

# Convocatorias 2016

## ECSEL JU

CDTI, 14 de marzo de 2016



**ECSEL JU**

# What is ECSEL? - Principles

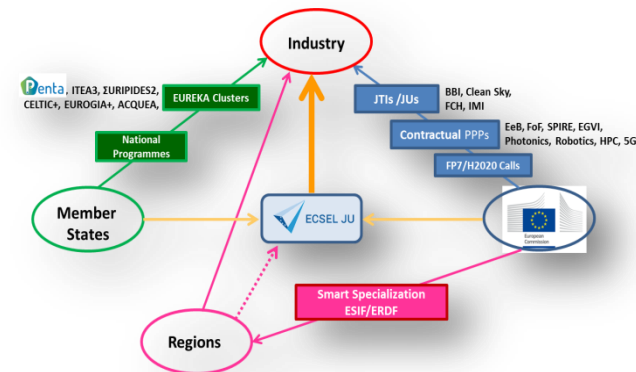
## ➤ Implement Horizon 2020:

- Develop favourable conditions for investing in knowledge and innovation
- Achieve smart, sustainable and inclusive growth



## ➤ PPP-model with 3-way funding

- The European Union (1.17B€, via EC/H2020)
- The ECSEL Participating States (>1.17B€)
- The Private Members (~ 5B€, minus grants)
- Build upon ARTEMIS/ENIAC JU experience and achievements



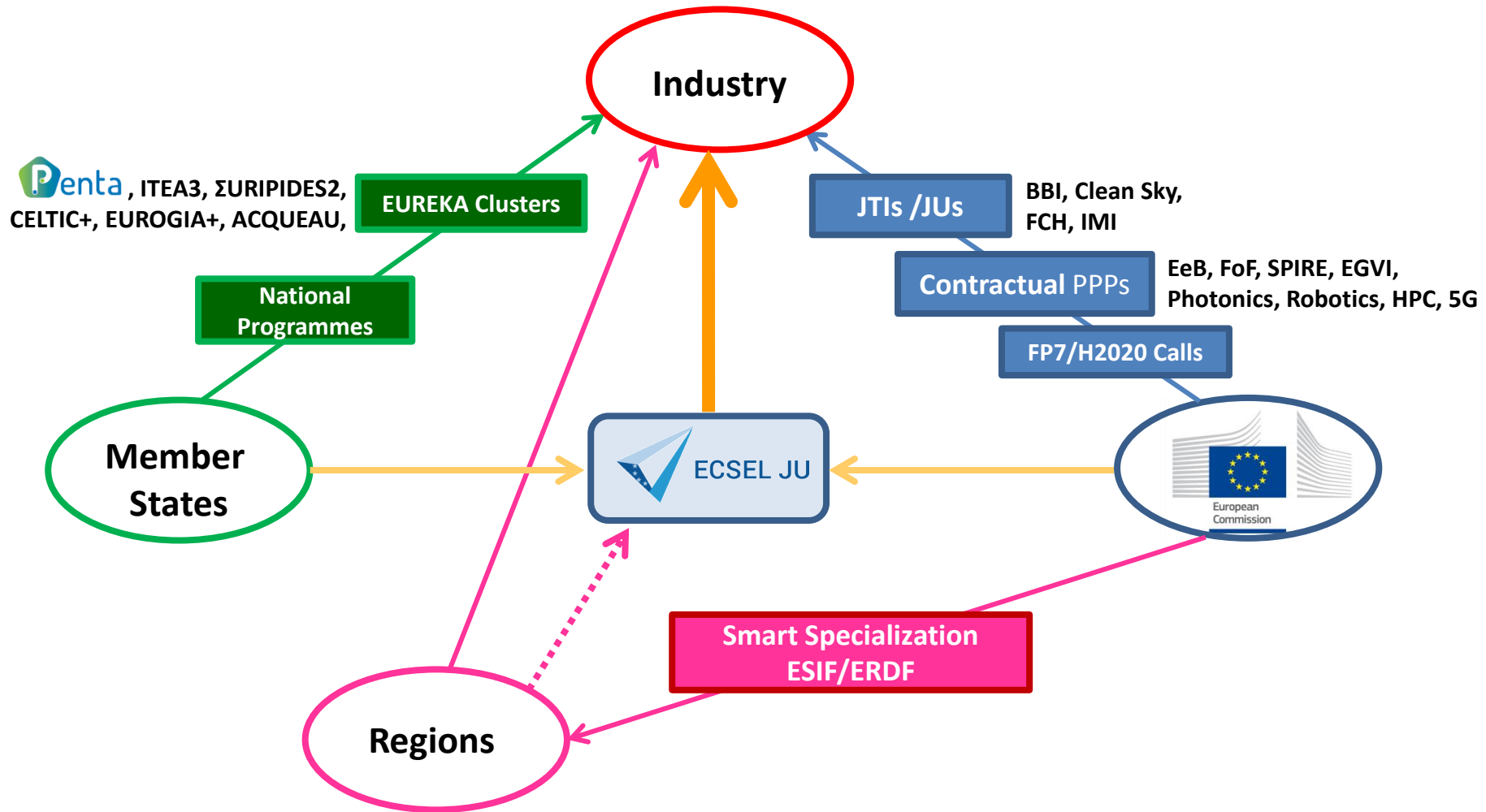
# WHO is ECSEL?



