



Micro- en Nanoelektronica

Roger De Keersmaecker
Senior VP Strategic Relations



KETs in HORIZON 2020
Startevent: KET-Platform Vlaanderen
14 november 2012

KET MICRO- & NANO-ELECTRONICS

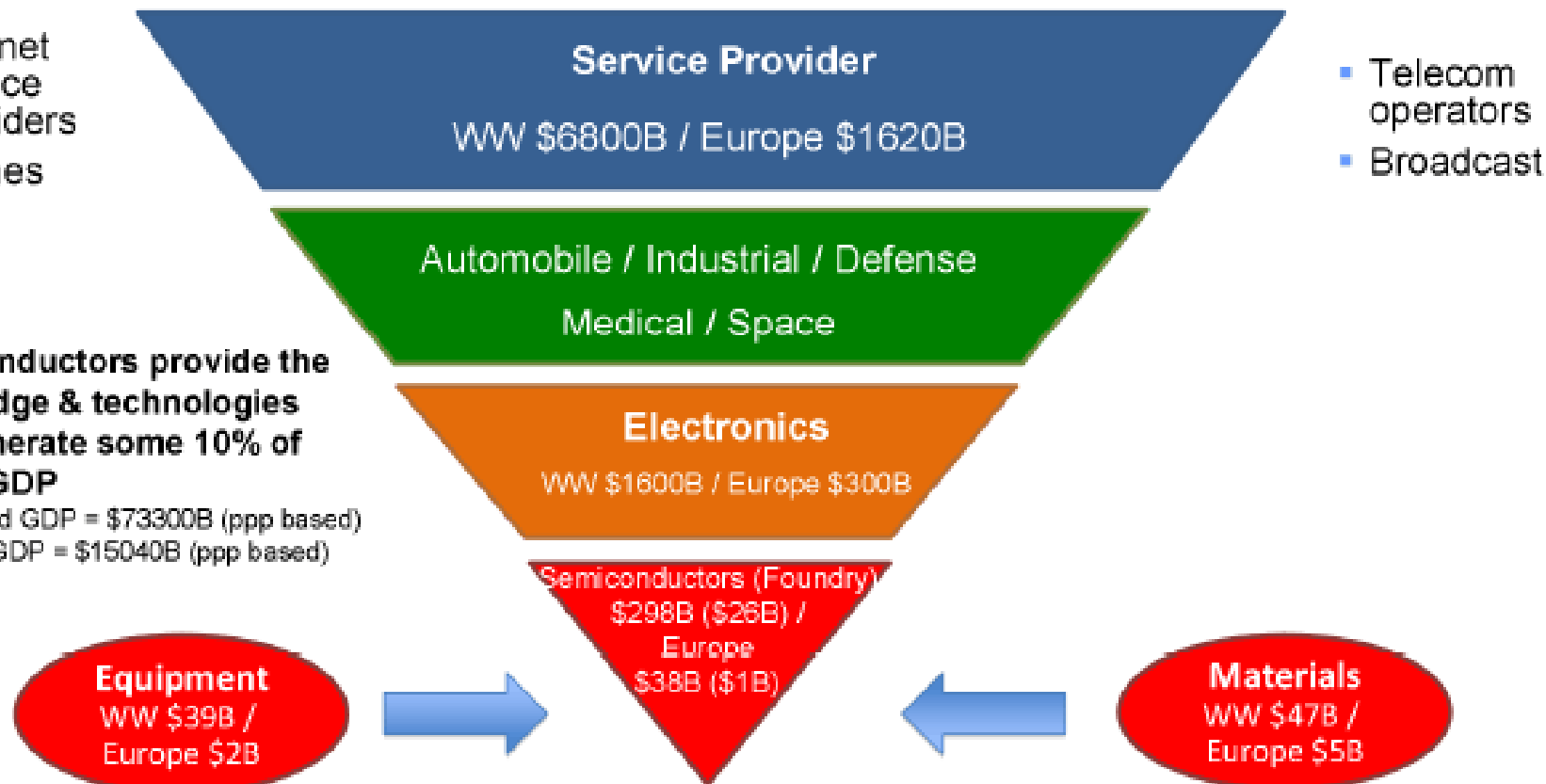
Electronics is a strategic “enabling” industry

