



Q&A

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CREATE-IoT



Alliance for Internet of Things Innovation



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June 12, 2020

The view of the European Commission



Franck Boissière
DG CONNECT
European Commission



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The Role of Standards in accelerating innovation

Advancing the digital transformation
of European industry

Rolf Riemenschneider/Franck Boissière

DG CONNECT

A portrait of Ursula von der Leyen, President of the European Commission, with blonde hair, wearing a white jacket, looking upwards and to the right with a slight smile.

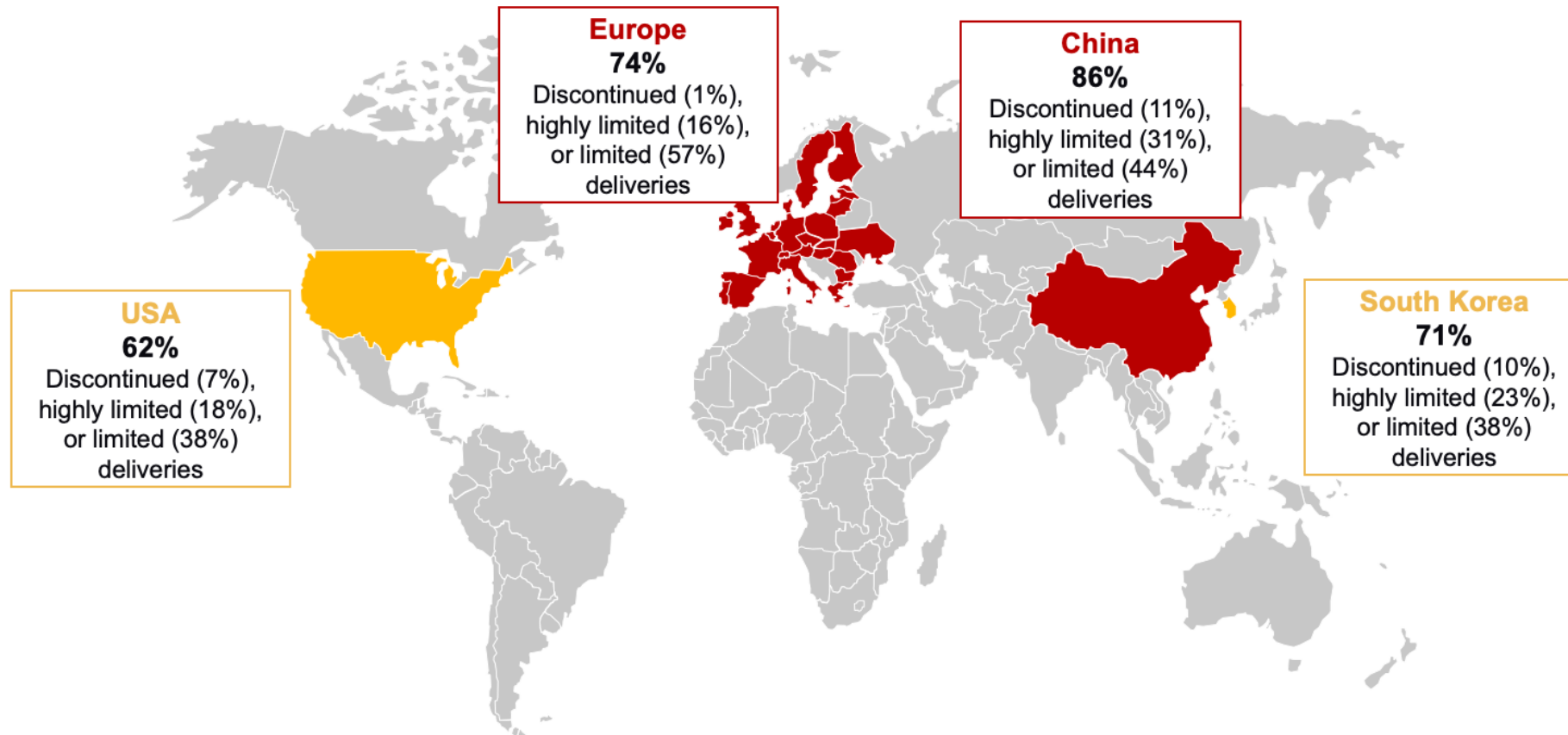
Long-term digital strategy ,Fit for the Digital Age‘ “

Missions statement for the New Commission

- Strengthening Europe's **technological leadership and strategic autonomy**..
Supported by **DG GROW** and **DG CONNECT**
- On enhancing **Europe's technological sovereignty**. investing in the next frontier of technologies,
blockchain, high-performance computing, algorithms, data-sharing, data-usage tools, 5G standards, ..
- **to lead reflections on these issues in key value chains**,
including in the defense and space sectors,
common standards and future trends.

- → A proposal for **€750 Mill. European Recovery Fund**
,Next Generation EU‘

Disruptive effect of Covid-19 crisis on Global Supply Chains



Source: Bitkom Research 2020 | Base: All respondents for whom supplies from the selected country are relevant and which are aware of the disruptions. China (n=229), South Korea (n=87), USA (n=164), Europe (n=208, no data available for Spain and Germany)

2020 Digital Economy and Society Index (DESI)

<https://ec.europa.eu/digital-single-market/en/desi>

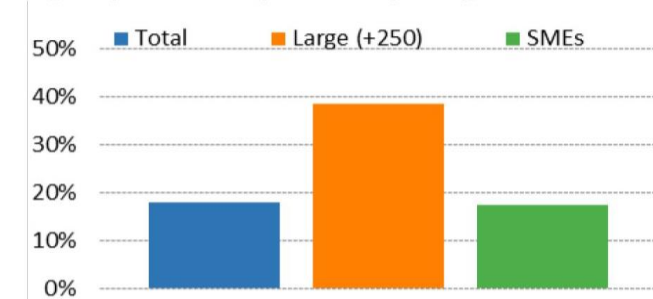


*“The coronavirus crisis has demonstrated **how crucial it is for citizens and businesses to be connected** and to be able to interact with each other online. We will continue to work with Member States to identify areas where more investment is needed so that all Europeans can benefit from digital services and innovations.”*



*“The data we publish today shows that **industry is using digital solutions now more than ever**. We need to **ensure this is also the case for small and medium businesses** and that the most advanced digital technologies are deployed throughout the economy.”*

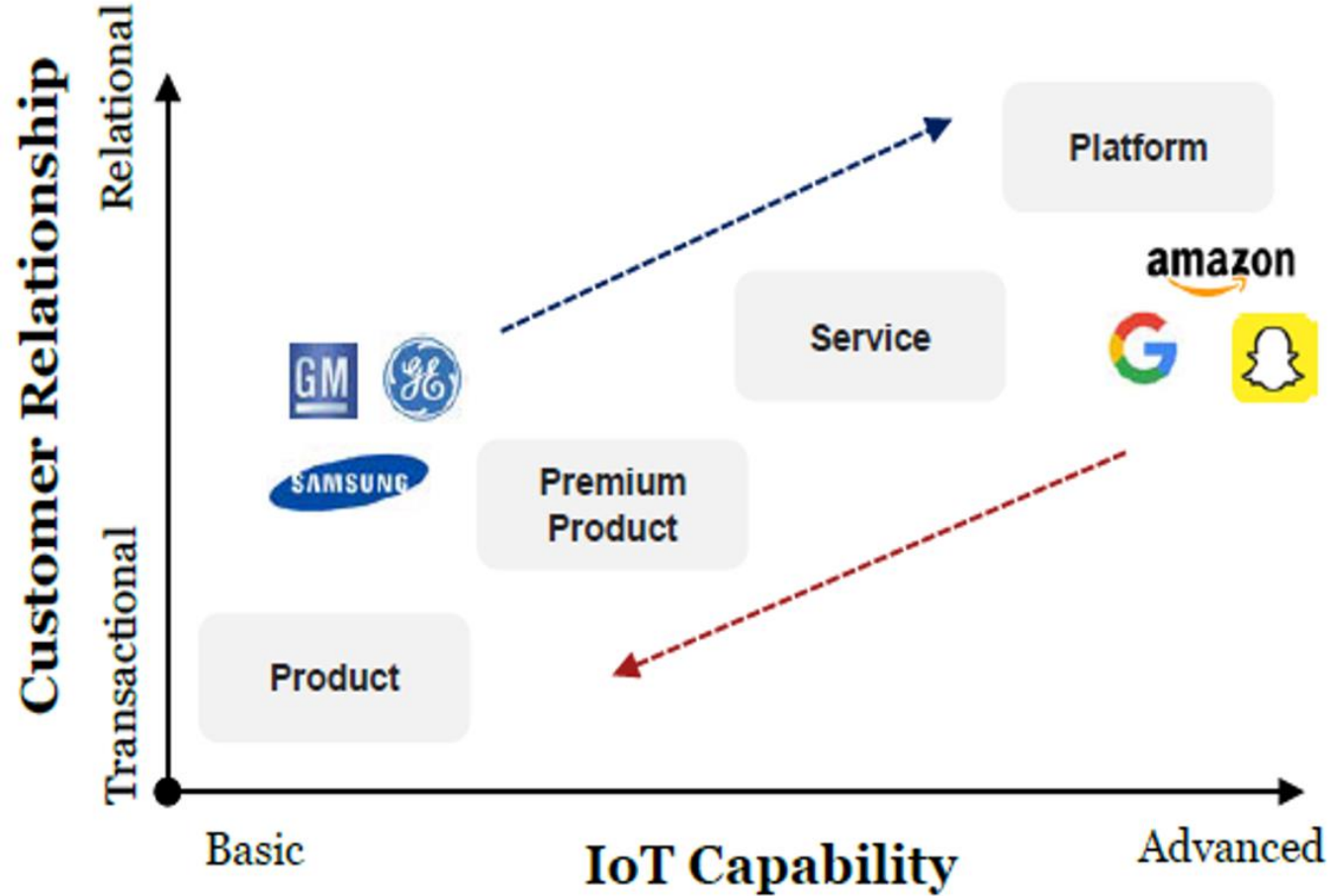
Figure 9 Cloud computing services of medium-high sophistication (% of enterprises), 2018



Source: Eurostat, Community survey on ICT usage and e-commerce in enterprises.

Enterprises are becoming more and more digitised, 38.5% of large companies already rely on advanced cloud services and 32.7% use big data analytics. However, **SMEs do not yet use these digital technologies**, as only 17% of them use cloud services and only 12% big data analytics.

