"IoT for Clean Energy and Responsible Consumption & Production"

IoT Stragety in Horizon 2020

Geneva
7th June 2017

Rolf Riemenschneider
DG CONNECT/E4
European Commission

European Commission

Launched by Commissioner Oettinger at Hannover Fair on 19 April 2016

- Europe's future is digital: Digitising European Industry

- *Focus actions on digital transformation of ALL industry*

- complementing our efforts on a Digital Single Market

High-level Roundtables with Commissioner Oettinger

- Member States and

- High-level industrial representatives for action on EU scale
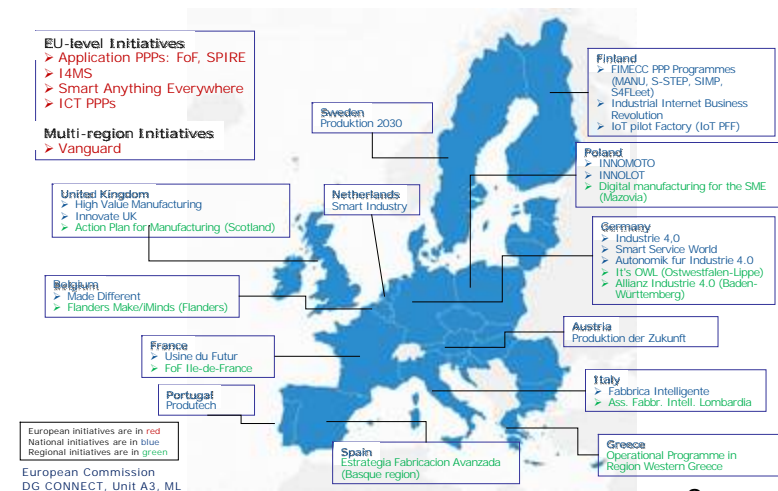
Consultations:

- DEI Stakeholder groups

See
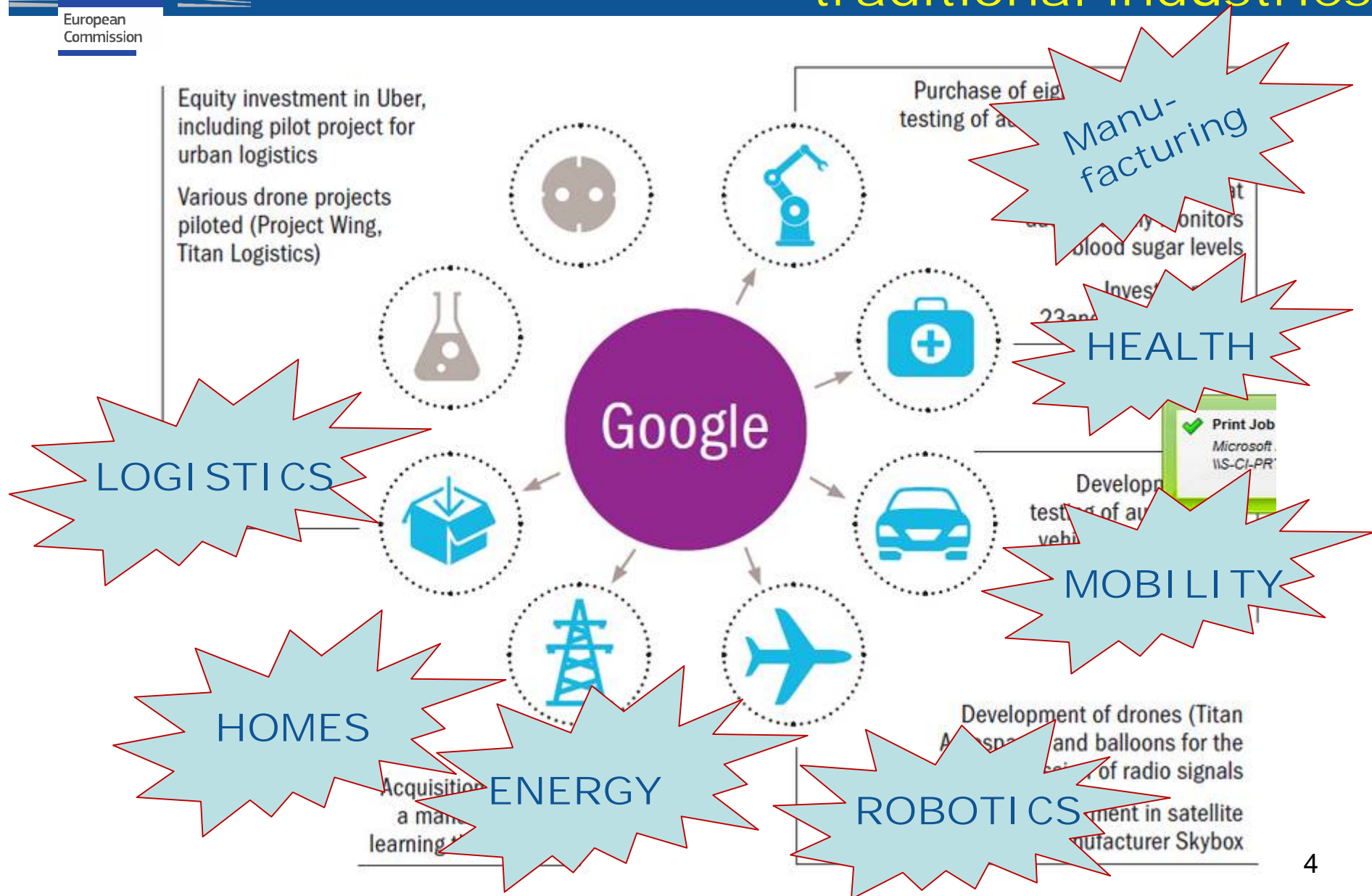http://ec.europa.eu/futurium/en/dei-implementation