- Internet service providers
- Games

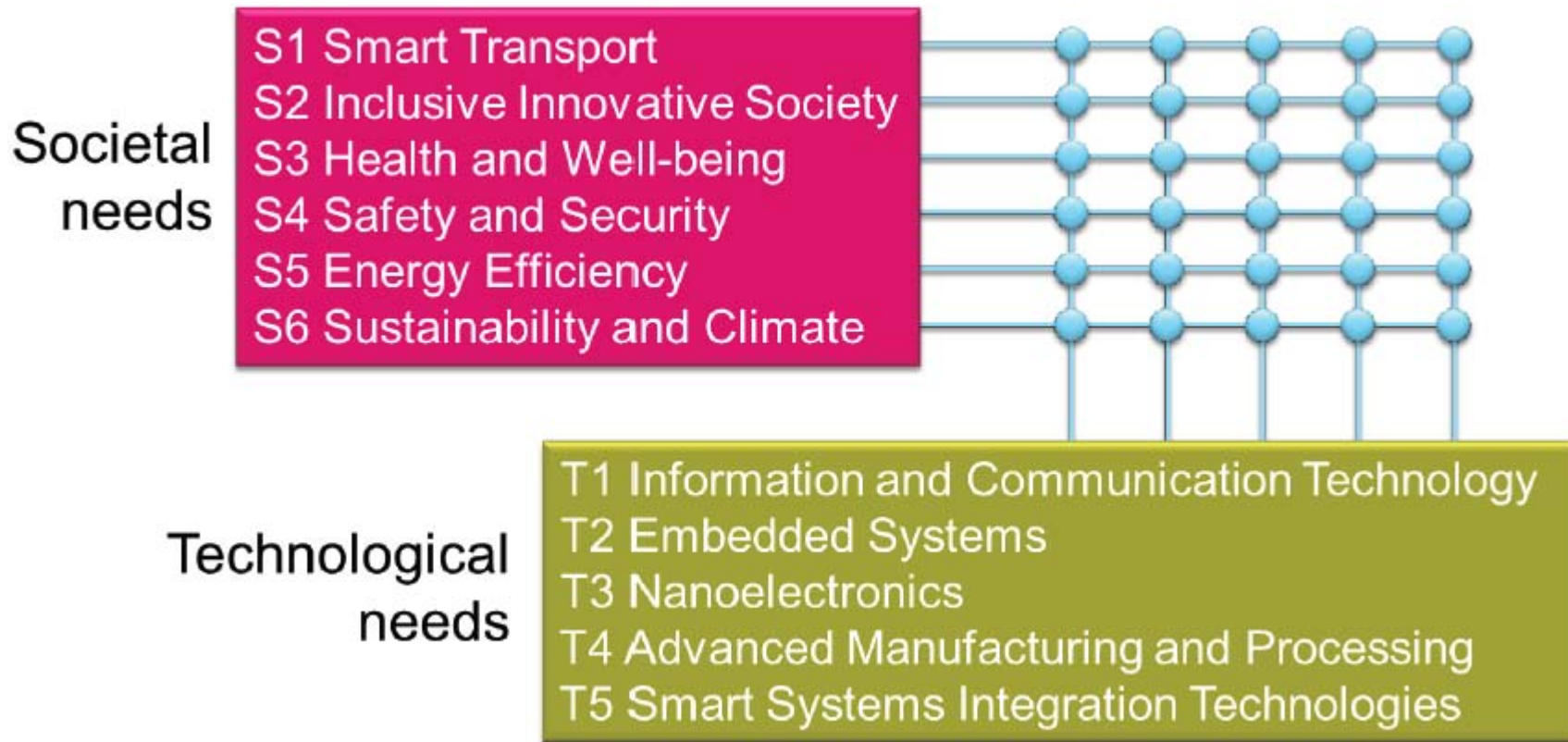
- Telecom operators
- Broadcast

Semiconductors provide the knowledge & technologies that generate some 10% of global GDP

2010 World GDP = \$73300B (ppp based)
2010 EU GDP = \$15040B (ppp based)



TECHNOLOGY ENABLERS FOR SMART, SUSTAINABLE AND INCLUSIVE GROWTH

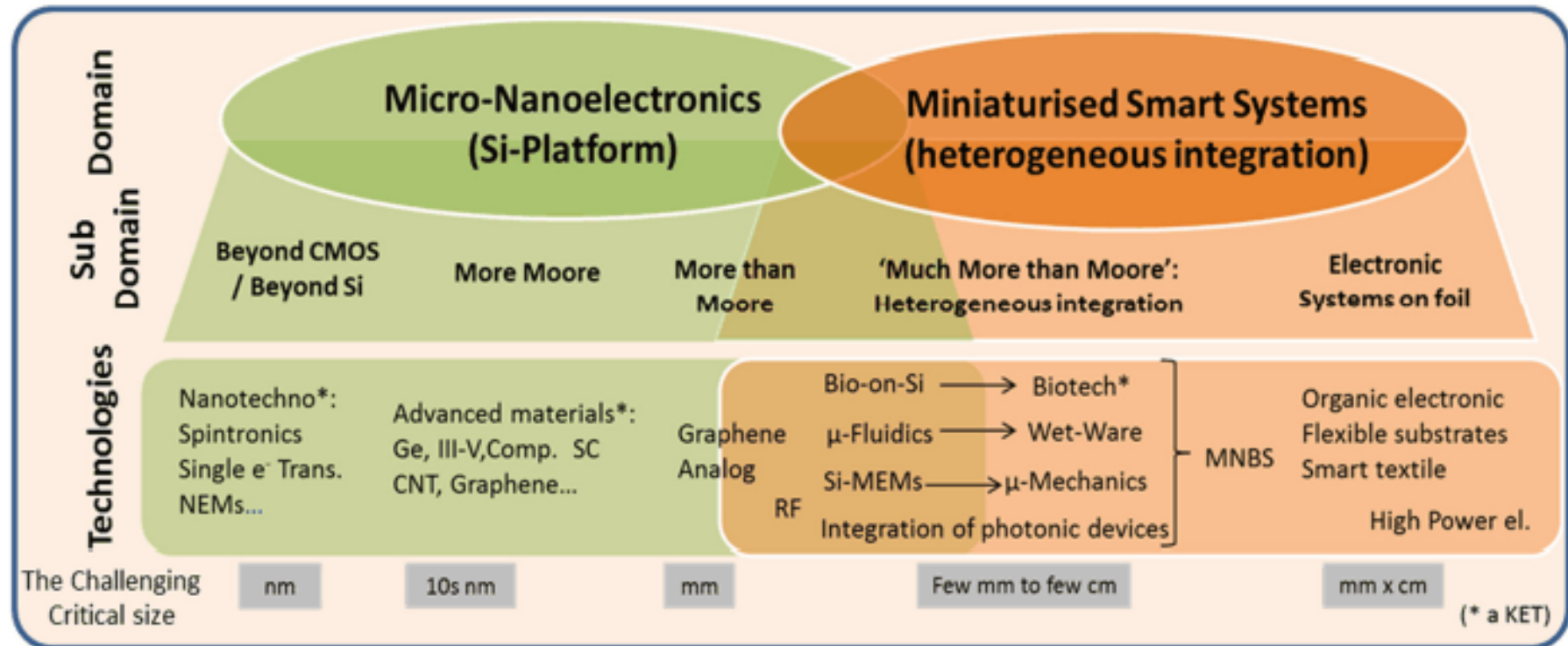


- Technology development must be driven by visionary "European" **application scenarios**

- Bringing together “silos” of **communities** in multiple technology and application disciplines