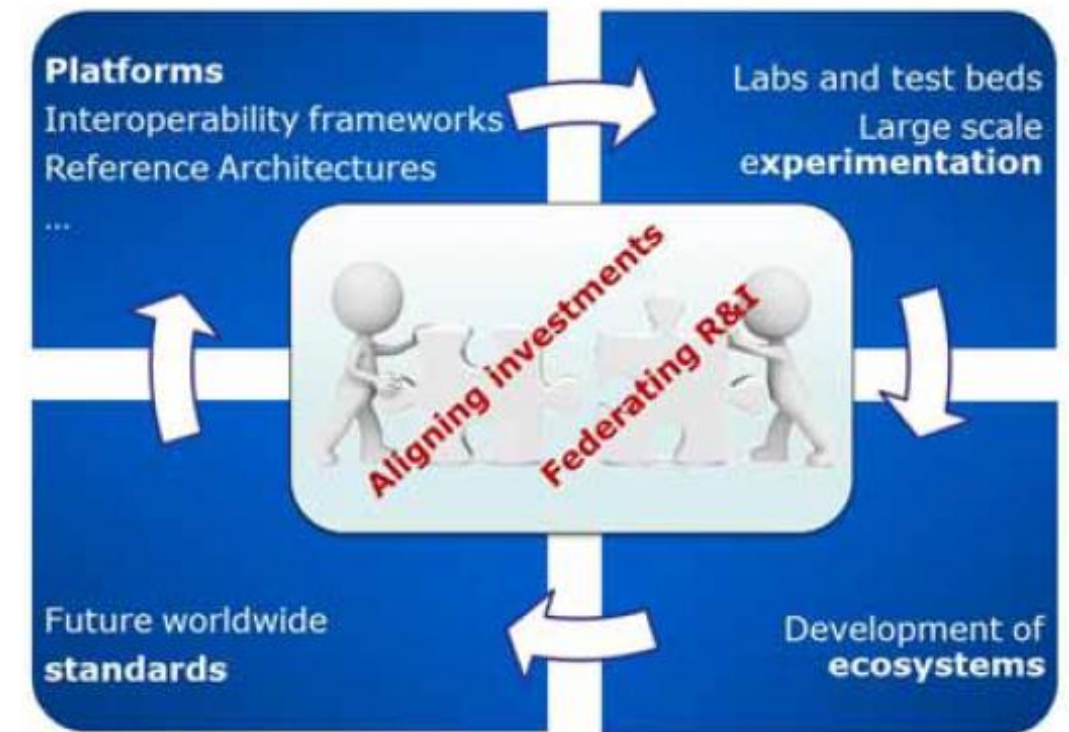
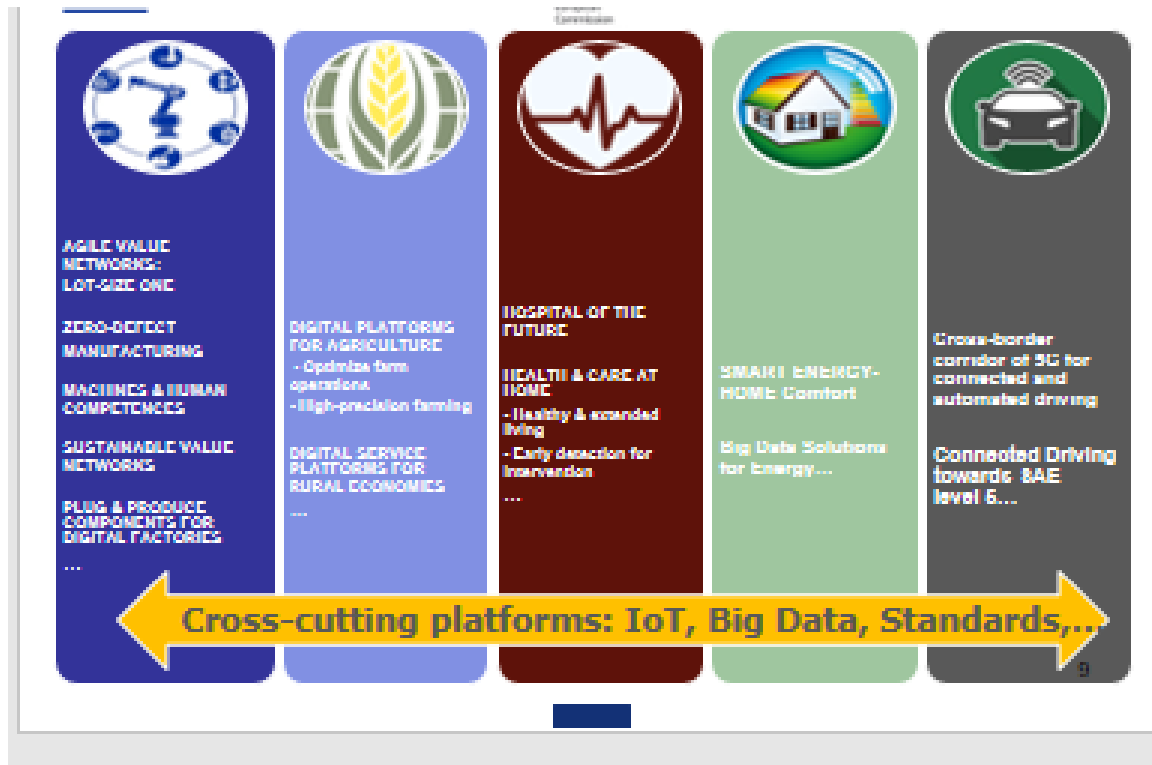
Exit Strategy from COVID-19 Crisis: Boost on Usage of Digital Platform Services



- Accelerated adoption of Digital Platforms
- Products and services cutting across sectorial silos.
- Focus on agility of supply chains and localisation of markets
- **IoT + AI as enabler for contactless user experience**
 - IoT use cases have proliferated amid the pandemic
 - IoT and AI enabled applications can help automate processes, track and manage assets

Source: PWC study

Digital Platforms & Pilots Work Programme 2018-20



- **Horizon 2020 (300 M€ for 2018-20)**
- Next generation platform building and piloting through large scale federating projects
- Common EU-wide strategies pooling resources

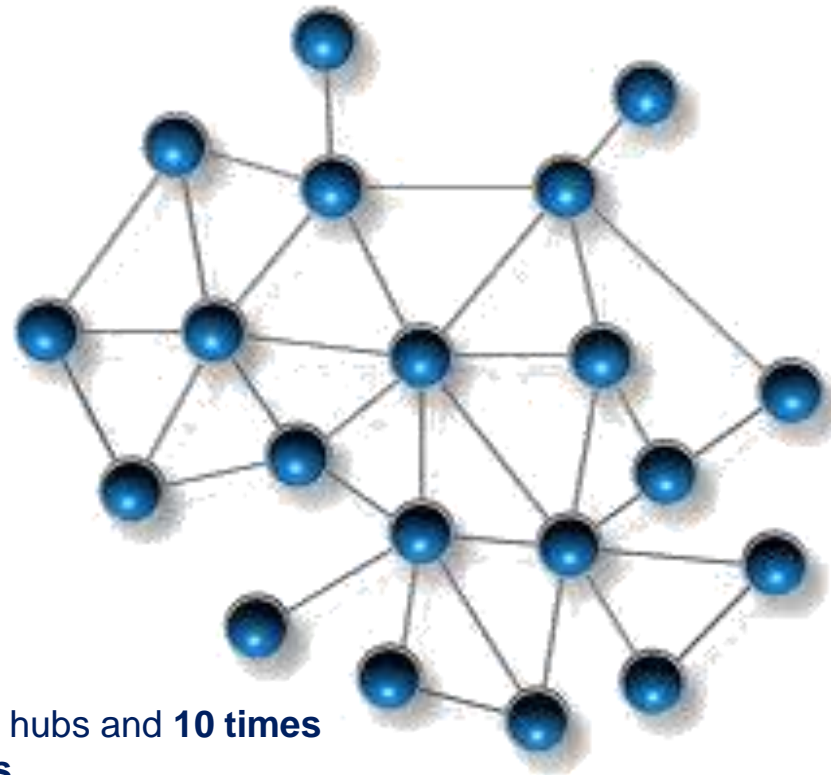
See <https://ec.europa.eu/digital-single-market/en/industrial-platforms-and-large-scale-pilots>

Digital Innovation Hubs: Towards organic Growth

"Ensure that every business in Europe, whatever its sector of activity, wherever located and whatever its size, can take full advantage of digital innovations and competences"

Member States & regions:
build-up/strengthening of
national and regional
structures of digital innovation
hubs

- particular attention to **SMEs**
- Ensure companies can **access** advanced technologies and enhance their **digital competences**
- **€100 million per year (EU)** of support to the hubs and **10 times more from the Member States and regions**



Commission:

- Set up a pan-European network of Digital Innovation Hubs
- Support activities *such as cross-border experiments, catalogue and assistance in the creation of hubs*

BOOST4.0: Towards a European Industrial Data Space



Pillars



Global
Standards



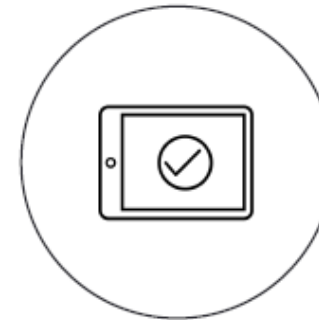
Secure Digital
Infrastructures



Trusted Big Data
Middleware



Digital Manufacturing
Platforms



Certification

Challenges to the IoT ecosystem and to standardisation

Choreography for the Session

Presentations

New challenges in light of Digital Data Strategy
Experience of using an architecture model in the open calls ...
Disruption in the industry value chains
Evolving architecture models

- Response of SMEs/start-ups to open calls
- Use of semantic architecture models and standards
- Innovation hubs to support local ecosystems
- Need for co-design supportive architectures

Panel Discussion

- Remedial actions on pilots and platforms
- Proposed Actions directed to support recovery
- Accelerated up-take of digital during recovery
- Changes in standardisation landscape
- Need of Public Intervention in Key Areas

Thank you

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June 12, 2020

10.15. New challenges for eHealth and Ageing Well



Sergio Guillén
MySphera
ACTIVAGE



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Webinar

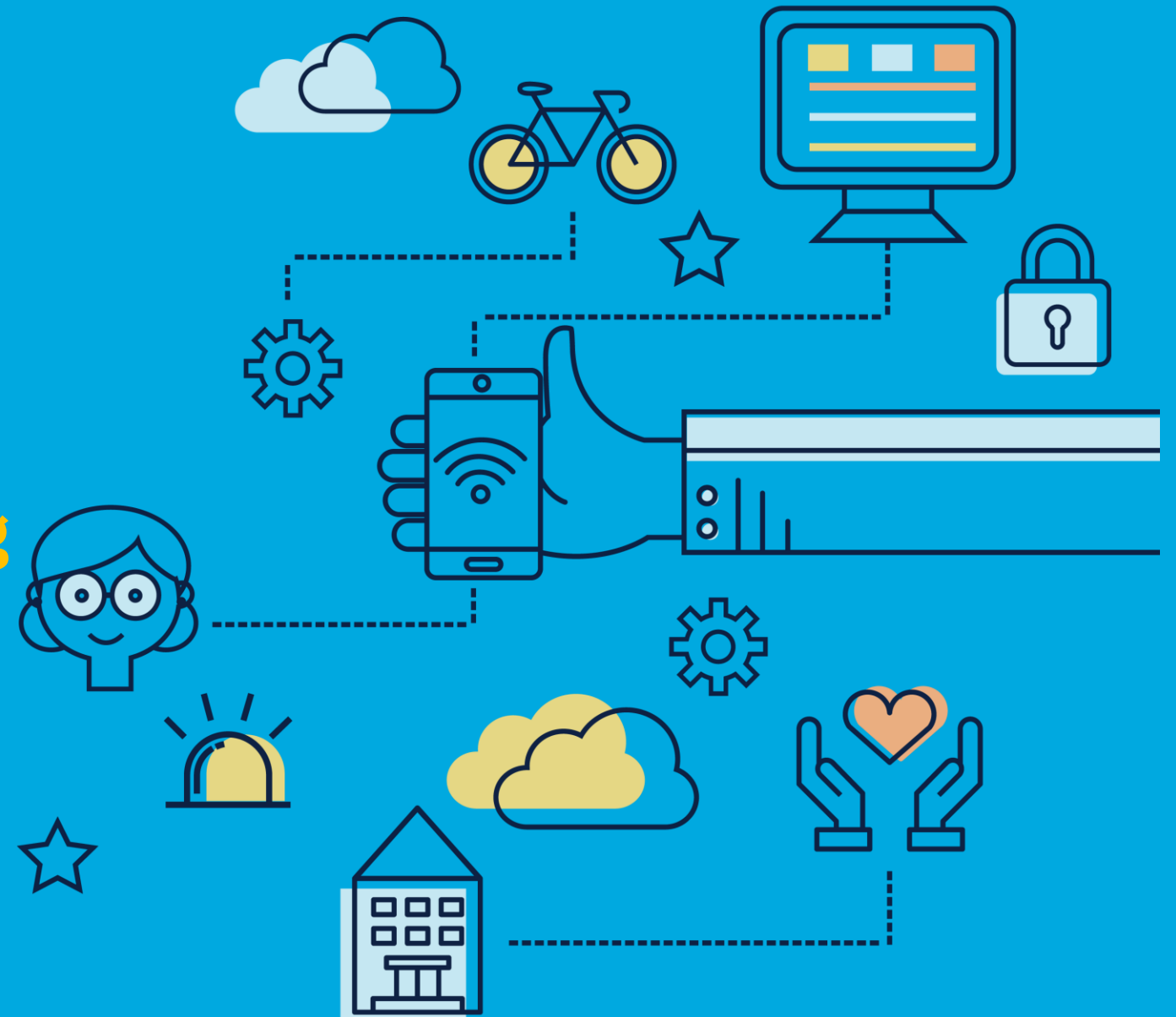
The role of standards in accelerating innovation The case of IoT/IIoT

