

1. Stocktaking

- report from 21st October meeting
- Inputs received

2. Next-generation platforms

- elaborate, develop further ideas/concepts

3. Supporting initiatives

- What kind of large scale federating initiatives are needed?
- Key characteristics of IoT Platforms?

4. Action plan

- Needed actions

1. Stocktaking

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WG2- IoT – Reporting from 21st of October meeting

What is the current landscape of activities in Europe (national initiatives, EU funded activities, other)?

- Explosion of new platforms (360+), US dominance, immature market
- Cluster of research IoT projects on emerging IoT platforms
- Initiatives: FoF, ECSEL are supporting IoT projects **in addition to 5G, robotics**
- Industry alliance AIOTI
- EU work on platforms focus more on connectivity than data.
- IoT for consumer versus Industrial IoT dominated by big players
- Open Standards and API are essential for a market place to give SME access
- Money available for start-ups but growing business is challenging (take over)

Main issues – vision of the future

- **Need to improve interoperability of platforms and data** – need for supporting standards and reference architecture models
- Need to better address privacy & security
- Need to cover areas not yet addressed: circular economy.
- **Processing close to the point of interest**
- Need for market pull – platforms to respond to the requirements. Pilot could bring supply and demand together and up-scale platform building
- Need for IoT incubator, communities of start-ups and developers

Next generation platforms – key areas

• **Pilot supporting platform building – connecting regional and national initiatives**

- Actions needed between MSs and coordination across PPPs
- Convergence needed
- Driven by market pull
- Challenge: platform development driven by different sectors
- Horizontal approach needed for convergence of IoT platforms

• **Creating open platforms**

- Avoid vendor lock-in
- Open platforms addressing several setors

• **Promotion of Standards**

- Address interoperability between platforms (semantics)
- Focus on convergence of standards rather than new ones.
- Large scale pilots to validate emerging standards
- Influence at international level (oneM2M, W3C)

• **Promotion Industrial partnership**

- To accelerate market up-take
- Promote consensus on platform up-scaling (role of AIOTI)

• **Supporting Large scale experiemental facilities**

- To promote acceptance and prove of platforms
- Demonstrate std, architectures and platforms
- Get SMEs and Start-up involved (new business models)

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1. Next-generation platforms

- → soup of platforms → need interoperability

Data processing close to the point of action

Real time connectivity – industry grade networks – no central cloud

Risk of connectivity failure // network attack (DDoS) -- keep local control

- **Key elements of a platform**

- Avoid Silos – de-siloing

– **Industrie 4.0, Farming 4.0, Energy 4.0, Health 4.0 all have cross-sector value chains // common principles, challenges**

- Governance needed, Platform economics, avoid **monopoly** / lock-in

multi-sided marketplace – must be self sustainable in long term

- Need critical large Scale of pilots – several open platforms – attractive across verticals

- Prominent categories of Platform economics:

GE approach vs: Google approach

GE approach: Predic platform to be used across sectors, build collaborations, alliances – build a community to scale

Google approach: push interface standard to market across sectors based on dominant market position

1. Next generation platforms

- **Some key characteristics**

SME – to have access

Avoid Silos – cross-sector (in response to int'l competition like IIC)

Standards, security, interoperability between soup of existing platforms

FRAGMENTATION to be avoided

Coherent implementation across MS, sectors, societal challenges

Gain Power through an ECOSYSTEM / cluster – !!scale matters !!

Scale of pilots – rather real environments – beyond national scale

Need for Cross –PPP pilots -- cross – PPP stakeholders but How??

