



Green Vehicles, the Electronics Strategy and ECSEL

3 July 2014

Willy Van Puymbroeck

Head of Unit

DG CONNECT A.4 Components

Overview

- *Work in Hand – Clean, safe and Autonomous Vehicles*
- *A strategy for Electronic Components and Systems in Europe – the strong link to the automotive*
- *ECSEL – opportunity ahead*

Work in Hand – Statistics on clean, safe and autonomous vehicles

Statistics based on projects funded through 6 different streams

- **Green Car Public Private Partnership – ICT part**
- **FP7 Components**
- **ENIAC JU**
- **FP7 Complex Systems and Advanced Computing**
- **FP7 Smart Cities**
- **ARTEMIS JU**

Grouping on projects in categories

- **3 categories related to components and smart systems**

- Vehicle energy & power management, including power electronics and batteries

- Electric vehicle (architecture and integration)

- Nanoelectronics for automotive

- **3 categories related to embedded systems and their integration in systems and infrastructure**

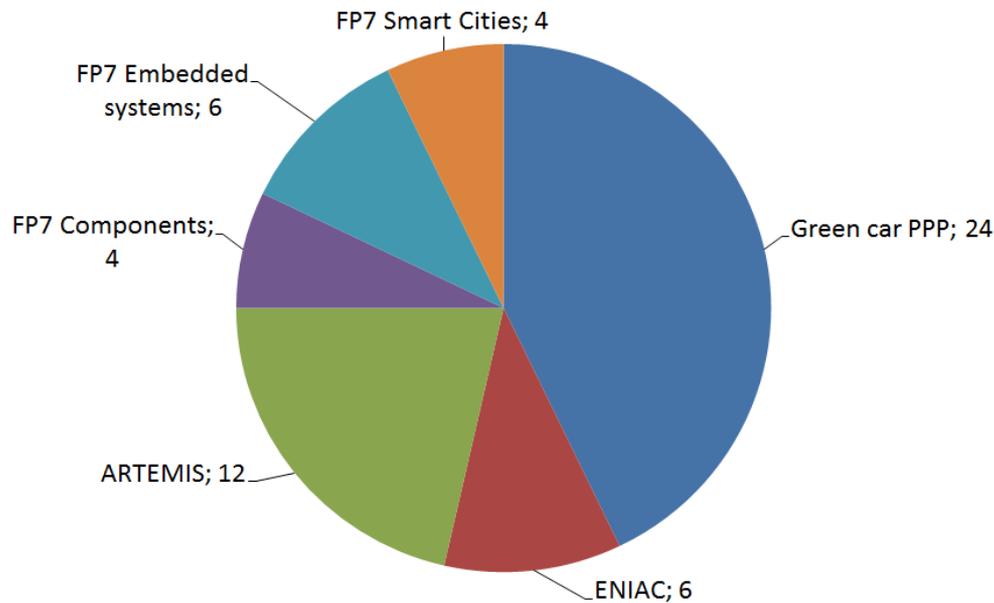
- Embedded system validation & certification, covering multiple dimensions in safety criticality, design reuse strategies...

- Autonomous vehicle

- Other embedded systems, including grid connection for electric vehicles, predictability...