Industry

- Digital Innovation Hubs
- Smart Regulations for Industry
- Platform Leadership
- Adapting Workforce

5G
ECSEL
IoT
Robotics
Cyber Security
Photonics
Big Data

A Strong Digital Sector

€900 B

European
Commission

❑ Strong digitisation in high tech industries and in some MSs.
❑ Challenges:

- New competition from non-EU digital platform owners

- Lack of standards and interoperable solutions

- Fragmentation of effort in Europe

- Skills and re-skilling of work force

- Legislative and regulatory gaps

EU-level Initiatives
➤ Application PPPs: FoF, SPIRE
➤ I4MS
➤ Smart Anything Everywhere
➤ ICT PPPs

Multi-region Initiatives
➤ Vanguard

Finland
➤ FIMECC PPP Programmes (MANU, S-STEP, SIMP, S4FLeet)
➤ Industrial Internet Business Revolution
➤ IoT pilot Factory (IoT PFF)

Sweden
Produktion 2030

Poland
➤ INNOMOTO
➤ INNOLOT
➤ Digital manufacturing for the SME (Mazovia)

United Kingdom
➤ High Value Manufacturing
➤ Innovate UK
➤ Action Plan for Manufacturing (Scotland)

Netherlands
Smart Industry

Germany
➤ Industrie 4.0
➤ Smart Service World
➤ Autonomik fur Industrie 4.0
➤ It's OWL (Ostwestfalen-Lippe)
➤ Allianz Industrie 4.0 (Baden-Württemberg)

Belgium
➤ Made Different
➤ Flanders Make/iMinds (Flanders)

France
➤ Usine du Futur
➤ FoF Ile-de-France

Austria
Produktion der Zukunft

Portugal
Produtech

Italy
➤ Fabbrica Intelligente
➤ Ass. Fabbr. Intell. Lombardia

European initiatives are in red
National initiatives are in blue
Regional initiatives are in green

Spain
Estrategia Fabricacion Avanzada (Basque region)

Greece
Operational Programme in Region Western Greece

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DG CONNECT, Unit A3, ML

3

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Equity investment in Uber, including pilot project for urban logistics

Various drone projects piloted (Project Wing, Titan Logistics)

Purchase of eig... testing of a...

