European
Large-Scale Pilots
Programme

CROSS FERTILISATION THROUGH ALIGNMENT, SYNCHRONISATION AND EXCHANGES FOR IoT

H2020 – CREATE-IoT Project

Deliverable 01.07

Pan-European workshop with national initiatives for digitising industry across the EU

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RE	Restricted to a group specified by the consortium (including the Commission Services)	
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Summary					
No and name	**D01.07 Pan-European workshop with national initiatives for digitising industry across the EU**				
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Editor	M. Álvarez (GRAD)				
DoW	Evaluation of the results achieved within the framework as proposed in D04.03 The work is covered by task T01.03 (European IoT community building in the digital single market context). This document a short summary of the Pan-European workshop carried out. The actual deliverable is the workshop arrangement and its results.				
Comments					

Document history			
Rev.	**Date**	**Author**	**Description**
0.00	12-01-2018	SINTEF	Template.
0.01	03-01-2019	SINTEF	General information and initial ToC/structure.
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Table of contents

1. INTRODUCTION

1.1 Purpose and target group

The IoT European Large-Scale Pilots Programme Workshops Series provide a Pan European platform to exchange information among projects addressing the fast-growing IoT European ecosystem. The workshops give the opportunity for IoT projects to present their research and most recent work in the field of IoT developments and deployments. The participants gain an up-to-date understanding of recent IoT developments and future trends across different industrial sectors and use cases. The Workshops series aims to foster links between communities of IoT users and providers, as well as with Member States' initiatives, and to connect with other initiatives including contractual Public-Private-Partnerships (PPP), exploit the combination of IoT and Art for stimulating innovation and acceptance and support the preparation for the next generation of IoT deployment and future funding programmes.

Figure 1: Illustrations representing the five LSPs,
(ACTIVAGE, AUTOPILOT, IoF2020, MONICA, SYNCHRONICITY)

This workshop was intended as a continuation of the work started in D04.01 (IoT as a key pillar of EU digital economy) with the following goals:

- Make the IoT LSP Programme known to stakeholders from the public sector at national, regional and local levels.
- Bring together the LSP community and public authorities that are not part of the LSP programme.
- Generate a debate on the role of public administrations in the support or facilitation of IoT take-up, and digital transformation in general, in the future, especially during the 2021-2027 period.
- Identify potential synergies between huge investment efforts at European level, such as the IoT LSP Programme, and other initiatives at national, regional or local level.

This workshop was intended for several target groups:

- Public authorities at all levels (European, national, regional and local) in charge of implementing, leading or facilitating digital transformation projects, activities or programmes
- The IoT LSP community
- Companies for the IoT and digital sector
- General public (registration was open to anyone interested)

1.2 Contributions of partners

GRAD is the deliverable responsible. Workshop organization, concept and design. Speaker selection, invitation and briefing. Workshop moderation. Reporting.

SINTEF: Workshop organization, agenda preparation, speakers' selection and invitation, documents, flyers preparation, Web update, reporting.

ATOS: Workshop organization support and reporting.

ISMB/LINK: Workshop organization support.

IDC: Workshop organization support and presentation of CREATE-IoT eBook on IoT Market Trends.

1.3 Relations to other activities in the project

This workshop took input from D04.01 "IoT as a key pillar of EU digital economy" and brought some of its elements down to earth for discussion around the vertical sectors linked to the LSPs and especially around the expectations for the near future.

This deliverable will provide input to the following deliverables:
* D01.10: IoT large-scale pilots' event with national and regional initiatives.
* D01.11: EU research and innovation activities overall plan-evaluation.
* D01.12: EU IoT value chain integration framework.

2. EVENT SUMMARY

2.1 Objectives and format

This workshop was designed as an IoT LSP Programme activity that involved as participants the LSPs and the two CSAs of the Programme. One of its goals was to be a reach-out activity in which the IoT LSP Programme would present itself to the general public but most importantly to stakeholders from public administrations at national, regional and local levels.

Registration for the workshop was open, but special care was taken to invite and secure the participation of representatives from public authorities that are supporting, running or facilitating digital transformation projects, initiatives or programmes involving IoT at under-EU levels.

The workshop was implemented as a full-day workshop with participation from the IoT LSPs, the two CSAs CREATE-IoT and U4IoT, and an important representation of external actors coming from DG CONNECT, national ministries (Spain), regional administrations (Spain, Portugal), public local authorities and bodies, and the private sector.

