interiot

interoperability of heterogeneous IoT platforms

Interoperability of Heterogeneous IoT Platforms

D 2.1 Stakeholders and market analysis report

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INTRODUCTION

Annexes A and B respectively contain the results of Task 2.1 investigations destined to describe the stakeholders and the products involved in the IoT market the INTER-IoT project is addressing. The identification of stakeholders and the listing of IoT products have been intended as key initial steps on which the D2.1 market analysis should be based on so as to provide partners with a clear understanding on the characteristics of the market the intended INTER-IoT products will be serving.

These two annexes are a full part of task 2.1 activities. However, in order to enhance clarity and so as to make the D2.1 more easly readable by avoiding overflooding it with too much data in the same document, it has been decided to include the stakeholders' identification and product description templates in a separate document. Annex A relates to the IoT stakeholders identified by partners, while Annex B contains a description of all the products identified.

In line with the clarity objective, so as to enhance the readiblity of the information, the stakeholders' identification templates have been listed below in Annex A following the INTER-IoT 5 product approach adopted for Task 2.1 (INTER-LAYER, INTER-FW, INTER-METH, INTER-LogP and INTER-Heatlh).

The chosen methodology is decribed in the D2.1 report itself, but it is useful to highlight the fact that from an operational standpoint, partners were asked to identify and describe the stakeholders and products they know of when conducting their ordinary business activities, but also to extend this search to elements stemmed from their business networks as well.

As a result, a wide variety of stakeholders has been identified, covering different technology sectors of the IoT economy, but also including users in different application domains. The products listed in Annex B also reveal a great diversity that points to a fragmentation analysed in the D2.1 report.

The summative information contained in this document constitute annexes to INTER-IoT D2.1, but as the project develops, partners will be asked to provide additional information, using the same identification templates, if ever and whenever new stakeholders or products are encountered in the lifetime of the project. Additional information will be uploaded on the JIRA repository[1].

Although all the information is available in the JIRA repository and the deliverable contains the summary and detailed study of the information gathered, we have decided to include the templates as an annex with the raw information, in order that readers with no access to JIRA may have the same information.

[1] jira.inter-iot.eu

ANNEX A STAKEHOLDERS

INTER-LAYER

Product Name: INTER-LAYER	
Stakeholder's Name: *DG CONNECT – EUROPEAN COMMISSION*	Stakeholder's Acronym: *DG CONNECT*
Stakeholder's Profile & Role: **Profile:** DG Connect contributes to the EU goals in the Digital Age: human advancement, fairness, jobs and growth. DG Connect seeks to foster innovation, creativity, culture, excellent research and competitive markets as well as a trustable, accessible and positive digital experience for every European citizen. **Role:** DG Connect is the sponsor of Inter-IoT as one of the 7 projects approved in the ICT30 call.	
Contact Person: DG Connect	Email: Position:
Stakeholder's Class: Political beneficiary	☒ Can appear in public reports ☐ Shall remain anonymous ☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

DG Connect has established the following needs:

- Develop open platforms to foster a vibrant IoT ecosystem. Opening up to developer communities and creative practices.
- Break the silos between the application areas (e.g. health, home) and technologies such as IoT, CPS, Cloud, Big Data.
- Prepare the ground for Large-scale Pilots.
- Not to forget about trust, security, ethics, etc. (IoT preparing the hyper-connected society)

It is needed a high impact of the action with:

- A visible and strategic programme
- Coordination and synergies across projects
- Availability and maturing of sustainable IoT platforms based on real ecosystems and developers
- Sustainability beyond the project life time
- Make progress and not reinvent the wheel

The European Commission wants to achieve a leadership in digital platforms for industry. For this, it is needed an availability of interoperable open platforms for any business to support its digital transformation. INTER-FW should be a multisided industry platform, understood as a foundation technology or service that enables a broader, interdependent ecosystem of businesses and requires complementary innovations to be useful, some levels of openness are necessary (i.e. APIs or SDKs) and it is necessary to go through standardization.

INTER-IoT needs to create an ecosystem around it and make it a success:

- Create test beds for the platform technology
- Define the two sides of the market and the core functionality
- Attract the best complementors, already in an early stage
- Drive the platform adoption.

INTER-LAYER should provide the interfaces able to link sensors, tags and smart objects registered in one IoT platform to other IoT platforms, owned by different entities and using different standards. INTER-LAYER will allow the connection of the systems of an IoT solution at various levels between each other and with other existing of future IoT platforms.

The need for this product is to get a set of building blocks that enable the transformation of existing sensor, tags and smart objects' networks into real IoT interoperable solutions. The IoT Interoperability tools need to fill the gaps of these networks that still lack of interoperable IoT functionalities and provide the secure and trusted mechanisms to connect with heterogeneous IoT networks.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
IoT initiatives/platforms (i.e. FI-WARE, IOTA, IOTLab, OpenIoT, BUTLER	

New Stakeholders	Stakeholder's class
AIOTI	Special Interest Group
IERC	Special Interest Group
SimbIoTe	ICT30 RIA (Research Innovation Action) project
TagItSmart	ICT30 RIA (Research Innovation Action) project
bIoTope	ICT30 RIA (Research Innovation Action) project
VICINITY	ICT30 RIA (Research Innovation Action) project
AGILE	ICT30 RIA (Research Innovation Action) project
BIG-Iot	ICT30 RIA (Research Innovation Action) project
BeIOT	ICT30 CSA (Coordination & Support Action) project
UNIFY-IOT	ICT30 CSA (Coordination & Support Action) project

Reason of involvement:	Identified by:	Registration Date:
Political beneficiary	Valenciaport Foundation Needs identified from ICT30 Kick off presentation	28/01/2016

Product Name:	
INTER-LAYER	
Stakeholder's Name:	Stakeholder's Acronym:
ICT30- SymbIoTe	*SymbIoTe*

Stakeholder's Profile & Role:

Profile: SymbIoTe (Symbiosis of smart objects across IoT environments) is an ICT30 RIA project that intends to create an interoperability framework across existing and future IoT platforms and enables IoT platform cooperation.

Role: SymbIoTe's aim is also to build a framework for interoperability and it is needed a link for collaboration between the two projects to avoid the creation of new silos of interoperability, as it has been requested by the European Commission.

Contact Person:	Email:	Position:
Sergios Soursos	souse@intracom-telecom.com	Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

SymbIoTe can benefit from Inter-Layer to implement SymbIoTe framework over different layers, allowing a more flexible implementation and guaranteeing the implementation in devices that non-necessarily integrate the complete layer stack. SymbIoTe can take advantage of Inter-Layer existing functionality to implement its framework over any layer. By this way, Inter-Layer can provide interoperability at several levels.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
OpenIoT; OpenUWEDAT; FIWARE; MoBaaS; Symphony; Navigo Digitale; nAssist; KIOLA; TarquinIoT	symbIoTe framework Standardisation: oneM2M and ETSI M2M, W3C WoT, OGC, IETF CORE and ACE.

New Stakeholders	Stakeholder's class
symbIoTe Consortium	Subject-matter experts

Reason of involvement:	Identified by:	Registration Date:
ICT30 RIA Project	Valenciaport Foundation Needs identified from ICT30 Kick off presentation	29/01/2016

Product Name:
INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
ICT30- TagItSmart	*TagItSmart*

Stakeholder's Profile & Role:

Profile: TagItSmart is an ICT30 RIA project that intends to create a consumer-oriented ecosystem: Manufacturing, Transport and Logistics, Retailers, Consumers at home and in stores, Third Party Services, Recycling and Disposal; based in the use of funny tags and associated technologies

Role: TagItSmart aims at defining a framework, enabling technologies and the tools required to design and exploit functional codes across multiple application sectors in a secure and reliable manner. The project will leverage clearly identified and well established catalysts (i.e., functional inks, printed circuit NFC, smartphones pervasiveness and cloud computing) to enable inclusion of any mass-market product into the world of connected objects.		
Contact Person: Srdjan Krco, DunavNET	Email: srdjan.krco@dunavnet.eu	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The use of Inter-Layer, instead of creating its own IoT interoperable framework, is advantageous to TagItSmart. Instead of creating its own framework, TagItSmart can benefit from Inter-Layer functionality, and rely on it its own tag control and tracking applications. Therefore, it is also opportune to benefit from the layers accordant to Inter-FW. Inter-Layer allows integration among different layers of different devices. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Passive RFID tags, QR tags, FunCodes	New products & Systems required: TagItSmart API TagItSmart framework Standardisation: W3C Web of Things, oneM2M MAS WG on IoT, IEC TC 119 on printed electronics	

New Stakeholders	Stakeholder's class
TagItSmart Consortium	Subject-matter experts

Reason of involvement: ICT30 RIA Project	Identified by: UPVLC Needs identified from ICT30 Kick off presentation	Registration Date: 29/01/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *ICT30- bIoTope*	Stakeholder's Acronym: *bIoTope*
Stakeholder's Profile & Role: **Profile:** BIoTope is an ICT30 RIA project that intends to promote an IoT system of system perspective, where horizontal and vertical integration is possible, using open standards and open API to connect platforms to other platforms, apps to apps, devices to other devices and business to business. **Role:** BIoTope aims to build a framework for IoT Open innovation Ecosystems for connected smart objects, by developing implementations of the reference architecture (FP6 PROMISE Project, The Open Group's Open platform 3.0, IoT-A and FIWARE), and promoting and studying the pilots in several cities (Proof-of-	

Concept). The pilots combine smart cities, vehicles, buildings and devices.		
Contact Person: Kary Främling, Aalto University	Email: kary.framling@aalto.fi	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The use of Inter-Layer eases the implementation of a wide range of devices, and interoperability at different levels in the bIoTope project. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: FP6 PROMISE Project, Open platform 3.0, IoT-A, FIWARE	New products & Systems required: bIoTope framework Standardisation: Open API standards O-MI and O-DF	

New Stakeholders	Stakeholder's class
TagItSmart Consortium	Subject-matter experts

Reason of involvement: ICT30 RIA Project	Identified by: UPVLC Needs identified from ICT30 Kick off presentation	Registration Date: 29/01/2016

Product Name: INTER-LAYER		
Stakeholder's Name: *ICT30- Vicinity*		Stakeholder's Acronym: *Vicinity*
Stakeholder's Profile & Role: **Profile:** VINICITY is an ICT30 RIA project that intends to create an ecosystem that provides "interoperability as a service" for infrastructures in the Internet of Things. The approach is bottom-up, decentralized, user-centric and standards-based without relying on a single standard. **Role:** VICINITY aims to create a platform -that provides interoperability as a service- for domain-crossing, value-added services by building and demonstrating a bottom-up ecosystem of decentralised interoperability of IoT infrastructures called virtual neighbourhood, like social network for things, enabling value added services, with strong focus on privacy: gateways process locally data, so that data is not sent over to the cloud.		
Contact Person: Christoph Grimm, TU Kaiserslautern	Email: grimm@cs.uni-kl.de	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs:		

The use of Inter-Layer eases the implementation of a wide range of devices to the different VICINITY platforms and applications. ☐ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved: DSM, Sensors, Smart Grid KPI	New products & Systems required: VICINITY framework VICINITY assisted living Standardisation: TinyMesh, OSGI VM, ZigBee, WLAN, Bluetooth Mesh, W3C Linked Data Platform (LDP), LinkSmart/Hydra, Ebbits, Ontologies from Ready4SmartCities, SmartCoDe FP7, ETSI/OneM2M

New Stakeholders	Stakeholder's class
Vicinity Consortium	Subject-matter experts

Reason of involvement: ICT30 RIA Project	Identified by: UPVLC Needs identified from ICT30 Kick off presentation	Registration Date: 29/01/2016

Product Name: INTER-LAYER		
Stakeholder's Name: *ICT30- Agile*		Stakeholder's Acronym: *Agile*
Stakeholder's Profile & Role: **Profile:** Agile intends to create IoT ecosystems in which different connectivity technologies are supported. To solve the problem of network options diversity Agile solution uses adoptive gateways for diverse multiple environments. **Role:** Agile aims to create adoptive interoperable gateways to allow devices to connect to cloud platforms, providing device discovery and support, interoperability -solving the problem of fragmentation of cloud IoT platforms-, privacy and data control issues, and accessibility of IoT apps in a global market. Agile has the features of modularity, extensibility, device and data management, privacy-data provenance, and IoT app ecosystem.		
Contact Person: Charalampos Doukas, CREATE-NET	Email: cdoukas@create-net.org	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: As AGILE gateways are designed to be able to communicate with a wide variety of devices through a large diversity of protocols, Agile can benefit from the capabilities of intra-layer communication and		

interoperability of Inter-Layer. ☐ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved: Smart Gateway, Eclipse Foundation products	New products & Systems required: Agile framework Standardisation: ALLSEEN Alliance, OMA, IPSO, OneM2M

New Stakeholders	Stakeholder's class
Agile Consortium	Subject-matter experts

Reason of involvement: ICT30 RIA Project	Identified by: UPVLC Needs identified from ICT30 Kick off presentation	Registration Date: 29/01/2016

Product Name: INTER-LAYER		
Stakeholder's Name: *ICT30- BIG-IoT*		Stakeholder's Acronym: *BIG-IoT*
Stakeholder's Profile & Role: **Profile:** BIG-IoT intends to bridge the interoperability gap of the Internet of Things, foster open IoT ecosystems, lower market entry barriers for IoT ecosystems, and enable syntactic and semantic interoperability of IoT platforms, by reusing and building up on existing methods to allow interweaving of platforms and users. **Role:** BIG-IoT aims to build and promote a marketplace where applications are available. Such marketplace is on top of a common API that allows aggregation of different platforms including ConnectedCity Platform, Open IoT, Smart Data platform, Mobile Analytics Platform, Smart Traffic Platform.		
Contact Person: Jelena Mitic, Siemens AG	Email: jelena.mitic@siemens.com	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The implementation of Inter-Layer will allow interoperability and compatibility in different levels for BIG-IoT with a wide range of devices. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Management & Semantics WG, OpenIoT, IoT platforms developed by the different stakeholders (e.g. Bosch or VMZ)	New products & Systems required: BIG-IoT API Standardisation: W3C WoT, W3C SDW, IETF core OGC, SWE WG, oneM2M, MS WG, OIC / IIC	

New Stakeholders	Stakeholder's class
BIG-IoT Consortium	Subject-matter experts

Reason of involvement:	Identified by:	Registration Date:
ICT30 RIA Project	UPVLC Needs identified from ICT30 Kick off presentation	29/01/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *Creative Systems Engineering (C.S.E) Monoprosopi EPE*	Stakeholder's Acronym: *CSE*

Stakeholder's Profile & Role:

Profile: Creative Systems Engineering (C.S.E) was established in Athens, Greece by a group of electrical, electronics and computer engineers with over 20 years of experience in the field of communication systems design, prototyping, industrial manufacturing and commercial exploitation through large European manufacturer firms, such as Alcatel and Siemens. Besides the firm engineering basis, all members of the technical staff have deep experience in R&D projects coordination, technical management and running, and strong scientific foundations.

CSE engineers have experience in the design and implementation of both hardware and software systems. Today CSE is working on the following activity areas:

- Design of systems composed of HW and SW sub-systems, PCB implementation, industrial manufacturing of electronic components, embedded systems.
- Design and implementation of embedded platforms for communication applications for corporate clients from the European industry sector
- Communication architectures and physical interfaces for IoT architectures
- Design and manufacturing of gateways for mesh networks with wireless/wired interfaces

Previous work also relates closely to application and protocol gateways, resource abstraction and virtualisation, orchestration software, Service oriented Architectures and OSGi implementations.

Role: CSE is a device manufacturer able to provide low energy IoT devices and also gateways to interconnect various devices and systems. CSE has developed one MIPS based residential gateway offering support for M2M and IoT setups that is offered as a commercial product with open software and hardware features that can be used for prototype development.

Contact Person:	Email:	Position:
Konstantinos Koutsopoulos	k.koutsopoulos@creativese.eu	Systems Engineer
Stakeholder's Class: Developer, Integrator	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

CSE has detected the following needs for the Inter-Layer product:

- Each layer should provide a set of easy, modular and extensible API, considering or merging all existing protocols. Following the IoT-A paradigm is important for CSE as they have some prototype gateway following IoT-A vision for which they have implemented a set of M2M concepts targeting proprietary devices that are attached via USB.
- Security and operational implications (e.g. low energy consumption at device level) is important for all layers. Furthermore, detailed descriptions of interfaces and involved operational parameters are needed. While connecting devices at various layers, it is important to know the various possibilities (e.g. protocols) to be used, but also some performance or benchmarking parameters to decide the best option for each scenario.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Advanced Modem Router Gateway (AMRG) – IoT gateway	Latch Current Limiter (LCL)

New Stakeholders	Stakeholder's class
ubinu	Developer, Integrator

Reason of involvement:	Identified by:	Registration Date:
Experience in IoT as device manufacturer	UPVLC	02/02/2016

Product Name:
INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
VMZ Berlin Betreibergesellschaft mbH	*VMZ*

Stakeholder's Profile & Role:

Profile: VMZ's core businesses are urban mobility and traffic management: from start to finish. VMZ is an affiliate of SIEMENS AG and has the role of an innovation lab for innovative mobility topics within SIEMENS. VMZ develops mobility and traffic management concepts and implements information services, operated by themselves. VMZ also carries out research on questions relating to mobility in the future. Its aim is to ensure secure, efficient and environmentally sound urban mobility: for pedestrians, for cyclists, for motorists, for users of public transport and for air travelers. VMZ's business units reflect the process chain in urban traffic and mobility management and comprises:

- Operation of the Berlin Traffic Information Center (VIZ) for the Federal State of Berlin with comprehensive services for mobility information for the city of Berlin
- Development and operation of multimodal information services which process real-time traffic data to inform on currently available mobility and
- Consulting services to public and private enterprises with questions related to ensuring urban mobility.

Role: VMZ leads traffic and mobility management in Berlin and other German cities as traffic planner and operators of the traffic information center. Their research focuses in multimodal mobility, incident management and the improvement of traffic information for the media and end users.		
Contact Person: Claudia Baumgartner	Email: claudia.baumgartner@vmzberlin.com	Position: Senior Consultant
Stakeholder's Class: IoT operator	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: VMZ has detected the following needs for the Inter-Layer product: To improve incident management and traffic information service, VMZ is interested in a seamless device to device interaction and an open service discovery and management framework, as well as common ontologies related to devices. As part of their research in multimodal mobility, it's a special need to have interoperable modules for mobility and routing. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Traffic information center	New products & Systems required: Incident management center	

New Stakeholders	Stakeholder's class

Reason of involvement: IoT operator	Identified by: UPVLC	Registration Date: 16/02/2016

Product Name: INTER-LAYER		
Stakeholder's Name: *ISECO S.L.*		Stakeholder's Acronym: *ISECO*
Stakeholder's Profile & Role: **Profile:** ISECO is a software control development company, that integrate sensors in an own developed control center. The systems deployed by the company have a broad range from malls to health centers. The main product developed by the company is called SAGE and is used to customize the reception of data from heterogeneous sensors. **Role:** Integration of hardware and software from different vendors in order to provide an integral service to a broad spectrum of clients. The implantation of its IoT platform is mainly monolithic.		
Contact Person: Vicente Collado	Email: vcollado@iseco.es	Position: CEO
Stakeholder's Class: Integrator	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: ISECO has the following needs:		

- Integration of heterogeneous sensors using different medium access control networks
- Integration of legacy systems and frameworks from different developers
- Offering of processed data and alarms to a suite of different applications
- Exchange of information from sensors to actuators using different networks
- Routing of data between different gateways in a pilot site
- Semantic representation of the information
- Interoperability with relevant standard middlewares like FIWARE, SOFIA2 or Universaal

INTER-LAYER provides opportunistic interoperability between different components at a chosen layer, the mechanisms and methods are required for ISECO operations

The main business of the company is the sensorization and control of Elderly Care Houses, more than 300 in Spain and 20 in Europe. The use of INTER-LAYER may solve several interoperability problems between sensors, gateways, middlewares and services developed by company, considering that the main business of the company is software development and integration and not hardware manufacturing.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
SAGE	Interoperability with FIWARE, use of SWE from OGC

New Stakeholders	Stakeholder's class
SolyMar Residencias	End User
SANITAS	End User

Reason of involvement:	Identified by:	Registration Date:
IoT operator	UPVLC	17/02/2016

Product Name:
INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
ETRA Investigación y Desarrollo, S.A	*ETRA I+D*

Stakeholder's Profile & Role:

Profile: ETRA Investigación y Desarrollo, S.A. (ETRA I+D) is the hi-tech unit within ETRA Group, one of the leading industrial groups in Spain. Its mission is putting in the market the most advanced solutions and services either directly or through the 10 companies of the Group. The main market areas of ETRA Group are Spain, South-Central America, Asia and the EU.

ETRA Group is owned by ACS, the 4th largest Construction Corporation in the World. With 2200 employees and a turnover of 250M€. ETRA Group is a market leader in the fields of technology, mobility and public services. More than 5.000 vehicles worldwide make use of ETRA's technology in their daily operation. More than 10.000 intersections are managed by ETRA's traffic management systems. More than 1.000.000 users use daily ETRA's smart card based solutions. ETRA is a leader in Mobility and Integrated Services providing technology of the 53% of urban traffic in Spain. 90% of the metros and light rail in Spain incorporate technological solutions from ETRA. ETRA controls more than 450,000 points of light in cities, roads, ports,

tunnels and get savings of 30% of energy costs. Manage more than 30,000 parking spaces.
Role: ETRA combines the Smart technology model with the provision of specific, tangible solutions to improve citizen's quality of life as well as the efficiency of city service managers in the use of their resources. ETRA has an intense activity in technological R&D&I projects for Smart Cities.

Contact Person:	Email:	Position:
Patricia Bellver Muñoz	pbellver.etraid@grupoetra.com	Researcher
Stakeholder's Class: Integrator	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:
ETRA I+D has detected the following needs for the Inter-Layer product:

- The ability to provide interoperability at various levels (from device to application level) allows the different products of ETRA to be better connected in two ways. In the first way, besides providing custom interfaces, ETRA will be able to choose other alternatives offered by Inter-Layer. Even if the customized approach can be more efficient, the existence of other alternatives shows a multimode operation potential of interest for some ETRA applications and services. From another point of view, the existence of more interoperable tools allows ETRA to easily integrate with other platforms, without having to allocate resources for custom interfaces
- ETRA is especially interested in the middleware and services layers rather than device layer, which is typically fulfilled by hardware providers.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Traffic Safety Management Center (Cegesev), Traffic Management Center (CGT), NOC (electric vehicles), Water management products, Security products	N/A

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Experience in IoT as system integrator	UPVLC	18/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *UPV Support Group for AIOTI Participation*	Stakeholder's Acronym: *AIOTI-UPV*

Stakeholder's Profile & Role:
Profile: AIOTI-UPV is a group of research teams from different field areas but with a common interest related with IoT. The research groups have organized in terms of the different existing WG in AIOTI.
Role: Research and development of solutions associated with IoT, from sensors, protocols, gateways, data processing, middleware, semantics and interoperability. With a relevant goal in publications and

standardization. The role of the association is to coordinate the participation and contribution of UPV in AIOTI.		
Contact Person: Ana Cruz	Email: acgarcia@cpi2020.es	Position: Project Manager
Stakeholder's Class: Integrator	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: AIOTI-UPV has the following needs: • Integration of heterogeneous sensors using different medium access control networks • Integration of legacy systems and frameworks from different developers • Exchange of information from sensors to actuators using different networks • Routing of data between different gateways in different environments • Semantic representation of the information • Interoperability with relevant standard middlewares depending on the project the research teams participate INTER-LAYER provides opportunistic interoperability between different components at a chosen layer; the mechanisms and methods are required for different research groups. The use of INTER-LAYER may solve several interoperability problems between sensors, gateways, middlewares and services developed by the research teams. ☒ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: UPV CARTA listed products and projects	New products & Systems required: N/A	

New Stakeholders	Stakeholder's class

Reason of involvement: IoT Research	Identified by: UPVLC	Registration Date: 29/01/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *Instituto de Tecnología Informática (ITI)*	Stakeholder's Acronym: *ITI*
Stakeholder's Profile & Role: **Profile:** ITI is a Private Technology Centre specialized in R&D in ICT, within UPVLC. ITI has extensive experience in the application of techniques and technologies from the Big Data Ecosystem to solve problems of large scale data analysis, and is a founding member of the Big Data Value Association (BDVA). **Role:** ITI has interest in the idea of connecting IoT interoperable frameworks with Big Data, and generate added value to IoT platforms and Smart City services by the management and intelligent analysis of these large scale collected data. ITI collaborates with the IMASCITI project of 'Smart Citizen', that provides personalized smart city services to identified individuals.	

Contact Person:	Email:	Position:
Daniel Saez	dsaez@iti.es	CEO
Stakeholder's Class: Big Data Expert team within UPVLC	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

IoT platforms are able to generate large amounts of data (Big Data). The management of these large scale data represents a challenge: typically, data requires real-time massive storage, quick access, and intelligent analysis to take advantage of immense potential benefits and possibilities, as well as data monitoring, real-time analysis and understandable visualization of relevant data.

ITI covers elements of the Big Data Ecosystem as a Technology provider, such as:

- Cloud Computing infrastructures and Real-Time optimization
- Collection of Non-Transactional Social and Heterogeneous Data
- Data Engineering (Improvement of the quality, integrity and consistency of data and database performance)
- Data Analysis for Transactional Data and Graphic Design and Data Visualization

The integration of Big Data techniques, methodology and solutions in Inter-IoT will drastically enhance the potential possibilities, services and utilities that Inter-IoT can provide. ITI can mutually benefit from this integration, as the use an IoT interoperable platform with integrated Big Data techniques and analysis will help to provide better and more complete IoT solutions to their clients.

INTER-LAYER provides opportunistic interoperability between different components at a chosen layer. The use of INTER-LAYER may solve several interoperability problems between sensors, gateways, middlewares and services developed by the company.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Big Data, Hadoop, Intelligent Large Scale Data Analysis, NoSQL, Business Intelligence platforms	IMASCITI IoT platforms

New Stakeholders	Stakeholder's class
IMASCITI	IoT project of Smart Citizen/platform provider

Reason of involvement:	Identified by:	Registration Date:
Interest in connecting IoT interoperable frameworks with Big Data	UPVLC	29/01/2016

Product Name:
INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
UNIVERSITY OF CALABRIA	*UNICAL*

Stakeholder's Profile & Role:

Profile: UNICAL is a research oriented Institution. In particular, it has different research groups focused on

IoT technologies from both technology transfer and academic viewpoints. UNICAL is therefore developing both research methods and prototypes in the IoT area specifically focused on devices, networking, middleware and application services.
Role: UNICAL is actively working on IoT interoperability from the aforementioned perspectives; thus, it is interested in novel solutions addressing interoperability at device, network, middleware and application layers.

Contact Person:	Email:	Position:
Giancarlo Fortino	g.fortino@unical.it	Professor of Computer Engineering
Stakeholder's Class: Other (Research and Development Expert)	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

- Device layer: a solution that is able to provide transparent access and management to heterogeneous IoT devices for the purpose of i) integrating most of the owned IoT devices ii) defining new network algorithms, protocols and applications atop the device layer.
- Networking layer: a solution that can allow a fast and reliable networking communication and integration among dissimilar IoT devices supporting several network addressing (6LoWPAN, IPv4, IPv6) and routing (RPL) protocols. This solution is mainly needed to define new protocols and applications atop the networking layer.
- Middleware layer: a solution that is able to couple the middleware components of the heterogeneous IoT platforms by using i) overlay middle components such as mediators and brokers; ii) virtualized middleware components to provide unified access to the three middleware services (discovery, management and communication) for IoT devices.
- Application service layer: a solution to make interoperable and/or integrate application services furnished by heterogeneous IoT platforms.
- Global IoT platform interoperability: a solution to support the whole interoperability between two or more already implemented or available IoT platforms in order to manage data flows in a transparent manner.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
BodyCloud, Air-Ground protocol, Smartphone Gateway Third party platforms (e. g. eCARE)	Third party platforms (e. g. smart home platforms, sensor networks, ehealth platforms) Programmable devices and sensors

New Stakeholders	Stakeholder's class
INRIA	Technology experts
University of Catanzaro	Research and Development Expert
TSC Consulting	Software engineers
Engineering	System Integrators

Reason of involvement:	Identified by:	Registration Date:
Partner of the project Provider of IoT platforms (e.g. BodyCloud)	UNICAL	08/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *Engineering Ingegneria Informatica S.p.A.*	Stakeholder's Acronym: *ENG*

Stakeholder's Profile & Role:

Profile: ENGINEERING Ingegneria Informatica S.p.A. is the head company of the ENGINEERING Group. Engineering was founded in 1980, and it is currently the first IT group in Italy, among the top 10 IT groups in Europe, with approx. 7.400 employees and 43 branch offices in Italy and abroad, with an established presence in Belgium, Lebanon, Republic of Serbia, Latin America and USA.

The group produces IT innovation to more than 1.000 large clients, with a complete offer combining system and business integration, outsourcing, cloud services, consulting, and proprietary solutions. Engineering Data Centres offer business continuity and IT infrastructure management to about 15.000 servers and 230.000 workstations. In 2014, consolidated revenues are 853 millions of euro.

Engineering operates through in the following business units: Finance, Central Government, Local Government and Healthcare, Energy & Utilities, Industry and Telecoms, delivering innovative IT solutions to main vertical markets: Aerospace, Insurance, Automotive, Banks, Consumer Products, Defence and Aerospace, Energy & Utilities, Training, Central & Local Government, Homeland Security, Life Science, Manufacturing, Media, International Organisation, Retail, Healthcare, Telecommunications, Transports, Welfare. Since 1987, Engineering innovation capability is supported by its Central Department of Research & Development, with around 250 researchers currently involved in over 70 research projects. R&D Department has been participating in several National and European research initiatives co-funded by EC and the Italian Research Ministry, with about 25M euro/year of co-funding. The R&D Department is located across 6 different locations in Italy and in Europe.

Engineering holds different responsibilities within the international research community, including technical and overall co-ordination of large research projects and consortia. In particular, the company is core partner of EIT ICT Labs in Italy (European Institute of Innovation and Technology) focused on leveraging ICT for Quality of Life; member of the Board of EOS (European Organisation for Security); core partner of NESSI (Networked European Software and Service Initiative); founding partner of the Future Internet PPP initiative. The European Commission aims to make FIWARE the standard platform for the Internet-of-Things (IoT) and Smart Cities, inviting ENGINEERING to form, together with other European big players (Telefonica, Orange, Atos), a foundation that encourages its adoption in all European countries. Engineering is an active member of most international open source communities and founder of SpagoWorld, a free/open source initiative managed by Engineering. The company is corporate member of OW2 Consortium and Eclipse Foundation.

Role: ENG could be interested in using project outcomes; ENG aims also at providing its expertise and open source solutions in the field of intelligent systems by participating in INTER-IoT open calls.

Contact Person: Giuseppe Francaviglia	Email: giuseppe.francaviglia@eng.it	Position: Senior researcher and project manager
Stakeholder's Class: System integrator, systems engineers, technology provider	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

To effectively address the layer-oriented approach described in the project, the followings are needed:

- Each layer should provide functionalities and services to components of other layers by means of standardized APIs; tools to check unauthorized access to layer's functionalities should be developed.
- Organizational interoperability, to enable and support relationships, communications and agreements between stakeholders/solution providers, in order to promote the involvement of new devices, networks, middlewares, application services and data to consequently increase the value of the whole platform
- Technical interoperability, implementation and exploitation of technologies, software and data integration patterns to enable heterogeneous devices, networks, middlewares, application services and data to be used and integrated together. Communication protocols, connectors, and APIs have to rely on standards: open source implementations supported by communities have to be addressed.
- Semantic interoperability, definition and implementation of an omni-comprehensive, shared ontology, to understand and to manage features and capabilities of heterogeneous devices, networks, middlewares, application services and data. Tools to manage semantic models, (semi) automatic data integration and mapping, and semantic consistency should be developed.
- Operational intelligence tools should be used to analyse in real time events and understand the status of the platform (i.e. complex event processing)
- Practical reasoning and goal oriented systems could be exploited to apply high level policies in order to realize reactive and proactive systems, able to autonomic computing capabilities (i.e. to realize systems which are compliant to self-* features)
- Security by design techniques, to implement a technological stack and the services needed to make the infrastructure secure both globally and at node level.
- Intelligent systems should be exploited to realize IoT platforms able to be aware about their internal status and the surrounding environment, and able to apply intelligent and autonomous behaviours both at global and at node level.
- Adoption of Sensors as a Service paradigm could be useful to exploit sensors' features in a standardized way, so to ensure scalability and usage of the whole platform.
- Innovative and smart techniques to enhance the engagement of heterogeneous devices that could be plugged in the platform.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Standard communication protocols at the state of the art	IoT Platforms (i.e. FI-WARE) Intelligent systems (i.e. PRACTIONIST - ,http://practionist.eng.it)

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Strong R&D activity on IoT domain and strong connections with relevant companies operating in related areas at European level	UNICAL	11/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *Alessandro Bassi Consulting SARL*	Stakeholder's Acronym: *ABC*

Stakeholder's Profile & Role:

Profile: Alessandro Bassi Consulting (ABC) was created in 2010 with a specific vision: help his clients to get beyond stereotypes and enable real innovation in different fields using ICT solutions. ABC is a Consulting firm based in the Sophia Antipolis area, France. ABC focus is on three topics: the set of technologies belonging to the Future Internet and Internet of Things domain, with particular regards to Smart Cities application, technologies and mechanisms for high performance data transfers for Cloud Computing and Storage, and analysis of Security aspects of both traditional networks and Constrained environments. In particular, in the FI sector, the competences of ABC were used in defining roadmaps for industry and public-funded research, and managing large EU co-funded research projects. Currently, ABC has an expanding portfolio of clients, comprising technologies companies, end-user retailers, and several international SMEs.

Role: ABC will contribute on the definition and analysis methods for providing interoperability and integration at device, communication and middleware levels

Contact Person:	Email:	Position:
Alessandro Bassi	alessandro@bassiconsulting.eu	CEO
Stakeholder's Class: Technology Experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

The need for this product is to get a set of building blocks that enable the transformation of existing sensor, tags and smart objects' networks into real IoT interoperable solutions. The IoT Interoperability tools need to fill the gaps of these networks that still lack of interoperable IoT functionalities and provide the secure and trusted mechanisms to connect with heterogeneous IoT networks in the port, transport and logistics scenarios.

INTER-LAYER should provide the interfaces able to link sensors, tags and smart objects registered in one IoT platform to other IoT platforms, owned by different entities and using different standards.

The existence of the building blocks and interfaces created in INTER-LAYER will provide the capacity of creating solutions that simplify the introduction of IoT in ports, logistics and freight and container transport under and interoperable framework where different companies can share information generated by different smart devices and sensors or captured from tags in a secure and trusted environment.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
SCADA systems sensors, Actuators, RFID	Communication Protocols IoT Platforms

New Stakeholders	Stakeholder's class
FINCONS	Provider
VTT	Subject-matter experts

THINGS	Representative of external associations
REPLY	Provider
CETIC	Subject matter expert

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	ABC	11/02/2016

Product Name:	
INTER-LAYER	

Stakeholder's Name:	Stakeholder's Acronym:
THINGS	*THINGS*

Stakeholder's Profile & Role:

Profile: THINGS.is a design and innovation agency for the Internet of Things. This agency is a a multi-disciplinary team of researchers, strategists, designers, technologists and makers. We strongly support open innovation and foster the process of connecting the world. They analyse consumer insights, user experiences and business models, inspiring their clients with innovative design trends. Then, they identify strategic scenarios for successful products & services integrating digital and physical worlds. Using a user-centered approach to design seamless interactions and interfaces and to outline increasingly broader experiential ecosystems, they provide open architectures following the latest advancements in technology to always deliver great front-end and back-end solutions.

Role: THINGS.is can be a target user for the Layer package, offering it within their technological portfolio.

Contact Person:	Email:	Position:
Pier Paolo Bardoni	pier.bardoni@things.is	CEO

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Technology Expert	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

A way for different devices to interact through a middle framework capable of managing the different kind of dynamics would be a great solution. What often happens is that devices become widely used and so their communication standards become the accepted solution, putting the widespread distribution of a common platform in second place. We still have great interoperability problems, which we solve by adopting frameworks that offer a good combination of supported applications and devices, with an open community. From our point of view, open platforms are the best bet to solve interoperability problems. This reduces the risk for a platform's support to be abandoned with the evolution of communication standards, reducing on the long term interoperability problems.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
DgLux - http://www.dglogik.com/dglux The Things Network - http://thethingsnetwork.org/ Brillo OS SCLAK - http://www.sclak.com/	Design & Prototyping process tool (task and economics) Machine Learning easy to embed IoT solution for retailers behaviour analysis

New Stakeholders	Stakeholder's class
Nest	Designers and Developers
Samsung	Technology Providers
General Electric	Technology Providers
PTC	Technology Providers
Privacy authorities	Public Authority
Officine Arduino	Technology Providers

Reason of involvement:	Identified by:	Registration Date:
Design and innovation IoT	ABC	12/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *VTT Technical Research Centre of Finland Ltd*	Stakeholder's Acronym: *VTT*

Stakeholder's Profile & Role:

Profile: VTT Technical Research Centre of Finland Ltd is the leading research and technology company in the Nordic countries. VTT has a national mandate in Finland. We use our research and knowledge to provide expert services for our domestic and international customers and partners. We serve both private and public sectors.

We have 73 years' experience supporting our clients growth with top-level research and science-based results.

We develop new smart technologies, profitable solutions and innovation services. We cooperate with our customers to produce technology for business and build success and well-being for the benefit of society. We use 4,000,000 hours of brainpower a year to develop new technological solutions. The benefit you gain from this spearhead research comes when we work with you to create new products, production processes, methods, and services. VTT ensures efficient utilisation of science and technology with the aid of broad international cooperation and networking.

VTT has been granted an ISO9001:2008 certificate and our environmental system is certified in accordance with ISO14001:2004. VTT is part of Finland's innovation system and operates under the mandate of the Ministry of Employment and the Economy. VTT reports corporate responsibility according to GRI G3 guidelines.

Role: Public-Private research center with strong links to industry and innovation.

Contact Person:	Email:	Position:
Heikki Ailisto	heikki.Ailisto@vtt.fi	IoT research Director
Stakeholder's Class: Research Institute	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

In our view the interoperability on the communication level is at reasonably satisfactory level. Of course, there are a number of standard and proprietary solutions, but this is understandable since requirements are different, too.

One problem may be pointed out: even between nominally interoperable solutions, there may be problems (versions differ too much.
Middleware and platform level there seems to be a number of actors promoting mainly proprietary solutions. Will it be "winner takes 80%" like in mobile platforms or a larger number of equally strong provider-solutions without one dominant player (like in industrial automation systems) remains to be seen. It seems some companies are holding their investments and waiting the scene to clear.

Regarding to communication level, there are expectations towards emerging solutions, namely 5G (around 2020) promising low latency, reasonable prising, wide bandwidth etc. In 2016 -17 some expect the rise of LORA or/and Sigfox, which are supposed to be "IoT tailored" solutions with low cost and long battery life. Sigfox promises also global scalability (one agreement and you are in the game globally).

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
We use quite typical things: BT LE (4.0), WiFI, some proprietary radios and Cellular for communications; some own development Middlewares, but then MS Azure and PTC Thingwox, for data-anlysis development Matlab, R and other tools.	Interoperability on data representation and semantic level is important for future. Some kind of standardization would make many things easier and more cost effective => wider use => more benefit. For example, data analysis tools would become more reusable.

New Stakeholders	Stakeholder's class
It seems that the telecoms (Nokia, Ericsson, Huawei) are investing in IoT properties of 5G systems during coming years. Want to have role there. Then on IoT platforms, PTC is challenging the big ones (IBM, SAP, Oracle, MS), but they are not giving up. Standardisation organisations and consortia like IIC, OneM2M etc. have a role too.	

Reason of involvement:	Identified by:	Registration Date:
	ABC	12/02/2016

Product Name:	
INTER-LAYER	
Stakeholder's Name:	Stakeholder's Acronym:
Fincons	*FIN*

Stakeholder's Profile & Role:

Profile: The FINCONS GROUP assists customers in IT strategy and process definition, working alongside them to design and develop the technological and organizational tools they need to concentrate on their core business, relying on the FINCONS GROUP as a partner for planning organizational change and adaptation in the field of IT.
The FINCONS GROUP's philosophy has always been to guarantee customers the best services and solutions which will be true building blocks of success for them.
The values driving the FINCONS GROUP toward this goal are shared by every employee in the Group.
KNOW-HOW, PROFESSIONALISM, EXCELLENCE, PASSION, QUALITY AND INNOVATION.

Role: IT Technology provider

Contact Person:	Email:	Position:
Matteo Villa	matteo.villa@finconsgroup.com	Innovation Manager
Stakeholder's Class: Technology Provider	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

FINCONS is looking with very special attention to the new class of SW Applications that IoT would make possible, in the various business sectors where we operate (Transport, Logistics, Health, Media&Broadcasting, Energy & Utilities, Banking, Insurances…)

For this an Interoperability layer is of fundamental importance, as it would allow us to focus on high-level development, addressing business needs, abstracting from the specific differences of the various IoT-based platforms.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
FINCONS don't have commercially available IoT-based products. Yet the company has a number of assets in a development stage: • "FINCONS Smart Manufacturing Platform": a rich framework of ICT tools for the Manufacturing sector, based on an Intelligent Middleware able to exploi the capabilities of IoT at industrial level. The platform is currently under development • "FINCONS SmartWaste": our B2B solution for electronic tracking of waste shipments, based on National and International regulations, and integrated with most popular ERP systems (i.e. SAP). Possible integration with IoT would tremendously enhance the capabilities of this solution allowing real-time tracking of waste shipments, thus providing significant added value to our customers.	We believe that the solutions developed by INTER-IoT would help us to: (i) extend our current solutions; (ii) ensure interoperability of our solution to third-party solutions; (iii) facilitate us in the development of new solutions. On this last bullet, FINCONS is collecting very relevant feedback from its customers and prospects in different market domains, and see several opportunities in the next future (cfr banking sector, insurances sector, energy saving sector, media & broadcasting sector).

New Stakeholders	Stakeholder's class
New stakeholders suggested or required for the design and implementation of the product to comply with the needs identified 1) Holonix – a spin-off of the "Politecnico di Milano", offering IoT-based solutions 2) at commercial level: Telecom Italia, SwissCom, SAP	

Reason of involvement:	Identified by:	Registration Date:
	ABC	12/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *Association pour le développement de la formation professionnelle dans les transports*	Stakeholder's Acronym: *AFT*

Stakeholder's Profile & Role:

Profile:

AFT is a non-profit organization based in France devoted to the development of vocational education and training in the Transport & Logistics sectors. Notably through its regional delegations scattered throughout the French territory it supports Transport & Logistics undertakings to gain awareness and benefit from new IoT advancements that could make them enhance competitiveness, by applying high level research results to their ordinary business activities involving IoT solutions.

Role:

AFT will be participating in the pilot case testing of different interoperable gateways and virtualized solutions developed in INTER-LAYER for the Transportation Pilot.

Contact Person:	Email:	Position:
Jean-André Lasserre	jean-andre.lasserre@aft-dev.com	Institutional Affairs Director

Stakeholder's Class:	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Representatives of external associations		

Stakeholder's Needs:

The need for this product is to get a set of building blocks that enable the transformation of existing sensor, tags and smart objects' networks into real IoT interoperable solutions. The IoT Interoperability tools need to fill the gaps of these networks that still lack of interoperable IoT functionalities and provide the secure and trusted mechanisms to connect with heterogeneous IoT networks in the port, transport and logistics scenarios.

INTER-LAYER should provide the interfaces able to link sensors, tags and smart objects registered in one IoT platform to other IoT platforms, owned by different entities and using different standards.

The existence of the building blocks and interfaces created in INTER-LAYER will provide the capacity of creating solutions that simplify the introduction of IoT in ports, logistics and freight and container transport under and interoperable framework where different companies can share information generated by different smart devices and sensors or captured from tags in a secure and trusted environment.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
SCADA Systems Sensors, smart objects, RFID tags	IoT Platforms

New Stakeholders	Stakeholder's class
Containersafe	IoT solution and device Provider
Conlock	IoT solution & device Provider

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	AFT	05/02/2016

Product Name: INTER-LAYER		
Stakeholder's Name: *Transport Route Service*		Stakeholder's Acronym: *TRS*
Stakeholder's Profile & Role: Profile: TRS is a French transport service provider specialized in haukibng goods for the carpentry industry. Having suffered from the recent economic crisis it is now basing future development on direct private individual deliveries. For this it relies on its staff of 160 professional drivers who are all equipped with smartphones and notably on Wintrans, an application they use tracking and tracing freight, but also for planning delivery rounds.		
Contact Person: Eric Paumier	Email: No email provided http://www.trs49.fr/trs_l-ouverture-transportee_contact.php?agence=trs49#formulaire	Position: Director General
Stakeholder's Class: Sample list provided below	☐ Can appear in public reports ☒ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: TRS is interested in the development of interoperability at different levels of IoT if it can allow for its tracking & tracing solutions to be connected to other platforms (e.g. fuyel management systems) so as to optimize even further the planning of delivery rounds. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Digital tachograph, RFID, dfreight tracking & tracing systems	New products & Systems required: Identification of additional products and systems required for the introduction of the product	

New Stakeholders	Stakeholder's class
New stakeholders suggested or required for the design and implementation of the product to comply with the needs identified	Customers

Reason of involvement: INTER-Layer	Identified by: AFT	Registration Date: 29/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *NEWAYS*	Stakeholder's Acronym: *NEWAYS*
Stakeholder's Profile & Role:	

Profile:
Neways Electronics International N.V. (Neways) is an international company active in the EMS (Electronic Manufacturing Services) market. Neways offers its clients custom-made solutions for the complete product life cycle (from product development to after-sales service) of both electronic components and complete (box-built) electronic control systems. Neways operates in a niche of the EMS market and focuses primarily on small to medium-sized specialist series, in which quality, flexibility and time-to-market play a crucial role. Neways products are used in sectors such as the semi-conductor, medical, automotive, telecom and defence industries. Neways has operating companies in the Netherlands, Germany, the Czech Republic, Slovakia and China, with a total of 2,530 employees at year-end 2015. Neways recorded net turnover of € 374 million in 2015. Neways shares are listed on the Euronext Amsterdam stock exchange (symbol: NEWAY).
Role:
Neways will be leading the definition and methods for Device layers Interoperability and integration, especially in T3.1. Contribute to the network and middleware layer interoperability and integration of LogP and Health devices to heterogeneous IoT architecture and to analysis requirements for data interoperability.

Contact Person:	Email:	Position:
Ron Schram	ron.schram@newayselectronics.com	Senior System Architect
Stakeholder's Class: Subject-matter Experts, System Engineer, system validation design, User	☐Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:
Interfaces able to link sensors, actuators and smart objects registered in one IoT platform to other IoT platforms, owned by different entities and using different standards. The INTER-LAYER will use to better connect systems at various levels between each other and with other IoT platforms in existing and future research projects. The need for this inter layer is to recognize the infrastructure and match it to the appropriate network reconfiguration mechanism to enable existing sensor, actuators and smart objects networks into an IoT interoperable solution.
☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Sensor Observation Systems (OGC SOS) SIMACOP (command & control) Industrial PLCs, Sensors, Actuators, RFID Localization and tracking	IoT Platforms (FI-WARE/VLCi, Open-IoT, Sofia2, Azure IoT, Google IoT), smart objects LoRa, DUST, Body Area Network (BAN) Smart Agriculture, Computervision

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	NEWAYS	12/02/2016

Product Name: INTER-LAYER		
Stakeholder's Name: *NOATUM Ports*		Stakeholder's Acronym: *NOATUM*
Stakeholder's Profile & Role: Profile: Noatum is owned by institutional investors, the majority of which are pension funds, advised by J.P. Morgan Asset Management Infrastructure Investment Group, and the Dutch Pension Fund Stichting Pensioenfonds ABP. ım Ports: Investor in strategic terminals offering efficient handling services managed by an experienced team of professionals: Bulk terminals, Container terminals, Multi-purpose terminals, Rail terminals, Ro-Ro and vehicle terminals Role: NOATUM contributes to the design of the reference interoperability of devices, network and middleware, application and services.		
Contact Person: Francisco Blanquer	Email: fblanquer@noatum.com	Position: Chief Development Engineer
Stakeholder's Class: End user	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: To communicate industrial PLCs with different software management applications e.g. Container Terminals environment, PLC interoperability with the trucks (e.g. using an smartphone), crane confirming that the truck is in the right place at the right time to load/unload the container. All in all, the crane/machine should be able to communicate with the external truck, thus identifying without making mistakes the number plate of the truck and loading/unloading in the correct truck, without using RFID tags. (RFID identifying from 0.5 m of the antennae and is not smart and friendly user for the external truck). ○ IoT devices should be able to communicate with applications, e.g.PLC-SEAMS-CATOS ○ Device-device (PLC-Smarphone) ○ Application-application (SEAMS-CATOS) ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: SEAMS; CATOS	New products & Systems required: Trucks Pre-booking, y TOS intermodal	

	(ferrocarril).

New Stakeholders	Stakeholder's class
Orbita Ingenieria	Subject-matter experts
Amplia	Designers and Developers
EDAE	Usability experts
Pesyr I+D	Technology experts

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	NOATUM	08/02/2016

Product Name:	
INTER-LAYER	

Stakeholder's Name:	Stakeholder's Acronym:
Orbita Ingeniería S.L.	*ORBITA*

Stakeholder's Profile & Role:

Profile:

ORBITA is more than an engineering firm, it's a solution turnkey provider in high end technology solution for the port community. They main business come from cars factories, and all that latest technology is used now for ports, food and water industries. In ports they have developed and successfully runs Automated gate control systems, Container Inspection systems (load detection) Control and monitoring of Port and Terminal processes (BlackBox), Control and Monitoring of airport baggage carousels, SCADA systems, etc

Role:

ORBITA represents the integrator of the process. The client ask Orbita how to improve the process and Orbita give them the solution, in this case with the IoT technology. But they have to implement the solution no only present it, so the work with the several parts to get the final integration of their design.

Contact Person:	Email:	Position:
Francisco Grau	fgrau@orbitaports.com	Business Manager - Ports and Terminals

Stakeholder's Class:	☐ Can appear in public reports	☐ IoT Demand side
Software engineers Technology experts	☒ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

- Usability of different communication systems such as Wifi, servers(big data database, standard database), virtualization (device level, application level), cloud (capacity, external

communications)

- Definition of a data standard or protocol for the sensors. At least there should be a seres of "standard" fields and other user free following a logic and nomenclature.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
GateCCR Container Code Recognition GateLPR Licence Plate Recognition CraneTMS Traffic Managament System Yard CarneOCA Obstacle Collision Avoidance Yard CraneSCA Stack Collision Avoidance	IoT Port Platform

New Stakeholders	Stakeholder's class
World Wide Terminals (DPWorld, MSC, Maersk	End User
Ford, Seat, Volkswagen, Mercedes, etc	End User
Sick, SIEMENS, Banner, ect	IoT devices
CARGOTEC	Provider

Reason of involvement:	Identified by:	Registration Date:
Solution Supplier	Noatum	18/02/2016

Product Name:

INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
AUTORIDAD PORTUARIA DE VIGO	*APVIG*

Stakeholder's Profile & Role:

Profile:

The Port Authority of Vigo maneges one of the major logistic and business complexes in Europe. Vigo is an economic significant Port, also called a port of general interest, with an essentially export nature and handling high value merchandises. Futhermore, the Port of Vigo accounts for about 40% of exports in Galicia. Port Authority of Vigo is deploying a Smart Port platform with a related IoT platform, integrating sensors deployed in the port area from lighting, water/electricity metering, AIS, weighing scales, access control, video, etc.

Role:

APVIG is interested in the results of the project and specifically in INTER-LAYER product..

Contact Person:	Email:	Position:

David Silveira	davidsilveira@apvigo.es	ICT Director
Stakeholder's Class: End user	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

The need for this product is to be able to offer access to Port Authority sensor data to third party agents from the Port Community so that it can be used in their own systems.

APVIG is interested mainly in the services layer, as they don't identify current needs for accessing raw sensor data at the device or network layer.

It could also be interesting to allow the future access from the Port IoT platform to sensor data from external agents (for instance, terminals). In this case, device or networking layer could be the most prominent needs although service layer is also desirable.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Ágata (Smart Port platform) Posidonia Operations Dorlet (access control) Intelligent video System	

New Stakeholders	Stakeholder's class
Ágata	IoT platform provider

Reason of involvement:	Identified by:	Registration Date:
Port Authority with an existing IoT platform	Prodevelop	15/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *PRODEVELOP*	Stakeholder's Acronym: *PRO*

Stakeholder's Profile & Role:

Profile:

Prodevelop is a solution developer and systems integrator with a high expertise in port & maritime solutions and public administration, especially smart cities. Prodevelop has a suite of products aimed at the management of Port Authorities, that has been integrated into IoT platforms in Smart Port projects.

Prodevelop has also participated in developing solutions for Smart Cities in mobile and geospatial technologies.

Role:

PRO is partner of the project, thus responsible for technically contributing to the deliverables and interested in commercializing this product.

Contact Person:	Email:	Position:
Miguel Montesinos	mmontesinos@prodevelop.es	CTO
Stakeholder's Class: Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

The need for this product is to be able to gather access from an organization like Port Authority or a City Council to sensor data existing in third party IoT platforms and also to be abel to offer access to this data from the central organization to third party agents..

The generic needs are the possible use of this product for an easy integration with IoT platforms, at the network or application & services layer. A common ontology I also necessary for integrating disparate sensors from different IoT platforms..

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Posidonia Management (PMS) Posidonia Operations	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Project partner	Prodevelop	15/02/2016

Product Name:

INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
AYUNTAMIENTO DE A CORUÑA (A CORUÑA CITY COUNCIL)	*AYAC*

Stakeholder's Profile & Role:

Profile A Coruna city council is the public body responsible for managing the city of A Coruna, a city and municipality of Galicia, Spain. It is the second-largest city in the autonomous community and seventeenth

overall in the country. A Coruna is a mid-sized city with 245.000 inhabitants. A Coruna is one of the European pioneers in Smart Cities, being one of the 6 finalists in the World Smart City Awards 2013, and also one of the 6 finalists in the Smart City Expo World Congress de Barcelona 2014.

Role: AYAC is interested in the results of the project and specifically in INTER-LAYER product as an end user.

Contact Person:	Email:	Position:
Rubén Cid	r.cid@coruna.es	Innovation Director
Stakeholder's Class:	☐ Can appear in public reports	☒ IoT Demand side
End user	☒ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

AYAC needs fall mainly in the field of interoperability. It is considered necessary to have interoperability methods for interconnecting its own IoT platform with external IoT platforms from agents and organizations working in the city (Port, utilities, etc.). There are a set of specific needs from AYAC point of view:

- Using AENOR standards for Smart Cities interoperability normalization.
- Taking into account European initiatives for enabling integration with them, like:
  - FI-WARE.
  - FED4FIRE.
- To focus on having a common ontology for enabling interoperability at a semantic level.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
SOFIA2 (Smart City IoT platform) FI-WARE	

New Stakeholders	Stakeholder's class
SOFIA2	IoT platform provider

Reason of involvement:	Identified by:	Registration Date:
Smart City leader	Prodevelop	15/02/2016

Product Name:	
INTER-LAYER	
Stakeholder's Name:	Stakeholder's

Open Geospatial Consortium	Acronym: *OGC*

Stakeholder's Profile & Role:

Profile The OGC (Open Geospatial Consortium) is an international not for profit organization committed to making quality open standards for the global geospatial community. These standards are made through a consensus process and are freely available for anyone to use to improve sharing of the world's geospatial data.

OGC standards are used in a wide variety of domains including Environment, Defense, Health, Agriculture, Meteorology, Sustainable Development and many more..

Role: OGC is a standardization body.

Contact Person:	Email:	Position:
Steve Liang	liangs@ucalgary.ca	Innovation Director
Stakeholder's Class: Standardization body	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

1. IoT is not only about devices and network, semantics is important and also services.
2. Reuse existing proven working standards. Make recommendations to the existing standard organization if some new use cases are required (e.g., make change request to OGC)
3. Effective communications with the active working group members in the standard organizations. They are the authors of the standards, and there are many lessons and issues have been considered when the specifications were written.
4. Spatial is special, and THINGs exist in space and time. The ability to integrate the existing (and future) spatial data standards and datasets is important for IoT.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
OGC SensorThings API is a new OGC standard specification (approved on Feb 1st) designed specifically for IoT. It's based on OGC SWE, but more practical and efficient. It provides great DEVELOPER EXPERIENCE!! It's very easy for developers to pick up. It can be applied to all three project outputs.	

New Stakeholders	Stakeholder's class
Of course, OGC community is important in my opinion.	Standardization body community

Reason of involvement:	Identified by:	Registration Date:
Standardization body with involvement in IoT	Prodevelop	24/02/2016

Product Name:	
INTER-LAYER	
Stakeholder's Name: *Everis Spain, SLU*	Stakeholder's Acronym: *EVE*

Stakeholder's Profile & Role:

Profile: everis is a consulting firm of NTT Data company that offers to its clients comprehensive business solutions covering all aspects of the value chain from business strategy to systems implementation. It is active in the sectors of Banking, Healthcare, Industry, Insurance, Media, Public Sector, Telecom and Utilities.

everis was established in Spain in 1996 as DMR Consulting, its name until October 2006. It started operating in Spain opening an office in Madrid and another in Barcelona soon followed by expansion in Europe and Latin America. The trust our clients place in us and our on-going investment in diversifying our business has allowed us to branch out into key sectors.

everis and NTT DATA are a top consulting companies providing business and strategic solutions, development and maintenance of technological applications and outsourcing services.

NTT Data Group is the 6th company in the IT services area with more than 70.000 professionals and operates in 41 countries.

Role: everis, as multinational consulting firm, can design and implement technology solutions and manage outsourcing applications, infrastructure and processes. It fosters the use of quality assurance methodologies and provides functional and technological specialization.

everismart, smart area of everis, is interested in IoT ant it will be using and testing different interoperable gateways and virtualized solutions developed in INTER-LAYER focused on Smart Cities scenarios.

Contact Person:	Email:	Position:
Adriana Anguera Jordà	adriana.anguera.jorda@everis.com	everismart
Stakeholder's Class:	☑ Can appear in public reports	☑ IoT Demand side
End user	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

The need for this product is to get a set of building blocks that enable the transformation of existing sensor, tags and smart objects' networks into real IoT interoperable solutions. The IoT Interoperability tools need to fill the gaps of these networks that still lack of interoperable IoT functionalities and provide the secure and trusted mechanisms to connect with heterogeneous IoT networks in the Smart Cities scenarios.

INTER-LAYER should provide the interfaces able to link sensors, tags and smart objects registered in one IoT platform to other IoT platforms, owned by different entities and using different standards.

The existence of the building blocks and interfaces created in INTER-LAYER will provide the capability of creating solutions that simplify the use of IoT in Smart Cities under and interoperable framework where different users can share information generated by different smart devices and sensors or captured from tags in a secure and trusted environment.

☑ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
everismart Platform. FI-WARE Platform. everis vertical solutions.	

New Stakeholders	Stakeholder's class
everis	IoT solution developer and consultancy firm

Reason of involvement:	Identified by:	Registration Date:
Interested in the project	Prodevelop	22/02/2016

Product Name:	
INTER-LAYER	

Stakeholder's Name:	Stakeholder's Acronym:
THALES SERVICES SAS	*THS*

Stakeholder's Profile & Role:

Profile Thales Services (THS) belongs to Thales group, which is a large industry player specialized in critical systems for government and companies, whose activities around the world now generate revenues of about 14.2 billion euro, with 65,000 employees in 50 countries. Leading the computing solutions within Thales, Thales Services designs, supplies, maintains and operates global solutions based on critical computing enabling its customers in civil and public sector markets (ground and air transportation, defence, avionics, space, etc.) to manage the critical infrastructures under their responsibility. Within Thales Services, ThereSIS is an applied research laboratory dedicated to developing innovative technologies into six key areas: Cloud Computing, Big Data & Big analytics, Real Time Environment, Vision & New sensors, Security & Networking, Machine learning & Modelling. In the new context of the "Internet of everything", ThereSIS has to respond to many societal and technological challenges, by developing innovative solutions for handling the generalized interconnection of actors, information systems and objects.

Role: Thales Services offering in the area of Platforms for Connected Devices and in the area of Intelligent information processing and service provisioning rely on the following technical pillars: "Urban Mobility" platform, enabling to manage and monitor the mobility of a city; Bio-inspired Simulation

platform, where artificial intelligence algorithms handle the goal-based individual and collective activities. Thales Services is a system integrator that has a long tradition and a complex infrastructure for integrating large scale systems for large accounts.

Contact Person:	Email:	Position:
Mihaela Brut	mihaela.brut@thalesgroup.com	PM
Stakeholder's Class: Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

Interoperability at each layer using international standards.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Propietary solutions of Thales for each interoperability layer, based on open standard specifications.	Third-party products would integrate Thales ecosystem through conversion operations.

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Interested in the project	Prodevelop	22/02/2016

Product Name:

INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
Systems Research Institute, Polish Academy of Sciences	SRIPAS

Stakeholder's Profile & Role:

Profile: The Systems Research Institute, Polish Academy of Sciences was established in 1976. Since then, the scientists employed at the Institute have been active primarily in the domain of methodological foundations for systems analysis. The Systems Research Institute is member of the consortium for Inter-IoT and has an expertise in the key domains of the project, to which it shall contribute. It concerns: (i) software agents and agent systems; (ii) ontologies and semantic data processing; (iii) agent-semantic systems; (iv) software agents in sensor networks; (v) software design and implementation; (vi) grid / cloud computing; (vii) cyber-physical systems.

Role: Within INTER-LAYER SRIPAS has interest in the following tasks:

1. Definition and Analysis of Methods for Middleware Layer Interoperability and Integration

2. Definition and Analysis of Methods for Application Service Layer Interoperability and Integration
3. Definition and Analysis of Methods for Data and Semantics Layer Interoperability and Integration
4. Definition and Analysis of Methods for Cross-Layer Interoperability and Integration

SRIPAS will contribute to the analysis and development of methods for the middleware layer, application service layer and cross-layer service interoperability and integration. Furthermore, SRIPAS will lead the task devoted to the definition and analysis of methods for data and semantics layer interoperability and integration. Here, particular focus will be on development / integration / matching of ontologies and development of tools supporting meta-level integration of IoT platforms.

Contact Person:	Email:	Position:
Maria Ganzha	Maria.Ganzha@ibspan.waw.pl	Project leader
Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
System designers and developers	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

1. INTER-LAYER should provide shared ontology and methods to achieve IoT platform semantic interoperability.
2. Shared ontology should include concepts describing general IoT platform architecture.
3. Shared ontology should be modularized to easily manage concepts related to each layer defined in INTER-LAYER.
4. Bidirectional integration between IoT platforms should be considered.
5. If available, commonly accepted standards and ontologies should be considered for reuse.
6. Proposed methods for interoperability should be identified for each layers (they may be different) as well as the method for cross-layer semantic integration should be designed.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Identification of existing products and adjancent systems of the product	*Identification of additional products and systems required for the introduction of the product*

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Partner in the Inter-IoT consortium.	SRIPAS	15/02/2016

Product Name: INTER-LAYER		
Stakeholder's Name: Vemco Sp. z o.o.		Stakeholder's Acronym: VEMCO
Stakeholder's Profile & Role:		
Vemco is a company with main focus on computer networks and access-control systems. They design, develop and deploy solutions for closed zone (e.g. parking) monitoring that include: tracking vehicles entering and leaving the area, incidents detection, access control. Vemco participated is a member of international consortium working on the following projects within JTI ARTEMIS European innitiative: - DEWI (Dependable Embaded Wireless Infrastructure) – project's scope is application of intelligent wireless embedded systems in 4 areas including smart buildings. - ACCUS (Adaptive Cooperative Control of Urban Subsystems) – project's scope is effective creation of systems composed of systems (SoS) that enables real-time management and optimization by urban systems integration. Vemco's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms, therefore their input in requirements specification for mentioned products can be valuable.		
Contact Person: Rafał Tkaczyk	Email: r.tkaczyk@vemco.pl	Position: IT Specialist
Stakeholder's Class: Subject-matter experts	☐ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs:		
Stakeholder is interested in results of the Inter-IoT project's products and willing to try to adopt them in their work. The following problems and possible areas of interests for research have been indicated by the stakeholder: - Lack of advanced semantics – communication with devices is based on many vendor-specific protocols - In case of integrating many platform (set of devices) each of them is managed separately due to dedicated APIs - Various variants of business rules engines. The problem is to analyze large amounts of data generated continuously and detection a number of conditions (in two variants, simple and complex). Very important is the quick reaction in real time system (system of systems). - Security, it is still open issue to manage an authorization, authentication and access rights assignment protocols in an efficient way. It is very important that data and services should be		

protected.

- Various communication protocols of devices (e.g. sensors, readers, area controllers, etc.). The problem is to design a unification protocols.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Projects developed by Vemco as part of ARTEMIS innitiative can provide interesting information about application use-cases.	-

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Vemco's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms.	Systems Research Institute, Polish Academy of Sciences	18/02/2016

Product Name:

INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
BetterSolutions SA	BS

Stakeholder's Profile & Role:

BetterSolutions's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms, therefore their input in requirements specification for mentioned products can be valuable.

Contact Person:	Email:	Position:
Mateusz Bonecki	mateusz.bonecki@bettersolutions.pl	R&D Director
Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Subject-matter experts	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

Stakeholder is interested in results of the Inter-IoT project's products and willing to try to adopt them in their work.

The following problems and possible areas of interests for research have been indicated by the stakeholder:

Context: BetterSolutions demands IoT technologies to streamline dairy supply chain logistics and account for reliable and safe food processing. In milk transportation and cold-chain management the "first in, first out" rule applies. MuuMap system (see below) is deployed in 20+ dairy processing plants in Poland and is used as a core IT system to support milk collection process.

5. **sensors heterogeneity** – highly specialized sensors and measuring devices, provided by numerous competing suppliers using different communication standards and data models, result in high expenditures on integration and interfacing of each device type; example: different devices to measure/detect milk parameters: somatic cells, antibiotics contamination, fat and protein content);
6. **WSAN support** – IoT platform should enable easy data exchange with IoT gateways installed in vehicles; Raspberry Pi-based embedded systems acting as gateways for WSAN nodes (sensors to monitor milk parameters and vehicle/drive/route parameters).
7. **data ownership** – sensors as data sources are owned by different third parties; IoT platform should support data ownership management, data-flow monitoring, access management;
8. **data privacy** – in case of personal data processing, IoT platform should meet standards required by Inspector General for Personal Data Protection (Poland);
9. **data security** – BS stores and processes sensitive (from the point of view of our customers in dairy industry) data; for example, quantity of resources available for pick-up per supplier.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
MuuMap – BetterSolutions product for dairy supply chain management (http://muumap.pl/en).	TBD

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
BetterSolutions's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms.	Systems Research Institute, Polish Academy of Sciences	22/02/2016

Product Name: INTER-LAYER		
Stakeholder's Name: Orange Polska S.A.		Stakeholder's Acronym: OPL
Stakeholder's Profile & Role: ISP & telco services provider for B2B/B2C customers. The biggest telco operator in Poland, part of Orange Group (France Telecom). Most oriented for innovation services and new technologies.		
Contact Person: Tomasz Kowalczyk	Email: *Tomasz.Kowalczyk3@orange.com*	Position: *Contact position*
Stakeholder's Class: Subject-matter experts	☑ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☑ IoT Supply side
Stakeholder's Needs: General knowledge about possible use cases of IoT Platforms and devices follow by technical solution. ☑ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved:	New products & Systems required:	

New Stakeholders	Stakeholder's class
Orange Polska S.A. -> M2M Marketing UNIT	

Reason of involvement:	Identified by:	Registration Date:
OPL would be IoT provider for B2B/B2C customers and develop new products in portfolio.	SRIPAS	February 22th, 2016

Product Name: INTER-LAYER	
Stakeholder's Name: ***TELECOM ITALIA***	Stakeholder's Acronym: ***TI***
Stakeholder's Profile & Role:	

Profile:
With 30.1 million TIM mobile lines and 12.1 million retail connections to its fixed network, of which 7 million are broadband accesses, at the end of June 2015, it is the leading ICT group and Italy's digital partner. Abroad its strength is Brazil, where TIM Brasil, supplying 74.6 million lines, is the second player on the market. Innovation is at the heart of the Group's strategy and over the 2015-2017 period it will be investing 5 billion euros on the development of new generation technologies, cloud computing, Date Centres. The goal for 2017 is to reach 75% of population with the new fixed ultra-broadband (Fiber, NGN) and 95% with the mobile one (4G,LTE). Today, NGN and LTE coverage reached 37% and more than 83% of population, respectively. It is the widest coverage in the country.
Its portfolio includes telecommunications, internet, digital contents, cloud services, digital platforms, office and system solutions, offering everyone – consumers, enterprises and institutions - simple and safe tools for the new digital life. To be connected anytime, anywhere and on any device, TIM offers innovative digital services and contents, as well as many applications and devices: smartphones, tablets, set top TV decoders, apps and cloud storage. As well as contents: a gaming library, e-books and magazines, music and audiovisual contents enriched with premium contents, such as major sporting events. To simplify the daily life there are new solutions: electronic payment systems, smart homes, electronic medical records and certified electronic mail in the healthcare and government sectors, for the schools interactive multimedia whiteboards and web-based learning environments.
The Telecom Italia department participating to the project is active in the definition and prototyping of innovative ICT solutions for telemedicine (telemonitoring, teleassistance, localization, primary prevention, etc.).
Role:
TI will contribute to the definition of methods for device layer interoperability and integration of medical devices to heterogeneous IoT architecture and to analysis and requirements for data interoperability

Contact Person:	Email:	Position:
Giovanna Larini	giovanna.larini@telecomitalia.it	Project Manager ICT Services Innovation
Stakeholder's Class: Subject-matter experts, customers, technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

- The most suitable technology to integrate devices and / or measures from devices /sensors;
- The most suitable technology to translate /match data and semantics in order to integrate data belonging to third party platforms
- The most suitable technology to integrate services belonging to third party platforms

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
eCARE (TELECOM ITALIA) third party platforms (e. g. BodyCloud) devices and sensors	third party platforms (e. g. smart home platforms, sensor networks, ehealth platforms)

New Stakeholders	Stakeholder's class
Universitat Politecnica de Valencia	Partner WP5 leader
Devices Providers	Interfacing technology

Third party platforms	Interfacing technology	
Reason of involvement: Provider of IoT platforms (e.g. eCare) Partner of project	Identified by: Telecom Italia	Registration Date: 09/02/2016

Product Name: INTER-LAYER (IoT Interoperability tools)	
Stakeholder's Name: *CONSOFT SISTEMI S.p.a*	Stakeholder's Acronym: *CON*

Stakeholder's Profile & Role:

Profile:

Consoft Sistemi is an Italian company present in the ICT market since 1986, with offices in Torino, Milano, Genova, Roma and Tunis, 400 employees and an annual turnover of around 29 million Euros. Operating alongside the group leader Consoft Sistemi, are three other companies: Consoft Consulting Consoft Consulting focused on specific topics of public administration; CSInIT specializes in scouting and distribution innovative software for the Italian market; Consoft Sistemi MEA expands the group leader's offer, particularly linked to Telecoms in the North African and Middle Eastern markets.