Manu-facturing

...onitors
blood sugar levels

Inves...

23an...

HEALTH

Google

LOGISTICS

Develop...
test...d of au...
vehi...

MOBILITY

HOMES

Acquisition... a ma... learning...

ENERGY

Development of drones (Titan
A... sp... and balloons for the
... of radio signals
...ment in satellite
...ufacturer Skybox

ROBOTICS

Print Job
Microsoft
\\S-CI-PRT

4

- COP21 – Energy Union –
  → Clean Energy Package 2016
  - What strategy for European actors / markets / regulators?

- „The Winter Package 2016"
- Modernising the grid infrastructructure
- Deployment of Smart Meters
- Integrate Renewables
- Empowering the User

smart sensing & monitoring

BIG DATA exchange

smart analysis & planning

smart control
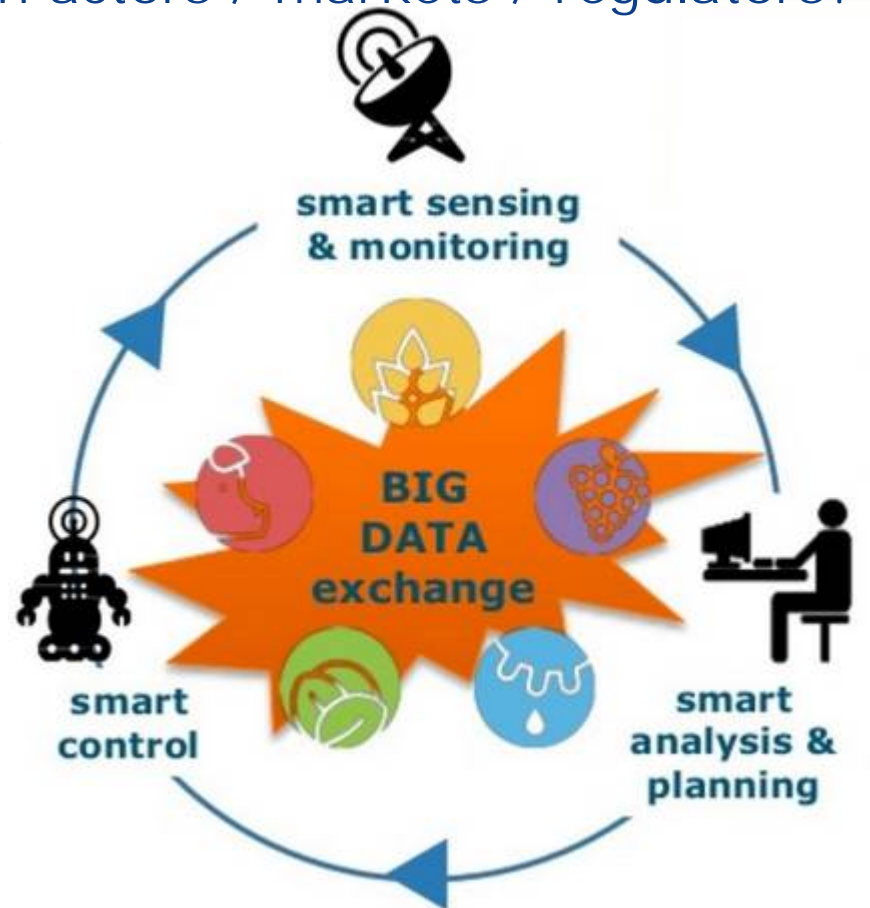
- Roberto Viola calls for new Business Models for the Internet of Energy
  - He stressed the need for new Business Models to sustain investment in an intelligent infrastructure for smart energy, avoid vertical silos to achieve economy of scale
  - ^Moving out of silos, beyond sector based innovation
  - "every object should be connected and interact with other objects and humans".