Overview – based on funding programme

Projects related to
safe, clean and automated vehicles



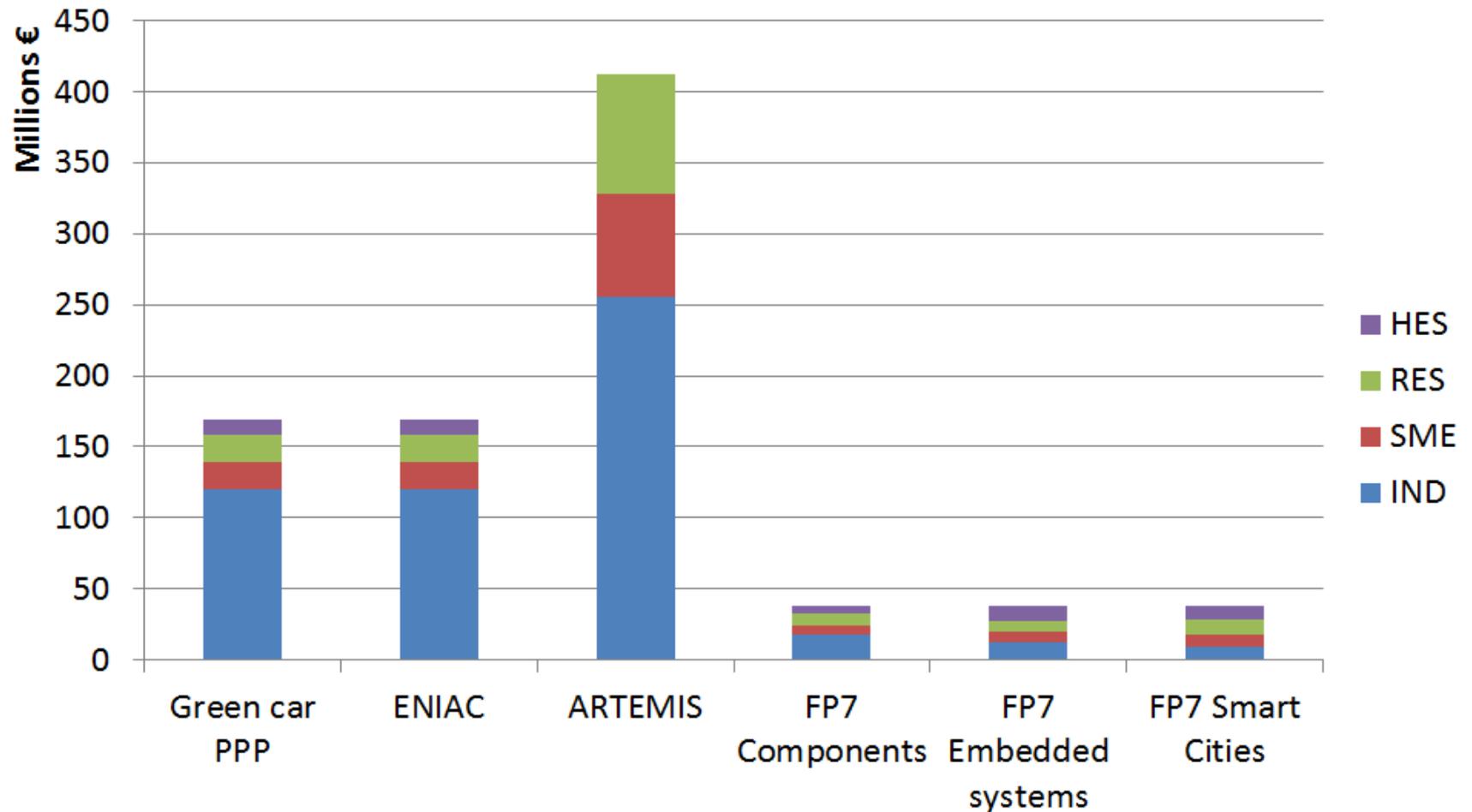
Total costs: 839.4 M€

EC funding: 263.9 M€