**COMMUNITY OF EUROPEAN R&D&I PARTICIPANTS**

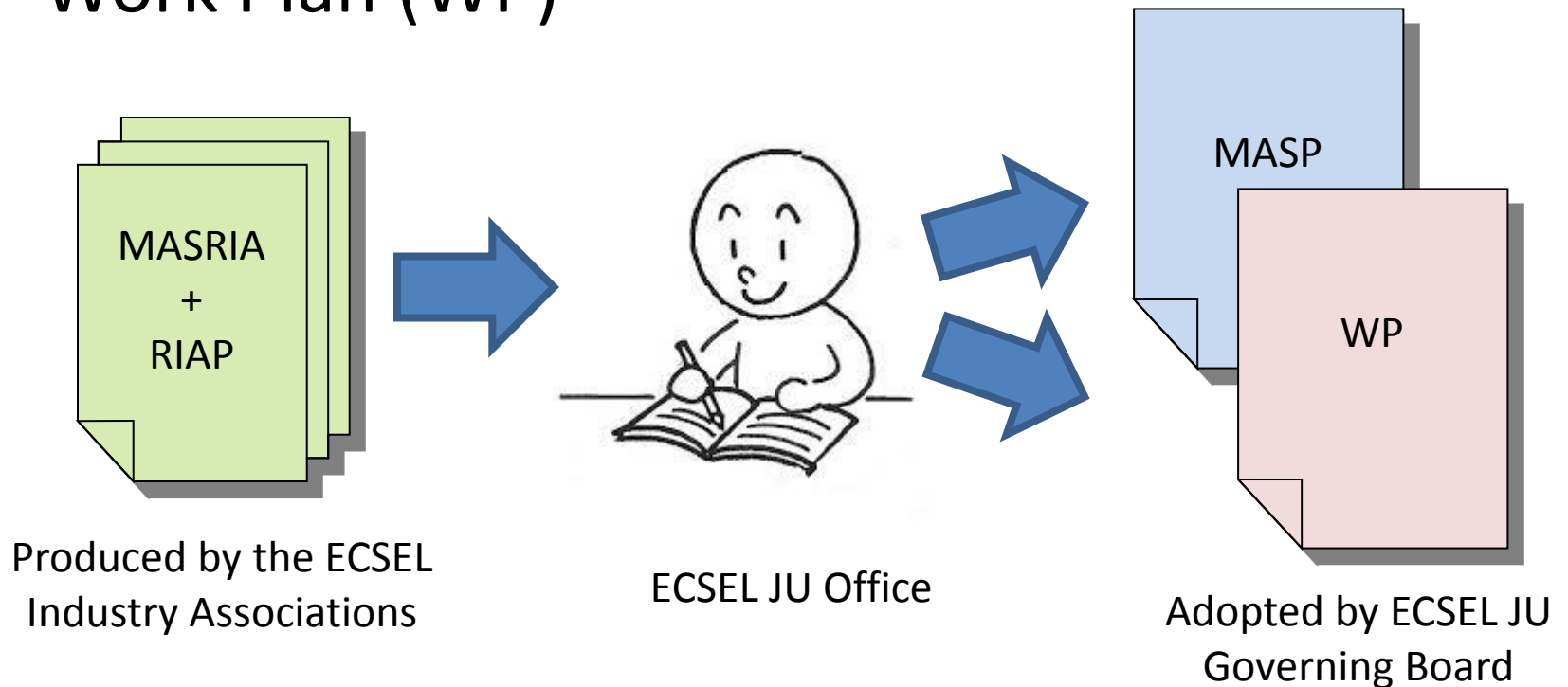


# The Tripartite Joint Undertaking: Complementing