Ref.: High-Level Meeting on the **Interoperability for the Internet of Energy, Brussels, 11 May 2017**

New business opportunities converging IoT, cloud and data analytics
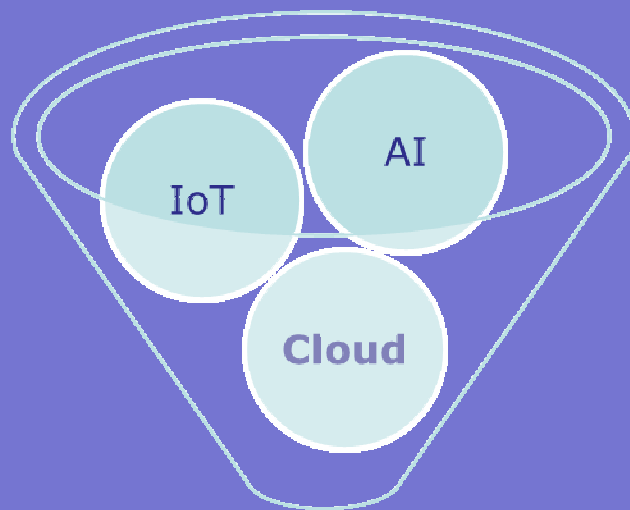
Identified Smart Environments

Smart Energy/ Utilities	Smart Transport
Smart Manu-facturing	Ageing Well
Smart Farming	Smart Homes
Smart Building	Smart City

IoT
AI
Cloud

Smart Environments

Business Opportunities

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> ## Setting up innovative platforms
>   > ### that can be rules by leading enterprises
>   > ### That can be shared by firms of very small to medium size,
>   > ### relying on industrial sectors, ecosystems and innovation hubs

A key to developing successful platforms and services is

- to put them in the hands of autonomous teams/innovators
- To provide the hooks to regional clusters and developer communities

- ## Internet of Energy –
  - *Moving away from silos of different sectors*

  - *Exploiting new business models*
  - *Focus on SME, midcaps*

  - *Knowledge through Data Sharing*

  - *User experience based on Internet platforms and social media*

The success of the Internet of Things depends strongly on the existence and smooth and effective operation of global standards.
(ITU)

IoT SDOs and Alliances Landscape

Home/Building • Manufacturing/Industry Automation • Vehicular/Transportation • Healthcare • Energy • Cities • Wearables • Farming/Agrifood
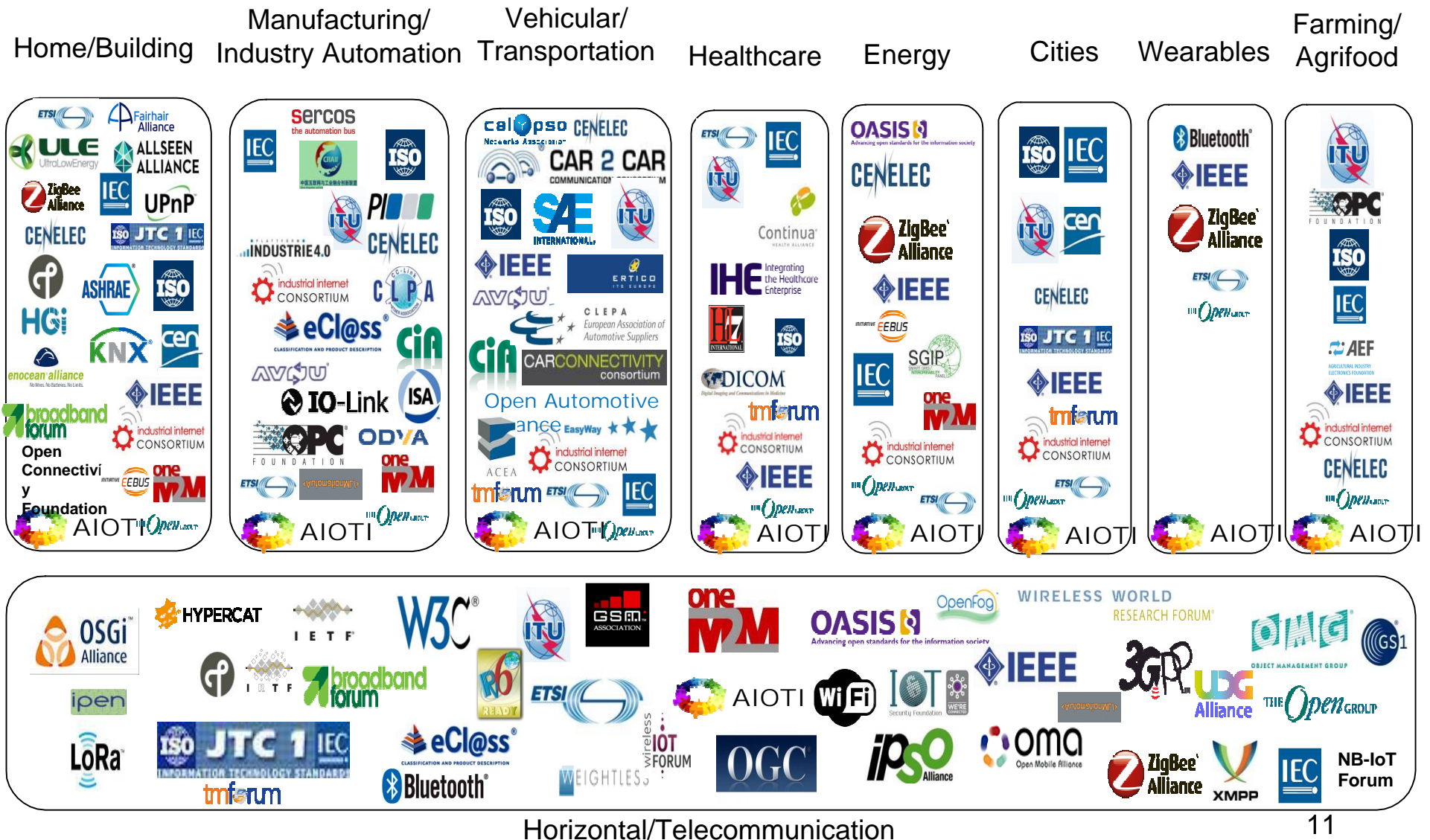
Horizontal/Telecommunication