Products, Solutions, Services: Consoft Sistemi's offer is focused on 9 thematic areas in which the company is able to create 'end to end' solutions for its customers through technological and methodological consultancy, training, development of integrated solutions and the provision of insourcing/outsourcing services.

IT Governance & Management For optimizing and aligning IT services to company needs. The ITG&M offer matches methodologies and certified competences with the supply of software tools, in partnership agreements with leading international vendors, in order to support customers in planning, innovating, designing, implementing, managing and checking IT infrastructures. The main areas are: Application & System Management, Application Performance Management, Application Monitoring, Networking, Security, Compliance and support during the introduction of ITIL Methodologies.

Business Analytics Thanks to the integration of technological skills (DWH, ETL, Data Modeling, Data Quality, Planning and Data Discovery) with those of business and industry, Consoft Sistemi is able to help its Customers through the whole life cycle of a BI Analytics solution. From offering vertical solutions for the sector to assessment and application management services. From logical model design to the choice of technological solutions and the development and implementation of complex projects,

Big Data Today, new technologies allow us to overcome obstacles linked to the dimensions, type, origin and complexity of data. Consequently, the challenge lies in the capacity to transform this mine of information into value. In this challenge, Consoft Sistemi is right beside its clients to support them in the adoption of opportune strategies and the implementation of 'best of the breed' solutions both in terms of adding value to the potential locked up in processed data and that sourced from social networks.

CRM All of the design capacity and technological skill of Consoft Sistemi is focused on getting the maximum value out of market-leading CRM solutions like Salesforce.com through complete integration with company IT ecosystems.

DevOps To ensure continuous delivery through the identification, improvement and optimizing of repeatable Lifecycle and Deploy processes. Consoft Sistemi offers its own methodological approach to life cycle management and the delivery of software by working on communication and collaboration between developers and IT operators. To this end, Consoft Sistemi adopts, among others, the Agile methodological approach for the management of products and proposes advanced solutions for the Deployment phase including products like uDeploy from the IBM Rational suite and Nolio from CA Lisa.
Mobile Experience Thanks to a profound understanding of the principal empowering technologies (Android, iOS and Black Berry), Consoft Sistemi supports its Clients in the phases of change and innovation introduced by mobile platforms. It creates innovative business scenarios exploiting new channels of communication and designs and integrates architectures for the distribution of added value services. Analysis of the characteristics and organizational/technological needs of the client combined with expertise in multiple functional environments permits Consoft Sistemi to design solutions which are personalized, created with the most avant-garde mobile technologies and perfectly integrated with the company systems.
Dematerialization of document processes For the management of document processes and for complete support in their dematerialization right from the creation of the document, thanks to innovative systems for graphometric and biometric signatures, Consoft Sistemi offers both specific solutions for the management of document processes which call for the acquisition of information from interactive modules and the multi-channel delivery of documents which can be used by any device. The strategic partnership with Adobe Systems, leader in ECM solutions, completes the offer.
Digital Content Management To support the digitalization of content in all its forms, we deal with the development and design of agile web sites while placing the individual at the center of programming and design. We believe that the instruments we develop must work for those who use them. The solutions and skills offered by Consoft Sistemi, exploit the best technologies and platforms present on the market able to deliver integration, collaboration, multichannel function, use-ability and security.
IOT & Connected Life The proliferation of connected devices coupled with improved, less-expensive technology platforms and adoption of common standards will only increase the rapid growth of IoT-enabled capabilities across industries.
More generally the technological evolution and the diffusion of digital devices connected and interacting between one another with processes and people enables the creation of innovative and smart services.
Consoft Sistemi unites knowledge of technology and networks (LTE, WSN, M2M etc.), with the ability to design and create solutions along with its experience as business integrator to add value and play a leading role with their clients in this new scenario.
Consoft Systems is active on IOT european and national projects applied to health, smart industry, safety at work and monitoring.
Role:
Consoft Sistemi can integrate his IOT platform in the INTER System and contribute to integration at various levels with particular interest to integration of devices through methods and tools at device layer.

Contact Person: Serena Ambrosini	Email: serena.ambrosini@consoft.it	Position: R&D BU Manager
Stakeholder's Class: Subject-matter experts, customers, technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

- The most suitable technology to integrate devices and / or measures from devices /sensors;

- The most suitable technology to translate /match data and semantics in order to integrate data belonging to third party platforms
- The most suitable technology to integrate services belonging to third party platforms

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Iot Platform (Consoft Sistemi) New application solutions on ehealth, smart factory, safety at work devices and sensors	third party platforms (e. g. smart home platforms, sensor networks, ehealth platforms)

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Provider of IoT platforms Provider of application solutions	Telecom Italia	18/02/2016

Stakeholder Name:

Product Name:

INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
Technische Universiteit Eindhoven	TU/e

Stakeholder's Profile & Role:

Profile:

Eindhoven University of Technology (https://www.tue.nl/en/) is one of Europe's top technological universities, situated at the heart of a most innovative high-tech region. Thanks to a wealth of collaborations with industry and academic institutes, our research has real-world impact. In 2015, TU/e was ranked 106th in the Times Higher Educational World University ranking and 49th in the Shanghai ARWU ranking (engineering). TU/e has around 3,000 employees and 2,300 PhD students (half of which international, representing about 70 nationalities).

Role:

TU/e will provide a comparative analysis of WirelessHart, ISA100.11a and IEEE802.15.4e. TU/e will address the communication dependability issues of highly constrained nodes in memory and battery life using 6LowPAN, RPL and IEEE802.15.4e. TU/e will also experiment with SDR techniques namely: channel hoping, transmission power control, time scheduling.

Stakeholder's ring position in the map (*i.e.* intended product, Operational work area etc° **: Core Team**

Contact Person:	Email:	Position:
Antonio Liotta	*tue.interiot@gmail.com*	*Professor*
Stakeholder's Class:	☐ Can appear in public reports	☐ IoT Demand side
domain experts, designers and developers, systems engineers, technology experts, system designers	☑ Shall remain anonymous	☑ IoT Supply side

Stakeholder's Needs:

The level of dependability and interoperability required by each IoT infrastructure is not known before deployment phase. That is, INTER-LAYER will have to be able to choose the right methods to ensure the right dependability and interoperability between platforms at each layer deciding case by case.

INTER-LAYER product should be able to recognize the QoS requirements per infrastructure and match it to the appropriate network reconfiguration mechanism. Having QoS as an input parameter, TU/e will work on modifying the configuration of the D2D and N2N intra-layer integration in order to fulfill the dependability requirements needed or even signal failure.

☑ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
WirelessHART, ISA100.11a and IEEE802.15.4e, TSCH, RPL	Centralized and decentralized scheduler, QoS differential monitoring, SDR techniques

New Stakeholders	Stakeholder's class
NXP Semiconductors N.V.	System designers, system engineers
Texas Instruments	System designers, system engineers
Cisco	Domain experts, usability experts
SICS Swedish ICT	Software experts, technology experts
resin.io	Users of the current system, provider

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	TU/e	12/2/2016

Product Name:	
INTER-LAYER	
Stakeholder's Name:	Stakeholder's Acronym:
VALENCIAPORT FOUNDATION	

	VPF

Stakeholder's Profile & Role:

Profile: VPF is a non-profit organization based in the port of Valencia that works on the innovation of the port, transport and logistics sectors. It is working on achieving and providing solutions that simplify the introduction of IoT in ports, logistics and freight and container transport under and interoperable framework where different companies can share information generated by different smart devices and sensors in a secure and trusted environment.

Role: VPF will be participating in the definition of interoperability elements (e.g. interfaces) at middleware, application service, data & semantics and cross-layer interoperability. It will be using and testing different interoperable gateways and virtualized solutions developed in INTER-LAYER for the Transportation Pilot.

Contact Person:	Email:	Position:
Miguel Llop	mllop@fundacion.valenciaport.com	ICT Director
Stakeholder's Class:	☒ Can appear in public reports	☒ IoT Demand side
End user	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

The need for this product is to get a set of building blocks that enable the transformation of existing sensor, tags and smart objects' networks into real IoT interoperable solutions. The IoT Interoperability tools need to fill the gaps of these networks that still lack of interoperable IoT functionalities and provide the secure and trusted mechanisms to connect with heterogeneous IoT networks in the port, transport and logistics scenarios.

INTER-LAYER should provide the interfaces able to link sensors, tags and smart objects registered in one IoT platform to other IoT platforms, owned by different entities and using different standards.

The existence of the building blocks and interfaces created in INTER-LAYER will provide the capacity of creating solutions that simplify the introduction of IoT in ports, logistics and freight and container transport under and interoperable framework where different companies can share information generated by different smart devices and sensors or captured from tags in a secure and trusted environment.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Port Community System (ValenciaportPCS) SCADA Systems Automated Gate Systems Sensors, smart objects, Passive RFID tags	IoT Platforms (i.e. FI-WARE, Open-IoT, Sofia2, Azure IoT, Google IoT, VLCi)

New Stakeholders	Stakeholder's class
Infoport	Port Solution & service provider
Prodevelop	Partner
Orbita System	IoT solution and devices provider
Universitat Politecnica de Valencia	Partner
Technological Institute of Informatics	Subject-matter expert (Big Data)

KII	IoT solution and devices provider
Geomobile	IoT solution and devices provider
BestTech4EU	Subject-matter expert (devices)

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	Valenciaport Foundation	29/01/2016

Product Name:	
INTER-LAYER	

Stakeholder's Name:	Stakeholder's Acronym:
Amiga Ventures	*Amiga*

Stakeholder's Profile & Role:

Profile: Amiga provides services to allow companies to undertake the digital transformation of their business, from strategy and design to maintenance and continuous improvement.

Role: Amiga will participate in the definition of interoperability elements at device, middleware and application service.

Contact Person:	Email:	Position:
Jorge Ruano	jorge.ruano@amigaventures.com	CEO & Founder

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Technology experts	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

IoT stack: Software standard specifications.

- Communication and connection functionality (wired and wireless).
- Management and Monitoring functionality.
- Authentication, Security and Privacy functionality.
- Data collection and Transport functionality:
  - Device to Device protocols, to transmit data among devices.
  - Device to Server protocols, to collect data from devices to the servers over the IT infrastructure.
  - Server to Server protocols, to transmit data among servers.
  - Device to Human protocols, to transmit data between an IoT device and a human device.
- Profiles functionality.

☒ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved:	New products & Systems required:

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Technology experts	Valenciaport Foundation	11/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *INFOPORT VALENCIA*	Stakeholder's Acronym: *INFOPORT*

Stakeholder's Profile & Role:

Profile: INFOPORT is technology services company specializing in the logistics sector and port. INFOPORT develops solutions to support their clients business needs and contributes to boost their competitiveness

Role: INFOPORT will collaborate in the definition of interoperability elements that they need for their products.

Contact Person:	Email:	Position:
Miguel Angel Portugues	maportugues@infoport.es	Engineering and Systems Manager
Stakeholder's Class: Software engineers Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

Communication problems and reliability in devices

The ontology data must fulfill with the regulations and standards (IMO, …)

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Port Community System (ValenciaportPCS)	

Port Access Control Port Management Information Systems (PMIS) Terminal Operating Systems (TOS)	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
PCS developer Access control provider	Valenciaport Foundation	03/02/2016

Product Name:	
INTER-LAYER	

Stakeholder's Name:	Stakeholder's Acronym:
VDR bestech4U S.L.U.	*bestech4U*

Stakeholder's Profile & Role:

Profile: Bestech4U is a start-up developing innovative smart technologies and solutions to improve the customers' digital life experience. Bestech4U's founder has been involved with, first domotics and later M2M and IoT, since 1996. Founder of DS2, silicon design house based in Valencia that invented and developed high speed powerline communications, Víctor was very early active in smart metering and smart grids, participating in the EU Smart Grid Interoperability Panel and in the US National Institute of Standards and Technology Smart Grid initiative. As member of the Board of the European Telecommunications Standards Institute he was part of the Special Committee preparing the M2M strategy plan. Have realized trials with Telefonica, Endesa, Iberdrola and Orange.

Role: Willing to provide expert advice on all aspects, technical and business, related to the project.

Contact Person:	Email:	Position:
Víctor Domínguez Richards	victor.dominguez.richards@bestech4u.com	Founder

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Subject-matter experts, Technology experts	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

Many requirements, difficult to summarize… To name a few, at the lower layers, important issues to be considered are security and protocol standardization; and at the higher layers, platform data bases' standardization and interaction between the platform and the devices (sign-up, monitoring, push-services, etc.)

☐ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved:	New products & Systems required:

New Stakeholders	Stakeholder's class
Sigfox	Technology experts
Cellnex	Systems engineers
EEDP	Systems engineers

Reason of involvement:	Identified by:	Registration Date:
Technology experts	Valenciaport Foundation	25/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *Kii*	Stakeholder's Acronym: *Kii*

Stakeholder's Profile & Role:

Profile: Kii helps developers and device manufacturers of all sizes meet their high-performance demands with an end-to-end platform optimized for building and running enterprise mobile and IoT initiatives.

Role: Kii will collaborate in the definition of interoperability elements.

Contact Person:	Email:	Position:
German Viscuso	german.viscuso@kii.com	Technical Sales

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Technology experts, Systems engineers	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

Intended usage of Kii platform, e.g. number of API requests, push notifications, IoT specific functionalities, storage needs.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Kii Cloud Platform	

New Stakeholders	Stakeholder's class
Haltian	Device provider
AQMesh	Device provider

Reason of involvement:	Identified by:	Registration Date:
IoT experts	Valenciaport Foundation	03/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *Every European Digital Poland sp. z o.o.*	Stakeholder's Acronyn *EEDP*

Stakeholder's Profile & Role:

Profile: EEDP is an IoT solutions company, providing consultancy services, developing IoT devices and distributing third-parties' off-the-shelf products.

Role: We are willing to provide expert consultancy on how to design, build and test the INTER-LAYER solutions platform and to supply the required devices and other hardware required to make the transportation and logistics pilot at the Port of Valencia a success!

Contact Person:	Email:	Position:
Dariusz Nachyla	dn@everyeuropeandigital.com	CEO

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Provider, designer, developer, technology expert	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

Standardization of IoT databases to allow seamless operation of multi-vendor devices on a single platform/database. Standardisation of protocols and messaging between the platform and the devices, including radiocommunications protocols and application program interfaces.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
EEDP has extensive experience in design and operation of IoT devices and network (sensors, base stations) using SIGFOX technology. This technology is widely deployed in Spain by Cellnex/Telefonica and in France by Sigfox. EEDP sensors include for example: motion detectors, actuators and air quality sensors.	New technologies for remote and non-invasive verification of the status of non-battery-powered equipment, as for example electro-magnetic sensing. The ETSI IoT standard 'oneM2M' is also relevant to the project.

New Stakeholders	Stakeholder's class
Asta Labs, Warsaw, Poland (Andrzej.Saczuk@astalabs.com)	IOT application developer

Reason of involvement:	Identified by:	Registration Date:
Technology experts	Valenciaport Foundation	25/02/2016

Product Name:

INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
MULTINATIONAL SOLUTIONS PROVIDER FOR GOVERNMENT AND INSTITUTIONS	*GIS*

Stakeholder's Profile & Role:

Profile: The stakeholder is a multinational solution provider for government and institutions. It provides solutions for customs authorities and different ministries for the simplification of trade and the traceability of cargo during transportation. The company is already providing solutions for trade simplification and traceability of cargo during transportation. To this end it has agreements with providers for tracking trucks on route like active seals with electronic lockers (seals) and GPS.

Role: This multinational will collaborate in the definition of interoperability elements and it will define use cases on the logistics and transport pilot linked with the traceability of goods and trucks for governments and institutions.

Contact Person:	Email:	Position:
-	-	-

Stakeholder's Class:	☐ Can appear in public reports	☐ IoT Demand side
Systems engineers. Solution provider	☒ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

The stakeholder shows interest in evolving and testing its solutions in an interoperable IoT ecosystem where new devices could be easily connected and interoperate with its solutions in a more cost effective approach that facilitates the adoption of the solutions for tracking goods and trucks under certain conditions.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Tracking solution for trucks and goods	Interoperable IoT platform able to introduce

Cross border controls	new devices for tracking, locking and monitoring the transport of goods.

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Solution providers	Valenciaport Foundation	03/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *Energy Solutions*	Stakeholder's Acronym: *Energy*

Stakeholder's Profile & Role:

Profile: Energy Solutions is a marketer of innovative solutions with high technological value in the area of Smart Environment. These solutions are built based on innovative products and services that integrate contributing our know-how of more than 20 years in research, development, and marketing strategy. They are experts in developing hardware and software for integrating smart solutions in areas such as energy efficiency, safety, health and sensors, among others.

Role: Energy Solutions will participate in the definition of interoperability elements between devices and platforms.

Contact Person:	Email:	Position:
Joaquín Carretero	joaquin@energy-solutions.es	R&D Director
Stakeholder's Class: Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

Energy Solutions has a portfolio of dataloggers and gateways that allow the collection of data from the environment, processes, etc. The information is stored and then transmitted. These devices are able to monitor different parameters (air quality, toxic gases, noise, position, temperature, speed, motion, height, humidity, etc.) and have been designed to get their energy from solar cells. The data collected is transmitted via radio for its analysis to any handheld device, computer or cloud server.

This stakeholder has shown specific interest on the INTER-LAYER product for working on the interoperability at device level with the rest of the layers, so the products the company designs will be easy to introduce in different ecosystems. The dataloggers provided by the company are powered with OTA (Over the Air Programming) which allows to be programmed remotely, this characteristic would

facilitate the creation of an interoperable environment at device level. These dataloggers can be personalized to use different IoT communication protocols like LoRa or ZigBee.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Dataloggers (CITYLOC, CITYMICRO, CITYWAY, GEOVAL)	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Device manufacturers	Valenciaport Foundation	12/02/2016

Product Name:
INTER-LAYER

Stakeholder's Name:	Stakeholder's Acronym:
XLAB d.o.o.	*XLAB*

Stakeholder's Profile & Role:
Profile:
XLAB is a company providing with technology solutions for enterprises and products for, among others, high volume and speed services such as Internet of Things, and member of the INTER-IoT project.
Role:
Within the project, its responsabilities lay in the design and implementation of interoperability gateways, especially within the middleware, for the interconnection of heterogeneous IoT solutions.

Contact Person:	Email:	Position:
Mariano Cecowski	mariano.cecowski@xlab.si	Research Manager
Stakeholder's Class:	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Designers and developers		

Stakeholder's Needs:
Stakeholder in need of tools for providing generic services to IoT solutions, and the ability to interconnect complementary business by mergin cross-domain information.
☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
RabitMQ, Reddit, MongoDB, ElasticSearch Proprietary systems	INTER-FW, INTER-LogP, INTER-Health, Generic data-enabler

New Stakeholders	Stakeholder's class
Sentine	Client
TeleTransfusion	Client

Reason of involvement:	Identified by:	Registration Date:
Partner of the Project	XLAB	08/02/2016

Product Name:	
INTER-LAYER	

Stakeholder's Name:	Stakeholder's Acronym:
Sentinel d.o.o.	Sentinel

Stakeholder's Profile & Role:

Profile Sentinel is a Croatian company providing with a hardware and software bundle for the monitoring of personal vessels and charter fleets.

Role: Sentinel is a consumer of IoT solutions that enable its activities.

Contact Person:	Email:	Position:
Marko Pihlar	marko.pihlar@sentinel.hr	Director

Stakeholder's Class:	☑ Can appear in public reports	☑ IoT Demand side
designers and developers	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

The ability to connect it services thgouth different transportation means (wifi, gms, etc.), communication with different services (e.g. marinas) and information merge with other services (weather, rental prices, etc.)

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
RabitMQ, ElasticSearch Proprietary systems	INTER-FW, INTER-LogP

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Potential users	XLAB	08/02/2016

Product Name: INTER-LAYER		
Stakeholder's Name: TeleTransfusion		Stakeholder's Acronym: TT
Stakeholder's Profile & Role: Profile: Service for remote pre-transfusion evaluation of blood samples by specialists. Role: TeleTransfusion can make use of the interconnection mechanisms to integrate different and incompatible platforms at middleware and application level.		
Contact Person: Tina Vavpotič	Email: tina.vavpotic@xlab.si	Position: Product Director
Stakeholder's Class: designers and developers	☑ Can appear in public reports ☐ Shall remain anonymous	☑ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: Need to communicate with different health systems. Need for reliable communication platform. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: MongoDB Proprietary systems		New products & Systems required: INTER-FW, INTER-Health, INTER-Meth

New Stakeholders	Stakeholder's class

Reason of involvement: **Potential users**	Identified by: XLAB	Registration Date: 08/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *AZIENZA SANITARIA LOCALE TO5*	Stakeholder's Acronym: *ASL TO5*
Stakeholder's Profile & Role:	

Profile: ASL TO5 is a public body that works in an area of 794.670 square kilometers. In particular, the Hygiene Nutrition Unit of the Complex Unit of Food and Nutrition Hygiene works in preventive field: promoting an appropriate healthy state and practice of physical activity to prevent the development of chronic degenerative diseases; nutritional counseling and educational interventions on the population. Within the project it will work to demonstrate the importance of IoT in health care, building a network of connections between users and medical staff to ensure increased effectiveness and health benefits, using same resources, with high impact on users.

Role: ASL TO5 working with other partners, will test modules for mobility and will provide an example for the management of the structure created by the use of smart device, then will provide interoperability elements at different levels, in particular contributing to the definition of a common ontology, so to facilitate the connection between the different types of data and semantics. It will use smart devices to develop the connection INTER-LAYER for the health use case.

Contact Person:	Email:	Position:
Margherita Gulino	gulino.margherita@aslto5.piemonte.it	Hygiene Nutrition Unit Director
Stakeholder's Class: End user	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

The need for this product is to introduced at various levels the IoT interoperability solution to correlate nutritional

outpatients, family doctors and end-users, in order to make concrete the holistic vision of health IoT, identifying new

access standard and interoperability.

The product INTER-LAYER wants to provide global interoperability between IoT platforms.

The identification of new standards and the creation of a single and concrete data collection system in 'INTER-LAYER, will facilitate the use of smart devices in health centers, enabling the registration of citizens health status and preventive screening, with higher efficiency and equality of resources.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Computerized Nutritional Folder	Sensors, smart objects (medical device) IoT Platforms (e-care TILAB platform and Bodycloud)

New Stakeholders	Stakeholder's class
CSI	Maintenance Operator
UNICAL	Partner
TELECOM ITALIA	Partner
Turin Unversity	Subject-matter expert

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	ASL TO5	08/02/2016

Product Name: INTER-LAYER	
Stakeholder's Name: *TURIN UNIVERSITY*	Stakeholder's Acronym: *UNITO*

Stakeholder's Profile & Role:

Profile:

The Department of Culture, Politics and Society of University of Turin, offers several degree programs, including: public communication and policy, communication, ICT and media, government sciences, political and social services, sociology. They offer to their students a multidisciplinary education in the historical, legal, sociological, economical fields, favoring the acquisition of critical tools indispensable to understand the political world and for interact with current social reality in constant evolution, able to operate in communications business, public bodies (health, cultural heritage, education, government), organization of a network of new IT services to make the city "smart". The Department also provides basis for sociological and economical knowledge helpful to capture and develop processes in the relationship between communication applications, development of new technologies and social changes.

Role:

Studies, research, contacts and information gained in the university research are a knowledge resource and theoretical and empirical skills to be offered to ASL in relation to technological information especially the stakeholder analyzes the organizational situation of bodies and procedures for use ICT for manage specific projects area.

Contact Person:	Email:	Position:
Mariella Berra	mariella.berra@unito.it	Associate professor
Stakeholder's Class: Subject matter expert	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

Several kinds of experiences gained (or that are being developed) within ASL (Prevention Department) concerning especially relationship between organization - services - technology - users and empirical samples can be useful both for teaching and for the theory in the university field.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
N/A	N/A

New Stakeholders	Stakeholder's class
Politecnico di Torino	Technology experts

Reason of involvement:	Identified by:	Registration Date:
Empirical theoretical skills to be offered to ASL within the project research	ASL TO5	15/02/2016

Product Name: INTER-LAYER		
Stakeholder's Name: *Intel Technology Poland Sp. z o.o.*		Stakeholder's Acronym: *Intel*
Stakeholder's Profile & Role: Intel Technology Poland Sp. z o.o. is a Polish branch of a multinational corporation that is one of the world's largest semiconductor chip producer. One of Intel 's focus areas is Internet of Things, where it's products help connect things to the cloud, integrate with existing infrastructure, and securely manage data. Intel offers the IoT Platform that is an end-to-end reference model and family of products from Intel that works with third party solutions to provide a foundation of seamlessly connecting devices, delivering data to the cloud and delivering value through analytics. Arkadiusz Hruszowiec is a Business Development Manager responsible for growing Intel's new businesses, including Intelligent Systems and Consumer Electronics, in Central and Eastern Europe. Arek has gained comprehensive experience in Marketing, R&D and Sales while working in Ireland, Germany and from 2011 also in Poland. Arek graduated with an MBA from University College Dublin in Ireland in 2010 with first class honours degree. He also holds MSc in Electronic Engineering from Wroclaw University of Technology in Poland. In 2012, he was elected to be a Vice President of the Polish Digital Signage Association. His out of work interests include history with focus on strategies and leadership, travelling and hiking. He was also an instructor at Intel University.		
Contact Person: Arkadiusz Hruszowiec	Email: Arkadiusz.Hruszowiec@intel.com	Position: Business Development Manager
Stakeholder's Class: Subject matter expert	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: • Consider Intel based IOT solutions in the project • Recognize the importance of security, connectivity and manageability of the IOT systems ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Intel based gateways from 3rd parties. SOCs, CPUs, Comms. Modules	New products & Systems required: N/A	

New Stakeholders	Stakeholder's class

Reason of involvement: Representative of a company that has significant impact on IoT market.	Identified by: SRIPAS	Registration Date: 29/02/2016

INTER-FW

Product Name: INTER-FW		
Stakeholder's Name: *UNIVERSITY OF CALABRIA*		Stakeholder's Acronym: *UNICAL*
Stakeholder's Profile & Role: **Profile:** UNICAL is a research oriented Institution. In particular, it has different research groups focused on IoT technologies from both technology transfer and academic viewpoints. UNICAL is therefore developing both research methods and prototypes in the IoT area specifically focused on devices, networking, middleware and application services. **Role:** UNICAL can contribute to the design of a fully Interoperable Framework for Interoperable IoT Platforms due to its expertise on agent-oriented meta-modelling and framework definition as well as innovative software development based on agent oriented software engineering.		
Contact Person: Giancarlo Fortino	Email: g.fortino@unical.it	Position: Professor of Computer Engineering
Stakeholder's Class: Other (Research and Development Expert)	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The main need in this context is the design and the effective implementation of a framework through which interoperable IoT Platforms can be programmed and managed. In particular, such framework should be implemented as software APIs at the different interoperability layers and building connectors for devices, objects, communication services and application services. These APIs will allow an easy mechanism to define new integration features at the different interoperability layers creating the basis for an expected future plugin-like connector catalogue that the companies can use to exploit the final solution and evolve it according to market trends and needs. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: BodyCloud, Air-Ground protocol, Smartphone Gateway Third party platforms (e. g. eCARE)		New products & Systems required: Third party platforms (e. g. smart home platforms, sensor networks, ehealth platforms) Programmable devices and sensors

New Stakeholders	Stakeholder's class
ITACA srl	Systems engineers
Sensyscal	Software engineers
ICAR-CNR	Research and Development Expert
Herzum	Designers and developers

Reason of involvement:	Identified by:	Registration Date:

Partner of the project Provider of IoT platforms (e.g. BodyCloud)	UNICAL	08/02/2016

Product Name: INTER-FW	
Stakeholder's Name: *Alessandro Bassi Consulting SARL*	Stakeholder's Acronym: *ABC*

Stakeholder's Profile & Role:

Profile: Alessandro Bassi Consulting (ABC) was created in 2010 with a specific vision: help his clients to get beyond stereotypes and enable real innovation in different fields using ICT solutions. ABC is a Consulting firm based in the Sophia Antipolis area, France. ABC focus is on three topics: the set of technologies belonging to the Future Internet and Internet of Things domain, with particular regards to Smart Cities application, technologies and mechanisms for high performance data transfers for Cloud Computing and Storage, and analysis of Security aspects of both traditional networks and Constrained environments. In particular, in the FI sector, the competences of ABC were used in defining roadmaps for industry and public-funded research, and managing large EU co-funded research projects. Currently, ABC has an expanding portfolio of clients, comprising technologies companies, end-user retailers, and several international SMEs.

Role: ABC will bring its experience matured in the definition of IoT-A architecture reference model to help in the design of the meta-architecture and meta-model.

Contact Person: Alessandro Bassi	Email: alessandro@bassiconsulting.eu	Position: CEO
Stakeholder's Class: Technology Experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

The need for this product is to ease and expedite the interoperability of different IoT platforms providing a solution to many of the challenges that appear in communicating, authorizing, registering, discovering, accessing, roaming, using and linking physical and virtual entities among different and heterogeneous IoT platforms.

The existence of a common interoperable framework applicable in several domains will provide the capacity of creating open and interoperable IoT solutions in ports, logistics and freight and container transport where different companies can share information generated by different smart devices and sensors or captured from tags in a secure and trusted environment.

This common interoperable framework should give confidence on security and trust and be full compliant with data protection regulations.

This framework should help IoT architects, engineers and developers to transform existing sensor, tags and smart object networks to interoperable IoT platforms, create new interoperable IoT platforms and connect

and configure the relations between two interoperable IoT platforms.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
SCADA systems sensors, Actuators, RFID	IoT Platforms

New Stakeholders	Stakeholder's class
FINCONS	Provider
VTT	Subject-matter experts
THINGS	Representative of external associations
REPLY	Provider
CETIC	Subject matter expert

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	ABC	11/02/2016

Product Name:
INTER-FW

Stakeholder's Name:	Stakeholder's Acronym:
THINGS	*THINGS*

Stakeholder's Profile & Role:

Profile: THINGS.is a design and innovation agency for the Internet of Things. This agency is a a multi-disciplinary team of researchers, strategists, designers, technologists and makers. We strongly support open innovation and foster the process of connecting the world. They analyse consumer insights, user experiences and business models, inspiring their clients with innovative design trends. Then, they identify strategic scenarios for successful products & services integrating digital and physical worlds. Using a user-centered approach to design seamless interactions and interfaces and to outline increasingly broader experiential ecosystems, they provide open architectures following the latest advancements in technology to always deliver great front-end and back-end solutions.

Role: THINGS.is can actively use the FW tools for their projects with customers.

Contact Person:	Email:	Position:
Pier Paolo Bardoni	pier.bardoni@things.is	CEO
Stakeholder's Class: Technology Expert	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

In the short term there's the need for a framework to be able to quickly recognize connected devices adding them to the ecosystem, showing which actions and behaviours they can perform. A usable framework should allow devices to add their functionalities to the ones that it already offers, giving the final user a sense of continuity and an ubiquitous access to their data. Frameworks should be able to operate with each others in the same way, communicating without the need for an intervention from the user, remaining completely invisible to them.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
DgLux - http://www.dglogik.com/dglux The Things Network - http://thethingsnetwork.org/ Brillo OS SCLAK - http://www.sclak.com/	Design & Prototyping process tool (task and economics) Machine Learning easy to embed IoT solution for retailers behaviour analysis

New Stakeholders	Stakeholder's class
Nest	Designers and Developers
Samsung	Technology Providers
General Electric	Technology Providers
PTC	Technology Providers
Privacy authorities	Public Authority
Officine Arduino	Technology Providers

Reason of involvement:	Identified by:	Registration Date:
Design and innovation IoT	ABC	12/02/2016

Product Name:
INTER-FW

Stakeholder's Name:	Stakeholder's Acronym:
VTT Technical Research Centre of Finland Ltd	*VTT*

Stakeholder's Profile & Role:

Profile: VTT Technical Research Centre of Finland Ltd is the leading research and technology company in the Nordic countries. VTT has a national mandate in Finland. We use our research and knowledge to provide expert services for our domestic and international customers and partners. We serve both private and public sectors.

We have 73 years' experience supporting our clients growth with top-level research and science-based results.

We develop new smart technologies, profitable solutions and innovation services. We cooperate with our customers to produce technology for business and build success and well-being for the benefit of society. We use 4,000,000 hours of brainpower a year to develop new technological solutions. The benefit you gain from this spearhead research comes when we work with you to create new products, production processes, methods, and services. VTT ensures efficient utilisation of science and technology with the aid of broad international cooperation and networking.

VTT has been granted an ISO9001:2008 certificate and our environmental system is certified in accordance with ISO14001:2004. VTT is part of Finland's innovation system and operates under the mandate of the Ministry of Employment and the Economy. VTT reports corporate responsibility according to GRI G3 guidelines.

Role: Public-Private research center with strong links to industry and innovation.

Contact Person:	Email:	Position:
Heikki Ailisto	heikki.Ailisto@vtt.fi	IoT research Director
Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side

Research Institute	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

On framework or architectural level there seems to be a few reference architectures: FIRE, IIC IIRA and perhaps IoT-a. Are these guiding the implementations – let us hope so, since they seem sensible.
Application level interoperability, in my understanding, varies from domain to domain. Some have a good base of (standardized) interoperability, others not.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
We use quite typical things: BT LE (4.0), WiFI, some proprietary radios and Cellular for communications; some own development Middlewares, but then MS Azure and PTC Thingwox, for data-anlysis development Matlab, R and other tools.	Interoperability on data representation and semantic level is important for future. Some kind of standardization would make many things easier and more cost effective => wider use => more benefit. For example, data analysis tools would become more reusable.

New Stakeholders	Stakeholder's class
It seems that the telecoms (Nokia, Ericsson, Huawei) are investing in IoT properties of 5G systems during coming years. Want to have role there. Then on IoT platforms, PTC is challenging the big ones (IBM, SAP, Oracle, MS), but they are not giving up. Standardisation organisations and consortia like IIC, OneM2M etc. have a role too.	

Reason of involvement:	Identified by:	Registration Date:
	ABC	12/02/2016

Product Name:
INTER-FW

Stakeholder's Name:	Stakeholder's Acronym:
Fincons	*FIN*

Stakeholder's Profile & Role:

Profile:

The FINCONS GROUP assists customers in IT strategy and process definition, working alongside them to design and develop the technological and organizational tools they need to concentrate on their core business, relying on the FINCONS GROUP as a partner for planning organizational change and adaptation in the field of IT.
The FINCONS GROUP's philosophy has always been to guarantee customers the best services and solutions which will be true building blocks of success for them.
The values driving the FINCONS GROUP toward this goal are shared by every employee in the Group.
KNOW-HOW, PROFESSIONALISM, EXCELLENCE, PASSION, QUALITY AND INNOVATION.

Role:

IT Technology provider

Contact Person:	Email:	Position:
Matteo Villa	matteo.villa@finconsgroup.com	Innovation Manager

Stakeholder's Class: Technology Provider	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

We expect that a Framework could provide all those necessary horizontal functionalities to deal with typical problems associated with IoT: security, access control, communication, etc…

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
FINCONS don't have commercially available IoT-based products. Yet the company has a number of assets in a development stage: • "FINCONS Smart Manufacturing Platform": a rich framework of ICT tools for the Manufacturing sector, based on an Intelligent Middleware able to exploi the capabilities of IoT at industrial level. The platform is currently under development • "FINCONS SmartWaste": our B2B solution for electronic tracking of waste shipments, based on National and International regulations, and integrated with most popular ERP systems (i.e. SAP). Possible integration with IoT would tremendously enhance the capabilities of this solution allowing real-time tracking of waste shipments, thus providing significant added value to our customers.	We believe that the solutions developed by INTER-IoT would help us to: (i) extend our current solutions; (ii) ensure interoperability of our solution to third-party solutions; (iii) facilitate us in the development of new solutions. On this last bullet, FINCONS is collecting very relevant feedback from its customers and prospects in different market domains, and see several opportunities in the next future (cfr banking sector, insurances sector, energy saving sector, media & broadcasting sector).

New Stakeholders	Stakeholder's class
New stakeholders suggested or required for the design and implementation of the product to comply with the needs identified 1) Holonix – a spin-off of the "Politecnico di Milano", offering IoT-based solutions 2) at commercial level: Telecom Italia, SwissCom, SAP	

Reason of involvement:	Identified by: ABC	Registration Date: 12/02/2016

Product Name: INTER-FW	
Stakeholder's Name: *ITACA SRL*	Stakeholder's Acronym: *ITACA*
Stakeholder's Profile & Role: Profile:	

ITACA is a spin-off company of University of Calabria and University of Salento, operating in Information & Communication Technology (ICT) field. The mission of ITACA is on one hand to ensure the technology transfer of the output of the thematic research conducted by the research group directly connected to the company members, and on the other hand to guarantee a commercial exploitation of the RTD projects carried out. The company main field of activity is the design and development of Decision Support Systems, expert systems and ICT solutions for decisional problems related to the management, optimization and control of Logistics, Transportation and Urban Mobility Systems.
ITACA solutions are based on Operational Research, Simulation/Optimization state of the art models and methods and aim at constructing ICT HW/SW web based integrated platforms that have the goal of supporting the realization of environmental and economic sustainable, safe and secure, effective and efficient systems. The main applications of ITACA solutions are in the following fields:
distributive logistics optimization;

- real-time fleet management;
- urban mobility management;
- traffic control;
- logistics for waste management;
- info-mobility.

Role:
ITACA can contribute as research partner by sharing the experience gained in previous research projects and/or as end user by exploiting the project results.

Contact Person:	Email:	Position:
Massimo Guccione	guccione@itacatech.it	Chief Technical Officer
Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Software engineers	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:
Automatic Vehicle Location generates a large amount of data that can be processed in order to provide many value added services. IoT leads to new possibilities to AVL systems, introducing intelligence-driven development of services. In order to exploit the IoT potentiality in a very real way, several conditions must take place at the same time:

- vehicles are IoT entities provided with on-board logic, collecting data coming from sensors (from canbus, biometric devices, etc.) using different devices and communicating these data through IoT protocols and standards (Complex Smart Asset);
- Hub and transport infrastructures (terminals, roads, stop points etc.) incorporate sensors, become smart and IoT enabled (i.e. weather and environmental sensors, gates, access controls, cameras, aids to navigation, road traffic control devices)
- IoT platforms are introduced by logistics and transport infrastructure managers as well as logistics and transport operators to handle the interoperable heterogeneous IoT enabled smart objects they have introduced and they are managing in the ecosystem.
- IoT platforms are connected to enterprise and operational business platforms (terminal operating systems, control systems, fleet management systems) so smart objects are tightly linked with the operations and the stakeholders linked to those operations.
- heterogeneous IoT platforms owned by different logistics and transport infrastructure managers and operators are able to interoperate;
- a Complex Smart Asset is IoT enabled, and can communicate with different heterogeneous IoT platforms in a secure and trusted environment, according to the associated business operation

and status or some business rules. ☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Passive RFID tags Smartphones & tablets On-board units Ticket machines Smart watches	Existing IoT Plaftform (i.e. Brillo, Wifare…) or IoT enabling platforms (JBossMQ, Apache Spark, Apache kafka, …)

New Stakeholders	Stakeholder's class
University of Calabria	Partner
AMC	End user (public transport company)
Everis	Subject matter expert (IoT)

Reason of involvement:	Identified by:	Registration Date:
Strong experience in software integration	University of Calabria	11/02/2016

Product Name: INTER-FW	
Stakeholder's Name: *SenSysCal Srl*	Stakeholder's Acronym: *SSC*

Stakeholder's Profile & Role:

Profile:

SenSysCal S.R.L. is a spin-off of the University of Calabria founded on April 2010. Its innovative services and products are derived from academic research results in the Wireless Sensor Networks and IoT domains. Its main activities are related to smart-health, building energy management and WSN/IoT Consulting.

Its innovative Health Care products include physical rehabilitation supported by wearable motion sensors, continuous and non-invasive cardio respiratory monitoring to support early detection of cardio-vascular and neurodegenerative diseases, monitoring of training improvements of professional athletes.

In the building monitoring domain, SSC uses smart Wireless Sensor and Actuator Networks (WSAN) to localize and remove these wastes, guaranteeing significant energy savings. This is obtained through a continuous energy consumption monitoring and real-time solution actuation. This system is coordinated by an advanced management software which interfaces the WSAN to a remote server. It is possible to access the system through a user friendly web interface which allows managing the WSAN even from a smartphone.

SSC also offers a wide range of consulting services such as analysis and evaluation of existing WSNs systems, application context analysis, and design and realization of new systems.

Role:

SSC mainly operates in the smart-Health domain enabled by wearable and smart objects. Its efforts are also devoted to build reusable, open software frameworks to support the development of heterogeneous m-Health hardware and software systems.

Contact Person:	Email:	Position:

Raffaele Gravina	raffaele.gravina@gmail.com	CTO smart-health area
Stakeholder's Class: Software engineers	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: This product will be beneficial to speed up the growth of interoperable IoT-based platforms as most of the current solutions use proprietary APIs and hardly can directly communicate each other, due to different semantics, application-level protocols, data formats, security mechanisms, and so on. Conversely, such global interoperable framework will enable diversified IoT-based smart-Health services – developed and used by different players and stakeholders – to easily interoperate and share low and high level user health data. This framework should help IoT architects, engineers and developers to transform existing sensor, tags and smart object networks to interoperable IoT platforms, create new interoperable IoT platforms and connect and configure the relations between two interoperable IoT platforms. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Wearable sensors, mobile devices, smart objects, beacons, embedded operating systems, cloud platforms, SPINE, BodyCloud	New products & Systems required: IoT	

New Stakeholders	Stakeholder's class

Reason of involvement: Provider and strong skills on smart-health services	Identified by: University of Calabria (UNICAL)	Registration Date: 11/02/2016

Product Name: INTER-FW	
Stakeholder's Name: *Telefonica*	Stakeholder's Acronym: *Telefonica*
Stakeholder's Profile & Role: Profile: Telefonica is one of the largest telecommunication companies in the world. Telefonica is a broadband, fixed and mobile telecommunication provider and offers IT services and solutions in areas such as smart cities, sustainable transport, logistics, renewable energy, and environmental sustainability. Role: Telefonica has developed FIWARE, a middleware platform for the development of IoT applications and services, used in smart cities, and the Thinking Things project, that provides modular plug-and-play hardware to connect smart objects and a high-usability interface to monitor them. Telefonica is the developer of VLCi, the IoT Open City platform of the city of Valencia.	

Contact Person: Ángel Gómez	Email: agomez@upv.es	Position: VLCi Assesor

Stakeholder's Class: IoT platform provider (VLCi)	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: Telefonica uses its own IoT platform, FIWARE. In order to avoid the creation of IoT silos, developers should follow some methodology while designing and integrating IoT platforms considering interoperability, reliability, security, privacy and trust. FIWARE and VLCi can benefit from Inter-Layer to implement Inter-IoT framework over different layers, allowing a more flexible implementation and guaranteeing the implementation in devices that non-necessarily integrate the complete layer stack. FIWARE and VLCi can take advantage of Inter-Layer existing functionality to implement its framework over any layer. By this way, Inter-Layer can provide interoperability at several levels, leading to better connect their systems at various levels between each other and with other IoT platforms in existing and future projects. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Thinking Things, FIWARE, VLCi	New products & Systems required: Common interoperability framework Standardisation: OMA Next Generation Service Interface Context Enabler (NGSI 9 / NGSI 10), JSON	

New Stakeholders	Stakeholder's class
SERTIC	IoT platform exploiter

Reason of involvement: Providers of VLCi platform and FIWARE technology	Identified by: Universitat Politècnica de València (UPVLC)	Registration Date: 29/01/2016

Product Name: INTER-FW	
Stakeholder's Name: *INDRA*	Stakeholder's Acronym: *INDRA*
Stakeholder's Profile & Role: Profile: INDRA is an information technology and defense systems company. Indra has proprietary solutions for all its market segments: Transport & Traffic, Energy and Industry, Public Sector and Healthcare, Financial Services, Security and Defence, and Telecom & Media. Role: Indra has developed SOFIA2, a semantic business-oriented interoperable IoT platform based on the SOFIA IoT platform project. Sofia2 is a part of Indra Smart Platform, and acts as the bus of the whole system. Indra develops IoT intelligent services and projects based on its Smart Platform.	

Contact Person: Jordi Paraire	Email: jjparaire@indra.es	Position: PaaS Resposible
Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side

IoT platform provider	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

INDRA uses its own IoT platform, SOFIA2. In order to avoid the creation of IoT vertical silos, developers should follow some methodology while designing and integrating IoT platforms considering interoperability, reliability, security, privacy and trust.

SOFIA2 can benefit from Inter-Layer to implement Inter-IoT framework over different layers, allowing a more flexible implementation and guaranteeing the implementation in devices that non-necessarily integrate the complete layer stack. SOFIA2 can take advantage of Inter-Layer existing functionality to implement its framework over any layer. By this way, Inter-Layer can provide interoperability at several levels, leading to better connect their systems at various levels between each other and with other IoT platforms in existing and future projects.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Sensor Observation Service (SOS), SOFIA, SOFIA2, iCloudBroker, IDynamics, GPaaS, Indra Smart Platform	Common interoperability framework Standardisation: JSON, MQTT, REST, IoT Rules, CEP, API Manager, Security, Assets, Device Management

New Stakeholders	Stakeholder's class
SOFIA	Subject-matter experts

Reason of involvement:	Identified by:	Registration Date:
IoT platform provider (SOFIA2)	Universitat Politècnica de València (UPVLC)	29/01/2016

Product Name:

INTER-FW

Stakeholder's Name:	Stakeholder's Acronym:
Systems Research Institute, Polish Academy of Sciences	*SRIPAS*

Stakeholder's Profile & Role:

Profile: The Systems Research Institute, Polish Academy of Sciences was established in 1976. Since then, the scientists employed at the Institute have been active primarily in the domain of methodological foundations for systems analysis. The Systems Research Institute is member of the consortium for Inter-IoT and has an expertise in the key domains of the project, to which it shall contribute. It concerns: (i) software agents and agent systems; (ii) ontologies and semantic data processing; (iii) agent-semantic systems; (iv) software agents in sensor networks; (v) software design and implementation; (vi) grid / cloud computing; (vii) cyber-physical systems.

Role: Within INTER-FW SRIPAS has interest in the following tasks:

1. Design of a Reference Meta-Architecture for Interoperable IoT Platforms
2. Design of a Reference Meta-Data Model for Interoperable IoT Platforms
3. Design of an Interoperable Framework (INTER-FW) for Interoperable IoT Platforms

4. Implementation of the IoT Interoperable Framework Engine
5. Design and Implementation of the IoT Interoperable Framework APIs and Tools for Programming and Managing Interoperable IoT Platforms

SRIPAS will contribute to the design and implementation of the project reference architecture and API, with focus on meta-level aspects (i.e. use of semantics and semantic interoperability in the reference meta-data model and all aspects of the interoperable framework).

Contact Person:	Email:	Position:
Maria Ganzha	Maria.Ganzha@ibspan.waw.pl	Project leader
Stakeholder's Class: System designers and developers	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

1. INTER-FW should include tools / libraries to support users in designing and implementing semantic and data interoperability in the reference architecture.
2. Developed reference architecture should be applicable to domains other that transport and logistics and m-Health.
3. Metadata-model should address privacy and security-related aspects of providing interoperability.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	SRIPAS	15/02/2016

Product Name:

INTER-FW

Stakeholder's Name:	Stakeholder's Acronym:
Vemco Sp. z o.o.	*VEMCO*

Stakeholder's Profile & Role:

Vemco is a company with main focus on computer networks and access-control systems. They design, develop and deploy solutions for closed zone (e.g. parking) monitoring that include: tracking vehicles

entering and leaving the area, incidents detection, access control. Vemco participated is a member of international consortium working on the following projects within JTI ARTEMIS European innitiative:

- DEWI (Dependable Embaded Wireless Infrastructure) – project's scope is application of intelligent wireless embedded systems in 4 areas including smart buildings.
- ACCUS (Adaptive Cooperative Control of Urban Subsystems) – project's scope is effective creation of systems composed of systems (SoS) that enables real-time management and optimization by urban systems integration.

Vemco's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms, therefore their input in requirements specification for mentioned products can be valuable.

Contact Person:	Email:	Position:
Rafał Tkaczyk	r.tkaczyk@vemco.pl	IT Specialist
Stakeholder's Class: Subject-matter experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

Stakeholder is interested in results of the Inter-IoT project's products and willing to try to adopt them in their work.

The following problems and possible areas of interests for research have been indicated by the stakeholder:

- Lack of advanced semantics – communication with devices is based on many vendor-specific protocols
- In case of integrating many platform (set of devices) each of them is managed separately due to dedicated APIs
- Various variants of business rules engines. The problem is to analyze large amounts of data generated continuously and detection a number of conditions (in two variants, simple and complex). Very important is the quick reaction in real time system (system of systems).
- Security, it is still open issue to manage an authorization, authentication and access rights assignment protocols in an efficient way. It is very important that data and services should be protected.
- Various communication protocols of devices (e.g. sensors, readers, area controllers, etc.). The problem is to design a unification protocols.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Vemco's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms.	SRIPAS	18/02/2016

Product Name: INTER-FW	
Stakeholder's Name: *BetterSolutions SA*	Stakeholder's Acronym: *BetterSolutions*
Stakeholder's Profile & Role: BetterSolutions's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms, therefore their input in requirements specification for mentioned products can be valuable.	

Contact Person:	Email:	Position:
Mateusz Bonecki	mateusz.bonecki@bettersolutions.pl	R&D Director
Stakeholder's Class: Subject-matter experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

Stakeholder is interested in results of the Inter-IoT project's products and willing to try to adopt them in their work.

The following problems and possible areas of interests for research have been indicated by the stakeholder:

1. Context: BetterSolutions demands IoT technologies to streamline dairy supply chain logistics and account for reliable and safe food processing. In milk transportation and cold-chain management the "first in, first out" rule applies. MuuMap system (see below) is deployed in 20+ dairy processing plants in Poland and is used as a core IT system to support milk collection process.
2. sensors heterogeneity – highly specialized sensors and measuring devices, provided by numerous competing suppliers using different communication standards and data models, result in high expenditures on integration and interfacing of each device type; example: different devices to measure/detect milk parameters: somatic cells, antibiotics contamination, fat and protein content);
3. WSAN support – IoT platform should enable easy data exchange with IoT gateways installed in vehicles; Raspberry Pi-based embedded systems acting as gateways for WSAN nodes (sensors to monitor milk parameters and vehicle/drive/route parameters).

4. data ownership – sensors as data sources are owned by different third parties; IoT platform should support data ownership management, data-flow monitoring, access management;
5. data privacy – in case of personal data processing, IoT platform should meet standards required by Inspector General for Personal Data Protection (Poland);
6. data security – BS stores and processes sensitive (from the point of view of our customers in dairy industry) data; for example, quantity of resources available for pick-up per supplier.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
MuuMap – BetterSolutions product for dairy supply chain management (http://muumap.pl/en).	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
BetterSolutions's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms.	SRIPAS	18/02/2016

Product Name:	
INTER-FW	

Stakeholder's Name:	Stakeholder's Acronym:
Orange Polska S.A.	*Orange*

Stakeholder's Profile & Role:

ISP & telco services provider for B2B/B2C customers. The biggest telco operator in Poland, part of Orange Group (France Telecom). Most oriented for innovation services and new technologies.

Contact Person:	Email:	Position:
Tomasz Kowalczyk	Tomasz.Kowalczyk3@orange.com	-
Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Subject-matter experts	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

General knowledge about possible use cases of IoT Platforms and devices follow by technical solution.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
MuuMap – BetterSolutions product for dairy supply chain management (http://muumap.pl/en).	

New Stakeholders	Stakeholder's class
Orange Polska S.A. -> M2M Marketing UNIT	Kozłowski Piotr, mail: Piotr.Kozlowski2@orange.com

Reason of involvement:	Identified by:	Registration Date:
OPL would be IoT provider for B2B/B2C customers and develop new products in portfolio.	SRIPAS	22/02/2016

Product Name:	
INTER-FW	

Stakeholder's Name:	Stakeholder's Acronym:
Intel Technology Poland Sp. z o.o.	*Intel*

Stakeholder's Profile & Role:

Intel Technology Poland Sp. z o.o. is a Polish branch of a multinational corporation that is one of the world's largest semiconductor chip producer. One of Intel 's focus areas is Internet of Things, where it's products help connect things to the cloud, integrate with existing infrastructure, and securely manage data. Intel offers the IoT Platform that is an end-to-end reference model and family of products from Intel that works with third party solutions to provide a foundation of seamlessly connecting devices, delivering data to the cloud and delivering value through analytics.

Arkadiusz Hruszowiec is a Business Development Manager responsible for growing Intel's new businesses, including Intelligent Systems and Consumer Electronics, in Central and Eastern Europe. Arek has gained comprehensive experience in Marketing, R&D and Sales while working in Ireland, Germany and from 2011 also in Poland. Arek graduated with an MBA from University College Dublin in Ireland in 2010 with first class honours degree. He also holds MSc in Electronic Engineering from Wroclaw University of Technology in Poland. In 2012, he was elected to be a Vice President of the Polish Digital Signage Association. His out of work interests include history with focus on strategies and leadership, travelling and hiking. He was also an instructor at Intel University.

Contact Person:	Email:	Position:
Arkadiusz Hruszowiec	Arkadiusz.Hruszowiec@intel.com	Business Development

		Manager
Stakeholder's Class: Subject-matter experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: • Consider Intel based IOT solutions in the project • Recognize the importance of security, connectivity and manageability of the IOT systems ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Intel based gateways from 3rd parties. SOCs, CPUs, Comms. Modules.	New products & Systems required:	

New Stakeholders	Stakeholder's class

Reason of involvement: Representative of a company that has significant impact on IoT market.	Identified by: SRIPAS	Registration Date: 29/02/2016

INTER-METH

Product Name: INTER-METH	
Stakeholder's Name: *VALENCIAPORT FOUNDATION*	Stakeholder's Acronym: *VPF*

Stakeholder's Profile & Role:

Profile: VPF is a non-profit organization based in the port of Valencia that works on the innovation of the port, transport and logistics sectors. It is working on achieving and providing solutions that simplify the introduction of IoT in ports, logistics and freight and container transport under and interoperable framework where different companies can share information generated by different smart devices and sensors in a secure and trusted environment.

Role: VPF will contribute to the interoperability and integration at the application service, data and cross-layer level, with especial interest in the coherence with the design of the interoperability framework.

Contact Person: Miguel Llop	Email: mllop@fundacion.valenciaport.com	Position: ICT Director
Stakeholder's Class: End user	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

IoT solutions are new, they are not very known and there is a lack of guidance on how to convert an existing network of sensors, tags and smart objects into an interoperable IoT ecosystem. Many of these networks claim to be IoT but they do not support basic functionalities that an interoperable IoT ecosystem should have, and they are isolated. On the other hand, every new IoT platform design should have interoperability, reliability, security, privacy and trust in mind if it needs to interact with existing enterprise and operational systems and with other IoT platforms.

INTER-METH should provide the knowledge, guidance, know-how and a stepwise approach to convert sensors, tags and smart objects isolated networks into IoT interoperable platforms at different layers depending on the requirements of a specific scenario: device to device interconnection of IoT infrastructures (using gateway-based solutions or virtualization), networking protocols, middleware, composition methods for application services, semantic interoperability and methods to translate data and semantics (common communication standards, ontology and semantic data processing)

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Port Community System (ValenciaportPCS) SCADA Systems Automated Gate Systems Sensors, smart objects, Passive RFID tags	IoT Platforms (i.e. FI-WARE, Open-IoT, Sofia2, Azure IoT, Google IoT, VLCi)

New Stakeholders	Stakeholder's class
Infoport	Port Solution & service provider

Prodevelop	Partner
Orbita System	IoT solution and devices provider
Universitat Politecnica de Valencia	Partner
Technological Institute of Informatics	Subject-matter expert (Big Data)
KII	IoT solution and devices provider
Geomobile	IoT solution and devices provider
BestTech4EU	Subject-matter expert (devices)
SGS	Solution provider for government agencies

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	Valenciaport Foundation	29/01/2016

Product Name: INTER-METH	
Stakeholder's Name: *UPV Support Group for AIOTI Participation*	Stakeholder's Acronym: *AIOTI-UPV*

Stakeholder's Profile & Role:

Profile: AIOTI-UPV is a group of research groups from different field areas but with a common interest related with IoT. The research groups have organized in terms of the different existing WG in AIOTI.

Role: Research and development of solutions associated with IoT, from sensors, protocols, gateways, data processing, middleware, semantics and interoperability. With a relevant goal in publications and standardization. The role of the association is to coordinate the participation and contribution of UPV in AIOTI.

Contact Person:	Email:	Position:
Ana Cruz	acgarcia@cpi2020.es	Project Manager
Stakeholder's Class: Integrator	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

AIOTI-UPV has a need of using a methodology for the deployment of each IoT platform used in the different projects they participate. The use of a CASE tool that may help this development and may enhance, reduce cost and improve interoperability in an easy and seamless way. Additionally, AIOTI-UPV may influence other organisations with the use of the methodology in the different deployments and research activities.

The CASE tool can be integrated with different solutions, and may allow the deployment and integration of sensors and actuators, so as defining semantic interoperability aspects.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
UPV CARTA listed products and projects	N/A

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
IoT Research	Universitat Politècnica de València (UPVLC)	29/01/2016

Product Name: INTER-METH	

Stakeholder's Name:	Stakeholder's Acronym:
Open Geospatial Consortium	*OGC*

Stakeholder's Profile & Role:

Profile: The OGC (Open Geospatial Consortium) is an international not for profit organization committed to making quality open standards for the global geospatial community. These standards are made through a consensus process and are freely available for anyone to use to improve sharing of the world's geospatial data.

OGC standards are used in a wide variety of domains including Environment, Defense, Health, Agriculture, Meteorology, Sustainable Development and many more.

Role: OGC is a standardization body.

Contact Person:	Email:	Position:
Steve Liang	liangs@ucalgary.ca	Innovation Director

Stakeholder's Class:	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side
Standardization body		

Stakeholder's Needs:

- Reuse existing proven working standards. Make recommendations to the existing standard organization if some new use cases are required (e.g., make change request to OGC)
- Effective communications with the active working group members in the standard organizations. They are the authors of the standards, and there are many lessons and issues have been considered when the specifications were written.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
N/A	N/A

New Stakeholders	Stakeholder's class
Of course, OGC community is important in my opinion.	Standardization body community

Reason of involvement:	Identified by:	Registration Date:
Standardization body with involvement in IoT	Prodevelop	24/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *OpenEHR Poland*	Stakeholder's Acronym: *OpenEHR*

Stakeholder's Profile & Role:

Profile: OpenEHR is a virtual community working on interoperability and computability in e-health. Its main focus is electronic patient records (EHRs) and systems. The openEHR Foundation has published a set of specifications defining a health information reference model, a language and methodology for building clinical models (archetypes), which can be used to define templates for specific deployments. OpenEHR is a vendor independent platform providing semantic framework that is widely used in the industry.

Role: OpenEHR provides reference model for clinical data representation. Clinical models that are included in the public repository were prepared by domain experts. Inter-IoT mHealth domain application should consider the possibility that data collected from use case platforms are integrated into OpenEHR-based systems. Otherwise, semantic interoperability should be considered between OpenEHR-based systems and use case platforms.

Contact Person:	Email:	Position:
Krzysztof Kulesza	krzysztof.kulesza@ersystems.pl	Representative of openEHR initiative in Poland

Stakeholder's Class:	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☐ IoT Supply side
Representative of external Association		

Stakeholder's Needs:

Domain ontologies developed within Inter-IoT project should be compliant with OpenEHR clinical models. Especially archetypes related to health parameters monitoring (e.g. temperature) should be considered in common Inter-IoT ontologies specification.

Inter-IoT should enable analysis of data from OpenEHR-based systems with data from other platforms, possibly from other domains.

Ontologically-represented OpenEHR data and data in other standards (data representation models) should ease the process of conversion of data between the systems e.g. standards for communications and standards for storage.

Inter-IoT should provide methodology for conversion between OpenEHR data and their ontological representation.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
N/A	N/A

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
OpenEHR provides reference models to represent clinical data that should be considered when designing Inter-IoT ontologies.	Systems Research Institute, Polish Academy of Sciences	18/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *VTT Technical Research Centre of Finland Ltd*	Stakeholder's Acronym: *VTT*

Stakeholder's Profile & Role:

Profile:

VTT Technical Research Centre of Finland Ltd is the leading research and technology company in the Nordic countries. VTT has a national mandate in Finland. We use our research and knowledge to provide expert services for our domestic and international customers and partners. We serve both private and public sectors. We have 73 years' experience supporting our client's growth with top-level research and science-based results. We develop new smart technologies, profitable solutions and innovation services. We cooperate with our customers to produce technology for business and build success and well-being for the benefit of society.We use 4,000,000 hours of brainpower a year to develop new technological solutions. The benefit you gain from this spearhead research comes when we work with you to create new products, production processes, methods, and services. VTT ensures efficient utilisation of science and technology with the aid of broad international cooperation and networking.

VTT has been granted an ISO9001:2008 certificate and our environmental system is certified in accordance with ISO14001:2004. VTT is part of Finland's innovation system and operates under the mandate of the Ministry of Employment and the Economy. VTT reports corporate responsibility according to GRI G3 guidelines.

Role:

Public-Private research center with strong links to industry and innovation.

Contact Person: Heikki Ailisto	Email: heikki.Ailisto@vtt.fi	Position: IoT research Director
Stakeholder's Class: Research Institute	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

There seems to be two schools or approaches towards methodology. One is rigorous planning of entering IoT and industrial internet systems as exemplified by many German companies in Industry 4.0 program. The other is more trial and experiment based: do something fast, if success, scale up, if not, drop it. An ultimate example is a Industry hack event, very popular now in Finland (http://industryhack.com/). A company invites teams (students, small startups) to "hack" their machines or services; hacking here in the positive sense of finding better (IoT based) ways to do things or do new things.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
We use quite typical things: BT LE (4.0), WiFI, some proprietary radios and Cellular for communications; some own development Middlewares, but then MS Azure and PTC Thingwox, for data-anlysis development Matlab, R and other tools.	Interoperability on data representation and semantic level is important for future. Some kind of standardization would make many things easier and more cost effective => wider use => more benefit. For example, data analysis tools would become more reusable.

New Stakeholders	Stakeholder's class
It seems that the telecoms (Nokia, Ericsson, Huawei) are investing in IoT properties of 5G systems during coming years. Want to have role there. Then on IoT platforms, PTC is challenging the big ones (IBM, SAP, Oracle, MS), but they are not giving up. Standardisation organisations and consortia like IIC, OneM2M etc. have a role too.	
Reason of involvement:	Identified by: ABC	Registration Date: 12/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *Telefonica*	Stakeholder's Acronym: *Telefonica*
Stakeholder's Profile & Role: Profile: Telefonica is one of the largest telecommunication companies in the world. Telefonica is a broadband, fixed and mobile telecommunication provider and offers IT services and solutions in areas such as smart cities, sustainable transport, logistics, renewable energy, and environmental sustainability. Role: Telefonica has developed FIWARE, a middleware platform for the development of IoT applications and services, used in smart cities, and the Thinking Things project, that provides modular plug-and-play hardware to connect smart objects and a high-usability interface to monitor them. Telefonica is the developer of VLCi, the IoT Open City platform of the city of Valencia.	
Contact Person: Ángel Gómez	Email: agomez@upv.es	Position: VLCi Assesor
Stakeholder's Class: IoT platform provider (VLCi)	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: In order to avoid the creation of IoT silos, developers should follow some methodology while designing and integrating IoT platforms. Every IoT platform design should consider interoperability, reliability, security, privacy and trust, to interact with existing enterprise and operational systems and with other IoT platforms. Telefonica will benefit from the guidance of the Inter-IoT methodology to maximize the compatibility and interoperability of its IoT platforms and services. The CASE-driven methodology provided by INTER-METH will facilitate the development and integration. ☐ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved: Thinking Things, FIWARE, VLCi	New products & Systems required: Common interoperability framework Standardisation: OMA Next Generation Service Interface Context Enabler (NGSI 9 / NGSI 10), JSON

New Stakeholders	Stakeholder's class

SERTIC	IoT platform exploiter	
Reason of involvement: Providers of VLCi platform and FIWARE technology	Identified by: Universitat Politècnica de València (UPVLC)	Registration Date: 29/01/2016

Product Name: INTER-METH		
Stakeholder's Name: *INDRA*		Stakeholder's Acronym: *INDRA*
Stakeholder's Profile & Role: Profile: INDRA is an information technology and defense systems company. Indra has proprietary solutions for all its market segments: Transport & Traffic, Energy and Industry, Public Sector and Healthcare, Financial Services, Security and Defence, and Telecom & Media. Role: Indra has developed SOFIA2, a semantic business-oriented interoperable IoT platform based on the SOFIA IoT platform project. Sofia2 is a part of Indra Smart Platform, and acts as the bus of the whole system. Indra develops IoT intelligent services and projects based on its Smart Platform.		
Contact Person: Jordi Paraire	Email: jjparaire@indra.es	Position: PaaS Resposible
Stakeholder's Class: IoT platform provider	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: In order to avoid the creation of IoT silos, developers should follow some methodology while designing and integrating IoT platforms. Every IoT platform design should consider interoperability, reliability, security, privacy and trust, to interact with existing enterprise and operational systems and with other IoT platforms. INDRA will benefit from the guidance of the Inter-IoT methodology to maximize the compatibility and interoperability of its IoT platform and IoT services. The CASE-driven methodology provided by INTER-METH will facilitate the development and integration of applications based on or compatible with Inter-IoT framework. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Sensor Observation Service (SOS), SOFIA, SOFIA2, iCloudBroker, IDynamics, GPaaS, Indra Smart Platform	New products & Systems required: Common interoperability framework Standardisation: JSON, MQTT, REST, IoT Rules, CEP, API Manager, Security, Assets, Device Management	

New Stakeholders	Stakeholder's class
SOFIA	Subject-matter experts

Reason of involvement: IoT platform provider (SOFIA2)	Identified by: Universitat Politècnica de València	Registration Date: 29/01/2016

	(UPVLC)	

Product Name: INTER-METH	
Stakeholder's Name: *Creative Systems Engineering (C.S.E) Monoprosopi EPE*	Stakeholder's Acronym: *CSE*

Stakeholder's Profile & Role:

Profile:

Creative Systems Engineering (C.S.E) was established in Athens, Greece by a group of electrical, electronics and computer engineers with over 20 years of experience in the field of communication systems design, prototyping, industrial manufacturing and commercial exploitation through large European manufacturer firms, such as Alcatel and Siemens. Besides the firm engineering basis, all members of the technical staff have deep experience in R&D projects coordination, technical management and running, and strong scientific foundations.

CSE engineers have experience in the design and implementation of both hardware and software systems. Today CSE is working on the following activity areas:

- Design of systems composed of HW and SW sub-systems, PCB implementation, industrial manufacturing of electronic components, embedded systems.
- Design and implementation of embedded platforms for communication applications for corporate clients from the European industry sector
- Communication architectures and physical interfaces for IoT architectures
- Design and manufacturing of gateways for mesh networks with wireless/wired interfaces

Previous work also relates closely to application and protocol gateways, resource abstraction and virtualisation, orchestration software, Service oriented Architectures and OSGi implementations.

Role:

CSE is a device manufacturer able to provide low energy IoT devices and also gateways to interconnect various devices and systems. CSE has developed one MIPS based residential gateway offering support for M2M and IoT setups that is offered as a commercial product with open software and hardware features that can be used for prototype development.

Contact Person: Konstantinos Koutsopoulos	Email: k.koutsopoulos@creativese.eu	Position: Systems Engineer
Stakeholder's Class: Developer, Integrator	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

CSE has detected the following needs for the Inter-METH product:

- The fact itself of providing a methodology for building interoperable products is important. In fact, CSE's product design and development is performed according to worldwide disciplines (ISO, IEEE, IPC, etc) with the use of state of the art CAE/CAD tools for analysis and modelling, design capture, development and simulations to guarantee reliable and quality end products in affordable and competitive prices. The introduction of a CASE based methodology in combination with the Framework will facilitate the integration of interoperable systems.

- The methodology process should be as agile as possible in order not to be stopped in any of the iterative processes of the chain. In any case the iterative process should be particularized for special platforms or use cases; maybe the general idea/approach is fine, but in a second stage it should be possible to be particularize by a company (or consortium), in order to improve efficiency.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Advanced Modem Router Gateway (AMRG) – IoT gateway	Latch Current Limiter (LCL)

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Experience in IoT as device integrator	Universitat Politècnica de València (UPVLC)	02/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *VMZ Berlin Betreibergesellschaft mbH*	Stakeholder's Acronym: *VMZ*

Stakeholder's Profile & Role:

Profile:

VMZ's core businesses are urban mobility and traffic management: from start to finish. VMZ is an affiliate of SIEMENS AG and has the role of an innovation lab for innovative mobility topics within SIEMENS. VMZ develops mobility and traffic management concepts and implements information services, operated by themselves. VMZ also carries out research on questions relating to mobility in the future. Its aim is to ensure secure, efficient and environmentally sound urban mobility: for pedestrians, for cyclists, for motorists, for users of public transport and for air travelers. VMZ's business units reflect the process chain in urban traffic and mobility management and comprises:

- Operation of the Berlin Traffic Information Center (VIZ) for the Federal State of Berlin with comprehensive services for mobility information for the city of Berlin
- Development and operation of multimodal information services which process real-time traffic data to inform on currently available mobility and
- Consulting services to public and private enterprises with questions related to ensuring urban mobility.

Role:

VMZ leads traffic and mobility management in Berlin and other German cities as traffic planner and operators of the traffic information center. Their research focuses in multimodal mobility, incident management and the improvement of traffic information for the media and end users.