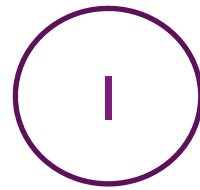
COMPONENTS & SYSTEMS

From Transistors to Miniaturised Smart Systems
From nanometres to centimetres





**Advanced Research &
Technology for EMbedded
Intelligence & Systems**



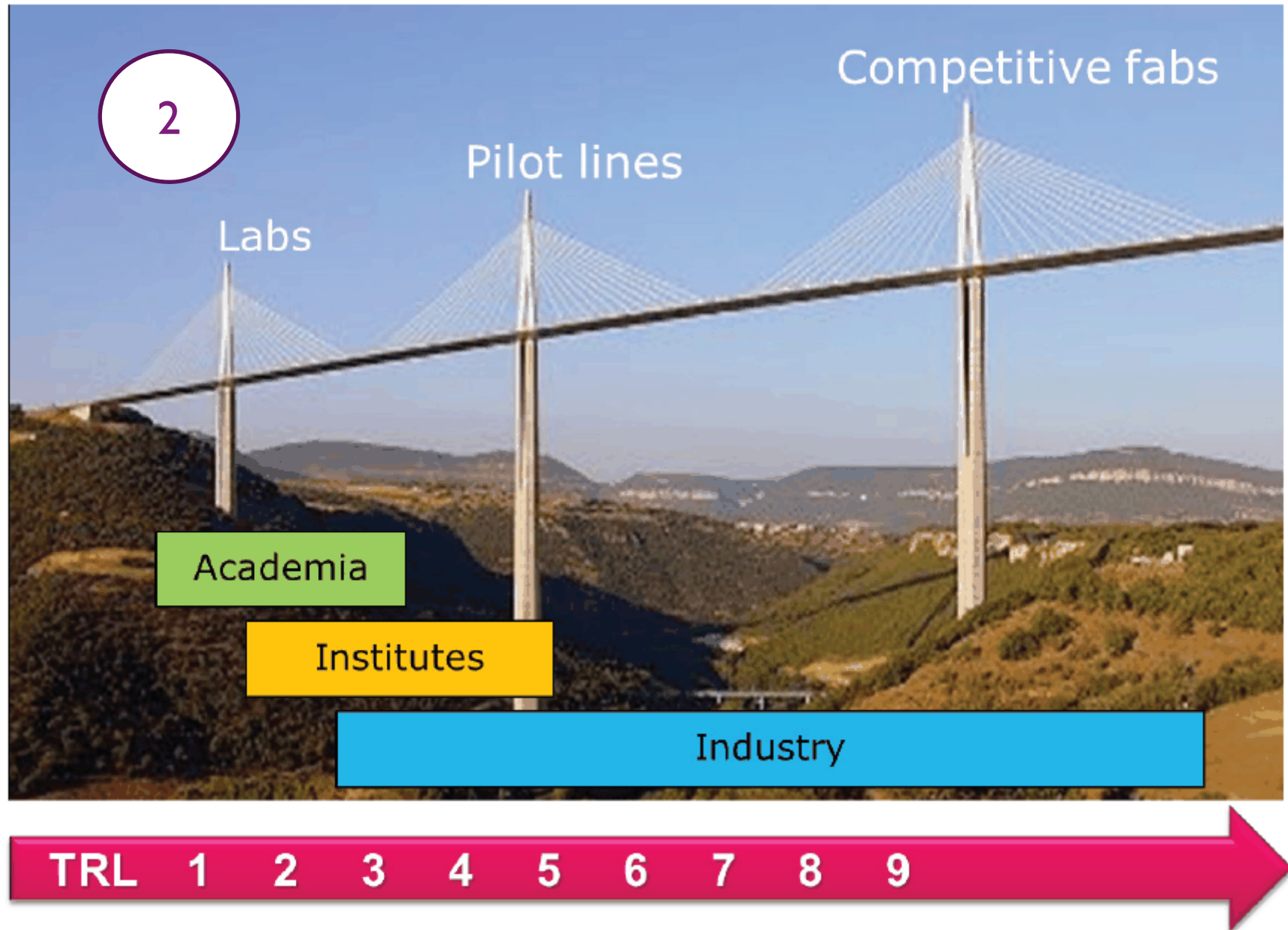
WHAT IS NEW?