Source: AIOTI WG3 (IoT Standardisation) – Release 2.6

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➢ # Large-scale Pilots:

  ➢ *Applying a reference architecture model*
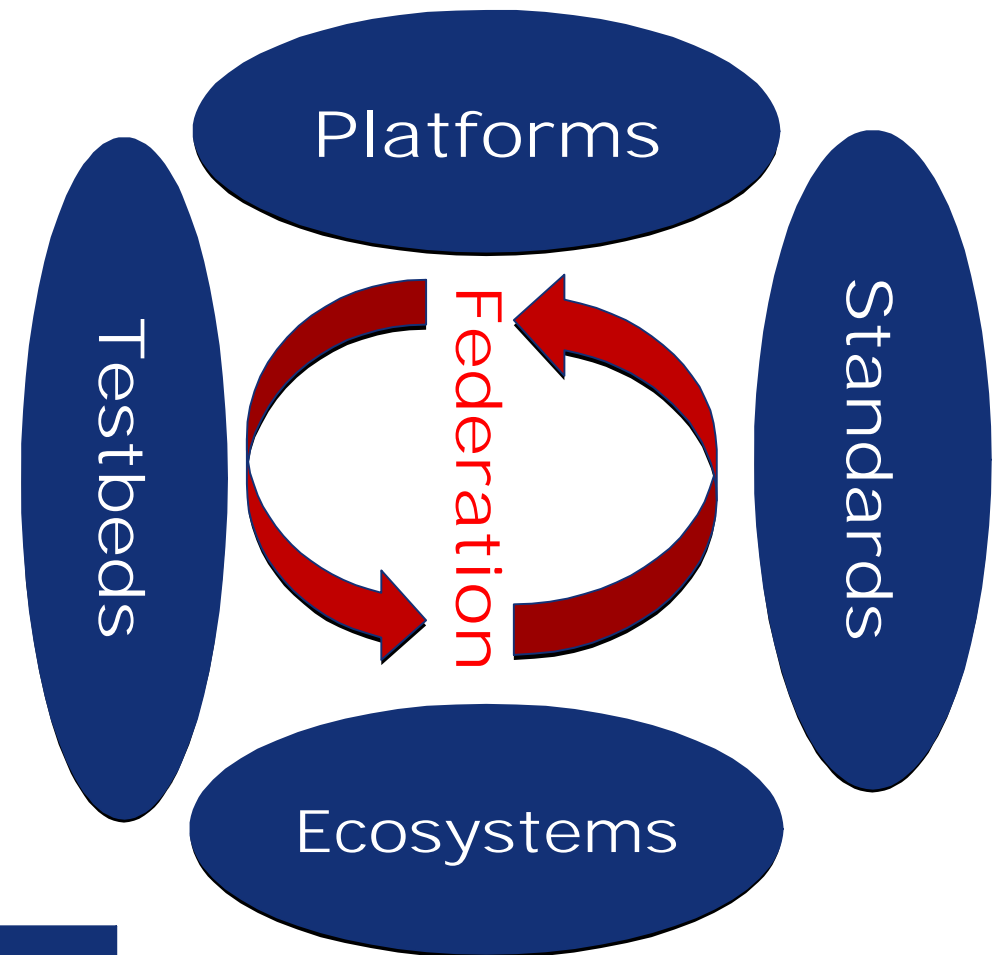 ➢ *Driving standardisation for connectivity and semantic interoperability*
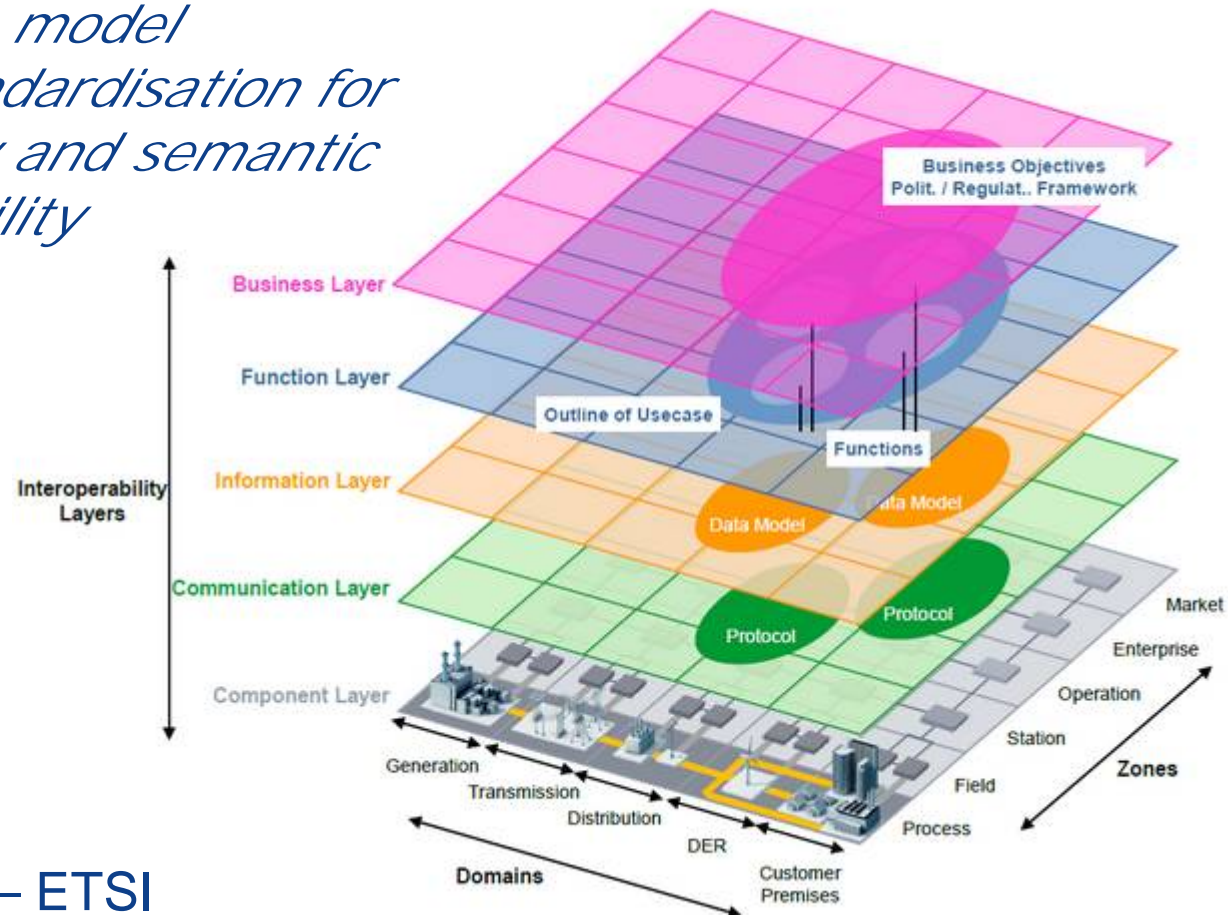
- Courtesi:
  CEN/CENELEC – ETSI