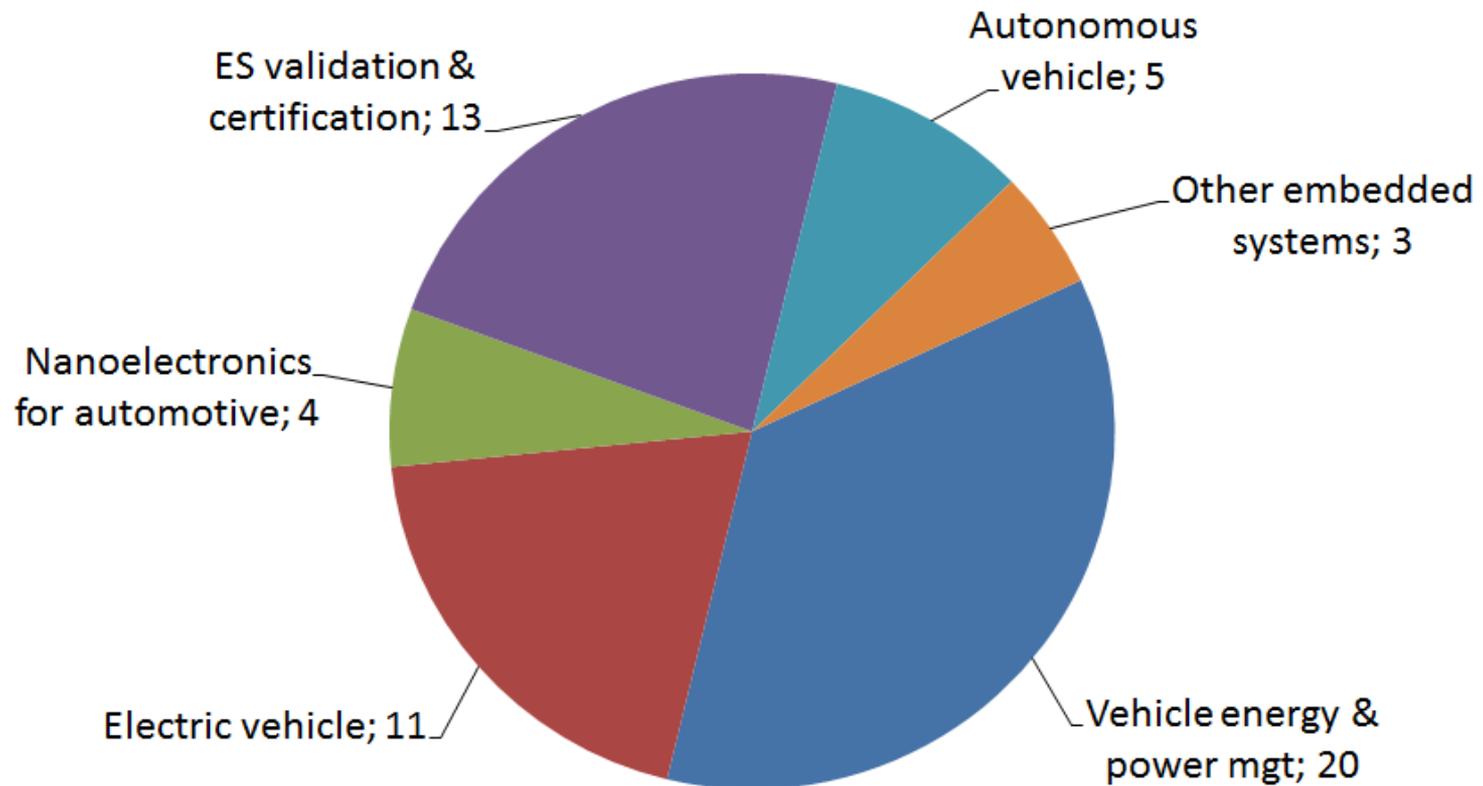
Number of projects: 56

Number of participants: 1,041

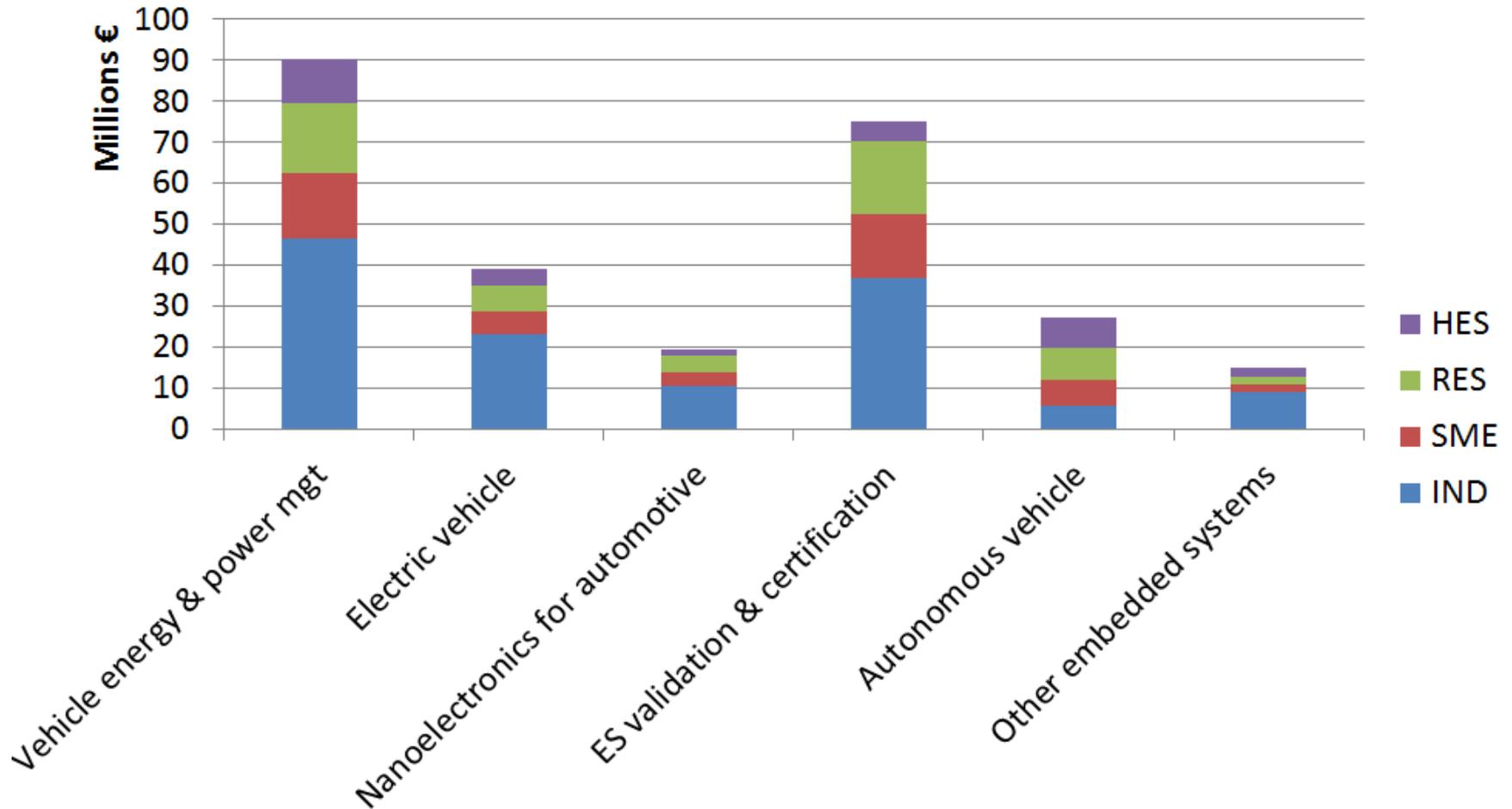
Total costs of projects related to safe, clean and automated vehicles