Contact Person:	Email:	Position:
Claudia Baumgartner	claudia.baumgartner@vmzberlin.com	Senior Consultant
Stakeholder's Class: IoT operator	☒ Can appear in public reports	☒ IoT Demand side

	☐ Shall remain anonymous	☐ IoT Supply side
Stakeholder's Needs: VMZ has detected the following needs for the Inter-METH product: A step by step methodology to obtain interoperable IoT applications that provides Inter-METH by means of a CASE tool is almost mandatory in order to take the most advantage of Inter-Layer and Inter-FW. Applying Inter-METH's methodology to build the required software components that comprises the Incident management center ensures that it will be able to interoperate with any IoT environment. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Traffic information center	New products & Systems required: Incident management center	

New Stakeholders	Stakeholder's class

Reason of involvement: IoT operator	Identified by: Universitat Politècnica de València (UPVLC)	Registration Date: 16/02/2016

Product Name: INTER-METH		
Stakeholder's Name: *ISECO S.L*		Stakeholder's Acronym: *ISECO*
Stakeholder's Profile & Role: Profile: ISECO is a software control development company, that integrate sensors in an own developed control center. The systems deployed by the company have a broad range from malls to health centers. The main product developed by the company is called SAGE and is used to customize the reception of data from heterogeneous sensors. Role: Integration of hardware and software from different vendors in order to provide an integral service to a broad spectrum of clients. The implantation of its IoT platform is mainly monolithic.		
Contact Person: Vicente Collado	Email: vcollado@iseco.es	Position: CEO
Stakeholder's Class: Integrator	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: ISECO has a need of using a methodology for the deployment of each IoT platform. The use of a CASE tool that may help this development and may enhance, reduce cost and improve interoperability in an easy and seamless way. The CASE tool can be integrated with ISECO SAGE solution, and may allow the deployment and integration of sensors and actuators, so as defining semantic interoperability aspects. ☒ Interested in participate in INTER-IoT open calls		

Existing Products & Systems involved:	New products & Systems required:
SAGE	Interoperability with FIWARE, use of SWE from OGC

New Stakeholders	Stakeholder's class
SolyMar Residencias	End User
SANITAS	End User

Reason of involvement:	Identified by:	Registration Date:
IoT integrator	Universitat Politècnica de València (UPVLC)	17/02/2016

Product Name:
INTER-METH

Stakeholder's Name:	Stakeholder's Acronym:
ETRA Investigación y Desarrollo, S.A.	*ETRA I+D*

Stakeholder's Profile & Role:

Profile:

ETRA Investigación y Desarrollo, S.A. (ETRA I+D) is the hi-tech unit within ETRA Group, one of the leading industrial groups in Spain. Its mission is putting in the market the most advanced solutions and services either directly or through the 10 companies of the Group. The main market areas of ETRA Group are Spain, South-Central America, Asia and the EU.

ETRA Group is owned by ACS, the 4th largest Construction Corporation in the World. With 2200 employees and a turnover of 250M€. ETRA Group is a market leader in the fields of technology, mobility and public services. More than 5.000 vehicles worldwide make use of ETRA's technology in their daily operation. More than 10.000 intersections are managed by ETRA's traffic management systems. More than 1.000.000 users use daily ETRA's smart card based solutions. ETRA is a leader in Mobility and Integrated Services providing technology of the 53% of urban traffic in Spain. 90% of the metros and light rail in Spain incorporate technological solutions from ETRA. ETRA controls more than 450,000 points of light in cities, roads, ports, tunnels and get savings of 30% of energy costs. Manage more than 30,000 parking spaces.

Role:

ETRA combines the Smart technology model with the provision of specific, tangible solutions to improve citizen's quality of life as well as the efficiency of city service managers in the use of their resources. ETRA has an intense activity in technological R&D&I projects for Smart Cities.

Contact Person:	Email:	Position:
Patricia Bellver Muñoz	pbellver.etraid@grupoetra.com	Researcher
Stakeholder's Class: Developer, Integrator	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

ETRA I+D has detected the following needs for the Inter-METH product:

ETRA understands the usefulness of a CASE methodology conceptually, but requires more concrete information as they think different methodologies might apply for different scenarios and services they operate (control centres, video cameras, engineering tools, water management). They highlight different

priorities might be incorporated in the methodology to assign more relevant to some aspects. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Traffic Safety Management Center (Cegesev), Traffic Management Center (CGT), NOC (electric vehicles), Water management products, Security products	New products & Systems required: N/A	

New Stakeholders	Stakeholder's class

Reason of involvement: Experience in IoT as system integrator	Identified by: Universitat Politècnica de València (UPVLC)	Registration Date: 18/02/2016

Product Name: INTER-METH		
Stakeholder's Name: *Instituto de Tecnología Informática (ITI)*		Stakeholder's Acronym: *ITI*
Stakeholder's Profile & Role: Profile: ITI is a Private Technology Centre specialized in R&D in ICT, within UPVLC. ITI has extensive experience in the application of techniques and technologies from the Big Data Ecosystem to solve problems of large scale data analysis, and is a founding member of the Big Data Value Association (BDVA). Role: ITI has interest in the idea of connecting IoT interoperable frameworks with Big Data, and generate added value to IoT platforms and Smart City services by the management and intelligent analysis of these large scale collected data. ITI collaborates with the IMASCITI project of 'Smart Citizen', that provides personalized smart city services to identified individuals.		
Contact Person: Daniel Saez	Email: dsaez@iti.es	Position: CEO
Stakeholder's Class: Big Data Expert team within UPVLC	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: IoT platforms are able to generate large amounts of data (Big Data). The management of these large scale data represents a challenge: typically, data requires real-time massive storage, quick access, and intelligent analysis to take advantage of immense potential benefits and possibilities, as well as data monitoring, real-time analysis and understandable visualization of relevant data. ITI covers elements of the Big Data Ecosystem as a Technology provider, such as: • Cloud Computing infrastructures and Real-Time optimization • Collection of Non-Transactional Social and Heterogeneous Data • Data Engineering (Improvement of the quality, integrity and consistency of data and database		

performance)
- Data Analysis for Transactional Data and Graphic Design and Data Visualization

The integration of Big Data techniques, methodology and solutions in Inter-IoT will drastically enhance the potential possibilities, services and utilities that InterIoT can provide. ITI can mutually benefit from this integration, as the use an IoT interoperable platform with integrated Big Data techniques and analysis will help to provide better and more complete IoT solutions to their clients.
The use of a defined methodology for the development of IoT platforms will be useful for ITI, in order to develop its IoT solutions. The use of the CASE tool may help this development and may enhance, reduce cost and improve interoperability in an easy and seamless way.
The CASE tool can be integrated with ITI solutions, and may allow the deployment and integration of sensors and actuators, so as defining semantic interoperability aspects.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Big Data, Hadoop, Intelligent Large Scale Data Analysis, NoSQL, Business Intelligence platforms	IMASCITI IoT platforms

New Stakeholders	Stakeholder's class
IMASCITI	IoT project of Smart Citizen/platform provider

Reason of involvement:	Identified by:	Registration Date:
Interest in connecting IoT interoperable frameworks with Big Data	Universitat Politècnica de València (UPVLC)	29/01/2016

Product Name: INTER-METH	
Stakeholder's Name: *TELECOM ITALIA*	Stakeholder's Acronym: *TI*

Stakeholder's Profile & Role:

Profile:

With 30.1 million TIM mobile lines and 12.1 million retail connections to its fixed network, of which 7 million are broadband accesses, at the end of June 2015, it is the leading ICT group and Italy's digital partner. Abroad its strength is Brazil, where TIM Brasil, supplying 74.6 million lines, is the second player on the market. Innovation is at the heart of the Group's strategy and over the 2015-2017 period it will be investing 5 billion euros on the development of new generation technologies, cloud computing, Date Centres. The goal for 2017 is to reach 75% of population with the new fixed ultrabroadband (Fiber, NGN) and 95% with the mobile one (4G,LTE). Today, NGN and LTE coverage reached 37% and more than 83% of population, respectively. It is the widest coverage in the country.
Its portfolio includes telecommunications, internet, digital contents, cloud services, digital platforms, office and system solutions, offering everyone – consumers, enterprises and institutions - simple and safe tools for the new digital life. To be connected anytime, anywhere and on any device, TIM offers innovative digital services and contents, as well as many applications and devices: smartphones, tablets, set top TV

decoders, apps and cloud storage. As well as contents: a gaming library, e-books and magazines, music and audiovisual contents enriched with premium contents, such as major sporting events. To simplify the daily life there are new solutions: electronic payment systems, smart homes, electronic medical records and certified electronic mail in the healthcare and government sectors, for the schools interactive multimedia whiteboards and web-based learning environments.
The Telecom Italia department participating to the project is active in the definition and prototyping of innovative ICT solutions for telemedicine (telemonitoring, teleassistance, localization, primary prevention, etc.).
Role:
TI will contribute on the definition and contextualization of the design patterns in the e-Health domain.

Contact Person:	Email:	Position:
Giovanna Larini	giovanna.larini@telecomitalia.it	Project Manager ICT Services Innovation
Stakeholder's Class: Subject-matter experts, customers	☐ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

- Methods and tools to integrate data belonging to third party platforms
- Methods and tools to integrate devices and / or measures from devices /sensors;
- Methods and tools to integrate services belonging to third party platforms

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
eCARE (TELECOM ITALIA) third party platforms (e. g. BodyCloud)	third party platforms (e. g. smart home platforms, sensor networks, ehealth platforms)

New Stakeholders	Stakeholder's class
Università della Calabria	Partner WP5 leader
Devices Providers	Interfacing technology
Third party platforms	Interfacing technology

Reason of involvement:	Identified by:	Registration Date:
Provider of IoT platforms (e.g. eCare) Partner of project	Telecom Italia	09/02/2016

Product Name:	
INTER-METH	
Stakeholder's Name: *CONSOFT SISTEMI S.p.a*	Stakeholder's Acronym: *CON*
Stakeholder's Profile & Role: Profile:	

Consoft Sistemi is an Italian company present in the ICT market since 1986, with offices in Torino, Milano, Genova, Roma and Tunis, 400 employees and an annual turnover of around 29 million Euros. Operating alongside the group leader Consoft Sistemi, are three other companies: Consoft Consulting Consoft Consulting focused on specific topics of public administration; CSInIT specializes in scouting and distribution innovative software for the Italian market; Consoft Sistemi MEA expands the group leader's offer, particularly linked to Telecoms in the North African and Middle Eastern markets.

Products, Solutions, Services: Consoft Sistemi's offer is focused on 9 thematic areas in which the company is able to create 'end to end' solutions for its customers through technological and methodological consultancy, training, development of integrated solutions and the provision of insourcing/outsourcing services.

IT Governance & Management For optimizing and aligning IT services to company needs. The ITG&M offer matches methodologies and certified competences with the supply of software tools, in partnership agreements with leading international vendors, in order to support customers in planning, innovating, designing, implementing, managing and checking IT infrastructures. The main areas are: Application & System Management, Application Performance Management, Application Monitoring, Networking, Security, Compliance and support during the introduction of ITIL Methodologies.

Business Analytics Thanks to the integration of technological skills (DWH, ETL, Data Modeling, Data Quality, Planning and Data Discovery) with those of business and industry, Consoft Sistemi is able to help its Customers through the whole life cycle of a BI Analytics solution. From offering vertical solutions for the sector to assessment and application management services. From logical model design to the choice of technological solutions and the development and implementation of complex projects,

Big Data Today, new technologies allow us to overcome obstacles linked to the dimensions, type, origin and complexity of data. Consequently, the challenge lies in the capacity to transform this mine of information into value. In this challenge, Consoft Sistemi is right beside its clients to support them in the adoption of opportune strategies and the implementation of 'best of the breed' solutions both in terms of adding value to the potential locked up in processed data and that sourced from social networks.

CRM All of the design capacity and technological skill of Consoft Sistemi is focused on getting the maximum value out of market-leading CRM solutions like Salesforce.com through complete integration with company IT ecosystems.

DevOps To ensure continuous delivery through the identification, improvement and optimizing of repeatable Lifecycle and Deploy processes. Consoft Sistemi offers its own methodological approach to life cycle management and the delivery of software by working on communication and collaboration between developers and IT operators. To this end, Consoft Sistemi adopts, among others, the Agile methodological approach for the management of products and proposes advanced solutions for the Deployment phase including products like uDeploy from the IBM Rational suite and Nolio from CA Lisa.

Mobile Experience Thanks to a profound understanding of the principal empowering technologies (Android, iOS and Black Berry), Consoft Sistemi supports its Clients in the phases of change and innovation introduced by mobile platforms. It creates innovative business scenarios exploiting new channels of communication and designs and integrates architectures for the distribution of added value services. Analysis of the characteristics and organizational/technological needs of the client combined with expertise in multiple functional environments permits Consoft Sistemi to design solutions which are personalized, created with the most avant-garde mobile technologies and perfectly integrated with the company systems.

Dematerialization of document processes For the management of document processes and for complete support in their dematerialization right from the creation of the document, thanks to innovative systems for graphometric and biometric signatures, Consoft Sistemi offers both specific solutions for the

management of document processes which call for the acquisition of information from interactive modules and the multi-channel delivery of documents which can be used by any device. The strategic partnership with Adobe Systems, leader in ECM solutions, completes the offer.
Digital Content Management To support the digitalization of content in all its forms, we deal with the development and design of agile web sites while placing the individual at the center of programming and design. We believe that the instruments we develop must work for those who use them. The solutions and skills offered by Consoft Sistemi, exploit the best technologies and platforms present on the market able to deliver integration, collaboration, multichannel function, use-ability and security.
IOT & Connected Life The proliferation of connected devices coupled with improved, less-expensive technology platforms and adoption of common standards will only increase the rapid growth of IoT-enabled capabilities across industries.
More generally the technological evolution and the diffusion of digital devices connected and interacting between one another with processes and people enables the creation of innovative and smart services.
Consoft Sistemi unites knowledge of technology and networks (LTE, WSN, M2M etc.), with the ability to design and create solutions along with its experience as business integrator to add value and play a leading role with their clients in this new scenario.
Consoft Systems is active on IOT european and national projects applied to health, smart industry, safety at work and monitoring.
Role:
Consoft Sistemi can integrate his IOT platform in the INTER System, with new sensors and with new application services.

Contact Person: Serena Ambrosini	Email: serena.ambrosini@consoft.it	Position: R&D BU Manager
Stakeholder's Class: Subject-matter experts, customers	☐ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

- Methods and tools to integrate data belonging to third party platforms
- Methods and tools to integrate devices and / or measures from devices /sensors;
- Methods and tools to integrate services belonging to third party platforms

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved: Iot Platform (Consoft Sistemi) New application solutions on ehealth, smart factory, safety at work devices and sensors	New products & Systems required: third party platforms (e. g. smart home platforms, sensor networks, ehealth platforms)

New Stakeholders	Stakeholder's class

Reason of involvement: Provider of IoT platforms Provider of application solutions Partner of project	Identified by: Telecom Italia	Registration Date: 18/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *UNIVERSITY OF CALABRIA*	Stakeholder's Acronym: *UNICAL*

Stakeholder's Profile & Role:

Profile:

UNICAL is a research oriented Institution. In particular, it has different research groups focused on IoT technologies from both technology transfer and academic viewpoints. UNICAL is therefore developing both research methods and prototypes in the IoT area specifically focused on devices, networking, middleware and application services.

Role:

UNICAL can provide the definition and use of software development methodologies based on agent abstractions, addressing methodological issues related to this specific product and also the interaction with the designed INTERFW to fully automate IoT platform integration. UNICAL can also support the design of a CASE (Computer Aided Software Engineering) tool for the automated application of the designed Methodology.

Contact Person: Giancarlo Fortino	Email: g.fortino@unical.it	Position: Professor of Computer Engineering
Stakeholder's Class: Other (Research and Development Expert)	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

The main need in this context is the creation of a full-fledged methodology for the integration of IoT platforms so making them interoperable. Such methodology can be based on the definition of a collection of design patterns with the aim of driving the integration designer to provide the most effective solutions. For a more rapid and robust integration of IoT platforms, minimizing human errors, reducing development time, and enhancing the quality of the integrated platform are fundamental needs.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
BodyCloud, Air-Ground protocol, Smartphone Gateway Third party platforms (e. g. eCARE)	Third party platforms (e. g. smart home platforms, sensor networks, ehealth platforms) Programmable devices and sensors

New Stakeholders	Stakeholder's class
ICAR-CNR	Subject matter experts
Sensyscal	Software engineers
University of Bologna	Subject matter experts
Herzum	Designers and developers

Reason of involvement: Partner of the project Provider of IoT platforms (e.g. BodyCloud)	Identified by: UNICAL	Registration Date: 08/02/2016

Product Name: INTER-METH		
Stakeholder's Name: *VMZ Berlin Betreibergesellschaft mbH*		Stakeholder's Acronym: VMZ

Stakeholder's Profile & Role:

Profile: VMZ's core businesses are urban mobility and traffic management: from start to finish. VMZ is an affiliate of SIEMENS AG and has the role of an innovation lab for innovative mobility topics within SIEMENS. VMZ develops mobility and traffic management concepts and implements information services, operated by themselves. VMZ also carries out research on questions relating to mobility in the future. Its aim is to ensure secure, efficient and environmentally sound urban mobility: for pedestrians, for cyclists, for motorists, for users of public transport and for air travelers. VMZ's business units reflect the process chain in urban traffic and mobility management and comprises:

- Operation of the Berlin Traffic Information Center (VIZ) for the Federal State of Berlin with comprehensive services for mobility information for the city of Berlin
- Development and operation of multimodal information services which process real-time traffic data to inform on currently available mobility and
- Consulting services to public and private enterprises with questions related to ensuring urban mobility.

Role: VMZ leads traffic and mobility management in Berlin and other German cities as traffic planner and operators of the traffic information center. Their research focuses in multimodal mobility, incident management and the improvement of traffic information for the media and end users.

Contact Person:	Email:	Position:
Claudia Baumgartner	claudia.baumgartner@vmzberlin.com	Senior Consultant
Stakeholder's Class: IoT operator	☑ Can appear in public reports ☐ Shall remain anonymous	☑ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

VMZ has detected the following needs for the Inter-METH product:

- A step by step methodology to obtain interoperable IoT applications that provides Inter-METH by means of a CASE tool is almost mandatory in order to take the most advantage of Inter-Layer and Inter-FW. Applying Inter-METH's methodology to build the required software components that comprises the Incident management center ensures that it will be able to interoperate with any IoT environment.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Traffic information center	Incident management center

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
IoT operator	Universitat Politècnica de València	16/02/2016

Product Name:	
INTER-METH	

Stakeholder's Name:	Stakeholder's Acronym:
ISECO S.L.	*ISECO*

Stakeholder's Profile & Role:

Profile: ISECO is a software control development company, that integrate sensors in an own developed control center. The systems deployed by the company have a broad range from malls to health centers. The main product developed by the company is called SAGE and is used to customize the reception of data from heterogeneous sensors.

Role: Integration of hardware and software from different vendors in order to provide an integral service to a broad spectrum of clients. The implantation of its IoT platform is mainly monolithic.

Contact Person:	Email:	Position:
Vicente Collado	vcollado@iseco.es	CEO
Stakeholder's Class: Integrator	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

ISECO has a need of using a methodology for the deployment of each IoT platform. The use of a CASE tool that may help this development and may enhance, reduce cost and improve interoperability in an easy and seamless way.

The CASE tool can be integrated with ISECO SAGE solution, and may allow the deployment and integration of sensors and actuators, so as defining semantic interoperability aspects.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
SAGE	Interoperability with FIWARE, use of SWE from OGC

New Stakeholders	Stakeholder's class
SolyMar Residencias	End User
SANITAS	End User

Reason of involvement:	Identified by:	Registration Date:
IoT Integrator	Universitat Politècnica de València	17/02/2016

Product Name:	
INTER-METH	
Stakeholder's Name:	**Stakeholder's Acronym:**
ETRA Investigación y Desarrollo, S.A.	ETRA I+D

Stakeholder's Profile & Role:

Profile: ETRA Investigación y Desarrollo, S.A. (ETRA I+D) is the hi-tech unit within ETRA Group, one of the leading industrial groups in Spain. Its mission is putting in the market the most advanced solutions and services either directly or through the 10 companies of the Group. The main market areas of ETRA Group are Spain, South-Central America, Asia and the EU.

ETRA Group is owned by ACS, the 4th largest Construction Corporation in the World. With 2200 employees and a turnover of 250M€. ETRA Group is a market leader in the fields of technology, mobility and public services. More than 5.000 vehicles worldwide make use of ETRA's technology in their daily operation. More than 10.000 intersections are managed by ETRA's traffic management systems. More than 1.000.000 users use daily ETRA's smart card based solutions. ETRA is a leader in Mobility and Integrated Services providing technology of the 53% of urban traffic in Spain. 90% of the metros and light rail in Spain incorporate technological solutions from ETRA. ETRA controls more than 450,000 points of light in cities, roads, ports, tunnels and get savings of 30% of energy costs. Manage more than 30,000 parking spaces.

Role: ETRA combines the Smart technology model with the provision of specific, tangible solutions to improve citizen's quality of life as well as the efficiency of city service managers in the use of their resources. ETRA has an intense activity in technological R&D&I projects for Smart Cities.

Contact Person:	Email:	Position:
Patricia Bellver Muñoz	pbellver.etraid@grupoetra.com	Researcher

Stakeholder's Class:	☑ Can appear in public reports	☐ IoT Demand side
Developer, Integrator	☐ Shall remain anonymous	☑ IoT Supply side

Stakeholder's Needs:

ETRA I+D has detected the following needs for the Inter-METH product:

- ETRA understands the usefulness of a CASE methodology conceptually, but requires more concrete information as they think different methodologies might apply for different scenarios and services they operate (control centres, video cameras, engineering tools, water management). They highlight different priorities might be incorporated in the methodology to assign more relevant to some aspects.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Traffic Safety Management Center (Cegesev), Traffic Management Center (CGT), NOC (electric vehicles), Water management products, Security products	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Experience in IoT as system integrator	Universitat Politècnica de València (UPVLC)	18/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *Instituto de Tecnología Informática (ITI)*	Stakeholder's Acronym: *ITI*

Stakeholder's Profile & Role:

Profile: ITI is a Private Technology Centre specialized in R&D&I in ICT, within UPVLC. ITI has extensive

experience in the application of techniques and technologies from the Big Data Ecosystem to solve problems of large scale data analysis, and is a founding member of the Big Data Value Association (BDVA).
Role: ITI has interest in the idea of connecting IoT interoperable frameworks with Big Data, and generate added value to IoT platforms and Smart City services by the management and intelligent analysis of these large scale collected data. ITI collaborates with the IMASCITI project of 'Smart Citizen', that provides personalized smart city services to identified individuals.

Contact Person:	Email:	Position:
Daniel Saez	dsaez@iti.es	CEO
Stakeholder's Class: Big Data Expert team within UPVLC	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

IoT platforms are able to generate large amounts of data (Big Data). The management of these large scale data represents a challenge: typically, data requires real-time massive storage, quick access, and intelligent analysis to take advantage of immense potential benefits and possibilities, as well as data monitoring, real-time analysis and understandable visualization of relevant data.
ITI covers elements of the Big Data Ecosystem as a Technology provider, such as:
· Cloud Computing infrastructures and Real-Time optimization
· Collection of Non-Transactional Social and Heterogeneous Data
· Data Engineering (Improvement of the quality, integrity and consistency of data and database performance)
· Data Analysis for Transactional Data and Graphic Design and Data Visualization
The integration of Big Data techniques, methodology and solutions in Inter-IoT will drastically enhance the potential possibilities, services and utilities that InterIoT can provide. ITI can mutually benefit from this integration, as the use an IoT interoperable platform with integrated Big Data techniques and analysis will help to provide better and more complete IoT solutions to their clients.
The use of a defined methodology for the development of IoT platforms will be useful for ITI, in order to develop its IoT solutions. The use of the CASE tool may help this development and may enhance, reduce cost and improve interoperability in an easy and seamless way.

The CASE tool can be integrated with ITI solutions, and may allow the deployment and integration of sensors and actuators, so as defining semantic interoperability aspects.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Big Data, Hadoop, Intelligent Large Scale Data Analysis, NoSQL, Business Intelligence platforms	IMASCITI IoT platforms Standardisation:

New Stakeholders	Stakeholder's class
IMASCITI	IoT project of Smart Citizen/platform provider

Reason of involvement:	Identified by:	Registration Date:
Interest in connecting IoT interoperable frameworks with Big Data	Universitat Politècnica de València (UPVLC)	29/01/2016

Product Name: INTER-METH	
Stakeholder's Name: *Herzum*	Stakeholder's Acronym: *HZ*

Stakeholder's Profile & Role:

Profile:

Herzum is an international consulting company, leader in Agile and DevOps and one of the largest Atlassian providers in the world. The group was created in March 2000 in Chicago, and has offices in Italy, India, and UK - and is busy expanding its geographical presence in 2016. Herzum is one of the few Atlassian Platinum Experts, a leading reseller of Atlassian products, and is well-known for its comprehensive Atlassian services. Herzum provides state-of-the-art Agile and DevOps services, advanced enterprise-level consulting, as well as custom application development to companies around the world. Herzum handles projects and organizations from the startup phase to the Fortune 100 level.

The company was created by Peter Herzum, based on the success of his book "Business Component Factory", which was named the "bible of software factories", was translated to several languages, and adopted by large organizations and universities around the world.

Herzum's Agile COSM model has helped organizations around the world start with Agile, improve their current agile adoptions, and scale it to the enterprise: : Agile Best Practices, Continuous Integration, Agile DevOps, Agile Management and Portfolio Management, Agile Frameworks (COSM, SAFe, DAD, and more), Agile QA, Software Factories.

Herzum has as well experience and knowledge about:

- methodologies, architectures and tools for software factory
- model driven architecture
- transport and smart city logistics
- business intelligence and interoperability in Healthcare Information Systems
- interoperability in the e-government

Role:

Domain expert knowledge about ecosystems supported by enterprise technologies and platforms

Contact Person: Teresa Gallo	Email: teresa.gallo@herzum.com	Position: Solution Center Manager
Stakeholder's Class: Domain experts	☐ Can appear in public reports ☒ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

The converging technologies for smart environments and integrated ecosystems require much more new IoT services capable of supporting interoperable (multi-domain), adaptivity and scalable (cloud-based) applications. It is very important to arrive at a standard methodology to support this in the industrial design.How suggestion INTER-METH should:

- try to analyze the IoT domain with a business component approach. The Business Component Model is a methodology to model, analyze, design, construct, validate, deploy, customize, and maintain large scale distributed systems, developed by Herzum, P. and O. Sims (Business Component Factory : A Comprehensive Overview of Component-Based Development for the Enterprise - John Wiley & Sons).
  COSM Agile Framework is Herzum Software's widely used approach for enterprise architecture

and agile software manufacturing. COSM analyzes 7-levels of interoperability protocol model:

- Development lifecycle interfaces
- Functional reference model
- Semantics
- Functional interfaces
- Application infrastructure
- Technical infrastructure
- Technical interfaces

These levels include: technology selections, technical infrastructure, integrations points in the application infrastructure, functional reference model and semantic specifications, functional reference models.

Business Component Model consists of five dimensions: Architectural Viewpoints, Component Granularity, Development Process, Distribution Tier, and Functional Categories.

The first dimension (Architectural Viewpoints) consists of four architectural viewpoints, which are:

- the Project Management Architecture (PMA, concerned with organizational decisions, tools, and guidelines),
- the Technical Architecture (TA, defining the execution environment, component and user interface frameworks, and other technical facilities),
- the Application Architecture (AA, describing development patterns, guidelines, or standards),
- the Functional Architecture (FA, identifying the features and functional aspects of a system and their relationships).

The second dimension (Component Granularity) defines three levels of granularity within the user-workspace and enterprise-resource domains:

- Distributed Component,
- Business Component
- Application Component.

The third dimension (Development Process) contains:

- rapid component development for designing, building, and testing an individual business component;
- system architecture and assembly for architecting, assembling, and testing a complete system;
- federation architecture and assembly for architecting, assembling, and testing a federation of systems using system level components.

The fourth dimension (Distribution Tier) separates the anatomy of a component among:

- user tier,
- workspace tier,
- enterprise tier, and
- resource tier.

The user tier presents the component on the screen and communicates with the user. It may be stand-alone, plug in, or not-existent at all. The local business logic is implemented by the workspace tier, which will interact with the enterprise tier. Typical business logic may, for instance, include transaction management utilizing several enterprise-level resources. The latter are implemented by the enterprise tier, providing business rules, validation, and interaction between components. It typically forms the core functionality of business components of a complex, large-scale component based system. The resource tier manages access to shared resources, such as databases, files, or communication infrastructures and shields all higher layers from their technical implementation.

The fifth dimension (Functional Categories) defines four broad functional categories:

- utility business components,
- entity business components,
- process business components and
- auxiliary business components.

– build a scalable and open "IoT Repository" based on a meta-modelling architecture. This Repository should formalize patterns, standards, architectural reference models, protocols, interoperability models, technologies, ontologies, legacy systems, sensor models about IoT
– design and develop a "Computer Aided Software Engineering" (INTER_CASE) IoT Repository based. INTER_CASE should support the software production lifecycle. At the higher level, INTER_CASE should provide graphical editors where, for example, the architecture of the IoT project can be drawn and the correctness of the models is automatically checked. On the lower level INTER_CASE should allow to set basic elements concerning, for example, virtual component IoT, business models, constraints of the context (security, interoperability, ...)or DevOps rules.
– provide tool for Designing Ecosystem Business Models
– examine interoperability solutions for european public administrations. IoT will foster the development of a number of applications that make use of the potentially enormous amount and variety of data generated by such objects to provide new services to citizens, companies, and public administrations. A renewed EU programme for 2016-2020 proposes to continue support for interoperable e-government services, emphasising open data and the re-use of digital solutions (Interoperability solutions for European public administrations -ISA).

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
COSM Agile Framework	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Strong experience of software development methodologies	UNICAL	26/02/2016

Product Name:	
INTER- METH	
Stakeholder's Name:	Stakeholder's Acronym:
PRODEVELOP	*PRO*

Stakeholder's Profile & Role:

Profile Prodevelop is a solution developer and systems integrator with a high expertise in port & maritime solutions and public administration, especially smart cities. Prodevelop has a suite of products aimed at the management of Port Authorities that has been integrated into IoT platforms in Smart Port projects. Prodevelop has also participated in developing solutions for Smart Cities in mobile and geospatial technologies.

Role: PRO is partner of the project, thus responsible for technically contributing to the deliverables and interested in commercializing this product.		
Contact Person: Miguel Montesinos	Email: mmontesinos@prodevelop.es	Position: CTO
Stakeholder's Class: Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: The need for this product is to be able to have a methodology and tools for using it in real projects. Specific needs for this product are the following ones: • To boost project integrations where a solution from Prodevelop must integrate with an existing IoT in a customer, or to offer access to third party IoT platforms. • To design the integration with other IoT platforms in a way that the models can both: ○ Generate code for the integration. ○ Generate design documentation that can be part of the technical and deployment documentation. ○ To generate APIs and API documentation (e.g. in a swagger way). ○ To be able to adapt this design and re-generate the code and documentation. For the code, it would desirable to have incremental code generation. • To have a methodology aligned with standards like AENOR interoperability for Smart Cities. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Prodevelop's PUI architecture	New products & Systems required:	
New Stakeholders	Stakeholder's class	
Reason of involvement: Project partner	Identified by: Prodevelop	Registration Date: 15/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *THALES SERVICES SAS*	Stakeholder's Acronym: *THS*
Stakeholder's Profile & Role: Profile Thales Services (THS) belongs to Thales group, which is a large industry player specialized in critical systems for government and companies, whose activities around the world now generate revenues of	

about 14.2 billion euro, with 65,000 employees in 50 countries. Leading the computing solutions within Thales, Thales Services designs, supplies, maintains and operates global solutions based on critical computing enabling its customers in civil and public sector markets (ground and air transportation, defence, avionics, space, etc.) to manage the critical infrastructures under their responsibility. Within Thales Services, ThereSIS is an applied research laboratory dedicated to developing innovative technologies into six key areas: Cloud Computing, Big Data & Big analytics, Real Time Environment, Vision & New sensors, Security & Networking, Machine learning & Modelling. In the new context of the "Internet of everything", ThereSIS has to respond to many societal and technological challenges, by developing innovative solutions for handling the generalized interconnection of actors, information systems and objects.

Role: Thales Services offering in the area of Platforms for Connected Devices and in the area of Intelligent information processing and service provisioning rely on the following technical pillars: “Urban Mobility” platform, enabling to manage and monitor the mobility of a city; Bio-inspired Simulation platform, where artificial intelligence algorithms handle the goal-based individual and collective activities. Thales Services is a system integrator that has a long tradition and a complex infrastructure for integrating large scale systems for large accounts.

Contact Person:	Email:	Position:
Mihaela Brut	mihaela.brut@thalesgroup.com	PM
Stakeholder’s Class:	☒ Can appear in public reports	☒ IoT Demand side
Technology experts	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder’s Needs:

INTER-METH should provide the methodology associated to the exploitation of the INTER-LAYER and INTER-FW on relevant industrial use-cases.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Documentation and methodologies specific to own products, and methodologies specifics to reusability engineering of components.	Thales portfolio could be enhanced with INTER-METH if it complies the stakeholder’s need mentioned above.

New Stakeholders	Stakeholder’s class

Reason of involvement:	Identified by:	Registration Date:
Interested in the project	Prodevelop	22/02/2016

Product Name: INTER-METH		
Stakeholder's Name: *INFOPORT VALENCIA*		Stakeholder's Acronym: *INFOPORT*
Stakeholder's Profile & Role: Profile: INFOPORT is technology services company specializing in the logistics sector and port. INFOPORT develops solutions to support their clients business needs and contributes to boost their competitiveness Role: INFOPORT will collaborate in the interoperability and integration of IoT platforms.		
Contact Person: Miguel Angel Portugues	Email: maportugues@infoport.es	Position: Engineering and Systems Manager
Stakeholder's Class: Software engineers Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: Agile and reusable methodology Methodology easy to adapt to any environment Quality control of participants ☒ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Port Community System (ValenciaportPCS) Port Access Control Port Management Information Systems (PMIS) Terminal Operating Systems (TOS)	New products & Systems required:	

New Stakeholders	Stakeholder's class

Reason of involvement: PCS developer Access control provider	Identified by: Valenciaport Foundation	Registration Date: 03/02/2016

Product Name: INTER-METH		
Stakeholder's Name: *Amiga Ventures*		Stakeholder's Acronym: *Amiga*
Stakeholder's Profile & Role: Profile: Amiga provides services to allow companies to undertake the digital transformation of their business, from strategy and design to maintenance and continuous improvement. Role: Amiga will collaborate in the interoperability and integration of IoT platforms.		
Contact Person: Jorge Ruano	Email: jorge.ruano@amigaventures.com	Position: CEO & Founder
Stakeholder's Class: Technology experts	☒Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: • Business requirements. • Solution viability. • Change and Risk management. • Project management. • Service management. • Quality control and Quality assurance. • Deployment and Life-cycle management. ☒ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved:	New products & Systems required:	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Technology experts	Valenciaport Foundation	11/02/2016

Product Name: INTER-METH		
Stakeholder's Name: *Kii*		Stakeholder's Acronym: *Kii*
Stakeholder's Profile & Role: Profile: Kii helps developers and device manufacturers of all sizes meet their high-performance demands with an end-to-end platform optimized for building and running enterprise mobile and IoT initiatives. Role: Kii will collaborate in the interoperability and integration of IoT platforms.		
Contact Person: German Viscuso	Email: German.viscuso@kii.com	Position: Technical Sales
Stakeholder's Class: Technology experts, Systems engineers	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: Intended usage of Kii platform, e.g. number of API requests, push notifications, IoT specific functionalities, storage needs. ☒ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Kii Cloud Platform		New products & Systems required:

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
IoT experts	Valenciaport Foundation	03/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *MULTINATIONAL SOLUTIONS PROVIDER FOR GOVERNMENT AND INSTITUTIONS*	Stakeholder's Acronym: *GIS*

Stakeholder's Profile & Role:		
Profile: The stakeholder is a multinational solution provider for government and institutions. It provides solutions for customs authorities and different ministries for the simplification of trade and the traceability of cargo during transportation. The company is already providing solutions for trade simplification and traceability of cargo during transportation. To this end it has agreements with providers for tracking trucks on route like active seals with electronic lockers (seals) and GPS. Role: This multinational will collaborate in the definition of interoperability elements and it will define use cases on the logistics and transport pilot linked with the traceability of goods and trucks for governments and institutions.		
Contact Person: -	Email: -	Position: -
Stakeholder's Class: Systems engineers. Solution provider	☐ Can appear in public reports ☒ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The stakeholders shows interest on using the methodology being developed in Inter-IoT as the use of methodologies are an important element that simplifies the introduction of these solutions, reduces implementation risks and helps to convince end users to acquire the solution. In the case of the participation in a public tender launched by a government or institution a methodology is a key element for the assessment of the offers. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Tracking solution for trucks and goods Cross border controls	New products & Systems required: Interoperable IoT framework able to track, monitor and actuate through devices (i.e. e-seals) deployed on trucks.	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Solution providers	Valenciaport Foundation	03/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *Orbita Ingeniería S.L.*	Stakeholder's Acronym: *ORBITA*
Stakeholder's Profile & Role:	

Profile: ORBITA is more than an engineering firm, it's a solution turnkey provider in high end technology solution for the port community. They main business come from cars factories, and all that latest technology is used now for ports, food and water industries. In ports they have developed and successfully runs Automated gate control systems, Container Inspection systems (load detection) Control and monitoring of Port and Terminal processes (BlackBox), Control and Monitoring of airport baggage carousels, SCADA systems, etc

Role: ORBITA represents the integrator of the process. The client ask Orbita how to improve the process and Orbita give them the solution, in this case with the IoT technology. But they have to implement the solution no only present it, so the work with the several parts to get the final integration of their design.

Contact Person:	Email:	Position:
Francisco Grau	fgrau@orbitaports.com	Business Manager - Ports and Terminals

Stakeholder's Class:	☐ Can appear in public reports	☐ IoT Demand side
Software engineers	☒ Shall remain anonymous	☒ IoT Supply side
Technology experts		

Stakeholder's Needs:

- The workers should be trained to follow this processes. A certification in IoT should be needed. This has two advantages: the companies that are not "professionals" are not allow to work with the client, and the workers have the necessary training in this new IoT field. This would allow a competitive advantage for companies in large scale IoT projects. In the other hand the client should have the required training in order to stablish good communication with the IoT supply side, otherwise the client would not understand the added value of this solutions.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
GateCCR Container Code Recognition GateLPR Licence Plate Recognition CraneTMS Traffic Managament System Yard CarneOCA Obstacle Collision Avoidance Yard CraneSCA Stack Collision Avoidance	IoT Port Platform

New Stakeholders	Stakeholder's class
World Wide Terminals (DPWorld, MSC, Maersk	End User
Ford, Seat, Volkswagen, Mercedes, etc	End User
Sick, SIEMENS, Banner, ect	IoT devices
CARGOTEC	Provider

Reason of involvement:	Identified by:	Registration Date:
Solution Supplier	Noatum	18/02/2016

Product Name: INTER-METH		
Stakeholder's Name: Vemco Sp. z o.o.		Stakeholder's Acronym: VEMCO
Stakeholder's Profile & Role:		
Vemco is a company with main focus on computer networks and access-control systems. They design, develop and deploy solutions for closed zone (e.g. parking) monitoring that include: tracking vehicles entering and leaving the area, incidents detection, access control. Vemco participated is a member of international consortium working on the following projects within JTI ARTEMIS European innitiative: - DEWI (Dependable Embaded Wireless Infrastructure) – project's scope is application of intelligent wireless embedded systems in 4 areas including smart buildings. - ACCUS (Adaptive Cooperative Control of Urban Subsystems) – project's scope is effective creation of systems composed of systems (SoS) that enables real-time management and optimization by urban systems integration. Vemco's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms, therefore their input in requirements specification for mentioned products can be valuable.		
Contact Person: Rafał Tkaczyk	Email: r.tkaczyk@vemco.pl	Position: IT Specialist
Stakeholder's Class: Subject-matter experts	☐ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs:		
Stakeholder is interested in results of the Inter-IoT project's products and willing to try to adopt them in their work. The following problems and possible areas of interests for research have been indicated by the stakeholder: - Lack of advanced semantics – communication with devices is based on many vendor-specific protocols - In case of integrating many platform (set of devices) each of them is managed separately due to dedicated APIs - Various variants of business rules engines. The problem is to analyze large amounts of data generated continuously and detection a number of conditions (in two variants, simple and complex). Very important is the quick reaction in real time system (system of systems). - Security, it is still open issue to manage an authorization, authentication and access rights		

assignment protocols in an efficient way. It is very important that data and services should be protected.

- Various communication protocols of devices (e.g. sensors, readers, area controllers, etc.). The problem is to design a unification protocols.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
	-

New Stakeholders	Stakeholder's class
-	-

Reason of involvement:	Identified by:	Registration Date:
Vemco's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms.	Systems Research Institute, Polish Academy of Sciences	18/02/2016

Product Name: INTER-METH	
Stakeholder's Name: BetterSolutions SA	Stakeholder's Acronym: BS
Stakeholder's Profile & Role: BetterSolutions's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms, therefore their input in requirements specification for mentioned products can be valuable.	

Contact Person:	Email:	Position:
Mateusz Bonecki	mateusz.bonecki@bettersolutions.pl	R&D Director
Stakeholder's Class: Subject-matter experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

Stakeholder is interested in results of the Inter-IoT project's products and willing to try to adopt them in

their work.

The following problems and possible areas of interests for research have been indicated by the stakeholder:

Context: BetterSolutions demands IoT technologies to streamline dairy supply chain logistics and account for reliable and safe food processing. In milk transportation and cold-chain management the "first in, first out" rule applies. MuuMap system (see below) is deployed in 20+ dairy processing plants in Poland and is used as a core IT system to support milk collection process.

10. sensors heterogeneity – highly specialized sensors and measuring devices, provided by numerous competing suppliers using different communication standards and data models, result in high expenditures on integration and interfacing of each device type; example: different devices to measure/detect milk parameters: somatic cells, antibiotics contamination, fat and protein content);
11. WSAN support – IoT platform should enable easy data exchange with IoT gateways installed in vehicles; Raspberry Pi-based embedded systems acting as gateways for WSAN nodes (sensors to monitor milk parameters and vehicle/drive/route parameters).
12. data ownership – sensors as data sources are owned by different third parties; IoT platform should support data ownership management, data-flow monitoring, access management;
13. data privacy – in case of personal data processing, IoT platform should meet standards required by Inspector General for Personal Data Protection (Poland);
14. data security – BS stores and processes sensitive (from the point of view of our customers in dairy industry) data; for example, quantity of resources available for pick-up per supplier.

 Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
MuuMap – BetterSolutions product for dairy supply chain management (http://muumap.pl/en).	TBD

New Stakeholders	Stakeholder's class
N/A	N/A

Reason of involvement:	Identified by:	Registration Date:
BetterSolutions's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms.	Systems Research Institute, Polish Academy of Sciences	18/02/2016

Product Name: INTER-METH		
Stakeholder's Name: Orange Polska S.A.		Stakeholder's Acronym: OPL
Stakeholder's Profile & Role: ISP & telco services provider for B2B/B2C customers. The biggest telco operator in Poland, part of Orange Group (France Telecom). Most oriented for innovation services and new technologies.		
Contact Person: Tomasz Kowalczyk	Email: Tomasz.Kowalczyk3@orange.com	Position:
Stakeholder's Class: Subject-matter experts	☑ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☑ IoT Supply side
Stakeholder's Needs: General knowledge about possible use cases of IoT Platforms and devices follow by technical solution. ☑ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved:	New products & Systems required:	

New Stakeholders	Stakeholder's class
Orange Polska S.A. -> M2M Marketing UNIT	Kozłowski Piotr, mail: Piotr.Kozlowski2@orange.com

Reason of involvement:	Identified by:	Registration Date:
OPL would be IoT provider for B2B/B2C customers and develop new products in portfolio.	SRIPAS	22/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *Alessandro Bassi Consulting SARL*	Stakeholder's Acronym: *ABC*
Stakeholder's Profile & Role:	

Profile:
Alessandro Bassi Consulting (ABC) was created in 2010 with a specific vision: help his clients to get beyond stereotypes and enable real innovation in different fields using ICT solutions. ABC is a Consulting firm based in the Sophia Antipolis area, France. ABC focus is on three topics: the set of technologies belonging to the Future Internet and Internet of Things domain, with particular regards to Smart Cities application, technologies and mechanisms for high performance data transfers for Cloud Computing and Storage, and analysis of Security aspects of both traditional networks and Constrained environments. In particular, in the FI sector, the competences of ABC were used in defining roadmaps for industry and public-funded research, and managing large EU co-funded research projects. Currently, ABC has an expanding portfolio of clients, comprising technologies companies, end-user retailers, and several international SMEs.
Role:
Understanding the Methodology for integrating different platforms and re-use on current and future business practices

Contact Person:	Email:	Position:
Alessandro Bassi	alessandro@bassiconsulting.eu	CEO
Stakeholder's Class:	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Technology Experts		

Stakeholder's Needs:
IoT solutions are new, they are not very known and there is a lack of guidance on how to convert an existing network of sensors, tags and smart objects into an interoperable IoT ecosystem. Many of these networks claim to be IoT but they do not support basic functionalities that an interoperable IoT ecosystem should have, and they are isolated. On the other hand, every new IoT platform design should have interoperability, reliability, security, privacy and trust in mind if it needs to interact with existing enterprise and operational systems and with other IoT platforms.

INTER-METH should provide the knowledge, guidance, know-how and a stepwise approach to convert sensors, tags and smart objects isolated networks into IoT interoperable platforms at different layers depending on the requirements of a specific scenario: device to device interconnection of IoT infrastructures (using gateway-based solutions or virtualization), networking protocols, middleware, composition methods for application services, semantic interoperability and methods to translate data and semantics (common communication standards, ontology and semantic data processing)

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
SCADA systems sensors, Actuators, RFID	IoT Platforms

New Stakeholders	Stakeholder's class
FINCONS	Provider
VTT	Subject-matter experts
THINGS	Representative of external associations
REPLY	Provider
CETIC	Subject matter expert

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	ABC	11/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *Fincons*	Stakeholder's Acronym: *FIN*

Stakeholder's Profile & Role:

Profile:

The FINCONS GROUP assists customers in IT strategy and process definition, working alongside them to design and develop the technological and organizational tools they need to concentrate on their core business, relying on the FINCONS GROUP as a partner for planning organizational change and adaptation in the field of IT.

The FINCONS GROUP's philosophy has always been to guarantee customers the best services and solutions which will be true building blocks of success for them.

The values driving the FINCONS GROUP toward this goal are shared by every employee in the Group.

KNOW-HOW, PROFESSIONALISM, EXCELLENCE, PASSION, QUALITY AND INNOVATION.

Role:

IT Technology provider

Contact Person: Matteo Villa	Email: matteo.villa@finconsgroup.com	Position: Innovation Manager
Stakeholder's Class: Technology Provider	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

A methodology driving application developers towards "best practice" is of fundamental importance, considering the novelty of IoT-based solutions.

In particular, we expect that a Methodology could help us to:

- best address customers' business needs in terms on providing value propositions on IoT-based solutions
- estimate the effort and complexity of IoT-based solutions, thus helping us in finding best value-for-money for our customers
- optimise the SW development process, by indicating best practices, SW codes examples, in order to most efficiently exploit the potentiality of the IoT
- best address future Application Maintenance phase, understanding the maintenance & support needs associated to the IoT , in terms of effort and costs.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
FINCONS don't have commercially available IoT-based products. Yet the company has a number of assets in a development stage: • "FINCONS Smart Manufacturing Platform": a rich framework of ICT tools for the Manufacturing sector, based on an Intelligent Middleware able to exploi the capabilities of IoT at industrial level. The	We believe that the solutions developed by INTER-IoT would help us to: (i) extend our current solutions; (ii) ensure interoperability of our solution to third-party solutions; (iii) facilitate us in the development of new solutions. On this last bullet, FINCONS is collecting very relevant feedback from its customers and prospects in different market domains, and see several opportunities in the next

platform is currently under development • "FINCONS SmartWaste": our B2B solution for electronic tracking of waste shipments, based on National and International regulations, and integrated with most popular ERP systems (i.e. SAP). Possible integration with IoT would tremendously enhance the capabilities of this solution allowing real-time tracking of waste shipments, thus providing significant added value to our customers.	future (cfr banking sector, insurances sector, energy saving sector, media & broadcasting sector).

New Stakeholders	Stakeholder's class
New stakeholders suggested or required for the design and implementation of the product to comply with the needs identified 1) Holonix – a spin-off of the "Politecnico di Milano", offering IoT-based solutions 2) at commercial level: Telecom Italia, SwissCom, SAP	

Reason of involvement:	Identified by:	Registration Date:
	ABC	12/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *NEWAYS*	Stakeholder's Acronym: *NEWAYS*

Stakeholder's Profile & Role:

Profile:

Neways Electronics International N.V. (Neways) is an international company active in the EMS (Electronic Manufacturing Services) market. Neways offers its clients custom-made solutions for the complete product life cycle (from product development to after-sales service) of both electronic components and complete (box-built) electronic control systems. Neways operates in a niche of the EMS market and focuses primarily on small to medium-sized specialist series, in which quality, flexibility and time-to-market play a crucial role. Neways products are used in sectors such as the semi-conductor, medical, automotive, telecom and defence industries. Neways has operating companies in the Netherlands, Germany, the Czech Republic, Slovakia and China, with a total of 2,530 employees at year-end 2015. Neways recorded net turnover of € 374 million in 2015. Neways shares are listed on the Euronext Amsterdam stock exchange (symbol: NEWAY).

Role:

Understands the Methodology for integrating different platforms and re-use on current and future application domains.

Contact Person:	Email:	Position:
Ron Schram	ron.schram@newayselectronics.com	Senior System Architect
Stakeholder's Class:	☐Can appear in public reports	☒ IoT Demand side

Subject-matter Experts, customers	☐ Shall remain anonymous	☐ IoT Supply side
Stakeholder's Needs: The understanding of the methodology for a more rapid and robust integration of IoT platforms so making them interoperable, reducing development time, minimizing errors and enhancing the quality of the integrated platform. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Industrial PLCs, Sensors, Actuators, RFID, Localization and tracking	New products & Systems required: IoT Platforms (FI-WARE/VLCi, Open-IoT, Sofia2, Azure IoT, Google IoT), smart objects LoRa, DUST, Body Area Network (BAN) Smart Agriculture, Computervision	

New Stakeholders	Stakeholder's class

Reason of involvement: Partner of the project	Identified by: NEWAYS	Registration Date: 12/02/2016

Product Name: INTER-METH	
Stakeholder's Name: SenSysCal Srl	Stakeholder's Acronym: SSC

Stakeholder's Profile & Role:

Profile: SenSysCal S.R.L. is a spin-off of the University of Calabria founded on April 2010. Its innovative services and products are derived from academic research results in the Wireless Sensor Networks and IoT domains. Its main activities are related to smart-health, building energy management and WSN/IoT Consulting.

Its innovative Health Care products include physical rehabilitation supported by wearable motion sensors, continuous and non invasive cardio respiratory monitoring to support early detection of cardio-vascular and neurodegenerative diseases, monitoring of training improvements of professional athletes.

In the building monitoring domain, SSC uses smart Wireless Sensor and Actuator Networks (WSAN) to localize and remove these wastes, guaranteeing significant energy savings. This is obtained through a continuous energy consumption monitoring and real-time solution actuation. This system is coordinated by an advanced management software which interfaces the WSAN to a remote server. It is possible to access the system through a user friendly web interface which allows managing the WSAN even from a smartphone.

SSC also offers a wide range of consulting services such as analysis and evaluation of existing WSNs systems, application context analysis, and design and realization of new systems.

Role: SSC mainly operates in the smart-Health domain enabled by wearable and smart objects. Its efforts are also devoted to build reusable, open software frameworks to support the development of heterogeneous m-Health hardware and software systems.		
Contact Person: Raffaele Gravina	Email: raffaele.gravina@gmail.com	Position: CTO smart-health area
Stakeholder's Class: Software engineers	☑ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☑ IoT Supply side
Stakeholder's Needs: One of the main problems limiting the development of interoperable IoT platforms is the lack of a specific methodology that addresses the interoperability requirement during the design phase. As a result, current solutions tend to vertically focus on specific aspects and the potentially global IoT ecosystem is today composed by many isolated network isles. With this respect, it is expected that INTER-METH will provide formal guidelines, systematic methods and a well-defined approach to support IoT interoperability at any level of abstraction, from device-to-device communication to end-user service composition. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Wearable sensors, mobile devices, smart objects, beacons, embedded operating systems, cloud platforms, Platform-based design methodology, model-driven analysis tools	New products & Systems required: IoT Platforms	

New Stakeholders	Stakeholder's class

Reason of involvement: Provider and strong skills on smart-health services	Identified by: UNICAL	Registration Date: 11/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *THINGS*	Stakeholder's Acronym: *THINGS*
Stakeholder's Profile & Role: Profile: THINGS.is a design and innovation agency for the Internet of Things. This agency is a a multi-disciplinary	

team of researchers, strategists, designers, technologists and makers. We strongly support open innovation and foster the process of connecting the world. They analyse consumer insights, user experiences and business models, inspiring their clients with innovative design trends. Then, they identify strategic scenarios for successful products & services integrating digital and physical worlds. Using a user-centered approach to design seamless interactions and interfaces and to outline increasingly broader experiential ecosystems, they provide open architectures following the latest advancements in technology to always deliver great front-end and back-end solutions.
Role:
THINGS.is can bring the Methodological approach to their customers.

Contact Person:	Email:	Position:
Pier Paolo Bardoni	pier.bardoni@things.is	CEO
Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Technology Expert	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:
One of the main adoption barriers to IoT devices, for both institutions and final users, is the process to establish a communication between the physical device and the remote service it works with. This often results in great costs of installation on the side of institutions and companies, or on great adoption barriers on final users that would instead desire a plug-n-play kind of device. The ability to deploy on the market devices able to automatically create a connection and establish a communication between the frameworks that now manage all kind of service, would greatly help. So to say, to help the deployment of IoT systems and services these products should be able to quickly connect with unknown platforms, using standardised open APIs, keeping their frameworks below the line of visibility so that users can deploy connected devices without having to care about interoperability problems.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
DgLux - http://www.dglogik.com/dglux The Things Network - http://thethingsnetwork.org/ Brillo OS SCLAK - http://www.sclak.com/	Design & Prototyping process tool (task and economics) Machine Learning easy to embed IoT solution for retailers behaviour analysis

New Stakeholders	Stakeholder's class
Nest	Designers and Developers
Samsung	Technology Providers
General Electric	Technology Providers
PTC	Technology Providers
Privacy authorities	Public Authority
Officine Arduino	Technology Providers

Reason of involvement:	Identified by:	Registration Date:
Design and innovation IoT	ABC	12/02/2016

Product Name: *INTER-METH*		
Stakeholder's Name: *Intel Technology Poland Sp. z o.o.*		Stakeholder's Acronym: *Intel*
Stakeholder's Profile & Role: Intel Technology Poland Sp. z o.o. is a Polish branch of a multinational corporation that is one of the world's largest semiconductor chip producer. One of Intel 's focus areas is Internet of Things, where it's products help connect things to the cloud, integrate with existing infrastructure, and securely manage data. Intel offers the IoT Platform that is an end-to-end reference model and family of products from Intel, that works with third party solutions to provide a foundation of seamlessly connecting devices, delivering data to the cloud and delivering value through analytics.		
Contact Person: *Arkadiusz Hruszowiec*	Email: *Arkadiusz.Hruszowiec@intel.com*	Position: *Business Development Manager*
Stakeholder's Class: *Subject-matter expert*	☐ Can appear in public reports (YES)	☐ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: • *Consider Intel based IOT solutions in the project* • *Recognize the importance of security, connectivity and manageability of the IOT systems* ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Intel based gateways from 3rd parties. SOCs, CPUs, Comms. Modules.	New products & Systems required:	

New Stakeholders	Stakeholder's class

Reason of involvement: *Representative of a company that has significant impact on IoT market.*	Identified by: *SRIPAS*	Registration Date: 29/02/2016

Product Name: INTER-METH		
Stakeholder's Name: *XLAB - TeleTransfusion*		Stakeholder's Acronym: *XLAB d.o.o*
Stakeholder's Profile & Role: Profile: Service for remote pre-transfusion evaluation of blood samples by specialists. Role: TeleTransfusion can make use of the interconnection mechanisms to integrate different and incompatible platforms at middleware and application level.		
Contact Person: Tina Vavpotič	Email: tina.vavpotic@xlab.si	Position: Product Director
Stakeholder's Class: Designers and developers	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: Need to communicate with different health systems. Need for reliable communication platform. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: MongoDB, Proprietary systems	New products & Systems required: INTER-FW, INTER-LAYER, INTER-Health	
New Stakeholders	Stakeholder's class	
Reason of involvement: Potential users	Identified by: XLAB	Registration Date: 08/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *UNIVERSITAT POLITECNICA DE VALENCIA*	Stakeholder's Acronym: *UPVLC*
Stakeholder's Profile & Role: Profile: UPVLC includes 15 centers: ten schools, three faculties, two higher polytechnic schools and five associated institutions. The Distributed Real Time Systems Lab (DRTSL) belongs to the Communications Department (CD) and has large expertise in: (i) Video streaming and encoding, (ii) Command and control systems, and (iii) Sensors deployment and simulation. Regarding sensors, the DRTSL includes expertise in random deployment of unattended sensors, routing protocol design, real time applications development for reliable data acquisition, RFID applications and integration with OGC standards. Role: UPVLC will contribute to the methodology in order to link it with the Inter-FW results, and design the patterns to extend it to other application domains out of the two use cases considered in the project.	

Contact Person:	Email:	Position:
Carlos Palau	cpalau@dcom.upv.es	Professor
Stakeholder's Class:	☑ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☑ IoT Supply side
Developer, Integrator		

Stakeholder's Needs:

In order to avoid the creation of IoT sylos, developers should follow some methodology while designing and integrating IoT platforms considering interoperability, reliability, security, privacy and trust.

INTER-METH should provide the knowledge, guidance, know-how and a stepwise approach to convert sensors, tags and smart objects from isolated networks into IoT interoperable platforms at different layers depending on the requirements of a specific scenario. The CASE-driven methodology provided by INTER-METH will facilitate the development and integration, and increase the productivity.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Sensor Observation Systems (OGC SOS) SIMACOP (command & control) Industrial PLCs, Sensors,	IoT Platforms (FI-WARE/VLCi, Open-IoT, Sofia2, Azure IoT, Google IoT), smart objects SCADA Systems in health environments

New Stakeholders	Stakeholder's class
INDRA	Usability experts
SERTIC (Valencia city council)	Customer
Telefonica	Domain experts
UPVLC's AIOTI	Representatives of external associations
ISECO	Customer
ITI (UPVLC)	Domain experts
EC	Strategic view
ETRA	Technology experts
CSE	Systems engineers
VMZ	Technology experts
ICT-30 projects	Representatives of external associations

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	Universitat Politecnica de Valencia	02/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *UNIVERSITY OF CALABRIA*	Stakeholder's Acronym: *UNICAL*

Stakeholder's Profile & Role:

Profile: UNICAL is a research oriented Institution. In particular, it has different research groups focused on IoT technologies from both technology transfer and academic viewpoints. UNICAL is therefore developing both research methods and prototypes in the IoT area specifically focused on devices, networking, middleware and application services.

Role: UNICAL can provide the definition and use of software development methodologies based on agent abstractions, addressing methodological issues related to this specific product and also the interaction with the designed INTERFW to fully automate IoT platform integration. UNICAL can also support the design of a CASE (Computer Aided Software Engineering) tool for the automated application of the designed Methodology.

Contact Person:	Email:	Position:
Giancarlo Fortino	g.fortino@unical.it	Professor of Computer Engineering

Stakeholder's Class: Other (Research and Development Expert) *Sample list provided below*	☑ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☑ IoT Supply side

Stakeholder's Needs:

The main need in this context is the creation of a full-fledged methodology for the integration of IoT platforms so making them interoperable. Such methodology can be based on the definition of a collection of design patterns with the aim of driving the integration designer to provide the most effective solutions. For a more rapid and robust integration of IoT platforms, minimizing human errors, reducing development time, and enhancing the quality of the integrated platform are fundamental needs.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
• BodyCloud, Air-Ground protocol, Smartphone Gateway • third party platforms (e. g. eCARE)	• third party platforms (e. g. smart home platforms, sensor networks, ehealth platforms) • Programmable devices and sensors

New Stakeholders	Stakeholder's class
ICAR-CNR	Subject-matter experts
Sensyscal	Software engineers
University of Bologna	Subject-matter experts

Herzum	Designers and developers	
Reason of involvement: Partner of the project Provider of IoT platforms (e.g. BodyCloud)	Identified by: UNICAL	Registration Date: 08/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *Dipartimento di Informatica , Scienza e Ingegneria - Università di Bologna*	Stakeholder's Acronym: *DISI-UNIBO*

Stakeholder's Profile & Role:

Profile: Dipartimento di Informatica - Scienza e Ingegneria aims to promote and develop researches in the field of science, engineering and information technology. The department joins the long tradition in conducting basic and foundational as well as technology driven and experimental research of both computer scientists and computer engineers.

Among many labs composing the Department, APICe is a research laboratory that hosts, either physically or virtually, scholars, research groups, and interdisciplinary project teams, including PhD students, fellows, and researchers, mostly (but not exclusively) belonging to the (DISI). The main research subjects investigated in APICe are: multi-agent systems & agent-oriented computing; coordination models & infrastructures; programming languages, models and paradigms; software & process engineering; bioinformatics & computational systems biology; ICT & law; intelligent systems; complex computational systems; simulation.

Role: DISI has several skills in the software engineering field and in the context of smart home design.

Contact Person: Ambra Molesini	Email: ambra.molesini@unibo.it	Position: Researcher fellow
Stakeholder's Class: Domain expert	☑ Can appear in public reports ☐ Shall remain anonymous	☑ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

To effectively design and develop IoT systems a methodology should provide support for:

1. deeply analysing the domain where the IoT system will be "deployed". In particular the methodology should support the analysis of the so called "legacy-systems" and take care of the all technological, organisational, ethical and legal constraints. Also the sources of data managed by the application have to be analysed in order to individuate the constraints about the security and privacy.

2. analysising the application requirements and the constraints coming from the domain
3. designing the system architecture
4. simulating the expected behaviours
5. designing the final system
6. developing systems
7. testing the system

The INTER-CASE tool should support the developers all over the methodology process. A nice feature of INTER-CASE could be the support for partial automatic code generation.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
- SODA (Societies in Open and Distributed Agent spaces) is a methodology for the analysis and design of complex agent-based systems (http://apice.unibo.it/xwiki/bin/view/SODA/) - Home Manager is a prototype application for the control of an intelligent home, designed as a multi-agent system via the SODA methodology, and implemented on top of theTuCSoN coordination infrastructure (http://apice.unibo.it/xwiki/bin/view/Products/HomeManager)	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Strong research background on methodologies	UNICAL	18/02/2016

Product Name:	
INTER-METH	
Stakeholder's Name:	Stakeholder's Acronym:
Autonomous and Robotic Systems Laboratory @ University of Catania	*ARSLAB@UNICT*

Stakeholder's Profile & Role:

Profile: ARSLAB is an education and research laboratory of the University of Catania. It is part of the Department of Mathematics and Informatics (DMI) and support students and researchers in activities related to agent-based system, multi-agent systems, IoT applications, autonomous ground- and flying-

robots. The lab is equipped with all the tools needed to support the implementation of the cited systems, including mechanical design tools, CNC machines, CPU/MCU-based boards, wireless communication systems, software development environment, etc. The lab has developed tools and metodologies for the design and implementation of the software running on those autonomous systems and these tools are also tough in some courses of the BSc and MSc degree in “Computer Science”.

Role: Possible user of the design and integration methodologies developed in INTER-Meth

Contact Person:	Email:	Position:
Corrado Santoro	santoro@dmi.unict.it	Researcher / Teacher

Stakeholder’s Class:	☑ Can appear in public reports	☐ IoT Demand side
Domain expert	☐ Shall remain anonymous	☑ IoT Supply side

Stakeholder’s Needs:

The lab could be interested in acquiring knowledge relevant to the state-of-the-art in:

1. communication protocols for IoT applications, with a specific focus on the aspects regarding the minimization of energy consumption while keeping a high throughput and minimal overhead
2. methodologies for the design of IoT applications, with a particular focus on how to model emerging behaviour
3. tools and frameworks for the implementation of IoT applications, with a specific interest in languages or platform that can help the developer, easing the implementation of the behaviour and interaction of the various entities involved in an IoT application.

☐ Interested in participate in INTER-IoT open calls

15. Existing Products & Systems involved:	New products & Systems required:
UAV flocks for monitoring wide terrain areas	• UAV flocks for the deployment of sensor networks over a wide area • Techniques/protocols for the interaction of UAV flocks and sensor networks

New Stakeholders	Stakeholder’s class

Reason of involvement:	Identified by:	Registration Date:
Possible user of the design and integration methodologies developed in inter-meth	UNICAL	18/02/2016

Product Name: INTER-METH	
Stakeholder's Name: Dipartimento di Ingegneria Chimica, Gestionale, Informatica, Meccanica – Università degli Studi di Palermo	Stakeholder's Acronym: DICGIM-UNIPA

Stakeholder's Profile & Role:

Profile: The Dipartimento of Ingegneria Chimica, Gestionale, Informatica, Meccanica (DICGIM) was born in 2011 as the result of the fusion of four different departments: Chemical Engineering, Production Engineering, Computer Engineering and Mechanical Design. The DICGIM carries out its activities within the three missions of the University: research, advanced training and third mission.

The research topics addressed in the DICGIM are consistent with the model "Global Engineer" as defined in the United States by the "National Academy of Engineering Education" and the "National Science Foundation", which integrates in the so called "T" model, a variety of "vertical" technical and scientific expertise with a set of horizontal competences most typically management- and entrepreneurial-oriented.

The DICGIM hosts several Labs among which the RoboticsLab where some of the research lines addressed are about software engineering for developing complex systems, multi-agent systems, cognitive robotics, situational method engineering and MDE techniques for software development.

Role: DICGIM has several skills in software engineering and complex system design.

Contact Person:	Email:	Position:
Valeria Seidita	*valeria.seidita@unipa.it*	*assistant professor*
Stakeholder's Class: *Domain Expert , software engineers*	✓ Can appear in public reports ☐ Shall remain anonymous	✓IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

Design methodologies supporting development and implementation of complex systems, like an IoT system may be, requires several techniques and methods that have to take into account the following factors:

- Identification and representation of the elements in the environment affecting or contributing to the system functionalities
- Representation of the rules or norm in the domain
- Representation of organizational structures and interactions among different part of the system
- Probable heterogeneity of implementation platforms for different parts of the systems

Moreover, since a complex system may be considered as composed of a set of other systems it my beneficial, under a design methodology points of view, having means for constructing interoperable and meshing design methodologies where each methodology (or part) is the most efficient one for developing specific part of a complex system.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
16. PASSI (Process for Agent Societies Specification and Implementation) is a step-by-step requirement-to-code methodology for designing and developing multi-agent societies integrating design models and concepts from both OO software engineering and artificial intelligence approaches using the UML notation. 17. ASPECS is a design methodology for engineering Complex Systems using Multiagent Systems and Holonic Multiagent Systems, it is based on a on a holonic organizational metamodel and provides multiple levels of abstractions and openness.	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Solid expertise and background in design methodologies and in developing design methodologies.	UNICAL	23/02/2016

Product Name: INTER-METH	
Stakeholder's Name: Systems Research Institute, Polish Academy of Sciences	Stakeholder's Acronym: SRIPAS

Stakeholder's Profile & Role:

Profile: The Systems Research Institute, Polish Academy of Sciences was established in 1976. Since then, the scientists employed at the Institute have been active primarily in the domain of methodological foundations for systems analysis. The Systems Research Institute is member of the consortium for Inter-IoT and has an expertise in the key domains of the project, to which it shall contribute. It concerns: (i) software agents and agent systems; (ii) ontologies and semantic data processing; (iii) agent-semantic systems; (iv) software agents in sensor networks; (v) software

design and implementation; (vi) grid / cloud computing; (vii) cyber-physical systems.

Role: Within INTER-METH SRIPAS has interest in the following tasks:

1. Definition of Design Patterns for Interoperable IoT Systems
2. Definition of a Full-fledged Methodology for IoT Platforms Integration
3. Implementation of a CASE tool for supporting the Automated Application of the Methodology

SRIPAS will contribute to the design patterns and methodology related to meta-level aspects (i.e. use of semantics and semantic interoperability in the reference meta-data model and all aspects of the interoperable framework).

Contact Person:	Email:	Position:
Maria Ganzha	Maria.Ganzha@ibspan.waw.pl	Project leader
Stakeholder's Class:	☐ Can appear in public reports	☐ IoT Demand side
System designers and developers	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

1. The design patterns should be identified and documented during all product development.
2. INTER-METH should result in step-by-step instructions on how to integrate existing IoT platforms using tools and methods developed in INTER-IoT. SRIPAS is specifically interested in developing methods and tools to help to analyze / design and map semantics in different systems in order to achieve semantic interoperability.
3. Defined methodology should provide systematic engineering approach.
4. Defined methodology should consider integration process on device, network, middleware, application, data and semantics layers.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Identification of existing products and adjancent systems of the product	Identification of additional products and systems required for the introduction of the product

New Stakeholders	Stakeholder's class
New stakeholders suggested or required for the design and implementation of the product to comply with the needs identified	Class of the new stakeholders identified (sample list provided below

Reason of involvement:	Identified by:	Registration Date:
Partner in the Inter-IoT consortium.	SRIPAS	15.02.2016

Product Name: INTER-METH		
Stakeholder's Name: *TURIN UNIVERSITY*		Stakeholder's Acronym: *UNITO*
Stakeholder's Profile & Role: Profile: The Department of Culture, Politics and Society of University of Turin, offers several degree programs, including: public communication and policy, communication, ICT and media, government sciences, political and social services, sociology. They offer to their students a multidisciplinary education in the historical, legal, sociological, economical fields, favoring the acquisition of critical tools indispensable to understand the political world and for interact with current social reality in constant evolution, able to operate in communications business, public bodies (health, cultural heritage, education, government), organization of a network of new IT services to make the city "smart". The Department also provides basis for sociological and economical knowledge helpful to capture and develop processes in the relationship between communication applications, development of new technologies and social changes. Role: The deep analysis of programs and projects (completed or in progress) designed to meet certain objectives of sector policies, is a potential resource for studies and interventions by teachers, researchers and students themselves.		
Contact Person: Mariella Berra	Email: mariella.berra@unito.it	Position: Associate professor
Stakeholder's Class: Subject matter expert	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: Identify organizational models and technologies for interoperability among ASL's facilities and services. ☒ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: N/A	New products & Systems required: N/A	

New Stakeholders	Stakeholder's class
Politecnico di Torino	Technology experts

Reason of involvement:	Identified by:	Registration Date:
Empirical theoretical skills to be offered to ASL within the project research	ASL TO5	15/02/2016

Product Name: INTER-METH		
Stakeholder's Name: *DG CONNECT – EUROPEAN COMMISSION*		Stakeholder's Acronym: *DG CONNECT*
Stakeholder's Profile & Role: Profile: DG Connect contributes to the EU goals in the Digital Age: human advancement, fairness, jobs and growth. DG Connect seeks to foster innovation, creativity, culture, excellent research and competitive markets as well as a trustable, accessible and positive digital experience for every European citizen. Role: DG Connect is the sponsor of Inter-IoT as one of the 7 projects approved in the ICT30 call.		
Contact Person: DG Connect	Email:	Position:
Stakeholder's Class: Political beneficiary	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

DG Connect has established the following needs:

- Develop open platforms to foster a vibrant IoT ecosystem. Opening up to developer communities and creative practices.
- Break the silos between the application areas (e.g. health, home) and technologies such as IoT, CPS, Cloud, Big Data.
- Prepare the ground for Large-scale Pilots.
- Not to forget about trust, security, ethics, etc. (IoT preparing the hyper-connected society)

It is needed a high impact of the action with:

- A visible and strategic programme
- Coordination and synergies across projects
- Availability and maturing of sustainable IoT platforms based on real ecosystems and developers
- Sustainability beyond the project life time
- Make progress and not reinvent the wheel

The European Commission wants to achieve a leadership in digital platforms for industry. For this, it is needed an availability of interoperable open platforms for any business to support its digital transformation.