ACTOVAGE
PROJECT

Session 1

New challenges for eHealth and Ageing Well

Sergio Guillen
MYSPHERA
(sguillen@mysphera.com)
20 th June 2020



ACTIVAGE
PROJECT

2017-2020



GATEKEEPER

2019-2023

- LSP project on IoT for Smart living Environments for ageing well
 - Main IoT technology innovation: **AIOTES**, a framework for semantic interoperability across IoT platforms for Active Ageing
 - Target market: Senior people population (100M) and Care Service Providers, IoT industry/Medtech/SME
 - 8.000 users
-
- LSP project on AI and Big Data for early detection of health risks and intervention for prevention and care on ageing populations
 - Main IoT technology innovation: **transition towards W3C - WoT architectural approach - Trust authority - Multisided Marketplace**
 - Target market: Senior people population (100M), health care system, IoT industry/Medtech/SME
 - Planned 50.000 users

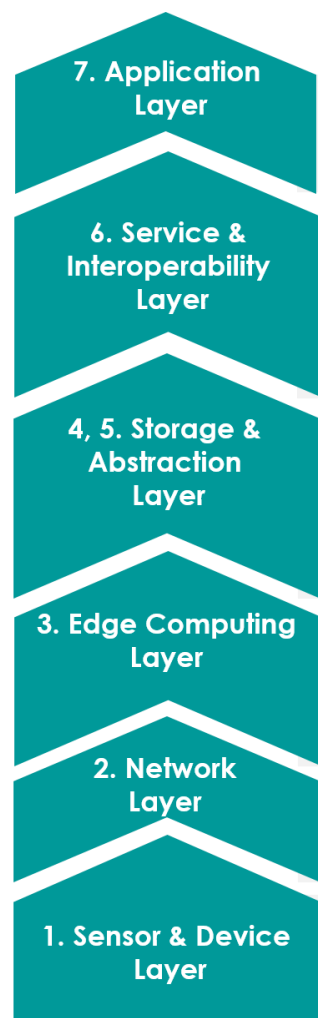


AIOTES

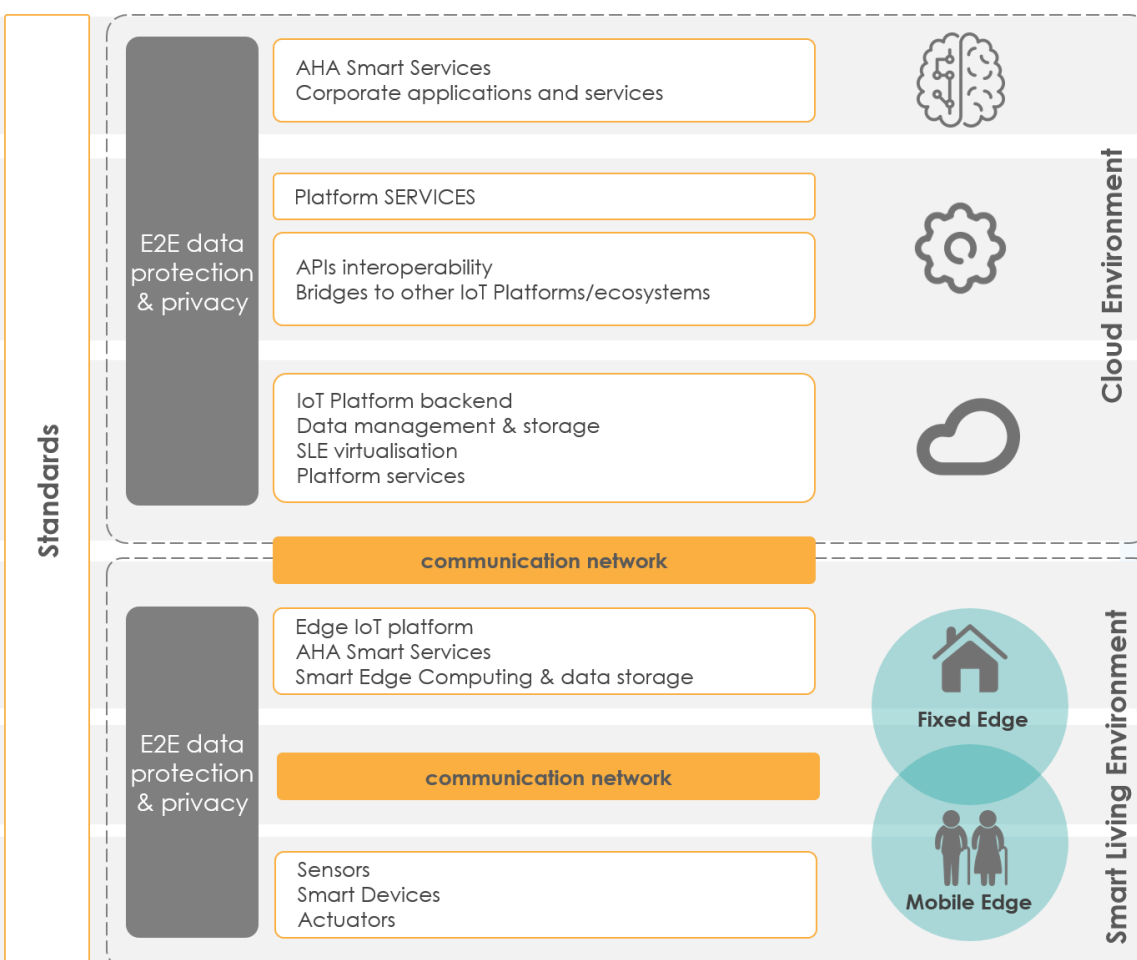
the LSP IoT Reference Architecture Communication Model

ACTIVAGE PROJECT

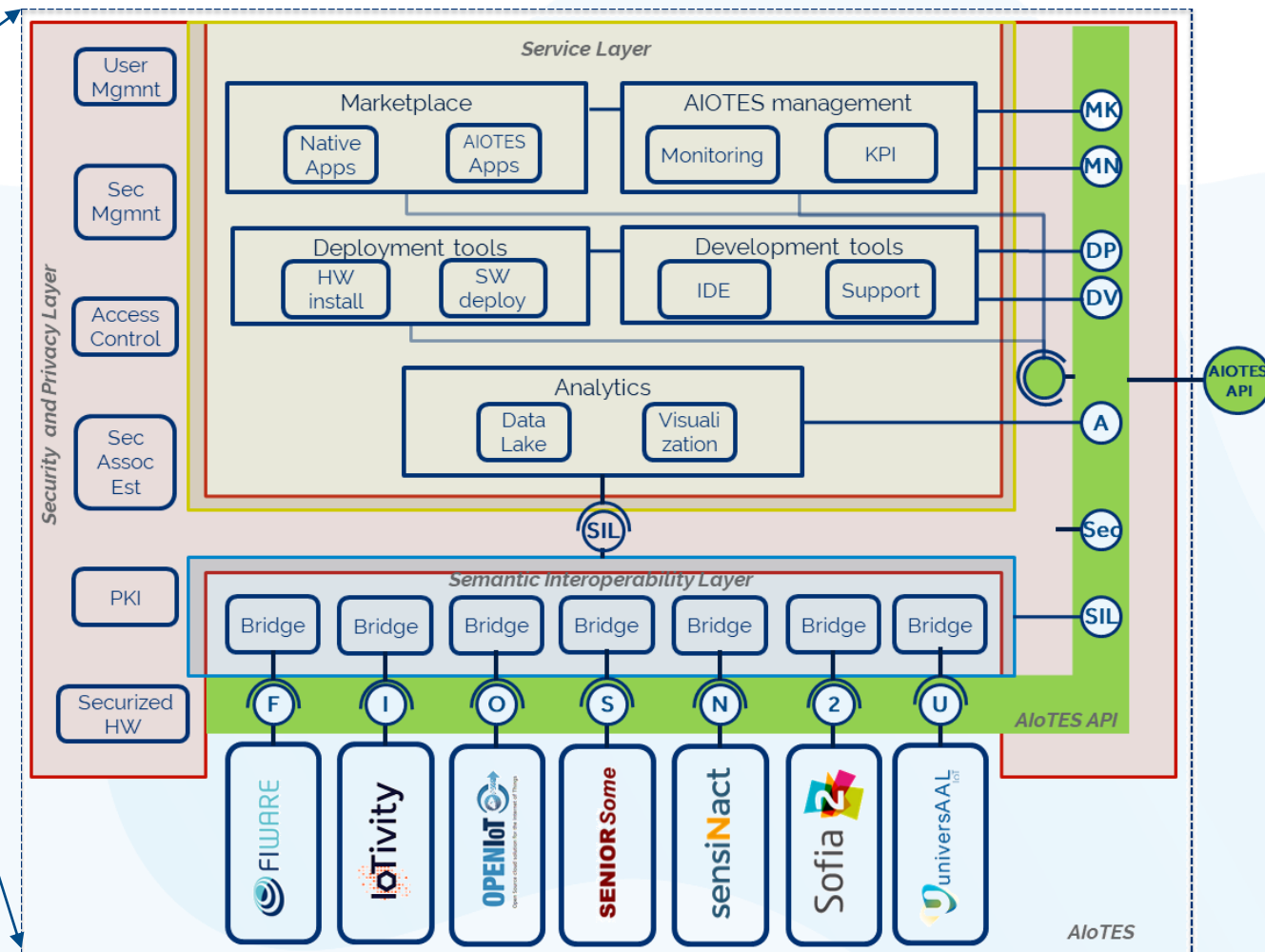
STANDARD IoT



STANDARD IoT 4 ACTIVE AGEING



AIOTES SEMANTIC INTEROPERABILITY LAYER

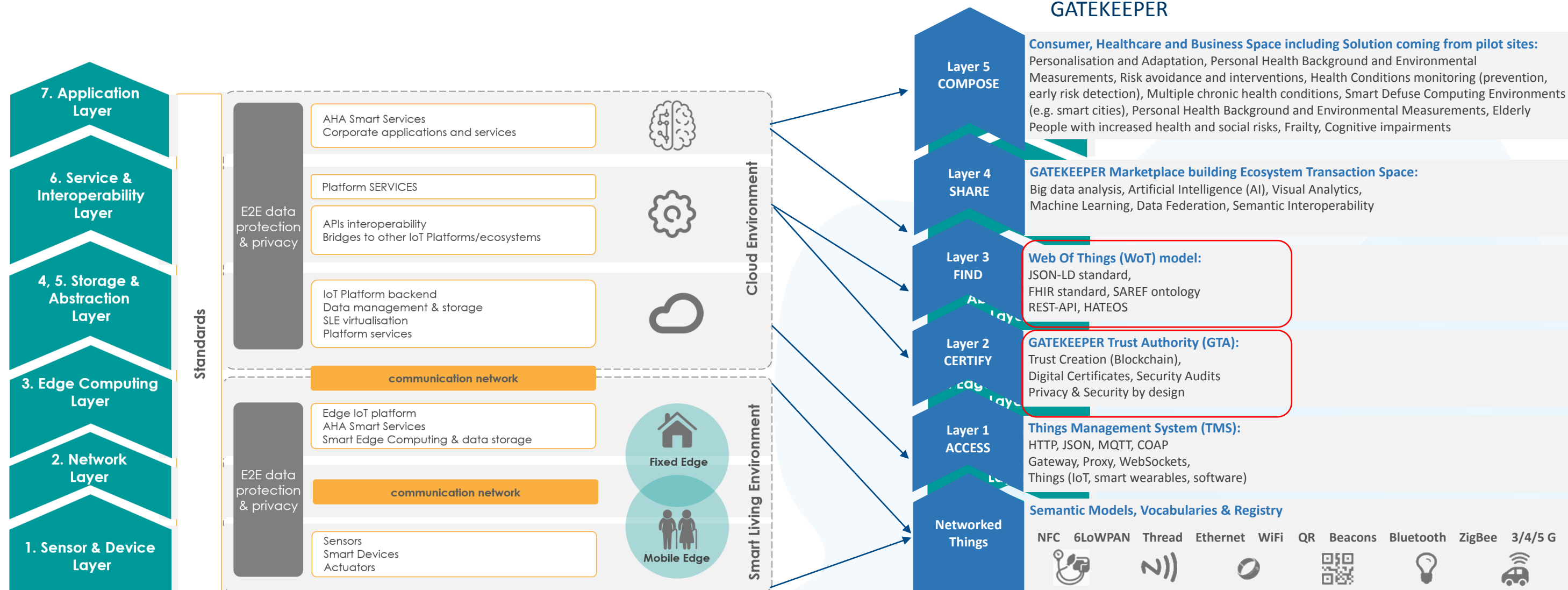


GATEKEEPER

Layer Mapping to Reference architecture (and AIOTES)