Figure 2: Group photo from the event

2.2 Agenda of the Workshop

The agenda of the workshop is given below, see also the website for more information:

https://european-iot-pilots.eu/create-the-next-generation-iot-experience-for-the-future-lisbon-february-2019/

Table 1: Workshop program 28 February 2019

09:00 – 09:30	**Registration** **(TRYP Hotel Caparica – Conference Hall)**
	Meeting Room: Costa Azul, TRYP Hotel Caparica, **Avenida General Humberto Delgado, 47 2829-506 Costa da Caparica - Lisboa, Portugal**
	IoT and Pan-European Digital Transformation Session
09:30 – 09:40	*Welcome* Silvia Sousa, Almada City Council, Portugal Virgílio Cruz Machado, Faculty of Sciences and Technology, Universidade Nova de Lisboa, Portugal

09:40 – 10:15	*IoT Large-Scale Pilots Programme as part of digitising European industry strategy* Ovidiu Vermesan, SINTEF, Norway (CREATE-IoT) Karl Andersson, Lulea Tekniska Universitet, Sweden (U4IoT) Sebastian Pantoja, Televés, Spain (ACTIVAGE) Diego Bernárdez, CTAG, Spain (AUTOPILOT) Pedro Maló, Unparallel, Portugal (IoF2020) Stefano Fava, Link Foundation, Italy (MONICA) Ricardo Vitorino, Ubiwhere, Portugal (SYNCHRONICITY)
10:15 – 10:30	*IoT Market Trends - Presentation of the e-Book on IoT Market Trends* Giorgio Micheletti, IDC, Italy
10:30 – 11:00	**Coffee/Tea Break**
11:00 – 11:45	*Digital transformation experiences beyond large-scale pilots* David Lozano, Andalusian Ministry of Agriculture, Livestock, Fisheries and Sustainable Development, Spain Ricardo Vitorino, Ubiwhere, Portugal Vitor Sousa, ZenithWings, Portugal
11:45 – 12:00	*The role of public authorities, local, regional and MSs initiatives in digital transformation and IoT future developments* Ice-breaker: *"Build Ecosystems, Not Labs! "* Peter Bihr, The Waving Cat, Germany
12:00 – 13:00	*The role of public authorities, local, regional and MSs initiatives in digital transformation and IoT future developments* Panel discussion. Public administrations in charge of developing digital transformation activities and programmes have a wide choice of tools. From small to large scale projects, from infrastructure development to ecosystem building, from grants or innovation vouchers to procurement. The goal of this panel discussion is to reflect on the different approaches and their expected effectiveness along the upcoming years in which our economy will be accelerating on digital transformation. Daniel Fernández Lestón, Ministry of Science, Innovation and Universities, Spain María Teresa Ambrós Mendioroz, Ministry of Agriculture, Fisheries and Food, Spain Ricardo Tiago, Institute for Mobility and Transport, Portugal Susana Barahona Ferreira, COTEC, Portugal Svetoslav Mihaylov, European Commission DG Connect, Belgium Moderator: Marcos Álvarez, Gradiant, Spain
13:00 – 14:15	**Lunch Break and Networking**
	Meeting Room: Costa Azul, TRYP Hotel Caparica, **Avenida General Humberto Delgado, 47 2829-506 Costa da Caparica - Lisboa, Portugal**
	IoT and Pan-European Digital Transformation Session
14:15 – 15:30	*Synergies among different initiatives and future developments* – Initiatives at Member State, regional or local level can be designed to leverage results from others, or to target investment towards areas where other initiatives cannot reach. This debate will gather representatives from public administrations at all levels so as to generate a reflection on how to articulate the future landscape of programmes and initiatives during the 2021-2027 period. Svetoslav Mihaylov, European Commission DG Connect, Belgium María Teresa Ambrós Mendioroz, Ministry of Agriculture, Fisheries and Food, Spain Paulo Calçada, SMAS Almada, Portugal Maria João Sousa, Proef, Portugal Moderator: Daniel Fernández Lestón, Ministry of Science, Innovation and Universities, Spain

15:30 – 16:00	*Wrap-up and what next. Horizon Europe perspective* – IoT as part of the Next Generation Internet, Connectivity and Intelligence at the Edge.
	Participation: Local organizers, EC, Public Authorities
	Closing remarks: Ovidiu Vermesan, SINTEF, Norway, Karl Andersson, Lulea Tekniska Universitet, Sweden
16:00	**Coffee and Networking**

2.3 Outcomes of interactions

Institutional welcome:
Silvia Sousa (Almada City Council, Portugal)
Virgilio Cruz Machado, Faculty of Sciences and Technology (Universidade Nova de Lisboa, Portugal).