INTER-FW should be a multisided industry platform, understood as a foundation technology or service that enables a broader, interdependent ecosystem of businesses and requires complementary innovations to be useful, some levels of openness are necessary (i.e. APIs or SDKs) and it is necessary to go through standardization.

INTER-METH should provide the knowledge, guidance, know-how and a stepwise approach to convert smart objects from isolated networks into IoT interoperable platforms at different layers depending on the requirements of a specific scenario: device to device interconnection of IoT infrastructures (using gateway-based solutions or virtualization), networking protocols, middleware, composition methods for application services, semantic interoperability and methods to translate data and semantics (common communication standards, ontology and semantic data processing). The CASE-driven methodology provided by INTER-METH will facilitate the development and integration, and increase the productivity. The use of Inter-METH

will facilitate the creation of Iot solutions based on Inter-FW and Inter-Layer, and an IoT ecosystem around the Inter-IoT project, as it will allow a rapid implementation and deployment of applications based on or compatible with Inter-IoT framework.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
IoT initiatives/platforms (i.e. FI-WARE, IOTA, IOTLab, OpenIoT, BUTLER	N/A

New Stakeholders	Stakeholder's class
AIOTI	Special Interest Group
IERC	Special Interest Group
SimbIoTe	ICT30 RIA (Research Innovation Action) project
TagItSmart	ICT30 RIA (Research Innovation Action) project
bIoTope	ICT30 RIA (Research Innovation Action) project
VICINITY	ICT30 RIA (Research Innovation Action) project
AGILE	ICT30 RIA (Research Innovation Action) project
BIG-Iot	ICT30 RIA (Research Innovation Action) project
BeIOT	ICT30 CSA (Coordination & Support Action) project
UNIFY-IOT	ICT30 CSA (Coordination & Support Action) project

Reason of involvement:	Identified by:	Registration Date:
Political beneficiary	Valenciaport Foundation Needs identified from ICT30 Kick off presentation	29/01/2016

Product Name:

INTER-METH

Stakeholder's Name:	Stakeholder's Acronym:
AYUNTAMIENTO DE A CORUÑA (A CORUÑA CITY COUNCIL)	*AYAC*

Stakeholder's Profile & Role:

Profile A Coruna city council is the public body responsible for managing the city of A Coruna, a city and municipality of Galicia, Spain. It is the second-largest city in the autonomous community and seventeenth overall in the country. A Coruna is a mid-sized city with 245.000 inhabitants. A Coruna is one of the European pioneers in Smart Cities, being one of the 6 finalists in the World Smart City Awards 2013, and also one of the 6 finalists in the Smart City Expo World Congress de Barcelona 2014.

Role: AYAC is interested in the results of the project and specifically in INTER-METH product for third party integrations.

Contact Person:	Email:	Position:

Rubén Cid	r.cid@coruna.es	Innovation Director
Stakeholder's Class: End user	☐ Can appear in public reports ☒ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

AYAC needs fall mainly in the field of interoperability. It is considered necessary to have interoperability methods for interconnecting its own IoT platform with external IoT platforms from agents and organizations working in the city (Port, utilities, etc.). There are a set of specific needs from AYAC point of view:

- To offer methodology and a set of tools simple to use for fostering the integration between Coruña Smart City platform and third party developers.
- To have a methodology and a set of tools simple to use to be offered to the city council IT providers in order to integrate IoT information from other stakeholders.
- To have a methodology following AENOR specifications (Comité Técnico de Normalización de AENOR AEN/CTN 178 "Ciudades Inteligentes"), that is, approved AENOR 178XXX standards.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
SOFIA2 (Smart City IoT platform) AENOR 178XXX set of standards	

New Stakeholders	Stakeholder's class
SOFIA2	IoT platform provider

Reason of involvement:	Identified by:	Registration Date:
Smart City leader	Prodevelop	15/02/2016

Product Name:

INTER-METH

Stakeholder's Name:	Stakeholder's Acronym:
AUTORIDAD PORTUARIA DE VIGO	*APVIG*

Stakeholder's Profile & Role:

Profile The Port Authority of Vigo maneges one of the major logistic and business complexes in Europe. Vigo is an economic significant Port, also called a port of general interest, with an essentially export nature and handling high value merchandises. Futhermore, the Port of Vigo accounts for about 40% of exports in Galicia. Port Authority of Vigo is deploying a Smart Port platform with a related IoT platform, integrating sensors deployed in the port area from lighting, water/electricity metering, AIS, weighing scales, access control, video, etc.

Role: APVIG is interested in the results of the project and in INTER-METH product..		
Contact Person: David Silveira	Email: davidsilveira@apvigo.es	Position: ICT Director
Stakeholder's Class: End user	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The need for this product is to be able to offer a methodology guide and tools to third party agents from the Port Community so that it can be used in their own systems. They think that the main interest would be based at the application & service layer. APVIG is not directly interested in the using the product for themselves, neither from the IoT provider point of view. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Ágata (Smart Port platform) Posidonia PCS (Port community System)	New products & Systems required:	

New Stakeholders	Stakeholder's class
Ágata	IoT platform provider

Reason of involvement: Port Authority with an existing IoT platform	Identified by: Prodevelop	Registration Date: 15/02/2016

Product Name: INTER-METH	
Stakeholder's Name: *AZIENZA SANITARIA LOCALE TORINO5*	Stakeholder's Acronym: *ASL TO5*
Stakeholder's Profile & Role: Profile: ASL TO5 is a public body that works in an area of 794.670 square kilometers. In particular, the Hygiene Nutrition Unit of the Complex Unit of Food and Nutrition Hygiene works in preventive field: promoting an appropriate healthy state and practice of physical activity to prevent the development of chronic degenerative diseases; nutritional counseling and educational interventions on the population. Within the project it will work to demonstrate the importance of IoT in health care, building a network of connections between users and medical staff to ensure increased effectiveness and health benefits,	

using same resources, with high impact on users.

Role: ASL TO5 will contribute to the data integration from different devices on different platforms, to define a common systematic methodology applicable on several levels, integrated that to all technical implementation of the project, allowing the creation of new standards IoT with lower chance of mistake.

Contact Person:	Email:	Position:
Margherita Gulino	gulino.margherita@aslto5.piemonte.it	Hygiene Nutrition Unit Director
Stakeholder's Class:	☑ Can appear in public reports	☑ IoT Demand side
End user	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs

The use of ICT in the healthcare environment, is a newly develop approach, which in some cases lack of guidelines for the integration of health data collected from different types of devices (technological environment) and the effectiveness of use such devices for the health monitoring (medical environment) preserving and protecting the data collected, since they are personal data. In this context you cannot develop an interoperability ecosystem where IoT can fit. On the other hand the use of new technologies in health care, collecting objective measures would allow a more accurate and efficient method of monitoring, especially in the preventive field. Creating INTER-METH as common methodology, might provide new input and guidelines for interoperable ecosystem creation, depending on specific scenarios: connection of devices and different platforms, creating new protocols and methods to translate, collect safety and process data and semantics.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Computerized Nutritional Folder	IoT Platforms (e-care TILAB platform and Bodycloud)

New Stakeholders	Stakeholder's class
CSI	Maintenance operator
UNICAL	Partner
TELECOM ITALIA	Partner
Università di Torino	Subject-matter expert
Regione Piemonte	Government

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	*AZIENZA SANITARIA LOCALE TORINO5*	29/01/2016

Product Name: INTER-METH		
Stakeholder's Name: ICT30- SymbIoTe		Stakeholder's Acronym: *SymbIoTe*
Stakeholder's Profile & Role: Profile: SymbIoTe (Symbiosis of smart objects across IoT environments) is an ICT30 RIA project that intends to create an interoperability framework across existing and future IoT platforms and enables IoT platform cooperation. Role: SymbIoTe's aim is also to build a framework for interoperability and it is needed a link for collaboration between the two projects to avoid the creation of new silos of interoperability, as it has been requested by the European Commission.		
Contact Person: Sergios Soursos	Email: souse@intracom-telecom.com	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The use of Inter-Meth will allow symbIoTe to have a defined methodology, thus the aid of CASE, an assistance development software tool. That will allow a rapid implementation and deployment of applications based on or compatible with symbIoTe framework. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: OpenIoT; OpenUWEDAT; FIWARE; MoBaaS; Symphony; Navigo Digitale; nAssist; KIOLA; TarquinIoT	New products & Systems required: symbIoTe framework Standardisation: oneM2M and ETSI M2M, W3C WoT, OGC, IETF CORE and ACE.	

New Stakeholders	Stakeholder's class
symbIoTe Consortium	Subject-matter experts

Reason of involvement: ICT30 RIA Project	Identified by: UPVLC Needs identified from ICT30 Kick off presentation	Registration Date: 29/01/2016

Product Name: INTER-METH	
Stakeholder's Name: *ICT30- TagItSmart*	Stakeholder's Acronym: *TagItSmart*
Stakeholder's Profile & Role: Profile: TagItSmart is an ICT30 RIA project that intends to create a consumer-oriented ecosystem: Manufacturing,	

Transport and Logistics, Retailers, Consumers at home and in stores, Third Party Services, Recycling and Disposal; based in the use of funny tags and associated technologies.
Role:
TagItSmart aims at defining a framework, enabling technologies and the tools required to design and exploit functional codes across multiple application sectors in a secure and reliable manner. The project will leverage clearly identified and well established catalysts (i.e., functional inks, printed circuit NFC, smartphones pervasiveness and cloud computing) to enable inclusion of any mass-market product into the world of connected objects.

Contact Person:	Email:	Position:
Srdjan Krco, DunavNET	srdjan.krco@dunavnet.eu	Coordinator
Stakeholder's Class:	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Domain experts		

Stakeholder's Needs:
Taking into account the fact that to TagItSmart is advantageous to adopt Inter-IoT framework and Inter-Layer to develop its IoT interoperable application, it will also be beneficial the adoption of Inter-Meth, that will provide a methodology that allows interoperability, and the integration of Inter-FW, among other benefits.
☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Passive RFID tags, QR tags, FunCodes	TagItSmart API TagItSmart framework Standardisation: W3C Web of Things, oneM2M MAS WG on IoT, IEC TC 119 on printed electronics

New Stakeholders	Stakeholder's class
TagItSmart Consortium	Subject-matter experts

Reason of involvement:	Identified by:	Registration Date:
ICT30 RIA Project	UPVLC Needs identified from ICT30 Kick off presentation	29/01/2016

Product Name:
INTER-METH

Stakeholder's Name:	Stakeholder's Acronym:
ICT30- bIoTope	*bIoTope*

Stakeholder's Profile & Role:
Profile:
BIoTope is an ICT30 RIA project that intends to promote an IoT system of system perspective, where horizontal and vertical integration is possible, using open standards and open API to connect platforms to other platforms, apps to apps, devices to other devices and business to business.

Role: BIoTope aims to build a framework for IoT Open innovation Ecosystems for connected smart objects, by developing implementations of the reference architecture (FP6 PROMISE Project, The Open Group's Open platform 3.0, IoT-A and FIWARE), and promoting and studying the pilots in several cities (Proof-of-Concept). The pilots combine smart cities, vehicles, buildings and devices.		
Contact Person: Kary Främling, Aalto University	Email: kary.framling@aalto.fi	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The use of Inter-Meth will allow bIoTope to have a defined methodology, thus the aid of CASE, an assistance development software tool CASE. That will allow a rapid adoption and deployment of applications based and compatible with bIoTope framework. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: FP6 PROMISE Project, Open platform 3.0, IoT-A, FIWARE	New products & Systems required: bIoTope framework Standardisation: Open API standards O-MI and O-DF	

New Stakeholders	Stakeholder's class
bIoTope Consortium	Subject-matter experts

Reason of involvement: ICT30 RIA Project	Identified by: UPVLC Needs identified from ICT30 Kick off presentation	Registration Date: 29/01/2016

Product Name: INTER-METH	
Stakeholder's Name: *ICT30- Vicinity*	Stakeholder's Acronym: *Vicinity*
Stakeholder's Profile & Role: Profile: VINICITY is an ICT30 RIA project that intends to create an ecosystem that provides "interoperability as a service" for infrastructures in the Internet of Things. The approach is bottom-up, decentralized, user-centric and standards-based without relying on a single standard. Role: VICINITY aims to create a platform -that provides interoperability as a service- for domain-crossing, value-added services by building and demonstrating a bottom-up ecosystem of decentralised interoperability of IoT infrastructures called virtual neighbourhood, like social network for things, enabling value added services, with strong focus on privacy: gateways process locally data, so that data is not sent over to the cloud.	

Contact Person: Christoph Grimm, TU Kaiserslautern	Email: grimm@cs.uni-kl.de	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The use of Inter-Meth will provide to VICINITY a defined methodology, and the aid of CASE for its implementation, an assistance development software tool. That will allow a rapid implementation and deployment of the different applications based and compatible with VICINITY and Inter-FW. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: DSM, Sensors, Smart Grid KPI	New products & Systems required: VICINITY framework VICINITY assisted living Standardisation: TinyMesh, OSGI VM, ZigBee, WLAN, Bluetooth Mesh, W3C Linked Data Platform (LDP), LinkSmart/Hydra, Ebbits, Ontologies from Ready4SmartCities, SmartCoDe FP7, ETSI/OneM2M	

New Stakeholders	Stakeholder's class
Vicinity Consortium	Subject-matter experts

Reason of involvement: ICT30 RIA Project	Identified by: UPVLC Needs identified from ICT30 Kick off presentation	Registration Date: 29/01/2016

Product Name: INTER-METH	
Stakeholder's Name: *ICT30- Agile*	Stakeholder's Acronym: *Agile*
Stakeholder's Profile & Role: Profile: Agile intends to create IoT ecosystems in which different connectivity technologies are supported. To solve the problem of network options diversity Agile solution uses adoptive gateways for diverse multiple environments. Role: Agile aims to create adoptive interoperable gateways to allow devices to connect to cloud platforms, providing device discovery and support, interoperability -solving the problem of fragmentation of cloud IoT platforms-, privacy and data control issues, and accessibility of IoT apps in a global market. Agile has the features of modularity, extensibility, device and data management, privacy-data provenance, and IoT app ecosystem.	
Contact Person:	Email:	Position:

Charalampos Doukas, CREATE-NET	cdoukas@create-net.org	Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: As Agile aims to implement its own inter-operable framework for IoT, to promote and ensure interoperability it will be advisable to adopt a common development and compatibility with Inter-IoT framework, in order to provide interoperability and avoid vertical silos. The creation of a coexisting and cooperative environment of all the interoperability frameworks is a need in order to avoid the creation of IoT silos due to incompatibilities between interoperability frameworks. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Smart Gateway, Eclipse Foundation products	New products & Systems required: Agile framework Standardisation: ALLSEEN Alliance, OMA, IPSO, OneM2M	

New Stakeholders	Stakeholder's class
Agile Consortium	Subject-matter experts

Reason of involvement: ICT30 RIA Project	Identified by: UPVLC Needs identified from ICT30 Kick off presentation	Registration Date: 29/01/2016

Product Name: INTER-METH		
Stakeholder's Name: ICT30- BIG-IoT		Stakeholder's Acronym: *BIG-IoT*
Stakeholder's Profile & Role: Profile: BIG-IoT intends to bridge the interoperability gap of the Internet of Things, foster open IoT ecosystems, lower market entry barriers for IoT ecosystems, and enable syntactic and semantic interoperability of IoT platforms, by reusing and building up on existing methods to allow interweaving of platforms and users. Role: BIG-IoT aims to build and promote a marketplace where applications are available. Such marketplace is on top of a common API that allows aggregation of different platforms including ConnectedCity Platform, Open IoT, Smart Data platform, Mobile Analytics Platform, Smart Traffic Platform.		
Contact Person: Jelena Mitic, Siemens AG	Email: jelena.mitic@siemens.com	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: Taking into account the fact that to BIG-IoT is advantageous to adopt Inter-IoT framework and Inter-Layer		

to develop its IoT interoperable platform, it will also be beneficial the implementation of Inter-Meth, that will provide a methodology that allows interoperability, and the integration of Inter-FW, among other benefits ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Management & Semantics WG, OpenIoT, IoT platforms developed by the different stakeholders (e.g. Bosch or VMZ)	New products & Systems required: BIG-IoT API Standardisation: W3C WoT, W3C SDW, IETF core OGC, SWE WG, oneM2M, MS WG, OIC / IIC	

New Stakeholders	Stakeholder's class
BIG-IoT Consortium	Subject-matter experts

Reason of involvement: ICT30 RIA Project	Identified by: UPVLC Needs identified from ICT30 Kick off presentation	Registration Date: 29/01/2016

INTER-LogP

Product Name: INTER-LogP		
Stakeholder's Name: *VALENCIAPORT FOUNDATION*		Stakeholder's Acronym: *VPF*
Stakeholder's Profile & Role:		
Profile: VPF is a non-profit organization based in the port of Valencia that works on the innovation of the port, transport and logistics sectors. It is working on achieving and providing solutions that simplify the introduction of IoT in ports, logistics and freight and container transport under and interoperable framework where different companies can share information generated by different smart devices and sensors in a secure and trusted environment. **Role:** VPF is a partner of the project. It is responsible for the Transportation Pilot during the work package on integration and pilot deployment (WP6).		
Contact Person: Miguel Llop	Email: mllop@fundacion.valenciaport.com	Position: ICT Director
Stakeholder's Class: Subject-matter experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

To effectively introduce IoT in ports, logistics and freight and container transport environments it is needed that:

1. Containers, semi-trailers, trucks, wagons, trains, vessels, cranes and other freight or container handling machines become entities IoT enabled capable to be identifiable and smart, capturing data coming from sensors using different devices and communicating these data through IoT protocols and standards.
2. Hub and transport infrastructures (ports, terminals, road, rail) incorporate sensors, become smart and IoT enabled (i.e. weather and environmental sensors, gates, access controls, cameras, aids to navigation, road&rail traffic control devices)
3. IoT platforms are introduced by port, logistics and transport infrastructure managers as well as port, logistics and transport operators to handle the interoperable heterogeneous IoT enabled smart objects they have introduced and they are managing in the ecosystem.
4. These IoT platforms are connected to enterprise and operational business platforms (i.e. port community systems, terminal operating systems, port management systems, control systems, fleet management systems) so smart objects are tightly linked with the operations and the stakeholders linked to those operations.
5. Heterogeneous IoT platforms owned by different port, logistics, transport infrastructure

managers and operators are able to interoperate.

6. A smart object in motion (i.e truck, container) is able to interact and communicate with different heterogeneous IoT platforms in a secure and trusted environment (i.e. using a type of roaming service) according to the associated business operation, to its location (i.e. by using geofences, tag readers, Bluetooth beacons) or to some predefined business rules (i.e. specified at IoT application level). A smart object in motion is also able to interact and communication with other IoT platforms thanks to the communication or interaction with other fixed (i.e. the interaction of a truck with a gate or access control system) or in motion smart objects (i.e. the interaction of a smart container with a smart truck) managed by other IoT platforms.
7. The data provided by a smart object could be different depending whether the IoT platform belongs, for example, to the owner, a partner, a customer, a service provider or a controller of the smart object.
8. An IoT or operational platform is able to access a fixed sensor or smart object from another IoT platform.
9. The smart object owner (in motion or fixed) is aware and accepts the interactions of the smart object with other IoT platforms.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Port Community Systems (ValenciaportPCS) Passive RFID tags Smart phones & tablets SEAMS & Machines BlackBox Automatic Gate Systems	IoT Platforms (i.e. FI-WARE, Open-IoT, Sofia2, Azure IoT, Google IoT, VLCi)

New Stakeholders	Stakeholder's class
Road Hauliers (Sictrans, Chema Ballester, Transtorres)	End user
Port Authority of Valencia	End user
Infoport	Port Solution & service provider
Prodevelop	Partner
Port Terminals (Noatum, Valencia Terminal Europa, Barcelona Ro-Ro Terminal)	End user Noatum is partner
Rail Undertakers (Continental Rail)	End user
Universitat Politecnica de Valencia	Partner
Technological Institute of Informatics	Subject-matter expert (Big Data)
SGS	Port Solution & service provider
KII	IoT solution and devices provider
Geomobile	IoT solution and devices provider

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	Valenciaport Foundation	29/01/2016

Product Name: INTER-LogP		
Stakeholder's Name: *PORT AUTHORITY OF VALENCIA (IT DEPARTMENT AND PCS MANAGEMENT)*		Stakeholder's Acronym: *APV*
Stakeholder's Profile & Role:		
Profile: The Port Authority of Valencia (PAV), which trades under the name of VALENCIAPORT, is the public body responsible for running and managing three state-owned ports along an 80km stretch of the Mediterranean coast in Eastern Spain: Valencia, Sagunto and Gandía. The PAV, like other port authorities in Spain, reports to the Ministry of Development and is governed by Spanish Legislative Royal Decree 2/2011 of 5 September under which the recast text of the Spanish Law on State-Owned Ports and the Merchant Navy was passed. This harmonized law lays down the PAV's role and functions as assigned by law and PAV's organizational structure. Valenciaport is Spain's leading Mediterranean port in terms of commercial traffic, mostly containerized cargo, due to its dynamic area of influence and an extensive network connecting it to major world ports. **Role:** Valenciaport boasts a tightly-linked Port Community, due to innovative elements such as its Quality Mark and the ValenciaportPCS technology platform, and comprising all public and private economic agents providing services through the ports of Valencia, Sagunto and Gandía. PAV provides port infrastructure for the pilot and the expertise with the PCS.		
Contact Person: José García de la Guía	Email: jgarcia@valenciaport.com	Position: Information Technology Manager
Stakeholder's Class: Customer	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs:		
PAV has a Port Community System, ValecniaportPCS, to provide services designed to streamline and facilitate the operating processes of companies of the port community. The platform manifests yet another step forward of its commitment to bolster the competitiveness of such companies. Efficient information management is a key factor of the competitiveness of any company involved in transportation due to the vast quantities of information created and interchanged. Through this platform Valenciaport provides logistics agents with a new instrument for them to offer their customers a better service, helping them thereby to become more competitive whilst allowing them to capture and increase cargo loyalty thanks to improvements in the following areas: • Efficiency: et automated operations by adopting error-free paperless processes		

- Connectivity: connecting port agents dealing with critical business processes
- Integration: integration of sea-port-land operations between ports, ocean carriers and their shipping agents, freight forwarders and other operators
- Modernization: modernizing logistics management by connecting agents' systems and using the most advanced information systems

However, ValenciaportPCS is not following yet an IoT paradigm of physical and virtual entities which prevents to enlarge the capacity of this system to monitor trucks, containers and drivers within the port using new devices like, for example, tags, NFC cards, smart phones & tablets or on-board units.

The creation of an IoT platform interoperable with other IoT platforms owned by other companies like port terminals, rail companies, road hauliers and other logistics operators as well as with other infrastructures' managers like rail infrastructure operators or highways operators is seen as an emerging necessity for the ports of the future where everything will be connected.

The interoperable IoT platform would be able to be integrated with ValenciaportPCS system. It should allow to track the location of the trucks inside the port facilities and the identification of the drivers. It should respect privacy and data protection rules.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Port Community Systems (ValenciaportPCS)	IoT Platform

New Stakeholders	Stakeholder's class
Infrastructure Department	End user
Operations Department	End User
Security and Safety Department	End user
Universitat Politecnica de Valencia	Partner
Infoport	Port Solution & service provider
Prodevelop	Partner

Reason of involvement:	Identified by:	Registration Date:
Involved in the transport pilot	Valenciaport Foundation	15/02/2016

Product Name:	
INTER-LogP	
Stakeholder's Name:	**Stakeholder's Acronym:**
PORT AUTHORITY OF VALENCIA VALENCIA (INFRASTRUCTURES AND INDUSTRIAL NETWORK DEPARTMENT)	*APV*

Stakeholder's Profile & Role:

Profile: The Port Authority of Valencia (PAV), which trades under the name of VALENCIAPORT, is the public body responsible for running and managing three state-owned ports along an 80km stretch of the Mediterranean coast in Eastern Spain: Valencia, Sagunto and Gandía.

The PAV, like other port authorities in Spain, reports to the Ministry of Development and is governed by Spanish Legislative Royal Decree 2/2011 of 5 September under which the recast text of the Spanish Law on State-Owned Ports and the Merchant Navy was passed. This harmonized law lays down the PAV's role and functions as assigned by law and PAV's organizational structure.

Valenciaport is Spain's leading Mediterranean port in terms of commercial traffic, mostly containerized cargo, due to its dynamic area of influence and an extensive network connecting it to major world ports.

Role: Valenciaport has AGS system which has done away with the use of paper at the port's access controls

APV provides port infrastructure for the pilot and the expertise with the PCS.

Contact Person:	Email:	Position:
Marcelo Burgos	m.burgos@valenciaport.com	Head of the construction and maintenance of facilities
Stakeholder's Class: Customer	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

APV is managing an Automated Gate System (AGS) to control and identify the arrival and departure of each truck and car in the port.

The AGS aims to improve the level of the required security and protection at ports without hampering the fluidity of freight transport by introducing automated systems, real time traceability and new collaboration opportunities within the transport chain.

Valenciaport AGS facilitates and simplifies Customs controls at Valenciaport ports while enhancing security and actions for improving existing bottlenecks and introducing new methods for simplifying the formalities for ships arriving and/or departing from ports without reducing the level of security and safety.

Currently it is using systems for automatic recognition of plates and container numbers but they are not following an IoT paradigm of physical and virtual entities which prevents to enlarge the capacity of this system to monitor trucks, containers and drivers within the port using new devices like, for example, tags, NFC cards, smart phones & tablets, on-board units. The creation of an IoT platform interoperable with other IoT platforms owned by other companies like port terminals, rail companies, road hauliers and other logistics operators as well as with other infrastructures' managers like rail infrastructure operators or highways operators is seen as an emerging necessity for the ports of the future where everything will be connected.

The interoperable IoT platform would be able to be integrated with the AGS. It should allow to track the location of the trucks inside the port facilities and the identification of the drivers. It should respect privacy and data protection rules.

This department is also in charge of operating an industrial network based on SCADA system for the data acquisition system and control for metereological and sound level meters sensors, navigation aids and medium voltage grid.

In addition, the Port of Valencia is assessing the provision of a container weighing service to ensure Spanish shippers are able to comply with new international regulations that will come into effect on 1 July 2016. The interoperable IoT platform should be able to be integrated with this new system.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Port Community Systems (ValenciaportPCS) Automatic Gate System (AGS) SCADA System	IoT Platform

New Stakeholders	Stakeholder's class
Systems Department	End user
Operations Department	End User
Security and Safety Department	End user
Universitat Politecnica de Valencia	Partner
Infoport	Port Solution & service provider
Prodevelop	Partner

Reason of involvement:	Identified by:	Registration Date:
Involved in the transport pilot	Valenciaport Foundation	15/02/2016

Product Name:	
INTER-LogP	

Stakeholder's Name:	Stakeholder's Acronym:
INFOPORT VALENCIA	*INFOPORT*

Stakeholder's Profile & Role:

Profile: INFOPORT is a technology services company specialized in the port and logistics sector. INFOPORT develops solutions to support their clients' business needs and it contributes to boost their competitiveness.

Role: INFOPORT is a stakeholder interested in contributing on the development of INTER-LogP solutions.

Contact Person:	Email:	Position:
Miguel Angel Portugues	maportugues@infoport.es	Engineering and Systems Manager

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Software engineers	☐ Shall remain anonymous	☒ IoT Supply side

Technology experts		

Stakeholder's Needs:

Usability of interoperability framework in port infrastructure

Development of new interoperable IoT based products for transport and logistics

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Port Community System (ValenciaportPCS) Port Access Control Port Management Information Systems (PMIS) Terminal Operating Systems (TOS)	

New Stakeholders	Stakeholder's class
Port Authority of Valencia	End user

Reason of involvement:	Identified by:	Registration Date:
PCS developer Access control provider	Valenciaport Foundation	03/02/2016

Product Name:

INTER-LogP

Stakeholder's Name:	Stakeholder's Acronym:
GRUPO CHEMMA BALLESTER	*GCB*

Stakeholder's Profile & Role:

Profile: GCB is a company created to develop the marine container logistics services. Located inside the Port of Valencia, the core business of GCB is to service inland container transport, making the quality, service and visibility the main premises.

Role: GCB is a stakeholder interested in the INTER-LogP solutions. It is interested in participating in the Transportation Pilot during the work package on integration and pilot deployment (WP6).

Contact Person:	Email:	Position:
Lorena Ballester	lorena@chemaballester.com	Director
Stakeholder's Class:	☒ Can appear in public reports	☒ IoT Demand side

Client	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

GCB wants to introduce IoT in ports, logistics and freight and container transport in order to achieve:

1. More efficient fleet management, especially when subcontracting the carriage of goods by road to freelance or third parties
2. Supply chain visibility inside the port areas
3. Predictability and foresight
4. Faster and safer port accesses
5. Shorter time of trucks inside the port and container terminal
6. Paperless
7. Preventive maintenance of its vehicles
8. Oil consumption savings
9. Sustainability
10. Strategic decision-making based in knowledge

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Fleet management systems for location and oil consumption monitoring. Digital tachograph that identifies the driver	Tablets IoT Platforms

New Stakeholders	Stakeholder's class
Mobiledata	Fleet management solution provider
Infoport	Port Solution & service provider

Reason of involvement:	Identified by:	Registration Date:
Pilot end user	Valenciaport Foundation	08/02/2016

Product Name:

INTER-LogP

Stakeholder's Name:	Stakeholder's Acronym:
Continental Rail	*Continental*

Stakeholder's Profile & Role:

Profile: Continental Rail is a private railway undertaking connecting the main ports of Spain with their

hinterlands. Operating 19 locomotives and 290 container platforms, Continental Rail strongly believes that Internet of Things can be of great importance to increase the productivity of its transport activities, obtaining valuable information about its transports from new technologies.

Role:

Contact Person:	Email:	Position:
Juan Marzo Bolufer	juan.marzo@continentalrail.es	Head of Intermodal Transport

Stakeholder's Class:	☒ Can appear in public reports	☒ IoT Demand side
Client	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

Interaction between locomotives, platforms and drivers and devices placed at port-terminals.

Interaction about position of train convoys and terminals.

Interaction between trains and infrastructure administrators.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Developing a "intelligent container platform" Geo localization for locomotives Rail Transport Management System	Devices to help predictive maintenance in platforms and locomotives Devices to increase interconnection between actor within the supply chain

New Stakeholders	Stakeholder's class
Vias y Construcciones	Construction Company
SICSA Rail Transportation	Railway operator
Constru-Rail	Railway operator

Reason of involvement:	Identified by:	Registration Date:
Railway undertaking	Valenciaport Foundation	02/02/2016

Product Name:

INTER-LogP

Stakeholder's Name:	Stakeholder's Acronym:
TRANSTORRES	TT

Stakeholder's Profile & Role:

Profile: TT is a company created to develop the marine container logistics services. Located inside the Port of Valencia, the core business of TT is to service inland container transport, making the quality, service and visibility the main premises.

Role: TT is a stakeholder interested in the INTER-LogP solutions. It is interested in participating in the Transportation Pilot during the work package on integration and pilot deployment (WP6).

Contact Person:	Email:	Position:
Carlos Prades	carlos@transtorres.net	General Manager
Stakeholder's Class: Client	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

TT wants to introduce IoT in ports, logistics and freight and container transport in order to achieve:

1. Full visibility of its fleet (TT has only the 50% of its fleet of trucks monitored)
2. Lower costs for monitoring their trucks. The current systems that they are using are far more expensive and cumbersome to deploy than other IoT devices in the market.
3. Integrate container depots in the IoT ecosystem for a faster and seamless communication
4. More efficient fleet management, especially when subcontracting the carriage of goods by road to freelance or third parties
5. Supply chain visibility inside the port areas
6. Predictability and foresight
7. Faster and safer port accesses
8. Shorter time of trucks inside the port and container terminal
9. Paperless
10. Preventive maintenance of its vehicles
11. Oil consumption savings
12. Sustainability
13. Strategic decision-making based in knowledge

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Fleet management systems for location and oil consumption monitoring (Mobildata). Digital tachograph that identifies the driver	Tablets IoT Platforms

New Stakeholders	Stakeholder's class
Mobiledata	Fleet management solution provider
Infoport	Port Solution & service provider

Reason of involvement:	Identified by:	Registration Date:
Pilot end user	Valenciaport Foundation	09/02/2016

Product Name: INTER-LogP		
Stakeholder's Name: *Amiga Ventures*		Stakeholder's Acronym: *Amiga*
Stakeholder's Profile & Role: **Profile:** Amiga provides services to allow companies to undertake the digital transformation of their business, from strategy and design to maintenance and continuous improvement. **Role:** Amiga is a stakeholder interested in the INTER-LogP solutions. It is interested in participating in the Transportation Pilot during the work package on integration and pilot deployment.		
Contact Person: Jorge Ruano	Email: jorge.ruano@amigaventures.com	Position: CEO & Founder
Stakeholder's Class: Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: • Technical and functional requirements. • Business scenarios. • Facilities and resources needed. • Test Cases / User Cases. • KPIs. ☒ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved:	New products & Systems required:	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Technology experts	Valenciaport Foundation	11/02/2016

Product Name: INTER-LogP		
Stakeholder's Name: *Kii*		Stakeholder's Acronym: *Kii*
Stakeholder's Profile & Role: **Profile:** Kii helps developers and device manufacturers of all sizes meet their high-performance demands with an end-to-end platform optimized for building and running enterprise mobile and IoT initiatives. **Role:** Kii will collaborate in the evaluation of device interoperability for port, logistics and transport.		
Contact Person: Martin Tantow	Email: Martin.tantow@kii.com	Position: Director Bus Dev EMEA
Stakeholder's Class: Technology experts, Systems engineers	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: Technical specification of devices intended to be analyzed and tracked. Understanding which use cases for IoT interoperability are intended. Intended usage of Kii platform, e.g. number of API requests, push notifications, IoT specific functionalities, storage needs. ☒ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Kii Cloud Platform	New products & Systems required:	

New Stakeholders	Stakeholder's class
Haltian	Device provider
AQMesh	Device provider

Reason of involvement:	Identified by:	Registration Date:
IoT experts	Valenciaport Foundation	03/02/2016

Product Name: INTER-LogP		
Stakeholder's Name: *VALENCIA TERMINAL EUROPA S.L.*		Stakeholder's Acronym: VTE
Stakeholder's Profile & Role: **Profile:** Valencia Terminal Europa is a port terminal based in the port of Valencia, working with RO-RO vessels where manufactured vehicles, trucks and semitrailers are loaded and discharged from these vessels through ramps. **Role:** Valencia Terminal Europa is a stakeholder interested in the INTER-LogP solutions that can provide a complementary view from container terminal operations as they have different needs. The solutions designed in INTER-LogP will take also into account the needs and requirements presented by this stakeholder.		
Contact Person: Damián Marqués	Email: dmrq@tcv.es	Position: IT Manager
Stakeholder's Class: Client	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: VTE is looking for a solution for sensing their internal machines operating in its terminal yard where there are thousands of manufactured vehicles, second hand vehicles, trucks and semi-trailers waiting for the subsequent transport leg (whether through maritime or inland transport modes). It also wants to monitor and keep track of all these transport units and to control them during the gate-in, gate-out, loading and discharge operations in an efficient way. The possibility of monitoring and communicate with existing devices and sensors installed on the trucks carrying this units is seen as an advantage and an opportunity to increase the efficiency of the operations, avoid errors and carrying out safer operations. The terminal operates the loading and discharge of the cars produced by Ford additionally to other manufacturers. Manufactured cars coming from Antwerp are already equipped with passive RFID tags for identifying the VIN (vehicle identification number) and there are plans from Ford to install also these tags also in the car manufacturing plant in Valencia. Monitoring of all these cars using an interoperable IoT environment is a particular interesting case for the terminal. The terminal operator is looking for a cloud solution that supports the management and monitoring of all their physical entities as well as the physical entities owned by third parties that are in its premises. These capabilities will help the terminal to build on top of it several new services and applications to improve its operations, become more efficient and provide higher value added services to their clients. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved:	New products & Systems required:	

Multi-purpose Terminal Operating System (IXNET) LPR (License plate readers) Some passive ISO-18600-C RFID antennas Wi-fi deployed network on the yard	IoT platform able to manage and monitor terminal machines, transport units (manufactured vehicles, trucks, semi-trailers, …) and transport means (trucks and rail).

New Stakeholders	Stakeholder's class
IXNET	Provider of the Multi-purpose Terminal Operating System

Reason of involvement:	Identified by:	Registration Date:
Potential user of Inter-IoT solutions	Valenciaport Foundation	18/02/2016

Product Name:

INTER-LogP

Stakeholder's Name:	Stakeholder's Acronym:
BALEARIA	BALEARIA

Stakeholder's Profile & Role:

Profile: Balearia is a shipping line which has a passenger and RO-RO terminal in the port of Valencia without having a large terminal yard. The shipping line and terminal are serving the traffics of passengers and of trucks carrying on supplies between the Spanish Peninsula and the Balearic Islands.

Role: Balearia is a stakeholder interested in the INTER-LogP solutions to provide new technological solutions for their operations. The solutions designed in INTER-LogP will take also into account the needs and requirements presented by this stakeholder.

Contact Person:	Email:	Position:
Antonio García	antonio.garcia@balearia.com	IT Manager

Stakeholder's Class:	☒ Can appear in public reports	☒ IoT Demand side
Client	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

Balearia is looking for new technological solutions for passenger access control systems, able to use an electronic boarding pass received in mobile devices or wearables (i.e. smart phones or smart watches) and to validate them on line in real time.

It is also interested to identify the semi-trailers through low-cost RFID tags that use this tags for the access control of the terminal as well as to be used in the customs controls performed at the Automated Gate System of the port.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Access control systems MEDITA's project results Passive RFID e-seals for semi-trailers Passive tags for windscreens.	IoT platform able to manage electronic boarding passes, semi-trailers and trucks connected with the systems of the port authority and customs using passive and low-cost RFID e-seals and tags, as well as on board active devices on trucks when available.

New Stakeholders	Stakeholder's class
Valenciaport Foundation	Solution provider

Reason of involvement:	Identified by:	Registration Date:
Potential user of Inter-IoT solutions	Valenciaport Foundation	18/02/2016

Product Name:	
INTER-LogP	

Stakeholder's Name:	Stakeholder's Acronym:
Barcelona Ro-Ro Terminal	Barcelona Ro-Ro

Stakeholder's Profile & Role:

Profile: Barcelona Ro-Ro Terminal is a port terminal based in the port of Barcelona, working with RO-RO vessels where passengers, manufactured vehicles, trucks and semitrailers are loaded and discharged from these vessels through ramps.

Role: Barcelona Ro-Ro Terminal is a stakeholder interested in the INTER-LogP solutions that can provide a complementary view from a container terminal operations as they have different needs. The solutions designed in INTER-LogP will take also into account the needs and requirements presented by this stakeholder.

Contact Person:	Email:	Position:
Bienvenido Lozano	lozano@grimaldilogistica.com	IT Manager

Stakeholder's Class:	☒ Can appear in public reports	☒ IoT Demand side
Client	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

The needs expressed by Barcelona Ro-Ro Terminal are quite similar to those expressed by Valencia Terminal Europa in terms of sensing their internal equipment and provide connected vehicle solutions with external vehicles to facilitate planning, monitoring and execution of road operations towards and within the ports.

Currently trucks and drivers are disconnected from port infrastructures and other logistics nodes when carrying out their transport operations. The technical equipment used by road transport hauliers is very heterogeneous, as is their willingness to participate in information exchanges. The lack of communication brings about inefficiencies and higher levels of pollution produced by trucks, more congestion, lower the total capacity of the port infrastructure and lower the security with less accurate capacities for truck traceability and supervision in the port area and difficulties in the supply chain management.

Additionally this terminal handles passengers and this exposes additional challenges similars to the ones expressed by the Balearia for the compliance of access control procedures for passengers.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Multi-purpose Terminal Operating System (IXNET) LPR (License plate readers) Automated Gate System (AGS)	IoT platform able to manage and monitor terminal machines, transport units (manufactured vehicles, trucks, semi-trailers, …), transport means (trucks and rail) and electronic boarding passes for passengers.

New Stakeholders	Stakeholder's class
IXNET	Provider of the Multi-purpose Terminal Operating System
Orbita	Provider of the LPR and AGS systems

Reason of involvement:	Identified by:	Registration Date:
User	Valenciaport Foundation	18/02/2016

Product Name:

INTER-LogP

Stakeholder's Name:	Stakeholder's Acronym:
MULTINATIONAL SOLUTIONS PROVIDER FOR GOVERNMENT AND INSTITUTIONS	*GIS*

Stakeholder's Profile & Role:

Profile: The stakeholder is a multinational solution provider for government and institutions. It provides solutions for customs authorities and different ministries for the simplification of trade and the traceability of cargo during transportation. The company is already providing solutions for trade simplification and traceability of cargo during transportation. To this end it has agreements with providers for tracking trucks on route like active seals with electronic lockers (seals) and GPS.

Role: This multinational will collaborate in the definition of interoperability elements and it will define use cases on the logistics and transport pilot linked with the traceability of goods and trucks for governments

and institutions.		
Contact Person: -	Email: -	Position: -
Stakeholder's Class: Systems engineers. Solution provider	☐ Can appear in public reports ☒ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The stakeholder is interested in testing and piloting its solution integrated with an IoT interoperable ecosystem in port, logistics and transport for tracking and monitoring goods for government and institutions along cross border flows and during customs transit procedures. This solution will be also focused as a tool to guarantee the integrity of the goods during customs' transit movements. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Tracking solution for trucks and goods Cross border controls	New products & Systems required: Interoperable IoT framework able to track, monitor and actuate through devices (i.e. e-seals) deployed on trucks.	
New Stakeholders	Stakeholder's class	
Reason of involvement: Solution providers	Identified by: Valenciaport Foundation	Registration Date: 03/02/2016

Product Name: INTER-LogP	
Stakeholder's Name: *Energy Solutions*	Stakeholder's Acronym: *Energy*
Stakeholder's Profile & Role: **Profile:** Energy Solutions is a marketer of innovative solutions with high technological value in the area of Smart Environment. These solutions are built based on innovative products and services that integrate contributing our know-how of more than 20 years in research, development, and marketing strategy. They are experts in developing hardware and software for integrating smart solutions in areas such as energy efficiency, safety, health and sensors, among others. **Role:** Energy Solutions will participate in the definition of interoperability elements between devices and platforms.	

Contact Person:	Email:	Position:
Joaqín Carretero	joaquin@energy-solutions.es	R&D Director
Stakeholder's Class: Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

The stakeholder is interested in introducing dataloggers in logistics and transportation interoperable IoT environments using the Inter-IoT framework. Concretely, the stakeholder is interested in introducing their datalogger products and a new e-seal device product they have recently designed to precisely know (less than 2,5 m) the position of a container or vehicle and which control the opening of the container door and its deactivation. This device could be used for the tracking and monitoring of containers under customs supervision or for tracking dangerous goods.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Sensors (CITYLOC, CITYMICRO, CITYWAY, GEOVAL) Electronic seal for containers (GEOVAL)	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Device manufacturers	Valenciaport Foundation	12/02/2016

Product Name:

INTER-LogP

Stakeholder's Name:	Stakeholder's Acronym:
NOATUM Ports	*NOATUM*

Stakeholder's Profile & Role:

Profile: Noatum is owned by institutional investors, the majority of which are pension funds, advised by J.P. Morgan Asset Management Infrastructure Investment Group, and the Dutch Pension Fund Stichting Pensioenfonds ABP.

Noatum Ports: Investor in strategic terminals offering efficient handling services managed by an experienced team of professionals: Bulk terminals, Container terminals, Multi-purpose terminals, Rail terminals, Ro-Ro and vehicle terminals.

Role: NOATUM will participate in the requirement needs definition due to the pilots participation at the Container Terminal. Noatum will make available the execution of this pilots, allowing communication with the existent systems and platforms, doing and making the required tests.

Contact Person:	Email:	Position:
Francisco Blanquer	fblanquer@noatum.com	Chief Development Engineer
Stakeholder's Class: End user	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

- Prepare the SEAMS platform to the Inter-IoT environment
- The platform should be able to inter-operate with outside terminal trucks, being able to know the location and communicate with them i.e. giving tasks, orders, etc…
  - Orders: where to go – leave the Container Terminal.
  - Energy Efficiency – Dynamic lights with to be able to operate with external trucks.
  - To locate and identify incidents (e.g. the container is not loaded in the right truck, being identified first that the truck is the one that should be working with the machine)
  - Safety and Security (e.g. being able to communicate with external's personnel in case of Tsunami)
- Identify automatically the IMO containers (e.g. a smartphone of the truck's driver is connected to the platform for the case of the IMOs, instead of using existing RFID tags, so it is known the location of the IMO and their cargo, priority and security information required)
- The platform should be able to connect with the Shipping line systems and transfer information of the reefer containers e.g. temperature, location, …

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
SEAMS, CATOS	Trucks Pre-booking, TOS intermodal (railway).

New Stakeholders	Stakeholder's class
Noatum Container Terminal Bilbao	Customer
MSC shipping	Customer (Reefers)
Maersk	Customer (Reefers)
Noatum Container Terminal Valencia	Customer
Orbita Ingenieria	Subject-matter experts
Amplia	Designers and Developers
EDAE	Usability experts
Pesyr I+D	Technology experts
Puertos del Estado	Members of the Public

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	NOATUM	08/02/2016

Product Name: INTER-LogP	
Stakeholder's Name: *Amplía Soluciones S.L.*	Stakeholder's Acronym: *Amplía*

Stakeholder's Profile & Role:

Profile: In Amplía, we are pioneers of Internet of Things solutions, specialized in wireless communication solutions and software engineering, with 10+ years working in different solutions and deployments, in different verticals and with different architectures. Our aim is to help companies to deploy Industrial IoT solutions based on reliable wireless infrastructure. Our M2M and IoT platform OpenGate is running in first class companies in Telecom and Utilities, with several hundred-thousand of devices per installation, and giving support to countries in Europe and Latam. Most of the devices managed by OpenGate are those from Smart Metering, Health, Logistics and Added Value solutions.

Role: Amplía could be a stakeholder to develop solutions in the INTER-LogP, using the experience in real projects like SEATERMINAL, DP World in Cargo Port Tarragona, Cemex´s concrete mixer fleet in Mexico, Schmidt´s fleet monitoring and maintenance, CLARISA (monitoring logistic of cold chain), Kuehne&Nagel tracking chain of logistic centers/trucks and planes via CartaSense sensors, advance vehicle localization for Detector, fleet localization for Spanish National Police

Contact Person:	Email:	Position:
Javier Martínez Abarca	javier.martinez@amplia.es	Consulting Director
Stakeholder's Class: Software engineers	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

Support for great diversity of logistic scenarios:

- Intermodal terminals
- Cold-Chain Quality Control
- Cargo Tracking

Support for great diversity in:

- Communications, positioning and embedded technologies
- Machine, Device and Sensor manufacturers/models

Required Device Management & Monitoring to facilitate deployment and maintenance of IoT infrastructure

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Container Tracking Automation (DPWorld & Termavi)	

SEAMS SLIM CLARISA IoT platform OpenGate	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
SEAMS developer, IoT experts	Noatum	19/02/2016

Product Name:	
INTER-LogP	

Stakeholder's Name:	Stakeholder's Acronym:
UNIVERSITAT POLITECNICA DE VALENCIA	*UPVLC*

Stakeholder's Profile & Role:

Profile: UPVLC includes 15 centers: ten schools, three faculties, two higher polytechnic schools and five associated institutions. The Distributed Real Time Systems Lab (DRTSL) belongs to the Communications Department (CD) and has large expertise in: (i) Video streaming and encoding, (ii) Command and control systems, and (iii) Sensors deployment and simulation. Regarding sensors, the DRTSL includes expertise in random deployment of unattended sensors, routing protocol design, real time applications development for reliable data acquisition, RFID applications and integration with OGC standards.

Role: UPVLC will help in the integration of Inter-IoT components (Inter-Layer, Inter-FW) for the logistics and transportation pilot in the Valencia city port. It will be mainly related to integrating sensors and sensor systems.

Contact Person:	Email:	Position:
Carlos Palau	cpalau@dcom.upv.es	Professor
Stakeholder's Class: Developer, Integrator	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

UPVLC's needs relate to effectively testing Inter-Layer, Inter-FW and Inter-Meth in specific scenarios (ports) and test if the previously identified requirements are fulfilled or not. Concrete real needs are provided by port entities (e.g. VPF, NVP).

☐ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved: Sensor Observation Systems (OGC SOS)	New products & Systems required: IoT Platforms (Open-IoT,Azure IoT, Google IoT), smart objects SCADA Systems in port environments PCS

New Stakeholders	Stakeholder's class
UPVLC's AIOTI	Representatives of external associations
EC	Strategic view
ICT-30 projects	Representatives of external associations
ETRA	Technology experts
VMZ	Technology experts

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	Universitat Politecnica de Valencia	02/02/2016

Product Name: INTER-LogP	
Stakeholder's Name: *DG CONNECT – EUROPEAN COMMISSION*	Stakeholder's Acronym: *DG CONNECT*

Stakeholder's Profile & Role:

Profile: DG Connect contributes to the EU goals in the Digital Age: human advancement, fairness, jobs and growth. DG Connect seeks to foster innovation, creativity, culture, excellent research and competitive markets as well as a trustable, accessible and positive digital experience for every European citizen.

Role: DG Connect is the sponsor of Inter-IoT as one of the 7 projects approved in the ICT30 call.

Contact Person:	Email:	Position:
DG Connect	-	-

Stakeholder's Class:		
Client	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

DG Connect has established the following needs:

- Develop open platforms to foster a vibrant IoT ecosystem. Opening up to developer communities and

creative practices.

- Break the silos between the application areas (e.g. health, home) and technologies such as IoT, CPS, Cloud, Big Data.
- Prepare the ground for Large-scale Pilots.
- Not to forget about trust, security, ethics, etc. (IoT preparing the hyper-connected society)

It is needed a high impact of the action with:

- A visible and strategic programme
- Coordination and synergies across projects
- Availability and maturing of sustainable IoT platforms based on real ecosystems and developers
- Sustainability beyond the project life time
- Make progress and not reinvent the wheel

The European Commission wants to achieve a leadership in digital platforms for industry. For this, it is needed an availability of interoperable open platforms for any business to support its digital transformation.

INTER-LOGP allows IoT interoperability solutions in the areas of Port, Logistics and Transport, promoting Inter-IoT presence in digital platforms for the industry of these sectors.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
IoT initiatives/platforms (i.e. FI-WARE, IOTA, IOTLab, OpenIoT, BUTLER)	

New Stakeholders	Stakeholder's class
AIOTI	Special Interest Group
IERC	Special Interest Group
TagItSmart	ICT30 RIA (Research Innovation Action) project
AGILE	ICT30 RIA (Research Innovation Action) project
BeIOT	ICT30 CSA (Coordination & Support Action) project
UNIFY-IOT	ICT30 CSA (Coordination & Support Action) project

Reason of involvement:	Identified by:	Registration Date:
Political beneficiary	Universitat Politecnica de Valencia	18/02/2016

Product Name:	
INTER-LogP	
Stakeholder's Name:	**Stakeholder's Acronym:**
ICT30- TagItSmart	*TagItSmart*

Stakeholder's Profile & Role:

Profile: TagItSmart is an ICT30 RIA project that intends to create a consumer-oriented ecosystem: Manufacturing, Transport and Logistics, Retailers, Consumers at home and in stores, Third Party Services, Recycling and Disposal; based in the use of funny tags and associated technologies.

Role: TagItSmart aims at defining a framework, enabling technologies and the tools required to design and exploit functional codes across multiple application sectors in a secure and reliable manner. The project will leverage clearly identified and well established catalysts (i.e., functional inks, printed circuit NFC, smartphones pervasiveness and cloud computing) to enable inclusion of any mass-market product into the world of connected objects.

Contact Person:	Email:	Position:
Srdjan Krco, DunavNET	srdjan.krco@dunavnet.eu	Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

It has been identified several commonalities between Inter-IoT and TagItSmart mainly in the area of IoT application domain of transport and logistics. Interoperability issues are more focused in D2D elements and the development of a common framework for the creation of an IoT ecosystem. TagItSmart can benefit from the compatibility, integration and complementation with InterLogP, and rely on InterLogP for its applications for controlling and tracking tags, as well as on InterIoT framework, layers and methodology. As TagItSmart functionality is oriented to logistics and transportation, InterLogP is a platform that perfectly complements and supports TagItSmart service.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Passive RFID tags, QR tags, FunCodes	TagItSmart API TagItSmart framework Standardisation: W3C Web of Things, oneM2M MAS WG on IoT, IEC TC 119 on printed electronics

New Stakeholders	Stakeholder's class
TagItSmart Consortium	Subject-matter experts

Reason of involvement:	Identified by:	Registration Date:
ICT30 RIA Project	Universitat Politecnica de Valencia	29/01/2016

Product Name: INTER-LogP		
Stakeholder's Name: *ICT30- BIG-IoT*		Stakeholder's Acronym: *BIG-IoT*
Stakeholder's Profile & Role: **Profile:** BIG-IoT intends to bridge the interoperability gap of the Internet of Things, foster open IoT ecosystems, lower market entry barriers for IoT ecosystems, and enable syntactic and semantic interoperability of IoT platforms, by reusing and building up on existing methods to allow interweaving of platforms and users. **Role:** BIG-IoT aims to build and promote a marketplace where applications are available. Such marketplace is on top of a common API that allows aggregation of different platforms including ConnectedCity Platform, Open IoT, Smart Data platform, Mobile Analytics Platform, Smart Traffic Platform.		
Contact Person: Jelena Mitic, Siemens AG	Email: jelena.mitic@siemens.com	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: Additionally to Inter-FW, Inter-Layer and Inter-Meth, BioTope can also benefit from the interoperable logistic functionality that InterLogP provides, to take advantage to an existing interoperable open platform, lowering market entry barriers for IoT ecosystem, in the domain of transport and logistics, and allowing interweaving of platforms, things, and users. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Management & Semantics WG, OpenIoT, IoT platforms developed by the different stakeholders (e.g. Bosch or VMZ)	New products & Systems required: BIG-IoT API Standardisation: W3C WoT, W3C SDW, IETF core OGC, SWE WG, oneM2M, MS WG, OIC / IIC	

New Stakeholders	Stakeholder's class
BIG-IoT Consortium	Subject-matter experts

Reason of involvement:	Identified by:	Registration Date:
ICT30 RIA Project	Universitat Politecnica de Valencia	29/01/2016

Product Name: INTER-LogP	
Stakeholder's Name: *ETRA Investigación y Desarrollo, S.A.*	Stakeholder's Acronym: *ETRA I+D*

Stakeholder's Profile & Role:

Profile: ETRA Investigación y Desarrollo, S.A. (ETRA I+D) is the hi-tech unit within ETRA Group, one of the leading industrial groups in Spain. Its mission is putting in the market the most advanced solutions and services either directly or through the 10 companies of the Group. The main market areas of ETRA Group are Spain, South-Central America, Asia and the EU.

ETRA Group is owned by ACS, the 4th largest Construction Corporation in the World. With 2200 employees and a turnover of 250M€. ETRA Group is a market leader in the fields of technology, mobility and public services. More than 5.000 vehicles worldwide make use of ETRA's technology in their daily operation. More than 10.000 intersections are managed by ETRA's traffic management systems. More than 1.000.000 users use daily ETRA's smart card based solutions. ETRA is a leader in Mobility and Integrated Services providing technology of the 53% of urban traffic in Spain. 90% of the metros and light rail in Spain incorporate technological solutions from ETRA. ETRA controls more than 450,000 points of light in cities, roads, ports, tunnels and get savings of 30% of energy costs. Manage more than 30,000 parking spaces.

Role: ETRA combines the Smart technology model with the provision of specific, tangible solutions to improve citizen's quality of life as well as the efficiency of city service managers in the use of their resources. ETRA has an intense activity in technological R&D&I projects for Smart Cities.

Contact Person:	Email:	Position:
Patricia Bellver Muñoz	pbellver.etraid@grupoetra.com	Researcher
Stakeholder's Class: Designers and developers	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

ETRA I+D has detected the following needs for the Inter-LogP product:

ETRA does not have deep experience in ports but some IoT platforms used in port environments are similar to the ones they operate in other environments. ETRA has experience in smart cities and 'sees' the port as a small smart city oriented to workforce operation. As goods enter (or exit) the port via trucks, ETRA has experience in transport and mobility, thus any LogP solution involving integration with truck and fleets are interesting for them.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:

Traffic Safety Management Center (Cegesev), Traffic Management Center (CGT), NOC (electric vehicles), Water management products, Security products	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Experience in IoT as system integrator	Universitat Politecnica de Valencia	18/02/2016

Product Name:	
INTER-LogP	

Stakeholder's Name:	Stakeholder's Acronym:
UPV Support Group for AIOTI Participation	*AIOTI-UPV*

Stakeholder's Profile & Role:

Profile: AIOTI-UPV is a group of research groups from different field areas but with a common interest related with IoT. The research groups have organized in terms of the different existing WG in AIOTI.

Role: Research and development of solutions associated with IoT, from sensors, protocols, gateways, data processing, middleware, semantics and interoperability. With a relevant goal in publications and standardization. The role of the association is to coordinate the participation and contribution of UPV in AIOTI.

Contact Person:	Email:	Position:
Ana Cruz	acgarcia@cpi2020.es	Project Manager

Stakeholder's Class:		
Designers and developers	☒ Can appear in public reports	☐ IoT Demand side
	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

AIOTI-UPV develops activity related with smart cities and transport and logistics associated with sustainability. ITS and traffic management are a major issue associated with different research groups that could make use of this product.

☒ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved: UPV CARTA listed products and projects	New products & Systems required:

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
IoT Research	Universitat Politecnica de Valencia	29/01/2016

Product Name: INTER-LogP	
Stakeholder's Name: *Engineering Ingegneria Informatica S.p.A.*	Stakeholder's Acronym: *ENG*

Stakeholder's Profile & Role:

Profile: ENGINEERING Ingegneria Informatica S.p.A. is the head company of the ENGINEERING Group. Engineering was founded in 1980, and it is currently the first IT group in Italy, among the top 10 IT groups in Europe, with approx. 7.400 employees and 43 branch offices in Italy and abroad, with an established presence in Belgium, Lebanon, Republic of Serbia, Latin America and USA.

The group produces IT innovation to more than 1.000 large clients, with a complete offer combining system and business integration, outsourcing, cloud services, consulting, and proprietary solutions. Engineering Data Centres offer business continuity and IT infrastructure management to about 15.000 servers and 230.000 workstations. In 2014, consolidated revenues are 853 millions of euro.

Engineering operates through in the following business units: Finance, Central Government, Local Government and Healthcare, Energy & Utilities, Industry and Telecoms, delivering innovative IT solutions to main vertical markets: Aerospace, Insurance, Automotive, Banks, Consumer Products, Defence and Aerospace, Energy & Utilities, Training, Central & Local Government, Homeland Security, Life Science, Manufacturing, Media, International Organisation, Retail, Healthcare, Telecommunications, Transports, Welfare. Since 1987, Engineering innovation capability is supported by its Central Department of Research & Development, with around 250 researchers currently involved in over 70 research projects. R&D Department have been participating in several National and European research initiatives co-funded by EC and the Italian Research Ministry, with about 25M euro/year of co-funding. The R&D Department is located across 6 different locations in Italy and in Europe.

Engineering holds different responsibilities within the international research community, including technical and overall co-ordination of large research projects and consortia. In particular, the company is core partner of EIT ICT Labs in Italy (European Institute of Innovation and Technology) focused on leveraging ICT for Quality of Life; member of the Board of EOS (European Organisation for Security); core partner of NESSI (Networked European Software and Service Initiative); founding partner of the Future Internet PPP initiative. The European Commission aims to make FIWARE the standard platform for the Internet-of-Things (IoT) and Smart Cities, inviting ENGINEERING to form, together with other European big players (Telefonica, Orange, Atos), a foundation that encourages its adoption in all European countries. Engineering is an active member of most international open source communities and founder of SpagoWorld, a free/open source initiative managed by Engineering. The company is corporate member of OW2 Consortium and Eclipse Foundation.

Role: ENG could be interested in using project outcomes; ENG aims also at providing its expertise and open source solutions in the field of intelligent systems by participating in INTER-IoT open calls.

Contact Person:	Email:	Position:
Gabriele Giunta	gabriele.giunta@eng.it	Head of Smart Transport and Infrastructure Research Unit
Stakeholder's Class: System designers, Software engineering, System integrators, Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

The following list shows the ENGINEERING's needs in the INTER-LogP product adoption:

1. Enabling an organizational, technical and semantic interoperability and integration able to:
   a. collect several data on the logistic infrastructures and processes, such as good status, scheduled deliveries, ownerships, perishability, number of the involved logistic units, security intrusions, operability and so forth;
   b. ensure an high data gathering refresh rates and data quality using high reliable sensors and/or high bandwidth communication systems;
   c. develop interoperability adapters to existing solutions, such as integrate another communication protocol and/or data model, use API and so forth;
   d. expose functionalities and services to component integration by means of standardized APIs; tools to check unauthorized access to layer's functionalities should be developed.
   e. define an omni-comprehensive and shared logistic IoT semantic ontology;
   f. enable and support relationships, communications and agreements between stakeholders/solution providers;
   g. exploit new technologies, software and data integration patterns to enable integration of

heterogeneous devices, networks, middlewares, application services and data.

2. Development of advanced logistic services
   a. Identification, traceability and monitoring of the logistic units
      i. develop/adopt system capable to aggregate low level data using sensor fusion techniques;
      ii. develop technological solutions to automatically discover, register and identify logistic smart objects and logistic operations;
      iii. develop/adopt system implementing location based algorithms;
      iv. develop/adopt CEP systems to aggregate simple geo localized events to high level meaningful events;
      v. develop a service to manage the logistic IoT platform and the monitoring process itself, such as implementing self-CHOP (configure, heal, optimize, protect) general features for sensors, devices, infrastructures, units, but also to decide when monitor a logistic units, how to monitor and configure sensors and so forth
      vi. develop a service on discovered events to predict future situations and scenarios, in several perspectives such as security, delivery performance, resource utilization and so forth
      vii. develop a service on a discovered potential unwanted situation or security issue, to automatically apply countermeasures to mitigate or completely address it, such as re-route delivery of a wrong located logistic unit, avoid the delivery of logistic units in unsecure infrastructures and so forth
   b. Optimization techniques of the logistic units movement and storage
      i. develop a service to automatically decide how, when and why integrate a new component taking into account the objectives of the logistic IoT platform
      ii. develop a service to reason on how to use the features of a new integrated component depending on the status of the logistic IoT platform
3. Realize an interoperable logistic IoT ecosystem in order to:
   a. give to the ecosystem's actors the opportunity to integrate their solutions with the platform, and also simplify and speed up the integration process, using accessible and permissive licenses and/or open source paradigm
   b. implement a wide set of policies to establish who, where, why and when can use and/or access to a specific logistic infrastructure/unit
   c. develop logistic smart objects (eg logistic units), but also understand how to add smart features to existing logistic objects, eg adding sensors, actuators and communication systems
   d. develop IoT enabled infrastructures, or add to existing infrastructure technological requirements to be IoT enabled eg adding sensors, actuators and communication systems
   e. develop technological solutions to bring high performance connectivity and localization services to objects and infrastructures, inside connectivity served areas but also in not served areas
   f. build modular services on top of the logistic IoT platform

☒ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved: SoTA of the Logistic Information Systems	New products & Systems required:

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Strong R&D activity on IoT domain and strong connections with relevant companies operating in related areas at European level	University of Calabria	11/02/2016

Product Name: INTER-LogP	
Stakeholder's Name: *ITACA SRL*	Stakeholder's Acronym: *ITACA*

Stakeholder's Profile & Role:

Profile: ITACA is a spin-off company of University of Calabria and University of Salento, operating in Information & Communication Technology (ICT) field. The mission of ITACA is on one hand to ensure the technology transfer of the output of the thematic research conducted by the research group directly connected to the company members, and on the other hand to guarantee a commercial exploitation of the RTD projects carried out. The company main field of activity is the design and development of Decision Support Systems, expert systems and ICT solutions for decisional problems related to the management, optimization and control of Logistics, Transportation and Urban Mobility Systems.

ITACA solutions are based on Operational Research, Simulation/Optimization state of the art models and methods and aim at constructing ICT HW/SW web based integrated platforms that have the goal of supporting the realization of environmental and economic sustainable, safe and secure, effective and efficient systems. The main applications of ITACA solutions are in the following fields: distributive logistics optimization; real-time fleet management; urban mobility management; traffic control; logistics for waste management; info-mobility.

Role: ITACA can contribute as research partner by sharing the experience gained in previous research projects and/or as end user by exploiting the project results.

Contact Person:	Email:	Position:
Massimo Guccione	guccione@itacatech.it	Chief Technical Officer
Stakeholder's Class: Software engineers	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

Automatic Vehicle Location generates a large amount of data that can be processed in order to provide many value added services. IoT leads to new possibilities to AVL systems, introducing intelligence-driven development of services. In order to exploit the IoT potentiality in a very real way, several conditions must take place at the same time:

- Vehicles are IoT entities provided with on-board logic, collecting data coming from sensors (from canbus, biometric devices, etc.) using different devices and communicating these data through IoT protocols and standards (Complex Smart Asset);
- Hub and transport infrastructures (terminals, roads, stop points etc.) incorporate sensors, become smart and IoT enabled (i.e. weather and environmental sensors, gates, access controls, cameras, aids to navigation, road traffic control devices)
- IoT platforms are introduced by logistics and transport infrastructure managers as well as logistics and transport operators to handle the interoperable heterogeneous IoT enabled smart objects they have introduced and they are managing in the ecosystem.
- IoT platforms are connected to enterprise and operational business platforms (terminal operating systems, control systems, fleet management systems) so smart objects are tightly linked with the operations and the stakeholders linked to those operations.
- heterogeneous IoT platforms owned by different logistics and transport infrastructure managers and operators are able to interoperate;
- A Complex Smart Asset is IoT enabled, and can communicate with different heterogeneous IoT platforms in a secure and trusted environment, according to the associated business operation and status or some business rules.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Passive RFID tags Smartphones & tablets On-board units Ticket machines Smart watches	Esisting IoT Plaftform (i.e. Brillo, Wifare…) or IoT enabling platforms (JBossMQ, Apache Spark, Apache kafka, …)

New Stakeholders	Stakeholder's class
University of Calabria	Partner
Gioia Tauro Port	End user
Everis	Subject-matter expert (IoT)

Reason of involvement:	Identified by:	Registration Date:
Strong experience in software integration	University of Calabria	11/02/2016

Product Name:

INTER-LogP

Stakeholder's Name:	Stakeholder's Acronym:
Medcenter Container Terminal Spa	*MCT*

Stakeholder's Profile & Role:

Profile: Medcenter Container Terminal Spa (MCT), in the port of Gioia Tauro, is a company controlled by Contship Italia Spa, leader in Italy in container terminal operations.

MCT is today one the largest port in the Mediterranean and the main transhipment hub in the area, with an annual throughput in excess of 3 million Teus. MCT connects on a weekly basis more than 60 ports in the Med and Black Sea regions and offers weekly departures in direct connection with some 60 extra Med ports. Any deep sea destination, from Far East to Usa, from Middle East to South America and from Oceania to North Europe, can be reached via MCT in Gioia Tauro. An effective rail connection with North Italy and middle Europe is available as well.

Gioia Tauro is part of a TEN-t corridor (Helsinki-La Valletta).

MCT offers some 3.5 Km of linear berth, water depth up to -18 m and 1.600.000 sqm of yard space. The terminal is equipped with 22 gantry cranes and 1 mobile crane and is able to operate the last generation ULCC (Ultra Large Container Carrier) having a capacity in excess of 14.000 Teus. Yard operations are carried out by a fleet of 110 straddle carriers and other equipment such as trailers, multitrailer trains, reachstackers, front stackers and fork lifts.

A state of the art TOS (Terminal Operation System) and IT system support smooth and fast commercial operations. The terminal container is part of a larger logistic system which is currently in the process to be extended and completed trough the construction of new rail gateway and other logistic and economic businesses.

Role: MCT can contribute playing different roles:

- as research partner by sharing the experience gained in previous research projects
- as project partner supporting the pilot activities by sharing own logistic platform

- as end user by exploiting the project results

Contact Person:	Email:	Position:
Carmine Crudo	carmine.crudo@contshipitalia.com	General Manager
Stakeholder's Class: Domain Experts	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

The needs for a transshipment terminal container related to the usability of IoT are mainly linked to the possibility to:

- trace the containers from the inbound to outbound of the container in the terminal;
- check the status of the handling machines in real time and to provide maintenance, check consumptions, etc.;
- monitoring in real time the status of reefer and the hazards containers;
- knows in real time the position of the trucks, rail and vessel that are calling the terminal.

To achieve these goals, containers, trucks, wagons, trains, vessels, cranes and other freight or container handling machines should become entities IoT enabled capable to be identifiable and smart, capturing data coming from sensors using different devices (like RFID, GPS, PLC, etc.) and communicating these data through IoT protocols and standards.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Port Community Systems in development in the port of Gioia Tauro Smart phones & tablets WI-FI Network GPS installed on the handling machine Crane /Straddle carrier PLC	Passive and active RFID tags Automatic Gate Systems

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Strong experience in container terminal operations.	University of Calabria	08/02/2016

Product Name: INTER-LogP	
Stakeholder's Name: *PRODEVELOP*	Stakeholder's Acronym: *PRO*

Stakeholder's Profile & Role:

Profile: Prodevelop is a solution developer and systems integrator with a high expertise in port & maritime solutions and public administration, especially smart cities. Prodevelop has a suite of products aimed at the management of Port Authorities, which has been integrated into IoT platforms in Smart Port projects. Prodevelop has also participated in developing solutions for Smart Cities in mobile and geospatial technologies.

Role: PRO is partner of the project, thus responsible for technically contributing to the deliverables and interested in commercializing this product

Contact Person:	Email:	Position:
Miguel Montesinos	mmontesinos@prodevelop.es	CTO
Stakeholder's Class: Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

The need for this product is to be able to transfer the resultant product into a commercial product that could be incorporated into Prodevelop's portfolio. Taking into account this generic objective, some specific needs for this product are the following ones

- To be port independent, this means the product to be able to use generic processes and interfaces that can technically be applied to different IT systems existing in other ports.
- To have product customizable in terms of business to the needs to different ports.
- To analyze and possibly re-use the outputs of previous R&D experiences of Prodevelop and VPF about road transport (specifically STIMULO project).

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
STIMULO project	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Project partner	Prodevelop	15/02/2016

Product Name: INTER-LogP	
Stakeholder's Name: *AUTORIDAD PORTUARIA DE VIGO*	Stakeholder's Acronym: *APVIG*

Stakeholder's Profile & Role:

Profile: The Port Authority of Vigo maneges one of the major logistic and business complexes in Europe. Vigo is an economic significant Port, also called a port of general interest, with an essentially export nature and handling high value merchandises. Futhermore, the Port of Vigo accounts for about 40% of exports in Galicia. Port Authority of Vigo is deploying a Smart Port platform with a related IoT platform, integrating sensors deployed in the port area from lighting, water/electricity metering, AIS, weighing scales, access control, video, etc.