other instruments



# MASP and WP

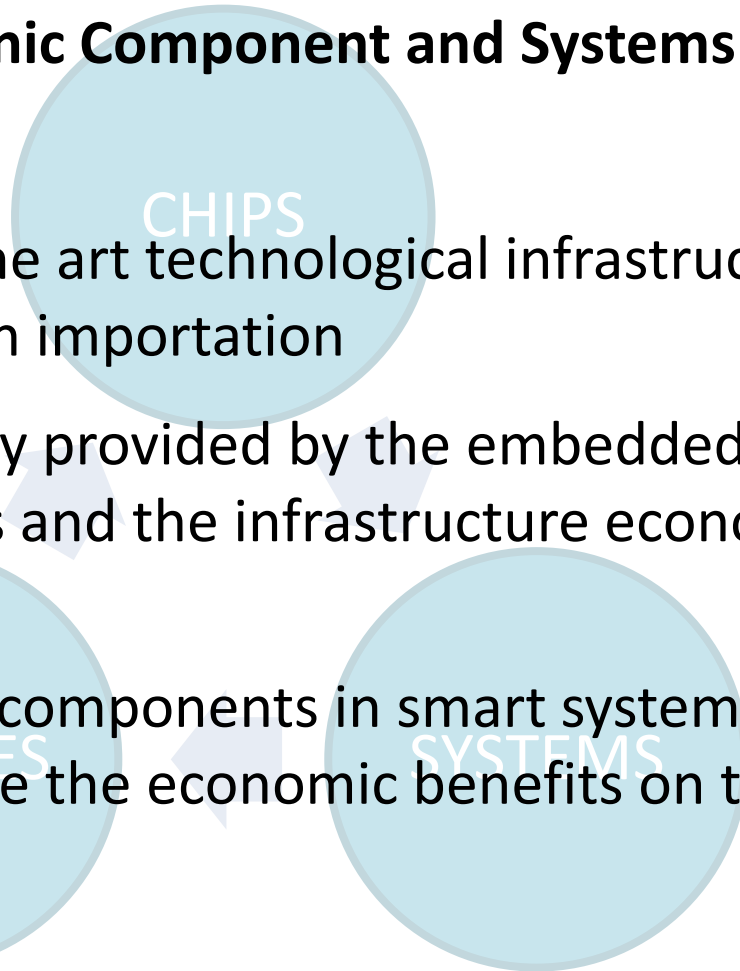
- Multi Annual Strategic Plan (MASP)
- Work Plan (WP)



