



# Digitising European industry

*LETI Innovation Days – 50<sup>th</sup> Anniversary*

28 June 2017

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 #DigitiseEU

## CEA-LETI is one of Europe's crown jewels in microelectronics:

- With IMEC and Fraunhofer amongst the 3 leading labs
- For electronic components: largest recipient of EU funding of RTOs
  - >100M€ since FP7 (65% in FP7)
  - 45% nano-electronics components
  - 15% equipment and process technologies
  - 10% microsystems
  - Nearly 10% on TOLAE
  - FP7: LETI is in 25% of projects / H2020: 19% of projects
- Strong role in in the Electronics Leaders Group developing Europe's Microelectronics strategy for H2020
- Strong role in the ECSEL Joint Undertaking
- Part of the planned Important Project of Common European Interest (IPCEI) on Microelectronics
- Instrumental in the success of FDSOI

## CEA-LETI is a major actor beyond microelectronics:

- Cyber-physical systems
- Supporting the digital transformation of our industry:  
Leading role in Smart Anything Everywhere
- 5G, IoT including large scale pilots
- Photonics, post CMOS-technologies



## CEA-LETI is an essential asset in the European ecosystem in electronic components and systems

- LETI should continue contributing to the shaping of the European ecosystem as well as to serving a broader diffusion of these technologies – for Rhone-Alpes, for France, and for Europe
- LETI and CEA are well positioned in post-CMOS technologies: neuromorphic, spintronics or quantum technologies.  
→ Build on these assets - use it for Europe's future competitiveness

# Digital Single Market Mid-term Review – May 2017

*at a glance*

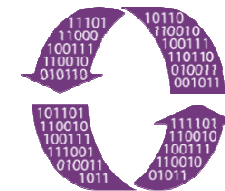
## **I. Taking stock of what has been achieved since 2015**

- **End of roaming charges** for all travellers in the EU June 2017
- **Portability of content** from early 2018
- **Wifi4EU**: free public Wi-Fi hotspots in local communities across the EU
- **Spectrum**: 700 MHz band for development of 5G + online services
- ...



## **II. Future Agenda**

- **Ensuring a fair, open and secure digital environment:** online platforms, data economy, cybersecurity
- **Managing the digital transformation:** Digital Skills, Digitisation of industry, eHealth, eGovernment, Connected mobility, HPC, Investment
- ...



## COMMITMENTS FOR A DIGITAL FUTURE OF EUROPE



**8 MSs** committed to build and deploy the next generation of **computing and data infrastructures** in Europe

**11 Ministers & State Secretaries** + industry leaders pledged to collaborate and work jointly within the **EU Platform of National Initiatives**

**29 EU and EEA** countries signed up for European **cross-border smart mobility corridors**

**5 Ministers, 2 MEPs** & high-level stakeholders participated in the launch of a pilot project to boost **cross-border digital work experiences**

# European platform of National Initiatives on Digitising Industry (*Rome, 2017*)

*To ensure that any industry in Europe - big or small, wherever situated, whatever sector - can fully benefit from digital innovations to upgrade its products, improve its processes and adapt its business models to the digital transition*

## The platform: our added value at EU level

- Coordination, combining investments, EU legislation
- Addressing all sectors ("value chain")
- In collaboration with Member States, industry and social partners





Broadly disseminate digital innovations **for all:**

Setting up a **pan-European network of Digital Innovation Hubs**

Strengthen **competitiveness** by developing **partnerships and platforms**

Standardisation

HPC/cloud

A framework for the coordination of national and European initiatives

A **regulatory framework** adapted to the digitisation of industry

Data: flow, access, exploitation  
safety, responsibility ("liability")

