

Smart Cyber-Physical Systems - an essential technology for Digitising European Industry

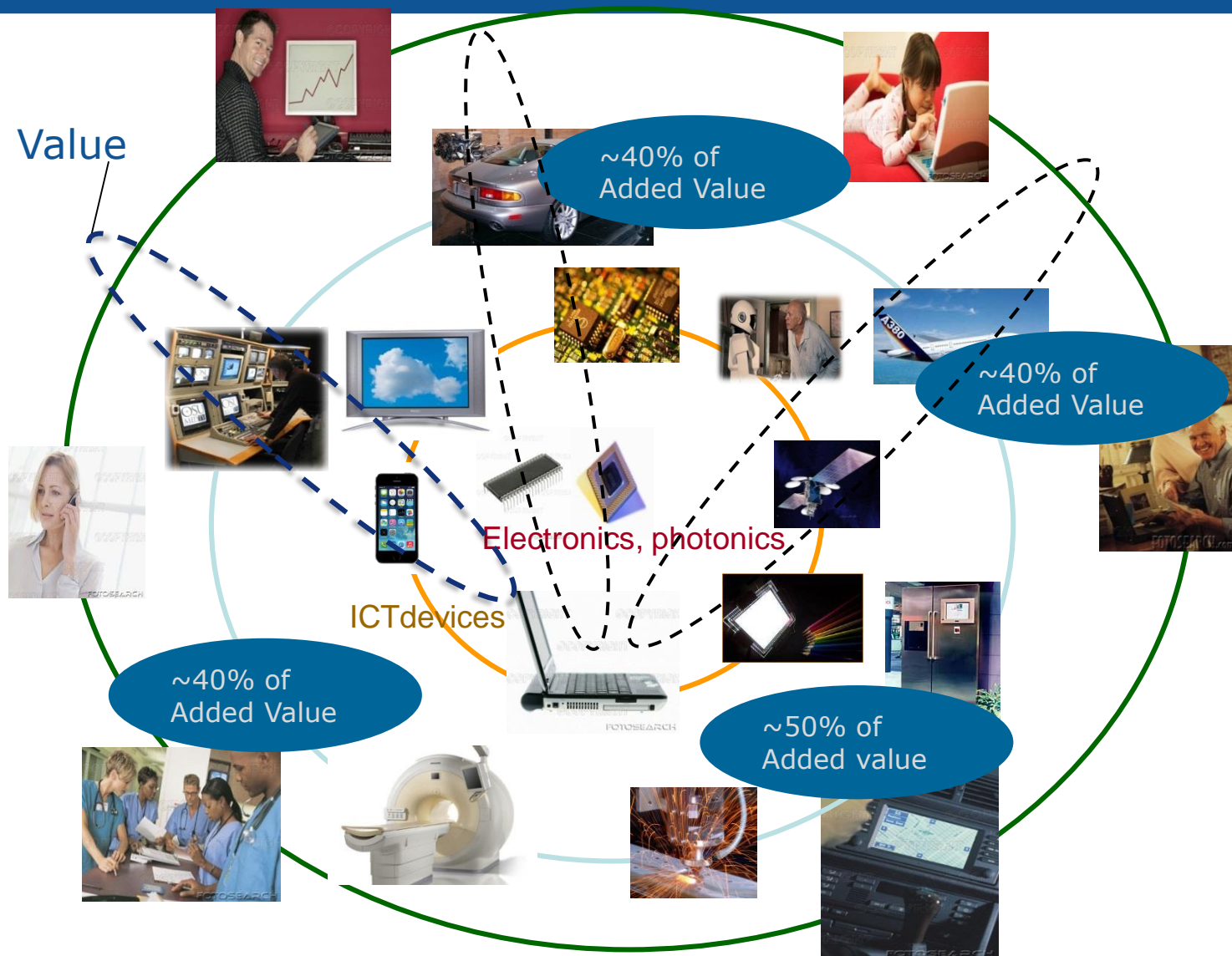
CPS clustering event, Vienna, 14 April 2016

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- The portfolio of Cyber-Physical Systems projects
- Overview of the ICT programme 2016-17
- Strategy and Outlook for 2018-20

CPS connect digital value chains across all sectors

Critical Value
chains



Topic	Scope
ICT1.a Budget: 37 MEuro	8 projects on Research & Innovation (RIA) Good coverage in terms of technologies and use cases
ICT1.b Budget: 21 MEuro	4 projects on Innovation Actions (IA) Both areas "platforms" and "smart anything everywhere" well covered
ICT1.c Budget: 1 MEuro	Support Actions 2 road-mapping projects (with USA) 1 community building project