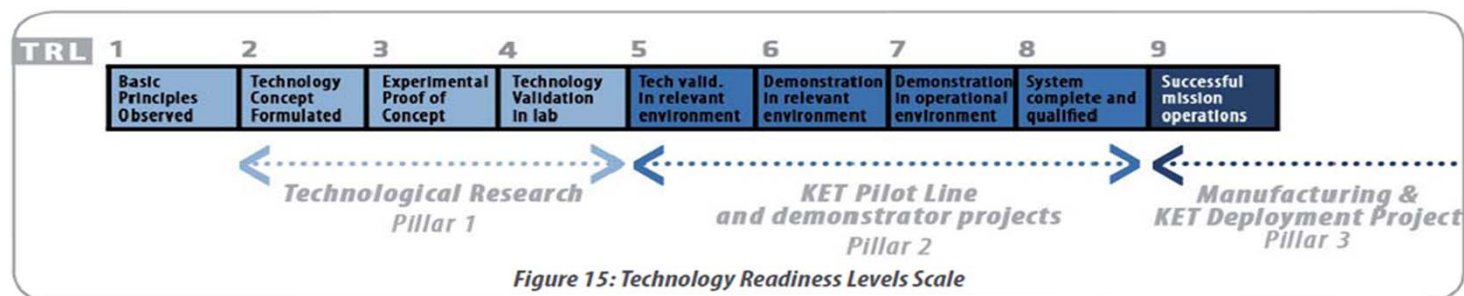
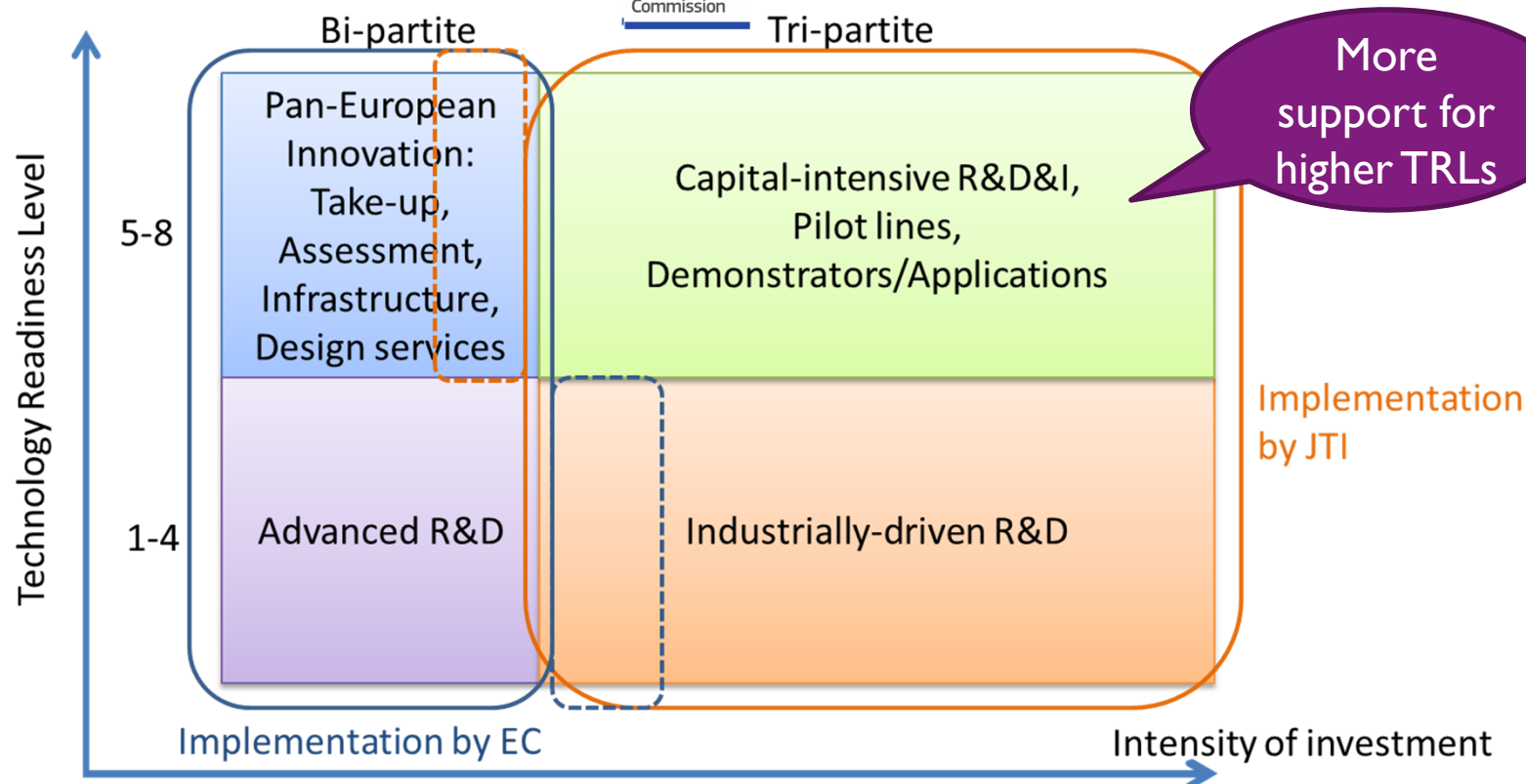
- “New” JTI on **Electronic Components and Systems** (combination of ENIAC, ARTEMIS and EPoSS)
- AENEAS supportive, but proposes to have separate calls for NE and S/W
- Common Strategic Research, Dev’t and Innovation agenda



EPoSS

European Technology Platform
on Smart Systems Integration





AN “AIRBUS” OF CHIPS ...