IoT Large-Scale Pilots Programme as part of digitising European industry strategy:
The CSA project coordinators Ovidiu Vermesan (CREATE-IoT) and Karl Andersson (U4IoT) introduced the IoT LSP Programme as a whole to the audience. Then the floor was taken by the representatives of the LSPs, who provided an overview of their projects in terms of goals, activities, early achievements and expected final results: Sebastian Pantoja (ACTIVAGE), Diego Bernárdez (AUTOPILOT), Pedro Maló (IoF2020), Ricardo Vitorino (SYNCHRONICITY).

IoT Market Trends - Presentation of the e-Book on IoT Market Trends:
Giorgio (IDC, Italy) from the CREATE-IoT project provided an advanced overview of the IoT LSP Programme E-Book on Market Trends that is set to be published during March 2019. The E-Book will cover a comprehensive overview of the rationale behind the IoT LSP Programme, including the following items:
- Reasons for adopting IoT: Improve security, reduce operational costs, improve internal efficiency, improve customers' productivity, improve product quality, improve customer experience.
- IoT Adoption across European verticals: Finance, Manufacturing, Retail/Wholesale, Professional Services, Healthcare, Transport, telecom/media.
- IoT Spending across worldwide regions: North America and Asia big competitors
- IoT Industries keywords in 2019: Transport (mobility as a service), retail (points of sale innovation), government (advanced data platform), insurance (collaborative & parametric approaches), manufacturing (servitization).
- What are the top challenges blocking IoT progress in Europe: Upfront costs (23%), security concerns (22%), privacy concerns (19%), Technology capabilities (18%), complexity of business process change (18%), Infrastructure limits, etc.
- An IoT Platform Landscape Deep Dive
- The IoT Focus area: Active and healthy ageing (use cases, value chain, market dynamics, how big is the market, how much money is going to be spent), Connected vehicles (use cases, value chain, market development ambition).
- Value-added and expected Impact of the LSP programme. Impact of the users, impact of technology.

Digital transformation experiences beyond large-scale pilots:
This session showcased examples of digital transformation projects or support initiatives outside the H2020 umbrella.

David Lozano (Andalusian Ministry of Agriculture, Livestock, Fisheries and Sustainable Development, Spain) brought examples of how the regional government of Andalusia is

supporting or implementing projects and measures that facilitate the digital transformation of the regional agriculture and agrifood sectors.

Barriers: Advanced-aged farmers, small farmers, lack of digital culture and low importance of data for decision-making.

Best value: Innovation is not possible without cooperation, between public administration, ICT sector, universities. Examples of measures:
- Participation in networks on the agrifood sector digitalization (learn from and with others)
  - S3P Agrifood Thematic Partnership on Traceability and Big Data. More than 20 regions and 720 stakeholders connected
  - European DIH Strategy
  - DIH in Andalucía (Andalusia Agrotech)
- Participation in innovation and cooperation international projects (demonstrative projects). Regions4Food, SmartAgriHubs.
- Boosting digitization of the agrifood sector (farmers and agro-industry). More than 30M€. Preparing a new call focused on digitalization. We are working with predictive models for pests and diseases (139 pests, data from more than 53000 farms, more than 56M of records, more than 700000 farmers). Demofarm 4.0 Andalucía (training camps) which starts in 2019. Agri-Hebe, a specific programme for youth in the agrifood sector (digital native's skills, more than 120M€).
- Boosting digital public administration. Geoportal (1st spatial data infrastructure). Monitoring CAP (monitorisation of 2 areas).

Lessons Learnt: Adapted solutions, cooperation among stakeholders, strategies and funds, coordination in all levels.

Ricardo Vitorino (Ubiwhere, Portugal) brought the vision of a SME that is trying to develop their business in the field of smart cities, with already a few market success stories (Algarve region, Almada municipality) that the company achieves thanks to their participation in key national and EU projects (such as AUTOPILOT).

Vitor Sousa (ZenithWings, Portugal) brought the experience of a start-up recently-born as a spin-off of another company that has focused its value proposition in the field of smart farming.

The role of public authorities, local, regional and MSs initiatives in digital transformation and IoT future developments:
Peter Bihr (The Waving Cat, Germany) brought an initial speech with some thought-provoking statements. There are current opportunities that must not be overlooked: Labs and hubs offer great learning opportunities that are of great value for both corporations and to public authorities. Challenges identified: Making the knowledge transfer work better.
A look at Berlin: 46% Innovation Lab, 34% accelerator, 13% incubator, 7% company builder. This is what capacity building looks like: Lots of hubs/labs/research centres also mean a growing talent pool. When the ecosystem grows, everybody wins.