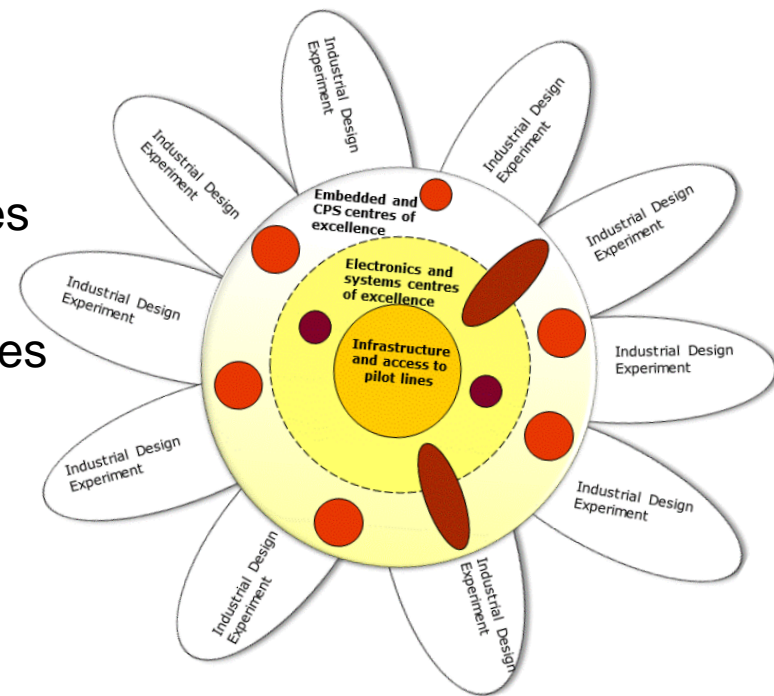
- **8 projects on "Science of CPS-Integration": Co-simulation/modelling** on all system levels incl. circuits, communication networks, firmware, operating system, system architecture, software layers
- **Vision:** entire design will be model-based to build cutting-edge cyber-physical systems (CPS)
 - **saving radically development cost and time**
 - **reducing complexity**
 - **Making it easier for innovators to realise new systems**
- Work is exemplified in a broad range of use cases
- Selected projects support more fundamental and longer term research issues than projects supported by ARTEMIS or targeted by ECSEL

Overview of use cases in the RIA projects

	Aero- space	Auto- motive	Tele- comm unicati on	Health	Surveil lance	Smart Buil- dings	Logi- stics	Smart grids	Manu- facturi ng	Rail way	Agricul ture	Visual search
SAFURE		X	X									
COSSIM								X				X
TAPPS		X		X								
IMMOR TAL	X											
AXIOM					X	X						
UnCoVer CPS		X						X	X			
U-Test				X			X					
Into CPS		X				X				X	X	

2 IAs: Networks of embedded systems design centres - "Smart Anything Everywhere" EUROCPS, CPSELABS

- Involving Europe's leading competence centres offering expertise/services
- SMEs can respond to open calls for third parties
- Critical mass of experiments with CPS/smart components technologies
- Develop innovative products or improve processes
- Collaboration across value chains



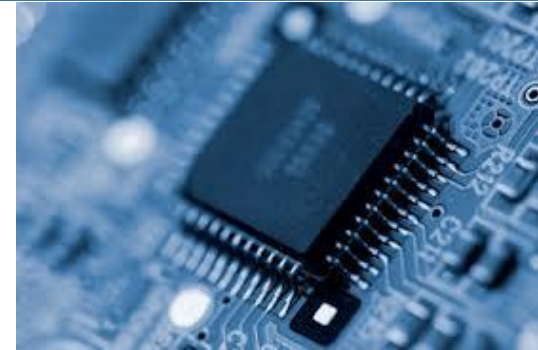
2 IAs: Platform Building

- **CP-SETIS**: Harmonise interoperability specification
- **EoT**: Ultra low power low cost vision platform

- Support actions of 2014 CPS call build communities, develop and validate roadmaps, explore EU-US collaboration opportunities
- ARTEMIS / ECSEL projects work in the area of embedded intelligence / cyber-physical systems on higher technology readiness levels
- All projects will present themselves in the course of the day

Overview of the EC programme Industrial Leadership – ICT for 2016-17?