WOT LAYER ARCHITECTURE IN
GATEKEEPER

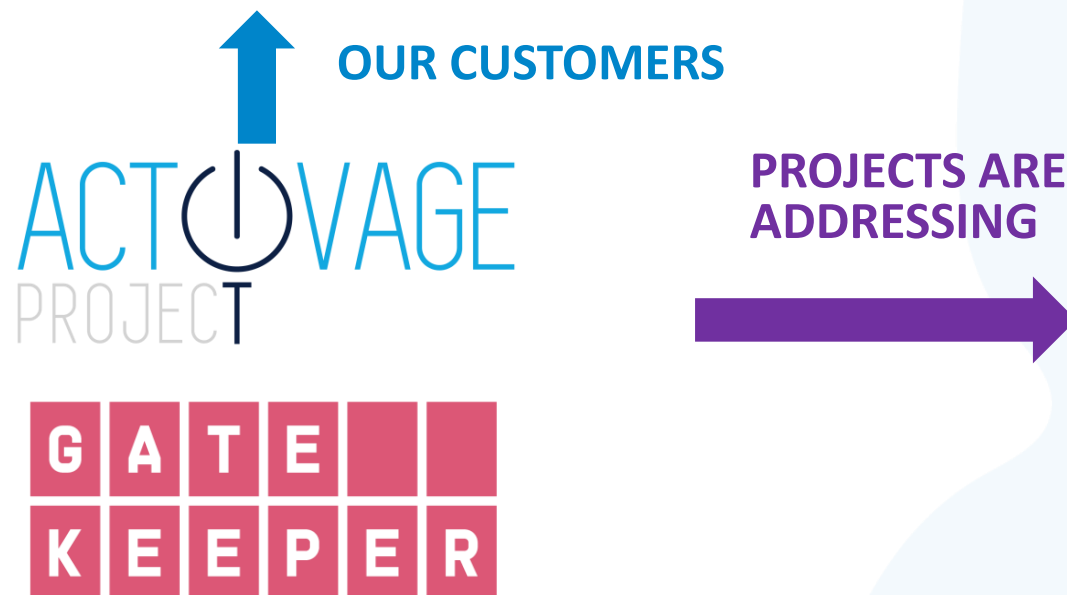
ACTIVAGE
PROJECT



IMPACT OF COVID-19 ON PROJECT'S CUSTOMERS/TARGETS

The COVID-19 pandemic is impacting the global population in drastic ways. Older people are facing the most threats and challenges at this time.

- Over 95% of these deaths occurred in those older than 60 years.
- More than 50% of all fatalities involved people aged 80 years or older.
- Reports show that 8 out of 10 deaths are occurring in individuals with at least one comorbidity
- Higher % of infections and deaths in individuals living in nursing homes..
- During times of isolation and quarantine, older people need safe access to nutritious food, basic supplies, money, medicine to support their physical health, and social care
- It's very important maintaining a healthy lifestyle while in self-quarantine or in isolation. Older people are often dependent on the support from carers in maintaining daily routines, staying active, and eating nutritious, balanced meals
- Mental health during anxious times is also a key consideration. Finding ways to stay socially connected is even more important for this age group as many do not have easy access to digital platforms.
- Home care might save lives
- Early detection and symptoms progress surveillance



IMPACT OF COVID-19 NEW CHALLENGES

INTEROPERABILITY

- At the edge, lack of interoperability

DATA SPACES

- Align with EU Data Space Framework in the health care sector

GDPR / MDR

- Implementation across IoT levels

HOME DIGITISING

- Connectivity
- SLE 4.0 - Embedded AI
- Training

RURAL AREAS

- Connectivity
- Services

MANY MORE IN THE HEALTH CARE DOMAIN

By Design

Refocus

Refocus

By Design / Open Calls

Future

ACTIVAGE
PROJECT

G A T E
K E E P E R



ACTIVAGE.ORG



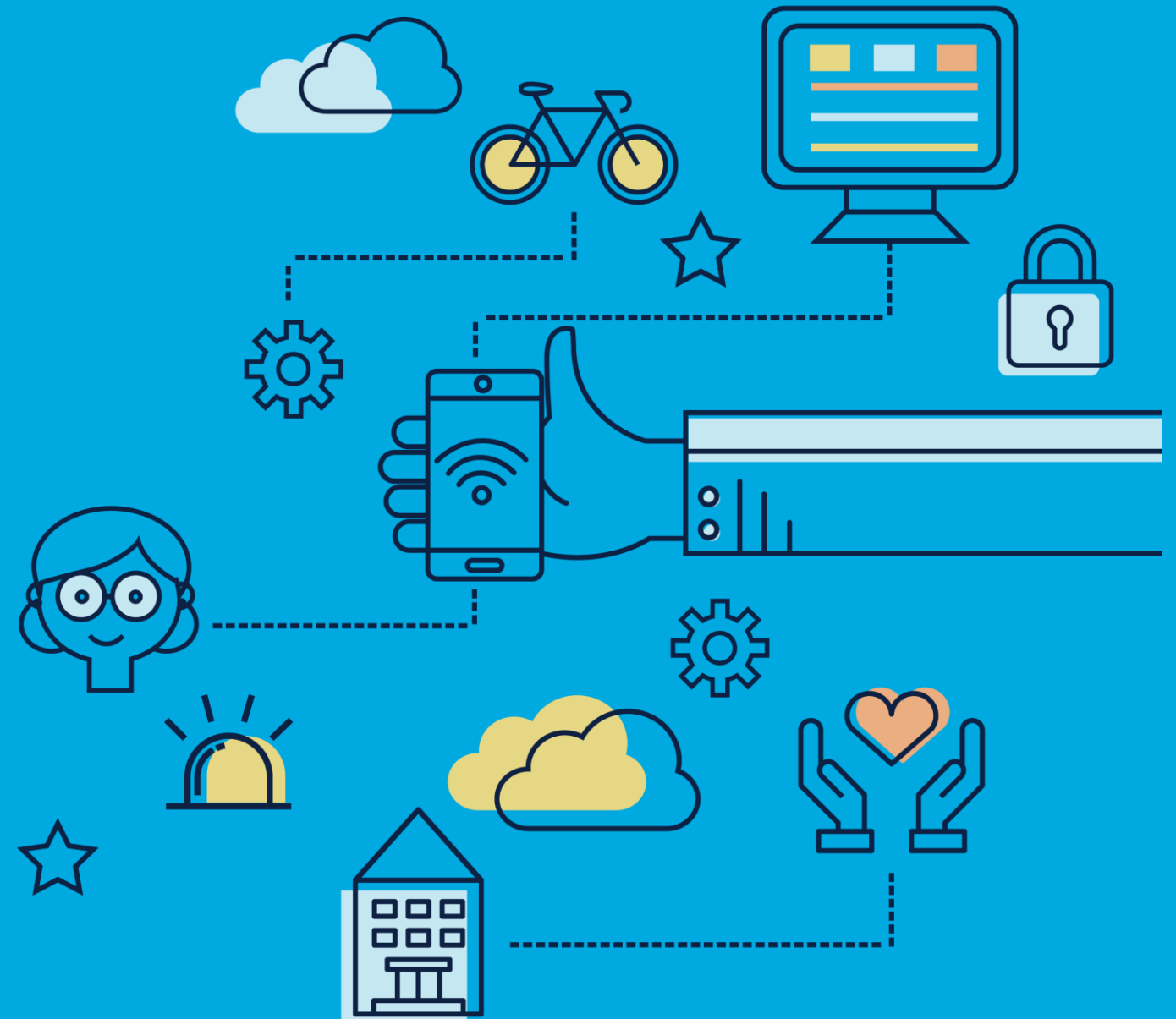
Webinar

The role of standards in accelerating innovation The case of IoT/IIoT

Thank you for your attention

Sergio Guillen
MYSPHERA
(sguillen@mysphera.com)
20 th June 2020

ACTOVAGE
PROJECT



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June 12, 2020

10.23 The impact on Agriculture and food supply



George Beers
Wageningen University
IoF2020

Advancing the Digital Transformation of European Industry Webinar 2020

The role of standards in accelerating innovation- The case of IoT/IloT

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COVID-19 TASK FORCE REPORT

INNOVATIVE SOLUTIONS. RESILIENT SUPPLY CHAIN. FACTUAL NEWS.

PERFORMED ACTIONS

Identify & support use-case solutions



IoF2020 solution that can help manage COVID-19 impacts on the food supply chain or provide data

SOLUTIONS

- Sent survey to identify use-case solutions
- Received 29 responses from 24 use-cases
- Task Force selected 13 to contact and assess

Communicate real situation + successes



News that show direct proven impact of COVID-19 and potential solutions to fight challenges

NEWS

- Created Basecamp forum to collect news
- Prepared communication plan with visuals, hashtags, channels
- Selected 2 news already to be published soon

IOF2020 COVID-19

Communication Objectives

- Providing insights about the impact of COVID-19 on the food & farm supply chain
- Sharing the story of one of our partners. In this way best practices and inspirational examples of how to deal with COVID-19 measures are shared.

Challenges

- Limited information on available stock and projected stock
- Food waste due to long waiting time at borders
- Food safety issues due to expired shelf-life for fresh goods
- Need for tracking food supply on the road
- Missing manual labour for harvesting, seeding etc.
- Missing labour for quality controls and food safety checks
- Missing skills of workers and volunteers to help on farms
- Missing skills of farmers to quickly use digital tools
- Other



Information sources

The information comes from contributions / interviews from IoF2020 use cases and ecosystem chairs

Our target audience is

- EU Commission (give overview of current situation)
- Farmers (interested to learn from solutions)
- Service Providers

POTENTIAL SOLUTIONS

5.5 - Feed supply chain management Spain	Open source algorithm for optimal pick-up/delivery routes for health care centers to collect protective clothing	SOLUTION AVAILABLE NEWS FEATURE IN PREPARATION
2.1 - Grazing Cow Monitor Netherlands	Offer GPS trackers measuring temperature + humidity to control supply chains	SOLUTION AVAILABLE NEWS FEATURE IN PREPARATION
1.7 - Traceability for food and feed logistics Belgium, France, Netherlands, Poland	No paper signing needed + logistics manager can work from home => Reduced contact	SHORT-TERM AVAILABILITY NEWS FEATURE IN PREPARATION
3.3 - Automated olive chain Spain, Greece	Track workers changing between farms to quick relocate if COVID-19 case detected, connect to virus tests	SHORT-TERM AVAILABILITY NEWS FEATURE PLANNED
3.5 - Smart orchard spray application Spain, Hungary, Poland, Portugal	Use spraying equipment for disinfection of areas if needed	SOLUTION AVAILABLE NO NEWS PLANNED
2.4 - Remote milk quality Netherlands	Use number samples as indicators of milk supply and demand situation	SOLUTION AVAILABLE NO NEWS PLANNED
3.4 - Intelligent fruit logistics Germany, Netherlands	Data on supply chain behaviour might be available to authorities to forecast supply + local sales possible	SHORT-TERM AVAILABILITY NEWS FEATURE PLANNED
3.6 - Beverage integrity tracking Italy, Portugal, Romania	Track transport conditions and change shelf-life dynamically + reduced need for checking personnel	SHORT-TERM AVAILABILITY NEWS FEATURE PLANNED