Projects related to safe, clean and automated vehicles



EC funding of projects related to safe, clean and automated vehicles



A strategy for ECS in Europe – the strong link to the automotive

- 23 May 2013: Commission proposes a new EU wide strategy for the field with the aim of regaining production shares
Highlights the importance of the sector and the need to act
VP Kroes sets a challenge of doubling production in Europe – 10 actions including
 - Set up an Electronics Leaders Group (ELG)
 - Launch ECSEL – a public private partnership on Electronic Components and Systems for European Leadership
 - Elaborate and implement a market-pull approach

A strategy for ECS in Europe – the strong link to the automotive

- 14 February 2014: ELG proposes a 'European Industrial Strategic Roadmap for Micro- and Nanoelectronics Components and Systems'

Identifies key market opportunities

- Existing system areas where Europe is strong e.g. automotive
- Emerging system areas such as IoT, intelligent transport
- Mobile converge

and 3 tracks of action

- Demand accelerators
- Preparing supply, raising production capacity and capability across the value chain
- Enhanced framework and infrastructure

A strategy for ECS in Europe – the strong link to the automotive

- 30 June 2014: ELG proposes an Implementation Plan for the European Industrial Strategic Roadmap
 - Identifies spearheading measures and measures to drive innovation on a wider scale
 - Trailblazer projects - including autonomous mobility
 - World-class reference zones of testing, integration and deployment of smart innovation
 - Networks of competence centres
 - On supply – including
 - Building on pilot lines – on power and embedded electronics

ECSEL Joint Undertaking

- A public-private partnership with a tri-partite governance structure to support R&D&I established by Council Regulation
- Total Budget: ~€5 billion for 2014-2024 (2020 for EU financial commitments)
 - **€1.185 billion from the EU (incl. €15 million admin)**
 - **€1.170 billion from participating States (MS + AC)**
 - **€2.340 billion from industry (at least, of which €1.657 billion from private members incl. max €48 million admin)**
- Replaces and succeeds ARTEMIS and ENIAC JU and includes EPoSS ETP

Synergies - Scope

The strategy for Electronic Components and Systems:

➤ Without a state of the art technological infrastructure, Europe will be dependent on importation



➤ Without integrating components in smart systems, it is impossible to capture the economic benefits on the end user markets