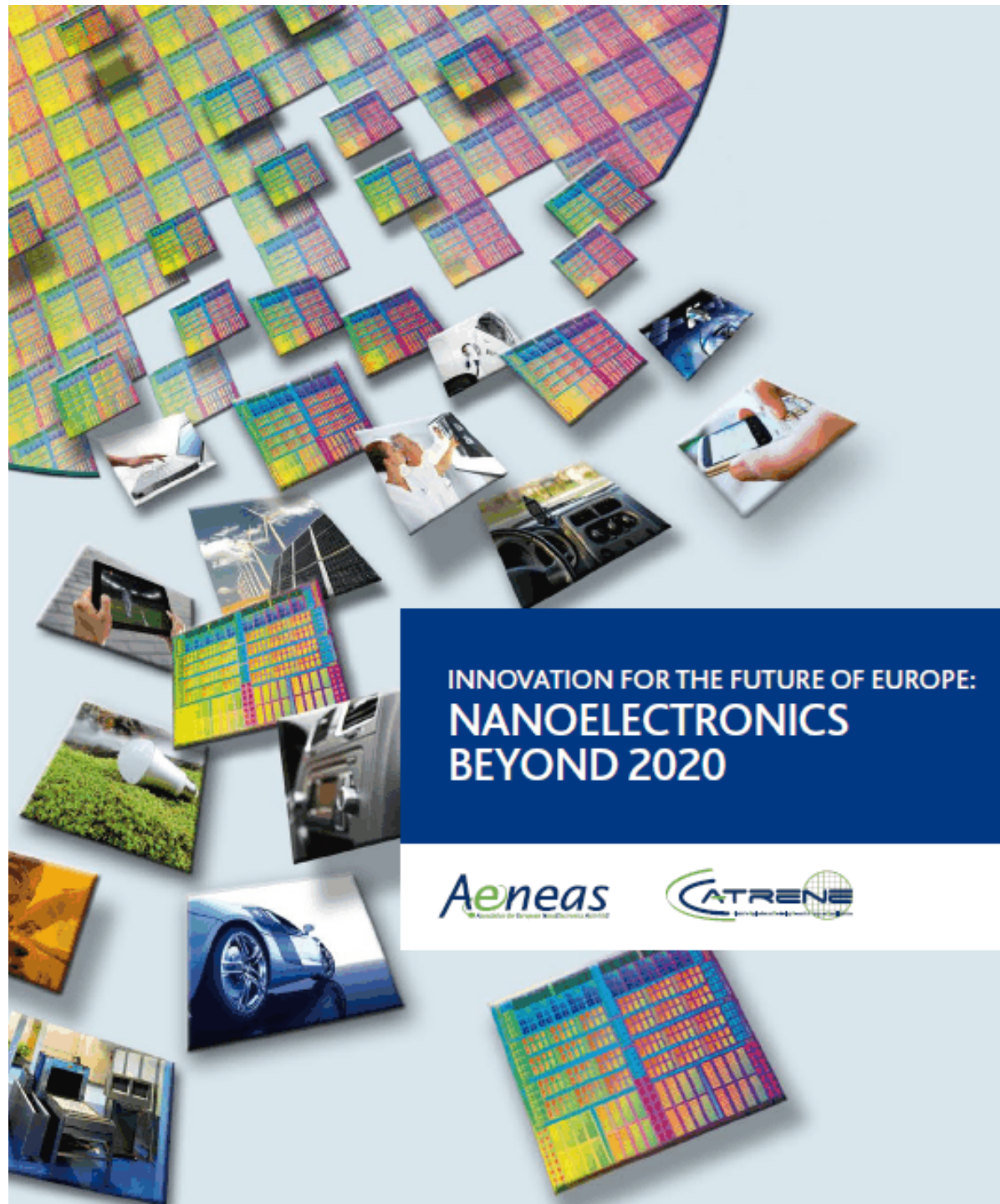
Neelie Kroes, Vice-President of the EC responsible for the Digital Agenda Electronics for Europe at the imecTechnology Forum (ITF) Brussels, 24 May 2012

“ ... Given these new opportunities. And given the economic position of Europe, with no Member State big enough to compete along the whole industrial value chain: the question has to be, don't we want one of those global players to be European? Shouldn't we consolidate and cooperate on our own terms – rather than wait for it to be forced on us? Isn't the time right to pool our excellence in R&D, much more than we do today?

Shouldn't we be looking for an "Airbus of Chips"? ...”

STAKEHOLDERS PROACTIVE...

- Common position paper AENEAS & CATRENE
- To be presented at European Nano-electronics Forum (20+21 Nov '12)



450MM FOR E&M INDUSTRY

INDUSTRY 450mm CONVERSION TIMELINE

2012	2013	2014	2015	2016	2017	2018	2019

450mm Equipment

450mm Pilot

**450mm
Production**

CLEAN ROOM EXPANSION JUNE 8TH 2010

450mm READY



FAB 1

5200 m² CR (1750 m² Class 1)