POTENTIAL SOLUTIONS

1.5 - Potato processing data exchange

Netherlands, Belgium, Poland

Yield prediction for potatoes and forecast of demand to manage proper supply and predict issues

MID-TERM AVAILABILITY

NO NEWS PLANNED

2.2 - Happy Cow

Netherlands

Limited physical contact through data sharing with vets and advisors

MID-TERM AVAILABILITY

NO NEWS PLANNED

5.6 - Interoperable pig tracking

Sweden, Spain, Switzerland

Hopu maybe interesting partner to develop quick solutions => not yet checked

MID-TERM AVAILABILITY

NO NEWS PLANNED

5.4 Decision-making optimisation in beef supply chain

Bulgaria, Croatia, Ireland, Portugal

Support farmers face declining demand from restaurants + solution can help to deliver to new customers directly

MID-TERM AVAILABILITY

NO NEWS PLANNED

3.1 - Fresh Table Grapes Chain

Italy, Greece, Belgium

Blow solution to track shelf-life of fresh produces => not yet checked

MID-TERM AVAILABILITY

NO NEWS PLANNED

PROPOSED Use Case extensions for Covid-19

Workforces:

1. Health registration and control of workers
2. Data Sharing on available workforces

Logistics:

3. Changing patterns in movement of boxes

Current status: ideas & first drafts for proposals

Open Calls on Covid-19

2 Open calls, deadline June 3:

- DIH – Hackathons (31 proposals)
- SMEs – Solutions for Covid-19 challenges (78 proposals)

Status: Selection procedure started

TOPICS TO DISCUSS

In IoF2020 and SmartAgriHubs:

- Use of standards not an explicit issue related to Covid-19 actions
- Replicability to other sectors is (softly) included
- Proposals could be 'manipulated' before contracting
- Open for suggestions on pushing more standards

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June 12, 2020

10.31. ATLAS Reference Architecture for Data Exchange in Agriculture



Stefan Rilling
Fraunhofer IAIS
ATLAS project coordinator

Advancing the Digital Transformation of European Industry Webinar 2020

The role of standards in accelerating innovation- The case of IoT/IIoT

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The role of standards in accelerating innovation| +++

Online Workshop, June 12th 2020| +++

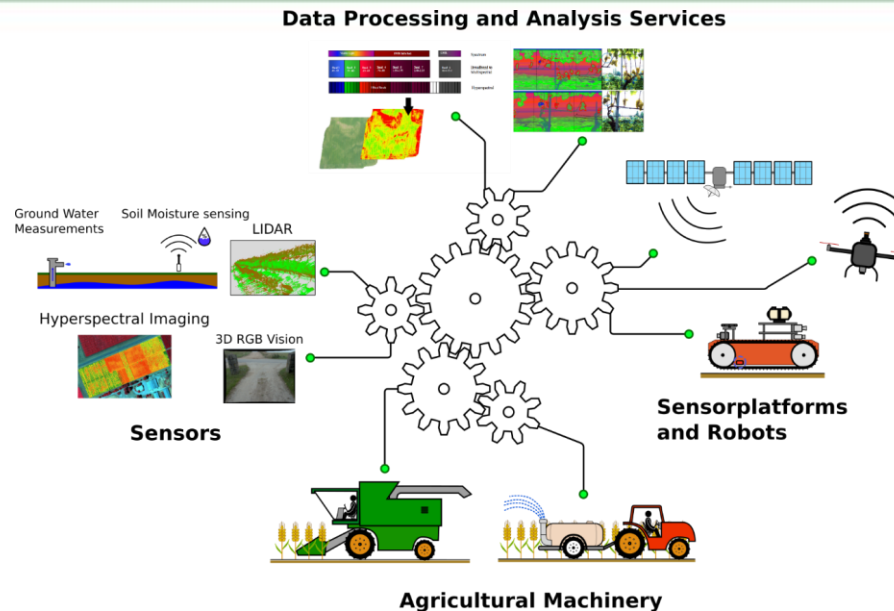
ATLAS Reference Architecture for Data Exchange in Agriculture

Stefan Rilling
Fraunhofer IAIS



This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement no. 857125.

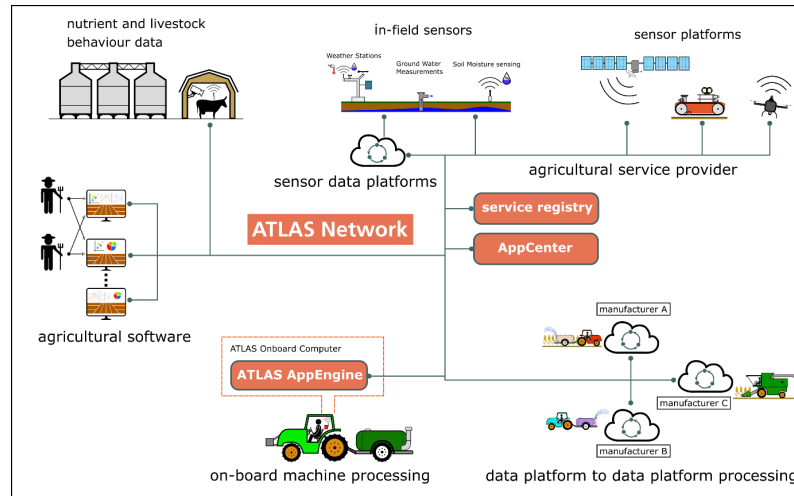
Interoperability in digital Agriculture



- **Very heterogeneous landscape of machines, sensors and data platforms**
- **Exchange of data between all entities is a key-capability**
- **Interoperability between**
 - Agricultural machines, sensors and data services



ATLAS Interoperability Architecture



INTERNATIONAL DATA
SPACES ASSOCIATION



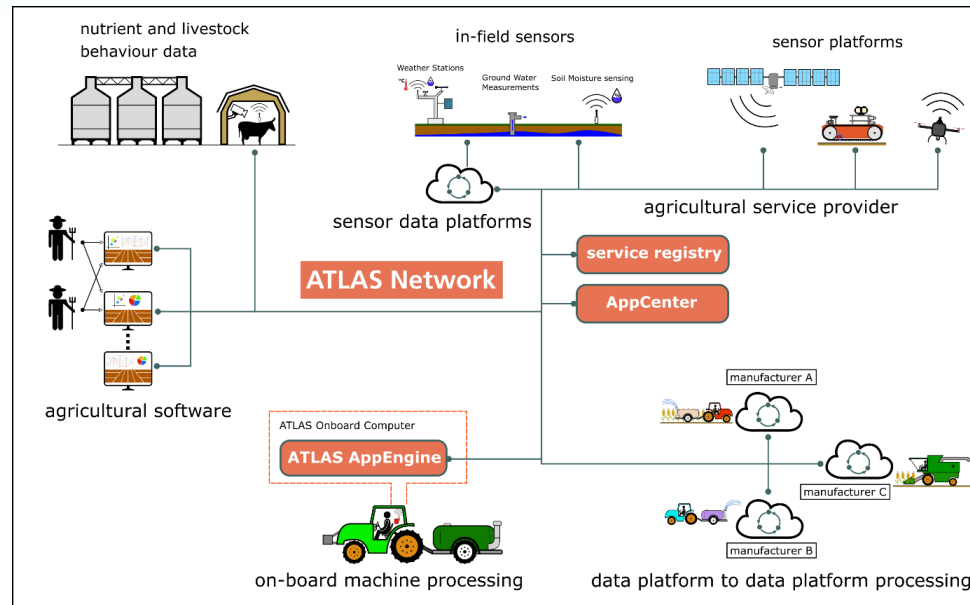
- **Trusted and autonomous participants**
 - Data sovereignty and full control over the data
- **Minimum of centralized components**
 - No data silos, no central data hubs
- **Data Exchange through dedicated connectors (Services)**
 - Simplified connection of supply and demand side
 - More data for optimized distribution of agricultural goods



The role of standards in accelerating innovation – The case of IoT/IIoT | +++

Online Workshop, June 12th 2020 | +++

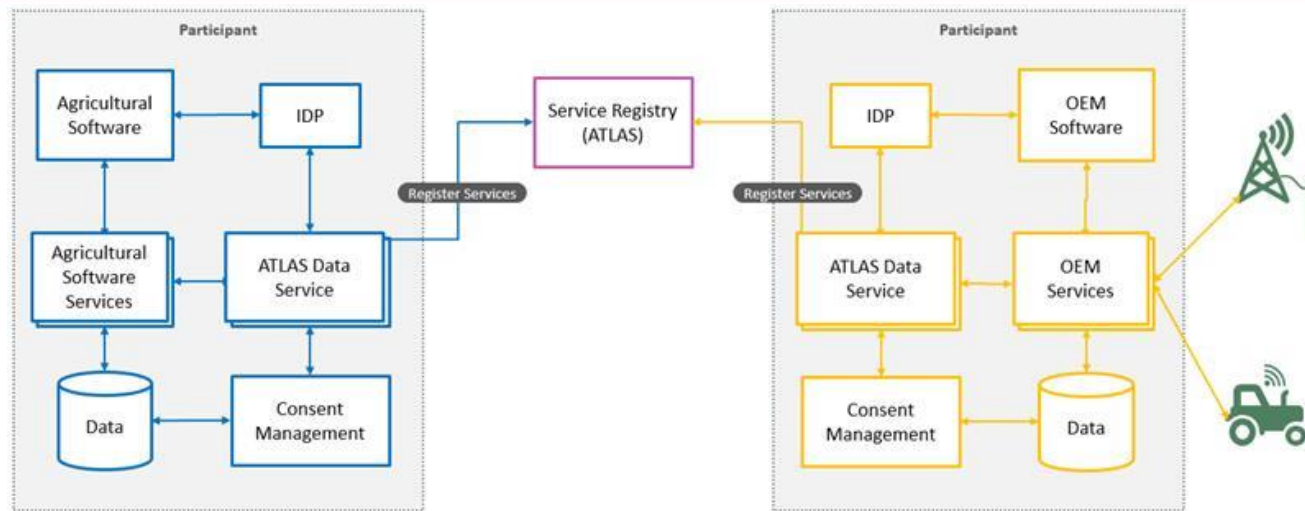
ATLAS Interoperability Architecture



- **High-level reference architecture Designed along concrete use-cases**
 - Collaborative development process between industry partners, software developers, agricultural service providers
- **Two basic concepts complementing each other:**
 - Data-platform based data exchange and processing
 - On-board / on-site computing and processing capabilities



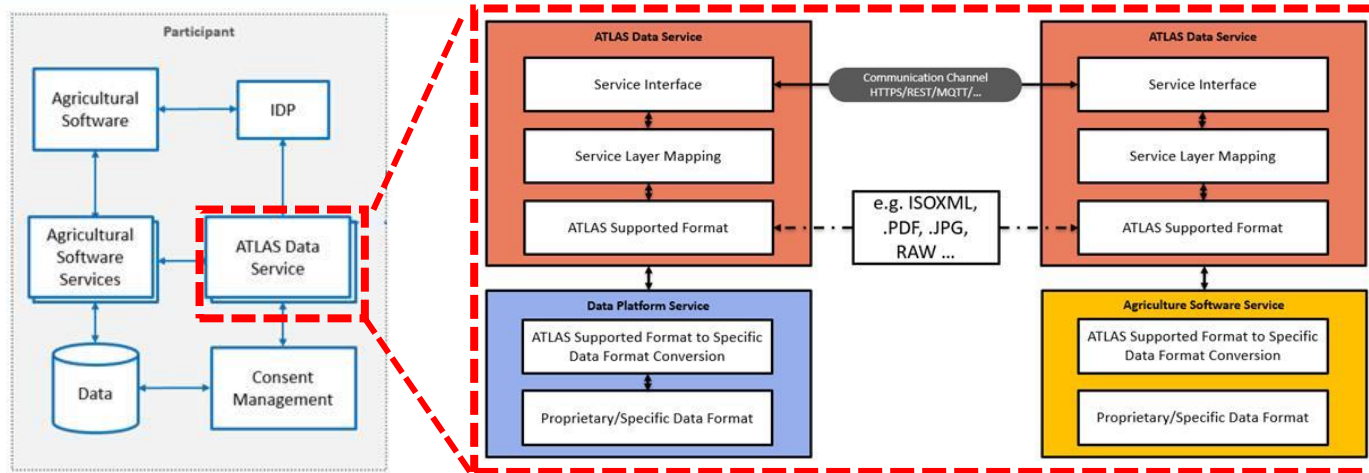
ATLAS Network Participants



- **Participants are defined through**
 - Own software and proprietary services
 - ATLAS Data Services
 - Identity Provider (IDP) service, consent management system, data storage capabilities
- **Service registry as central component serving as a trusted directory**



Data Services for Data Exchange between Participants



- **Data Service Instances as the central participant component**
 - Data- and transport-technology agnostic
 - Work towards standards for communication between ag equipment and software solutions
- **Technical specifications from mature output from several WPs as foundation for standards**
- **Rules from the EU regulatory framework**
 - Machinery Directive, RED, GDPR



Thank you!