**Prepare Europeans for the digital age**

Training, education, new work environment

*"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"*

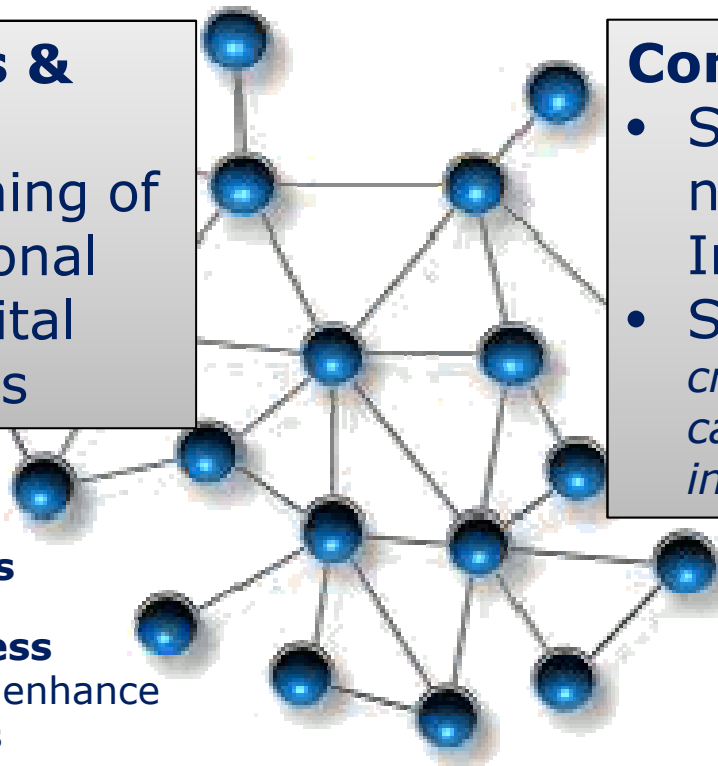
## Member States & regions:

build-up/strengthening of national and regional structures of digital innovation hubs

## Commission:

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









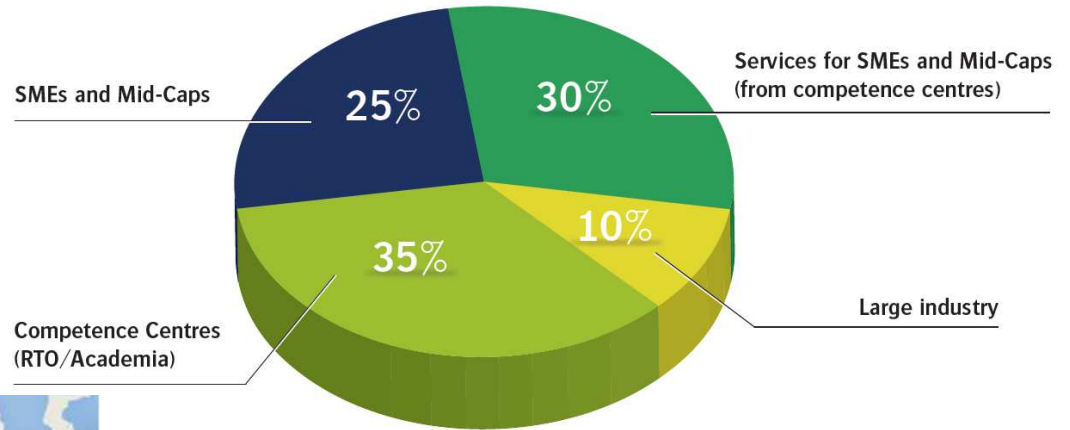
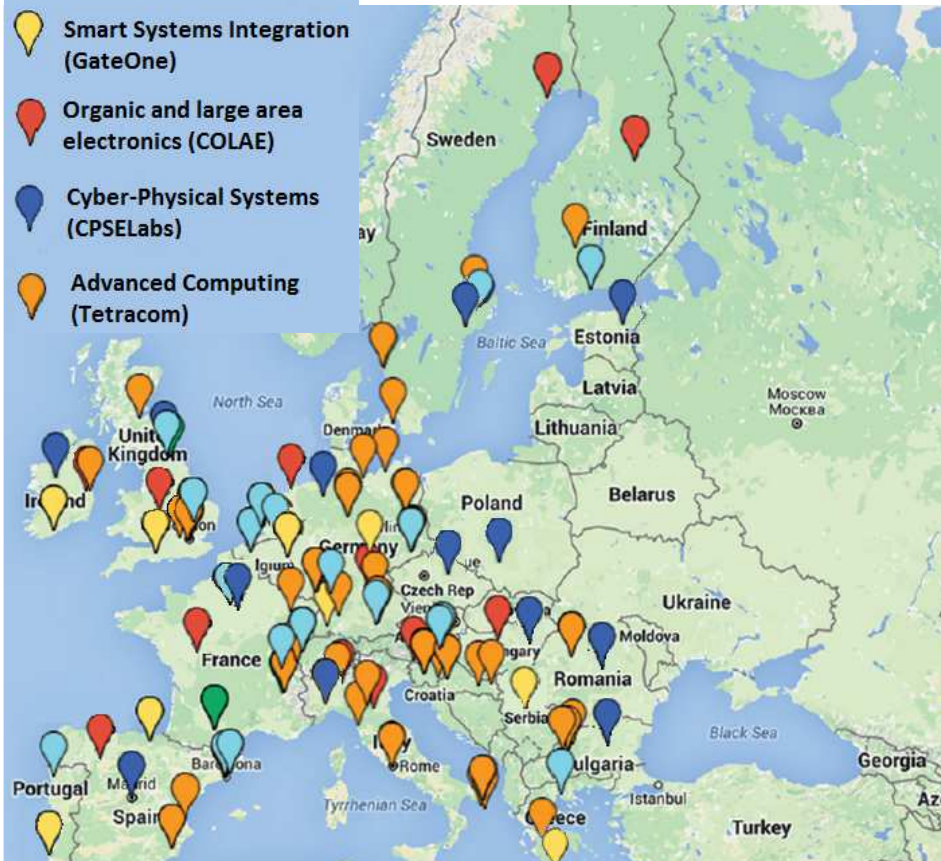
# Smart Anything Everywhere initiative