Role: APVIG is interested in the results of the project and in INTER-LogP product.

Contact Person:	Email:	Position:
David Silveira	davidsilveira@apvigo.es	ICT Director

Stakeholder's Class:	☒ Can appear in public reports	☒ IoT Demand side
Customer	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

So far, there is not a big concern about organizing truck arrivals to the different terminals of the Port of Vigo. Nevertheless the Port Authority of Vigo shows interest in the following features:

- Integrating sensor data from different port agents (terminals, road transport, etc.) to a central hub managed by the Port Authority.
- Making homogeneous use of disparate sensor using a common ontology for a common understanding.
- To offer services for distributing processed information with enterprise platforms to enable new business models.

☐ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved: Ágata (Smart Port platform) Posidonia PCS (Port community System)	New products & Systems required:

New Stakeholders	Stakeholder's class
Ágata	IoT platform provider

Reason of involvement:	Identified by:	Registration Date:
Port Authority with an existing IoT platform	Prodevelop	15/02/2016

Product Name:	
INTER-LogP	

Stakeholder's Name:	Stakeholder's Acronym:
THALES SERVICES SAS	*THS*

Stakeholder's Profile & Role:

Profile: Thales Services (THS) belongs to Thales group, which is a large industry player specialized in critical systems for government and companies, whose activities around the world now generate revenues of about 14.2 billion euro, with 65,000 employees in 50 countries. Leading the computing solutions within Thales, Thales Services designs, supplies, maintains and operates global solutions based on critical computing enabling its customers in civil and public sector markets (ground and air transportation, defence, avionics, space, etc.) to manage the critical infrastructures under their responsibility. Within Thales Services, ThereSIS is an applied research laboratory dedicated to developing innovative technologies into six key areas: Cloud Computing, Big Data & Big analytics, Real Time Environment, Vision & New sensors, Security & Networking, Machine learning & Modelling. In the new context of the "Internet of everything", ThereSIS has to respond to many societal and technological challenges, by developing innovative solutions for handling the generalized interconnection of actors, information systems and objects.

Role: Thales Services offering in the area of Platforms for Connected Devices and in the area of Intelligent information processing and service provisioning rely on the following technical pillars: "Urban Mobility" platform, enabling to manage and monitor the mobility of a city; Bio-inspired Simulation platform, where artificial intelligence algorithms handle the goal-based individual and collective activities. Thales Services is a system integrator that has a long tradition and a complex infrastructure for integrating large scale

systems for large accounts.

Contact Person:	Email:	Position:
Mihaela Brut	mihaela.brut@thalesgroup.com	PM
Stakeholder's Class: Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

INTER-LogP should allow the tracking of objects carried out on containers. In addition, it should ensure the composition of data coming from different stakeholders and specific for an object, as well as secured and regulated accesses to these data.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Integrated system for port surveillance Integrated system for container management	INTER-LogP could allow the integration between the two existing systems of Thales through a fine-grain management at the level of the concerned objects.

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Interested in the project	Prodevelop	22/02/2016

Product Name:	
INTER-LogP	

Stakeholder's Name:	Stakeholder's Acronym:
Technische Universiteit Eindhoven	*TU/e*

Stakeholder's Profile & Role:

Profile: Eindhoven University of Technology (https://www.tue.nl/en/) is one of Europe's top technological universities, situated at the heart of a most innovative high-tech region. Thanks to a wealth of collaborations with industry and academic institutes, our research has real-world impact. In 2015,

TU/e was ranked 106th in the Times Higher Educational World University ranking and 49th in the Shanghai ARWU ranking (engineering). TU/e has around 3,000 employees and 2,300 PhD students (half of which international, representing about 70 nationalities).

Role: TU/e will deploy sample networks in the port of Valencia and collect data to assess dependability and reconfiguration capabilities of IoT infrastructure. Our role will be to test the performance of different networks in various scenarios and over mixed-criticality situations. INTER-LogP product offers a real-world testbed for us to learn the different requirements needed from different industrial infrastructures.

Contact Person:	Email:	Position:
Antonio Liotta	tue.interiot@gmail.com	Professor

Stakeholder's Class:	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Designers and developers, systems engineers, testers, technology experts, system designers		

Stakeholder's Needs:

INTER-LogP will need to provide a set of scenarios with different QoS requirements co-existing in the same network. TU/e technologies will need to identify the various QoS requirements and reconfigure the infrastructure at runtime.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Port Community System (ValenciaportPCS) SCADA Systems Automated Gate Systems Sensors, smart objects, Passive RFID tags	SCADA adaptor for INTER-LogP

New Stakeholders	Stakeholder's class
Cisco	Domain experts, usability experts
resin.io	Users of the current system, provider
Cosmote	Provider
TNO	System designers

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	Technische Universiteit Eindhoven	12/02/2016

Product Name: INTER-LogP		
Stakeholder's Name: *Association pour le développement de la formation professionnelle dans les transports*		Stakeholder's Acronym: *AFT*
Stakeholder's Profile & Role: **Profile:** AFT is a non-profit organization based in France devoted to the development of vocational education and training in the Transport & Logistics sectors. Notably through its regional delegations scattered throughout the French territory it supports Transport & Logistics undertakings to gain awareness and benefit from new IoT advancements that could make them enhance competitiveness, by applying high level research results to their ordinary business activities involving IoT solutions. **Role:** AFT is a partner of the project and will raise awareness and introduce transport & logistics stakeholders in its extensive national network, especially in those cities where port activities are predominant (e.g. Marseille, Sète, Le Havre) to the results of the use case so as to place them in a position to adopt the INTER-LogP application in praxis to carry out daily business.		
Contact Person: Jean-André Lasserre	Email: jean-andre.lasserre@aft-dev.com	Position: Institutional Affairs Director
Stakeholder's Class: Representatives of external associations	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: AFT is growingly committed to participating in combining environmental concerns with smart cities logistics in port cities. This application may be a good way for transport and logistics undertakings to optimize port logistics so as to comply with constraints such as increasing regulatory obligations, severe congestion at certain moments, urban delivery requirements and citizens' growing demand for better quality efficiency of deliveries in urban areas. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Port Community Systems Passive RFID tags Smart phones & tablets Automatic Gate Systems	New products & Systems required: IoT Platforms	

New Stakeholders	Stakeholder's class
Road Hauliers (SOTRADEL, AUBRY, Rouillé & Coulon)	End user
Ports & port terminals	End user

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	AFT	20/02/2016

Product Name:	
INTER-LogP	

Stakeholder's Name:	Stakeholder's Acronym:
XLAB d.o.o.	*XLAB*

Stakeholder's Profile & Role:

Profile: XLAB is a company providing with technology solutions for enterprises and products for, among others, high volume and speed services such as Internet of Things, and member of the INTER-IoT project.

Role: Within the project, its responsabilities lay in the design and implementation of interoperability gateways, especially within the middleware, for the interconnection of heterogeneous IoT solutions.

Contact Person:	Email:	Position:
Mariano Cecowski	mariano.cecowski@xlab.si	Research Manager

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Designers and developers	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

Tools for the support of maritime transport services and standards.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
RabitMQ, ElasticSearch Proprietary systems	INTER-FW, INTER-LAYER, INTER-LogP

New Stakeholders	Stakeholder's class
Sentinel	Client

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	XLAB	08/02/2016

Product Name: INTER-LogP	
Stakeholder's Name: *Sentinel d.o.o.*	Stakeholder's Acronym: *Sentinel*

Stakeholder's Profile & Role:

Profile: Sentinel is a Croatian company providing with a hardware and software bundle for the monitoring of personal vessels and charter fleets.

Role: Sentinel is a consumer of IoT solutions that enable its activities.

Contact Person:	Email:	Position:
Marko Pihlar	marko.pihlar@sentinel.hr	Director

Stakeholder's Class:	☒ Can appear in public reports	☒ IoT Demand side
Designers and developers	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

The ability to connect its services througth different transportation means (wifi, gsm, etc.), communication with different services (e.g. marinas) and information merged with other services (weather, rental prices, etc.)

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
RabitMQ, ElasticSearch Proprietary systems	INTER-FW, INTER-LAYER

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Potential users	XLAB	08/02/2016

Product Name: INTER-LogP	
Stakeholder's Name: *Systems Research Institute, Polish Academy of Sciences*	Stakeholder's Acronym: *SRIPAS*

Stakeholder's Profile & Role:

Profile: The Systems Research Institute, Polish Academy of Sciences was established in 1976. Since then, the scientists employed at the Institute have been active primarily in the domain of methodological foundations for systems analysis. The Systems Research Institute is member of the consortium for Inter-IoT and has an expertise in the key domains of the project, to which it shall contribute. It concerns: (i) software agents and agent systems; (ii) ontologies and semantic data processing; (iii) agent-semantic systems; (iv) software agents in sensor networks; (v) software design and implementation; (vi) grid / cloud computing; (vii) cyber-physical systems.

Role: Within INTER-LogP SRIPAS will research standards / semantics / data that are used in IoT platforms considered in the use case and develop tools and methodology to achieve semantic interoperability so that heterogeneous data can be seamlessly integrated and presented to the end user (person / systems) for further analysis.

Contact Person:	Email:	Position:
Maria Ganzha	Maria.Ganzha@ibspan.waw.pl	Project leader

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
System designers and developers	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

1. Semantic model of the application domain should be developed.
2. Pilot in the application domain should integrate data from identified IoT platforms so that they can be analyzed together by the end user.
3. All data exchange standards used in IoT platforms should be considered and mapping of common

concepts should be developed.

4. Product should consider the possibility to integrate more IoT platforms within INTER-LogP

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
N/A	N/A

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	SRIPAS	15/02/2016

Product Name:

INTER-LogP

Stakeholder's Name:	Stakeholder's Acronym:
Vemco Sp. z o.o.	*VEMCO*

Stakeholder's Profile & Role:

Profile: Vemco is a company with main focus on computer networks and access-control systems. They design, develop and deploy solutions for closed zone (e.g. parking) monitoring that include: tracking vehicles entering and leaving the area, incidents detection, access control. Vemco participated is a member of international consortium working on the following projects within JTI ARTEMIS European innitiative:

- DEWI (Dependable Embaded Wireless Infrastructure) – project's scope is application of intelligent wireless embedded systems in 4 areas including smart buildings.
- ACCUS (Adaptive Cooperative Control of Urban Subsystems) – project's scope is effective creation of systems composed of systems (SoS) that enables real-time management and optimization by urban systems integration.

Role: Vemco's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms, therefore their input in requirements specification for mentioned products can be valuable.

Contact Person:	Email:	Position:
Rafał Tkaczyk	r.tkaczyk@vemco.pl	IT Specialist

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Subject-matter experts	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

1. Stakeholder is interested in results of the Inter-IoT project's products and willing to try to adopt them in their work.

The following problems and possible areas of interests for research have been indicated by the stakeholder:

- Lack of advanced semantics – communication with devices is based on many vendor-specific protocols
- In case of integrating many platform (set of devices) each of them is managed separately due to dedicated APIs
- Various variants of business rules engines. The problem is to analyze large amounts of data generated continuously and detection a number of conditions (in two variants, simple and complex). Very important is the quick reaction in real time system (system of systems).
- Security, it is still open issue to manage an authorization, authentication and access rights assignment protocols in an efficient way. It is very important that data and services should be protected.
- Various communication protocols of devices (e.g. sensors, readers, area controllers, etc.). The problem is to design a unification protocols.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Projects developed by Vemco as part of ARTEMIS initiative can provide interesting information about application use-cases.	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Vemco's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms.	SRIPAS	18/02/2016

Product Name: INTER-LogP		
Stakeholder's Name: *BetterSolutions SA*		Stakeholder's Acronym: *BS*
Stakeholder's Profile & Role: **Profile:** BetterSolutions's area of interest is close to the Inter-IoT project. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms, therefore their input in requirements specification for mentioned products can be valuable. **Role:**		
Contact Person: Mateusz Bonecki	Email: mateusz.bonecki@bettersolutions.pl	Position: R&D Director
Stakeholder's Class: Subject-matter experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

Stakeholder is interested in results of the Inter-IoT project's products and willing to try to adopt them in their work.

The following problems and possible areas of interests for research have been indicated by the stakeholder:

- Context: BetterSolutions demands IoT technologies to streamline dairy supply chain logistics and account for reliable and safe food processing. In milk transportation and cold-chain management the "first in, first out" rule applies. MuuMap system (see below) is deployed in 20+ dairy processing plants in Poland and is used as a core IT system to support milk collection process.
- sensors heterogeneity – highly specialized sensors and measuring devices, provided by numerous competing suppliers using different communication standards and data models, result in high expenditures on integration and interfacing of each device type; example: different devices to measure/detect milk parameters: somatic cells, antibiotics contamination, fat and protein content);
- WSAN support – IoT platform should enable easy data exchange with IoT gateways installed in vehicles; Raspberry Pi-based embedded systems acting as gateways for WSAN nodes (sensors to monitor milk parameters and vehicle/drive/route parameters).
- data ownership – sensors as data sources are owned by different third parties; IoT platform should support data ownership management, data-flow monitoring, access management;
- data privacy – in case of personal data processing, IoT platform should meet standards required by Inspector General for Personal Data Protection (Poland);

- data security – BS stores and processes sensitive (from the point of view of our customers in dairy industry) data; for example, quantity of resources available for pick-up per supplier.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
MuuMap – BetterSolutions product for dairy supply chain management (http://muumap.pl/en).	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
BetterSolutions's area of interest is close to the Inter-IoT projects. They have knowledge and experience in designing, developing and deploying systems based on IoT platforms.	SRIPAS	18/02/2016

Product Name:

INTER-LogP

Stakeholder's Name:	Stakeholder's Acronym:
Orange Polska S.A.	*OPL*

Stakeholder's Profile & Role:

Profile: ISP & telco services provider for B2B/B2C customers. The biggest telco operator in Poland, part of Orange Group (France Telecom). Most oriented for innovation services and new technologies.

Role:

Contact Person:	Email:	Position:
Tomasz Kowalczyk	Tomasz.Kowalczyk3@orange.com	

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Subject-matter experts	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:		
General knowledge about possible use cases of IoT Platforms and devices follow by technical solution. ☒ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved:	New products & Systems required:	

New Stakeholders	Stakeholder's class
Orange Polska S.A. -> M2M Marketing UNIT Kozłowski Piotr, mail: Piotr.Kozlowski2@orange.com	

Reason of involvement:	Identified by:	Registration Date:
OPL would be IoT provider for B2B/B2C customers and develop new products in portfolio.	SRIPAS	22/02/2016

Product Name:	
INTER-LogP	
Stakeholder's Name:	Stakeholder's Acronym:
NEWAYS	*NEWAYS*

Stakeholder's Profile & Role:

Profile: Neways Electronics International N.V. (Neways) is an international company active in the EMS (Electronic Manufacturing Services) market. Neways offers its clients custom-made solutions for the complete product life cycle (from product development to after-sales service) of both electronic components and complete (box-built) electronic control systems. Neways operates in a niche of the EMS market and focuses primarily on small to medium-sized specialist series, in which quality, flexibility and time-to-market play a crucial role. Neways products are used in sectors such as the semi-conductor, medical, automotive, telecom and defence industries. Neways has operating companies in the Netherlands, Germany, the Czech Republic, Slovakia and China, with a total of 2,530 employees at year-end 2015. Neways recorded net turnover of € 374 million in 2015. Neways shares are listed on the

Euronext Amsterdam stock exchange (symbol: NEWAY).

Role: Neways is WP6 pilot deployment lead and responsible for the integration and validation of INTER-LogP pilot for the logistics and transportation in the Valencia city port.

Contact Person:	Email:	Position:
Ron Schram	ron.schram@newayselectronics.com	Senior System Architect

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Client	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

Neways needs is relate to effectively deployment of the LogP pilot. Testing Inter-Layer, Inter-FW and Inter-Meth in specific scenarios (ports) and test if the previously identified requirements are fulfilled or not. Concrete real needs are provided by port entities (e.g. VPF, NVP).

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Sensor Observation Systems (OGC SOS) SIMACOP (command & control) Industrial PLCs, Sensors, Actuators Passive RFID, Localization & Tracking	IoT Platforms (FI-WARE/VLCi, Open-IoT, Sofia2, Azure IoT, Google IoT), smart objects LoRa, DUST, Body Area Network (BAN) Smart Agriculture, Computervision

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	Neways	12/02/2016

Product Name:	
INTER-LogP	

Stakeholder's Name:	Stakeholder's Acronym:
SOTRADEL	*STRDL*

Stakeholder's Profile & Role:		
Profile: SOTRADEL is a logistics company that provides freightforwarding, warehousing and regional, national and European transport services. **Role:** It is interested in IoT solutions chiefly to enhance the driving performance of its workforce.		
Contact Person: Nöel Comte	Email: Noel.comte@sotradel.com	Position: General Manager
Stakeholder's Class: Client	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: SOTRADEL is in need of any solution that could provide extra data on fuel consumption (per km driven and per tonnage), on driving behaviour or any information that would allow to compare driving behaviours among drivers. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Digital tachograph, embarked tracking & tracing devices	New products & Systems required: Device that would allow comparability of driver (driving) behaviour	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
INTER-LogP may provide opportunity for SOTRADEL to access additional information on drivers	AFT	01/03/2016

INTER-Health

Product Name: INTER-Health		
Stakeholder's Name: *4MOVE srl*		Stakeholder's Acronym: *4MOVE*

Stakeholder's Profile & Role:

Profile: 4MOVE is a company acting in the field of fitness, nutrition, nutritional supplementation and wellbeing in the broad meaning of the word. Core of the company is use and interpretation of Armband that we like to call "metabolic holter"; It is the best device, at the moment, present in the market; thanks to our software elaboration it gives insight on life style, ie: kcal burned, physical activity quantified in steps, km and more than this MET; best feature of the device and the software is the quality of sleep, variable that often is ignored or not taken in count in the right way and meaning. Quality of sleep is very important to asses quality of life, but it influences too, correct losing weight and physical performance (athletes).

Other field of the company is the training about physical activity, nutrition, nutritional supplementation fitness center marketing and other fields related to physical activity and sport.

Role: Potential piloting partner providing a monitoring program of athletes and/or people physical actives to asses quality of life and performance status;

Potential research partner to develop algorithms and improve the life style device action;

End user by exploiting the project results.

Contact Person:	Email:	Position:
Stefano Ninci	s.ninci@4move.biz	CEO
Stakeholder's Class: Technology experts	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

- Connect our company to possible partners that could benefit of it (for example insurance companies in USA or Australia)
- Further develop and implement our software to take in count other parameters such body composition or clinical analysis.
- Customize intervention plan using data coming from the device for example via nutrigenomic analysis.
- Develop or better customize a new device, to allow a more comfortable wearing and a more reliable data collecting.
- Connect our company to public structure that care about health, hospitals and similar, to use the program in pathological states.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Wearable metabolic sleep & activity monitoring	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Strong experience in use and interpretation of data coming from life style devices.	University of Calabria	10/02/2016

Product Name: INTER-Health	
Stakeholder's Name: *ICT30- Agile*	Stakeholder's Acronym: *Agile*

Stakeholder's Profile & Role:

Profile: Agile intends to create IoT ecosystems in which different connectivity technologies are supported. To solve the problem of network options diversity Agile solution uses adoptive gateways for diverse multiple environments**.**

Role: Agile aims to create adoptive interoperable gateways to allow devices to connect to cloud platforms, providing device discovery and support, interoperability -solving the problem of fragmentation of cloud IoT platforms-, privacy and data control issues, and accessibility of IoT apps in a global market. Agile have the features of modularity, extensibility, device and data management, privacy-data provenance, and IoT app ecosystem.

Contact Person:	Email:	Position:
Charalampos Doukas, CREATE-NET	cdoukas@create-net.org	Coordinator

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Domain experts	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

Agile can benefit from the use of and compatibility to Inter-Health platform. Agile is designed to provide interoperability to a wide range of devices, such monitoring sensors related to e-Health applications and its compatibility with Inter-Health is convenient.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:

Smart Gateway, Eclipse Foundation products	Agile framework Standardisation: ALLSEEN Alliance, OMA, IPSO, OneM2M

New Stakeholders	Stakeholder's class
Agile Consortium	Subject-matter experts

Reason of involvement:	Identified by:	Registration Date:
ICT30 RIA Project	UPVLC Needs identified from ICT30 Kick off presentation	29/01/2016

Product Name:

INTER-Health

Stakeholder's Name:	Stakeholder's Acronym:
UPV Support Group for AIOTI Participation	*AIOTI-UPV*

Stakeholder's Profile & Role:

Profile: AIOTI-UPV is a group of research groups from different field areas but with a common interest related with IoT. The research groups have organized in terms of the different existing WG in AIOTI.

Role: Research and development of solutions associated with IoT, from sensors, protocols, gateways, data processing, middleware, semantics and interoperability. With a relevant goal in publications and standardization. The role of the association is to coordinate the participation and contribution of UPV in AIOTI.

Contact Person:	Email:	Position:
Ana Cruz	acgarcia@cpi2020.es	Project Manager

Stakeholder's Class:	☒ Can appear in public reports	☒ IoT Demand side
Integrator	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

One of the activities associated with AIOTI-UPV is related with wearables, e-health and AAL, so the resulting product can be used and integrated in the UNIVERSAAL platform.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
UPV CARTA listed products and projects	N/A

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
IoT Research	Universitat Politècnica de València (UPVLC)	29/01/2016

Product Name: INTER-Health	
Stakeholder's Name: *Alkemy Tech*	Stakeholder's Acronym: *ALK*

Stakeholder's Profile & Role:

Profile: ALK designs, develops and manages IC technologies that support omnichannel innovation processes of our enterprise customers. It's Lab exeperiments new technologies and supports it's system aggregation teams in order to apply new customized solutions for it's customers with the most complex enterprise systems. In the world of Internet of Everithing, ALK develops mobile, wearable and sensors solutions for Energy, Telco, Communication, Healthcare and Data Journalism. ALK also develop new technologis for Big Data acquisition, analysis and representation.

Role: ALK is interested as a potential customer of the INTER-Heath IoT project results.

Contact Person:	Email:	Position:
-	-	-

Stakeholder's Class:	☐ Can appear in public reports	☐ IoT Demand side
System Integrator	☒ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

ALK develops solutions based on analysis and representation of Big Data, with specific reference to HealthCare. The solution construction path is:

- Identification of the sources, with research and selection of relevant data in the focus area (for example social souces al Facebook, Twitter, Instagram, Youtube, and other sources based on IoT systems and frameworks);
- Detection, exstraction, acquisition, and storing of raw data. These raw data are then organized and structured in a standar frame compatible with the data analysis algorithms of interest;
- Data analysis executed by data scientists. Data are processed using statistical and semantical analysis. Different algoritm can be used, as text mining, text analysis, sentiment analysis, onthologies, taxonomies and query. Data analysis includes also the validation of results;
- Visualization using new data aggregation and navigation models. In this phase interactive graphics and configurable active graphs are used. They are aggregated and delivered using technologies as the prototypal platform Social Sense;

- Description, interpretation, narrative construction of analysis results. This is made putting in relation the aggregated data, using futher knowledge for interpretation of the interest domain, also with ad hoc research and data journalism.

Based on the framework described, ALK has interests in extending the range of usable sources, using new frameworks and vertical solutions based on IoT. The domain of HealthCare is interesting because the data analysis of a large set of healthcare or wellness data can open a number of new products or services related to personal assistants, care and prevention applications. A lot of new sensors are now available on market and widely used; they can produce a large data asset that can be used for new services and products.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Mobile apps Wearable apps Healthcare systems	INTER-Health – data acquisition, analisys, and representation

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Potential customer of the INTER-Health product	UNICAL	11/02/2016

Product Name:

INTER-Health

Stakeholder's Name:	Stakeholder's Acronym:
AZIENZA SANITARIA LOCALE TO5	*ASL TO5*

Stakeholder's Profile & Role:

Profile: ASL TO5 is a public body that works in an area of 794.670 square kilometers. In particular, the Hygiene Nutrition Unit of the Complex Unit of Food and Nutrition Hygiene works in preventive field: promoting an appropriate healthy state and practice of physical activity to prevent the development of chronic degenerative diseases; nutritional counseling and educational interventions on the population. Within the project it will work to demonstrate the importance of IoT in health care, building a network of connections between users and medical staff to ensure increased effectiveness and health benefits, using same resources, with high impact on users.

Role: ASL TO5 is a partner of the project and is responsible for the development of the health use case concerning monitoring of lifestyles "Decentralization and monitoring of lifestyles" during the Integration and Pilot deployment (WP6) to improve and overcome the methods, tools and traditional protocols.

Contact Person:	Email:	Position:
Margherita Gulino	gulino.margherita@aslto5.piemonte.it	Hygiene Nutrition Unit Director
Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Subject-matter experts	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

To introduce IoT in health in order to prevent the major chronic diseases resulting from improrer lifestyle and lack of physical activity is necessary:

1. Decentralize ambulatory activity from the health care center to users home using devices that allow to collected directly on platforms e-Care, the users objective measures.
2. Monitor in mobility users through wearable mobile devices by which the users objective measure are directly collected on Bodycloud platforms.
3. It will be used in the health care center a Computerized Nutritional Record, where the data subjects will be collected (by traditional and experimental methodology with the use of the devices).
4. The interoperability of these two platforms will create a new integrated ecosystem monitored at multiple levels; in this way the various stakeholders according to their skills will be able to work together to achieve the same goal: using the devices and preventive action
5. The development of quantitative benefits (public wideness) and qualitative (objective measurements) will lead to a greater efficiency of the system.
6. Creating new standards for the management of nutritional outpatient (tested during an "experimental nutritional counseling") to assist more efficiently the citizen, allowing them to extend the preventive action with the same resources to a wider group of people.
7. The data collected in mobility and those collected in a decentralized way at the subjects' homes will be correlated and used simultaneously by the health care center and the stakeholders with the future goal of being able to involve the family doctors.
8. The subjects recruited will be informed about the type of observational study and devices that will use, reading an information sheet and signing an informed consent, in particular by using a specific identification code and password they can check the data recorded from mobile devices and collected on platforms.
9. They will be collected different data types depending on the reference platform; they will be made anonymous in accordance with national regulations concerning the handling and data protection.
10. Will be used the health status indicators, and the dropout rate, to evaluate the effectiveness of the IoT during a nutrition counseling and the experimentation effectiveness in health scenarious.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Computerized Nutritional Folder Scale Statometer	Sensors (mobile device), smart objects (medical device)

Sphygmomanometer	

New Stakeholders	Stakeholder's class
Municipalities	Government
CSI	Maintenance operator
UNICAL	Partner
TELECOM ITALIA	Partner
Turin Unversity	Subject-matter expert

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	*AZIENZA SANITARIA LOCALE TO 5*	8/2/2016

Product Name:

INTER-Health

Stakeholder's Name:	Stakeholder's Acronym:
Institute of Electronics, Computer and Telecommunication Engineering (IEIIT), Consiglio Nazionale delle Ricerche (CNR)	*CNR-IEIIT*

Stakeholder's Profile & Role:

Profile: CNR is the greatest Italian research institution, with several institutes, working in the main fields of scientific and humanistic research. CNR performs research activities in cooperation with universities, other research institutions, and industrial companies. Advanced research activities at Institute of Electronics, Computer and Telecommunication Engineering (IEIIT) are carried out in the Information and Communication Technologies domain: more specifically, the Wireless Communication System group of IEIIT-CNR covers different areas of wireless communications, statistical signal processing, software defined radio (SDR), information theory, ad-hoc networking and IoT platforms for monitoring and control applications. The CNR-IEIIT unit interested in the Inter-IoT project is developing a radically novel and ubiquitous sensing technology for environmental perception, able to transform any wireless-enabled device into a sensor. The technology, referred to as RadioVision, relies on the real-time processing of the same electromagnetic (EM) fields that are commonly used for wireless communications, without any need for deploying new hardware equipment or ad-hoc sensing infrastructures. The perturbations induced by moving bodies/objects on the radio-frequency (RF) field (namely the channel quality information CQI) are measured and processed in real-time to extract an image of the environment that originated the perturbation. Potential applications of RadioVision are crowd density/flow monitoring, human activity/health, intention recognition, person/object localization and tracking. Each wireless link part of the RadioVision system can thus double as sensor while the combination of multiple, heterogeneous links enable powerful distributed sensing for accurate human-scale understanding of space and motion.

Role: The CNR-IEIIT unit can take the role of integrating the RadioVision technology in the INTER-Health product. The RadioVision system will be thus designed to enable the recognition of person well-being, including device-free fall detection, localization and recognition of wandering motion patterns. The

adoption of a device-free wireless fall detection and localization technology is highly attractive in the context of assisted living as a fallen person might not be able to activate a personal emergency response system, if not forgetting how to use it. In addition, today's commercially available products use already a broad range of active devices (e.g., necklaces with emergency buttons, fall sensors in mobile phones, etc.). However, these devices are often too difficult for elderly people to operate and are useless in emergencies. Body-worn sensing devices also require cooperation from the monitored subjects and might hinder daily activities. Systems based on cameras, video or acoustic sources are also effective but penalized by privacy concerns. A demonstration of the RadioVision technology will be available for public evaluation and also serve as a technology laboratory where other potential stakeholders can get knowledge of the RadioVision technology solutions available for home automation and care.

Contact Person:	Email:	Position:
Stefano Savazzi	stefano.savazzi@ieiit.cnr.it	Research Scientist
Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
Subject-matter experts	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

To effectively introduce the RadioVision technology in the INTER-Health product the following items are needed:

1. The technology should be demonstrated in highly representative environments. Two potential set-ups have been identified as the DAT ("Domotica, Ausili, Terapiaoccupazionale") smart home laboratory hosted by Fondazione Don Gnocchi and the smart work-space area hosted by the CNR unit. Other settings will be also considered. Selected environments will incorporate different IoT platforms consisting of heterogeneous radio devices and that are able to interoperate.
2. RadioVision will consider the real-time analytics of massive volumes of electromagnetic (EM) data extracted from possibly heterogeneous wireless devices that are pre-deployed inside the considered environment (e.g., smartphones, wireless-enabled machines or appliances).

   This in turn will require the re-design of signal-processing and statistical learning tools and the definition of distributed and cooperative inference methods.
3. The channel quality information (CQI), used as EM measurements for recognition, is extracted from pre-existing wireless devices and can be in the form of: physical (PHY) layer values processed at the baseband symbol level (e.g., radio channel state information CSI, micro-Doppler, dynamic phase-shifts, complex channel envelope) or upper layer (application/link layer) received signal strength (RSS) data. Other aggregated link quality metric forms (e.g., packet error rate, link quality information – LQI) can be also considered. Software-defined radio devices should be adopted to extract PHY layer CQI. Instead upper layer RSS data could be easily extracted and processed using commercial off-the-shelf (COTS) radio devices.
4. Several tests in the identified representative environment are needed as instrumental to the demonstrators' development. Volunteers will sign an informed consent with information about the experiments, while collected data will be regarded as anonymous. For testing of the demonstrator a group of healthy elderly subjects (aged 65 or above) should be recruited. EM fields employed during experimental measurements will be checked to be compliant with Italian and European limit standards.

☒ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved: Smart-phones Wifi and Bluetooth low-energy (BLE) devices ZigBee devices Passive RFID tags	New products & Systems required: RadioVision software platform can be applied to existing radio devices, and standards including WiFi, ZigBee, Bluetooth low-energy (BLE). In addition, in contrast to tag-based recognition, it does not require the instrumentation of human body (device-free), nor human intervention (non-cooperative).

New Stakeholders	Stakeholder's class
Fondazione Don Gnocchi (Onlus)	Subject-matter expert (assisted living)
Aalto University, Department of Communications and Networking	Subject-matter expert (RF sensing technology, ubiquitous computing)

Reason of involvement:	Identified by:	Registration Date:
Strong experience in IoT platforms for monitoring and control applications.	University of Calabria	10/02/2016

Product Name:	
INTER-Health	
Stakeholder's Name: *CONSOFT SISTEMI S.p.a.*	Stakeholder's Acronym: CON

Stakeholder's Profile & Role:

Profile: Consoft Sistemi is an Italian company present in the ICT market since 1986, with offices in Torino, Milano, Genova, Roma and Tunis, 400 employees and an annual turnover of around 29 million Euros. Operating alongside the group leader Consoft Sistemi, are three other companies: Consoft Consulting Consoft Consulting focused on specific topics of public administration; CSInIT specializes in scouting and distribution innovative software for the Italian market; Consoft Sistemi MEA expands the group leader's offer, particularly linked to Telecoms in the North African and Middle Eastern markets.

Products, Solutions, Services: Consoft Sistemi's offer is focused on 9 thematic areas in which the company is able to create 'end to end' solutions for its customers through technological and methodological consultancy, training, and development of integrated solutions and the provision of insourcing/outsourcing services.

IT Governance & Management For optimizing and aligning IT services to company needs. The ITG&M offer matches methodologies and certified competences with the supply of software tools, in partnership agreements with leading international vendors, in order to support customers in planning, innovating, designing, implementing, managing and checking IT infrastructures. The main areas are: Application &

System Management, Application Performance Management, Application Monitoring, Networking, Security, Compliance and support during the introduction of ITIL Methodologies.

Business Analytics Thanks to the integration of technological skills (DWH, ETL, Data Modeling, Data Quality, Planning and Data Discovery) with those of business and industry, Consoft Sistemi is able to help its Customers through the whole life cycle of a BI Analytics solution. From offering vertical solutions for the sector to assessment and application management services. From logical model design to the choice of technological solutions and the development and implementation of complex projects,

Big Data Today, new technologies allow us to overcome obstacles linked to the dimensions, type, origin and complexity of data. Consequently, the challenge lies in the capacity to transform this mine of information into value. In this challenge, Consoft Sistemi is right beside its clients to support them in the adoption of opportune strategies and the implementation of 'best of the breed' solutions both in terms of adding value to the potential locked up in processed data and that sourced from social networks.

CRM All of the design capacity and technological skill of Consoft Sistemi is focused on getting the maximum value out of market-leading CRM solutions like Salesforce.com through complete integration with company IT ecosystems.

DevOps To ensure continuous delivery through the identification, improvement and optimizing of repeatable Lifecycle and Deploy processes. Consoft Sistemi offers its own methodological approach to life cycle management and the delivery of software by working on communication and collaboration between developers and IT operators. To this end, Consoft Sistemi adopts, among others, the Agile methodological approach for the management of products and proposes advanced solutions for the Deployment phase including products like uDeploy from the IBM Rational suite and Nolio from CA Lisa.

Mobile Experience Thanks to a profound understanding of the principal empowering technologies (Android, iOS and Black Berry), Consoft Sistemi supports its Clients in the phases of change and innovation introduced by mobile platforms. It creates innovative business scenarios exploiting new channels of communication and designs and integrates architectures for the distribution of added value services. Analysis of the characteristics and organizational/technological needs of the client combined with expertise in multiple functional environments permits Consoft Sistemi to design solutions which are personalized, created with the most avant-garde mobile technologies and perfectly integrated with the company systems.

Dematerialization of document processes For the management of document processes and for complete support in their dematerialization right from the creation of the document, thanks to innovative systems for graphometric and biometric signatures, Consoft Sistemi offers both specific solutions for the management of document processes which call for the acquisition of information from interactive modules and the multi-channel delivery of documents which can be used by any device. The strategic partnership with Adobe Systems, leader in ECM solutions, completes the offer.

Digital Content Management To support the digitalization of content in all its forms, we deal with the development and design of agile web sites while placing the individual at the center of programming and design. We believe that the instruments we develop must work for those who use them. The solutions and skills offered by Consoft Sistemi, exploit the best technologies and platforms present on the market able to deliver integration, collaboration, multichannel function, use-ability and security.

IOT & Connected Life The proliferation of connected devices coupled with improved, less-expensive technology platforms and adoption of common standards will only increase the rapid growth of IoT-enabled capabilities across industries.

More generally the technological evolution and the diffusion of digital devices connected and interacting between one another with processes and people enables the creation of innovative and smart services.

Consoft Sistemi unites knowledge of technology and networks (LTE, WSN, M2M etc.), with the ability to design and create solutions along with its experience as business integrator to add value and play a leading role with their clients in this new scenario.
Consoft Systems is active on IOT european and national projects applied to health, smart industry, safety at work and monitoring.
Role: Consoft Sistemi can integrate his telemonitoring and telecare platform with wearable solutions for frailty people.

Contact Person:	Email:	Position:
Serena Ambrosini	serena.ambrosini@consoft.it	R&D BU MAnager
Stakeholder's Class: subject-matter experts, provider	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

1. methods, tools and interfaces to integrate Consoft platform,
2. methods, tools and interfaces to integrated new services, analytics, user interfaces and monitoring devices in INTER-Health

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
• Iot Platform c-health (Consoft Sistemi) • New application solutions on e-health, safety at work • devices and sensors	

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Provider of IoT platforms Provider of application solutions Partner of project	Telecom Italia	18/02/2016

Product Name: INTER-Health	
Stakeholder's Name: *DG CONNECT – EUROPEAN COMMISSION*	Stakeholder's Acronym: *DG CONNECT*
Stakeholder's Profile & Role: **Profile:** DG Connect contributes to the EU goals in the Digital Age: human advancement, fairness, jobs and growth. DG Connect seeks to foster innovation, creativity, culture, excellent research and competitive markets as well as a trustable, accessible and positive digital experience for every European citizen. **Role:** DG Connect is the sponsor of Inter-IoT as one of the 7 projects approved in the ICT30 call.	
Contact Person: DG Connect	Email: - / Position: -
Stakeholder's Class: Political beneficiary	☒ Can appear in public reports ☐ Shall remain anonymous / ☒ IoT Demand side ☐ IoT Supply side

Stakeholder's Needs:

DG Connect has established the following needs:

1. Develop open platforms to foster a vibrant IoT ecosystem. Opening up to developer communities and creative practices.
2. Break the silos between the application areas (e.g. health, home) and technologies such as IoT, CPS, Cloud, Big Data.
3. Prepare the ground for Large-scale Pilots.
4. Not to forget about trust, security, ethics, etc. (IoT preparing the hyper-connected society)

It is needed a high impact of the action with:

1. A visible and strategic programme
2. Coordination and synergies across projects
3. Availability and maturing of sustainable IoT platforms based on real ecosystems and developers
4. Sustainability beyond the project life time
5. Make progress and not reinvent the wheel

The European Commission wants to achieve a leadership in digital platforms for industry. For this, it is needed an availability of interoperable open platforms for any business to support its digital transformation.

INTER-HEALTH scenario for Decentralized and Mobile Monitoring of Assisted Livings' Lifestyle, aims at developing an integrated IoT system for monitoring humans' lifestyle in a decentralized way and in mobility, to prevent health issues mainly resulting from food and physical activity disorders.

INTER-HEALTH will facilitate the development of IoT solutions in the Health and Assisted Living sector.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
IoT initiatives/platforms (i.e. FI-WARE, IOTA, IOTLab, OpenIoT, BUTLER)	

New Stakeholders	Stakeholder's class
AIOTI	Special Interest Group
IERC	Special Interest Group

VICINITY	ICT30 RIA (Research Innovation Action) project
AGILE	ICT30 RIA (Research Innovation Action) project
BeIOT	ICT30 CSA (Coordination & Support Action) project
UNIFY-IOT	ICT30 CSA (Coordination & Support Action) project

Reason of involvement:	Identified by:	Registration Date:
Political beneficiary	Valenciaport Foundation Needs identified from ICT30 Kick off presentation	29/01/2016

Product Name:	
INTER-Health	
Stakeholder's Name:	**Stakeholder's Acronym:**
Engineering Ingegneria Informatica SpA	*ENG*

Stakeholder's Profile & Role:

Profile: Engineering - Ingegneria Informatica Spa was founded in 1980, and it is currently the first IT group in Italy, among the top 10 IT groups in Europe, with over 7.000 employees and 40 branch offices in Italy, Belgium, Latin America and USA.

The group produces IT innovation to more than 1.000 large clients, with a complete offer combining system and business integration, outsourcing, cloud services, consulting, and proprietary solutions. Engineering Data Centres offer business continuity and IT infrastructure management to about 15.000 servers and 230.000 workstations. In 2012, consolidated revenues are 770 millions of euro, with a share of 7% of domestic market, and 12% of annual turnover resulting from overseas activities.

Engineering operates through seven different business units: Finance, Central Government, Local Government and Healthcare, Energy & Utilities, Industry and Telecoms, delivering innovative IT solutions to main vertical markets: Aerospace, Insurance, Automotive, Banks, Consumer Products, Defence and Aerospace, Energy & Utilities, Training, Central & Local Government, Homeland Security, Life Science, Manufacturing, Media, International Organisation, Retail, Healthcare, Telecommunications, Transports, Welfare.

Since 1987, Engineering innovation capability is supported by its Central Unit of Research & Development, with around 250 researchers currently involved in over 50 research projects co-funded by national and international authorities.

Engineering holds different responsibilities within the international research community, including technical and overall co-ordination of large research projects and consortia. In particular, the company is core partner of EIT ICT Labs in Italy (European Institute of Innovation and Technology) focused on leveraging ICT for Quality of Life; founding partner of the Future Internet PPP initiative; member of the Board of EOS (European Organisation for Security); core partner of NESSI (Networked European Software

and Service Initiative); founding partner of the Big Data Value Public Private Partnership [http://www.bigdatavalue.eu/].

Engineering is an active member of most international open source communities and founder of SpagoWorld, a free/open source initiative managed by Engineering. The company is corporate member of OW2 Consortium and Eclipse Foundation.

The Engineering Healthcare Division is the first technological, consulting and management firm in Italy for eHealth, on all government levels –national, regional and corporate: present in 60% of Italian healthcare institutions with 21 regional projects, 550 specialist professionals and 3 research and development laboratories exclusively dedicated to the healthcare sector. Engineering is a permanent member of eHtel (www.ehtel.org), IHE Italy and HL7 Italy. Its flagship product (AREAS) has a lot of IHE certifications (68 certifications on 39 different interoperability profiles) participating to all the editions of the Connect--a--thon IHE Europa.

Role: Within the identified product the role of Engineering could be: solution provider, domain expert and case study provider.

Contact Person:	Email:	Position:
Matteo Melideo	matteo.melideo@eng.it	Head of IT Systems for Health Research Unit
Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
software engineers; system designers; domain experts	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

The needs of ENG in the Inter-HEALTH products stands mainly in:

1. Deliver the vertical IoT solutions required for applications based on wearables, (body) sensor nets making use of various technologies such as Arduino, ARM and the like.
2. Deliver a mHealth solution, which enables the monitoring of the patients with impaired mobility anytime, anywhere and in real time by caregivers and clinicians.
3. Design and provide a case study tailored on the needs of our customers and based on the Assisted Mobility module of AREAS® which is our flagship health solution. The idea is to make our AREAS solution interoperable also with the INTER-IoT platform.
4. Be part of a large initiative on IoT, which can be used as leverage toward our customers to propose new offering and solutions.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
AREAS which is the proprietary flagship Engineering solution for the healthcare A middleware for the management of a various sensors data and pluggable with any device.	An open IoT platform which can interoperate with our AREAS solution and our middleware.

New Stakeholders	Stakeholder's class
	legal experts, customer, users of the current system, domain experts, usability experts

Reason of involvement:	Identified by:	Registration Date:
Strong R&D activity on IoT domain and strong connections with relevant companies operating in related areas at European level	UNICAL	11/02/2016

Product Name: INTER-Health	
Stakeholder's Name: *Inria Lille Nord Europe*	Stakeholder's Acronym: *INRIA*

Stakeholder's Profile & Role:

Profile: Inria, the national institute for research in computer science and control, operating under the dual authority of the Ministry of Research and the Ministry of Industry, is dedicated to fundamental and applied research in information and communication science and technology (ICST). The Institute also plays a major role in technology transfer by fostering training through research, diffusion of scientific and technical information, development, as well as providing expert advice and participating in international programs.

Role: the Self-Organizing Future Ubiquitous Network (FUN) team in Inria Lille – Nord Europe will be the representative stakeholder in the context of the project INTER-IoT. FUN is a research group that investigates solutions to enhance programmability, adaptability and reachability of wireless smart devices (e.g. sensors, robots, etc.) characterized by limited resources, mobility. The role FUN will play is testing and evaluating the product considered, by trying an integration with the current solutions developed and improving the transfer technology mission of FUN with other companies.

Contact Person:	Email:	Position:
Valeria Loscri	valeria.loscri@inria.fr	Senior Researcher FUN Team (Inria Lille – Nord Europe)

Stakeholder's Class:	☒Can appear in public reports	☐ IoT Demand side
Designers and developers	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

The FUN team actively works on innovative solutions for Health, also in collaboration with hospitals and

health centers. To effectively exploit IoT in the context of body networks solutions it is needed that:

1. A set of key parameters can be identified and a smart object in motion (on the body user/patient) is able to communicate with different heterogeneous platforms
2. The full exploitation of heterogeneous IoT for the patient's monitoring process, where heterogeneity also means the integration of different communication paradigms (e.g. based on VLC solutions, communication based on ultrasound, etc.)

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
VITAL platform (result of an FP7 Smart Cities call, 2013-2016, https://www.iot-lab.info) EquipEX Future Internet of Things (FIT) platform https://www.iot-lab.info LIRIMA PREDNET https://iww.inria.fr/prednet/en/)	

New Stakeholders	Stakeholder's class
Eurasanté http://www.eurasante.com	IoT user
Decathlon	IoT user

Reason of involvement:	Identified by:	Registration Date:
Strong experience in IoT area	University of Calabria	05/02/2016

Product Name:

INTER-Health

Stakeholder's Name:	Stakeholder's Acronym:
Instituto de Tecnología Informática (ITI)	*ITI*

Stakeholder's Profile & Role:

Profile: ITI is a Private Technology Centre specialized in R&D in ICT, within UPVLC. ITI has extensive experience in the application of techniques and technologies from the Big Data Ecosystem to solve problems of large scale data analysis, and is a founding member of the Big Data Value Association (BDVA).

Role: ITI has interest in the idea of connecting IoT interoperable frameworks with Big Data, and generate added value to IoT platforms and Smart City services by the management and intelligent analysis of these large scale collected data. In Health domain ITI deploys a use case based on the Neurological Images Biobank of Valencia Public Health System. The objective in to improve the infrastructure, data, methodologies and algorithms to analyse and control the evolution of different neurological diseases.

Contact Person: Daniel Saez	Email: dsaez@iti.es	Position: CEO
Stakeholder's Class: Big Data Expert team within UPVLC	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

As ITI is deploying a Health use case project that shares strong similarities and important points with Inter-Health, both applications can benefit from a common and compatible development, guaranteeing compatibility and inter-operability. Furthermore, these benefits can be strongly complementary: the integration of Big Data techniques, methodology and solutions in an Inter-IoT platform will drastically enhance the potential possibilities, health services and utilities that Inter-Health can provide. And on the other hand, ITI can mutually benefit from this integration, as the use an IoT interoperable platform with integrated Big Data techniques and analysis can help to provide better and more complete IoT health solutions.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved: Big Data, Hadoop, Intelligent Large Scale Data Analysis, NoSQL, Business Intelligence platforms	New products & Systems required: IMASCITI, IoT platforms Standardisation:

New Stakeholders	Stakeholder's class
IMASCITI	IoT project of Smart Citizen/platform provider

Reason of involvement: Interest in connecting IoT interoperable frameworks with Big Data	Identified by: Universitat Politècnica de València (UPVLC)	Registration Date: 29/01/2016

Product Name: INTER-Health	
Stakeholder's Name: Napier University – Scotland	Stakeholder's Acronym: Napier

Stakeholder's Profile & Role:

Profile: Edinburgh Napier University has over 17,000 students from 100+ countries. Our campuses are located throughout the city of Edinburgh, Scotland's inspiring capital.

Edinburgh Napier graduates have one of the best employment prospects of all Scottish universities, with over 93% entering employment or further study within 6 months of graduating. We are Edinburgh's top university for graduate employability (HESA 2010).

Napier offers around 150 undergraduate and 100 postgraduate courses in three faculties:

• The Business School

• Engineering, Computing & Creative Industries

• Health, Life & Social Sciences

We also have 40+ specialist research teams with a reputation for working closely with industry and business, such as Scotland's first Screen Academy.

Role: E-health center for Scotland.

Contact Person:	Email:	Position:
Christoph Tuemmler	C.Thuemmler@NAPIER.AC.UK	Professor E-Health
Stakeholder's Class:	☒Can appear in public reports	☒ IoT Demand side
Customer	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

Implementation tools should be available to connect IoT technology with legacy systems. It is unlikely that health care legacy systems will be replaced in the short or midterm. For the health domain it would also be interesting to consider software to data strategies for things meaning that "mobile agents" would be able to visit especially more complex things in horder to harvest information (not necessarily data). One of the biggest challenges is certainly the interoperability between different devices in the health domain from Infusion pumps, ECG monitoring devices, pacemakers, etc. However, frequently the problem lies in the fact that manufacturers do not want to share the source code in order to protect their brand in the sense of a provider lock-in. A very interesting trend is currently the rise of smart pharmaceuticals - asthma inhalers, insulin pens and others which will be radio-enabled and might also be able to talk to their immediate environment. This might go towards a situation where different medications recognise incompatibility and potential threats to the patient. Definitely in the light of "Individualized or Personalized health Care" (the Americans call the same thing Precision Medicine) we will see the need for the drug to recognise the patient and exchange data with sensors inside the body.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Unfortunately the role out of IoT devices is still in its infancies. Zebra products (RF tags in wrist bands and stickers) are in use in some hospitals for tagging and tracking solutions, we are just about to negotiate with a hospital in Leeds IoT technology to monitor the supply chain in order to prevent medication to run out of data (Celestor Ltd, Gane Data). We are just about to consider tags based on 4G LTE and future 5G technology to enable hospital beds and bed matrazes to communicate their status, there are also discussions around patient tagging and the establishment of end-to-end systems to link patients, staff and medications.	In general I believe that Interoperability systems are of interest as a component to almost any back-end system. These interoperability platforms could also be delivered to users as a service whenever instances of such a system would be required.

New Stakeholders	Stakeholder's class

Celestor Ltd, Edinburgh	Technology Provider
Gane data, Leeds	Technology Provider
D-Log Munich	Technology Provider
Honeywell	Technology Provider
Zebra	Technology Provider
Advantec (Taiwan)	Technology Provider

Reason of involvement:	Identified by:	Registration Date:
E health expert	ABC	12 FEB 2016

Product Name:	
INTER-Health	
Stakeholder's Name: NEWAYS	Stakeholder's Acronym: NEWAYS

Stakeholder's Profile & Role:

Profile: Neways Electronics International N.V. (Neways) is an international company active in the EMS (Electronic Manufacturing Services) market. Neways offers its clients custom-made solutions for the complete product life cycle (from product development to after-sales service) of both electronic components and complete (box-built) electronic control systems. Neways operates in a niche of the EMS market and focuses primarily on small to medium-sized specialist series, in which quality, flexibility and time-to-market play a crucial role. Neways products are used in sectors such as the semi-conductor, medical, automotive, telecom and defence industries. Neways has operating companies in the Netherlands, Germany, the Czech Republic, Slovakia and China, with a total of 2,530 employees at year-end 2015. Neways recorded net turnover of € 374 million in 2015. Neways shares are listed on the Euronext Amsterdam stock exchange (symbol: NEWAY).

Role: Neways is WP6 pilot deployment lead and responsible for the integration and validation of INTER-Health pilot.

Contact Person:	Email:	Position:
Ron Schram	*ron.schram@newayselectronics.com*	*Senior System Architect*

Stakeholder's Class:		
End user	☒Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒IoT Supply side

Stakeholder's Needs:

Neways needs is relate to effectively deployment of the Health pilot. Testing Inter-Layer, Inter-FW and Inter-Meth in specific scenarios (Health) and test if the previously identified requirements are fulfilled or

not. Concrete real needs are provided by Health entities (e.g. TI, Università della Calabria, ASL To5, SRIPAS, RINI)

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	**New products & Systems required:**
Sensor Observation Systems (OGC SOS) SIMACOP (command & control) Industrial PLCs, Sensors, Actuators Passieve RFID Localization	IoT Platforms (FI-WARE/VLCi, Open-IoT, Sofia2, Azure IoT, Google IoT), smart objects LoRa Body Area Network (BAN) Smart Agriculture Computervision

New Stakeholders	Stakeholder's class
Slingcare	Usability experts

Reason of involvement:	**Identified by:**	Registration Date:
Partner of the project	Neways	12/02/2016

Product Name:

INTER-Health

Stakeholder's Name:	Stakeholder's Acronym:
North Manchester University Hospital	*NMUH*

Stakeholder's Profile & Role:

Profile: North Manchester General Hospital is the largest hospital within the Trust and is located in Crumpsall, 3.5 miles North of Manchester City Centre.

The hospital has a full accident and emergency department, which includes a separate paediatric A&E unit. It also offers a full range of general and acute surgical services and is the base for the region's specialist infection disease unit. The site is also home to the Trust's main headquarters.

The hospital site was originally three separate hospitals, namely Crumpsall Hospital, Springfield Hospital and Delaunays Hospital, and is now the only hospital serving the North Manchester area after the closure of other hospitals in the area.

In recent years, the hospital has undergone extensive work to improve its size and layout. The hospital has particularly benefitted from a £35m investment in the Women and Children's department, which now offers a level 2 neonatal unit, maternity, labour and children's wards.

Role: To participate in the clinical trials of Inter-HEALTH product, in particular for its use in dementia and elderly patients

Clinical Care Provider		
Contact Person: Prof. Irasema Leroy	Email: Iracema.Leroi@manchester.ac.uk	Position: Professor
Stakeholder's Class: Clinical Experts	☒Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☒IoT Supply side
Stakeholder's Needs: Hospital provides care to elderly and dementia patients and with aging population, it is apparent that existing methods of provision of care will not meet the ever growing demand. Therefore, Hospital is looking for new methods and technologies for provision of care and InterHeath product promises to address this problem. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Traditional hospital Care	New products & Systems required: Inter HEALTH	
New Stakeholders South Manchester University Hospital (SMUH) North Mancheter University Hospital RINICARE	Stakeholder's class end user end user Technology Provider	
Reason of involvement: Partner	Identified by: RINICOM	Registration Date: 22/02/2016

Product Name: INTER-Health	
Stakeholder's Name: *Rinicare Ltd*	Stakeholder's Acronym: *RINICARE*
Stakeholder's Profile & Role: **Profile**: Rinicare Ltd is a Lancaster based (UK) SME that brings state-of-the-art technological solutions for	

healthcare applications. Research solutions provided by Rinicare utilise the latest information and communications technologies and provide a solid foundation for enhancing its users' quality of life. Ultimately, Rinicare's goal is to design innovative, hospital grade medically certified technologies aimed at both improving patient outcomes and alleviating pressure on healthcare budgets.

Healthcare providers around the world face the challenge of maintaining sustainable healthcare systems in light of an ageing population and continuously increasing costs. Rinicare's approach to addressing these challenges is based on extensive research within Rinicom Holdings and utilises advanced prediction algorithms, enhanced with innovative information technology solutions and close collaboration with the end users. Rinicare is currently focusing on 3 solutions; PRIME (Pre-hospital Information and Monitoring E-system), STABILITY and SAFE (System to Avoid Fall Events).

As a member of the Rinicom Group, Rinicare Ltd also benefits from ground-breaking technologies for professional security applications, which contribute to the reinforcement of Rinicare's integrated solutions.

Role: RINICARE will provide its extensive knowledge and expertise to the UK healthcare market and assist with clinical trials of the developed InterHealth product.

Contact Person:	E-mail;	Position:
Natasha McCrone	natasha@rinicare.com	COO
Stakeholder's Class:	☒ Can appear in public reports	☒ IoT Demand side
Technology Experts	☐ Shall remain anonymous	☐ IoT Supply side

Stakeholder's Needs:

The proposed PRIME system will enable interconnection of various biometric sensors with InterIoT interoperability platform, providing reliable and secure data transfer from a patient to the clinical staff via the developed IntorIoT interoperability platform. The PRIME system is developed utilizing Open Platform architecture so it is anticipated that the majority of the existing sensors currently available on the market will be compatible with it. Furthermore, this architecture will ensure future proof concept, ensuring that even future sensors could be incorporated within the PRIME architecture

In addition, PRIME incorporate proprietary prediction algorithm (called "STABILITY") allowing early stage prediction and prevention of patient deterioration.

☒Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Sensors, Actuators, BLUETOOTH	Communication Protocols, Risk Prediction Software, Bayesian Netowrk IoT platforms

New Stakeholders	Stakeholder's class
South Manchester University Hospital (SMUH)	end user
North Manchester University Hospital	end user

Rinicare		technology provider
Reason of involvement: Partner of the project	Identified by: RINICOM	Registration Date: 22 Feb 2016

Product Name: INTER-Health		
Stakeholder's Name: Slingcare		Stakeholder's Acronym: Slingcare
Stakeholder's Profile & Role: **Profile:** Slingcare designs, manufactures and sells slings for lifting natural persons in care centres, hospitals etc. In many cases the slings are adapted and unique per individual. The products can be categorized as safety critical. **Role:** Slingcare aims to improve the traceability, serviceability and maintenance of slings, by adding new functionality and features.		
Contact Person: *TBD (name foreseen)*	Email: *TBD (name foreseen)*	Position: *Manager R&D*
Stakeholder's Class: Usability experts	☐ Can appear in public reports ☒ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: Main goal for the stakeholder is to aims and improve the traceability, serviceability and maintenance of slings, by adding new functionality and features. Stakeholder seeks for technical competence on system level and product design capabilities, enabling to develop a innovative product. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: Paper based registration by Human hand. Functionality partly implemented.	**New products & Systems required:** IoT Platforms. Smart Sensing, diagnostic, LoRa of BT-LE based.	

New Stakeholders	Stakeholder's class

Reason of involvement: Potential User	Identified by: Neways	Registration Date: 12/02/2016

Product Name: INTER-Health		
Stakeholder's Name: *South Manchester University Hospital*		Stakeholder's Acronym: *SMUH*
Stakeholder's Profile & Role: **Profile**: South Manchester University Hospital is the leading UK clinical research centre specializing a broad scope of medicine and technologies. Its aim is to draw on the areas of clinical excellence and its strong research base to promote and implement research which contributes to improvements in patient care and the knowledge base; fosters multidisciplinary working; links with clinical and corporate governance; informs the development of clinical standards and aims to improve clinical services to patients and users. **Role**: SMUH will contribute its clinical expertise and provide a provide a foundation for clinical trials and validation of the developed product		
Stakeholder's ring position in the map: clinical validation and trials		
Contact Person: Dr.Stuart Grant	Email: stuart.grant@manchester.ac.uk	Position: Cardiac Sargent
Stakeholder's Class: Clinical Experts	☐ Can appear in public reports ☒ Shall remain anonymous	☒ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: The developed Inter HEALTH solution will enhance the quality of care provided by the hospital and allow more efficient use of the resources by transferring non-critical hospital care to home care ☒ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: PREDICTOR	New products & Systems required: Inter-HEALTH	

New Stakeholders	Stakeholder's class
South Manchester University Hospital (SMUH)	end user
North Manchester Hospital	end user
Rinicare	Technology Provider

Reason of involvement:	Identified by:	Registration Date:
Partner	RINICOM	22 Feb 2016

Product Name: INTER-Health	
Stakeholder's Name: *SenSysCal Srl*	Stakeholder's Acronym: *SSC*

Stakeholder's Profile & Role:

Profile: SenSysCal S.R.L. is a spin-off of the University of Calabria founded on April 2010. Its innovative services and products are derived from academic research results in the Wireless Sensor Networks and IoT domains. Its main activities are related to smart-health, building energy management and WSN/IoT Consulting.

Its innovative Health Care products include physical rehabilitation supported by wearable motion sensors, continuous and non invasive cardio respiratory monitoring to support early detection of cardio-vascular and neurodegenerative diseases, monitoring of training improvements of professional athletes.

In the building monitoring domain, SSC uses smart Wireless Sensor and Actuator Networks (WSAN) to localize and remove these wastes, guaranteeing significant energy savings. This is obtained through a continuous energy consumption monitoring and real-time solution actuation. This system is coordinated by an advanced management software which interfaces the WSAN to a remote server. It is possible to access the system through a user friendly web interface which allows managing the WSAN even from a smartphone.

SSC also offers a wide range of consulting services such as analysis and evaluation of existing WSNs systems, application context analysis, and design and realization of new systems.

Role: SSC mainly operates in the smart-Health domain enabled by wearable and smart objects. Its efforts are also devoted to build reusable, open software frameworks to support the development of heterogeneous m-Health hardware and software systems.

Contact Person:	Email:	Position:
Raffaele Gravina	raffaele.gravina@gmail.com	CTO smart-health area
Stakeholder's Class: Software engineers	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

In the general framework of interoperable systems, SSC aims at providing end-user solutions appealing to the market. However, in order to achieve this, there is the need for well-defined guidelines, methods, and tools supporting rapid prototyping of such interoperable systems. Another related need is the availability of benchmarking tools to empirically assess the degree of interoperability of a given

IoT-enabled smart-health service, developed by SSC following the methodology proposed in this project and using the corresponding framework and layer interoperability tools.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Wearable sensors, mobile devices, smart objects, beacons, embedded operating systems, cloud platforms, fitness trackers, mobile vital signs monitors	IoT Platforms

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Provider and strong skills on smart-health services	UNICAL	11/02/2016

Product Name:

INTER-Health

Stakeholder's Name:	Stakeholder's Acronym:
TELECOM ITALIA	TI

Stakeholder's Profile & Role:

Profile: With 30.1 million TIM mobile lines and 12.1 million retail connections to its fixed network, of which 7 million are broadband accesses, at the end of June 2015, it is the leading ICT group and Italy's digital partner. Abroad its strength is Brazil, where TIM Brasil, supplying 74.6 million lines, is the second player on the market. Innovation is at the heart of the Group's strategy and over the 2015-2017 period it will be investing 5 billion euros on the development of new generation technologies, cloud computing, Date Centres. The goal for 2017 is to reach 75% of population with the new fixed ultrabroadband (Fiber, NGN) and 95% with the mobile one (4G,LTE). Today, NGN and LTE coverage reached 37% and more than 83% of population, respectively. It is the widest coverage in the country.

Its portfolio includes telecommunications, internet, digital contents, cloud services, digital platforms, office and system solutions, offering everyone – consumers, enterprises and institutions - simple and safe tools for the new digital life. To be connected anytime, anywhere and on any device, TIM offers innovative digital services and contents, as well as many applications and devices: smartphones, tablets, set top TV decoders, apps and cloud storage. As well as contents: a gaming library, e-books and magazines, music and audiovisual contents enriched with premium contents, such as major sporting events. To simplify the daily life there are new solutions: electronic payment systems, smart homes, electronic medical records and certified electronic mail in the healthcare and government sectors, for the

schools interactive multimedia whiteboards and web-based learning environments.

The Telecom Italia department partecipating to the project is active in the definition and prototyping of innovative ICT solutions for telemedicine (telemonitoring, teleassistance, localization, primary prevention, etc.).

Role: TI is a partner of the project. It is responsible for the Health Pilot during the work package on integration and pilot deployment (WP6).

Contact Person:	Email:	Position:
Giovanna Larini	giovanna.larini@telecomitalia.it	Project Manager ICT Services Innovation

Stakeholder's Class:	☒Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒IoT Supply side
subject-matter experts, provider		

Stakeholder's Needs:

As **Core Team**: methods, tools and interfaces

- to integrate eCare platform and BodyCloud platform,
- to build INTER HEALTH platform with integrated services and user interfaces (e.g. aggregated report of all the measures related to a same citizen)
- ensure that the integrated platform meets safety regulations and privacy

As Operational work area:

- INTER-Health administrative services: users and functionalities administration (e.g. unified user provision), statistics report, etc.
- INTER-Health Software and User documentation

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
eCARE (TELECOM ITALIA) BodyCloud (UNIVERSITA DELLA CALABRIA)	

New Stakeholders	Stakeholder's class
ASL TO 5	Customer , domain experts
Università della Calabria	Subject-matter experts, provider BodyCloud
Neways	Partner (WP6 leader)
RINI	Partner
SRIPAS	Partner

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	Telecom Italia	02/02/2016

Product Name: INTER-Health		
Stakeholder's Name: *TeleTransfusion (XLAB)*		Stakeholder's Acronym: *TT*
Stakeholder's Profile & Role: **Profile**: Service for remote pre-transfusion evaluation of blood samples by specialists. **Role**: TeleTransfusion can make use of the interconnection mechanisms to integrate different and incompatible platforms at middleware and application level.		
Contact Person: Tina Vavpotič	Email: tina.vavpotic@xlab.si	Position: Product Director
Stakeholder's Class: designers and developers	☒ Can appear in public reports ☐ Shall remain anonymous	☒ IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: Need to communicate with different health systems. Need for reliable communication platform. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved: MongoDB Proprietary systems		New products & Systems required: INTER-FW, INTER-LAYER, INTER-Meth
New Stakeholders		Stakeholder's class
Reason of involvement: Potential users	Identified by: XLAB	Registration Date: 08/02/2016

Product Name: INTER-Health		
Stakeholder's Name: *University of Calabria*		Stakeholder's Acronym: *UNICAL*
Stakeholder's Profile & Role:		

Profile: UNICAL is a research oriented Institution. In particular, it has different research groups focused on IoT technologies from both technology transfer and academic viewpoints. UNICAL is therefore developing both research methods and prototypes in the IoT area specifically focused on devices, networking, middleware and application services.

Role: UNICAL is actively working on IoT interoperability from the aforementioned perspectives; thus, it is interested in novel solutions addressing interoperability at device, network, middleware and application layers.

Contact Person:	Email:	Position:
Giancarlo Fortino	g.fortino@unical.it	Professor of Computer Engineering
Stakeholder's Class: Other (Research and Development Expert)	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

One of the basic needs for the development of the INTER-Health product, is the integration of the *BodyCloud* platform by UNICAL with the *eCare* platform by Telecom Italia. The resulting integrated platform will more effectively support the implementation of the end-user application services.

Another important need/requirement is that the overall system, as a whole, should meet safety regulations and satisfy the necessary medical certifications.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
Wearable sensors, mobile devices, smart objects, beacons, embedded operating systems, cloud platforms, fitness trackers, mobile vital signs monitors	IoT Platforms

New Stakeholders	Stakeholder's class
CNR-IEIIT	Subject-matter experts
INRIA	Designers and developers
Sensyscal	Software engineers
Engineering	System integrators
Alkemy Tech	System integrators
4MOVE	Technology experts

Reason of involvement:	Identified by:	Registration Date:
Partner of the project Provider of IoT platforms (e.g. BodyCloud)	UNICAL	08/02/2016

Product Name: INTER-Health		
Stakeholder's Name: *Turin University: Department of Culture, Politics and Society of University of Turin*		Stakeholder's Acronym: *UNITO*
Stakeholder's Profile & Role: **Profile***:* the Department of Culture, Politics and Society of University of Turin, offers several degree programs, including: public communication and policy, communication, ICT and media, government sciences, political and social services, sociology. They offer to their students a multidisciplinary education in the historical, legal, sociological, economical fields, favoring the acquisition of critical tools indispensable to understand the political world and for interact with current social reality in constant evolution, able to operate in communications business, public bodies (health, cultural heritage, education, government), organization of a network of new IT services to make the city "smart". The Department also provides basis for sociological and economical knowledge helpful to capture and develop processes in the relationship between communication applications, development of new technologies and social changes. **Role:** Help finding and contributing in the analysis of main elements of organizational innovation and improvement performance of specialist services in relationship with the adoption of IoT technologies. Especially, the intervention of the University, could fuel new processes and change the focus of pre-existing routes.		
Contact Person: BERRA Mariella	Email: mariella.berra@unito.it	Position: Associate professor
Stakeholder's Class: subject matter expert	☒Can appear in public reports ☐ Shall remain anonymous	☒IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: Testing models upon health data management within interoperabilty environment ☒Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved:	New products & Systems required:	

New Stakeholders	Stakeholder's class
Politecnico di Torino	Technology experts

Reason of involvement:	Identified by:	Registration Date:
Empirical theoretical skills to be offered to ASL within the project research	ASL TO5	15/02/2016

Product Name: INTER-Health		
Stakeholder's Name: *ICT30- Vicinity*		Stakeholder's Acronym: *Vicinity*
Stakeholder's Profile & Role: **Profile:** VINICITY is an ICT30 RIA project that intends to create an ecosystem that provides "interoperability as a service" for infrastructures in the Internet of Things. The approach is bottom-up, decentralized, user-centric and standards-based without relying on a single standard. **Role:** VICINITY aims to create a platform -that provides interoperability as a service- for domain-crossing, value-added services by building and demonstrating a bottom-up ecosystem of decentralized interoperability of IoT infrastructures called virtual neighbourhood, like social network for things, enabling value added services, with strong focus on privacy: gateways process locally data, so that data is not sent over to the cloud.		
Contact Person: Christoph Grimm, TU Kaiserslautern	Email: grimm@cs.uni-kl.de	Position: Coordinator
Stakeholder's Class: Domain experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: Assisted Living and E-health at home are VICINITY projects. As VICINITY has its own medical platform, that shares important common points with Inter-Health, both applications can benefit from a common and compatible development, guaranteeing compatibility and inter-operatibility. ☐ Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved:	New products & Systems required: VICINITY framework VICINITY assisted living Standardisation: TinyMesh, OSGI VM, ZigBee, WLAN, Bluetooth Mesh, W3C Linked Data Platform (LDP), LinkSmart/Hydra, Ebbits, Ontologies from Ready4SmartCities, SmartCoDe FP7, ETSI/OneM2M	

New Stakeholders	Stakeholder's class
Vicinity Consortium	Subject-matter experts

Reason of involvement: ICT30 RIA Project	Identified by: UPVLC Needs identified from ICT30 Kick off presentation	Registration Date: 29/01/2016

Product Name: INTER-Health		
Stakeholder's Name: *Vinovo Municipality*		Stakeholder's Acronym: *Vinoso*
Stakeholder's Profile & Role: *Profile:* The municipality is the public body that manages the territory of the town, administered by the Mayor and members of the Board and City Council. The administrative structure is divided into several areas. Those more specifically connected to the project research are: the Culture, Education and Sport Areas, that deals events, social and employment policies, supporting all activities with schools (school meals, school transport, pre and after school service, the educational assistance to children with disabilities, educational projects), with the town library, cultural associations and cultural events; coordinating activities and various events organized on the territory directly or by others (sporting events and use of gyms and municipal structures) and welfare policies following cases of distressed citizens. *Role:* the municipality can help at local level to identify those subjects to be monitored for the health study "Decentralization and monitoring of lifestyles" during the work plan of integration and pilot development (WP6) to improve and overcome the traditional methods, instruments and protocols.		
Contact Person: *Stefania Marcolin*	Email: *area.politichesociali@comune.vinovo.to.it*	Position: *Manager of Cultural, Educational, Sports, Events, social and labor affairs, and population Areas*
Stakeholder's Class: Government	☒Can appear in public reports ☐ Shall remain anonymous	☒IoT Demand side ☐ IoT Supply side
Stakeholder's Needs: The innovative approach to health issues disclose in the European project is helpful to the action of social promotion usually performed by the municipality promoting interaction between citizens and cultural and sporting associations. ☒Interested in participate in INTER-IoT open calls		
Existing Products & Systems involved:	New products & Systems required:	

New Stakeholders	Stakeholder's class
Cultural association ("Amici del Castello")	FUNCTIONAL BENEFICIARY
Sport association "Chisola calcio"	FUNCTIONAL BENEFICIARY
Sports club association "Jolly Vinovo"	FUNCTIONAL BENEFICIARY

Reason of involvement:	Identified by:	Registration Date:
One of the most influential organization at local level to determine the social policy to involve end users.	ASL TO5	12/2/2016

Product Name: INTER-Health	
Stakeholder's Name: *XLAB d.o.o.*	Stakeholder's Acronym: *XLAB*

Stakeholder's Profile & Role:

Profile: XLAB is a company providing with technology solutions for enterprises and products for, among others, high volume and speed services such as Internet of Things, and member of the INTER-IoT project.