200 mm pilot line

Continuous operation: 24/7

FAB 2

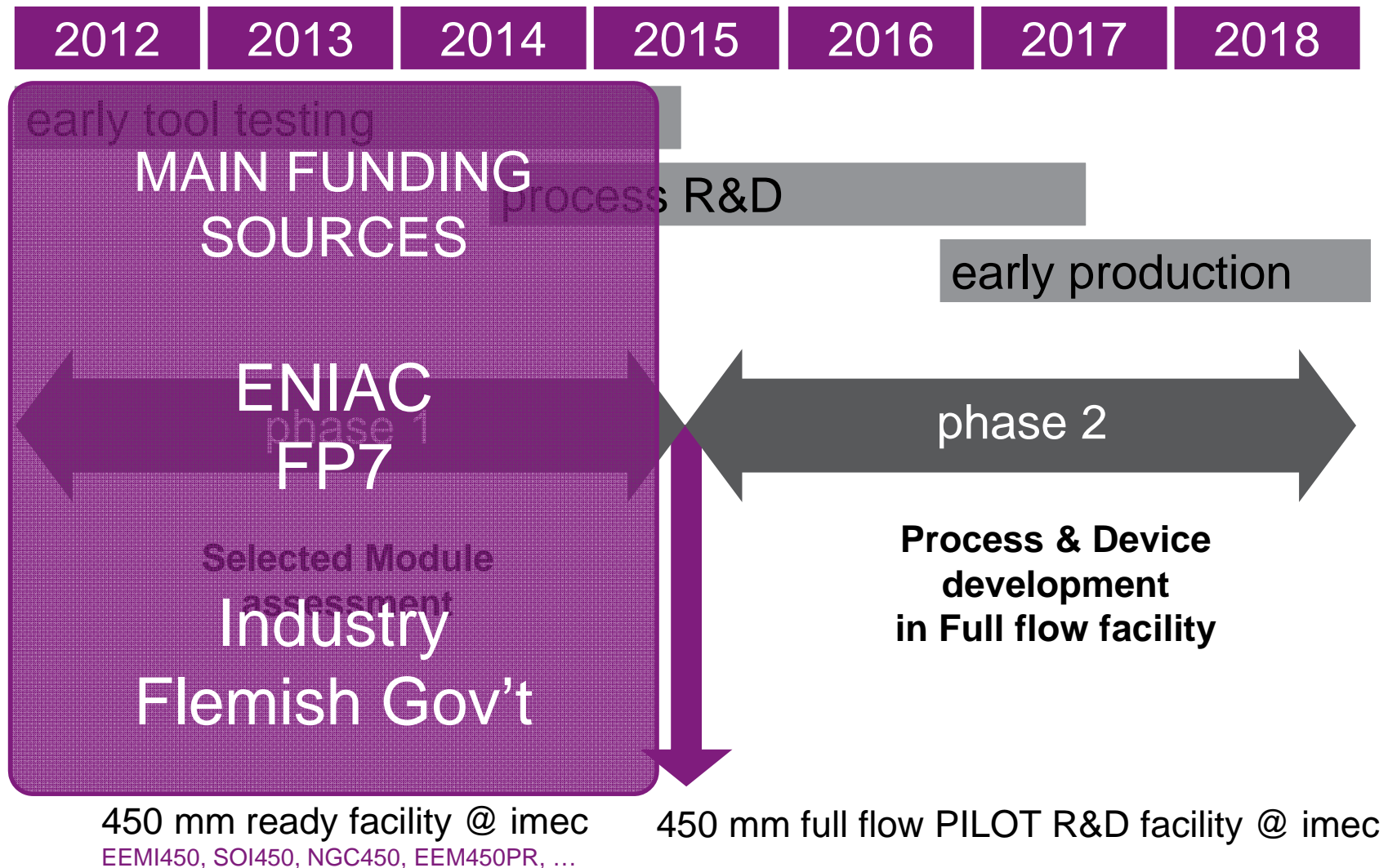
3200 m² + 1200 m² CR

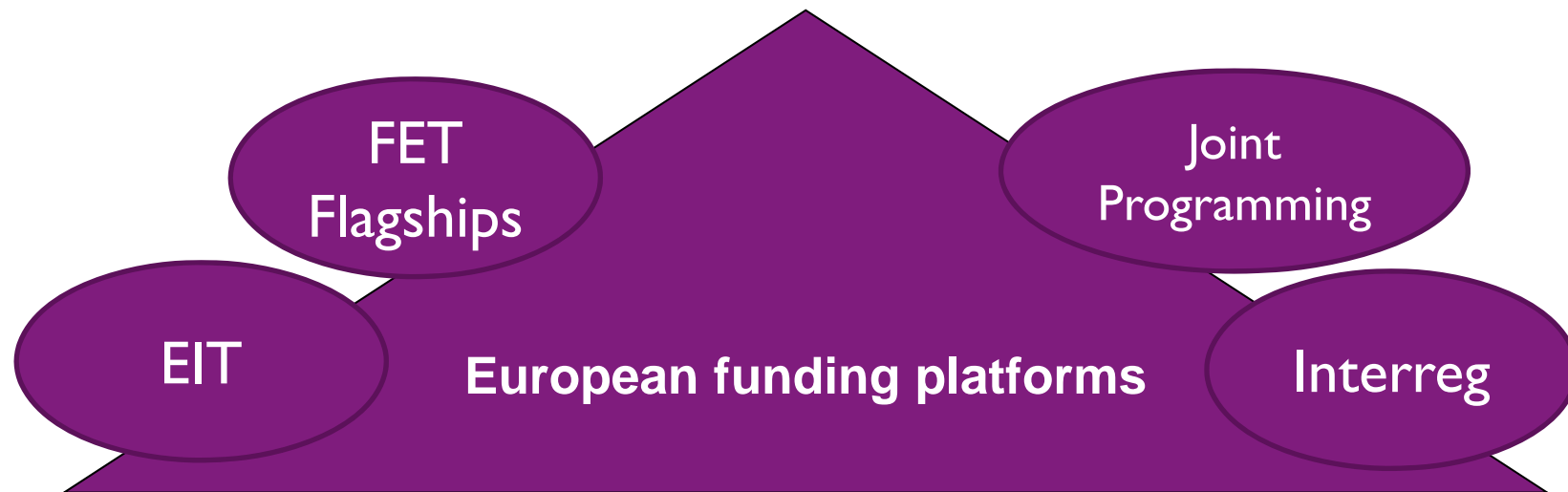
300 mm pilot line - Ball Room, Clean sub-fab

Continuous operation: 24/7



450mm R&D PILOT FACILITY KET PILOT PROPOSAL





<p><u>FP7</u></p> <ul style="list-style-type: none">• Upstream R&D• NMP, ICT, Health• → each having an own work program	<p><u>JTI</u></p> <ul style="list-style-type: none">• Downstream R&D• Unified processes• National contracts• EC top-up• ENIAC/ARTEMIS/IMI	<p><u>EUREKA</u></p> <ul style="list-style-type: none">• Downstream R&D• ITEA 2, CATRENE• National contracts• No EC top-up	<p><u>National and Regional Programmes</u></p> <ul style="list-style-type: none">• IWT• FWO• Hercules• Province
<p>Funded by EC</p>	<p>Funded by EC and PA</p>	<p>Funded by PA 10% extra funding in Flanders</p>	<p>Funded by PA</p>