## LETI coordinates:

- EURO-CPS
- GATEONE
- FED4SAE

-  Cyber-Physical Systems (EUROPCS)
-  Smart Systems Integration (Smarter-SI)
-  Smart Systems Integration (GateOne)
-  Organic and large area electronics (COLAE)
-  Cyber-Physical Systems (CPSELabs)
-  Advanced Computing (Tetracom)



- Started in 2015 (phase 1)
- 63 M€ of EU funding
- 135 competence centres
- 240 experiments: 70% cross-border
- 152 contractors/15 large industry
- 20 Members States + Ass. Countries

## Phase 2 projects:

- **26.5M€** EC funding
- **125+** experiments
- **1 CSA & 4 IAs**
- Start in **2017**

## Custom-made professional footwear perfectly adapted to any anomaly of the foot

### An EU-wide partnership:

SME user: BASE PROTECTION – IT

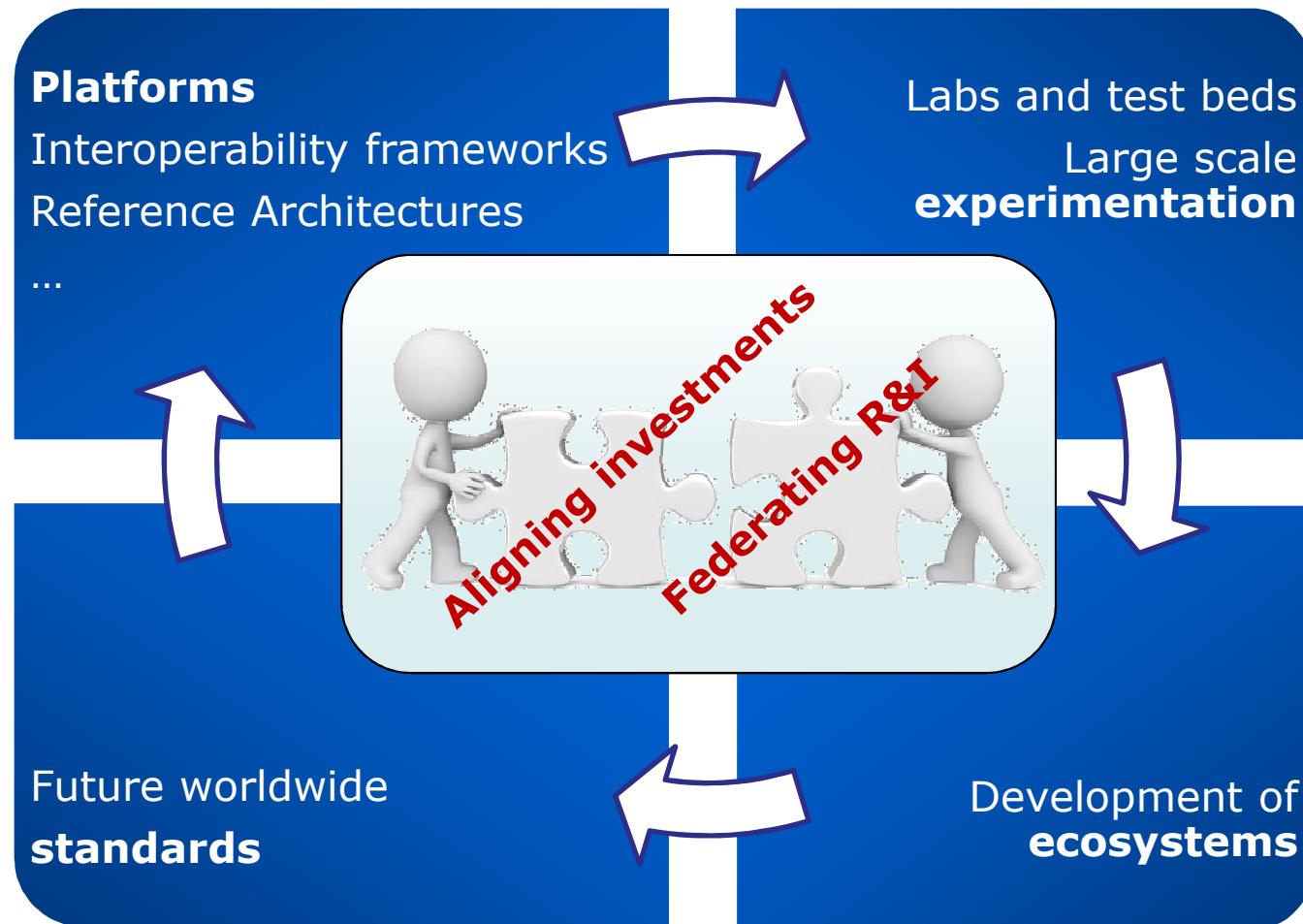
SME user: PODOACTIVA – ES

SME technology provider: INGECON – ES



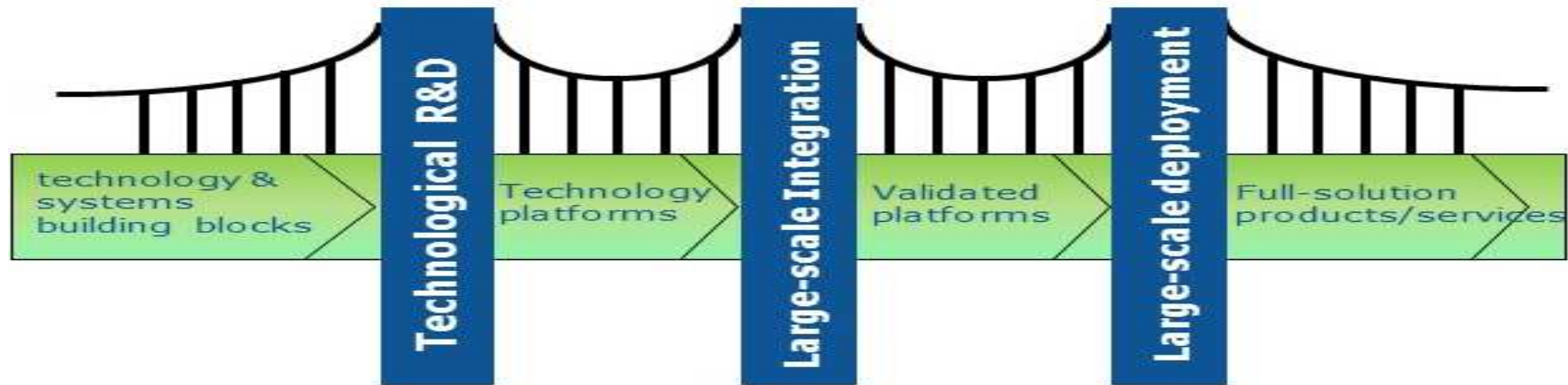
- Single financing of €250,000
- **Increased competitiveness of SMEs**
- 3D printing based on customised design of the sole
  - **HPC simulations available** via cloud
  - In the long term, 3D printing to be done in-house by the retailer
- No specialized CAD knowledge
- Reduced design and fixed costs
- Immediate validation and perfect fit of the sole
- Quick availability and lower price of a customised product