- **A new generation of components and systems:**
 - engineering of advanced embedded and resource efficient components and systems
- **Next generation computing:**
 - advanced and secure computing systems and technologies, including cloud computing
- **Future Internet:**
 - software, hardware, infrastructures, technologies and services
- **Content technologies and information management:**
 - ICT for digital content, cultural and creative industries
- **Advanced interfaces and robots:**
 - robotics and smart spaces
- **Micro- and nanoelectronics and photonics:**
 - key enabling technologies



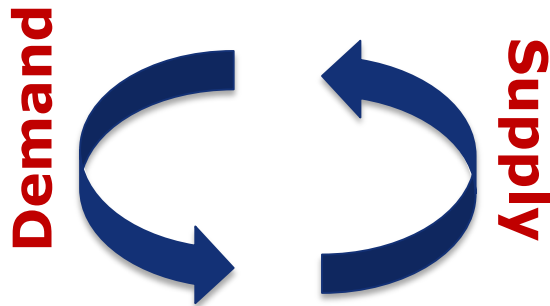
- **Cross-cutting focus area**
 - Contributions from **SC1** and **SC2**
- Increased support with the ambition to **foster the take-up of IoT in Europe** and to **enable the emergence of IoT ecosystems** supported by open technologies and platforms
- Organised in three topics:
 - **Large scale pilots** (100 M€)
 1. Smart living environment for ageing well
 2. Smart farming and food security
 3. Wearables for smart ecosystems
 4. Reference zones in EU cities
 5. Autonomous vehicles in a connected environment
 - IoT Horizontal activities (4 M€)
 - **R&I on IoT integration and platforms** (35 M€)



On 19 April the European Commission will adopt a Communication to Council and Parliament on **Digitising European Industry**.

Leadership in open digital platforms for industry
driven by European actors,
that any business can use to make its products,
processes or services ready for the digital age.

Digital transformation of all industry in Europe requires a **strong digital sector** in Europe

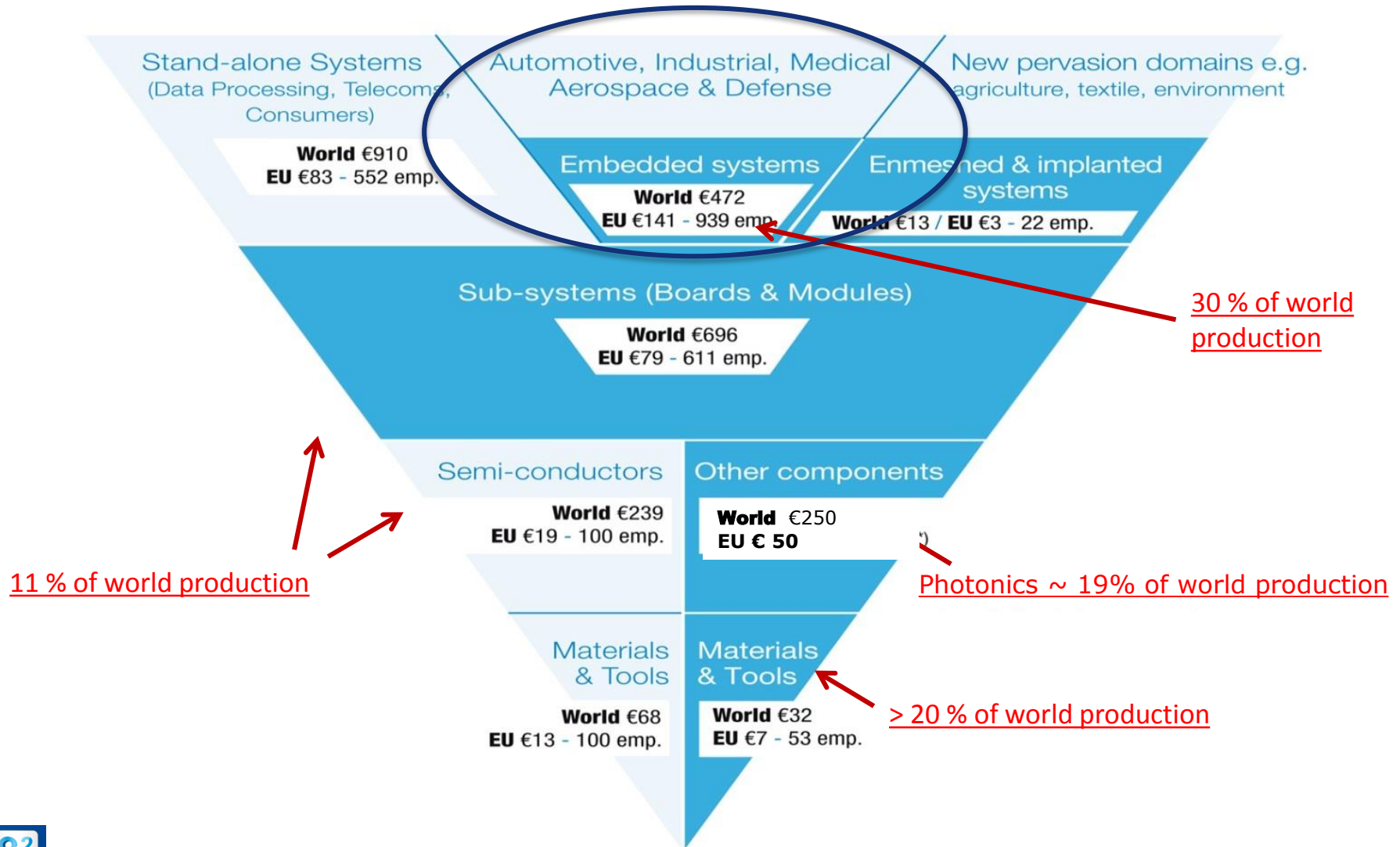


Broad digital transformation of all industry offers a unique opportunity to strengthen Europe's digital sector