FP7

- Upstream R&D
- NMP

SEA450

ENABLE450

Funded by EC

ITN

- E
- National
- EC
- E

EEMI450

EEM450PR

E450EDL

0-45%

Funded by EC
and PA

**EUREKA –
CATRENE**

- Do
- I
- No

SOI450

NGC450

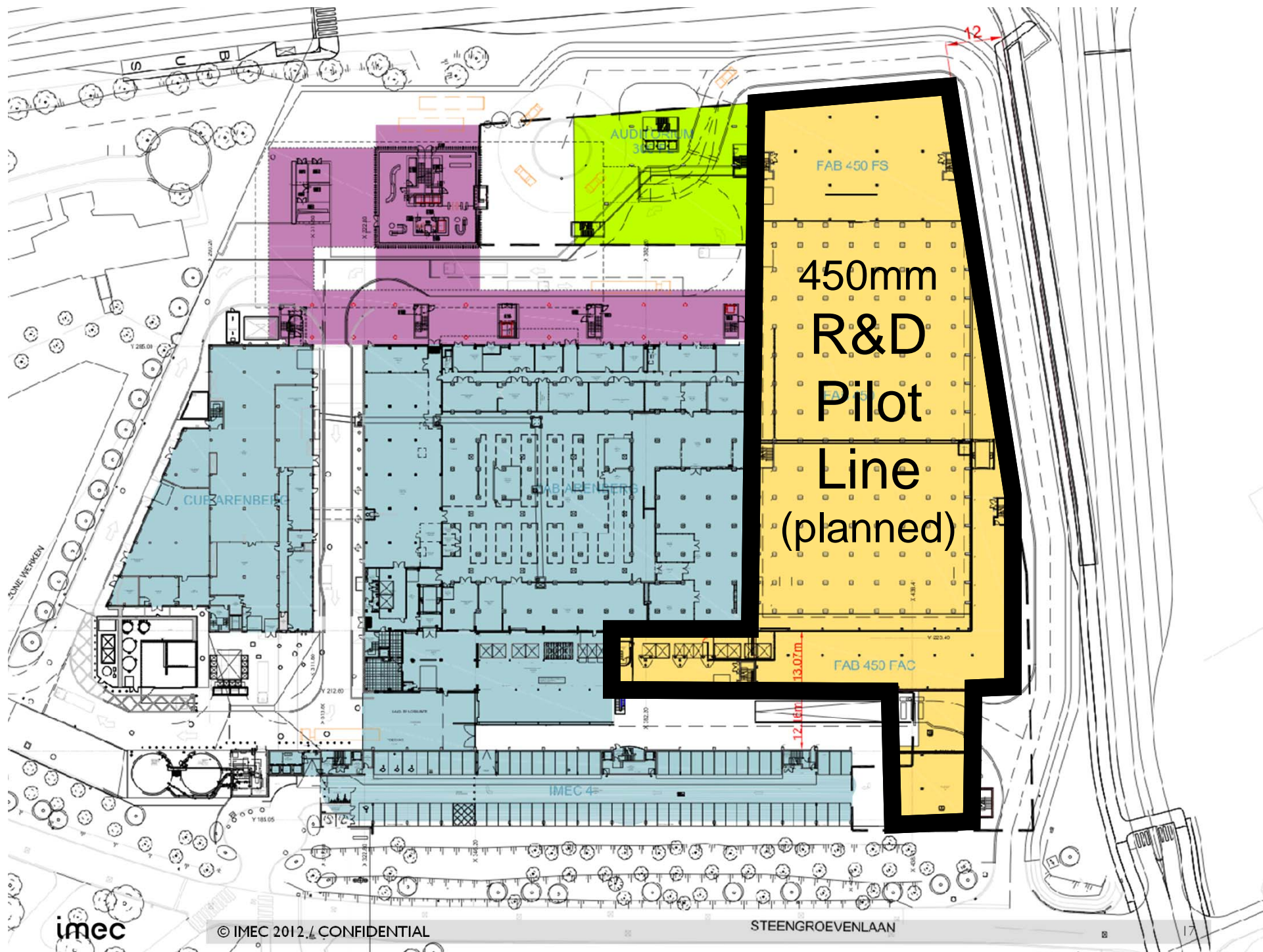
Funded by PA
10% extra funding
in Flanders

**National and
Regional
Programmes**

Support
Flanders

35-100%

Funded by PA



SMART SPECIALIZATION



What is DSP Valley?

→ Cluster organization

- **Technology network** - design and dev't of embedded signal processing systems
- Transformed to **cluster mgt organization** -> **DSP Valley 2.0**

→ Mission

- Stimulating **innovation** - creating new **partnerships** - networking **platform**
- Creating a technology community