WP3 - ATLAS Reference Architecture

Stefan Rilling
Fraunhofer IAIS

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June 12, 2020

10.39. Disruption in the industry value chains



Sergio Gusmeroli
Politecnico di Milano
OpenDEI



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OPENDEI

COVID-19 Impact on DEI: Disruption in the Industry Value Chains

Milano, June 12th 2020 | Sergio Gusmeroli (Coordination Team)

OPEN DEI: DEI Focus Area Cooperation with multi-sector IAs

*“The **DEI strategy** has to continue to ensure reinforcing the EU's competitiveness in digital technologies so that any industry in Europe, big or small, wherever situated and in any sector can fully benefit from digital innovations to upgrade its products, improve its processes and adapt its business models to the digital change”*

Mariya Gabriel, former Commissioner for Digital Economy and Society



OPEN DEI is a H2020 Coordination and Support Action

DT-ICT-13-2019 - Deadline Nov 2018

Start Date: June 2019

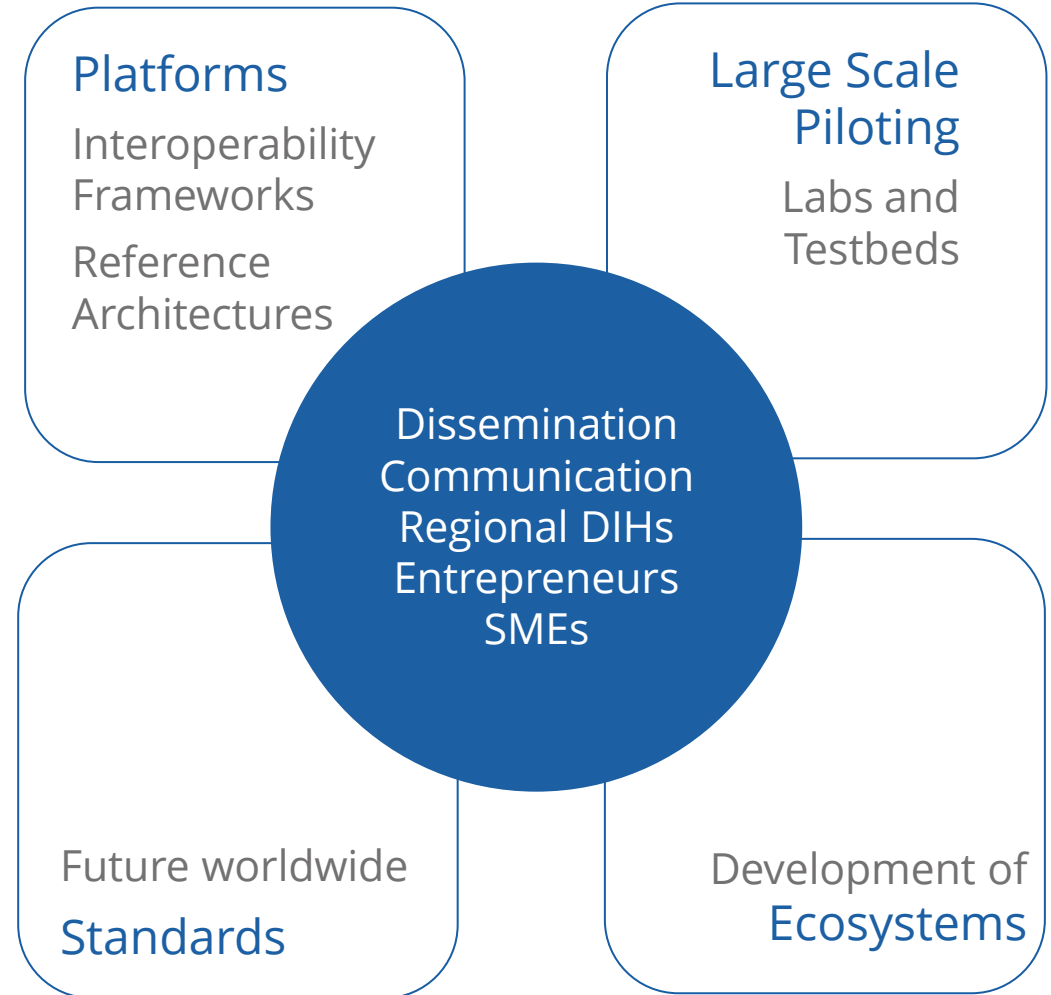
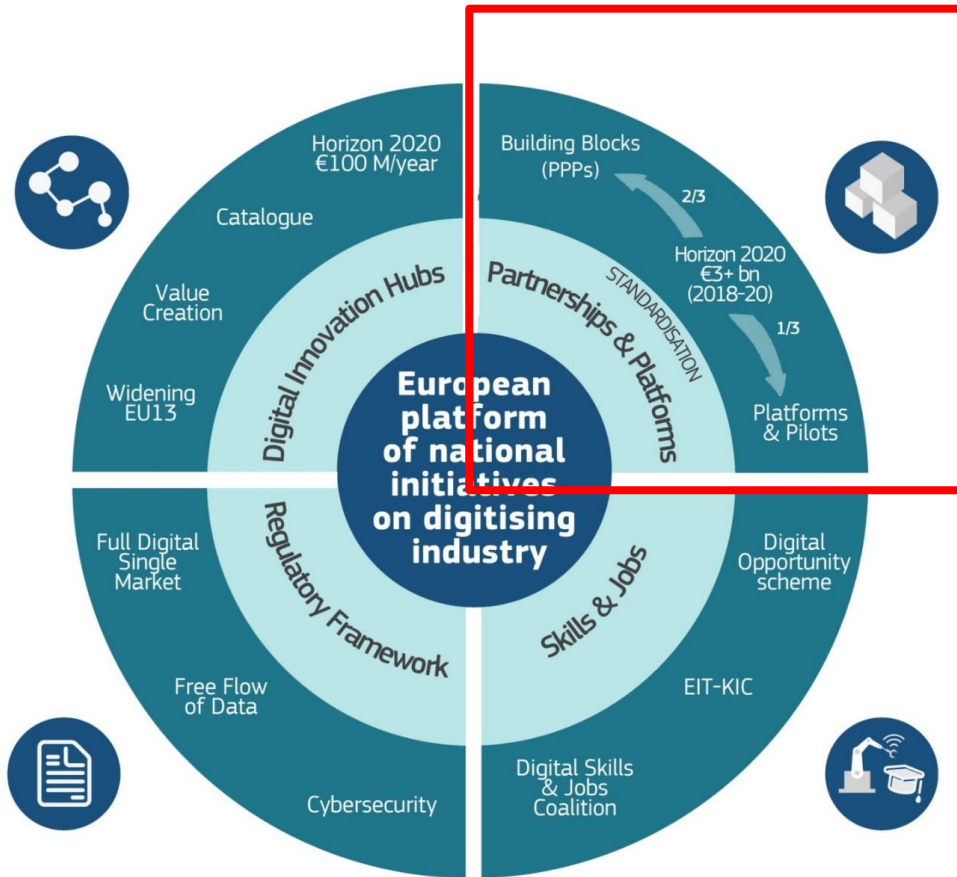
Duration: 36 Months

Consortium: 9 Beneficiaries

Coordinator: IDC (Giorgio Micheletti)



OPEN DEI: The CSA for cross-domain Platforms & Pilots



OPEN DEI: The Ecosystem of Innovation Actions

Agri-food



Energy



INTERFACE



Manufacturing



eFactory



smart human oriented platform
for connected factories

Health & Care



EU Coronavirus Response



information session
20 May 2020 – 14h00-16h30

EU #CORONAVIRUS RESPONSE

2nd call for an Expression of Interest

**in behaviour, socioeconomics, cohorts,
manufacturing, medical and digital solutions**

€122 million

#UnitedAgainstCoronavirus #StrongerTogether #GlobalResponse



*This information session will be recorded
and available for viewing after the event.*

The presentations will also be available.

*Questions by email only
during corresponding presentation
RTD-HEALTH-INFODAY@ec.europa.eu*

*Disclaimer: The information presented in the slides is indicative; applicants must refer to
the official call documents available on the EC's Funding and Tenders website*



OPE

Topic 1: Repurposing of Manufacturing



Topic 1: Repurposing of manufacturing for vital medical supplies and equipment

Carmine Marzano, DG R&I, unit F.3





Topic 1: Repurposing of Manufacturing, scope impact

Scope

- re-orientation and repurposing of **production capacities** to meet urgent needs
- repurposing, adaptation and ramp-up of **production lines** to quickly adjust to new and urgent production needs, notably medical equipment, diagnostic technologies already deployed based on advanced materials and/or biotechnologies, as well as service systems and automated systems of disinfection,
- Demonstrate **flexibility models for the supply chain** for the repurposing of production lines and proper risk management in case of disruption of supply chains,
- **Automation technologies** that are less dependent on work force present in factories, certification/ calibration/ accreditation of production lines that have been repurposed or restarted after a shutdown,
- **Qualification of operators/technicians** for new/repurposed production lines.

Expected Impact

- To foster industry's **adaptation capacity and resilience** in strategic sectors (e.g. manufacturing of medical equipment, PPE, etc.).
- Demonstrate a flexible **48-hour industrial response** capability for requalification or release of repurposed production lines.
- To support industry and interested parties, in particular SMEs, by **providing services** for design, assessment, testing and regulatory issues.
- Deliver results within 3-18 months to end-users at scale.
- Solutions should foresee their application to other industrial sectors that might be explored in future calls.