Role: Within the project, its responsabilities lay in the design and implementation of interoperability gateways, especially within the middleware, for the interconnection of heterogeneous IoT solutions.

Contact Person:	Email:	Position:
Mariano Cecowski	mariano.cecowski@xlab.si	Research Manager

Stakeholder's Class:	☒ Can appear in public reports	☐ IoT Demand side
designers and developers	☐ Shall remain anonymous	☒ IoT Supply side

Stakeholder's Needs:

Tools for supporting different eHealth communication and data standards.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:
RabitMQ, ElasticSearch Proprietary systems	INTER-FW, INTER-LAYER, INTER-LogP

New Stakeholders	Stakeholder's class
Sentinel	Client

Reason of involvement:	Identified by:	Registration Date:
Partner of the Project	XLAB	08/02/2016

Product Name: INTER-Health		
Stakeholder's Name: *Systems Research Institute, Polish Academy of Sciences*		Stakeholder's Acronym: *SRIPAS*

Stakeholder's Profile & Role:

Profile: The Systems Research Institute, Polish Academy of Sciences was established in 1976. Since then, the scientists employed at the Institute have been active primarily in the domain of methodological foundations for systems analysis. The Systems Research Institute is member of the consortium for Inter-IoT and has an expertise in the key domains of the project, to which it shall contribute. It concerns: (i) software agents and agent systems; (ii) ontologies and semantic data processing; (iii) agent-semantic systems; (iv) software agents in sensor networks; (v) software design and implementation; (vi) grid / cloud computing; (vii) cyber-physical systems.

Role: Within INTER-Health SRIPAS will research standards / semantics / data that are used in two IoT platforms considered in the use case and develop tools and methodology to achieve semantic interoperability so that heterogenous data can be seamlessly integrated and presented to the end user (person / systems) for further analysis.

Contact Person:	Email:	Position:
Maria Ganzha	Maria.Ganzha@ibspan.waw.pl	Project leader
Stakeholder's Class: System designers and developers	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

1. Semantic model for the application domain should be developed.
2. Pilot in the application domain should integrate data from two IoT platforms so that they can be analyzed together by the end user.
3. All data exchange standards used within IoT platforms should be considered and mapping of common concepts should be developed.
4. Product should consider the possibility to integrate more IoT platforms within INTER-Health.
5. If possible, existing and commonly acceptable standards should be consider for re-use.
6. It would be beneficial to gain knowledge from the institution running the pilot application how the data collected from two IoT plaforms in further analyzed and integrated with what systems outside IoT ecosystem.

☐ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
Partner of the project	SRIPAS	15/02/2016

Product Name: INTER-Health	
Stakeholder's Name: *Orange Polska S.A.*	Stakeholder's Acronym: *Orange*
Stakeholder's Profile & Role: ISP & telco services provider for B2B/B2C customers. The biggest telco operator in Poland, part of Orange Group (France Telecom). Most oriented for innovation services and new technologies.	
Contact Person: Tomasz Kowalczyk	Email: Tomasz.Kowalczyk3@orange.com
Position: -	
Stakeholder's Class: Subject-matter experts	☒ Can appear in public reports ☐ Shall remain anonymous
☐ IoT Demand side ☒ IoT Supply side	
Stakeholder's Needs: General knowledge about possible use cases of IoT Platforms and devices follow by technical solution. ☒ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved: MuuMap – BetterSolutions product for dairy supply chain management (http://muumap.pl/en).	New products & Systems required:

New Stakeholders	Stakeholder's class
Orange Polska S.A. -> M2M Marketing UNIT	Kozłowski Piotr, mail: Piotr.Kozlowski2@orange.com

Reason of involvement:	Identified by:	Registration Date:
OPL would be IoT provider for B2B/B2C customers and	SRIPAS	22/02/2016

develop new products in portfolio.		

Product Name: INTER-Health		
Stakeholder's Name: *OpenEHR Poland*		Stakeholder's Acronym: *OpenEHR*
Stakeholder's Profile & Role: **Profile:** OpenEHR is a virtual community working on interoperability and computability in e-health. Its main focus is electronic patient records (EHRs) and systems. The openEHR Foundation has published a set of specifications defining a health information reference model, a language and methodology for building clinical models (archetypes), which can be used to define templates for specific deployments. OpenEHR is a vendor independent platform providing semantic framework that is widely used in the industry. **Role:** OpenEHR provides reference model for clinical data representation. Clinical models that are included in the public repository were prepared by domain experts. Inter-IoT mHealth domain application should consider the possibility that data collected from use case platforms are integrated into OpenEHR-based systems. Otherwise, semantic interoperability should be considered between OpenEHR-based systems and use case platforms.		
Contact Person: Krzysztof Kulesza	Email: krzysztof.kulesza@ersystems.pl	Position: Representative of openEHR initiative in Poland
Stakeholder's Class: Representative of external Association	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side
Stakeholder's Needs: Domain ontologies developed within Inter-IoT project should be compliant with OpenEHR clinical models. Especially archetypes related to health parameters monitoring (e.g. temperature) should be considered in common Inter-IoT ontologies specification. Inter-IoT should enable analysis of data from OpenEHR-based systems with data from other platforms, possibly from other domains. Ontologically-represented OpenEHR data and data in other standards (data representation models) should ease the process of conversion of data between the systems e.g. standards for communications and standards for storage. Inter-IoT should provide methodology for conversion between OpenEHR data and their ontological representation.		

☐ Interested in participate in INTER-IoT open calls	
Existing Products & Systems involved:	New products & Systems required:

New Stakeholders	Stakeholder's class

Reason of involvement:	Identified by:	Registration Date:
OpenEHR provides reference models to represent clinical data, that should be considered when designing Inter-IoT ontologies.	SRIPAS	18/02/2016

Product Name: INTER-Health	
Stakeholder's Name: *EMBIQ sp. z o.o.*	Stakeholder's Acronym: *EMBIQ*

Stakeholder's Profile & Role:

We are an IT company which currently employs around 30 persons. Upon the order of our clients we realise research and development work oriented on the areassuch as mobile technology, complex building of internetservices, servers and hardware construction. We specialize among others in iBeaconstechnology, which we started to develop and use in applications as one of the first companies in Poland. We cooperate with the leading manufacturers of devicesin the country and abroad, constituting their support by adapting appropriate parameters to the specific requirements. As an important part of our activity we regard projects using geo-localisation and concerning multimedia and telemedicine.

We cooperate with the Lublin higher education institutions – Lublin University of Technology and the Medical University of Lublin. We employ outstanding PhD graduates and students, provide internships, conduct lectures, also, participate in cooperative research and projects that result in patentrequests. We participate in didactic and scientific projects as a subsidiary and as a member of a consortium.

Contact Person:	Email:	Position:
Tomasz Niedziałek	tomasz.niedzialek@embiq.com	CEO
Stakeholder's Class: Subject-matter experts	☒ Can appear in public reports ☐ Shall remain anonymous	☐ IoT Demand side ☒ IoT Supply side

Stakeholder's Needs:

The possibility of controlling the accessto data collected by the produced devices, a lot of API and interfaces dependent upon the producer, which makes integration difficult.

☒ Interested in participate in INTER-IoT open calls

Existing Products & Systems involved:	New products & Systems required:

New Stakeholders	Stakeholder's class
Lublin University of Technology: Electrical Engineering and Computer Science Faculty.	Subject-matter experts

Reason of involvement:	Identified by:	Registration Date:
The company's strategy involves action in the field of research and development	SRIPAS	01/03/2016

ANNEX B PRODUCTS & SYSTEMS

Market Analysis		
Product's Name: *ValenciaportPCS*		
Product Class: Port System	Context: Local	Access mode: Close
Web address: www.valenciaportpcs.com		

Product Description:

The flow of information in Valenciaport is highly complex and involves a great many agents.

Each movement of a TEU requires multiple communications amongst members of our Port Community, creating a highly complex information network.

valenciaportpcs is an open, neutral electronic platform that enables smart and secure exchanges to be made between public and private agents with the aim of improving the competitive position of our port community.

valenciaportpcs optimises, manages and automates efficient port and logistic processes through one single data transfer, connecting transport and logistics chains.

Product Services:

The efficient flow of freight passing through ports calls for increased planning and control of operators who must handle cargo in an agile, flexible and rapid manner. To this effect valenciaportpcs.net offers services covering commercial and operational transactions for sea, port and land operations, thereby advancing one step further the evolution of port information systems:

- Sea: includes all services related to the sending and approval of documentary procedures to contract and confirm cargo bookings and loading instructions (to obtain bill of ladings – B/Ls).
- Port: incorporates the services corresponding to the electronic processing of port call requests, dangerous goods declarations and cargo manifests (loading) and summary declarations (unloading) / import and export cargo manifests.
- Land: covers the services associated to the processing of road haulage orders, cargo acceptance and delivery orders as well as rail loading orders.

Additional general services offer users with more accurate information on the integral tracking and tracing of goods in transit and ensure greater quality monitoring.

Links and Documents:

http://www.valenciaportpcs.com/en/support/documentation/			
Reason of involvement: Port Solution	Related to IoT Product: INTER-LogP	Identified by: Valenciaport Foundation	Registration Date: 01/02/2016

Market Analysis		
Product's Name: *Automated Gate System (AGS)*		
Product Class: Port System	Context: Local	Access mode: Close
Web address:		

Product Description:

Automated Gate System (AGS) is a gate operating system (GOS) for real time remote management and completely automated operation of an access control point. AGS improves performance and land access by centralising the control of multi-lane gate events and incidents, with minimal operator presence required.

The system enables users to automatically identify ISO containers as they are transported by truck through a controlled access point. The system also includes a truck license plate reader, capture of still images and videos for control.

AGS delivers a high degree of accuracy and reliability in ISO code verification through to the use of the latest technology in IP cameras, megapixel sensors and sophisticated processing by means of neural networks and other vision technologies. In addition, AGS is designed to provide a high level of speed and reliability in the most demanding climatic conditions.

Product Services:

Automated Gate System

- Offers an automatically reads vehicle license plates and a calibration interface for simpler maintenance.
- Provides an OCR portal for automated identification of containers
- captures of still images and videos for control
- Provides a gate kiosk for automated driver identification and VoIP communication to each lane
- Includes the Exception management system for remote exception handling

- Provides security and access control integrated in the system
- AGS is a system that is easily integrated with other software applications and automated systems. In the use case of Port Authority of Valencia, the system is integrated with the Megaports radiation detection portals and the Spanish Tax Agency Customs office system.

Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Port Solution	INTER-LogP	Valenciaport Foundation	22/02/2016

Market Analysis

Product's Name:

PortCDM (Collaborative Decision-Making System)

Product Class:	Context:	Access mode:
Port System	International (Part of the greater Sea Traffic Management project)	The concept is still being validated in the framework of the STM Validation project. 13 European ports are carrying test-beds.

Web address:

Product Description:

PortCDM is a means for sharing real-time information about the port call process in order to speed up port calls, optimize vessel arrival time, operational efficiency and to ensure environmentally sustainable operations.

This IT tool intends to boost closer information exchange between several port actors such as port authorities, terminals and vessels for key events in the process to minimize idle time or unnecessary waiting times.

Product Services:

The main services in which PortCDM plays a key role, are four-fold:

- Provide a basis for best routing, resulting in optimal voyages and thus optimize the use of energy or have the most cost efficient routeing
- Synchronize the port call between vessel arrival and port readiness enabling green steaming in the latter stage of a voyage.
- Enable a fast turn-around process by giving a port's various service providers the information to permit just-in-time operations.

▪ Synchronize the processes related to departing and arriving vessels and port readiness.
Links and Documents: http://monalisaproject.eu/wp-content/uploads/Compit-2015-Port-CDM-Lind.pdf

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Port Solution	INTER-LogP	Valenciaport Foundation	23/02/2016

Market Analysis		
Product's Name: *AIS*		
Product Class: Port System	Context: International	Access mode: Open
Web address:		

Product Description:

The Automatic Identification System (AIS) is an automatic tracking system used on ships and by vessel traffic services (VTS) for identifying and locating vessels by electronically exchanging data with other nearby ships, AIS base stations, and satellites.

AIS information supplements marine radar, which continues to be the primary method of collision avoidance for water transport.

Vessels fitted with AIS transceivers can be tracked by AIS base stations located along coast lines or, when out of range of terrestrial networks, through a growing number of satellites that are fitted with special AIS receivers which are capable of deconflicting a large number of signatures.

The International Maritime Organization's International Convention for the Safety of Life at Sea requires AIS to be fitted aboard international voyaging ships with gross tonnage (GT) of 300 or more, and all passenger ships regardless of size.

Product Services:

AIS is intended, primarily, to allow ships to view marine traffic in their area and to be seen by that traffic.

Information provided by AIS equipment, such as unique identification, position, course, and speed, can be displayed on a screen or an ECDIS. AIS is intended to assist a vessel's watchstanding officers and allow maritime authorities to track and monitor vessel movements. AIS integrates a standardized VHF transceiver with a positioning system such as a GPS or LORAN-C receiver, with other electronic navigation sensors, such as a gyrocompass or rate of turn indicator.

A secondary, unplanned and emerging use for AIS data is to make it viewable publicly, on the internet, without the need for an AIS receiver. Global AIS transceiver data collected from both satellite and

internet-connected shore-based stations are aggregated and made available on the internet through a number of service providers. Data aggregated this way can be viewed on any internet-capable device to provide near global, real-time position data from anywhere in the world.

Typical data includes vessel name, details, location, speed and heading on a map, is searchable, has potentially unlimited, global range and the history is archived. Most of this data is free of charge but satellite data and special services such as searching the archives are usually supplied at a cost.

AIS mobile apps are also readily available for use with Android, Windows and iOS devices.

AIS is currently used for:

- Collision avoidance
- Fishing Fleet Monitoring and Control
- Vessel traffic services
- Maritime Security
- Aids to navigation
- Search and rescue
- Accident investigation
- Ocean surface currents estimates[edit]
- Fleet and cargo tracking

Links and Documents:

http://www.marinetraffic.com/

http://vislab-ccom.unh.edu/~schwehr/papers/2010-IMO-SN.1-Circ.289.pdf

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Port System	INTER-LogP	Valenciaport Foundation	22/02/2016

Market Analysis		
Product's Name: *SCADA*		
Product Class: Port System	Context: Local	Access mode: Close
Web address:		

Product Description:

SCADA (supervisory control and data acquisition) is a system for remote monitoring and control that operates with coded signals over communication channels (using typically one communication channel per remote station). The control system may be combined with a data acquisition system by adding the

use of coded signals over communication channels to acquire information about the status of the remote equipment for display or for recording functions

SCADA systems are tailored towards the monitoring of geographically diverse control hardware, making them especially suited for industries such as utilities distribution where plant areas may be located over many thousand square kilometres.

In basic SCADA architectures, information from sensors or manual inputs are sent to PLCs (Programmable Logic Controllers) or RTUs (Remote Terminal Units), which then send that information to computers with SCADA software. SCADA software analyzes and displays the data in order to help operators and other workers to reduce waste and improve efficiency in the manufacturing process.

The remote location of RTUs imposes many restraints on the system and is a core aspect of the manner in which SCADA systems are designed.

Product Services:

SCADA systems deploy multiple software and hardware elements that allow industrial organizations to:

- Monitor, gather, and process data
- Interact with and control machines and devices such as valves, pumps, motors, and more, which are connected through HMI (human-machine interface) software
- Record events into a log file

SCADA's schematic overview Data acquisition begins at the RTU or PLC level and includes meter readings and equipment status reports that are communicated to SCADA as required. Data is then compiled and formatted in such a way that a control room operator using the HMI can make supervisory decisions to adjust or override normal RTU (PLC) controls. Data may also be fed to a Historian, often built on a commodity Database Management System, to allow trending and other analytical auditing.

Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Port Solution	INTER-LogP	Valenciaport Foundation	22/02/2016

Market Analysis		
Product's Name: *Azure IoT Suite*		
Product Class: IoT Platform	Context: International	Access mode: Subscription
Web address:		

https://azure.microsoft.com/	

Product Description:

The Azure IoT Suite is an integrated offering that takes advantage of all the relevant Azure capabilities to connect devices and other assets (i.e. “things”), capture the diverse and voluminous data they generate, integrate and orchestrate the flow of that data, and manage, analyze and present it as usable information to the people who need it to make better decisions as well as intelligently automate operations. It allows:

- Enhance the security of IoT solutions
- Support a broad set of operating systems and protocols
- Easily connect millions of devices
- Analyze and visualize large quantities of operational data
- Integrate with existing systems and applications
- Scale from proof of concept to broad deployment

Product Services:

Connect IoT Devices

You can connect your devices to the cloud so they can deliver meaningful data to your cloud-based services. You can connect all your devices to the cloud, receive data at scale from those devices, and manage the authorization and throttling of those devices. The rapid proliferation of connected devices, and the disparity of platforms and protocols all raise significant challenges when connecting devices to the cloud and handling their aggregate event stream. Real time monitoring

You can monitor the data stream of the devices connected to the cloud to gain insights into your business, drive efficiency improvements, and streamline business processes. You can analyze millions of events per second in the cloud and rapidly develop and deploy a real-time monitoring solution that enables actionable insights from the data sent by the devices and sensors in your infrastructure. Anomaly detection in real time

When you are monitoring the event stream from your connected devices, you can forward events to a machine learning algorithm which can identify anomalies in the patterns of data that might indicate a problem in your business processes or infrastructure. You can then configure a trigger for an alert on a real time dashboard with a notification to your administrators.

Links and Documents:

Azure IoT Platform architecture

https://securityledger.com/2015/03/microsoft-goes-big-announcing-azure-iot-suite/

http://www2.advantech.com/embedded-boards-design-in-services/featurearticle/0ed41d88-9c94-419d-93e4-b23b6325ca81/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
IoT Platform	INTER-Layer, INTER-FW, INTER-Meth	Valenciaport Foundation	22/02/2016

Market Analysis			
Product's Name: *Google Cloud Platform*			
Product Class: IoT Platform	Context: International	Access mode: Subscription	
Web address: https://cloud.google.com/			
Product Description: Google Cloud Platform is a cloud computing platform by Google that offers hosting on the same supporting infrastructure that Google uses internally. Google Cloud Platform provides developer products to build a range of programs such as scale connections, gather and make sense of data, and provide the reliable customer experiences that hardware devices require. The new IoT Platform within Google Cloud Platform is Brillo.			
Product Services: Google is offering a new IoT platform Brillo with an embedded OS based on Android. Brillo has been built on the fully grown-up Android platform to add the advantage of being more secure over time and it will allow cross-platform APIs. Google offers another IoT component called Weave. The Weave is a unique communication protocol of the Brillo OS that connects all smart devices and lets them talk to other smart devices. It enables connectability and controllability for those smart devices through mobile and web applications. Weave adds more intelligence by auto-detecting the Brillo devices and remote features to users by connecting the devices directly or via the cloud.			
Links and Documents: Google Cloud Platform architecture https://cloud.google.com/solutions/architecture/streamprocessing Brillo https://developers.google.com/brillo/ Weave https://developers.google.com/weave/			
Reason of involvement: IoT Platform	Related to IoT Product: INTER-Layer, INTER-FW, INTER-Meth	Identified by: Valenciaport Foundation	Registration Date: 22/02/2016

Market Analysis		
Product's Name: *Kii Could*		
Product Class: IoT Platform	Context: International	Access mode: Subscription
Web address: https://en.kii.com/		

Product Description:

Kii Cloud is an MBaaS (Mobile Backend as a Service) provided by Kii Corporation. The Kii Cloud service allows mobile app developers to add cloud services to their apps without writing server software.

It provides various server-side features for mobile application development with common APIs. By leveraging these APIs, you can develop your mobile applications without worrying about the server-side implementations and operations.

Product Services:

- Speed up your IoT initiatives

  Connect all types of devices to the cloud while ensuring availability and interoperability. Stable, monitored and fully managed for performance and security, Kii scales instantly and includes remote firmware upgrades, taking platform management hassles off your IT team's plate.

- Any premises deployment

  Kii provides flexible public and private deployment options with instant server provisioning and automated platform updates.

- Simplified device management

  Rapidly deploy, interact with, enable or disable devices. You can easily manage configurations and firmware upgrades remotely.

- Building apps for the connected device

  With Kii's mobile backend, create scalable, high performance mobile apps for various operating systems that all connect with your device seamlessly.

- Actionable analytics

  Integrated analytics unlock insights into user behavior happening on devices, companion apps and the web.

- Private and secure

  Kii provides secure user and data management and will work with you to architect a solution that meets your regulatory compliance and business risk requirements. With private cloud deployment, customer data never leaves your environment. Contact us to find out if Kii is right for you.

• Run in your datacenter or KII's Deploy to the KII public cloud or in your own datacenter. Kii is flexible, aligning with your business and security requirements.
Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
IoT Platform	INTER-Layer, INTER-FW, INTER-Meth	Valenciaport Foundation	22/02/2016

Market Analysis		
Product's Name: *Sofia2*		
Product Class: IoT Platform	Context: European	Access mode: Open
Web address: http://sofia2.com/		

Product Description:

SOFIA2 is a middleware that allows the interoperability of multiple systems and devices, offering a semantic platform to make real world information available to smart applications (Internet of Things).

It is multi-language and multi-protocol, enabling the interconnection of heterogeneous devices. It provides publishing and subscription mechanisms, facilitating the orchestration of sensors and actuators in order to monitor and act on the environment.

Cross-platform and multi-device through its SDK, APIs and extension mechanisms that allow integration with any device.

Product Services:

Sofia2 CloudLab is an instance of Sofia2 deployed on Cloud that allows any person, company, organization, developer or citizen to have free access to public data managed on it and create their own applications for experimental purposes. You can try it here.

Sofia2 PoC on Cloud is a dedicated Cloud instance in which an organization has a complete implementation of Sofia2 with a very small cost.

On Premise: this model is suitable for organizations that want to have Sofia2 in their own infrastructure.

The cost is based on the number of cores in which it is deployed. Cloud (SaaS): with this model the organization simply accesses to a platform available for it. The cost is based on the number of processed messages per unit time or storage TBs.
Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
IoT Platform	INTER-Layer, INTER-FW, INTER-Meth	Valenciaport Foundation	22/02/2016

Market Analysis		
Product's Name: *Movildata*		
Product Class: Feet Platform	Context: National	Access mode: Close
Web address: http://www.movildata.com/en		
Product Description: Movildata is an advanced fleet management systems for industrial and light vehicles. It provides information about vehicle use and maintenance, creates routes with stops to make and receive alerts if the vehicle has not reached the destination.		
Product Services: Movildata offers services covering commercial and operational operations: • GPS Tracking • Plug & Play Tracking • Fleet management • Schedule control • Cold chain control • On-board display • Driving and rest times management • Tachograph download • Fuel saving		

• Fuel Anti-theft
Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Fleet management	INTER-LogP	Valenciaport Foundation	22/02/2016

Market Analysis		
Product's Name: *Dynafleet*		
Product Class: Feet Platform	Context: International	Access mode: Close
Web address: http://www.volvotrucks.com		

Product Description:

Dynafleet is a fleet management telematic based service provided by Volvo Truck Corporation to support end customers with performance follow up on vehicles and drivers to optimize the fleet performance. This tool provides users with the exact location and status of their trucks and drivers at any given time, but also shows what areas to improve in order to reach better profitability.

Product Services:

The three Dynafleet services are:

No more fuel wasted: Provides information related with how fuel efficient are drivers and why one is succeeding so much better than the other.

Map out the whole fleet: Provides a map or dashboard where user can see in one screen where is the truck at present and when the driver will arrive.

Keep the cab updated: Messaging service to keep drivers informed and responsive to changes in plans. The service also enables smooth integration with the company order system and lets it communicate directly with the drivers.

Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Fleet management	INTER-LogP	Valenciaport Foundation	22/02/2016

Market Analysis		
Product's Name: *VDO Digital tachograph*		
Product Class: Hardware. Sensor	Context: International	Access mode: Close
Web address: http://www.fleet.vdo.com/laws/recording-trips/digital-tachograph-dtco/		
Product Description: A digital tachograph is a device fitted to a vehicle that digitally records its speed and distance, together with the driver's activity selected from a choice of modes. In Europe, as a result of European Union regulation 1360/2002 digital tachographs are mandatory for all relevant vehicles manufactured after August 1, 2005.		
Product Services: The digital tachograph services include driving, working, on-call and rest periods for the driver and the front passenger and stores this information on the personal driver card. The driver can use the VDO Counter to find out when the maximum permissible driving time has been reached and how long the next break needs to be. In addition, the device records vehicle-related data such as the truck speed. Information on calibration is also stored in the mass storage device and the driver is periodically reminded of test intervals and the remaining validity of the tachograph card.		
Links and Documents:		

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Truck device	INTER-LogP	Valenciaport Foundation	22/02/2016

Market Analysis		
Product's Name: *CITYSENSORs*		
Product Class: Hardware. Sensors	Context: International	Access mode: Close
Web address: http://energy-solutions.es/portfolio/citysensors/?lang=en		

Product Description:

CITYSENSOR consists of Micro Autonomous Datalogger that allow the collection of data from the environment, processes, etc. The information is stored and then transmitted.

These devices are able to monitor different parameters (air quality, toxic gases, noise, position, temperature, speed, motion, height, humidity, etc.) and have been designed to get their energy from solar cells.

The data collected is transmitted via radio for its analysis to any handheld device, computer or cloud server.

CITYSENSOR is powered with the OTA (Over the Air Programming) feature and can be programmed remotely making them perfect for use on a drone, for example, to attend any urgency or remote area monitoring.

Product Services:

CITYLOC: Cityloc is a small quad-band GPS locator that can be aggregated to all applications in which the position of the device is a factor to consider. Its low power consumption allows it to be powered by small batteries. This device can be easily controlled with AT commands.

CITYMICRO: With its ultra-low power, it can be powered by either batteries or solar cells. Due to its tiny size, it can be installed in remote or places that are hard to access without civil work. The data captured can be analysed, stored and transmitted to a gateway for further processing.

CITYWAY: City way is a gateway with a GPS locator, quad-band mobile communication and Bluetooth. Thanks to its low energy consumption, it can be powered by small batteries. This device includes a microprocessor for controlling its functions and enables the programming of simple applications.

GEOVAL: Device that allows to know the position of a container or the vehicle that transports it and controls the door opening and disabling

Links and Documents:

http://energy-solutions.es/wp-content/uploads/CITYLOC-ENG.pdf

http://energy-solutions.es/wp-content/uploads/CITYWAY-ENG.pdf

http://energy-solutions.es/wp-content/uploads/CITYMICRO-ENG.pdf

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Sensors	INTER-Layer, INTER-LogP, INTER-Health	Valenciaport Foundation	22/02/2016

Market Analysis		
Product's Name: *Thingsee One*		
Product Class: Hardware. Sensor	Context: International	Access mode: Close
Web address: https://thingsee.com/		
Product Description: Thingsee One is a smart developer device for Internet of Things (IoT) application and solution development. The device is designed for the easier and faster deployment of new IoT applications and services at a fraction of the current cost. Thanks to its robust structure, wide variety of fully programmable sensors and extensive cellular connectivity, Thingsee One is an ideal host for a multitude of different applications. With a battery life lasting up to one year, the device's capabilities are extensive.		
Product Services: Thingsee One has a wide variety of power optimized MEMS sensors: 3D accelerometer, magnetometer, gyroscope, temperature, humidity, pressure and ambient light, coated by A-GPS and GNSS location tracking. Also its wireless local connectivity with WLAN, future proof Bluetooth LE 4.1 and cellular brings the device quite outstanding characteristics. It allows you to transmit data & events to your app, server or device.		
Links and Documents: http://www.haltian.com/Internet-Of-Things/Thingsee-One		

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Sensors	INTER-Layer, INTER-LogP, INTER-Health	Valenciaport Foundation	22/02/2016

Market Analysis			
Product's Name: *SEAMS*			
Product Class: Platform	Context: Local	Access mode: Close	
Web address: http://seaterminals.eu/index.html			
Product Description: Smart, Energy-Efficient and Adaptive Management Platform (SEAMS). The SEAMS system connects the machine of a Port Container Terminal with a database being able to acquire all the information related with the operative and energy dimensions in real time. The SEAMS make uses of a black box prototype (PLC and DGPS) connected to each machine. This information is stored into a database and then post-processed and evaluated by the port operators.			
Product Services: Port Container Terminals real time monitoring of machinery and operations, able to detect bottlenecks in the terminal's operative. The product is really useful as decision-making tool and planning for port operators.			
Links and Documents: https://www.youtube.com/watch?v=ZRy5jRXQS_8			
Reason of involvement: IoT Platform	Related to IoT Product: INTER-LogP	Identified by: Noatum	Registration Date: 22/02/2016

Market Analysis		
Product's Name: *OpenGate*		
Product Class: IoT Platform	Context: Eiropean	Access mode: Close
Web address: http://www.amplia-iiot.com/		
Product Description:		

Platform to create and manage complete M2M processes and move towards industrial solutions applying the Internet of Things. This platform is focused on the collection of data, BigData analysis, of the data produced by the internet of thing solutions. This platform is able to escalate the information and able to process large amount of data. This solution is able to reduce implementation and maintenance costs for this kind of solutions.

Product Services:

- Device Management

Use device connection through different protocols in order to control the deployed inventory, operate, perform software update operations, and monitor the status of each device, correlating how it affects the business.

- Business Intelligence

OpenGate simultaneously collects the inventory and status of the lines from different carriers, MNOs, MVNOs, fixed, or proprietary.

- Data collector and BigData

OpenGate provides multiples functions (to manage message transactions, file transfers, organization support, etc.) to enable communications between devices and backoffice applications.

- Security Framework

Secure your IoT solution and business with OpenGate, adding functions to prevent unauthorized accesses, spoofing, fraud…

Links and Documents:

http://www.amplia-iiot.com/iot-platform-opengate/bigdata-collector/

http://www.amplia-iiot.com/contact/use-cases-4/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
IoT Platform	INTER-FW, INTER-Meth	Noatum	22/02/2016

Market Analysis		
Product's Name: *CATOS*		
Product Class: Port System	Context: International	Access mode: Close
Web address: http://www.tsb.co.kr		

Product Description:

A Terminal Operating System, or TOS, is a key part of the supply chain and primarily aims to control the movement and storage of various types of Cargo in and around a Container terminal or Port. The systems also enables you to make better use of your assets, labour and equipment, plan your workload, and get up to the minute information which allows for more timely and cost-effective decision making.

The objective of a terminal operating system is to provide a set of computerized procedures to manage cargo, machines and people within the facility to enable a seamless link to efficiently and effectively manage the facility.

NOATUM uses CATOS (Computer Automated Terminal Operating System)

CATOS is a comprehensive terminal operating system providing usability, interoper-ability, scalability and flexibility across the entire range of terminal's work processes and decision making activities. Based on our accumulated experience and expertise, TSB has incorporated the most flexible and state-of-the art technology into CATOS to meet our customers' needs. This proven system also satisfies users with TSB's customized service and future-directed business insight.

CATOS has a full suite of planning, operation and management system modules covering the total operations of the terminal and utilizing terminal resources fully, thus maximizes revenue through improved terminal operation efficiency and lowered costs. With the Plan-Do-See (PDS) concept, CATOS supports users to streamline and automate modular work processes for shorter operation cycles and higher performances. These three activity types share one and the same database within CATOS, therefore, the integrity of your data is guaranteed.

Product Services:

- Planning. Intelligent and Optimized Planning for Fast and Accurate Operation
  - Yard Planning, Berth Planning, Ship Planning, Human Resource Planning, Auto Ship Planning, Dual Cycling Ship Planning, Rail Planning …
- Operation. Best Performance and Reliable Job Monitoring
  - C3IT (Application Server), Terminal Monitoring, Berth Monitoring, Gate Operation, Yard Operation, Ship Operation, Operation Management, EDI(web-based), Web IP, Gate Checker (HHT), EQ Pooling, Auto Re-stack (Auto-Shifting), Prime Mover RDT, Inspection Checker, Barge Operation, Barge Checker, CFS Operation, DG Operation (IMDG Segregation), Reefer Operation, Reefer Monitoring with HHT, Rail Operation, Rail Checker, Customs, Pre-Notification
- Management. Intuitive and Configured Management for Business
  - Billing, Statistics (web-based)

Links and Documents:

http://www.tsb.co.kr/RBS/Fn/FreeForm/View.php?RBIdx=Ver1_38

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Terminal Solution	INTER-LogP	Noatum	23/02/2016

Market Analysis			
Product's Name: *Conlock*			
Product Class: Management Platform	Context: International	Access mode: Close	
Web address: http://globaltrackingtechnology.com/conlock-gps-container-tracking-device.html#contact			
Product Description: ConLock is a GPS container tracking device embedded in a proprietary IoT platform used by haulage companies in France that deliver transport services in connection with container terminals in ports. The device features several sensors that can operate simultaneously, allowing for remote protection of the container. ConLock comes ready to work the "mytrackingdevices.com gps tracking platform". But integration with existing enterprise application platforms is also possible as API and integration support can also be provided.			
Product Services: Its bears a container tracking device that features several sensors that can operate simultaneously, giving the ability to protect containers remotely. It provides notifications when damages or a blows to a container occur and can generate cell phone alerts when container doors are opened			
Links and Documents: http://globaltrackingtechnology.com/conlock-gps-container-tracking-device.html http://globaltrackingtechnology.com/gps-tracking-systems-and-gps-tracking-devices-basics.html http://globaltrackingtechnology.com/what-is-gps-tracking-its-uses-and-benefits.html			
Reason of involvement: Could be encountered in INTER-LogP use case	Related to IoT Product: INTER-LogP, INTER-FW	Identified by: AFT	Registration Date: 22/02/2016

Market Analysis		
Product's Name: *OpenIoT*		
Product Class: *Platform*	Context: *International*	Access mode: *Open*
Web address: www.openiot.eu		

Product Description:

The OpenIoT project was co-funded by the European Commission, and provides an open source IoT platform that enables the semantic interoperability of IoT services in the cloud. OpenIoT is perceived as a natural extension to cloud computing implementations, which allow access to additional and increasingly important IoT based resources and capabilities.

OpenIoT platform applies the W3C Semantic Sensor Networks (SSN) ontology, which provides a common standards-based model for representing physical and virtual sensors. Also it includes sensor middleware that eases the collection of data from virtually any sensor, ensuring their proper semantic annotation. OpenIoT exploits the Linked Data concept towards linking related sensor data sets. Moreover, it provides functionalities for dynamically filtering and selecting data streams, as well as for dealing with mobile sensors. Furthermore, OpenIoT offers a wide range of visual tools that enable the development and deployment of IoT applications through minimal programming effort.

OpenIoT is currently supported by an active community of IoT researchers, and is extensively used for the development of IoT applications in areas where semantic interoperability is a major concern.

Product Services:

OpenIoT provides the means for composing and delivering IoT services that comprise data from multiple sensors, and optimizing resources within the OpenIoT middleware and cloud computing infrastructure.

In particular, the OpenIoT platform allows:

-Collecting and processing data from virtually any sensor in the world, including physical devices, sensor processing algorithms, social media processing algorithms and more, understanding the term 'sensor' as any component that can provide observations. OpenIoT facilitates the integration of the above sensors with only minimal effort for implementing an appropriate access driver.

-Semantic annotation of sensor data, according to the W3C Semantic Sensor Networks (SSN) specifications.

-The streaming the data of the various sensors to a cloud computing infrastructure.

-Dynamically discovering and querying sensors and their data.

-Visualization of IoT data based on appropriate mashups (charts, graphs, maps etc.). OpenIoT provides a Visual IoT Service for dynamically selecting sensors/ICOs and synthesizing their data into services. The «Request Presentation» visual tool (part of OpenIoT IDE) provides zero-programming interfaces. The tool

enables validation and deployment of the service on OpenIoT middleware.			
Links: *https://github.com/OpenIotOrg/openiot* and Documents: http://download.springer.com/static/pdf/399/chp%253A10.1007%252F978-3-319-16546-2_3.pdf?originUrl=http%3A%2F%2Flink.springer.com%2Fchapter%2F10.1007%2F978-3-319-16546-2_3&token2=exp=1456477128~acl=%2Fstatic%2Fpdf%2F399%2Fchp%25253A10.1007%25252F978-3-319-16546-2_3.pdf%3ForiginUrl%3Dhttp%253A%252F%252Flink.springer.com%252Fchapter%252F10.1007%252F978-3-319-16546-2_3*~hmac=ce7f17e71b7211ee558de716a6a1be3126dc7270231cbcc315f4e1e1e1dbb6cc			
Reason of involvement: *IoT platform*	Related to IoT Product: *INTER-LAYER, INTER-FW, INTER-METH*	Identified by: *Universitat Politecnica de Valencia (UPVLC)*	Registration Date: *20/2/2016*

Market Analysis		
Product's Name: *Kura*		
Product Class: IoT framework	Context: International	Access mode: Open
Web address: www.eclipse.org/kura		

Product Description:

Eclipse Kura is an Eclipse IoT project that provides a platform for building IoT gateways. It is a smart application container that enables remote management of such gateways and provides a wide range of APIs for allowing to write and deploy IoT applications. These applications leverage OSGi, a dynamic component system for Java, and Kura API to facilitate access to the underlying hardware (serial port, GPIOs, etc.), to communicate with an IoT server backend, to manage the runtime settings, etc.

Kura runs on top of the Java Virtual Machine (JVM) and makes use of OSGi to simplify the process of writing reusable software building blocks. Kura provides or, when available, aggregates open source implementations for the most common services needed by M2M applications. Kura components are designed as configurable OSGi Declarative Service exposing service API and raising events. While several Kura components are in pure Java, others are invoked through JNI and have a dependency on the Linux operating system.

Product Services:

Kura is a smart application container that enables remote management of gateways and provides a wide range of APIs for allowing to write and deploy IoT applications.

Kura is currently planning this initial set of services:

- I/O Services: Serial port, USB and Bluetooth access, Position Service for GPS information, Clock Service, Kura API for GPIO/PWM/I2C/SPI access

- Data Services: Store and further functionality for the data collected by the gateway and published to remote servers.

- Cloud Services: In addition to simple publish/subscribe, the Cloud Service API simplifies the implementation of more complex interaction flows like request/response or remote resource management.

- Configuration Service: Snapshot service to import/export the configuration of all registered services in the container.

- Remote Management: Allows remote management of the M2M applications.

- Networking: API that allows the configuration of the network interfaces available in the gateway like Ethernet, Wi-Fi, and Cellular modems.

- Watchdog Service: Register critical components to the Watchdog Service, which will force a system reset through the hardware watchdog when a problem is detected.

- Web administration interface: Web-based console for gateway management.

Kura will provide a pre-made build for popular open hardware platforms like the Raspberry Pi.

Links and Documents:

http://eclipse.github.io/kura

http://wiki.eclipse.org/Kura

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
IoT platform	*INTER-FW, INTER-Layer, INTER-METH*	*Universitat Politecnica de Valencia (UPVLC)*	20/02/2016

Market Analysis

Product's Name:
IoTivity

Product Class:	Context:	Access mode:
IoT Framework	*International*	*Open*

Web address:
www.iotivity.org

Product Description:

IoTivity is an open source software framework enabling seamless device-to-device connectivity to address the emerging needs of the Internet of Things. The IoTivity project is hosted by the Linux Foundation, as a Collaborative Project, and sponsored by the Open Interconnect Consortium. OIC is a group of technology companies such as Samsung Electronics and Intel who are developing a standard specification and certification program to enable the Internet of Things.

IoTivity enables devices, products and services for the Internet of Things (IoT). The project plans to release a reference implementation of the IoT standards defined by the OIC. The standard and the open source implementation aim to ensure interoperability among products and services regardless of maker and across multiple industries, including smart home, automotive, industrial automation, and healthcare.

As a Linux Foundation Collaborative Project, IoTivity is governed by an independent steering group that liaises with the OIC. The project is open to all and includes RESTful-based APIs. It is expected to be available in various programming languages for a variety of operating systems and hardware platforms.

The IoTivity project is licensed under the Apache License version 2.0.

Product Services:

IoTivity framework aims to provide seamless, secure and reliable connectivity for the Internet of Things. IoTivity will provide RESTful-based APIs to allow the development of IoT systems. It is expected to be available in various programming languages for a variety of operating systems and hardware platforms. Core functionality is written in C for deployment to constrained devices. Most functionality available from C and C++. Other bindings available are Java (Android) and JavaScript (in progress).
IoTivity Services, which are built on the IoTivity base code, provide a common set of functionalities to application development. IoTivity Services are designed to provide easy and scalable access to applications and resources and are fully managed by themselves. These services are:
- Discovery & Connectivity of smart objects.
- Resource Management: provides platform initialization, discovery of resources and registration/creation of resources.
- Resource Encapsulation: it abstracts common resource function modules.
- Virtual Soft Sensor Manager
- Resource Container: provides a way to integrate non-OIC resources into OIC ecosystem by creating, registering, loading and unloading resource bundles.
- Protocol Plugin Manager: provides mechanism to represent non-OIC protocols within the OIC framework
- Things Manager: it creates Groups, finds appropriate resources in the network and manages member presence.
- Resource Hosting: responsible for hosting the resources of a Lite device or less power/memory capable IOT device by another smart device.
- Resource Directory
- Smart Home Protocol Control Manager

Links and Documents: *https://www.iotivity.org/documentation*			
Reason of involvement: *IoT open source interoperability framework*	Related to IoT Product: *INTER-LAYER, INTER-FW, INTER-METH*	Identified by: *Universitat Politècnica de València* (UPVLC)	Registration Date: *26/02/2016*

Market Analysis		
Product's Name: *NEXCOM IOT GATEWAY*		
Product Class: *IoT smart Gateway*	Context: *International*	Access mode: *Open*
Web address: http://www.nexcom.com/Products/industrial-computing-solutions/iot-solutions/iot-gateway		

Product Description:

NEXCOM IoT gateway is an intelligent IoT gateway based on Intel Quark/Intel IoT Gateway platform (Moon Island). It is designed to connect to sensor networks and provide flexible connections between sensor nodes and customer's cloud for enabling intelligent big data analysis and data-driven decision making. This smart gateway integrates technologies and protocols for networking, embedded control, security and manageability on which third-party applications can run.

NEXCOM IoT gateway series use low power Quark solution, and has a rugged design, intended for critical industrial environments where sensor nodes or I/O devices are deployed. Due to its modular design, it can be flexibly configured with different protocol-ready modules to communicate with end sensors or I/O nodes. It also provides connection to cloud servers through wireless 3G/Wi-Fi, wired LAN networks, or cloud-ready API integration.

The Intel IoT Gateway technology-based board support package (BSP) integrates the operating systems and communication protocols, as well as security protection mechanism from McAfee to ensure ease of deployment and secure connectivity. Besides Intel IoT Gateway technology-based BSP, NEXCOM also offers Yocto BSP solution as an option to support networks based on fieldbus protocols or wireless communication of 3G, Wi-Fi, and ZigBee.

Product Services:

NEXCOM IoT Gateways give developers the flexibility to create and deploy innovative, cost-effective and secure Internet of Things solutions for a wide array of business segments.

NEXCOM IoT Gateways securely connect legacy industrial devices and next-generation intelligent infrastructure to the IoT. They integrate technologies and protocols for networking, embedded control,

security and manageability on which third-party applications can run.

NEXCOM Gateways offer:

- a choice of Intel processors for different application needs.

- support for multiple operating systems (Wind River and Ubuntu Linux, Microsoft Windows 10, etc.)

- robust device management capabilities.

- connection to cloud servers through wireless 3G/Wi-Fi, wired LAN networks, or cloud-ready API integration.

- flexibility in the configuration of different protocol-ready modules for the communication with smart objects, due to NEXCOM gateway modular design.

- a technology-based board support package (BSP) that integrates the operating systems and communication protocols, and a security protection mechanism from McAfee to ensure ease of deployment and secure connectivity.

- offers Yocto BSP solution as an option to support networks based on fieldbus protocols or wireless communication of 3G, Wi-Fi, and Zigbee.

Links and Documents:

http://www.nexcom.com/Products/industrial-computing-solutions/iot-solutions/iot-gateway

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
IoT smart Gateway	*INTER-LAYER*	*Universitat Politecnica de Valencia (UPVLC)*	*29/2/2016*

Market Analysis		
Product's Name: *Libelium*		
Product Class: IoT Platform Provider	Context: International	Access mode: Open
Web address: www.libelium.com		

Product Description:

Libelium designs and manufactures hardware and a complete software development kit (SDK) for wireless sensor networks so that system integrators, engineering, and consultancy companies can deliver reliable Internet of Things (IoT), M2M, and Smart Cities solutions with minimum time to market.

Libelium has its own versatile IoT platform, that allows implementation of any Wireless Sensor Network, from Smart Parking to Smart Irrigation solutions. Libelium platform, named 'Waspmote', is open source, horizontal, modular and accessible to help developers design and deploy sensor applications on top, easily and within the minimum time to market. Waspmote provides a compact and highly reliable framework for developing IoT applications.

Many IoT applications and services have been depeloped with Waspmote, in a wide range of areas such as eHealth, Business models / Retail, Smart Cities, Smart Environment, Smart Water, Smart Metering, Security and Emergencies, Logistics, Industrial Control, Smart Agriculture, Smart Animal Farming, and Domotic and Home Automation.

Product Services:

Waspmote Platform:

· Open source horizontal, modular, accessible platform for an easy development of IoT applications and services based on sensors, and within de minimum time to market.

· Compact and extremely reliable framework for the development of IoT applications and services.

· Complete software development kit (SDK) for wireless sensor networks.

Waspmote has proven to be a valid platform for the development of IoT solutions in a wide variety of areas, such as e-Health, Logistics, Smart City, etc.

Hardware for IoT: Extremely wide variety of sensors that can perform as single smart objects, or networks of smart objects.

· Sensor boards for Video Surveillance, Radiation control, Gases measurement, Smart Water, Smart City, Smart Parking, Agriculture, GPS locators, etc.
Wireless interfaces and Encryption Libraries are available for Waspmote Sensor Networks.

Links and Documents:

www.libelium.com

http://www.libelium.com/top_50_iot_sensor_applications_ranking/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
IoT platform	*INTER-FW, INTER-Layer, INTER-METH, INTER-Health, INTER-LogP*	*Universitat Politecnica de Valencia (UPVLC)*	29/02/2016

Market Analysis		
Product's Name: *OM2M*		
Product Class: IoT Platform	Context: International	Access mode: Open
Web address: http://www.eclipse.org/om2m/		

Product Description:

The OM2M project, initiated by LAAS-CNRS, is an open source implementation of oneM2M and SmartM2M standard. It provides a horizontal M2M service platform for developing services independently of the underlying network, with the aim to facilitate the deployment of vertical applications and heterogeneous devices.

OM2M follows a RESTful approach with open interfaces to enable developing services and applications with M2M interoperability. It proposes a modular architecture running on top of an OSGi layer. OM2M is a Java implementation running on top of an OSGi Equinox runtime, making it highly extensible via plugins. It is built as an Eclipse product using Maven and Tycho. Each plugin offers specific functionalities, and can be remotely installed, started, stopped, updated, and uninstalled without requiring a reboot.

OM2M is based on the ETSI-M2M standard. It provides a horizontal Service Common Entity (CSE) that can be deployed in an M2M server, a gateway, or a device.

OM2M supports multiple protocol bindings such as HTTP and CoAP. Various interworking proxies are provided to enable seamless communication with vendor-specific technologies such as Zigbee and Phidgets devices.

Product Services:

OM2M provides an open source horizontal M2M service platform that allows interoperability and the development of services independently of the underlying network, with the aim to facilitate the deployment of vertical applications and the use of heterogeneous devices. OM2M provides a horizontal Service Common Entity (CSE) that can be deployed in an M2M server, a gateway, or a device. Each CSE provides Application Enablement, Security, Triggering, Notification, Persistency, Device Interworking, Device Management, etc.

OM2M provides a RESTful API for creating and managing M2M resources. It includes several primitive procedures to enable machines authentication, resources discovery, applications registration, containers management, synchronous and asynchronous communications, access rights authorization, group organization, re-targeting, etc.

Links and Documents:			
https://wiki.eclipse.org/OM2M https://wiki.eclipse.org/OM2M#Getting_started http://git.eclipse.org/c/om2m/org.eclipse.om2m.git			
Reason of involvement: *IoT platform*	Related to IoT Product: *INTER-FW, INTER-Layer, INTER-METH*	Identified by: *Universitat Politecnica de Valencia (UPVLC)*	Registration Date: 29/02/2016

Market Analysis		
Product's Name: *MIHINI*		
Product Class: IoT Framework	Context: International	Access mode: Open
Web address: https://wiki.eclipse.org/Mihini		Mihini

Product Description:

Mihini is an open source incubator project under the Eclipse Technology umbrella. The Mihini project creates an application environment for the Things in the IoT, providing a framework that allows device interoperability. The Mihini project is still under development.

Mihini is based on the programming language Lua, a lightweight scripting language, specifically defined for M2M applications on embedded systems, with a very powerful expressiveness which results in compact and efficient code. Lua language is very robust to programming errors, especially in the management of complex data and conflicts due to parallel threads. It is possible to easily interface Lua programs with C routines. However, Lua is not adopted to the M2M scenario. This adoption takes place with the Mihini framework that implements functionalities such as I/O management, device management, and application management.

The main goal of Mihini is to deliver an embedded runtime running on top of Linux that exposes high-level API for building M2M applications. Mihini aims at enabling easy and portable development, by facilitating access to the I/Os of an M2M system, providing a communication layer, etc. As Mihini runs on top of Linux systems like the Raspberry Pi, on the one hand, this decision enhances the hardware base of the framework. On the other hand, it does not allow to build small, energy saving devices.

Product Services:

Mihini framework allows the development of IoT applications and services providing M2M

interoperability. Mihini implements functionalities like I/O management, device management, application management and device discovery.

Mihini allows to easily distinguish between general functions to be integrated in any M2M application (send data, receive commands) and specific functions which depend on a particular application (process data, react to events). The first set of functionalities is managed by an autonomous Mihini agent, while the second set is specified by the programmer in the application container. The Mihini agent is responsible of the application time life, configuration, data structures, and communication protocols. The container provides the libraries for I/O operations based on most industrial protocols, data storage, assignment of task priorities and scheduling policies, definitions of event reactions functions.

Mihini run on top of Linux systems, and it is available for two programming languanges: C and Lua. A Mihini API for java is currently under development.

Links and Documents:

https://projects.eclipse.org/projects/technology.mihini

https://wiki.eclipse.org/Mihini/Run_Mihini_on_an_Open_Hardware_platform

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
IoT interoperability framework	*INTER-FW, INTER-Layer, INTER-METH*	*Universitat Politecnica de Valencia (UPVLC)*	29/02/2016

Market Analysis

Product's Name:

Hue

Product Class:	Context:	Access mode:
Hardware, Software, Methodology, Platform, Standard …	International	Open, Close, subscription, …

Web address:

http://www2.meethue.com

Product Description:

Philips Hue is your personal wireless lighting system, designed for real life and all its potential. It combines brilliant and energy-efficient LED light with intuitive technology. Together, the light, the bridge and the smart controls will forever change the way you control and experience light. After all, the richness of lighting is as magical as real life once you turn it on and start living. The Hue Lights can welcome you home. Wake you up. Get you energized. Make you feel safe. Improve your mood. Enhance your entertainment experience. It can even keep you informed about the weather or incoming calls. The

possibilities are endless once you start exploring.

The Hue lights can be easy controlled via ZigBee. They dim. They flash. They pulse.

The bridge is the heart of your Philips Hue system that connects your smart device to your Hue lights. You can add up to 50 Philips Hue lights and accessories to one bridge. Linked to Wi-Fi via your router, it also connects your system to the wider world via the Internet for out-of-home control and other smart features. The bridge is included in all Philips Hue starter kits, or you can buy it separately and simply build your own Philips Hue system.

The Hue Control controls your Hue system from any device, wherever you are. For the easiest way to set brightness, create timers, change colors (and so much more), choose the Philips Hue app. Discover different functionalities by trying one of the third party apps developed for Philips Hue. You don’t even have to be at home to control your lights - great for peace of mind.

MyHue is an online interface that connects you to your home, from anywhere in the world. But, if you're home and your phone or tablet is not at hand, you can use other smart switches and controls to trigger your lights for that special moment.

Philips Hue is based on ZigBee LightLink, a low-power, safe, and reliable technology to control your lights. New features and improvements are continuously added to the system to make it even more useful. Software and firmware updates can be done wirelessly and directly to your lights. The Philips Hue system can be easily integrated with other ZigBee-based systems for additional home automation.

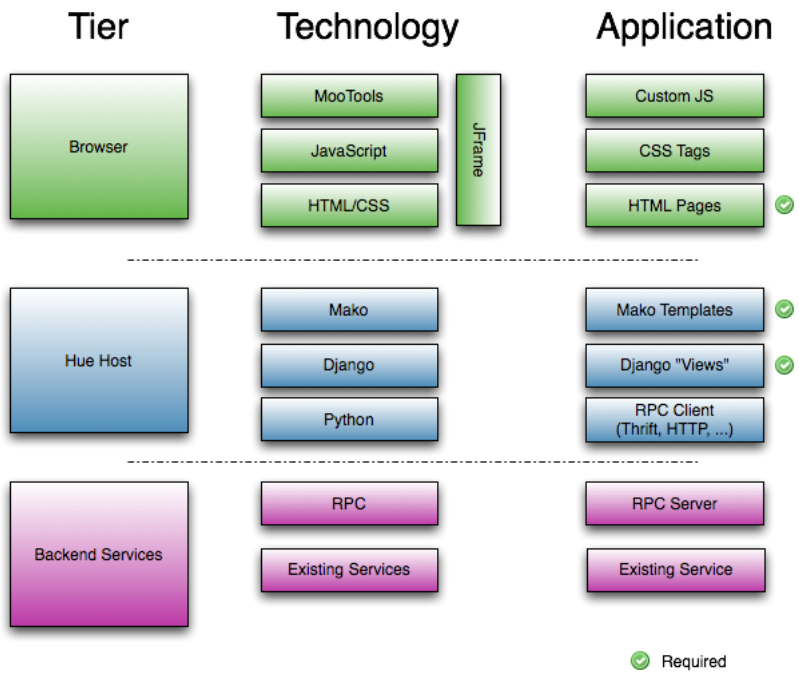
The Hue and Nest are interoperable, working together on integrating hue wireless bulbs as a potential part of the "Works with Nest" program (Google-owned smart thermostat company) in a bid to link up the smart home. The work-in-progress, Philips tells SlashGear, builds on hue and Nest's existing compatibility as linked by IFTTT.

Currently, there are several Nest IFTTT recipes which link the thermostat as well as the Nest Protect smoke alarm with the hue bulbs. For instance, using the online bridging service it's possible to turn on the lights automatically if smoke is detected, or to change their color to red if carbon monoxide is found to be present.

IFTTT is a free web-based service that allows users to create chains of simple conditional statements, called "recipes", which are triggered based on changes to other web services such as Gmail, Facebook, Instagram, and Pinterest. IFTTT is an abbreviation of "If This Then That". An example "recipe" might consist of sending an e-mail message if the IFTTT user tweets using a certain hashtag. Or, if the user is tagged by someone on Facebook, then that photo will be added to the user's cloud-based photo archive.

The Hue Developer program covers 4 system components: Apps, Bridge, Portal, Lights.

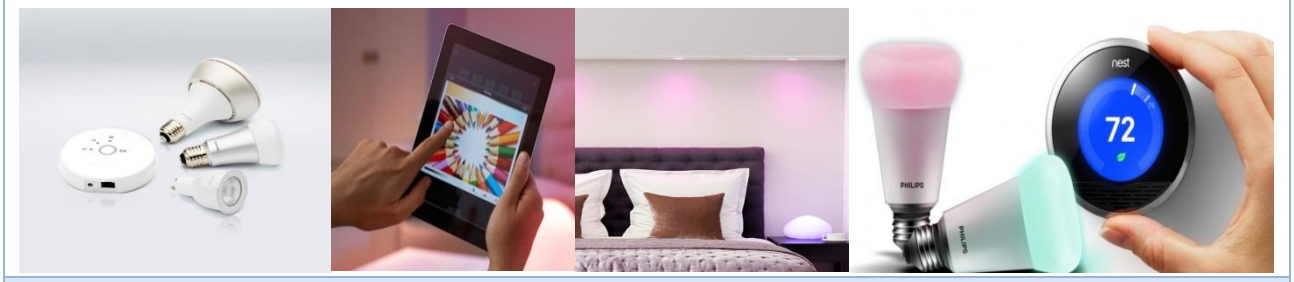
1.1.1 Architectural View



A HUE application may span three tiers: (1) the UI and user interaction in the client's browser, (2) the core application logic in the HUE web server, and (3) external services with which applications may interact.

The absolute minimum that you must implement (besides boilerplate), is a "django view" function that processes the request and the associated template to render the response into HTML.

Many apps will evolve to have a bit of custom JavaScript and CSS styles. Apps that need to talk to an external service will pull in the code necessary to talk to that service.



Product Services:

The Hue is a lighting system concept that can be used to:

- Change the Ambience light, set the mood.
- Stimulate your health and wellbeing with a biological lighting program.
- Helps in a smart and useful ways, to keep your home more secure.
- It can become an integral part of your day-to-day life. Alarms. Timers. Alerts.
- Expand your TV viewing experience by extending your Ambilight TV colours to your Hue light bulbs.
- Extend and enhance your Sharknado viewing experience with the Syfy Sync app. Enjoy the amplified suspense and emotions.
- The Hue jukebox, see how light reacts to your music.
- The Nest smart thermostat.

Links and Documents:

http://www.developers.meethue.com/

http://www2.meethue.com/en-gb/

http://archive.cloudera.com/cdh/3/hue/sdk/sdk.html

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	Inter-Layer, Inter-FW, Inter- METH	Partner who has identified the stakeholder	29/02/2016

Market Analysis		
Product's Name: *Samsung RF28HMELBSR/AA*		
Product Class: *Hardware with embedded software to add functionality to the fridge.*	Context: *International*	Access mode: *Close, subscription*
Web address: http://www.samsung.com/us/appliances/refrigerators/		
Product Description: A fridge with integrated touch-screen display that support a WiFi connection. The display allows phone connect functionality, calendar, photo showing, weather forecast. Entering shopping lists, writing memo's to display. The display can be connected to a smart-phone as a monitor. The fridge has a build in sound system that allows audio streaming. The Samsung 4-Door refrigerator with 8" Wi-Fi Enabled LCD will allow you to browse the web, access apps and connect to other Samsung smart devices – opening up a world of interactive communication and entertainment. This Samsung refrigerator features an 8" Wi-Fi Enabled LCD that enables web browsing and easy access to apps, right on the refrigerator door. The Counter-Height FlexZone™ Drawer is optimized for family organization, with an adjustable Smart Divider, easy access for kids, and four temperature control settings from chill to soft freeze. Our 28 cu. ft. extra large capacity 4-Door refrigerator has enough room to fit up to 28 bags of groceries. The Twin Cooling Plus™ feature maintains both high levels of refrigerator humidity to keep perishable fruits and vegetables fresher longer, and dry freezer conditions means less freezer burn for better tasting frozen foods.		
Product Services: Main service of the product is cooling food. This basic function is expanded with all kind of gadgets.		
Links: and Documents: *http://www.samsung.com/us/appliances/refrigerators/RF28HMELBSR/AA*		
Reason of involvement:	Related to IoT Product: Inter-Layer. IoT will enable more functionality to the product	Identified by: Partner who has identified the stakeholder	Registration Date: 29/02/2016

Market Analysis		
Product's Name: *LG Smart ThinQ*		
Product Class: *Hardware, Software*	Context: *International*	Access mode: *Close, subscription*
Web address: http://www.lg.com/us/washers/		

Product Description:

A smart washing machine which allows control by smart-phone. It has a wide variety in washing programs all controllable by smart-phone.

Leave it to LG to give home appliances an advanced degree! LG Smart ThinQ™ Refrigerators, Ranges, Washers and Dryers do more than any appliance you've owned before. They integrate seamlessly with your busy schedule – whether you're home or miles away – offering a new world of connectivity, customization and efficiency. Life just got a little easier. And a whole lot smarter.

Smarter Washing

With its Smart ThinQ™ technology*, you might just wonder if this washer is almost as smart as you. Stay connected with features like Smart Access and Smart Adapt, which allow you to monitor your laundry remotely and download new and improved cycles. The Smart Grid Ready feature automatically runs the washer when electricity rates are lowest. In the unlikely event that you have any problems, Smart Diagnosis helps you troubleshoot problems quickly and efficiently.

More free time

Towers of towels, piles of sweatshirts, and a mountain of jeans? Go for it. The Ultra Large Capacity (4.7 cu.ft.) washer lets you do more laundry in fewer loads. That's time saved and sore backs avoided.

The hottest thing in cold clean

Using the cold cycle on your washer doesn't have to mean compromising. ColdWash™ technology uses cold water and enhanced washing motions to penetrate deep into fabrics, giving you cold water savings with warm water performance.

Catch the wave

If you thought water had done all it could to clean your clothes, you haven't experienced WaveForce™ technology. Rapid drum movement and powerful water jets provide a revolutionary washing and rinsing experience.

Count on it

When you buy a washer, you want something reliable that you can count on. Because the Direct Drive Motor uses fewer moving parts and operates more efficiently, LG confidently backs the motor with a 10-

year limited warranty.

Wash in peace

You shouldn't know your washer is on when you're in the next room. The LG TrueBalance™ anti-vibration system is designed to minimize washer noise and vibration for smooth, quiet performance in any room of the house - even on the 2nd floor.

Save money. Save energy.

When your washer uses about 30% less energy and half the amount of water used by regular washers, you're going to make an impact—on your utility bills, your energy and water consumption, and most importantly, the environment.

Product Services:

Main services of the product is to automatically wash laundry. It allows easy (remote) control by using internet accessibility.

Links and Documents:

http://www.lg.com/us/washers/lg-WT6001HV-top-load-washer

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
	The machine is connected to internet to enhance it's functionality		29/02/2016

Market Analysis

Product's Name:

LG Kitchen appliances

Product Class:	Context:	Access mode:
Hardware, Software.	*International*	*Close, Subscription*

Web address:

http://www.lg.com/us/kitchen-appliances

Product Description:

A range of products (kitchen appliances) that are connected to the internet and can be controlled by an app on the smart phone.

It's the most popular gathering spot in the house! Make if functional, elegant and energy-efficient with LG kitchen appliances:

Refrigerators: From French door, to side-by-side, traditional to bottom-freezer designs, LG has one of the largest and most innovative selections of refrigerators. And with LG's exclusive Linear Compressor

technology, you'll get optimum cooling, operating efficiency and reliability.

Ranges and ovens: Choose from a huge variety of gas and electric ovens and ranges, including the largest single oven in the industry. They're more than ready for your most ambitious meals. Explore kitchen appliances designed to make cooking easy and life good.

Cooktops: Boasting features including stainless steel trim, Smooth Touch™ controls, induction bridge elements and premium-grade griddles, LG cooktops truly are style and convenience in perfect harmony.

Microwave ovens: With innovative features like Easy Clean® interiors for quick, high-performance cleaning without chemicals, plus Sensor Cook technology, you can find a stylish LG microwave oven that's just right for your home.

Dishwashers: Dish duty just got easier. Browse LG dishwashers with intuitive controls that let you enter your desired settings with the touch of a finger.

Product Services:
Main services of product: Combining easy control and extra functionality with the primary function.

Links: and Documents:			
Reason of involvement:	Related to IoT Product: (INTER-LAYER)	Identified by: Partner who has identified the stakeholder	Registration Date: Date of registration

Market Analysis		
Product's Name: *AR Drone 2.0*		
Product Class: *Hardware, Software*	Context: *European/International*	Access mode: *Close, subscription*
Web address: http://ardrone2.parrot.com/		

Product Description:

Phone controllable drone that can be used for video's and flight recording. It has GPS and WiFi connections for control and datatransfer.

APTURE HD PHOTOS & VIDEOS

Amazing footage streamed and recorded directly to your smartphone using the inbuilt 720p HD camera.

720p - 30FPS - H264 encoding base profile

Low latency streaming

Video storage on the fly with remote device or with USB flash drive

JPEG photo capture

As you fly, the HD video is recorded and sent directly to your device

FLY HIGH, FLY SAFE

The cutting edge EPP design of the AR.Drone 2.0 ensures it has a robust structure.

"Impressive, intuitive!"

AR.FreeFlight is the primary application used to fly and pilot the AR.Drone. Pilot with or without the accelerometer and switch from the frontal camera to the vertical camera.

Record pictures, nav data & videos and upload them instantly right from the application

New user friendly interface

Compatible with AR.Drone and AR.Drone 2.0

PILOT LIKE A PRO

With a single touch to your screen, you can control your AR.Drone 2.0 to take-off, land, hover and flip!

The Director mode lets you program automatic movements so that you can shoot great videos just like a movie director.

Choose your movement: traveling, pan, crane…

Adjust speed and moves in real time to compose your video sequence

Stabilization system and video post-processing to get clean smooth shots

Tune camera settings such as white balance, exposure and luminosity

Selection of key sequences in the video

Video sharing on YouTube and AR.Drone Academy

Product Services:
Main services of product are video and photo. The product can be as a toy.
Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
	(INTER-LAYER)	Partner who has identified the stakeholder	Date of registration

Market Analysis		
Product's Name: *Flytrex Sky*		
Product Class: *Hardware, Software, Platform*	Context: *European, International*	Access mode: *Close, subscription,*
Web address: http://www.flytrex.com/		
Product Description: Phone controllable drone that can be used for video's and flight recording. It has GPS and 3G connections for control and datatransfer and tracking.		

Flytrex Sky is the first multipurpose drone. Use the different Sky apps for the task you need.

Fly for fun with the Flytrex Sky Pilot app. Supporting manual and auto pilot features, auto-takeoff and landing, return to home and more features that makes flying fun and simple.

Why wait for Amazon? Start accepting and delivering parcels using the Flytrex Sky Messenger app. Select contact, mount parcel and hit go - that's it!

Flytrex Sky is the world's first drone that operates over the cloud. Harnessing the powers of the internet, the Sky redefines what our drones can do and unleashes a myriad of new possibilities!

All Sky flights are automatically logged to your personal Flytrex profile and are available to you via our web-site or mobile apps, built-in 3G tracking guarantees you'll never lose your expensive equipment, range-free connectivity keeps you worry free even when flying long distances or in urban areas, our gaming platform is available when looking for your next challenge and more!

Although Flytrex Sky is ready to fly out of the box, it also offers unparalleled platform for hobbyist and drone enthusiast.

Install any of the major RC transmitter and receiver systems to enable dual-mode flying using RC control and GSM connection for longer distances missions, range-free connection helps you discover new destinations, GoPro docking bay, dual battery ready for 35 minutes of flight, FPV ready and more!

Product Services:
Main services of product are video and photo. The product can be as a toy.
Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
	(INTER-LAYER)	Partner who has identified the stakeholder	Date of registration

Market Analysis		
Product's Name: *Roomba 980*		
Product Class: *Hardware, Software*	Context: *International.*	Access mode: *Close.*

Web address: http://www.irobot.com/	iRobot

Product Description:

A robot cleaner (vacuum cleaner/mopping/scrubbing) that can be controlled and programmed by smart-phone.

The Roomba 980 is iRobot's best robotic vacuum yet, adding Wi-Fi and app control for even easier home cleaning, but the price for convenience is higher than ever.

Uses a high-efficiency cleaning pattern and a full suite of sensors to map and adapt to real world clutter and furniture for thorough coverage.

Visual Localization expands the Roomba 980's coverage to an entire level of your home by using iRobot's proprietary vSLAM® technology to create visual landmarks in its map so it doesn't lose track of where it is or where its been.

It runs continuously for up to two hours then automatically recharges and resumes cleaning to complete the entire job.

Product Services:

Main services of product is household and cleaning

Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
	(INTER-LAYER)	Partner who has identified the stakeholder	Date of registration

Market Analysis		
Product's Name: *Smart watch*		
Product Class: *Hardware,Software, Platform.*	Context: *International*	Access mode: *Open, Close, subscription, …*
Web address: http://www.samsung.com/global/microsite/gear/		
Product Description: A smart watch that has similar functionality as a smart phone. This device can be used as a control interface for IoT devices. 		
Product Services: Main services of product, providing a multifunctional control platform.		
Links: and Documents: *http://www.samsung.com/global/microsite/gear/gearlive_features.html* *http://www.sonymobile.com/gb/products/accessories/smartwatch/* *http://www.apple.com/watch/* *https://www.pebble.com/*		
Reason of involvement: Partner project	Related to IoT Product: (INTER-LAYER)	Identified by: Partner who has identified the stakeholder
Registration Date: Date of registration		

Market Analysis		
Product's Name: *GT Comm. Unit*		
Product Class: *Hardware*	Context: *International*	Access mode: *Open*
Web address: http://www.globetracker.com/		

Product Description:

Globe Tracker Communications Unit (GT Comm. Unit) is a real time tracking, monitoring and communications device. The GT Comm unit can be installed in cargo containers, truck trailers, railway cars and more. The unit tracks the position and condition of assets. Optional sensors can also monitor events with one of the optional sensors, such as g-force, motion, temperature, humidity, light, gasses, door open/closed.

The unit transmits the data via either wifi (when it can connect to a wifi access point) or via GSM network. The sensor data is stored in a personal database, in which the consumer can track its cargo.

Product Services:

This product is used to track and trace a shipping container all over the globe. It uses several network services for communication.

Links: and Documents:

http://www.globetracker.com/products/globe-tracker-communications-unit/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	(INTER-LogP)	Partner who has identified the stakeholder	Date of registration

Market Analysis		
Product's Name: *Confidex Survivor/ Confidex Silverline*		
Product Class: *Methodology*	Context: *European/International*	Access mode: *Close*
Web address: http://www.confidex.com/		

Product Description:

Confidex makes RFID tags and labels for products and transport system (warehousing) for CC-containers and bus, tram and train tickets.

Product Services:

Main services of product tagging a package or system for digital identification and tracking.