**Digital
Signal
Processing**

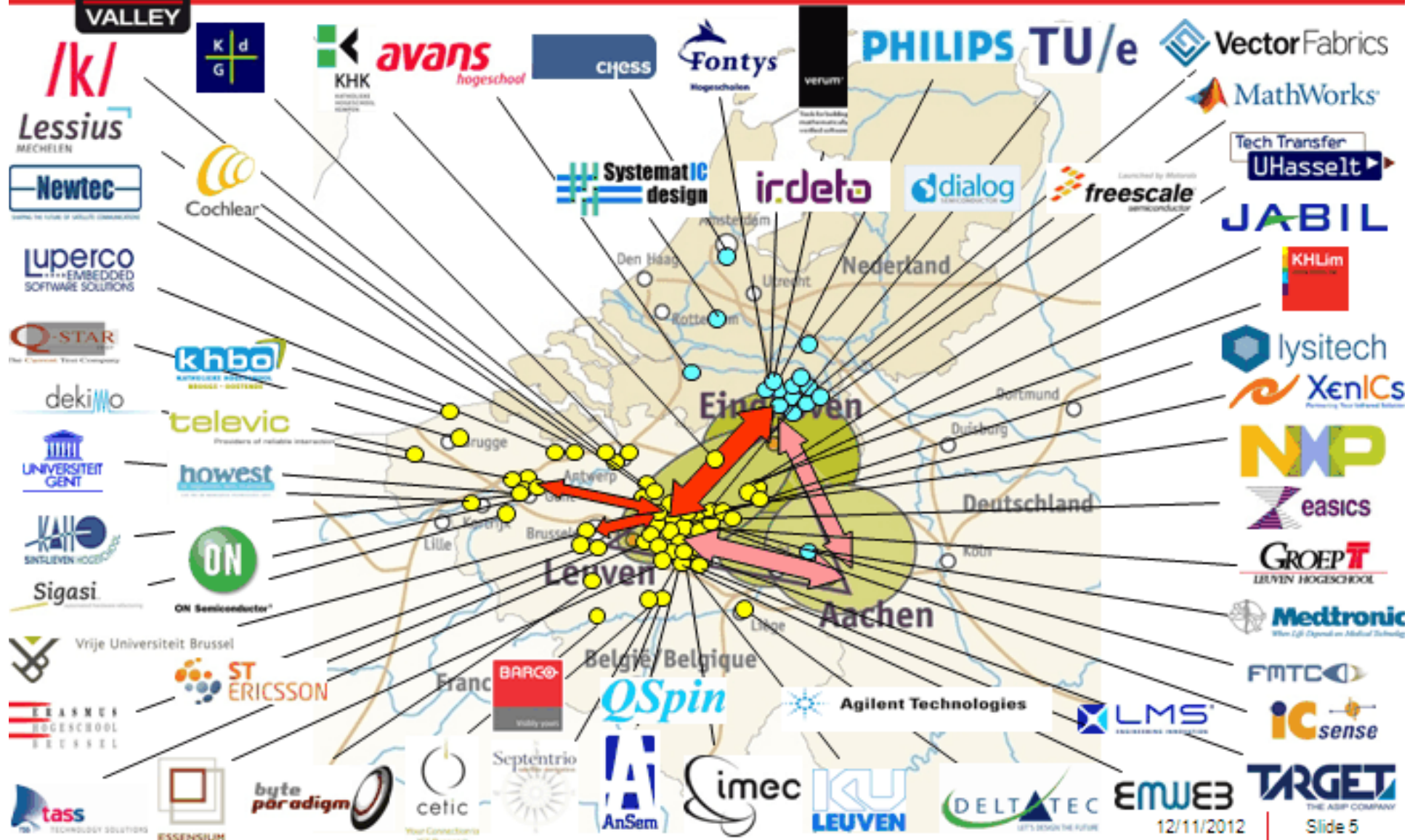


**Designing
Smart
Products**

... with **DSP**
as KET



Technical Complementarity & Regional Proximity

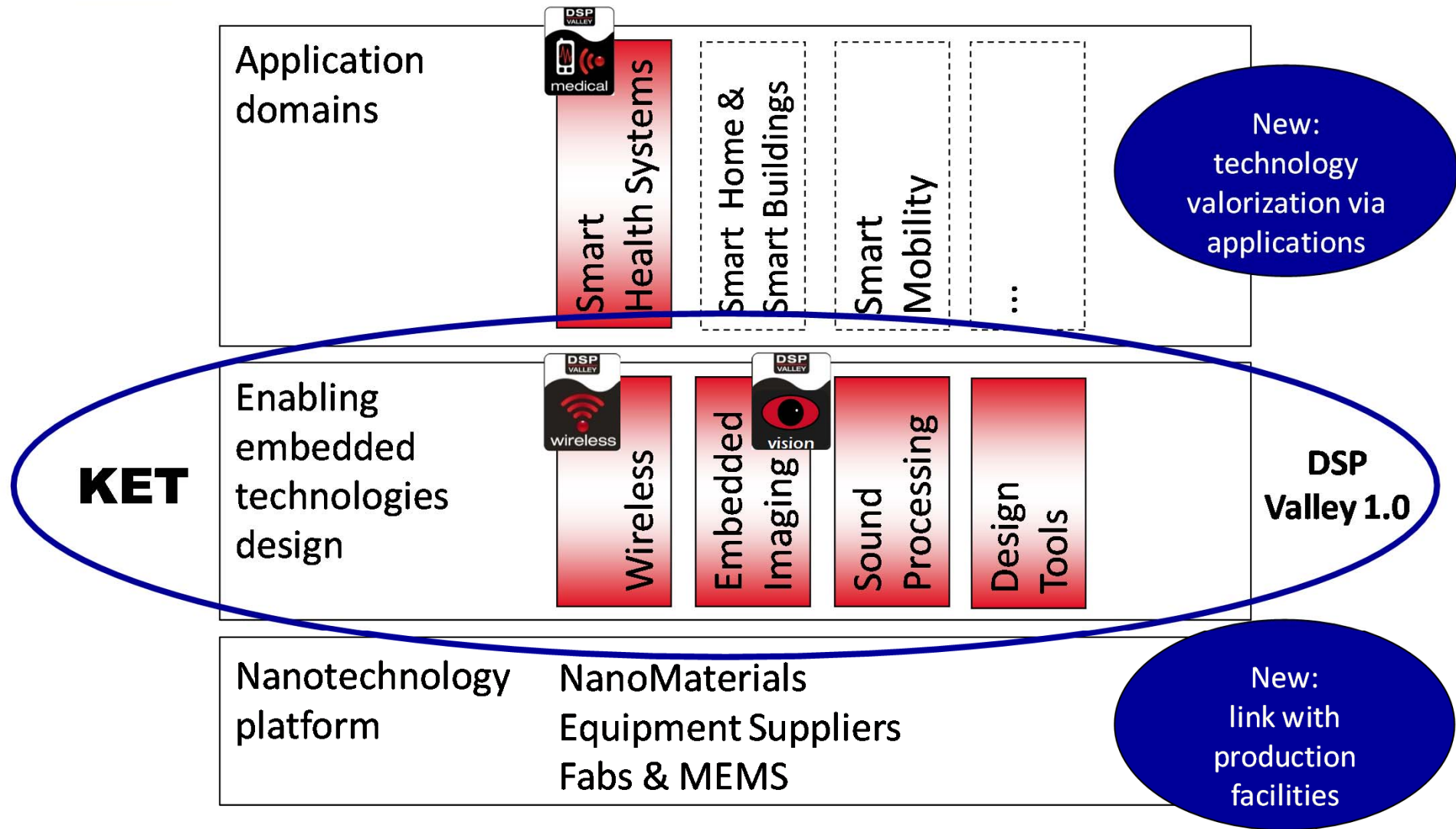


12/11/2012

Slide 5



Valorization via Applications, driven by KETs





Smart Specialization: NfH

Cluster Governance for NfH

NanoTechnologies for Health

DSP Valley

Flanders BIO

Eisenscella

Smart Health Systems

Bio-silicon & Medical Devices

BAN & Remote Monitoring

Medical Imaging

Bio-Instrumentation

Biomaterials

Biotech

Biopharma

Fabless Semiconductor & Embedded Systems Design & Development Community

Nano-electronics Technology Platforms

Life Sciences Technology Platforms

imec

*R&D Platforms
NERF*

VIB

Clinical Testing & Translational Research

UZ GHB

12/11/2012

Slide 11



**ASPIRE
INVENT
ACHIEVE**