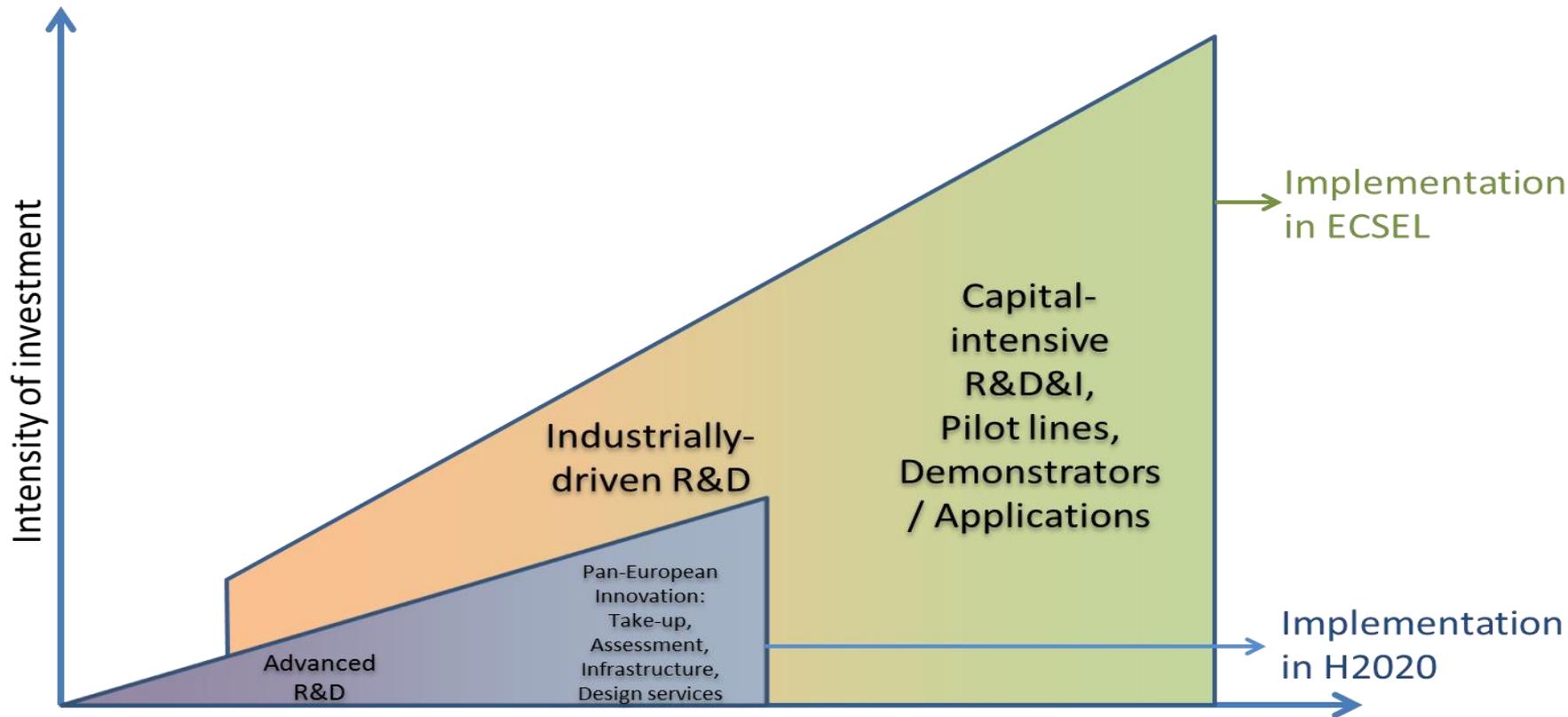


➤ Without functionality provided by the embedded software, the chips are useless and the fabs are economically unsustainable