**Aligning investments and federating R&I efforts from all actors  
(industry, national initiatives and EU) along common strategies  
based on European interests and values**



# From R&D to the deployment and investment needs

LETI is a key actor in:  
ECSEL pilot lines, the planned IPCEI, IoT pilots, ...



## Basic and applied research (TRL 2-5)

- Horizon 2020
- National and regional programmes

**Investment needs**

## Development of platforms, scaling, experiments, pilot lines (TRL 5-8)

- H2020, Industry Member States

## Deployment (TRL 8-9)

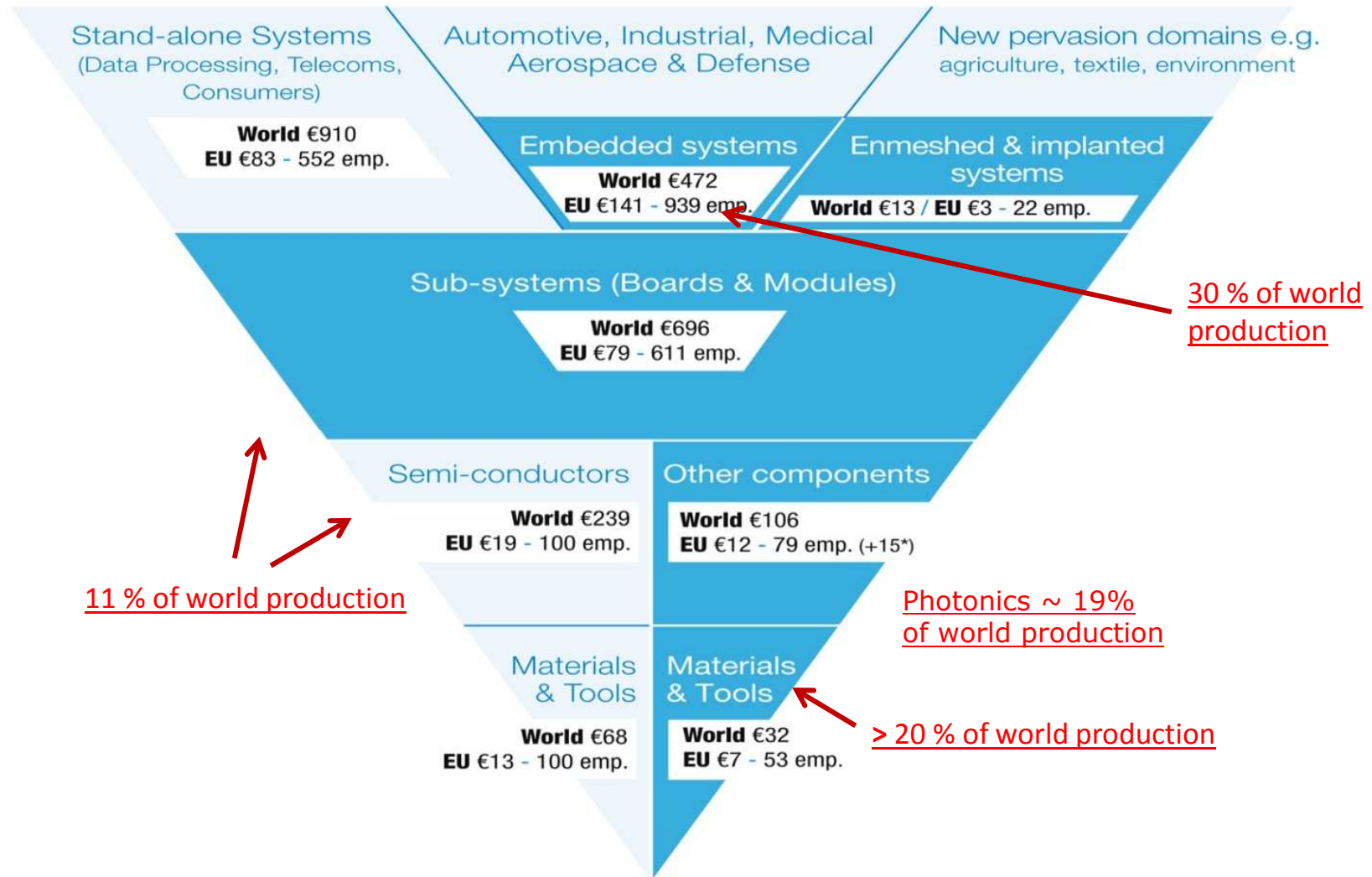
- Member States (state aid, IPCEI\*)
- Industrie