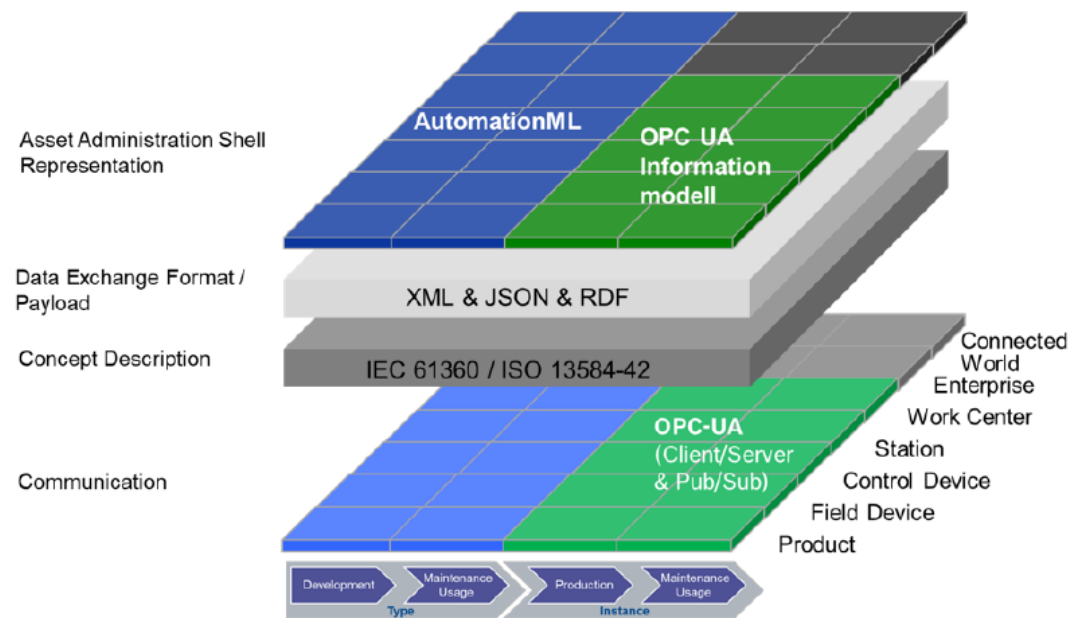
Standards: RAMI AAS as basis for Production Digital Twins



- Repurposing Production Capacity
- Virtual Commissioning and Ramp-up of Production Lines
- Automation and Social Distancing



Figure 54 Graphic View on Exchange Data Formats for the Asset Administration Shell²²



Source: Bosch Rexroth AG, Plattform Industrie 4.0



BOSCH
Invented for life



ISO 13584-42: 2010

Industrial automation systems and integration — Parts library — Part 42: Description methodology: Methodology for structuring parts families



Standards: IDSA Data Sovereignty for agile (AM) Value Chains

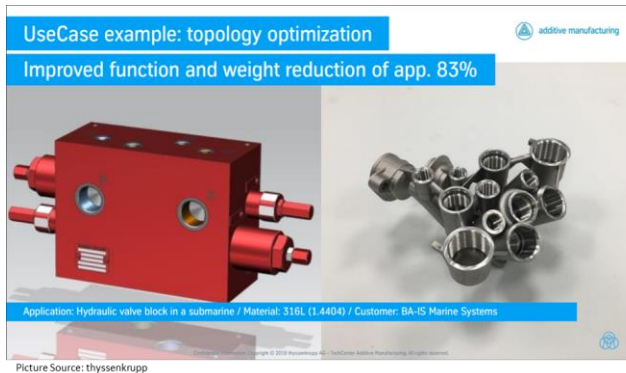


- Flexibility Models for the Supply Chain
- Qualification of Operators
- Additive Manufacturing

INTERNATIONAL DATA
SPACES ASSOCIATION



ThyssenKrupp



variety of steel components increases



supply chains become more dynamic



more and more 3D printing services also for metal parts

Engineering

Create a digital representation based on requirements



Service Composition

Choose from service landscape/ marketplace a set of fitting services (iterative)



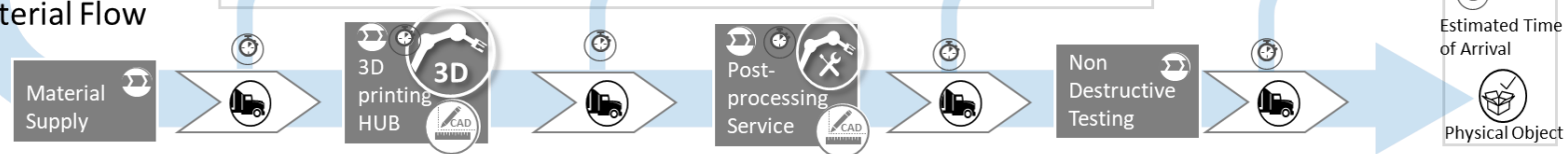
Ecosystem Enabling

Enable Findability, Accessibility, Interoperability and Usability of data assets



Information Flow
Material Flow

Logistics Service Provider



Alignment of planning and execution

By providing access to planning data of all participants in the value chain and in the supply chain, the planning processes and the execution process become better aligned. This leads to more flexibility, robustness and transparency.

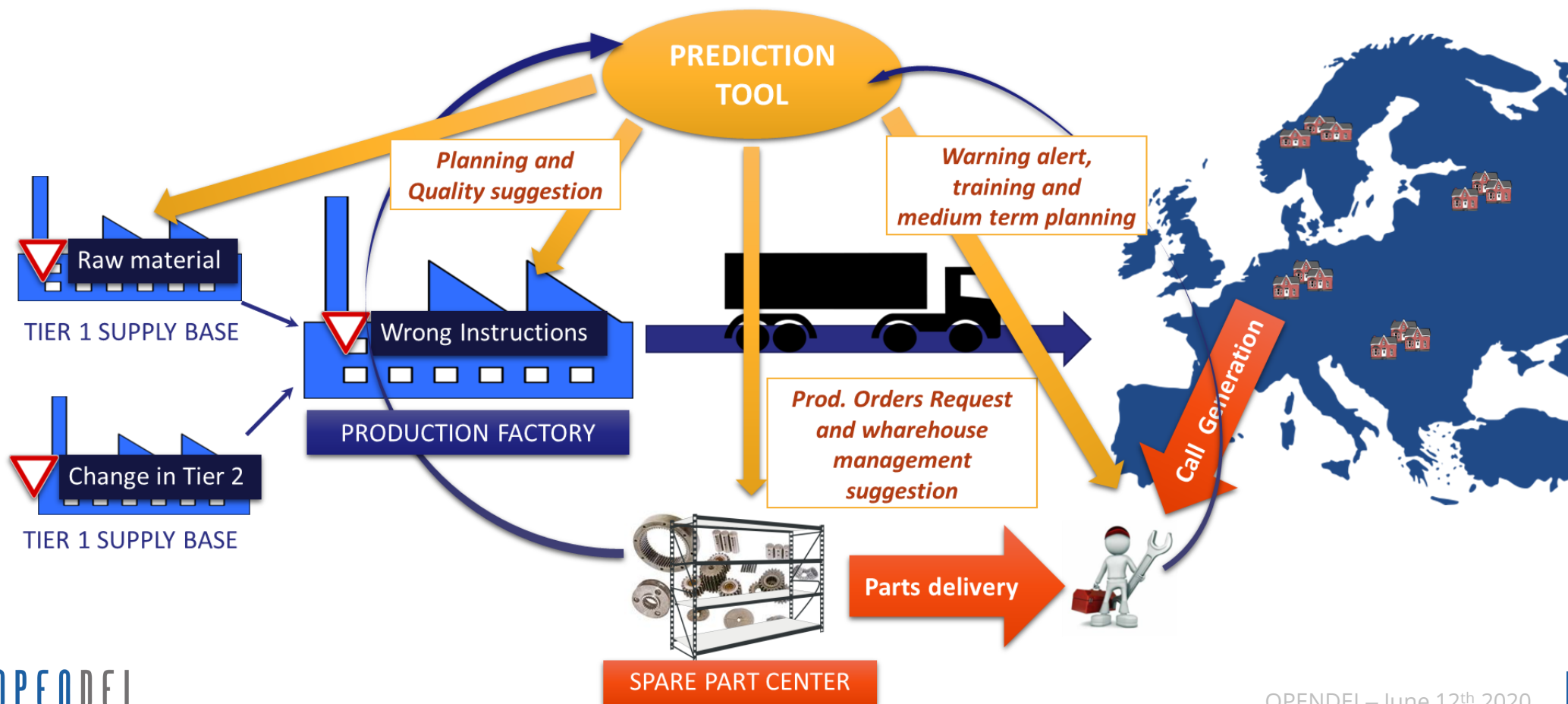
Standards: IDSA Data Sovereignty for agile Suppliers' Chain



INTERNATIONAL DATA
SPACES ASSOCIATION



- Flexibility Models for the Supply Chain
- Qualification of Operators
- Spare Parts Logistics and Operations





Contact

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LinkedIn

[OPEN DEI](https://www.linkedin.com/company/opendei)



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June 12, 2020

10.47. Addressing the need for
co-design supportive
architectures



Emmanuel Darmois
CommLedge
ETSI

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The role of standards in accelerating innovation

The case of IoT/IIoT

Advancing the Digital Transformation of European Industry Webinar 2020

Addressing the need for
co-design supportive architectures

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Impacts and Challenges

Perceived Impacts

- ✓ Major boost to the place of digitalized processes
 - ✓ Supply chains (e.g., industry, agriculture), eHealth, e-payment and not just video-conferencing !
- ✓ Key role of citizens involvement in the resilience of society and key systems
- ✓ Perceived areas for strong improvement of access to digitalized systems
 - ✓ Better support to SMEs (e.g., easy access, simplification), education, cities services, ...

Challenges

- ✓ Boosted digitalization of (IoT-based) systems and services
 - ✓ Streamlined, seamlessly interoperable (from physical to process levels), secure, privacy-supportive, ...
- ✓ Better involvement of non traditional actors
 - ✓ SMEs, citizens, small cities, rural communities, ...
- ✓ More efficient and simple ways to communicate between all involved stakeholders
- ✓ More coordinated involvement of the standardisation community

Citizens involvement

the example of ETSI STF 561



The problem

- ✓ How many smart city/community technology initiatives actually mention **citizens and their needs** like accessibility, security, privacy, services that function correctly and listen to them?
- ✓ Projects, research and industry factor in standards – but **how many standards factor in the citizen?**

The objectives

- ✓ Overview of citizen needs in smart communities
- ✓ Some basic principles as to how address them
- ✓ Recommendations to standardisation

An open process with stakeholder consultation

<https://standards4citizens.etsi.org/>

The need for co-design with citizens

- ✓ New approach needed to co-design with citizens the changes to city services and participate in smart city changes

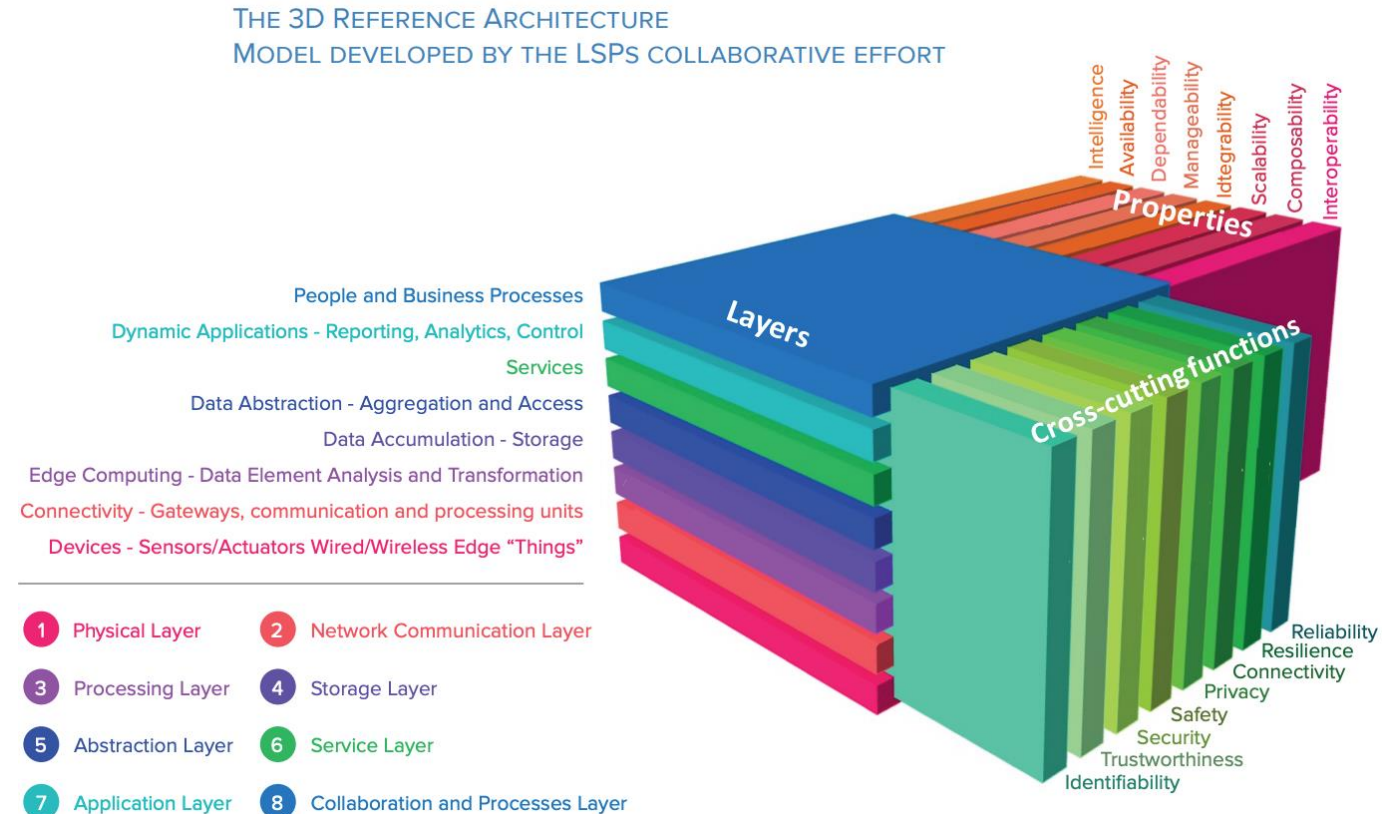
Recommendation #12

- ✓ **Standardize the basic elements of citizen-oriented service design**, to provide clear and easy-to-use electronic interfaces,
 - ✓ with background supporting information easily available,
- ✓ ensure human interface possibilities are always there (in whatever form) as back-up and avoid digital divide issues,
 - ✓ by providing special interfaces designed for the less able, and support provided for these persons