"push-pull"
or the "virtuous circle"

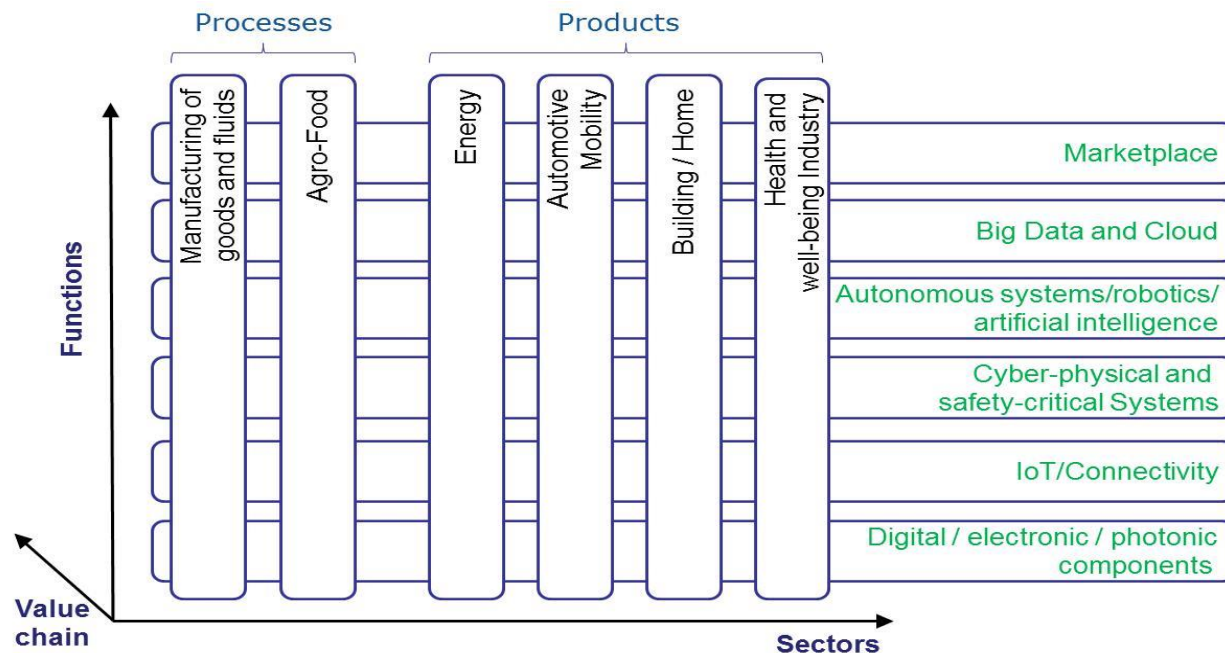


EU strengths: Professional & vertical markets



1. Leadership in digital technologies value chains

- Target
 - European leadership in open digital platforms for industry, and "technology gateways" that any business can use
- The challenge
 - Building on strengths in vertical markets, develop Europe's presence in cross sector platforms (IoT, Data, web, consumer,...)



2. Access to digital technologies Spurring bottom up innovation

Target

- Access to digital technologies and expertise within "working distance" for any industry in Europe, especially SMEs, mid-caps and non-tech

How

- A "Digital Innovation Hub" in every region based on:
 - World class specialised competence centre
 - able to provide industry with access to knowledge, technology development means and testing facilities
 - honest broker between users, suppliers, investors,...
- Collaboration and networking between centres, ensuring a one-stop-shop for expertise, complementarity & specialisation
- Public sector sharing risk with industry in innovation

Building on, and expanding successful actions



Status (EU support so far):

- ~150 M€ (2013-14)– 14 projects – 80 centres – 400 experiments
- ~75 M€ in 2015 (in contracting phase)

- Planned EU Action Plan builds on EU, Member states and regional structures
 - Catalogue of initiatives, priorities, competences, and best practices
 - Support building the "glue" – providing EU added value
- Timetable
 - April 2016: Communications by EC to EP and Council
 - April 2016: Hannover Messe announcement of action plan

Questions to the audience for the synergy session



- How do the activities of your project link to digital platforms and digital innovation hubs?
- Are we doing enough to get over the valley of death to get research to marketplace?
- Have we got everyone engaged e.g. the demand side, the commercialisation people, customers?
- Ideas on cooperation across projects and programmes?