Links: and Documents:

http://www.confidex.com/success-stories

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	(INTER-LAYER, INTER-LogP, INTER-Health)	Partner who has identified the stakeholder	Date of registration

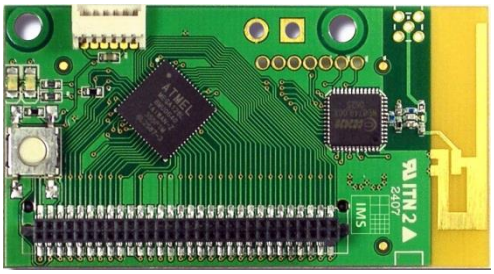
Market Analysis		
Product's Name: *ATI TABS*		
Product Class: *Platform*	Context: *National (Asian)*	Access mode: *Close, subscription*
Web address: http://1-stop.com.ph/		
Product Description: 1-stop is an online system to improve truck trafficking in and out of a port to avoid congestions. It is used to plan cargo freight. Different terminals can plan in their resources. The information can be shared among different terminals, making it a more integrated system. Enabling a more adequate planning.		
Product Services: Main services of product is controllability of traffic		
Links: and Documents: *http://bworldonline.com/content.php?section=Corporate&title=ati-launches-container-tracking-system-for-truckers&id=96241* *http://www.asianterminals.com.ph/ATIWebsite/index.aspx* *http://www.1-stop.biz/Lists/News%20and%20Events/Attachments/232/MEDIA%20RELEASE%201-Stop's%20Booking%20solution%20launched%20in%20Manila.pdf*		
Reason of involvement: Partner project	Related to IoT Product: (INTER-FW, INTER-LogP)	Identified by:
Registration Date:		

Market Analysis		
Product's Name: *FhG IMS*		
Product Class: *Hardware, Software*	Context: *European*	Access mode: *Close*

Web address: http://www.fcm.fraunhofer.de/	Fraunhofer FOOD CHAIN

Product Description:

Wireless sensors for Agricultural Applications such as temperature and sunlight sensing in greenhouses, monitoring micro-climates in fields (temperature, humidity and soil moisture) and livestock measurement (measuring the pH and temperature inside the cow's rumen.



Product Services:

Main services of product: information gathering of its near environment

Links: and Documents:

http://www.fcm.fraunhofer.de/en/beispiele11/drahtlose_sensornetzeinderland-undforstwirtschaft.html

Reason of involvement:	Related to IoT Product: *(INTER-Health)*	Identified by:	Registration Date:

Market Analysis		
Product's Name: *ATC*		interiot
Product Class: *Platform*	Context: *International*	Access mode: *Close*
Web address: http://www.autonomoustractor.com/		ATC
Product Description:		

A system that makes an agricultural tractor autonomous. With a Laser Radio Navigation System the tractor can position itself with sub-inch precision. The route the tractor has to drive can be trained in the tractor. When during autonomous drive the autonomous tractor encounters a problem the owner will be notified by a text.

The first stage is an upgrade kit for a normal tractor, the second stage is still under development and is a fully autonomous tractor-robot that has no room for a driver/passenger anymore.

Product Services:

Main services of product: Automate a work intensive process in the agriculture

Links: and Documents:

https://agfundernews.com/autonomous-tractor-corporation-aims-to-be-the-tesla-for-tractors.html
https://en.wikipedia.org/wiki/Driverless_tractor

Reason of involvement:	Related to IoT Product: *(INTER-FW, INTER-Health)*	Identified by:	Registration Date:

Market Analysis

Product's Name:

Smart thermostat (Anna NLE, E-thermostaat Essent, EnergieAssistent E.ON, Nest Essent, Delta, Toon Eneco)

Product Class:	Context:	Access mode:
Platform	National/European	Close, subscription

Web address:

https://www.nle.nl/
https://www.essent.nl/

https://energieassistent.eon.nl/ http://www.deltadore.com/ https://www.eneco.nl/	

Product Description:

Smart thermostat that combines heater control with extra functionality. With Geo-fencing (of smartphone) the thermostat can see if there is someone at home, or returning home, setting the thermostat on the desired heat level. The thermostat can learn your day to day routine, making sure that the home is at the desired temperature.

Toon and the "energieassistent" can be monitor the amount of energy used by appliances enabling you to reduce your energy consumption.

Anna NLE	E-thermostaat Essent	EnergieAssistent E.ON	Nest Essent	Delta	Toon Eneco

Product Services:

Main services of product: Smart control of the central heating system

Links: and Documents:

https://www.nle.nl/producten/vroeger-waren-er-thermostaten?gclid=CjwKEAiAgeW2BRDDtKaTne77ghgSJACq2U4bTccVsRUdBu-6l8awlnBfnBWytnWIMIUrLcGB9GOFUhoCG6_w_wcB

https://www.essent.nl/content/particulier/energie-besparen/thermostaat_vergelijken/index.html?ecmp=20151125SEA112U&gclid=CjwKEAiAgeW2BRDDtKaTne77ghgSJACq2U4boyw96VZrr_cucH64MAfxCmqcJmVEVZ7S8jcbU764sxoCwpXw_wcB#

https://energieassistent.eon.nl/energie-assistent-mogelijkheden/?br=1&gclid=CjwKEAiAgeW2BRDDtKaTne77ghgSJACq2U4bGjlR-XsQuerVdSe6QCemn8HYByG-D13fjMNAzOjQchoC857w_wcB

http://www.deltadore.com/uk/en/wireless-home-control-catalogue/heating-control/hydronic-heating/programmable-thermostats.html

https://www.eneco.nl/toon-thermostaat/?utm_source=google_dds-t&utm_source=cpc&utm_campaign=02.03%20Eneco%20Toon%20-%20Thermostaat%20-%20GE&utm_content=Thermostaat%20-%20E&utm_term=e%20thermostaat&utm_device=c&gclid=CjwKEAiAgeW2BRDDtKaTne77ghgSJACq2U4baJ6IwEOgYfpLOi8QLDkJlgYyLMP3xglHs6_uH1wR0xoCT3vw_wcB

Reason of involvement:	Related to IoT Product: *(INTER-FW, INTER-Health)*	Identified by:	Registration Date:

Market Analysis			
Product's Name: Contiki OS			
Product Class: Software	Context: international	Access mode: Open	
Web address: www.contiki-os.org		(Logo)	

Product Description:

As stated in the website of Contiki OS, "Contiki is an open source operating system for the Internet of Things. Contiki connects tiny low-cost, low-power microcontrollers to the Internet."

The operating system support a wide range of networking protocols (L2 and L3) and allows for fast development of applications. It also supports a variety of hardware platforms from various manufacturers. It is the de-facto industrial standard of operating systems for low-power IoT devices.

Product Services:

The following services are extracted from Contiki's website

- Power awareness: operates in extremely low power platforms allowing for years-long continuous operation. Contiki makes the power profiling of each platform possible.
- 6lowpan, RPL, CoAP: Contiki supports the recently standardized IETF protocols for low-power IPv6 networking, including the 6lowpan adaptation layer, the RPL IPv6 multi-hop routing protocol, and the CoAP RESTful application-layer protocol.

Links: and Documents:

http://contiki-os.org/start.html

https://github.com/contiki-os/contiki

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Support hardware and protocol interoperability and low-power scenarios	Inter-Layer, Inter-LogP	TU/e	24/2/2016

Market Analysis			
Product's Name: Cooja simulator			
Product Class: Software	Context: international	Access mode: Open	
Web address: www.contiki-os.org		(Logo)	
Product Description: As stated in the website of Contiki OS, "Contiki devices often make up large wireless networks. Developing and debugging software for such networks is really hard. Cooja, the Contiki network simulator, makes this tremendously easier by providing a simulation environment that allows developers to both see their applications run in large-scale networks or in extreme detail on fully emulated hardware devices."			
Product Services: - Near-reality network emulation capabilities of different applications over Contiki - Signal propagation models for testing of various scenario - Packet and protocol analysis			
Links: and Documents: https://github.com/contiki-os/contiki/wiki/An-Introduction-to-Cooja			
Reason of involvement: Fast validation of low-power networking solutions	Related to IoT Product: Inter-Layer, Inter-LogP	Identified by: TU/e	Registration Date: 24/2/2016

Market Analysis		
Product's Name: DEMANES Middleware		
Product Class: Methodology	Context: international	Access mode: Open

Web address: www.demanes.eu	

Product Description:

DEMANES Methodology comprises a set of component-based methods, framework and tools for development of runtime adaptive systems, making them capable of reacting to changes in themselves, in their environment (battery state, availability and throughput of the network connection, availability of external services, etc.) and in user needs (requirements).

Product Services:

- to model the architecture and the operation of adaptive systems
- to support the design process of such systems by providing simulation and evaluation environments and test-beds
- to support the implementation of such system by providing services for self organization, reconfiguration and self optimization as parts of the execution environment
- to verify and test adaptive systems
- to monitor the internal and external operational conditions and manage adaptation at run time.

Links: and Documents:

www.demanes.eu

http://www.springer.com/cn/book/9789811007149

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Models reconfigurable low-power networks. Ideal case for dense IoT applications.	Inter-FW	TU/e	24/2/2016

Market Analysis

Product's Name:

NXP JN5168

Product Class:	Context:	Access mode:
Hardware	international	Closed

Web address: www.nxp.com	

Product Description:

The JN516x series is a range of ultra low power, high performance wireless microcontrollers supporting JenNet-IP, ZigBee PRO or RF4CE networking stacks to facilitate the development of Home Automation, Smart Energy, Light Link and Remote control applications. They feature an enhanced 32- bit RISC processor with embedded Flash and EEPROM memory, offering high coding efficiency through variable width instructions, a multi-stage instruction pipeline and low power operation with programmable clock speeds. They also include a 2.4GHz IEEE802.15.4 compliant transceiver and a comprehensive mix of analogue and digital peripherals. Three memory configurations are available to suit different applications. The best in class operating current of 15mA, with a 0.6uA sleep timer mode, gives excellent battery life allowing operation direct from a coin cell.

Product Services:

- Single chip device to run stack and application
- Very low current solution for long battery life – over 10 yrs
- Supports multiple network stacks
- Highly featured 32-bit RISC CPU for high performance and low power
- System BOM is low in component count and cost
- Flexible sensor interfacing options

Links: and Documents:

http://www.nxp.com/documents/data_sheet/JN516X.pdf

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Inter-LogP requires long battery life network solutions	Inter-LogP	TU/e	24/2/2016

Market Analysis		
Product's Name: AirGround		
Product Class: Software Platform	Context: International	Access mode: Open
Web address:		(Logo)

In progress	

Product Description:

AirGround is a collaborative coordination and communication protocol. It is mainly designed to support collaboration and the coordination between aerial and terrestrial drones but it is a quite general communication framework that can be applied to any smart object.

The main objective of the AirGround protocol is the execution of a mission consisting of a sequence of tasks which must be performed by a group of smart objects that can autonomously decide who and how to perform various tasks.

Product Services:

The main characteristics of the proposed protocol are the following:

- *neighbour discovery* to make each drone aware of the presence of other terrestrial or aerial drones;
- *leader election support* to choose the most suitable drone to act as team coordinator,
- *distributed task assignment* among the drones to accomplish an assigned mission;

In particular, whenever a particular situation occurs, the leader election procedure is automatically executed after the reception of specifc trigger messages that all smart objects are able to listen to and to which they will respond on the basis of configurable parameters and conditions.

Links: and Documents:

P. Pace, G. Aloi, G. Caliciuri, G. Fortino “Management and Coordination Framework for Aerial-Terrestrial Smart Drone Networks”, SMARTOBJECTS 2015, MOBICOM workshop on experiences with the design and implementation of smart objects, Paris, France, 7th September, 2015.

P. Pace, G. Aloi, G. Fortino “An Application-Level Framework for UAV/Rover Communication and Coordination”, IEEE International Conference on Computer Supported Cooperative Work in Design (CSCWD), Calabria, Italy May 6-8, 2015.

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Useful to coordinate different IoT devices	INTER-FW	UNICAL	18/02/2016

Market Analysis		
Product’s Name: FIWARE		
Product Class:	Context:	Access mode:

Platform	International	Open
Web address: https://www.fiware.org/		(Logo)
Product Description: FIWARE mission is to build an open sustainable ecosystem around public, royalty-free and implementation-driven software platform standards that will ease the development of new Smart Applications in multiple sectors.		
Product Services: The FIWARE platform provides a rather simple yet powerful set of APIs that ease the development of Smart Applications in multiple vertical sectors.		
Links: and Documents:		

Reason of involvement: FIWARE products are of interest to Inter-IoT.	Related to IoT Product: INTER-LAYER, INTER-FW	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis		
Product's Name: HyperCat		
Product Class: Standard	Context: International	Access mode: Open
Web address: http://www.hypercat.io/		(Logo)
Product Description: The HyperCat specification allows Internet of Things clients to discover what data an IoT server has available. It is built on the same Web standards that are now common for that interface, i.e. HTTPS, REST/HATEOAS, JSON. With HyperCat, developers can write apps that will work across many servers, which helps to break down the walls between today's vertical silos.		

Product Services:			
Links: and Documents: • http://www.techradar.com/news/internet/web/what-is-hypercat-exploring-the-latest-internet-of-things-standard-1255230			
Reason of involvement: Standard in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-LAYER, INTER-FW	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis		
Product's Name: INTEL IoT Gateway		
Product Class: Software (Software Development Kits)	Context: *International*	Access mode: *Closed (commercial solution)*
Web address: https://www-ssl.intel.com/content/www/us/en/embedded/solutions/iot-gateway/overview.html		(Logo)
Product Description: Intel IoT Gateways securely connect legacy industrial devices and next-generation intelligent infrastructure to the IoT. They integrate technologies and protocols for networking, embedded control, security and manageability on which third-party applications can run. The Intel IoT Platform is an end-to-end reference model and family of products from Intel. An Intel IoT Gateway is a critical component within this framework. Source: https://www-ssl.intel.com/content/www/us/en/embedded/solutions/iot-gateway/overview.html		
Product Services:		

Links: and Documents:			
Reason of involvement: IoT platform that allows data to flow seamlessly and securely between edge devices and the cloud.	Related to IoT Product: Inter-Layer, Inter-FW	Identified by: SRIPAS	Registration Date: 29/02/2016

Market Analysis		
Product's Name: IoT M2M Council		
Product Class: Organization	Context: International	Access mode: Open
Web address: http://www.iotm2mcouncil.org/		(Logo)

Product Description:

- IMC is the largest and fastest-growing trade association dedicated to the IoT/M2M sector.
- The IMC is comprised of companies providing solutions from all parts of the global Iot/M2M ecosystem as Sustaining Members. The organisation has brought together large-scale connectivity providers like AT&T and Deutsche Telekom, but also more dedicated network operators such as long-time industry players Aeris Communications and Kore Telematics. It includes systems integrators like Digi, but also equipment manufacturers like Telit, and chipware maker giants like Intel.

Source: http://www.iotm2mcouncil.org/imcabout

Product Services:

Links: and Documents:

- http://www.iotm2mcouncil.org/
- http://www.iotm2mcouncil.org/imccurrentprojects

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Organization activity in the scope of interest of Inter-IoT.	INTER-LAYER, INTER-FW	SRIPAS	22/02/2016

Market Analysis		
Product's Name: NEC Smart Cities		
Product Class: Platforms	Context: International	Access mode: Closed
Web address: http://www.nec.com		(Logo)

Product Description:

NEC supports smart city scalability with first live deployment of the new oneM2M standard NEC is the first company in the world to deploy the new oneM2M service layer standard in a live smart city control center deployment. NEC's use of the open oneM2M specification makes it possible to collect data from a diversity of sensors in a consistent and secure way for statistical and billing purposes and use robust data management models to enable cities to make informed day-to-day management decisions.

Source: http://www.nec.com/en/press/201412/global_20141215_02.html

Product Services:

Links: and Documents:

- https://smarttofuture.com/company/nec/
- http://www.nec.com/en/global/ad/campaign/smartcity/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
NEC's usage of oneM2M standard should be investigated in Inter-IoT.	INTER-LAYER, INTER-FW	SRIPAS	22/02/2016

Market Analysis			
Product's Name: oneM2M			
Product Class: Standard	Context: International	Access mode: Open	
Web address: http://www.onem2m.org/		(Logo)	
Product Description: Standards for M2M and the Internet of Things. The purpose and goal of oneM2M is to develop technical specifications which address the need for a common M2M Service Layer that can be readily embedded within various hardware and software, and relied upon to connect the myriad of devices in the field with M2M application servers worldwide. Source: http://www.onem2m.org/about-onem2m/why-onem2m			
Product Services:			
Links: and Documents:			
Reason of involvement: Standard in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-LAYER, INTER-FW	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis			
Product's Name: OpenIoT			
Product Class: EU ICT Project	Context: European	Access mode: Open	
Web address:		(Logo)	

http://www.openiot.eu/	
Product Description: OpenIoT creates an open source middleware for getting information from sensor clouds, without having to worry about what exact sensors are used. OpenIoT explores efficient ways to use and manage cloud environments for IoT "entities" and resources (such as sensors, actuators and smart devices) and offering utility-based (i.e. pay-as-you-go) IoT services. OpenIoT will provide instantiations of cloud-based and utility-based sensing services enabling the concept of "Sensing-as-a-Service", via an adaptive middleware framework for deploying and providing services in cloud environments. Source: http://www.openiot.eu/?page_id=18	
Product Services:	
Links: and Documents: https://github.com/OpenIotOrg/openiot	

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
OpenIoT outcome and deliverables can be used in Inter-IoT.	INTER-LAYER, INTER-FW	SRIPAS	22/02/2016

Market Analysis		
Product's Name: SensorThings API		
Product Class: Standard	Context: International	Access mode: Open
Web address: http://www.opengeospatial.org/projects/groups/sensorthings		(Logo)
Product Description:		

The OGC (Open Geospatial Consortium) SensorThings API provides an open and unified way to interconnect the Internet of Things devices, data and applications over the Web. The SensorThings API is an open standard, builds on Web protocols and the OGC Sensor Web Enablement standards, and applies an easy-to-use REST-like style.
Product Services:
Links: and Documents: • http://ogc-iot.github.io/ogc-iot-api/ • http://ogc-iot.github.io/ogc-iot-api/faq.html

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Standard in the scope of interest of Inter-IoT.	INTER-LAYER, INTER-FW	SRIPAS	22/02/2016

Market Analysis		
Product's Name: Intelligent Cargo in Efficient and Sustainable Global Logistics Operations (iCargo)		
Product Class: Project co-funded by the 7th Framework Programme of the EC.	**Context:** European	**Access mode:** Open
Web address: http://i-cargo.eu/		(Logo)
Product Description: Cargo will build an open affordable information architecture that allows real world objects, existing systems, and new applications to efficiently co-operate, enabling more cost effective and lower-CO2 logistics through improved synchronisation and load factors across all transport modes. **Source: http://i-cargo.eu/content/about-icargo-project**		
Product Services:		

The iCargo project aims at advancing and extending the use of ICT to support new logistics services that:

- Synchronize vehicle movements and logistics operations across various modes and actors to lower CO2 emissions
- Adapt to changing conditions through dynamic planning methods involving intelligent cargo, vehicle and infrastructure systems and
- Combine services, resources and information from different stakeholders, taking part in an open freight management ecosystem.

Source: http://i-cargo.eu/content/about-icargo-project

Links: and Documents:

http://i-cargo.eu/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Project in the scope of interest of Inter-IoT.	Inter-LogP	SRIPAS	22/02/2016

Market Analysis

Product's Name:

Intelligent Global Pooling Systems (iGPS)

Product Class:	Context:	Access mode:
Platform	International	Closed (commercial solution)

Web address:	(Logo)
http://www.igps.net/	

Product Description:

Intelligent Global Pooling Systems (iGPS) is the world's first RFID-tagged, all-plastic pallet pool. iGPS is dedicated to being the industry leader of innovative, world-class supply chain solutions leveraging sustainable, intelligent shipping platforms while achieving unmatched value for our customers, investors, and employees.

Source: http://www.igps.net/mission-values.aspx

Product Services:

Each iGPS platform has integrated RFID technology that bears that platform's unique serial number or GRAI (Global Returnable Asset Identifier). This information can be captured via instantaneous RFID scanning or by reading the bar code found on each pallet.

Track & Trace System Integrates:

- Serialized product data
- Trading partner relationships
- Product master data
- Supply chain events
- Temperature Management

http://www.igps.net/capture-critical-data.aspx

Links: and Documents:

Reason of involvement:	**Related to IoT Product:**	**Identified by:**	**Registration Date:**
Project in the scope of interest of Inter-IoT because their identification system works through all supply chain: transportation, warehousing (storage), stocking and production.	INTER-LogP	SRIPAS	22/02/2016

Market Analysis

Product's Name:

Numerex

Product Class:	Context:	Access mode:
Software	International	Closed (commercial solution)

Web address:	(Logo)
http://numerex.com/	

Product Description:

Single-Source Provider of IoT Solutions. Numerex's fleet management solutions can track any high value moving asset - including large and small fleets - adding vehicle management and driver behavior capabilities as well.

Source: http://numerex.com/industries/transportation/

Product Services:

Links: and Documents:			
Reason of involvement: Project in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-LogP	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis		
Product's Name: Smart Port Logistics		
Product Class: Platform	Context: Local	Access mode: Closed
Web address: http://www.hamburg-port-authority.de/en/smartport/Seiten/Unterbereich.aspx		(Logo)

Product Description:

- Collaboration between smartPort Hamburg, Deutsche Telekom, SAP. smartPORT logistics is synonymous for smart traffic and trade flow solutions in the Port of Hamburg, taking account of both economic and ecological aspects. A special focus of the project lies on infrastructure, traffic flows and trade flows.
- smartPort Logistics delivers facts and figures that support faster decision making and rapid responses to dynamic changes in traffic and port infrastructure, saving time and money. What's more, the solution accelerates traffic and goods flows and eliminates congestion – benefiting both drivers and the environment.

Source: http://www.hamburg-port-authority.de/en/smartport/logistics/Seiten/Unterbereich.aspx

Product Services:

- Traffic flows
- Infrastructure
- Trade flows
- News

Links: and Documents:

- http://www.hamburg-port-authority.de/en/smartport/logistics/Seiten/Unterbereich.aspx
- http://cases.t-systems.com/logistics/use-case-hpa/telematics-from-the-cloud-48558

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Project in the scope of			

interest of Inter-IoT. Smart Port Logistics solution may be interesting from the point of view of transport and logistics use case.	INTER-LogP	SRIPAS	22/02/2016

Market Analysis			
Product's Name: Smart Port Barcelona			
Product Class: Platform	Context: Local	Access mode: Closed	
Web address: http://news.portdebarcelona.cat/noticia.php?id=97		(Logo)	
Product Description: • The Port promotes information technology as a way of improving the services it offers to its customers: automatic lighting management, automating terminal entry and exit controls, removing the need for paper documents in container deliveries and collection • Open data is available (EDI, Meteorology, and many others)			
Product Services:			
Links: and Documents: • http://news.portdebarcelona.cat/noticia.php?id=97 • http://www.portdebarcelona.cat/en/web/autoritat-portuaria/open-data			
Reason of involvement: Project in the scope of interest of Inter-IoT. Smart Port Logistics solution may be interesting from the point of view of transport and logistics use case.	Related to IoT Product: INTER-LogP	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis			
Product's Name: BestFact			
Product Class: Project co-funded by the 7th Framework Programme of the EC.	Context: European	Access mode: Open	
Web address: http://www.bestfact.net/		(Logo)	
Product Description: • The objective of BESTFACT is to develop, disseminate and enhance the utilisation of best practices and innovations in freight transport that contribute to meeting European transport policy objectives with regard to competitiveness and environmental impact. • Standards for Urban Freight, Green Logistics & Co-modality, eFreight Source: http://www.bestfact.net/			
Product Services: *Main services of product*			
Links: and Documents: *Useful links*			
Reason of involvement: BestFact outcome and deliverables can be used in Inter-IoT.	Related to IoT Product: INTER-LogP	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis		
Product's Name: *Giraff+*		
Product Class: *eHealth (aging well)*	Context: *Local*	Access mode: *closed*

Web address: http://giraffplus.eu/	

Product Description:

GiraffPlus is a complex system which can monitor activities in the home using a network of sensors, both in and around the home as well as on the body. The sensors can measure e.g. blood pressure or detect e.g. whether somebody falls down. Different services, depending on the individual's needs, can be pre-selected and tailored to the requirements of both the older adults and health care professionals. At the heart of the system is a unique telepresence robot, Giraff, which lends its name to the project. The robot uses a Skype-like interface to allow e.g. relatives or caregivers to virtually visit an elderly person in the home.

Product Services:

The GiraffPlus approach is to combine technologies for social interaction and long term monitoring to promote independent and healthy living

A network of distributed sensors can monitor activities and physiological data. The network can be configured according to the needs of inhabitants, using devices only when needed. With the help of a tele-presence robot timely involvement of family caregivers can occur and promote social interaction.

Using adaptable interfaces care providers and family can obtain meaningful summaries of activities.

Links and Documents:

http://giraffplus.eu/images/stories/deliverables/brochure_english.pdf

http://www.giraffplus.eu/images/stories/deliverables/D5.1_GiraffPlus_final.pdf

http://www.giraffplus.eu/images/stories/deliverables/giraffplus_d2.2_final.pdf

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Interest as use-case for the INTER-IoT results	*INTER-LAYER, INTER-FW, INTER-METH, INTER-Health*	*XLAB*	22/02/2016

Market Analysis		
Product's Name: *Google Brillo*		
Product Class: *Platform*	Context: *global*	Access mode: *closed*
Web address: https://developers.google.com/brillo/		
Product Description: Brillo brings the simplicity and speed of software development to hardware for IoT with an embedded OS, core services, developer kit, and developer console. Build on Brillo with an embedded OS based on Android, core services built-in, a developer kit, and a developer console. Choose from a variety of hardware capabilities and customization options, quickly move from prototype to production, and manage at scale with OTA updates, metrics, and crash reporting.		
Product Services: Brillo is an Android-based embedded operating system platform by Google aimed to be used with low-power and memory constrained IoT devices supporting low energy Bluetooth and Wi-Fi, and makes use of its Wave protocol for communication.		
Links and Documents: http://googledevelopers.blogspot.si/2015/10/building-brillo-iant-devices-with-weave_27.html		
Reason of involvement: *Competing technology, additional standard.*	Related to IoT Product: *INTER-LAYER, INTER-FW, INTER-METH*	Identified by: *XLAB*	Registration Date: *01/03/2016*

Market Analysis		
Product's Name: ÁGATA		
Product Class:	Context:	Access mode:

IoT platform	National (Spain)	By payment. Part of IT project
Web address: http://agatatechnology.es/		

Product Description:

AGATA is the name of a product created and commercialized by the company ÁGATA TECHNOLOGY, based in Spain.

AGATA is a Smart multi platform that is a focus of integration in any environment with complex and diversified technological systems: cities, ports, industries, universities, trade in consumer or any complex environment, where many people converge, resources and actions.

It is the Smart platform used in Smart Port projects of Vigo and A Coruña, as Port Authority of Vigo has identified.

ÁGATA has a big strength in data monitoring coming from multiple sensors and systems. It uses AMQP internally for distributing information within the Smart platforms.

Product Services:

AGATA is offered for 3 vertical domains:

- Ports.
- Cities.
- Factories.

It is commercialized integrating solutions from existing partners specialized in the previous 3 domains. It is a product customizable to every project that consist in a core and a set of tools for monitoring, analyzing big data with a holistic engine, a simulation engine and a graphical visualization tool.

Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Suggested by Port of Vigo and Prodevelop	INTER-LAYER INTER-FW INTER-METH INTER-LogP	PRODEVELOP, S.L	24/02/2016

Market Analysis		
Product's Name: AllJoyn Framework		
Product Class: IoT framework	Context: International framework related to AllSeen Alliance	Access mode: Open source
Web address: https://allseenalliance.org/framework		

Product Description:

AllJoyn is an open source software framework that makes it easy for devices and apps to discover and communicate with each other. Developers can write applications for interoperability regardless of transport layer, manufacturer, and without the need for Internet access. The software has been and will continue to be openly available for developers to download, and runs on popular platforms such as Linux and Linux-based Android, iOS, and Windows, including many other lightweight real-time operating systems.

The AllJoyn framework handles the complexities of discovering nearby devices, creating sessions between devices, and communicating securely between those devices. It abstracts out the details of the physical transports and provides a simple-to-use API. Multiple connection session topologies are supported, including point-to-point and group sessions. The security framework is flexible, supporting many mechanisms and trust models. And the types of data transferred are also flexible, supporting raw sockets or abstracted objects with well-defined interfaces, methods, properties, and signals.

Product Services:

AllJoyn framework lies within AllSeen Alliance. It is open-source with different packages, tutorials and documentation.

There is a certification programme for products. Products that pass the certification earn the right to wear the AllJoyn Certified mark, are registered in the AllJoyn Certified Products database, and benefit from the patent pledge.

The alliance is comprised by members. Some remarkable members are Philips, Canon, Microsoft, LG, Qualcomm, Sony or Sharp. There is a community of more than 200+ hardware manufacturers and software developers.

Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Suggested by Prodevelop	INTER-LAYER INTER-FW	PRODEVELOP, S.L	24/02/2016

Market Analysis		
Product's Name: Eclipse Kura		
Product Class: IoT framework	Context: International framework related to Eclipse	Access mode: Open source
Web address: http://www.eclipse.org/kura		

Product Description:

Eclipse Kura is an Eclipse IoT project that provides a platform for building IoT gateways. It is a smart application container that enables remote management of such gateways and provides a wide range of APIs for allowing you to write and deploy your own IoT application.

Kura runs on top of the Java Virtual Machine (JVM) and leverages OSGi, a dynamic component system for Java, to simplify the process of writing reusable software building blocks. Kura APIs offer easy access to the underlying hardware including serial ports, GPS, watchdog, USB, GPIOs, I2C, etc. It also offer OSGI bundle to simplify the management of network configurations, the communication with IoT servers, and the remote management of the gateway.

It is really a M2M gateway. There is a component for integrating into Apache Camel.

Product Services:

Kura comes with the following services:

I/O Services

Data Services

Cloud Services

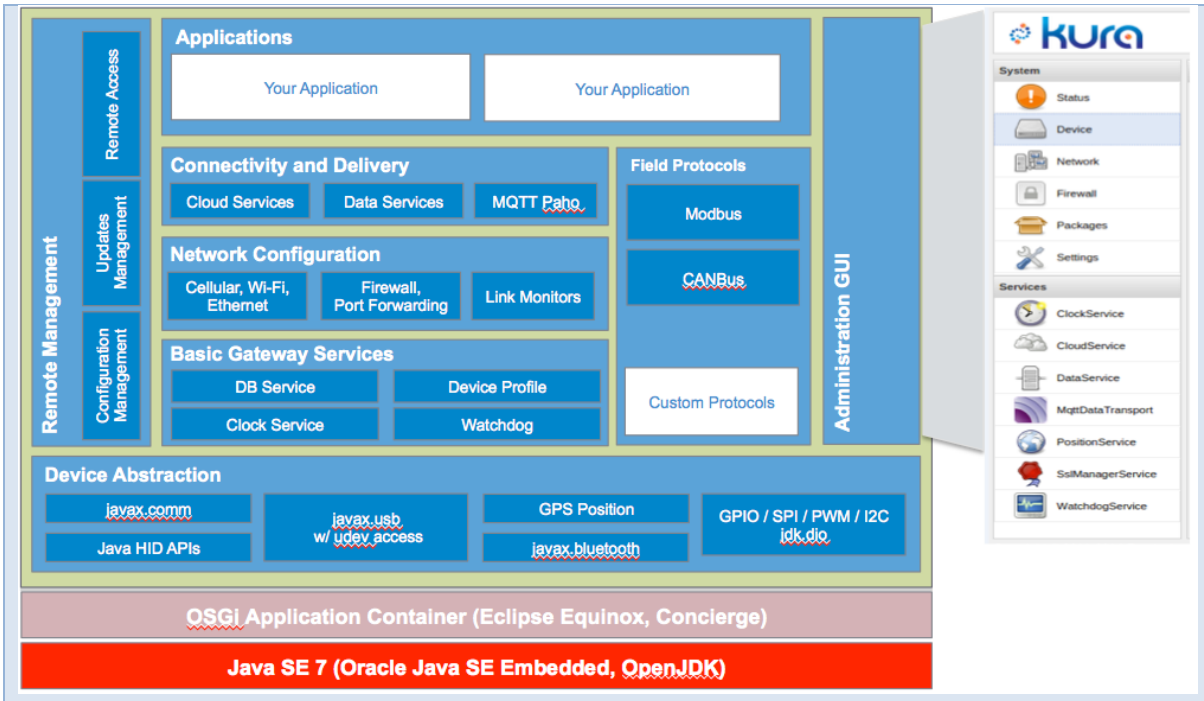
Configuration Service

Remote Management

Networking

Watchdog Service

Web administration interface



Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Suggested by Prodevelop	INTER-LAYER INTER-FW INTER-METH	PRODEVELOP, S.L	24/02/2016

Market Analysis

Product's Name:

SensorThing SWG (OGC)

Product Class:	Context:	Access mode:
Standard	International	• Open • members pay a fee to free access to OGC portal system

Web address:

http://www.opengeospatial.org

http://www.opengeospatial.org/projects/groups/sweiotswg

Product Description:

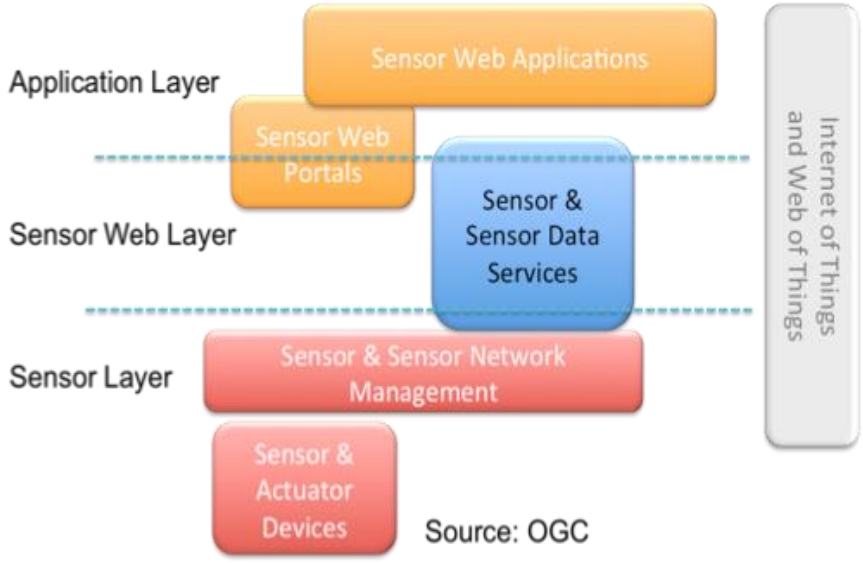
The OGC (Open Geospatial Consortium) is an international not for profit organization committed to making quality open standards for the global geospatial community. These standards are made through a consensus process and are freely available for anyone to use to improve sharing of the world's geospatial data.

OGC has identified the need for standardized interfaces for sensors in the Web of Things (WoT). The Sensor *Web interface for IoT* SWG (Standard Working Group) aims to develop such a standard based on existing WoT portals with consideration of the existing OGC Sensor Web Enablement (SWE) standards.

OGC's Sensor Web Enablement (SWE) standards are the only ones that focus on the content of sensor information and on making the sensor observations useful to end user applications. SWE standards allow users to assessment the fitness for use of observations and to allow accurate processing on the sensed information to create derived information suitable to the users needs.

In much the same way that HTML and HTTP standards enabled the exchange of any type of information on the Web, the OGC SWE standards enable the discovery of sensors and corresponding observations, exchange, and processing of sensor observations, as well as the tasking of sensors and sensor systems.

The figure below depicts middleware layers between device level and application level interfaces. Each layer needs a standard interface.



The formation of Sensor Web for IoT SWG was approved by the OGC membership with its first meeting in Seoul October 2012. The initial scope of the SWIOT SWG seeks to make observations captured by IoT devices easily available to applications and users through data aggregation portals.

OGC has an alliance relationship with as per the ISO/IEC JTC 1/WG 10 Internet of Things. Here, the draft ISO specification ISO/IEC 30141, Information technology Internet of Things Reference Architecture (IoT

RA) is a reference to be taken into account.

Product Services:

- SWE: The Sensor Web Enablement (SWE) Common Data Model Encoding Standard defines low level data models for exchanging sensor related data between nodes of the OGC® Sensor Web Enablement (SWE) framework. These models allow applications and/or servers to structure, encode and transmit sensor datasets in a self describing and semantically enabled way. SWE Common 1.0 was defined in the OGC SensorML 1.0 Standard available at http://www.opengeospatial.org/standards/sensorml.
-

Links: and Documents:

- *SensorThing SWG:* *http://www.opengeospatial.org/projects/groups/sweiotswg*
- *OGC's Sensor Web Enablement (SWE):* *http://www.opengeospatial.org/domain/swe*
-

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
International standardization organization on open geospatial for sensors in the Web of Things (WoT).	INTER-LAYER INTER-FW	PRODEVELOP, S.L	24/02/2016

Market Analysis

Product's Name:

Posidonia Operations

Product Class:	Context:	Access mode:
Product	Local	License

Web address:

https://www.prodevelop.es/en/posidonia-operations-0

Product Description:

Posidonia Operations is a product that is part of the Posidonia Port Solution Suite© developed by PRODEVELOP, S.L.

Posidonia Operations is an Integrated Port Operation Management System highly customizable that allows a port to optimize its maritime operational activities related to the flow of vessels in the port service area, integrating all the relevant stakeholders and computer systems.

It has been designed to meet all the phases of vessel traffic:

- Request
- Berth Planning
- Authorization
- Port approach
- Entry in port's service area
- Berthing
- Unberthing
- Berth change
- Anchorage start
- Anchorage finish
- Bunkering
- Exit from port
- Waypoint/zone pass-through control (entrance, channel,..)
- etc.

At a technological level, Posidonia Operations is a new product, developed using the last cutting-edge technologies in the market.

The client is a 100% Web application,that uses the last HTML5 and CSS3 specifications, and modern components and Web architecture patterns in software engineering. The server comprises several advanced components, from XTPP (eXtreme Transaction Processsing Platform) platforms, to real-time information analysis engines, big data techniques, real-time event notification brokers, etc.

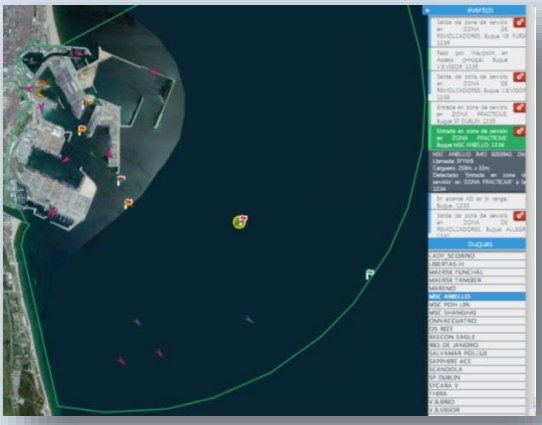
Product Services:

Posidonia Operations is a real-time platform able to connect to AIS (Automatic Identification System), VTS (Vessel Traffic System) or radar, and automatically detect vessel operational events like port arrival, berthing, unberthing, bunkering operations, tugging, etc.

It also allows to manage the maritime operations, to control related services like pilots, tugboats, moorers, other services, etc. and to integrate all the information from and towards the PMS (Port Management System) and the PCS (Port Community System).

Posidonia Operations may run under different operation modes:

- Manual mode. Designed as a contingency solution in case of communication failure or external systems problems.
- Assisted mode. Events are detected automatically, related data is captured and presented to an operator allowing to confirm or to complete the information.
- Automatic mode. Fully unattended operation, with recording of events, operations, even being able to automate actions in the PMS or PCS like call start/finish, berthing/unberthing, anchorage start/finish, etc.
- With Posidonia Operations a single environment for controlling vessel operations is available, thus avoiding multiple screens with different applications which make it difficult to monitor port operations.



Links and Documents:

- Posidonia Suite: https://www.prodevelop.es/en/posidonia-0

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Improvement of its functionalities taking into account the exploitable products of INTER-IoT	INTER-LAYER INTER-FM INTER-METH INTER-LogP	PRODEVELOP, S.L	24/02/2016

Market Analysis

Product's Name:

ACOSO Meth

Product Class:	Context:	Access mode:
Methodology	International	Closed

Web address:

http://acoso.dimes.unical.it/ACOSOMETH.html

Product Description:

The perception of the Internet of Things (IoT) as a loosely coupled, decentralized system of cooperating smart objects (SOs) is gaining more and more consensus. Many research efforts in the IoT realm have been to date devoted to device, networking and application service perspectives: on the contrary, software engineering approaches for the development of SO-based IoT systems are still in their infancy.

ACOSO Meth is a novel software engineering approach aiming to support a systematic and full-fledged development of SOs-based IoT systems.

ACOSO Meth is based on metamodels that are defined at different levels of abstraction to support the development phases of analysis, design and implementation. Every phase introduces new features and a higher degree of detail in the metamodels, maintaining at the same time strong relations with the higher levels metamodels.

Following the ACOSO Meth, the ACOSO middleware has been specifically conceived for the full management of cooperating and agent-oriented smart objects.

Product Services:

Main services of product

The ACOSO Meth aims to effectively support the analysis, design and implementation of any kind of

future IoT systems. In detail, the adopted metamodel-based approach ensures:

Effectiveness: the ACOSO Meth is a well-defined development methodology which allow to full exploit the widely recognized SO's potential in analyzing, designing and implementing IoT complex eco-systems.

Versatility: the ACOSO Meth provides (i) high-level metamodels, suitable to support the SO analysis phase since they model main system and system components aspects; (ii) fine-grained design metamodels, providing the functional components of the system, their relationships and interactions; (iii) implementation metamodels, which specify how high-level concepts are mapped to concretely implementable components.

Flexibility: the flexibility that characterizes the ACOSO Meth allows to easily extend the metamodels of every phase, hence modeling incoming requirements or aspects (e.g. security issues)

Links: and Documents:

- Fortino, G., Guerrieri, A., Russo, W., & Savaglio, C. (2015, October). Towards a Development Methodology for Smart Object-Oriented IoT Systems: A Metamodel Approach. In *Systems, Man, and Cybernetics (SMC), 2015 IEEE International Conference on* (pp. 1297-1302). IEEE.
- http://acoso.dimes.unical.it/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner	INTER-METH	UNICAL	19/02/2016

Market Analysis

Product's Name:

AREAS

Product Class:	Context:	Access mode:
Application Platform	International	Closed

Web address:

http://www.eng.it/soluzioni/tecnologie/dettaglio-progetto.dot?com.dotmarketing.htmlpage.language=1&catTecnoId=c2a253fe-df28-4322-83fe-fc638cf54fbb&inode=b6f7c612-1867-434d-b4a1-50d1957e4449

Product Description:

AREAS® is the specific ERP (Healthcare Enterprise Resource Planning) platform for healthcare developed by Engineering, chosen and used each day by dozens of local healthcare facilities and hospitals.

AREAS® is a complete, customizable web solution, to support the carrying out and integration of the clinical and administrative processes in the company-based or supra-company healthcare organizations.

In Engineering's architectural vision, the single applications are bricks in the Hospital Information System, integrated into a common platform for connection and exchange of data. The AREAS® platform, with the

combination of its 68 certified profiles/IHE actors, is the national leader in terms of international tests certifying interoperability according to the sector's reference standards.

Product Services:

AREAS services are intended to support seven application areas, divided into modular and programmable systems and subsystems:

- Governance: systems for clinical and economic-financial governance. (risk management, treatment protocols and Evidence Based Medicine protocols, information obligation flow management)
- Access: systems for accessing assistance programs (CUP, hospital registration, emergency room, 118 emergency service number).
- Hospital: systems for digitizing hospital admittance and outpatients processes (clinical records, outpatients, order entry, operating theaters, local logistics).
- Territorial: systems and subsystems for the management of district activities (legal medicine, prosthetic medicine, rehabilitation, consulting rooms, PUA, home assistance for patients, RSA, sports and general medicine) and prevention (screening, vaccinations, environmental safety, food and workplace).
- Diagnostics: systems for managing laboratories and service medicine (test labs, transfusions, anatomic pathology, and radiology).
- Administration and Control: administrative management systems (accounting, provisioning, logistics, finance and budget).
- Human Resources: staff management systems (attendance/absence monitoring, calculation of salaries, training and organization).

Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Application platform in the context of e-Health	INTER-Meth	Engineering	18/02/2016

Market Analysis		
Product's Name: *Butler - uBiquitous, secUre inTernet-of-things with Location and contEx-awaReness*		
Product Class: *eHealth (aging well)*	Context: *Local*	Access mode: *closed*

Web address:

http://www.iot-butler.eu

Product Description:

BUTLER's concept is of a natively secure, pervasive, energy-efficient and optimized context-aware opened architecture, integrating IoT technologies and services to transparently learn and infer the behaviours and needs of users, acting on their behalf of and protecting them so as to improve their quality-of-life.

It focuses on 5 different vertical domains: Smart Transport, Smart Health, Smart Shopping, Smart Home and Smart City.

Product Services:

The main objective of BUTLER is to support the construction of pervasive applications that make use of heterogeneous devices (SmartObjects in BUTLER parlance), based on different protocols and standards. Said pervasive applications aim to improve daily user activities in different domains taking into account contextual information (user needs, preferences and location, status of the physical entities the user interacts with and so on).

The interworking between the different elements of the BUTLER architecture is, at first sight, really simple: users invoke applications that utilize user data, contextual information, location information and predicted behaviour to achieve their purposes. As part of said purposes, applications also request actuators to execute an action. To enable applications implement their functionality, BUTLER takes the raw information generated by users and devices and shuffle it to create rich contextual information, to calculate precise location information, or to predict user behavior. Access to devices in order to actuate on them is also provided. This apparently simple approach poses many challenges on BUTLER. To name a few, BUTLER has to be able to gather information from the physical environment through devices supporting disparate communication technologies, application protocols and data models (nothing new for any IoT project).

BUTLER has to be also able to provide efficient ways to declare and compute contextual and location information, as well as predict user behavior. BUTLER has to achieve all of this in a secure way so that only authorized parties access the devices that gather information from the physical environment or actuate on it. Other key security services, namely integrity and confidentiality, have also to be guaranteed when communicating with devices. Finally, some business models that BUTLER can support involve the supply of data mediated or inferred by BUTLER to third-parties wishing to use it to create new applications.

Additional challenges have to be confronted with when taking into account the different deployment scenarios BUTLER supports. Indeed, the different functional components the BUTLER architecture comprises can be distributed across entities playing the different roles defined in BUTLER: SmartObjects (with the SmartObject Gateway companion to integrate different types of devices), SmartServers and SmartMobiles. It is obvious, for instance, that if a robust and comprehensive context generation functionality is wished, the involvement of one, or several, SmartServers is needed. However, basic or limited context generation processes can be implemented in a SmartObject Gateway without requiring the involvement of a SmartServer.

Links and Documents: *http://www.iot-butler.eu/about-butler* *http://www.iot-butler.eu/wp-content/uploads/downloads/2013/10/D3.2-Integrated-System-Architecture-v1.50.pdf* *http://www.iot-butler.eu/wp-content/uploads/downloads/2013/11/D4.1-BUTLER-SmartServer-Platform-and-Enabling-Technologies_v1.2.pdf* *http://www.iot-butler.eu/wp-content/uploads/downloads/2014/12/D5.1-BUTLER-Platforms-and-Perv-Func_v1.0.pdf* *http://www.iot-butler.eu/download/deliverables*

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Interest as use-case for the INTER-IoT results	INTER-LAYER, INTER-FW, INTER-METH, INTER-Health	XLAB	22/02/2016

Market Analysis		
Product's Name: COSM Agile Framework		
Product Class: Development Methodology	Context: International	Access mode: Closed
Web address: http://www.herzum.com/		
Product Description: COSM Agile Framework is Herzum Software's widely used approach for enterprise architecture and agile software manufacturing.		
Product Services: COSM analyzes 7-levels of interoperability protocol model: • Development lifecycle interfaces • Functional reference model • Semantics • Functional interfaces • Application infrastructure • Technical infrastructure • Technical interfaces		

These levels include: technology selections, technical infrastructure, integrations points in the application infrastructure, functional reference model and semantic specifications, functional reference models.

Business Component Model consists of five dimensions: Architectural Viewpoints, Component Granularity, Development Process, Distribution Tier, and Functional Categories.

The first dimension (Architectural Viewpoints) consists of four architectural viewpoints, which are:

- the Project Management Architecture (PMA, concerned with organizational decisions, tools, and guidelines),
- the Technical Architecture (TA, defining the execution environment, component and user interface frameworks, and other technical facilities),
- the Application Architecture (AA, describing development patterns, guidelines, or standards),
- the Functional Architecture (FA, identifying the features and functional aspects of a system and their relationships).

The second dimension (Component Granularity) defines three levels of granularity within the user-workspace and enterprise-resource domains:

- Distributed Component,
- Business Component
- Application Component.

The third dimension (Development Process) contains:

- rapid component development for designing, building, and testing an individual business component;
- system architecture and assembly for architecting, assembling, and testing a complete system;
- federation architecture and assembly for architecting, assembling, and testing a federation of systems using system level components.

The fourth dimension (Distribution Tier) separates the anatomy of a component among:

- user tier,
- workspace tier,
- enterprise tier, and
- resource tier.

The user tier presents the component on the screen and communicates with the user. It may be stand-alone, plug in, or not-existent at all. The local business logic is implemented by the workspace tier, which will interact with the enterprise tier. Typical business logic may, for instance, include transaction management utilizing several enterprise-level resources. The latter are implemented by the enterprise tier, providing business rules, validation, and interaction between components. It typically forms the core functionality of business components of a complex, large-scale component based system. The resource tier manages access to shared resources, such as databases, files, or communication infrastructures and shields all higher layers from their technical implementation.

The fifth dimension (Functional Categories) defines four broad functional categories:

- utility business components,
- entity business components,
- process business components and
- auxiliary business components.

Links and Documents:			
Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Agile software development framework/methodology	INTER-Meth	Herzum Software	01/03/2016

Market Analysis		
Product's Name: ELDAMeth		
Product Class: Methodology	Context: International	Access mode: Open Source project (based on the LGPL license)
Web address: http://eldameth.deis.unical.it/eldameth.html		

Product Description:

In multiple application domains, ranging from traditional distributed information systems to innovative Smart Objects-based IoT scenarios, the agent-based computing paradigm has been demonstrated to be effective for the analysis, design and implementation of distributed software systems. In particular, several agent-oriented methodologies, incorporating suitable agent models, frameworks and tools, have been to date defined to support the development lifecycle of Distributed Agent Systems (DAS). However, few of them provide effective validation methods to analyze design objects (and even less Smart Objects) at different degrees of refinement before their actual implementation and deployment.

ELDAMeth aims at providing developers with a simulation-based methodology for DAS, which enables rapid prototyping based on visual programming, validation, and automatic code generation. ELDAMeth can be used both stand-alone for the modeling and evaluation of DAS and coupled with other agent-oriented methodologies for enhancing them with simulation-based validation. In particular, the proposed methodology, which is based on the ELDA (Event-driven Lightweight Distilled StateCharts-based Agents) agent model, provides key programming abstractions (event-driven computation, multi-coordination, and coarse-grained strong mobility) very suitable for highly dynamic distributed scenario and is supported by a CASE tool-driven iterative process, seamlessly covering the detailed design, simulation, and implementation phases of DAS.

Product Services:

ELDAMeth (Event-driven Lightweight Distilled StateCharts-based Agents Methodology) is a methodology specifically designed for the simulation-based prototyping of distributed agent systems (DAS). It is based on an iterative development process covering modeling, simulation and implementation phases of DAS. In particular, main ELDAMeth features are:

(Semi)Automatic Interoperability: ELDAMeth can be used both stand-alone and in

conjunction/integration with other agent-oriented methodologies which support the analysis and (high-level) design phases. At the modelling phase, ELDAMeth produces an ELDA-based MAS design object, which can be eventually produced by the translation and refinement of design objects produced by other agent-oriented methodologies such as PASSI, GAIA, MCP, and others. In particular, while the translation process centers on (semi)automatic model transformations based on the MAS meta-model of the employed methodology and the ELDA MAS meta-model, the refinement process is usually carried out manually by the ELDA-based Modeler by using the ELDATool. The defined design objects can be automatically translated, through the ELDATool, into ELDA-based MAS code objects according to the ELDAFramework, which is a set of Java classes formalizing all the modeling abstractions of the ELDA MAS meta-model. The code objects are then used in the Simulation phase.

Complete support to preliminary evaluations: the Simulation phase produces the Simulation Results in terms of MAS execution traces and performance indices that must be carefully evaluated with respect to the identified functional and non-functional requirements. Such evaluation can lead to a further iteration step which starts from a new (re)modeling activity. In particular, the Simulation Results come from the execution of the ELDA-based MAS simulation object carried out through ELDASim, a Java-based event-driven simulation framework for ELDA agents. The simulation object is obtained by synthesizing the ELDA-based MAS code object with the simulation parameters and performance indices, defined on the basis of the requirements, by means of ELDASim.

Executability: the Implementation & Deployment phase produces code for the JADE framework which can be then deployed and executed on a distributed JADE platform. Starting from the ELDA-based MAS design object, the code production is supported by the JADE-based DistilledStateChartBehaviour framework, the JADE framework and the ELDATool. Of course, the execution results can be evaluated against the functional and non functional requirements and, possibly, trigger a new iteration

Links and Documents:

- G. Fortino, W. Russo, ELDAMeth: An Agent-oriented Methodology for Simulation-based Prototyping of Distributed Agent Systems. Information and Software Technology, Elsevier, 2012, Vol. 54, n. 6, pp. 608-624.
- http://eldameth.deis.unical.it

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner	INTER-METH	UNICAL	04/03/2016

Market Analysis		
Product's Name: *FIWARE*		
Product Class: Platform	Context: International	Access mode: Open
Web address: www.fiware.org		

Product Description:

FI-WARE is a European Union driven open initiative aiming to create a sustainable ecosystem in order to offer a new wave of digitization services based on the integration of components and technologies of the Internet of Things through open standards that create a low-cost, open-data environment that benefits all. FIWARE is supported by the Future Internet Public-Private Partnership (FI-PPP) project of the European Union.

The objective of FIWARE is to facilitate a cost-effective creation and delivery of Future Internet applications and services in a variety of areas, including smart cities, sustainable transport, logistics, renewable energy, and environmental sustainability. The API specification of FIWARE is open and royalty-free.

The platform provides enhanced OpenStack-based Cloud capabilities and a set of tools and libraries known as Generic Enablers (GEs) with public and open-source specifications and interfaces. These FIWARE GEs are distributed in different technical chapters and provide different capacities. For example, the Internet of Things chapter provides tools to connect sensors and other devices.

Another pillar of the FIWARE architecture is context management. FIWARE provides a mechanism to generate, collect, publish or query massive context information and use it for applications to react to their context. This is a complex process, as this information may come from different sources: systems, mobile apps' users, sensor networks, etc. The Context Broker, through a REST implementation of API OMA NGSI, allows to shape and access it, whatever the source is.

The use and management from data coming from "Things" (i.e. sensors, actuators and other devices) is also a complex process, as there are many different protocols in the IoT sphere. FIWARE provides a set of GEs allowing to access the relevant information through only one API (NGSI) and to act on some elements.

Product Services:

The FIWARE platform provides a rather simple yet powerful set of APIs (Application Programming Interfaces) that ease the development of Smart Applications in multiple vertical sectors. The specifications of these APIs are public and royalty-free.

Besides, an open source reference implementation of each of the FIWARE components is publicly available so that multiple FIWARE providers can emerge faster in the market with a low-cost proposition.

FI-Lab is the open ecosystem of FIWARE, FIWARE Lab is the experimentation environment where

technology providers, solution developers and their stakeholders and data providers (such as cities) can identify problems, design and build solutions on the platform and experiment with them.

FIWARE provides an open platform Smart Cities, ensures the interoperability and the creation of standard data models. FIWARE can represent a fundamental pillar in the infrastructures of Smart Cities, as the different GEs build an architecture that can serve most of their needs. FIWARE has been used in numerous smart cities initiatives, such as VLCi, that transformed Valencia in the first fully integrated smart city in Spain, and the first big European city to fully adopt open data e-Governance technology.

On the other hand, other functionalities such as business intelligence, web interfaces and advanced interfaces allow the creation of very powerful applications and solutions.

Links and Documents:

www.fiware.org

https://forge.fiware.org/plugins/mediawiki/wiki/fiware

https://account.lab.fiware.org

http://help.lab.fiware.org

http://catalogue.fiware.org

https://www.fiware.org/lab

https://www.fiware.org/fiware-operations

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Interoperability and compatibility of IoT platforms	INTER-FW, INTER-Meth, INTER-Layer	UPVLC	08/02/2016

Market Analysis

Product's Name:

Home Manager

Product Class:	Context:	Access mode:
Application	International	Open

Web address:

http://apice.unibo.it/xwiki/bin/view/Products/HomeManager

Product Description:

Home Manager is a prototype application for the control of an intelligent home, designed as a multi-agent system via the SODA methodology, and implemented on top of the TuCSoN coordination infrastructure.

The system considers a house with independent devices (air conditioners, lights, etc.), each equipped with an agent to participate to the agent society. The coordination infrastructure, programmable via tuple centres, embeds the coordination laws required both to mediate among the different user's preferences and to pursue the overall system goals — in this case, to manage (limit) the overall energy consumption. More recently, the Home Manager system has been re-interpreted, given its goals and features, in the Butlers perspective: in particular exploiting the user's location — tracked in real time thanks to the GPS and the other geo-localisation techniques embedded in modern smartphones — to enable an intelligent reasoner agent to take some autonomous decisions (for instance, adjusting the air conditioner temperature), possibly even anticipating some user's needs, managing the related devices on the user's behalf (for instance, deducing the opportunity to switch on the oven, or post-pone the washing machine, etc.). The Home Manager system is available underGNU LGPL license.

Product Services:

Home Manager supports monitoring and control tasks in the context of smart buildings. Specific services include:

- energy management
- user locatization
- autonomous actions

Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Application in the context of smart environments	INTER-Meth	SIDI-UNIBO	18/02/2016

Market Analysis

Product's Name:

Intel Intelligent Systems Framework

Product Class:	Context:	Access mode:
IoT Framework	International	Open

Web address:

http://www.intel.com/content/www/us/en/internet-of-things

Product Description:

Advancing the Internet of Things Intel has a long history of supporting scalable technologies and

ecosystems that drive transformations in computing—from PCs to the Internet to the data center. Intel is now focusing its robust ecosystem, research and development, and portfolio of silicon and technologies on enabling businesses and consumers to benefit from the Internet of Things and the emerging intelligent systems economy.

Intel Intelligent Systems Framework is a set of interoperable solutions designed to address connecting, managing, and securing devices in a consistent and scalable manner. ISF provides solutions to allow smart objects to Connect, Share and Drive value from the Data.

The Intelligent Systems Framework enables OEMs to shift their investments from achieving interoperability to unlocking the value of data. ISF allows faster-time-to-Market, as enables innovative services – as a consequence of exploiting the unlocked value of the data-, and lower development and deployment costs. The framework features fundamental capabilities, delivered by components from Intel and ecosystem partners, that address connectivity, manageability, and security including software and middleware from Wind River and McAfee.

Intel is also assembling an ecosystem of system vendors, ISVs, system integrators, and cloud-to-device services that build upon this framework with interoperable solutions that reduce fragmentation and speed time to market. This ecosystem will work closely with the Open Data Center Alliance to ensure seamless integration of intelligent systems with the data center and cloud.

Product Services:

Intel Intelligent Systems Framework is a consistent framework for connectivity, security, and Manageability. ISF provides flexible recipes utilizing scalable, off-the-shelf elements, enables vertical specialization, and shifts resource investment from interoperability to extracting value from data. Intel processors supported in the framework include Intel® Xeon® processors, 2nd and 3rd Generation Intel® Core™ processors with Intel® vPro™ technology, and Intel® Atom™ processors.

Intel Intelligent System Framework enables:

Connectivity:

- Multiple protocol: Wired, Wireless, Mobile, Local
- Simple integration with Intel solutions
- Flexible combinations, easy integration

Manageability:

- Reliability: Improved system uptime; out-of-band detect, diagnose and repair; device management
- Efficiency: Remote power management, off-peak maintenance, off-peak maintenance, inventory and asset management
- Hardening: McAfee integration, compliance management

Security:

- Platform protection: BIOS and firmware, platform hardware, system reliability
- Software protection: operating system, applications, pre-OS
- Data protection: System/App Data

Links and Documents: http://download.intel.com/newsroom/kits/embedded/pdfs/Intel-Intelligent-Systems-Framework_Overview.pdf

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
IoT framework	INTER-FW, INTER-Layer, INTER-METH	Universitat Politecnica de Valencia (UPVLC)	29/02/2016

Market Analysis		
Product's Name: Intoino		
Product Class: *Education*	Context: *Local*	Access mode: *closed*
Web address: http://www.intoino.com/		

Product Description:

Intoino is a Arduino based educational and prototyping platform for the Internet of Things, that provides with customized boards and plug-and-play sensors and actuators, that allow to easily program and connect events to produce smart-things behavior such as watering plants when their soil is too dry, or send an alarm every time the fridge is opened. The accompanying iOS and Android applications allows the users to program their Intoino but also to interact with it to receive alers and monitor programmable events.

Product Services:

Intoino provides with a customized Ardiuno board that can be easily programmed to make use of the available actuators and sensors. These include a 4 digit display, relays and buzzers, and sensors of sound, ultra-sound, light, rotation, soil humidity, temperature and air humidity. The platform includes a mobile application for the programming of the Intoino, which at the same time serves as interface for the users' application. Intoino includes a Marketplace for applications created by its users, which allows them to share their experience.

Links and Documents:

https://play.google.com/store/apps/details?id=com.belandsoft.intoino

https://itunes.apple.com/it/app/intoino/id956190309?mt=8

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Interest as use-case for the INTER-IoT results	INTER-LAYER, INTER-FW, INTER-METH	XLAB	01/03/2016

Market Analysis		
Product's Name: Kukua		
Product Class: *Weather*	Context: *Local*	Access mode: *closed*
Web address: http://www.kukua.cc/		
Product Description: Kukua's vision is to close Africa's weather information gap by leveraging new weather station technology and mutually beneficial partnerships. The sustainable solution will provide accurate weather data and forecasts to smallholder farmers, commercial farmers and other stakeholders throughout Africa.		
Product Services: Kukua makes use of a network of low-cost weather stations to obtain information, which aggregated allows predicting weather events such as rainfall and temperatures. The system would greatly benefit form weather information from other resources and sensor networks , but merging those data might not be trivial.		
Links and Documents: https://www.facebook.com/kukuaweather		

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Interest as use-case for the INTER-IoT results	*INTER-LAYER, INTER-FW, INTER-METH*	*XLAB*	*01/03/2016*

Market Analysis		
Product's Name: Open IOT – the Open source Internet of Things		
Product Class: Iot Platform	Context: Global	Access mode: Open
Web address: https://github.com/OpenIotOrg/openiot http://www.openiot.eu/		

Product Description:

The OpenIoT middleware infrastructure will support flexible configuration and deployment of algorithms for collection, and filtering information streams stemming from the internet-connected objects, while at the same time generating and processing important business/applications events.

OpenIoT is a joint effort of prominent open source contributors towards enabling a new range of open large-scale intelligent IoT (Internet-of- things) applications according to a utility cloud computing delivery model.

OpenIoT is perceived as a natural extension to cloud computing implementations, which will allow access to additional and increasingly important IoT based resources and capabilities. In particular, OpenIoT will research and provide the means for formulating and managing environments comprising IoT resources, which can deliver on-demand utility IoT services such as sensing as a service.

OpenIoT is pertinent to a wide range of interrelated scientific and technological areas spanning:

Middleware for sensors and sensor networks,

Ontologies, semantic models and annotations for representing internet-connected objects, along with semantic open-linked data techniques

Cloud/Utility computing, including utility based security and privacy schemes.

Product Services:

The OpenIoT infrastructure provide the means for:

Collecting and processing data from virtually any sensor in the world, including physical devices, sensor processing algorithms, social media processing algorithms and more. Note that in OpenIoT the term sensor refers to any components that can provide observations. OpenIoT will facilitate the integration of the above sensors with only minimal effort (i.e. few man days effort) for implementing an appropriate access driver.

Semantically annotating sensor data, according to the W3C Semantic Sensor Networks (SSN) specifications.

Streaming the data of the various sensors to a cloud-computing infrastructure.

Dynamically discovering/querying sensors and their data.

Composing and delivering IoT services that comprise data from multiple sensors.

Visualizing IoT data based on appropriate mashups (charts, graphs, maps etc.)

Optimizing resources within the OpenIoT middleware and cloud-computing infrastructure.

Examples of use:

NetAtmo personal weather station

NetAtmo personal weather station has been enabled to upload sensor data to the OpenIoT sensing cloud. This means that anyone interested can contribute public data about local weather conditions.

Wind Chill vs Air Temp in Brussels

The OpenIoT innovative service creation environment is used to generate a dashboard of weather data from sensors in Brussels.

Urban Crowdsensing Scenario

Urban Crowdsensing is a use case for the OpenIoT project - identified by Black Duck as top-10 among open source projects started in 2013. OpenIoT creates a middleware for using data from sensor clouds, without needing to handle individual sensors. It supports semantic queries.

Smart Factory Scenario

Smart Factory is a use case for the OpenIoT project - identified by Black Duck as top-10 among open source projects started in 2013. OpenIoT creates a middleware for using data from sensor clouds, without needing to handle individual sensors. It supports semantic queries.

http://open-platforms.eu/library/openiot-the-open-source-internet-of-things/

Links and Documents:

https://github.com/OpenIotOrg/openiot

https://github.com/OpenIotOrg/openiot/wiki/Downloads

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Interoperability and compatibility of IoT platforms	INTER-LAYER, INTER-FW, INTER-METH, INTER-LogP, INTER-Health	ABC	22/02/2016

Market Analysis		
Product's Name: Oracle IoT		
Product Class: *Platform*	Context: *global*	Access mode: *closed*
Web address: https://cloud.oracle.com/iot		
Product Description: Oracle IoT Cloud Service is like a fast and simple on-ramp for merging IoT into your business. Work in the cloud to minimize your costs and time to market. Connect your existing sensors and devices to powerful analytics and business intelligence engines in the cloud. Customize your software intelligence on the device side and the cloud side to meet your business needs. Use friendly interfaces to set up monitoring of your IoT data. Oracle IoT Cloud Service security protects your network and data. Whether your business data comes from simple sensors or complex programmable devices, you can connect your data sources to Oracle IoT Cloud Service. Connect your existing sensors and devices to powerful business logic tools in the cloud, with support for standard device architectures and platforms. Oracle IoT Cloud Service handles security and identity, making creation of your IoT network safe, quick, and painless.		
Product Services: Oracle Internet of Things (IoT) Cloud Service is a managed Platform as a Service (PaaS) offering that helps you make critical business decisions and strategies by allowing you to connect your devices to the cloud, analyze data and alert messages from those devices in real time, and integrate your data with enterprise applications, web services, or with other Oracle Cloud Services, such as Oracle Business Intelligence Cloud Service. Oracle IoT Cloud Service Instance includes Device Virtualization, High Speed Messaging, Endpoint Management, Event Store, and Stream Processing		
Links and Documents: http://www.oracle.com/us/dm/oracle-iot-cloud-service-2625351.pdf https://cloud.oracle.com/en_US/_downloads/eBook_IoT_File/Oracle_Internet_of_Things_ebook.pdf		

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Competing technology, additional standard.	*INTER-LAYER, INTER-FW, INTER-METH*	*XLAB*	*01/03/2016*

Market Analysis		
Product's Name: PASSI (Process for Agent Societies Specification and Implementation)		
Product Class: Methodology	Context: International	Access mode: Open
Web address: http://medee.poli.usp.br/Medee%20Method%20Framework/a_passi_content_%20elements/guidances/supportingmaterials/passi_methodoloy_description_31F1BC3D.html		

Product Description:

PASSI is a step-by-step requirement-to-code methodology for developing multi-agent software that integrates design models and philosophies from both object-oriented software engineering and MAS using (more properly extending) the UML notation (OMG, 2003b). Because of the specific needs of agent design, the UML semantics and notation will be used as reference points, but they will be extended, and UML diagrams will be often used to represent concepts that are not considered in UML and/or the notation will be modified to better represent what should be modeled in the specific artifact. The PASSI process is composed of five process components: System Requirements, Agent Society, Agent Implementation, Code, and Deployment, and several distinct work definitions within each of them. Code production is strongly supported by the automatic generation of a large amount of code thanks to the PASSI ToolKit (PTK) used to design the system and a library of reusable patterns of code and pieces of design managed by the AgentFactory application.

Product Services:

PASSI supports the following tasks:

1. System Requirements Model: a model of the system requirements in terms of agency and purpose. It is composed of four phases:
   (a) Domain Requirements Description (D.R.D.): a functional description of the system using conventional use case diagrams;
   (b) Agent Identification (A.Id.): the phase of attribution of responsibilities to agents, represented as stereotyped UML packages;
   (c) Role Identification (R.Id.): a series of sequence diagrams exploring the responsibilities of each agent through role-specific scenarios; and
   (d) Task Specification (T.Sp.): specification of the capabilities of each agent with activity diagrams.
2. Agent Society Model: a model of the social interactions and dependencies among the agents involved in the solution. Developing this model involves three steps:

(a) Ontology Description (O.D.): use of class diagrams and OCL constraints to describe the knowledge ascribed to individual agents and their communications;

(b) Role Description (R.D.): class diagrams are used to show the roles played by agents, the tasks involved, communication capabilities, and inter-agent dependencies; and

(c) Protocol Description (P.D.): use of sequence diagrams to specify the grammar of each pragmatic communication protocol in terms of speech-act performatives.

3. Agent Implementation Model: a classical model of the solution architecture in terms of classes and methods; the most important difference with the common object-oriented approach is that we have two different levels of abstraction, the social (multi-agent) level and the single-agent level. This model is composed of the following steps:

   (a) Agent Structure Definition (A.S.D.): conventional class diagrams describe the structure of solution agent classes; and

   (b) Agent Behavior Description (A.B.D.): activity diagrams or statecharts describe the behavior of individual agents.

4. Code Model: a model of the solution at the code level requiring the following steps to produce it:

   (a) generation of code from the model using one of the functionalities of the PASSI add-in. It is possible to generate not only the skeletons but also largely reusable parts of the method's implementation based on a library of reused patterns and associated design descriptions; and

   (b) manual completion of the source code.

5. Deployment Model: a model of the distribution of the parts of the system across hardware processing units and their migration between processing units. It involves one step: Deployment Configuration (D.C.): deployment diagrams describe the allocation of agents to the available processing units and any constraints on migration and mobility.

6. Testing: the testing activity has been divided into two different steps: the single-agent test is devoted to verifying the behavior of each agent regarding the original requirements for the system solved by the specific. During the Society Test, integration verification is carried out together with the validation of the overall results of this iteration. The Agent Test is performed on the single agent before the deployment phase, while the society test is carried out on the complete system after its deployment.

Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Methodology	INTER-Meth	UNIPA	18/02/2016

Market Analysis		
Product's Name: Sentinel		
Product Class: *Smart transport platform*	Context: *Local*	Access mode: *closed*
Web address: http://sentinel.hr		

Product Description:

Sentinel is a hardware and software solution for the monitoring of private boats and vessel fleets.