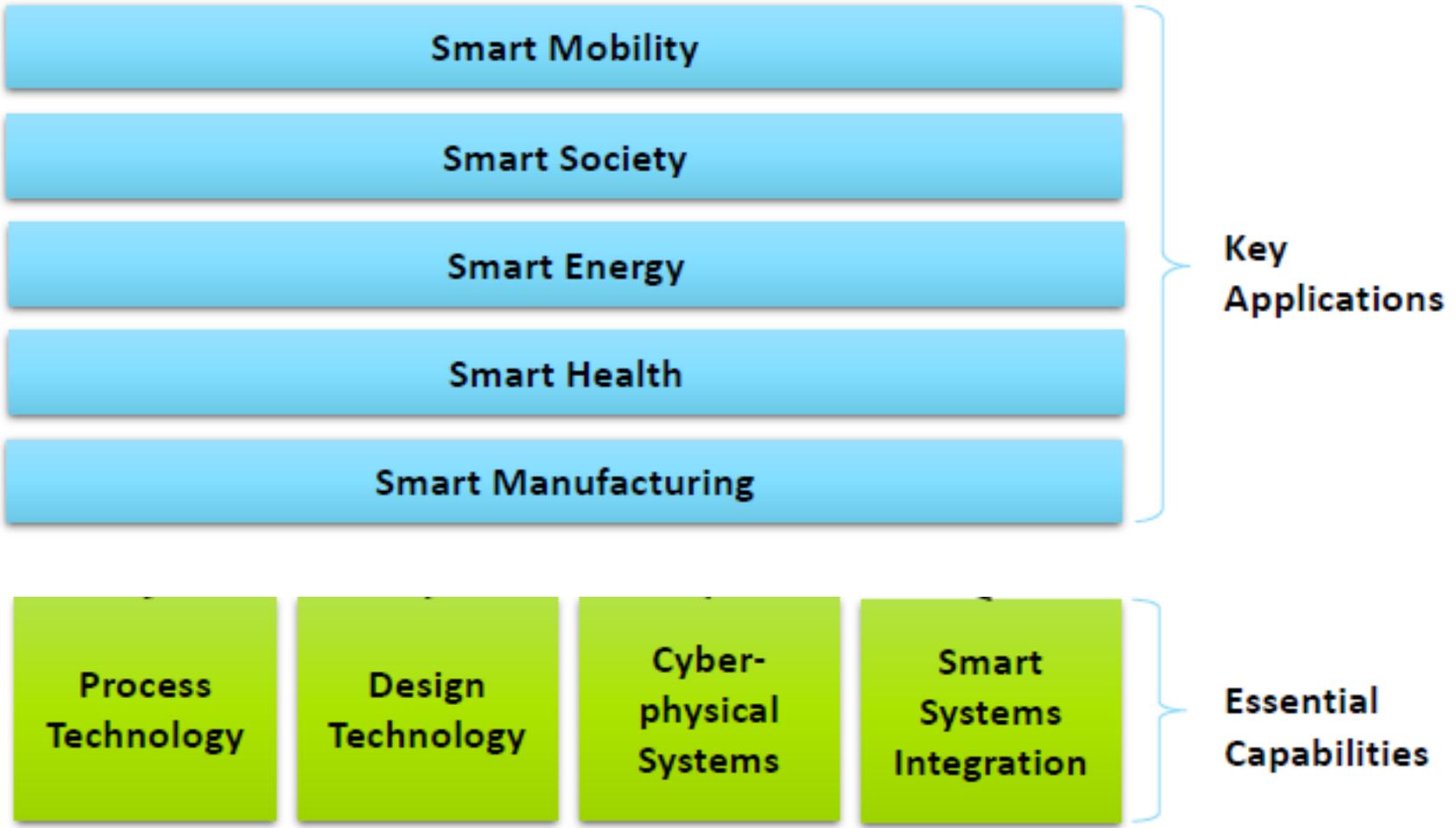
Focus on industrial R&D&I



TRL	1	2	3	4	5	6	7	8	9
	Basic Principles Observed	Technology Concept Formulated	Experimental Proof of Concept	Technology Validation In lab	Tech valid. In relevant environment	Demonstration In relevant environment	Demonstration in operational environment	System complete and qualified	Successful mission operations



Strategic Trust – Key applications / essential technologies



Smart Mobility as part of ECSEL Multi-Annual Strategic Plan

- Resource-efficient transport, e.g.
 - **ECS on vehicles to harvest energy**
 - **Energy efficient power electronics**
 - ...
- Less congestion/more safety, e.g.
 - **Smarter, reliable and robust communication**
 - **Advanced driver assistance**
 - ...
- Next generation intelligent vehicles, e.g.
 - **Intelligent in-vehicle networks**
 - ...
- Mobility in broad multimodal sense

- **ECSEL JU launch:**
 - **6 May 2014: Regulation adopted**
 - **7 June 2014 : publication in O.J.**
 - **27 June 2014 : entry into force**

- **Calls for proposals:**
 - **9 July: publication**
 - **Mid-September: Submission deadline**
 - **Before year end: Funding decision**
 - **One Call TRL 2-5: Research & Innovation Actions**
 - **One Call TRL 4-8: Innovation Actions (Pilot Lines)**

- **EU budget: €135 million**

Note: work in progress, information may change

THANK YOU

Willy.Vanpuymbroeck@ec.europa.eu

DG CONNECT (Communications Networks, Content and Technology):

http://ec.europa.eu/dgs/connect/index_en.htm Horizon 2020 on the web:

http://ec.europa.eu/research/horizon2020/index_en.cfm