Here as a starting point need common views/approach on

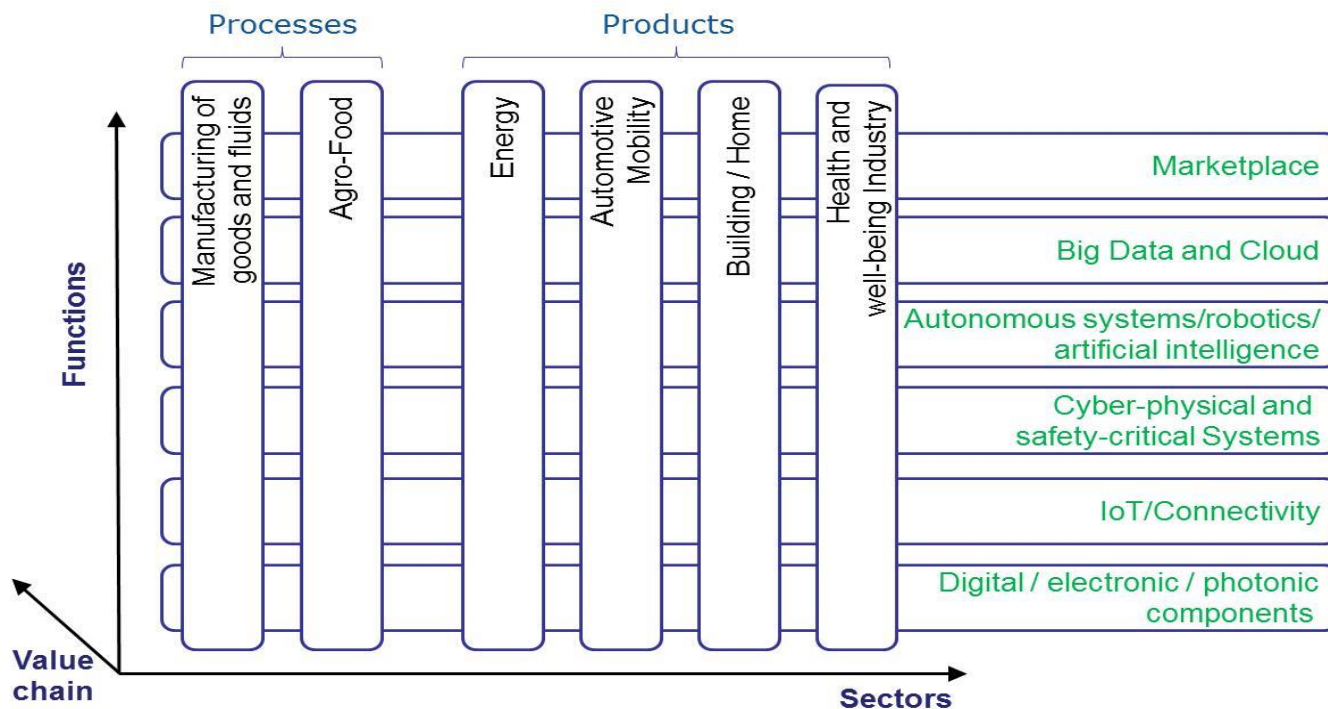
→ high level architecture; security , standardisation

→ Relevant PPPs FoF, ECSEL, 5G, robotics

***Regulation should be linked to the evolution of the platforms
adapting the regulatory framework in a complex policy
context***

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- Target
 - Integration Platforms addressing cross-sector challenges
- The challenge
 - Which sectors for IoT to cut across
 - Key elements of a platform – IoT more than connectivity



1. Supporting initiatives

- **What areas ?? Which sectors to prioritise?**

ENERGY

FARMING – Water management – Fish production

Health - + autonomous systems + smart home

MOBILITY in cities; mobility + energy +autonomy

SMART CITY by nature cross cutting

testbed for cross sector (legal platforms, share data)

1. *What kind of large scale federating initiatives are needed?*
 - Clear objectives !!!
 - **Bring together Supply demand need Infrastructure M2M/5G, data analytics/cloud dynamics of an ecosystems**
 - Mechanism to support platform building and demonstrated in large-scale pilots?
Look at Best practice from Industrie 4.0, Energy 4.0, Smart City 4.0, Health 4.0, Farming 4.0
 - Should be European centred – but competitive on international scale
Role of alliances to monitor and align in global context
 - Powering a European ecosystems // engage with SMEs
 - essential need to scale
 - trust, security, data valorisation
 - free marketplace – no dependencies / barrier for SMEs

Sub-working group Meeting structure

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 - **Needed actions**

1. Action plan

- **Needed actions for an open, integration platform addressing cross-sector challenges**

Maintain LT support → fair rules, security, access to SMEs
different use cases are needed to be explored

tackle PINGUIN effect (other follow only if first has tested the water)

– spearheading, promote best practice // support transformation/migration

enable quick start of trials – cooperation – standards-data sharing

Not only ONE large pilot – but consider replication to cover more geographical areas

1. Action plan

- **Why countries need NATIONAL IoT Strategies**
FR, NL, DE, UK, SE, AT,
→ 3 bn € investment in IoT in total in EU -- leverage national investments, important for SMEs
No national platforms able to compete globally
--< e.g. need of EU Standardisation platform (FR) to link to national initiatives
→ **Build on regional / excellence:**
Some Regional clusters are spearheading platform building
(e.g. manufacturing in DE, farming in NL, smart city in UK, connected driving in SE
– important link to regional/S3 initiatives
- **→ Testbeds in a complex policy context (security, standards)**
Need to work across DGs – across societal challenges -- policy areas
Closely coordinate with member states on policy options
Need adjustment of market regulatory frameworks
Work with related policy /innovation DGs

1. Action plan

- **The concept of platform of platforms**
DEI platform building should not compete with existing commercial platforms
But work in complementary, synergetic way
→ focus on semantic interoperability and thus federating proprietary platforms where needed (do not create graveyard of new platform)
- Federated platforms need dedicated **horizontal coordination**
 - **Principle of An industrial alliance**
Rely on EU alliances AIOTI /ETSI with pivotal role

- *Focus a significant part of the PPPs and national investments on cross-sectoral and integrated digital platforms and ecosystems including reference implementation and experimentation environments in real settings.*
- *Open – avoid lock-in – dominant position of one player – monitor global competition*
- *Link to standards & regulatory / policy issues*