It is composed of a set of sensors connected to a local smart hub, which in turn processes and sends the information via GSM or Wi-Fi to a central service, and user front-ends for the communication and monitoring of such values.

The services includes a set of standard sensors which include humidity, temperature, battery level, location (GPS), acceleration, and intrusion, but additional ones can be connected to the smart-hub via Bluetooth or the NMEA2000 wired standard. All this information is then transmitted to the Sentinel service, stored, processed and analyzed in order to detect potential problems such as collisions, and trigger alarms to the users.

Product Services:

The user can access its boat location and information remotely through a web interface or mobile application (currently Android and iOS version available), as well as to define and receive alarms about events such as battery level, intrusion, etc. The user can store tours (trajectories taken during a certain period of time) and visualize them on the map.

Sentinel also makes available a special front-end for charter companies to be able to follow several vessels at the same time on a single map, as well as to obtain alarms about possible collisions, engine failures, battery, etc.

Links and Documents:

http://www.sentinel.hr/fleet_management.html

http://www.sentinel.hr/static/images/sentinel_white_device-specifications.pdf

https://play.google.com/store/apps/details?id=si.xlab.xmarine

https://itunes.apple.com/us/app/sentinel-mobile-application/id901393283?mt=8&ign-mpt=uo%3D2

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Interest as use case for the INTER-IoT results	*INTER-LAYER, INTER-FW, INTER-METH, INTER-LogP*	*XLAB*	*12/02/2016*

Market Analysis		
Product's Name: Smart Cites and open data. UNE 178301:2015 (AENOR)		
Product Class: Standard	Context: National (Spain)	Access mode: By payment. Pdf format: Spanish version: 54,54 € English version: 79.08 €
Web address: http://www.en.aenor.es		AENOR

Product Description:

AENOR is a Spanish Association for Standardization and Certification is a private non-profit organization that was founded in 1986.

In Spain, AENOR is present in all the Autonomous Communities, where it has 20 offices, and has a permanent presence in 12 countries, mostly in Latin America and Europe.

AENOR offers a proven track record and information on standards and products and services connected with organizations from all over the world, performing major work in the field of international cooperation.

The standard: Smart Cites and open data. UNE 178301:2015 (Last version 2015-07-29 has been produced by the Committee AEN/CTN 178 - CIUDADES INTELIGENTES. Publication date: 21/01/2015. There are a set of standards that are being released named 178GXX, being G a specific working group for these interest fields: 1-Infraestructures, 2: KPIs and semantics, 3: Govern and mobility, 4: Energy and Environment, 5: Tourism

It is s Spanish initiative related with international standards like ISO/TS 37151 (Smart community infrastructures), ISO 37120 (Sustainable development and resilience of communities. Indicators for city services and quality of life).

Product Services:

Links: and Documents:

- *Access to an extract of the standard:* *http://www.en.aenor.es/aenor/normas/normas/fichanorma.asp?tipo=N&codigo=N0054318&PDF=Si#.Vs2lUObO-pQ*
- *Smart Cities standards:* *http://www.aenor.es/DescargasWeb/normas/normas_ciudades_inteligentes.pdf*

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Latest national standard on Smart Cities and open data	INTER-LAYER INTER-FW INTER-METH	PRODEVELOP, S.L	24/02/2016

Market Analysis		
Product's Name: SODA (Societies in Open and Distributed Agent spaces)		
Product Class: Software Platform	Context: International	Access mode: Open
Web address: http://apice.unibo.it/xwiki/bin/view/SODA/		

Product Description:

SODA (Societies in Open and Distributed Agent spaces) is a methodology for the analysis and design of complex agent-based systems. SODA is not concerned with intra-agent issues: designing a multi-agent system with SODA leads to defining agents in terms of their required observable behaviour and their role in the multi-agent system. Instead, SODA concentrated on inter-agent issues, like the engineering of societies and infrastructures for multi-agent systems. Recently a new and extended version of the methodology has been proposed, which takes into account both the Agents and Artifacts (A&A) meta-model, and a mechanism to manage the complexity of system description

Product Services:

SODA is organised in two phases, structured to support the following tasks:

1. Analysis
    a. Requirements Analysis
    b. Formal Analysis
2. Design
    a. Architectural Design
    b. Detailed Design

Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Methodology	INTER-Meth	SIDI-UNIBO	18/02/2016

Market Analysis		
Product's Name: *VLCi (Valencia Open City)*		
Product Class: *Smart City platform*	Context: *Local*	Access mode: *Open*
Web address: http://gobiernoabierto.valencia.es		

Product Description:

VLCi -smart city platform for Valencia- was launched in February, 2015. As a result, Valencia was the first fully integrated smart city in Spain.

VLCi improves the services available for citizens and reduces public spending through efficient management of public resources. Valencia has merged 45 different city services into its open standard digital platform, VLCI, which are now managed centrally keeping citizens well informed in one single always-available access point. VLCi offers unprecedented levels of services for a south European city and as it is based on an open platform, it provides the perfect ecosystem for innovation: the beginning of other technological initiatives that can be added to the platform instead of becoming the end of a closed technological project.

Valencia City Council designed Telefonica as the technological partner in charge of the creation of VLCi. . The Polytechnic University of Valencia (UPVLC) partnered in the project, delivering technology through 350 sensors that keep connected services under control, improving previous management systems. The IoT solution utilises Telefonica IoT platform, that follows FIWARE standards and works on Telefonica Cloud. The open innovation ecosystem used to develop the project, Fi-Lab (FIWARE's online experimentation lab) will allow collaboration with entrepreneurs and ICT service providers.

Product Services:

Valencia has merged 45 different city services into its open standard digital platform VLCI, which are now managed centrally keeping citizens well informed in one single always-available access point.

Mobility:

· Real time traffic monitoring and traffic information: Some of the solutions include the use of 3,900 pre-existent traffic density sensors and 1,000 intelligent traffic lights.

· Available parking information in real time.

· City bus and bike rental services are centralized, with real time information available through the platform and apps.

· Handicapped Parking spaces are managed through smartphone interaction.

E-bureaucracy: 90% of all municipal paperwork can now be done online. All city services that interact with citizens no longer require paper and are done online.

E-Government: Valencia is the first big European city to fully adopt open data eGovernance technology.

Other general city services: Law enforcement has been improved with the implementation of cameras. Smart lighting and smart watering provide resource efficient systems that reduce consumption in up to 35%. Fire Fighting services have a new rapid alert service that decreases response time. Noise pollution, rubbish collection, water management, air quality and the rest of the underlying core indicators that a big city must have under control are now centralized and streamlined.

Smart Citizen: Available city app called App Valencia to interact with the city services.

Future services: Companies, Entrepreneurs, Universities, and Researchers work together in a joint initiative that improves Valencia through innovation and technology, offering citizens simple digital solutions to their daily problems.

Links and Documents:

www.valencia.es

en.wikipedia.org/wiki/Valenbisi

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Interest in interoperability and compatibility of IoT platforms	*INTER-LAYER, INTER-FW, INTER-METH, INTER-LogP, INTER-Health*	*UPVLC*	*19/02/2016*

Market Analysis		
Product's Name: Anatomic Therapeutic Chemical Classification of Drugs (ATC)		
Product Class: Standard	Context: International	Access mode: Open
Web address: http://www.who.int/classifications/atcddd/en/		(Logo)
Product Description: The ATC/DDD system classifies therapeutic drugs. The purpose of the ATC/DDD system is to serve as a tool for drug utilization research in order to improve quality of drug use.		
Product Services:		

Links: and Documents:			
Reason of involvement: Standard in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-Health	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis		
Product's Name: Arduino only USA / Genuino outside USA		
Product Class: Platform	Context: International except USA	Access mode: Open
Web address: https://www.arduino.cc/		
Product Description: Arduino is an open-source prototyping platform based on easy-to-use hardware and software. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so you use the Arduino programming language (based on Wiring), and the Arduino Software (IDE), based on Processing.		
Product Services: Cross-platform - The Arduino Software (IDE) runs on Windows, Macintosh OSX, and Linux operating systems. Most microcontroller systems are limited to Windows. Open source and extensible software - The Arduino software is published as open source tools, available for extension by experienced programmers. The language can be expanded through C++ libraries, and people wanting to understand the technical details can make the leap from Arduino to the AVR C programming language on which it's based. Similarly, you can add AVR-C code directly into your Arduino programs if you want to. Open source and extensible hardware - The plans of the Arduino boards are published under a Creative Commons license, so experienced circuit designers can make their own version of the module, extending it and improving it. Even relatively inexperienced users can build the breadboard version of the module in order to understand how it works and save money.		
Links and Documents: https://www.arduino.cc/		
Reason of involvement: Interoperability and compatibility of IoT platforms	Related to IoT Product: INTER-LAYER, INTER-LogP, INTER-Health	Identified by: ABC	Registration Date: 23/02/2016

Market Analysis			
Product's Name: BodyCloud			
Product Class: Software Platform	Context: International	Access mode: Open	
Web address: http://bodycloud.dimes.unical.it/			
Product Description: BodyCloud is a distributed software framework for the rapid prototyping of large-scale BSN applications. It is designed as a SaaS architecture to support the storage and management of sensor data streams and the processing and analysis of the stored data using software services hosted in the Cloud. In particular, BodyCloud endeavors to support several cross-disciplinary applications and specialized processing tasks. It enables large-scale data sharing and collaborations among users and applications in the Cloud, and delivers Cloud services via sensor-rich mobile devices. BodyCloud also offers decision support services to take further actions based on the analyzed BSN data.			
Product Services: BodyCloud tackles the problem by exploiting a Cloud computing infrastructure and providing an integrated platform, namely a Cloud-enabled BSN infrastructure, that offers: • capabilities of using heterogeneous sensors through mobile devices acting as gateways, • scalability of processing power for different kinds of analysis, • scalability of data stream storage, • ubiquitous and global access to the processing and storage infrastructure, • easy sharing of results and • pay-as-you-go pricing for using BSN services.			
Links and Documents:			
Reason of involvement: e-Health Cloud platform	Related to IoT Product: INTER-Health	Identified by: UNICAL	Registration Date: 18/02/2016

Market Analysis			
Product's Name: BodyCloud			
Product Class: Platform	Context: International	Access mode: Open	
Web address: http://bodycloud.dimes.unical.it/team.html		(Logo)	
Product Description: 2 A CLOUD-ASSISTED SOFTWARE PLATFORM FOR PERVASIVE AND CONTINUOUS MONITORING OF ASSISTED LIVINGS USING WEARABLE AND MOBILE DEVICES.			
Product Services:			
Links: and Documents:			
Reason of involvement: Partner project	Related to IoT Product: INTER-Health	Identified by: SRIPAS	Registration Date: 22.02.2016

Market Analysis		
Product's Name: CEN/ISO EN13606		
Product Class: Standards	Context: International	Access mode: Open
Web address: • http://www.en13606.org/the-ceniso-en13606-standard • http://www.iso.org/iso/catalogue_detail.htm?csnumber=40784		(Logo)
Product Description: Health informatics – Electronic health record communication, is a European norm designed to achieve semantic interoperability in the Electronic Health Record communication.		
Product Services:		
Links: and Documents:		

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Standard in the scope of interest of Inter-IoT.	INTER-Health	SRIPAS	22/02/2016

Market Analysis		
Product's Name: C-Health (prototype service)		
Product Class: Software Platform	Context: Europe	Access mode: Close, Subscription
Web address http://gruppoconsoft.com		

Product Description:

C-Health is a data platform designed to gather data and information supporting monitoring services and clinical trials. It can be used either by citizens who want to check their own health status or by professional stakeholder providing care services. The platform may gather heterogeneous data. As a matter of fact, both sensor based measurements, clinical reports and e-CRF (electronics Case Report Form) may be managed.

Sensor based measurements are transferred to the data platform by means of dedicated home gateways. It is possible to upload the following information:

- Activity monitoring: a wearable device is used to measure user activity in terms of taken steps, walked distance, caloric outtake. It is also able to synthesize the overall activity on a 5 levels monitoring scale.
- Health monitoring: measurements from medical devices are transferred to the data platform: Blood pressure, O2 saturation, hearth rate, weight, temperature and blood sugar are the considered medical parameters.
- The wearable device performing activity monitoring can be employed as home care device as well. It may be used to send alarm signals by means of a dedicated emergency button. It is also able to detect falls followed by the absence of activity (a faint) and automatically manage an alarm signal.
- Environmental monitoring: The home gateway monitors and transmits local relative humidity and temperature in order to detect uncomfortable perceived environmental temperature.

Clinical information (clinical reports and e-CRF) is transferred to the platform by means of the integration of dedicated software interfaces, thus integrating dedicated web based applications and archives.

Both patients, users (e.g. patients relatives) and involved stakeholder (e.g. physicians and caregivers) may benefit from C-Health by accessing historical data and analytics. Stakeholders and caregivers have at their disposal web based dashboards to monitor and analyze gathered data and applications to manage emergency situations. Users (both patients and their relatives or friends) may have access to web based

dashboards for “self quantify” services.

Product Services:

- Real-time activity monitoring (e.g. steps counting, caloric out-take)
- Real-time alert to warn family or call center in case of emergency
- Alert system through different channels (email, sms..)
- Medical devices management
- Environment monitoring
- Access to historical data in order to understand how they evolve during a medical treatment
- Analytics generation on clinical data respect to a single person or a group of patients
- Dashboard to help doctors to see the results of the analysis in a clear form through charts
- Possibility to interconnect heterogeneous medical devices/sensors (even in realtime)
- Possibility to connect custom applications to receive data provided from sensors (even in realtime)
- Privacy and security functions

Links: and Documents:

Useful links

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Health platform to be integrated in Health Pilot Evolution of the platform to provide new services	INTER-Health	Telecom Italia S.p.A.	26/02/2016

Market Analysis

Product’s Name:

CoXnico (Nousmed)

Product Class:	Context:	Access mode:
Software Platform	National	Close, Subscription

Web address

http://www.coxnico.com

Product Description:

Telemedicine system, which uses as a gateway device with integrated SIM (CoXnico Lab) that connect

sboth wired and wireless several medical devices (very wide of the glucometers wired) and send the information by means of mobile connection to the platform. It offers consulting services for data collected to various web users / profiles.

Product Services:

- User profiling access and corresponding services (patient, doctors, caregiver)
- Chat (between doctor and patient)
- SMS alert (to warn the physician of exceeding specific thresholds pre-set)
- Historical trend reports for the doctor about the patient measures
- Call center

Links: and Documents:

http://www.nousmed.com/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
m-heath market analysis	INTER-Health	Telecom Italia	01/03/2016

Market Analysis

Product's Name:

Current Procedural Terminology (4th Edition) (CPT 4)

Product Class:	Context:	Access mode:
Standard	International	Open

Web address:	(Logo)
http://www.ama-assn.org/ama/pub/physician-resources/solutions-managing-your-practice/coding-billing-insurance/cpt/about-cpt.page?	

Product Description:

Current Procedural Terminology (4th Edition), is a taxonomy developed by American Medical Association that describes medical procedures and services.			
Product Services:			
Links: and Documents:			
Reason of involvement: Standard in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-Health	Identified by: SRIPAS	Registration Date: 22.02.2016

Market Analysis		
Product's Name: *Diamond Cuff BP*		
Product Class: *Blood Pressure monitor*	Context: *Local and Regional*	Access mode: *Close, subscription*
Web address: http://www.foracare.ch		

Product Description:

Diamond BP cuff device is a Bluetooth enabled blood pressure cuff that allows for automatic monitoring of blood pressure with minimal patient intervention required. Readings are stored on the device or if connected to the target application can be loaded straight to the platform in use such as the PRIME system. A clinically validated BP cuff this device has advanced blood pressure monitoring technology to take accurate readings and raise potential problems using Irregular Rapid Beat (IRB) technology.

Product Services:

This product allows for measurement of the systolic and diastolic values for a patient's blood pressure. In

addition it is fully wireless and requires no cables or external battery packs. During normal use the device store up to 200 readings internally which can be later downloaded to a Windows/Android or iOS device. When making measurements the Diamond Cuff BP supports AVG technology which makes three automatic measurements within two minutes and uses the average value to provide a more accurate reading. Other advanced features include IRB to detect irregular heartbeats indicating that a patient should be further investigated.
Links: and Documents: *Useful links* http://www.foracare.ch/Meter-Diamond-CUFF-BP.html

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	*INTER-Health*	*Rinicom*	*25/02/16*

Market Analysis		
Product's Name: DigiO2ETH-301		
Product Class: Wireless Thermometer	Context: Local and Regional	Access mode: Close, subscription
Web address: http://www.digio2.com/		

Product Description:

This thermometer is designed to allow users to take temperature readings as quickly and easily as possible. Temperature can be taken without contact from the forehead, and readings take only a second to display on a large and easy to read screen. All readings taken on the device can be saved on the internal memory and are transmitted live when connected to an external device for remote viewing.

Product Services:

This thermometer device allows for non-contact temperature measurements and using Bluetooth these readings may be viewed on a Windows/Android or iOS device. This device stores the 10 most recent readings, has a backlight indicator for ease of use and supports both ºC & ºF units. To conserve power the device supports auto-power off so minimal user interaction is required.

Links: and Documents:

Useful links

http://www.digio2.com/product_v2.php?item=43&f_item=42

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	INTER-Health	Rinicom	22/02/2016

Market Analysis

Product's Name:

Digital Hospital

Product Class:	Context:	Access mode:
Software Platform	National	Close, Subscription

Web address	

Product Description:

Digital Hospital is a suite of IT and communication Telefonica services designed to improve the efficiency of healthcare providers, empowering professionals by providing access to the right information, in the right place and at the right time, and improving patient demand management by offering new digital channels and multichannel platforms for medical appointments, triage, health advice and emergencies.

Product Services:

- Digital Image: an online digital medical imaging service, providing end-to-end, semi-distributed and multimodal integrated management (CT scan results, radiology, MRI, etc.). Comprehensive solutions including RIS, PACS, viewers, voice recognition software and diagnostic stations are available, in addition to core dedicated capabilities such as communications, storage, etc.
- Telemedicine: a customised end-to-end solution from the design of the service and process consultation through to the provision of software, hardware and communication technology required to implement Telemedicine services (teleconsulting, telediagnostics, teletraining,), which facilitate collaboration between health professionals in remote locations.
- Demand Management, based on:
  - Appointments and Reminders: a service that automates the appointment booking process, including offering SMS bundles to deliver appointment reminders and provide health and prevention campaigns. We provide a range of communication channels (telephone operators, SMS, web, kiosks, IVR….) through which patients can contact their health providers and manage their appointments.
  - Teletriage and Health Advice: it allows consumers to address concerns and evaluate their health remotely via a number of different channels which provide selfcare recommendations, advice for treatment and referrals to the appropriate health professionals. Health providers and governments can achieve significant savings, as well as bring citizens and patients closer to the health system, by providing a 24x7 universal service.
  - Emergencies: a service that allows Public Administrators to manage the entire process of handling emergencies: from the initial request to the response, dispatch and coordination (including the management and control of intervention resources, audits, reports, etc.).

Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
e-Health market analysis	INTER-Health	Telecom Italia	01/03/2016

Market Analysis		
Product's Name: Electronic Stethoscope Model 3200		
Product Class: Wireless Stethoscope	Context: Local and Regional	Access mode: Close, subscription
Web address: http://www.littmann.com/		

Product Description:

The 3M Littmann Electronic Stethoscope Model 3200 combines ambient Noise Reduction technology and frictional noise dampening features with amplification, Bluetooth technology and an all-new user interface, for the next level of performance and ease of use.

Product Services:

This wireless stethoscope allows the user to record and save up to twelve 30-second patient sound tracks, tracks. In addition the user may transmit sounds via Bluetooth technology to the health monitoring platform whether this be using Windows or Android devices, alternatively the sound may be listened to remotely using the Littmann TeleSteth system.

Links: and Documents:

Useful links

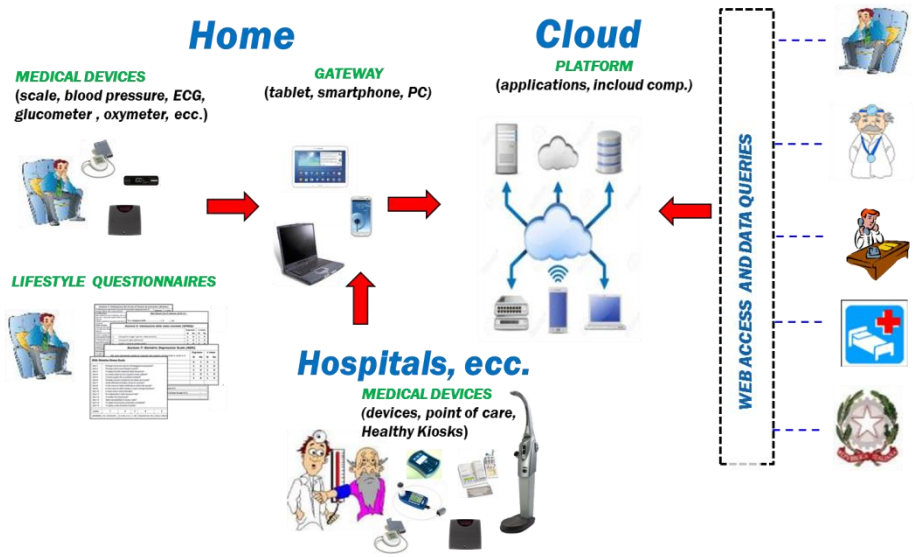
http://www.littmann.com/wps/portal/3M/en_US/3M-Littmann/stethoscope/stethoscope-catalog/catalog/~/3M-Littmann-Electronic-Stethoscope-Model-3200-Black-Tube-27-inch-3200BK27?N=5932256+4294958300&rt=d

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	INTER-Health	Rinicom	22/02/2016

Market Analysis		
Product's Name: e-Care (prototype service)		
Product Class: Software Platform	Context: National	Access mode: Close, Subscription
Web address http://tlm-demo.tilab.com/		

Product Description:

e-Care is a Telemonitoring service that could be used by chronic pathology patients or simply by citizens that want to monitor their health status for prevention. It is made of two modules: the first one regards quantitative measures management (collection and analysis of physiological parameters) while the second one regards the qualitative measure management (lifestyle analysis through questionnaires). Patients or Citizens could perform measurements of many physiological parameters using the following medical devices: weight scale, blood pressure monitor, INR monitor, oxymeter, spirometer, ECG, glucometer, body temperature, ecc. The medical devices are connected to the platform with a bluetooth wireless connection. Measures are sent to a medical platform via a gateway installed on a smartphone or a tablet. The gateway receives the measures from the devices via wireless short range connectivity and sends them to the platform via mobile connectivity. Doctors have at their disposal the instruments to evaluate the exams results (by web access to the medical platform) and, on the basis of patient's condition, are able to interact with him and modify their treatments. Patients may receive, depending on the treatment laid down by his doctor, SMS reminder about therapies to follow. An electronic questionnaires management module allows physicians to assign questionnaries to their patients; then patients are requested to fill in answers and then physicians again could monitor the results of subjective information given by patients or citizens about foods, physical activity, social activity, drugs, smoke, etc. There is also a virtual physician reporting patients weekly via mail, about their results and performances.



Product Services:

- User profiling access and corresponding services (patient, nurse, referring physician)
- Measures Agenda Management
- Questionnaires setting and customizing
- Setting thresholds on the measures, customizable on each patient
- SMS remainder (to remind the patient to take measurements)
- SMS alert (to warn the physician of exceeding specific thresholds pre-set)
- Historical trend reports for the doctor about the patient measures
- Questionnaires assignment
- Questionnaires reports
- Refertation management
- Mobile apps for patients/citizens and for physicians (for assisted monitoring)
- Privacy and security functions

Links: and Documents:

Useful links

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Health solution to be used in the m-Health Pilot	INTER-Health	Telecom Italia	22/02/2016

Market Analysis			
Product's Name: eCare by Telecom Italia			
Product Class: Platform	Context: International	Access mode: Closed	
Web address:		(Logo)	
Product Description: Platform that processes data collected from non-wearable sensors. All data generated in the system is transmitted to gateway device, e.g. tablet, smartphone, PC, from where it can be later transferred to the Cloud, and eventually analyzed by a physician.			
Product Services:			
Links: and Documents:			
Reason of involvement: Partner project	Related to IoT Product: INTER-Health	Identified by: SRIPAS	Registration Date: 22.02.2016

Market Analysis		
Product's Name: EMC Healthcare Integration Portfolio		
Product Class: Software Platform	Context: International	Access mode: Close, Subscription
Web address http://www.emc.com/		
Product Description: The EMC Information Intelligence Group's (IIG) HIP is a new suite of products specifically designed to help simplify the management and sharing of all forms of patient-related content. HIP provides support for healthcare IT standards such as XDS, HL7 and DICOM, and enhances the value of an EMR, enabling the rich content management services of Documentum to be applied seamlessly to the management of patient-related content throughout its lifecycle, from capture to disposition or retention. EMC works with industry EMR, medical imaging, and VNA application partners, system integrators, and service providers to integrate, test, and certify EMC infrastructure with partner applications for enhanced		

clinical workflow and provider productivity.

Solutions:

- *Mobile Health Solutions*
- *Clinical Archiving*
- *Image and content management*
- *Electronic medical records*

The platform can scale from million to billion of episodes and events managed; multiple federated repositories can be configured to provide a single view of citizen/patient infos.

EMC HIP certified his technology and integration capabilities at Connectathon since 2010. So every features are available every year. Partners and customers can extend it via the included SDK.

Product Services:

- EMC HIP Platform can be configured with add-on EMC items to manage goals, algorithms, notifications, letters and even personalized report
- EMC platform (HIP) is Open: access to information in data is guaranteed through standard integration profiles available to the market. So a dashboard with trends, personal data graphs, can be implemented in any modern mobile friendly technology such as Angular JS.
- EMC HIP Platform is able to manage natively, Diagnostic Images (DICOM3), Clinical Report (HL7 CDA2), Scanned report, PDF, raw data, xml data and it can be deployed in a cloud model
- Every event, document, structured data is available; historical events timeline have been implemented for real projects at national level.
- Data can be submitted and retrieved via Web (a medical device certified web app is also available when clinical images need to be shared between patient and doctor) or from device called MHD Restful services.
- EMC provides Mobile apps implemented by his selected partners including:
  - Wellness specific app to view and collect personal data
  - Medical Device Class 2B Eu to manage diagnostic images
- Business model: B2B.

Links: and Documents:

http://pulseblog.emc.com/2013/05/07/emc-gets-hip-in-healthcare-introducing-emc-healthcare-integration-portfolio/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
m-health market analysis	INTER-Health	Telecom Italia S.p.A.	01/03/2016

Market Analysis		
Product's Name: Experimental Nutritional Counseling		
Product Class: *Service*	Context: *Local*	Access mode: *Open*
Web address: http://www.aslto5.piemonte.it/		

Product Description: The nutritional outpatinet of the ASL TO5 prevention department proposes to clinically healthy subjects a nutritional counseling, with the aim to reduce the occurrence of major chronic degenerative diseases. For the development of this product, they will be monitored on a qualitative and quantitative level two types of measures: objective, such as weight, height, body mass index (BMI), blood pressure (BP), and subjective such as eating habits and physical activity practice. During the experimental nutritional counseling (year: month 0, month 6, month 12), the subjects recruited will be monitored in a decentralized way from the health care center to their homes, through the use of medical devices and wearable mobile devices. In particular through the use of medical devices will be monitored and recorded the objective measures (the BP will be monitored on a daily basis only in individuals at hypertension risk) while the use of wearable mobile devices will be monitored and recorded the practice of daily physical activity, so that such a subjective measure can be assessed objectively by using the number of routes distance, elapsed time and Kcal consumed; for a more effective evaluation, the subjects will be divided into "classes of physical activity." Other subjective measures (eating habits and physical activity reported) will also be monitored and recorded by compiling, from the subjects themselves, of electronic questionnaires. All monitored data (objective and subjective measures) will be collected on platforms e-Care and Body Cloud, and will be treated in accordance with current legislation on privacy and the handling of sensitive data.
The integration of technologies into traditional nutritional counseling will develop a new system of lifestyles decentralized and mobile monitoring, amplifying a preventive layer effects, in a health field that is still not well developed.

Product Services: The system will be built upon the technology of the IoT platforms and exploiting the integrated INTER-Health, the monitoring process could prove more effective than a nutritional counseling took place only in the outpatient, since the subject will be followed both at home and in mobility with the use of electronic devices and wearable sensors.

Links: and Documents:

Bibliografia

1- World Health Organization. Global status report on non communicable diseases 2010.

2- World Health Organization. Preventing chronic diseases: a vital investment : WHO global report, 2005

3- World Health Organization. Obesity: Preventing and Managing the Global Epidemic. WHO Obesity Technical Report Series 894. Geneva, Switzerland: World Health Organization; 2000.

4- World Health Organization. Physical Status: The Use and Interpretation of Anthropometry. Technical Report Series 854. Geneva, Switzerland: World Health Organization; 1995.

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	*INTER-Health*	*ASL TO5*	*19/02/2106*

Market Analysis		
Product's Name: Fedex Senseaware		
Product Class: Smart tools	Context: International	Access mode: Closed
Web address: http://www.senseaware.com/		

Product Description:

SenseAwareSM powered by FedEx provides enhanced visibility during shipping, allowing to take control of supply chain. SenseAware helps heighten security, improve efficiency and productivity, and gain confidence from business partners and clients.

Using a multi-sensor device, SenseAware collects and transmits data from inside packages, pallets, trailers, and warehouses using wireless communication. The data is sent in near real-time to a powerful online application for monitoring and analysis.

SenseAware's web-based application makes it easy to transform information into insight:

Web-based platform that is easily accessible and can be used with or without FedEx transportation services.

Near real-time visibility of environmental conditions and location.

A powerful vantage point for managing all of your critical shipments and devices.

Permission-based access to share predetermined data with business partners and other interested parties.

Customizable triggers and alerts that can be preset before travel and changed while in transit.

Product Services:

SenseAware gives enhanced visibility and insight into supply chain with near real-time information on shipment's environmental conditions as it travels, its location, and whether.

SenseAware is approved for domestic and international use on FedEx aircraft and other major commercial airlines as well as on many ground fleet services.

SenseAware continues to expand its network of approved carriers to provide with the flexibility to select

the air or ground service that best meets shipping needs. When it comes to shipping internationally, supply chains become more complex, less visible, and have an increased risk of in-transit damage to shipments. SenseAware, gives enhanced visibility and control to the international supply chain.
Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Smart tools in logistics and healthcare	INTER-LAYER, INTER-LogP, INTER-Health	ABC	29/02/2016

Market Analysis		
Product's Name: FitBit Charge		
Product Class: Activity Tracker/SmartWatch	Context: International	Access mode:
Web address https://www.fitbit.com/		

Product Description:

FitBit Charge is a smartwatch that permits the monitoring of daily activity, sleep and share this data with friends.
Charge connects to the APP on the smartphone with a BlueTooth LE link and transfers data with a property communication protocol.

Product Services:

- App available for iOS, Android
- Virtual Coach
- Food tracker
- Exercise tracker
- Incoming call alert

- Data Cloud Sync
- CloudToCloud Sync with OAuth 2.0 authorization
- Tech details:
  - Water resistant
  - Battery life: Up to 10 days
  - Bluetooth® 4.0 BLE
  - Up to 30 days activity memory
  - Tri-axis accelerometer, altimeter
  - Oled Display

Links: and Documents:

https://www.fitbit.com/it/charge

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Market analysis	INTER-Health	Telecom Italia	01/03/2016

Market Analysis		
Product's Name: HL7		
Product Class: Standards	Context: International	Access mode: Open
Web address: http://www.hl7.org/		(Logo)

Product Description:

HL7 is an international standards development organization in the area of healthcare information technology. HL7 and its members provide a framework (and related standards) for the exchange, integration, sharing, and retrieval of electronic health information.

Product Services:

Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Standard in the scope of interest of Inter-IoT. Medical data stored in	INTER-Health	SRIPAS	22/02/2016

HL7 should be compatible with shared ontology for health domain.			

Market Analysis		
Product's Name: iMedOne® Mobile		
Product Class: Software Platform	Context: National	Access mode: Close, Subscription
Web address		

Product Description:

iMedOne® Mobile is an app for an hospital information system. By using mobile applications and smartphones and tablets it is possible to optimize work processes at your hospital. Relieve the burden on doctors and nursing staff and improve your patients' quality of healthcare at the same.

Product Services:

- Mobile findings, doctors' letters, diagnoses, and procedures
- Test results displayed graphically and cumulative findings
- Instruct service facilities and approve orders
- Online access to the picture archiving and communication system (PACS)
- Prescribe and release medications, including access to medication subsystem
- Give instructions to colleagues and document action taken while on the move
- Access the iMedOne® calendar and surgery appointments
- Dictate digitally and send dictation straight to the typing pool
- Document medical and nursing care using text templates
- Measure vital signs and display fever curve
- Document nursing measures by means of hand signals
- Document wounds, including photos
- Take medical photos and save them straight to the folder
- Photograph paper documents and save them to the folder as PDF files
- Use built-in barcode scanner for patient identification

• Save patients' master data with alarm indicators, reference to private patient status, and reminder of birthdays • Manage workflows smartly using dynamic lists of patients and an occupancy overview by departments, wards, and outpatient clinics
Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
e-health market analysis	INTER-Health	Telecom Italia	01/03/2016

Market Analysis		
Product's Name: iMedOne® Hospital Information System		
Product Class: Software Platform	Context: National	Access mode: Close, Subscription
Web address		

Product Description:

iMedOne® support processes in hospitals in a wide range of ways. They both contribute substantially toward profitability and quality improvement because they make the work of doctors and nursing staff much easier. iMedOne® supports the user not only by drawing up the statutory quality assurance documentation, but also ensures transparency in target statistics and in-house data evaluation

Product Services:

- Patient Management and Billing: iMedOne® Billing offers all users optimal support with patient management and billing. It contains all the functionalities of inpatient and outpatient billing:
  - Integration of a variety of financial and cost accounting systems
  - Integrated cash administration and cash book
  - Comfortable and transparent data communication with statutory and private health insurers
  - Wide range of controlling and data export option
- Ambulance and Emergency Management: in the Stroke Angel and Cardio Angel telemedicine projects patients' data is sent straight from the ambulance to the hospital and iMedOne®. On admission the iMedOne® Manchester Triage System (MTS) is used. You can also integrate

additional classification systems of your own. In the end, outpatient and inpatient treatment merge seamlessly.

- Document Management: for drafting, editing, and managing admission, transfer, and release letters, operation reports, and internal and external results, doctors and clerical staff have in iMedOne® MedText Editor a tool that leads to a considerable time saving in day-to-day work.
- Nursing Process: iMedOne® makes a decisive contribution toward easing the burden on nursing. It minimizes significantly the time and effort required for documentation and administration. Patients' data can be recorded swiftly and intuitively – mobile and right at the patient's beside.
    - Comprehensive mapping of the nursing process
    - A comfortable patient curve, individually configurable
    - Wound documentation to expert standard
    - Medication management with treatment safety test
- Treatment Planning and Patient Management: with clinical paths you can plan, monitor, and control a patient's entire treatment on the basis of evidence – with no restriction on freedom of treatment for medical care, of course. The system records instructions automatically in the background, plans appointments and resources, and connects dependent process steps with each other. One of the positive consequences is cost transparency for individual diseases by means a clear allocation of services.
- Medical assistance systems: iMedOne® assistance systems lead to faster results and better quality because they can bundle the hospital's competence and knowledge in clinical paths for each and every disease.
    - Bi-directional integration of coding and grouper solutions
    - Access to leading systems in the medication preparation process
    - Literature for individual problems of the patient's sent directly to the workplace
- Subsystems: by integrating subsystems iMedOne® ensures swift and uncomplicated provision and conflation of information required from all functional areas. The service facility management of iMedOne® ensures data interchange with special systems in functional departments by means of its comfortable order.
    - Service requests and documentation
    - Derivation of operation and procedural (OPS) and service codes, both inpatient and outpatient
    - Easy recording of results with word processing modules iMedOne® Client MS Word or iMedOne® Client Editor
    - Dynamic and freely configurable work lists
- Hospital Logistics: iMedOne® supports you in an exemplary fashion in conflating and evaluation all information required for optimal patient care. The system then automatically draws up the ideal

further course of action. ▸ Cross-sectoral data flow, including transfer to clinical path ▸ Material management ▸ Medication control ▸ Links to all relevant financial and controlling software solutions ▸ Integration of picking up and dropping off service into the functional processes of service facility management ▸ Consumption documentation sent straight to the surgical documentation
Links: and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
e-Health market analysis	INTER-Health	Telecom Italia	01/03/2016

Market Analysis		
Product's Name: Indra Health		
Product Class: Software Platform	Context: Europe	Access mode: Close, Subscription
Web address http://www.indracompany.com/		

Product Description:

Indra Health solution integrates advanced telemedicine and remote assistance services, improving quality for patients in rehabilitation or with chronic diseases without the need for patients to leave their homes. This not only benefits patients, but also achieves an increase in internal efficiency and in the knowledge distribution of health organizations.

The functionality is intended for the remote management and provision of medical services, eliminating geographical and specialist availability barriers and providing new communication and collaboration work tools between professionals and patients. Management systems for applications/requests, courier services, etc. for remote services (request-reply).

Instant messaging, video conferences, etc. for live (simultaneous) services. Virtual processing of treatment agents and elements so they can be multiplied and distributed at a distance (remote-rehabilitation, chronic

patient treatment, etc).

The diagnosis and specialized treatment processes for primary healthcare are examples of the application of Distance Assistance Services solutions:

1. Health management for patients outside the healthcare setting
2. Optimization of the use of specialized services (scarce in the entire organization), etc.

Product Services:

- Dashboard with graph and trends for the monitoring of activity, sleep, oximetry etc..
- Dashboard to help doctors to see the results of the analysis in a clear form through charts
- Doctors can set rules to generate alert that are visualized in a specified monitoring area.
- Notification system through different channels (email, sms..)
- Personal health record for clinical documentation.
- Sharing of medical documentation with doctors and caregivers.
- Compatibility with hl7, ihe and ieee11073 standards.
- Open platform to integrate new sensors and medical devices: API and SDK availables.
- Privacy and security functions
- Business model: B2B.

Links: and Documents:

http://sofia2.com/demos/smarthealth/pages/dashboard_phillip.html#

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
m-health market analysis	INTER-Health	Telecom Italia S.p.A.	01/03/2016

Market Analysis		
Product's Name: International Classification of Functioning, Disability and Health (ICF)		
Product Class: Standard	Context: International	Access mode: Open
Web address: http://www.who.int/classifications/icf/en/		(Logo)
Product Description: The International Classification of Functioning, Disability and Health developed by World Health		

Organizaion is a classification of health and health-related domains structured around main components: body functions, body structures, activities and participation, environmental factors.			
Product Services:			
Links: and Documents:			
Reason of involvement: Standard in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-Health	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis		
Product's Name: International Classification of Disease (ICDx)		
Product Class: Standard	Context: International	Access mode: Open
Web address: http://www.who.int/classifications/icd/en/		(Logo)
Product Description: The International Classification of Disease coding standard is a classification of diagnosis developed by the World Health Organization.		
Product Services:		
Links: and Documents:		

Reason of involvement: Standard in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-Health	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis		
Product's Name: M&T (Wearable metabolic and sleep & activity monitoring)		
Product Class: Hardware and Software	Context: National National	Access mode: Close Closed

Web address:	
http://www.4move.biz/met-sistema-di-analisi-dello-stile-di-vita/	

Product Description:

M & T is a real time analysis system of lifestyle that allows to easily and intuitively collect key data to achieve the objectives of athletes / patients. Thanks to the ease of use and fit that M & T can become a daily companion for the evaluation of user's lifestyle.

In a tiny plastic wrap (6 × 5.5 × 1 cm) weighing only 80g, M & T embodies years of development technological and scientific researches that allow the recording of data with an average error less than 10% : completely negligible error due to the complexity of the nature of the extracted data and the non-invasiveness of the method.

M & T is applied by means of an elastic strap behind the triceps of the arm and it is worn in any daily activities, provided that the product does not come into direct contact with water.

Product Services:

M & T measure three quantities in the skin: the heat dissipated, galvanic skin response, temperature and interpolates the data with the acceleration obtained from a triaxial accelerometer.

The information is used by the computing algorithms to extract the energy consumption, the steps taken, kilometers traveled, workout duration, type of movement carried out, accelerations, the quality and duration of sleep.

Thanks to this wealth of information, M & T allows to assign a numerical value to phenomena and parameters of human physiology that previously could not be measured or that they could not be in free-living conditions.

M & T leads us to understand if the lifestyle of the wearer is too sedentary or, conversely, rich in sporting activities.

M & T analyzes ALL bodily physiological signals that measures to correctly identify the context in which the person wearing it is to apply the appropriate algorithms and accurately calculate energy expenditure (EE).

Traditional tools that only measure the activity as accelerometers or pedometers are inaccurate in contexts where there is high level of movement but low EE (eg. driving, traveling on a car or other vehicle) and where there is low motion and high level EE (such as lifting a weight or during an isometric activity).

Links: and Documents:

http://www.4move.biz/met-sistema-di-analisi-dello-stile-di-vita/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Potential product of potential stakeholder (4MOVE)	INTER-Health	Unical	22/02/2016

Market Analysis			
Product's Name: ISO/IEEE 11073			
Product Class: Standards	Context: International	Access mode: Open	
Web address: http://www.iso.org/iso/home/search.htm?qt=11073&published=on&active_tab=standards&sort_by=rel		(Logo)	
Product Description: Health informatics – Point-of-care medical device communication, is a European norm describing low level communication standards between medical, health care and wellness devices (e.g. weight scale, pulse oximeter) and with external computer systems.			
Product Services:			
Links: and Documents:			
Reason of involvement: Standard in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-Health	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis		
Product's Name: JawBone UP 3		
Product Class: Activity Tracker	Context: International	Access mode:
Web address https://jawbone.com/		JAWBONE
Product Description:		

JawBone Up 3 is an activity tracker that permits the monitoring of daily activity, sleep, heart rate and share this data with friends.
UP3 connects to the APP on the smartphone with a BlueTooth LE link and transfers data with a property communication protocol.

Product Services:

- App available for iOS, Android and Windows Phone
- SmartCoach
- Food tracker
- Data Cloud Sync
- CloudToCloud Sync with OAuth 2.0 authorization
- Tech details:
  - Water Resistant
  - Battery life: Up to 7 days
  - Bluetooth® 4.0 BLE
  - Tri-axis accelerometer
  - Bio-impedance:
    - Heart rate
    - Respiration
    - Galvanic Skin Response (GSR)
  - Three single color LEDs: Blue for sleep, orange for activity, and white for notifications

Links: and Documents:

https://jawbone.com/store/buy/up3

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Market analysis	INTER-Health	Telecom Italia	01/03/2016

Market Analysis			
Product's Name: Logical Observations Identifiers Names and Codes (LOINC)			
Product Class: Standard	Context: International	Access mode: Open	
Web address: https://loinc.org/		(Logo)	
Product Description: Logical Observations Identifiers Names and Codes, is an ontology providing a universal code system for tests, measurements, and observations related to electronic health records.			
Product Services:			
Links: and Documents:			
Reason of involvement: Standard in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-Health	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis		
Product's Name: *Onyx II 9560*		
Product Class: *Wireless finger pulse Oximeter*	Context: *Local and Regional*	Access mode: *Close*
Web address: http://www.nonin.com/		
Product Description: The Nonin 9560 was the world's first wireless finger pulse oximeter and supports Bluetooth®. This device allows clinicians to remotely monitor a patient's oxygen saturation level, pulse rate and pulse wave. As a wireless device it allows for greater patient freedom (up to 100m range) and ease of logging results to a patient's electronic patient record. Photo below illustrates the product described:		

Product Services:

The Nonin Onyx II 9560 offers support for oxygen saturation, pulse rate and plethysmograph. Through use of Bluetooth technology this device is compatible with Windows & Android however iOS is not supported due to the device using BT 2.0.

Links: and Documents:

Useful links

http://www.nonin.com/Onyx9560

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	*INTER-Health*	*Rinicom*	22/02/2016

Market Analysis

Product's Name:

Nutritional Folder

Product Class:	Context:	Access mode:
Software	*Local*	*close*

Web address: http://www.aslto5.piemonte.it/

A.S.L. TO5
Azienda Sanitaria Locale
di Carmagnola, Chieri, Moncalieri e Nichelino

Product Description:

During the traditional nutritional counseling the ASL TO5 dietitian records data of subjects who arrive to nutritional outpatient on a "nutritional folder." This type of nutritional folder is an off line folder managed with EPI INFO software creating pages in exel format. It is used to record health and sensitive data of subjects such as: personal data (name, surname, age), anthropometric data (weight, height, BMI, waist circumference), blood pressure, eating habits and physical activity. The data collected is protected under national law "Code regarding the protection of personal data".

A proposal for a future open call, might consist in using a computerized nutritional folder during the experimental nutritional counseling that would allow the recording of the data of the subjects in both outpatient and decentralized way through the medical devices and wearable sensors, so that a subject can be controlled at several levels by the National Health System. The real-time collection of health data would provide a more efficient service.

Product Services:

The nutritional folder is a diagnostic tool that, by collecting the information useful for the definition of the nutritional status of a subject, is able to interface the various medical and health expertise (doctor, dietitian, etc.) in order to:

− Define and assess the nutritional risk

- Monitor the nutritional status

The development of a computerized nutritional folder, could give to the subject the opportunity to control their own health status at any time, through the development of an application provided by the computerized nutritional folder software, with the increased efficiency of outpatient, because the subject would be constantly monitored and possibly more motivated to follow the advice of nutrition counseling.

Links and Documents:

Bibliografia

1- World Health Organization. Global status report on non communicable diseases 2010.

2- World Health Organization. Preventing chronic diseases: a vital investment : WHO global report, 2005

3- World Health Organization. Obesity: Preventing and Managing the Global Epidemic. WHO Obesity Technical Report Series 894. Geneva, Switzerland: World Health Organization; 2000.

4- World Health Organization. Physical Status: The Use and Interpretation of Anthropometry. Technical Report Series 854. Geneva, Switzerland: World Health Organization; 1995.

5- Health Institute-ISS. ISTISAN Terms 09/42. Nutritional medical folder: managing of patient nutrition in hospitals and prevention of its related infections

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	*INTER-Health*	ASL TO5	1/03/2016

Market Analysis			
Product's Name: Open Biomedical Ontologies			
Product Class: Standard	Context: International	Access mode: Open	
Web address: http://www.obofoundry.org/		(Logo)	
Product Description: The goal of the OBO Foundry is to develop a family of interoperable ontologies that are both logically well-formed and scientifically accurate.			
Product Services:			
Links: and Documents:			
Reason of involvement: Standard in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-Health	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis			
Product's Name: OpenEHR			
Product Class: Standards	Context: International	Access mode: Open	
Web address: http://www.openehr.org/		(Logo)	
Product Description: OpenEHR is a community working on interoperability and computability in the eHealth domain, with the main focus being the EHR, that has developed an open domain-driven platform for developing flexible e-health systems. It includes a set of specifications defining a health information *reference model*, a language for building clinical models, or *archetypes.*			
Product Services:			

Links: and Documents:			
Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Standard in the scope of interest of Inter-IoT. Medical data stored in openEHR format should be compatible with shared ontology for health domain.	INTER-Health	SRIPAS	22/02/2016

Market Analysis		
Product's Name: *PRIME*		
Product Class: *A combination of hardware and software, together with a platform for analysis of the biometric data*	Context: *Local and Regional*	Access mode: *Close, subscription*
Web address: www.rinicare.com		

Product Description:

PRIME is a mobile health information and monitoring platform aimed to optimise patient pathways in pre-hospital healthcare and ambulance services' efficient performance. It creates intuitive and rich patient electronic forms (eForms) that integrates real-time continuous recordings of patients' vital signs and multimedia (written and audio notes, images and high-definition video), considering NHS requirements and the paramedics' mobile environment, procedures and workflow. PRIME eForms can be seamlessly shared with remote specialists (telehealth) to assist early and accurate assessment of patients' condition and the provision of treatment advice to paramedics on site and in the ambulance. PRIME innovation will be based on IoT and will impact pre-hospital healthcare on the ability to sustainably develop ambulance services and their increasingly active role in healthcare, improve patient satisfaction as well as the NHS new competitive nature, cost savings effort, paperless approach and integrated care vision, in the name of quality and excellence in healthcare delivery. The system has 3 main components as shown in the following pictures:

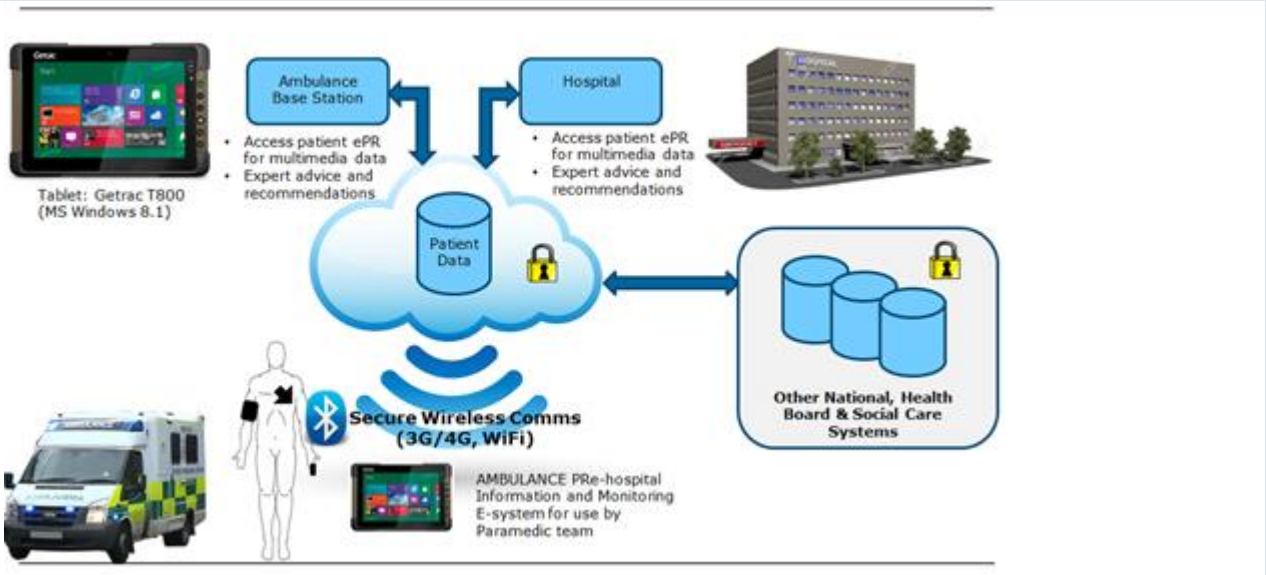
Multimedia

Remote Monitoring of Live Data

Product Services:

PRIME as a product is customisable and can be provided as a standalone system or complete with server. The device PRIME is implemented on is also flexible. The original PRIME was built around a medical grade tablet, however later versions are to include mini-prime on a small pc and also an android version of PRIME to increase compatibility. The main benefits of PRIME can be listed as follows: completely wireless sensor suite, continuous monitoring of vital signs, storage and transfer of all data, enriched digital patient forms, high-definition multimedia, remote access to real-time data, early recognition. The markets in which PRIME have been considered vary and currently include: paramedic services, major incidents/events, GP and nursing homes, hospital outreach services, commercial travel, military services.

PRIME can be summarised in the following diagram:



Links: and Documents:

Useful links

http://rinicare.com/randd/products/prime/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	*INTER-Health)*	*Rinicom*	22/02/2016

Market Analysis		
Product's Name: Remote Patient Monitoring		
Product Class: Software Platform	Context: National	Access mode: Close, Subscription
Web address		

Product Description:

Remote Patient Monitoring is a Telefonica telemedicine service for operators, professionals and patients which optimise healthcare provision by adapting it to the needs and level of risk of each patient. This approach supports the development of a new care model which is more efficient and cost-effective, and ensures that patients and their families, health professionals and organisations are more connected. It is an end-to-end service which facilitates efficient communication between patients and health professionals. It uses a remote monitoring platform that supports a variety of tasks, including receiving and analysing bio-measurement data, generating alerts, managing a calendar with daily tasks, sending reminders to the patient, sharing educational content, performing health questionnaires, messaging, video conferencing and sending photos to the health professional.

Product Services:

It is an end-to-end service which facilitates efficient communication between patients and health professionals. It uses a remote monitoring platform that supports a variety of tasks, including:

- receiving and analysing bio-measurement data
- generating alerts
- managing a calendar with daily tasks
- sending reminders to the patient
- sharing educational content
- performing health questionnaires
- messaging
- video conferencing and sending photos to the health professional.

Links: and Documents:			
http://www.cisco.com/c/en/us/solutions/collateral/service-provider/vni-service-adoption-forecast/case-study-telefonica-e-health.pdf			
Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
eHealth market analysis	INTER-Health	Telecom Italia	01/03/2016

Market Analysis		
Product's Name: Self Care and Connected Care		
Product Class: Software Platform	Context: National	Access mode: Close, Subscription
Web address		

Product Description:

Selfcare and Connected Care: they are Selfcare Programmes and well-being Telefonica services that enable prevention, greater self-control and peace of mind by giving the whole population better access to doctors and health contents. This is a totally new market where we have invested in a disruptive Internet startup which connects users and doctors online: Saluspot. Saluspot is an online community where users can engage with thousands of doctors about any health doubt or concern they may have and have online consultations.

Product Services:

- Education and Selfcare: digital content programmes designed to increase awareness on topics related to education and selfcare, such as nutrition, fitness, child health and wellness among others. We provide specific educational and selfcare programmes for every stage of people's lives.
- Online Consultation: Saluspot is an online meeting point between doctors and users, where anyone can ask health-related questions directly to a community of thousands of doctors. Its objective is to facilitate user health consultation, by providing access to a constantly expanding community of qualified doctors to answer their doubts and health concerns.
- Dr. On the Phone: it allows users to contact specific health professionals by phone to address their concerns on health-related matters. Complementary to the Education and Selfcare programmes, it allows users to stay informed about their health status by providing direct contact with a doctor in case further questions arise.
- Connected Wellness: a service which connects users with health specialists (nutritionists, physiotherapists, orthopaedics, personal trainers, etc.) and helps them develop and maintain a

healthy lifestyle utilising wearable technology and care programmes with personalised objectives and daily tasks			
Links: and Documents:			
Reason of involvement: e-Health market analysis	Related to IoT Product: INTER-Health	Identified by: Telecom Italia	Registration Date: 01/03/2016

Market Analysis		
Product's Name: Stabil-O-Graph Blood pressure monitor (IEM)		
Product Class: Medical devices	Context: International	Access mode:
Web address		

Product Description:

Stabil-O-Graph® is a blood pressure and pulse monitor for self-measurement at home.
Measured values can be transmitted automatically via a Bluetooth transmission (proprietary protocol).

Product Services:

- 50 memories for measurements
- Automatic computed blood pressure average displayed
- Continuous time and date display
- BT communication for data communication

- LCD Display
- CE mark: Stabilograph® comply with the provisions of Council Directive 93/42/EEC of 14 June 1993 as well as national laws concerning medical devices and with the provisions of the European Standard EN 1060-1 Non-invasive sphygmomanometers - Part 1: General requirements, and EN 1060-3: Supplementary requirements for electro-mechanical blood pressure measuring systems.

Links: and Documents:

http://www.euromedix.com/en/stabil-o-graph

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
To be used in the m-Health Pilot	INTER-Health	Telecom Italia	01/03/2016

Market Analysis

Product's Name:
Seymour by Cellscope

Product Class:	Context:	Access mode:
Smart tool	International	Closed

Web address:
https://www.cellscope.com/

Product Description:
Seymour is the smarter way to care for your family's health. It offers around-the-clock access to a doctor's opinion for kids' health concerns. Using in-app guidance and phone attachments, can share images of ear and skin concerns and get a doctor's opinion and recommendation plan in under 2 hours right to the phone.

Product Services:
KNOW IF YOUR CHILD HAS AN EAR INFECTION
• Seymour with the Oto attachment captures videos of child's ears. Compatible for iPhone 5, 5s, 6 and 6s users.
• Skipping the germ-filled waiting rooms or late night trips to urgent care and identify ear infection from home.

24/7 ACCESS TO A BOARD-CERTIFIED DOCTOR:
• Doctor's answer to customers phone in less than 2 hours.

MONITOR KIDS'S HEALTH OVER TIME • Track kids' progress and recovery over time with Seymour's guided photo capture. Share with Seymour dr. or customer doctor at the next visit.			
Links and Documents: *https://itunes.apple.com/us/app/id1061108478?mt=8*			
Reason of involvement: Medical -E-health	Related to IoT Product: INTER-Health	Identified by: ABC	Registration Date: 29/02/2016

Market Analysis		
Product's Name: SemanticHealthNet – Semantic Interoperability for Health Network		
Product Class: *Project* co-funded by the 7th Framework Programme of the EC.	Context: *European*	Access mode: *Open*
Web address: http://www.semantichealthnet.eu/		(Logo)
Product Description: Project focused on semantic interoperability of clinical and biomedical knowledge, in order to ensure efficiency of EHR systems. Semantic interoperability mechanisms and domain models were prepared with ontologies. The focus of that project was put on chronic heart failure as patient care exemplar and cardiovascular prevention as public health exemplar.		
Product Services:		
Links: and Documents:		
Reason of involvement: Project in the scope of interest of Inter-IoT.	Related to IoT Product: Inter-Health	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis			
Product's Name: Sigfox			
Product Class: Iot Communication	Context: Global	Access mode: Open	
Web address: http://www.sigfox.com/			
Product Description: SIGFOX is an operated telecommunication network, dedicated to the Internet of Things. It is an operated network, meaning you do not have to handle any installation or maintenance operations. SIGFOX is seamless and out-of-the box, allowing you to forget about communication and keep focused on the core of your project. It is a LPWA (Low-Power Wide-Area) network, currently deployed in Western Europe, San Francisco, and with ongoing tests in South America & Asia. The SIGFOX allows a bidirectional communication, both from & to the device. The communication is always initiated by the device. The SIGFOX network is designed for small messages sent every now and then. It is not appropriate for high-bandwith usages (multimedia, permanent broadcast). Its focus on energy efficiency allows you to build connected devices able to last years on a standard battery.			
Product Services: The SIGFOX network operates on sub-GHz frequencies, on ISM bands : 868MHz in Europe/ETSI & 902MHz in the US/FCC. SIGFOX uses an Ultra-Narrow Band (UNB) modulation, which is key to our ability to provide a scalable & high-capacity network. With a 162dB budget link SIGFOX enables long range communications, with much longer reach than GSM. There is no negotiation between the device and a receiving station. The device simply emits in the available frequency band (+/- its own frequency shift). The signal is detected by the closest base stations, decoded & forwarded to the network backend. Deduplication and other protocol operations are handled by the network itself. Messages are then forwarded to own application, and made accessible using SIGFOX's API. Each message is authenticated using a hash mechanism, and a private key specific to the device. This offers a protection against replay attacks. The SIGFOX radio protocol also offers a resistance to interferers.			
Links and Documents: http://www.sigfox.com/			
Reason of involvement: Communication between smart devices	Related to IoT Product: INTER-LAYER, INTER-LogP, INTER-Health	Identified by: ABC	Registration Date: 22/02/2016

Market Analysis			
Product's Name: SNOMED CT			
Product Class: Standard	Context: International	Access mode: Open	
Web address: http://www.ihtsdo.org/snomed-ct		(Logo)	
Product Description: SNOMED CT is the most comprehensive and precise clinical health terminology product in the world, owned and distributed around the world by The International Health Terminology Standards Development Organisation (IHTSDO). SNOMED CT is the multilingual clinical healthcare terminology that enables consistent, processable representation of clinical content in electronic health records and can be mapped to other international standards.			
Product Services:			
Links: and Documents:			
Reason of involvement: Standard in the scope of interest of Inter-IoT.	Related to IoT Product: INTER-Health	Identified by: SRIPAS	Registration Date: 22/02/2016

Market Analysis		
Product's Name: TelbiosConnect (commercial service)		
Product Class: Software Platform	Context: National	Access mode: Close, Subscription
Web address http://www.telbios.com/telbiosconnect/		Telbios™
Product Description: TelbiosConnect is a Telemonitoring platform that can be used by patients at home; different kits (for diabetes, bronchitis, heart failure and Hypertension) include different medical devices and the Telbios		

Station, a device aggregator, which is the gateway to send data to the server platform. Kits don't need a patient involvement in the configuration; patients don't need a network connection too. Data recorded on TelbiosConnect platform can be read by specialized personnel (Nurses, Physicians) in the medical Service Center provided by Telbios as part of its Services. A specialized pool of cardiologists are also available for patients affected by heart desease.

Patients can perform measurements of many physiological parameters using the following medical devices:

For Heart Failure: weight scale, blood pressure monitor, oximeter, Electrocardiograph

For Hypertension: blood pressure

For Bronchitis/asthma: weight scale, blood pressure monitor, oximeter, Thermometer

For Glucometer: glucometer, weight scale, blood pressure monitor

Physicians and health workers in Telbios Service Center select patients; give them education, define their cure plan and individual parameters (such as thresholds); continuously the sanitary staff is monitoring measures and alarms coming from patients data analysis; they adjust patients cure and measures program according to measures reports and analysis, giving feedback to their patients.

TelbiosConnect platform is a certified medical device according to 93/42/ce medical device directive class IIa

Product Services:

- Patients Enrolment
- Initial clinical evaluation
- Cure plan definition
- Measure queries available on portal using a PC or tablet.
- Cure coordination and adherence verification
- Monitoring and education
- Clinical Management
- Final evaluation

Links: and Documents:

http://www.telbios.com/telbiosconnect/

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
eHealth Market Analysis	INTER-Health	Telecom Italia	01/03/2016

Market Analysis		
Product's Name: TELCOMED		
Product Class: Software Platform	Context: International	Access mode: Close, Subscription
Web address		

Product Description:

The Medic4All Technology Platform consists of miniaturized, wearable, wireless medical monitoring peripherals and gateways, medical call center software and protocols.

Located in the patient's home, Medic4all's telemedicine system, is designed to automatically and wirelessly send its collected data to the medical monitoring center server without the patient's or medical monitoring center operator interaction.

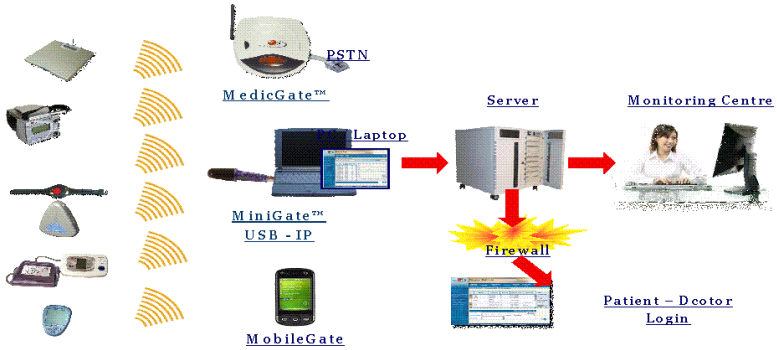
Uses several medical devices including the multi WristClinic device able to measure - Wrist Blood Pressure Monitor, Heart Rate, Heart Rhythm Regularity, Single Lead ECG, Breathing Rate, Body Temperature, Blood saturation - SpO2.

Uses severals gateways to collect measures and send them to platform:

MedicGate: allows wireless transmission between the medical devices; PSTN communication between the server, voice speakerphone allowing audio conferences with the monitoring center staff

MiniGate: allows wireless transmission between the medical devices; IP communication between MiniGate and the server

Mobile phone



Product Services:

- Monitoring at home based on gateway and devices
- Web-based application that stores complete personal medical records.

▸ Remote monitor service, call center assistance, medical service in travel			
Links: and Documents: http://www.medic4all.com/			
Reason of involvement: m-heath market analysis	Related to IoT Product: INTER-Health	Identified by: Telecom Italia	Registration Date: 01/03/2016

Market Analysis		
Product's Name: ThinFilm		
Product Class: Smart Tools	Context: Intenational	Access mode: Closed
Web address http://thinfilm.no/		

Product Description:

ThinFilm is an Oslo based company looking to use printed electronic techniques to add intelligence to objects that have not been possible (or cost prohibitive) to connect in the past using traditional electronics. Using roll-to-roll printing Thinfilm can produce electronic labels with built-in rewritable memory (up to 100,000 times), sensors, a display, and embedded wireless communications including RFID and NFC capabilities.
These printed smart labels promise to open up a range of new types applications:
Food packages that can provide a freshness indicator based on if it has been exposed to higher than recommended ranges over its storage life.
Product pricing that can adjust itself dynamically over time.
Medical labels that can track their products lifetime safety and authenticity.
The creation of labels that can monitor and record other environmental data (light, pressure, humidity, even toxic gases) or other physical properties to be accessed by a consumer using their smartphone or displayed directly on the packaging.
Thinfilm's current printable memory system is commercially available in sizes up to 20 bit, with plans to increase it to 96 bits within the next few years.

Product Services:

Thinfilm Memory™is the world's only printed rewritable non-volatile memory
Massively scalable roll-to-roll production
Licensed by Xerox Corporation, December 2014
1.3 billion units of capacity opening in early 2016 at Xerox in Webster, NY

Links: and Documents:			
http://library.fora.tv/2012/10/23/Demo_Presentation_of_Think_Thin_by_Davor_Sutija			
Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Smart tool for logistics and health	INTER-LAYER, INTER-LogP, INTER-Health	ABC	29/02/2016

Market Analysis		
Product's Name: *Thingworx*		
Product Class: IoT Platform	Context: International	Access mode: Open
Web address: http://www.thingworx.com/iot-platform		

Product Description:

ThingWorx is the industry's leading Internet of Things (IoT) technology platform. It enables innovators to rapidly create and deploy game-changing applications, solutions and experiences for today's smart, connected world.

The IoT Platform enables users to connect, create, analyze and experience "things" in new ways. With ThingWorx, users can:

Connect any device in the ecosystem to the platform

Remove complexity and develop IoT applications and solutions without limits

Quickly and easily automate complex big data analytics using integrated machine learning

Extend and share innovation with other IoT developers

Deploy solutions to meet the needs of the market - cloud, on-premise and embedded options meet the needs of every use case.

Product Services:

ThingWorx Composer™

ThingWorx Composer is an end-to-end application modeling environment that enables developers to easily build unique applications for the connected world. Composer makes it easy to model the things, business logic, visualization, data storage, collaboration, and security required for an IoT application.

Codeless Mashup Builder

ThingWorx "drag and drop" Mashup Builder empowers developers to rapidly create rich, interactive IoT applications, real-time dashboards, collaborative workspaces, and mobile interfaces without the need for coding. This next-generation application builder reduces development time and produces high quality, scalable connected applications enabling faster delivery of value-add solutions and increased market share.

Dynamic Collaboration

ThingWorx virtually brings together people, systems, and connected equipment, and utilizes live collaboration sessions that help teams to solve problems faster. The ThingWorx data store becomes the basis of context aware collaboration and interaction among the system's users, further enhancing its

value.
Business Process Management
ThingWorx Business Process Manager enables business analysts to build an automated repeatable process using the Business Process Editor. The process is initiated from an alert or event from a remote connected product. Once initiated, the process follows the defined route to completion.
Thing Management
ThingWorx Thing Management Utilities provide a comprehensive portfolio of standard and advanced capabilities to monitor, update, and interact with your connected things. Utilities include ThingWorx Remote Access and Control which facilitates remote diagnostics, remote desktop and remote control of things, and ThingWorx Software Content Management which manages the schedule and delivery of remote software updates.
Digital-Physical Integration Hub
ThingWorx Integration Hub provides an integration framework in which both physical and digital information converge to enable the innovation of new applications and business processes. Solution developers, OEMs and system integrators benefit from an abstraction layer enables the development of applications, integrations and business processes that are back end system agnostic.
Administration
ThingWorx Platform Administration enables role based access for business administrators, system administrators and developers. Users are easily able to configure access control and perform critical user- and thing-administration functions such as role definitions, user profile management, model definitions, grouping, visibility, and activity auditing.
Flexible Connectivity Options
ThingWorx offers an “inclusive” connectivity strategy that maximizes market opportunity and minimizes integration efforts. ThingWorx supports connectivity to devices via several methods, including 3rd party device clouds, direct network connections, Open APIs, and AlwaysOn™ connectivity using the ThingWorx Edge MicroServer.
Alert Management
Alert Management allows users to view, manage and interact with events and alerts associated with connected devices to gain insights into active alerts, alert history, and alert information. The easy-to-use alert rule editor allows for business analysts to create rules that perform actions such as trigger notifications or launch business processes. It also enables applications developers to create connected solutions that embed alert management capabilities into other applications.
Provisioning
Provisioning efficiently defines the attributes associated with unique instances of new intelligent assets as they are created. This feature ensure that remote products can be easily connected and remotely managed and supports lifecycle use cases of connected devices.

Links and Documents:

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Interoperability and compatibility of IoT platforms	INTER-LAYER, INTER-LogP, INTER-Health	ABC	29/02/2016

Market Analysis		
Product's Name: Withings Activitè		
Product Class: Activity Tracker/SmartWatch	Context: International	Access mode:
Web address http://www.withings.com/		

Product Description:

Withings Activitè is a smartwatch that permits the monitoring of daily activity, sleep and swim. Activitè connects to the APP on the smartphone with a BlueTooth LE link and transfers data with a property communication protocol.

Product Services:

- App available for iOS, Android
- Personal Coach
- Silent Alarm Vibration
- Data Cloud Sync
- CloudToCloud Sync with OAuth 1.0 authorization
- Tech details:
  - Water-proof
  - Responsive glass
  - No recharge need: CR2025 button cell, up to 8 months of battery life.
  - Bluetooth® 4.0 BLE
  - Day & Night motion sensor
  - High precision MEMS 3-axis accelerometer
  - Low power consumption

Links: and Documents:

http://www.withings.com/eu/en/products/activite

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Market analysis	INTER-Health	Telecom Italia	01/03/2016

Market Analysis		
Product's Name: *Wireless ECG*		
Product Class: *12-lead wireless ECG Sensor*	Context: *Local and Regional*	Access mode: *Close, subscription*
Web address: http://www.sr-med.com/		

Product Description:

Wireless ECG is a clinical grade 12-lead ECG sensor operating over BLUETOOTH wireless link. It offers reliable ECG reading with easy monitoring, with a broad scope of applications, ranging from clinical to sport to personal health monitoring. The system also incorporates data analytics software, allowing prediction mitigation of risk factors, such as heart attack and cardiac arrest. Photo below illustrates the product:

Product Services:

Wireless ECG as a product is customisable and can be provided as a standalone system or as a part of Rinicare PRIME system. The product already operates on Windows and iOS table PCs and soon will support ANDROID. The main benefits can be listed as follows: completely wireless sensor, continuous monitoring of ECG, storage and transfer of all data, early recognition of critical events

Links and Documents:

http://www.sr-med.com/cardioscout-multi-ecg-universelles-ios-mini-12-kanal-ekg-mit-bluetooth#.Vs7R5PmLQgs

Reason of involvement:	Related to IoT Product:	Identified by:	Registration Date:
Partner project	*INTER-Health*	*Rinicom*	*25.02.16*