A co-design supportive Reference Architecture model

The LSP 3D Architecture Model (developed in the LSP Activity Group 02) extends some of the current IoT reference architectures and is aiming at:

- Ensuring a common view of the different layers of the IoT systems from Physical up to Business;
- Providing additional viewpoints to the different stakeholders (not just to the developers) regarding some additional cross systems functions such as security, privacy or safety and the shared analysis of some properties (e.g., integrability) between different stakeholders.



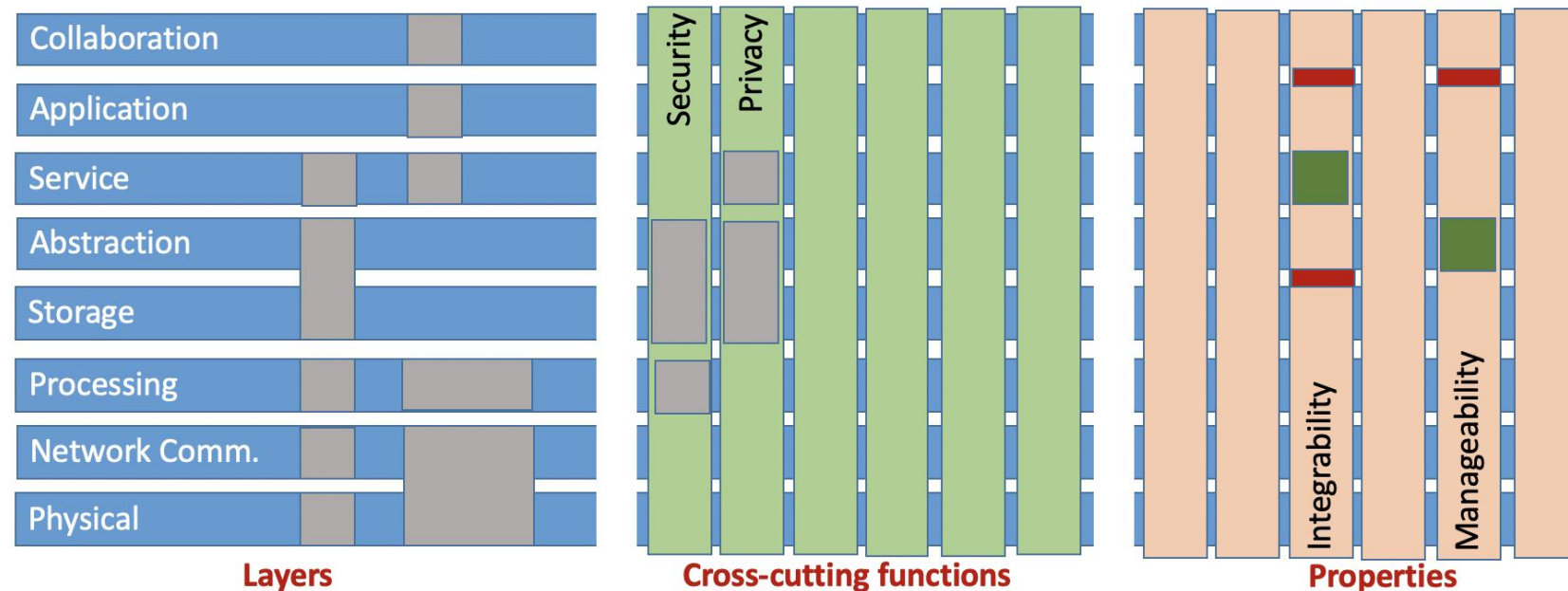
3 complementary views of an IoT system

3 main views

- ✓ Functional
- ✓ Specialized expertise
- ✓ All stakeholders

Different supported roles

- ✓ Project owners
- ✓ End-users, citizens
- ✓ Designers, developers
- ✓ Domain experts
- ✓ ...



The “Properties” view refers to features and characteristics of the IoT systems associated with the administration and management aspects of the IoT infrastructure and the system itself.

- ✓ It includes intelligence, availability, dependability, manageability, integrity, scalability composability and Interoperability.
- ✓ The main usage of this layer is for identification of the properties characterising IoT systems or applications.

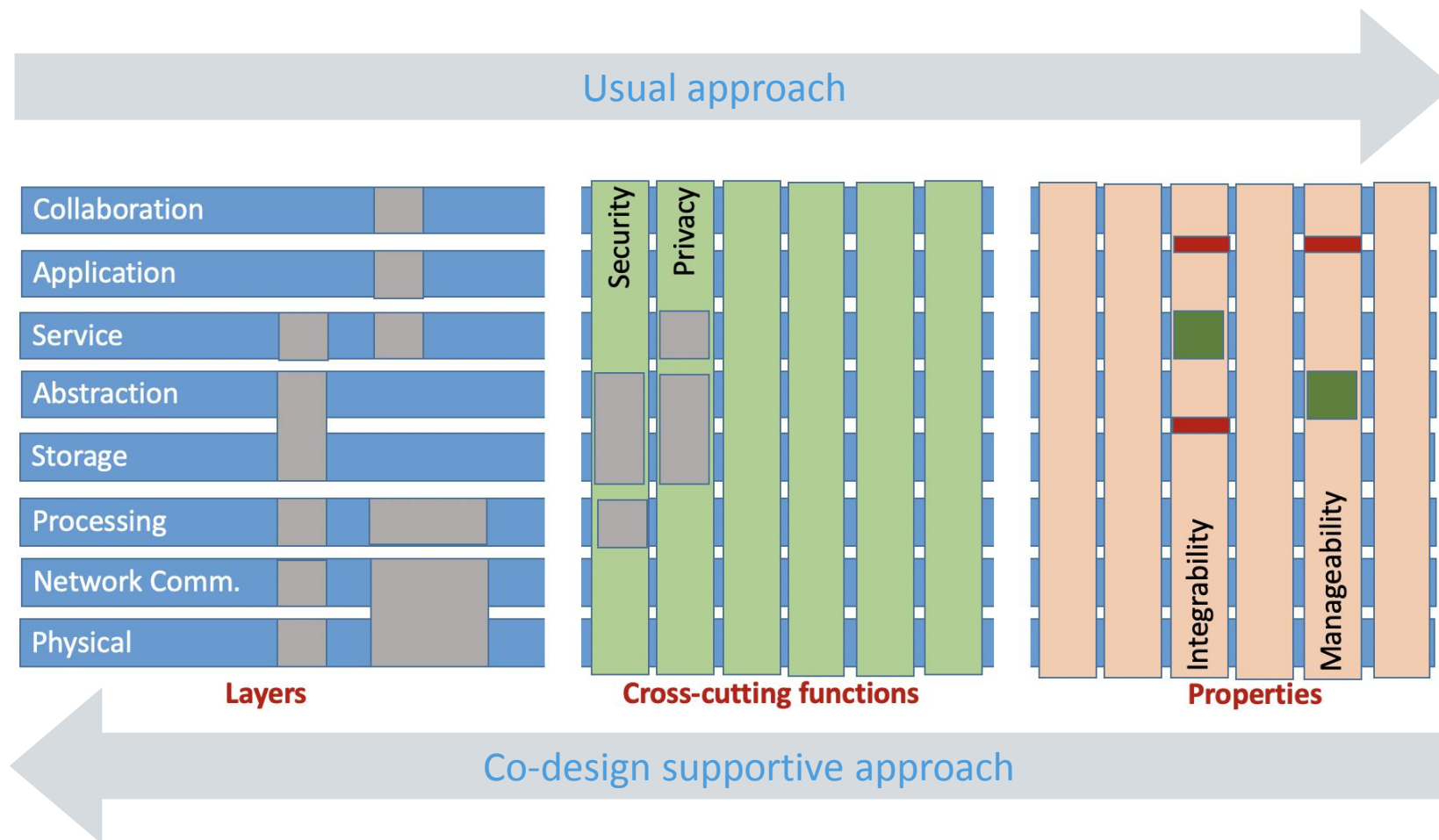
The need to think differently

From a usual approach

- ✓ Designers/developers-centric
 - ✓ Key role: functional view
- ✓ Limited engagement of specialized experts
- ✓ Reduced involvement of “other” stakeholders

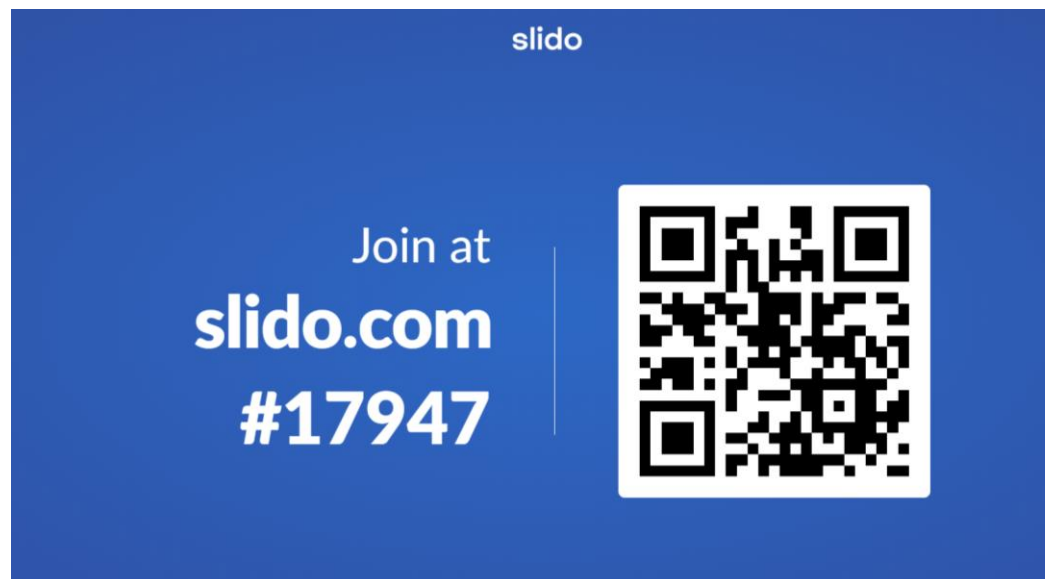
To a co-design supportive one

- ✓ Early involvement of “other” stakeholders in the definition of the expected properties
 - ✓ Key role: properties view
- ✓ Co-engagement of designers/developers and specialized experts



Thank you for your attention!

Questions:



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Q&A

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Register here:

Session 1 (10-11.30): bit.ly/StandardsIoT1

Session 2(14-15.30): bit.ly/StandardsIoT2