Everybody wants to copy Silicon Valley, but this might be a mistake. When Google opened campus in Berlin, it did not work out well: sometimes the same idea doesn't fit in a different environment with different stakeholders.

How can public authorities support ecosystem development?
- Actively participate in events, in conversations with stakeholders. Consider launching your own labs/hubs starting for Government Digital Services.
- Coordinate and collaborate. Help coordinating other stakeholders with an ecosystem perspective and involving them on artists, community groups. There is a percentage of population who doesn't understand what machine learning is.

- Think about scales. Larger pilots and low-risk loans for products R&D are great. But also: Micro-grants (500-5000€) for small events can be very powerful.

The role of public authorities, local, regional and MSs initiatives in digital transformation and IoT future developments:
Moderated by Marcos Álvarez (CREATE-IoT)

Daniel Fernández Lestón (Ministry of Science, Innovation and Universities, Spain)

General thoughts.
- Public Levers: legislative/regulatory actions. It's important that our role must be clear. A specific law is one of our responsibilities.
- Strategy Setting. It's critical to understand which the needs are and looking the resources that we have.
- Financing. Innovation with tax incentives. Public sector has responsibility in the development infrastructure.
- Coordination with the private sector. PPP. Collaborations between Ministries is key. Regions and also international level.
- Demand. PPI and PCP. How public administrator helps with the developing of the innovation? Overall procurement process. Public administration can collaborate with new ideas.
- Ethical/security Aspects
- Communication. Implication of the technologies. Booster digital adoption.

Strategic plans: Smart territories (beyond smart cities), 5G strategy, Industry 4.0, R&D Strategy and Action Plans (Energy & Climate, Digitalization & AI, Health, Eco-design), SMEs.

María Teresa Ambrós Mendioroz, (Ministry of Agriculture, Fisheries and Food, Spain):

She presented the National Agenda for the digitalization of the agrifood and forestry sector and for rural territories, currently under public consultations in Spain.

Agrifood is an important economic sector for Spain: 900.000 agricultural holdings, 28.000 agrifood industries, 95% of companies working in the sector are SMEs. Innovation and digitalization in agriculture and rural areas is a cross-cutting objectives.

The strategy agenda defines lines and measures to promote digital transformation of agri-food and forestry sectors and in general in rural territories.

The main goal is to eliminate or reduce barriers. Our specific objectives are to reduce the digital divide, support data use and boost enterprise development and new business models. Connectivity in rural areas is an evident challenge.

Ricardo Tiago (Institute for Mobility and Transport, Portugal):

Role of public authorities in mobility. We are a public institute and a central body. Our missions are to perform the functions of technical regulations. There are 7 important characteristics of urban traffic (multimodality, parking, more than one road operator, robustness of networks, mixed traffic, intersections, etc.).

Every city is different, but it is a physical and digital fingerprint. In the new connected world, everything is connected. The infrastructures are being more and more connected.

One of the roles of public authorities is to act as facilitator and an aggregator of wills, ideas and sometimes demand. Intelligent use of funding sources is required (national, regional and EU funds).

Towards CCAM – Cooperative Intelligent Transport Systems + Connected Vehicles + Automated Vehicles (from technology to sustainable mobility). The goals of IMT are: zero road fatalities, optimal traffic flow, reduced emissions, reduces congestions, etc.

<u>Susana Barahona Ferreira (COTEC, Portugal)</u>

She presented the Portuguese Industria 4.0 Platform: articulation, disseminations, mobilization and advance in digital transformation of industries.

Interesting example of public-private cooperation. COTEC signed an agreement with the Ministry of Economy 2 years ago to carry out the coordination and supervision of the implementation of this programme.

The view of the Ministry of Economy was that its necessary to connect the different actors to achieve the digitalization. At the beginning were including 60 relevant measures to this goal. These measures were implemented. Financing: COMPETE 2020 (85%, national funds) and Strategic Committee's Private Entities (15%).

Some of the results:
- Work 4.0 – Hypothesis towards a new modernity Report
- Work 4.0 – Rethinking the Human Technology Alliance synthetic report

COTEC has also promoted working groups and events dedicated to the health and construction sectors. Expected results: Tool connecting the demand and supply of digital skills; mapping the DIH network; participating in European Commission's working meetings

<u>PANEL Discussions:</u>
Ministry of agriculture: In Spain we don't have competences in the field of agriculture at all, since 100% of the policy is fixed at EU level. This is why it is crucial to boost the cooperation among different stakeholders. Public policy is being very participatory.

COTEC: We are stakeholders in different areas, and we try that the necessary actions be adapted.

EC (Svetoslav Mihaylov, DG CONNECT): We solve public authorities' problems, but we also help private sector to boost their technology. We are consulting to experts to prepare the work programmes.