> Leadership in next generation open and interoperable digital platforms

Main Characteristics

> Smart connected devices
> Interoperable Services
> Secure, safe Operation
> Co-creation with users
> Transaction support like Blockchains

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> *Every object should be connected and interact with other objects and humans*

Smart Connected Devices & Systems

> Appliances, white goods
> Boiler, Heating
> Lighting
> Cooling, ventilation
> PV panels
> Batteries, electric vehicles

Concluding on Internet of Energy

- ## Clean Energy Package
  - Interoperable devices and systems
  - Grid – Demand-Response management
  - Support electrification trend

- ## Collaboration across multiple verticals
  - Cross-cutting business models to drive investments in grid infrastructure
  - Testbeds + large scale experimentation
    - Broad experimentation by SMEs and mid-caps
  - User validation and bundled services

- ## Pilot support through Horizon 2020
  - Building on existing platforms/ref architectures
  - Identification of business scenarios and applicable (or needed) standards
    - → collaborate with ETSI, and the alliance AIOTI
  - Provide access to SMEs and start-ups
    - Ecosystem – Market Place - societal, users

Platforms

Testbeds

Federation

Standards

Ecosystems
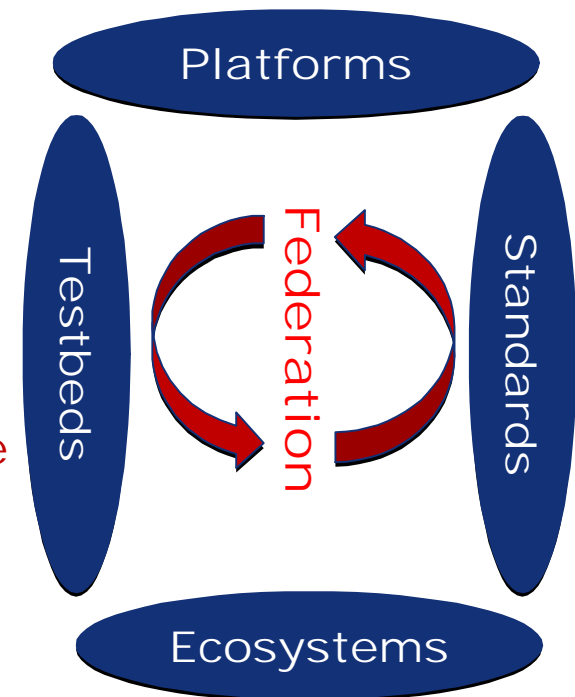
Attention to Sessions

➢ *IoT for Home Comfort and Energy*
     Thursday 08 June 09 h

➢ *IoT Standards Convergence*
     Friday 09 June 09h

Thank you - useful links

- Digitising European Industry Strategy (DEI):
  https://ec.europa.eu/digital-single-market/en/digitising-european-industry → FUTURIUM

- European IoT Platform Initiative EPI
  http://IoT-EPI.eu

- The Alliance of Internet of Things Innovation
  http://www.AIOTI.eu

- IoT Week: 06–09 June in Geneva
  http://IoT-Week.eu

- NetFutures 28-29 June
  http://netfuturesconference.eu/