**Commitment from PPPs essential at every stage**

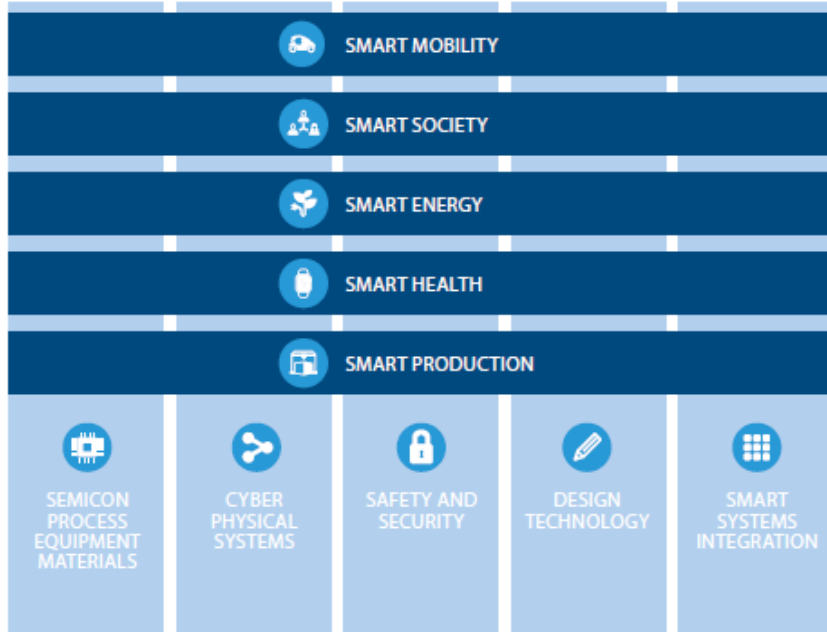


\* IPCEI, Important Projects of Common European Interest

# European Strengths: vertically integrated and professional markets



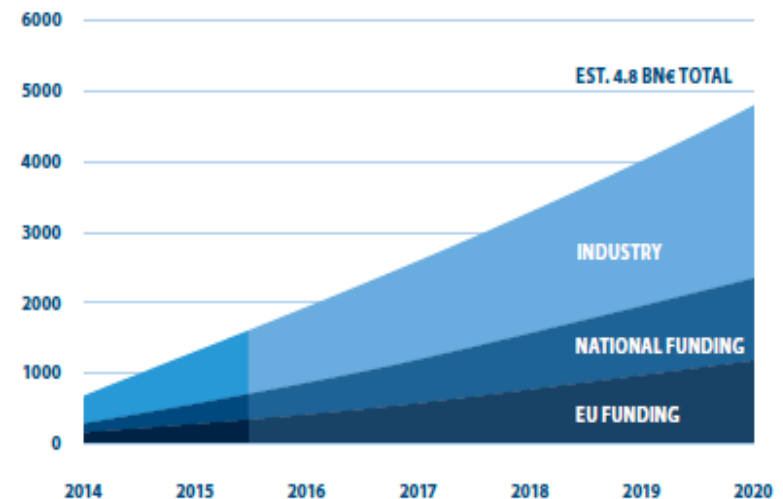




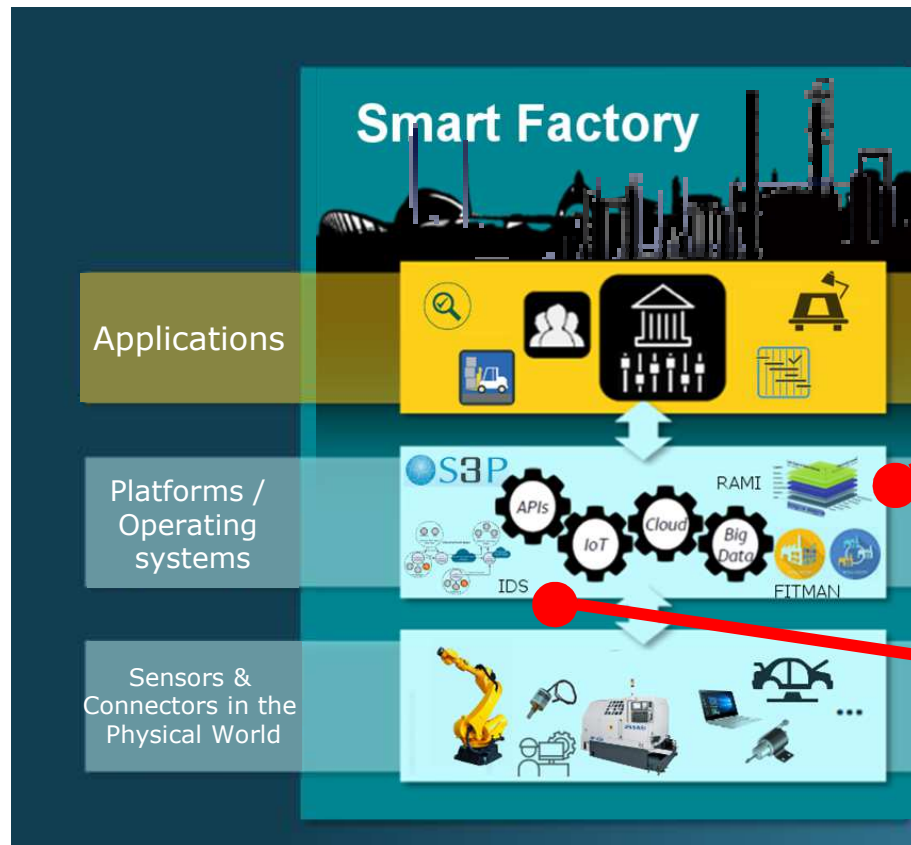
**Creation of a critical mass of leveraged investments: EU – Member States - industry**

**From component to systems and applications covering the full chain up to pilot projects**

CUMULATIVE INVESTMENTS IN ECSEL PROGRAMME

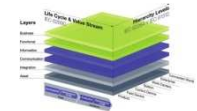


# An industrial platform for the connected industry

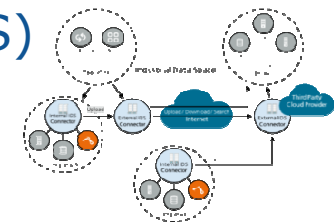


## Development examples :

Reference architecture for the connected and automated industry (RAMI)



Secure platform for industrial data sharing (IDS)





**Bring together sources of financing and mobilise a critical mass of investment from other public, national and private actors by leveraging European R&I investment**

## EU Investments

**Under mandate (2018-2020):**

3.5 billion in R & I (Horizon 2020) of which:

- € 1 billion for platforms, pilot projects, pilot lines and test beds
- € 300 million for digital innovation hubs

**EU:  
€5,5 billion  
(2016-2020)**



**A total investment of at least €50 billion**

- The digital transformation concerns everyone:
  - It requires a voluntary pro-active approach of all actors
  - Which builds on the European strengths
- The Digitising European Industry Initiative:
  - Builds on national initiatives - focus on European added value
- CEA-LETI is excellently positioned to continue
  - doing forward-looking research on components and systems to build the foundation for Europe's future competitiveness
  - taking an instrumental role in supporting French and European industry in their digital transformation
  - networking and integrating technology and national silos under a common European strategy
- The digital transformation of our economy and society is also about skills, jobs and social aspects:
  - Need for an inclusive approach towards digital transformation
  - Take due consideration for the fears of European citizens!

# THANK YOU

**Digitising European Industry**

**<http://ec.europa.eu/digital-agenda/en/digitising-european-industry>**

**Twitter: #DigitiseEU**