Synergies among different initiatives and future developments:
Moderation: Daniel Fernández Lestón (Ministry of Science, Innovation and Universities, Spain)

Opportunities for supporting innovation actions:
- We already produce a lot of data and we must treat it. Be connected to stakeholders. Customers complains a lot, so we must be prepared. The real information is important.

How do you see public procurement?
- Ministry of Agriculture: There is a lack of analysis of the effectiveness of the different instruments supporting digital transformation (tenders and others). Definitely this should be in the to-do list of many administrations.
- EC: We try to bring the innovation. We have projects based in PPPs. For private companies is more manageable now. We are creating networks to bring new ideas. We use the public procurement to scalable digital solutions
- SMEs should to disseminate about the challenges they are addressing.
- Sometimes cross-border collaboration is not possible. An example of this is in the agriculture domain, where CAP-supported measures make it virtually impossible to establish cross-border innovation projects.
- The private sector is moving towards a mature market offer, but normally there is more support at early stages or TRLs than at more mature stages that are closer to market. In some countries this is compensated with a dynamic private investment ecosystem, but this is not the case of Spain, for example, where Spain there is a fair public support for academia or research projects but little continuation afterwards.

- (EC) We should take example of earlier European successes, for example the GSM telephony standard. We are giving the opportunity to startups and all the ecosystem to create new innovation. Developers can explore opportunity.

Wrap-up and what next. Horizon Europe perspective:
Moderated by Ovidiu Vermesan (CREATE-IoT) and Karl Andersson (U4IoT)

Sustainability is a key driver and a must for several industrial sectors. IoT solutions must be socially and environment sustainable. The future trends are driven by convergence of technologies such as IoT/IIoT, 5G, AI, edge computing.

The dialog among stakeholders in the IoT value chain, national/regional initiatives and public authorities is critical to identifying opportunities for R&D, technology integration, and development of new solutions and applications across industry segments.

The introduction of AI into IoT edge nodes and edge computing equipment is required to assure that autonomous actions do not compromise organisation assets, clients, products or services. These services are becoming increasingly necessary for businesses and industrial organizations that fully leverage IoT technologies.

Continuous investment in digital (or digital-ready) infrastructures will be of paramount importance during the next MFF 2021-2027.

Figure 3: Ovidiu Vermesan (CREATE-IoT coordinator, SINTEF, Norway)

2.4 Key takeaways

- External stakeholders recognized the impressive size and ambition of the IoT LSP Programme
- General agreement among external stakeholders that digital transformation is key to their areas of influence and the race will not stop in a near future. All of them are convinced that continuous investment will be needed to advance in the adoption of digital technologies and the benefits they bring in terms of efficiency, information availability for decision making, planning and policy making, etc. Examples such as the Digital Agenda for the Spanish Agriculture and Forestry sectors or the Portuguese Industria 4.0 Platform demonstrate how important digital transformation is considered at ministerial level in Spain and Portugal.
- Differences exist across verticals in terms of optimal measures, types of interventions, etc.
- The public sector must not stop in fostering or supporting digital transformation. It should lead by example, adopting digital technologies in their internal processes and also in the services they offer to citizens, companies and the public in general.
- Digital innovation is a driver for economic growth, improves competitiveness and helps improve market position and the possibilities of exporting products and services.

- Public procurement: The public sector could do more in aggregating demand related to digital transformation. PCP and PPI tool are there, but sometimes the small size of the buying administration make it difficult to generate the desired pull effect.

3. CONCLUSIONS

The IoT European Large-Scale Pilots Programme workshops series provide a Pan European platform to exchange information among projects addressing the fast-growing IoT European ecosystem. The workshops give the opportunity for IoT projects to present their research and most recent work in the field of IoT developments and deployments.

Pan-European workshop with national initiatives for digitising industry across the EU addressed the European IoT Value Chain integration framework by fostering links between communities of IoT users and providers, as well as with Member States' initiatives.

The workshop is part of the framework to connect with other regional, national IoT initiatives and have an open dialog with the national/regional public authorities. The workshop was organised as an open dialog to evaluate the relationship between the various actors in the IoT Value Chain spanning from Member States' IoT initiatives relationship with European activities and the integration of national/regional activities to ensure unified visions across Europe for information flows, policy coordination and knowledge in the implementation of the digital economy.

The results of the workshop can be used as recommendations for further research and innovation activities related to IoT as key pillar for the digital economy by contributing quantifiable drivers and barriers in the IoT area to the Digital Single Market implementation in Europe and an assessment of the common challenges and the collaboration potential across Europe.