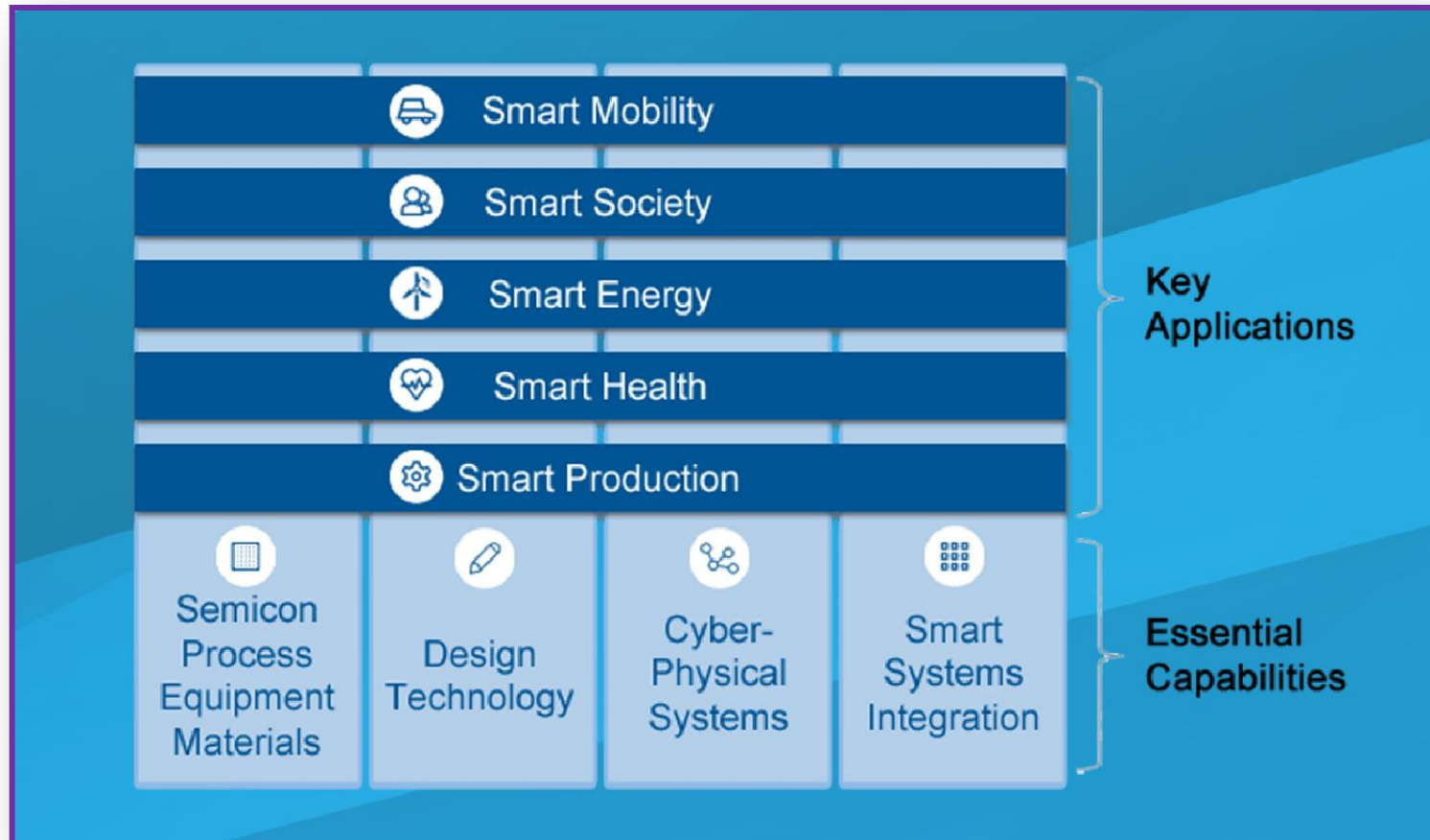
# Synergies in Electronic Components and Systems

**The strategy in Electronic Component and Systems relies on obvious necessities:**

- Without a state of the art technological infrastructure, Europe will be dependent on importation
- Without functionality provided by the embedded software the chips are useless and the infrastructure economically unsustainable
- Without integrating components in smart systems, it is impossible to capture the economic benefits on the end user markets



# MASP TOPICS



# Smart Mobility

- **ECS for resource efficient vehicles**
  - 2nd, 3rd generation EVs, FCEVs (fuel-cell), High-efficiency IC, alternative fuels
    - novel and increasingly powerful and complex hardware (incl. sensors / actuators)
    - mixed-criticality embedded software
    - dependable vehicular networks
- **ECS for partial, conditional, highly and fully automated transportation**
  - Autonomous vehicles, through SAE levels 3 to 4 (level 5 >> 2030)
    - System Architecture : automated vehicles and traffic systems
    - Sensors and actors, SW for (critically) real-time data acquisition
    - Safety and security aspects: Communication between vehicles, and between vehicles and infrastructure
    - HPC and Big Data: real-time decision making
    - Human interface, human centric design
- **ECS for integrated and multimodal mobility networks**
  - ...creation of an open, common secure and trustworthy architecture for the interplay of all actors in all modes of transportation





# Smart Society

- **European independence for security enabling components and systems**
  - “critical **hardware or software components** with respect to **security** shall be available from European sources, including sensors, actuators, sensor networks, gateways, servers, middleware, etc. for **IoT/M2M** support”
- **European leadership for Smart and Connected Things (including Internet of Things)**
  - “Low-cost components and reference architectures exploiting short range wireless connectivity”
- **European assets protection**
  - “end-to-end security, to protect the integrity of the data and to guarantee the authenticity of the transmitters”

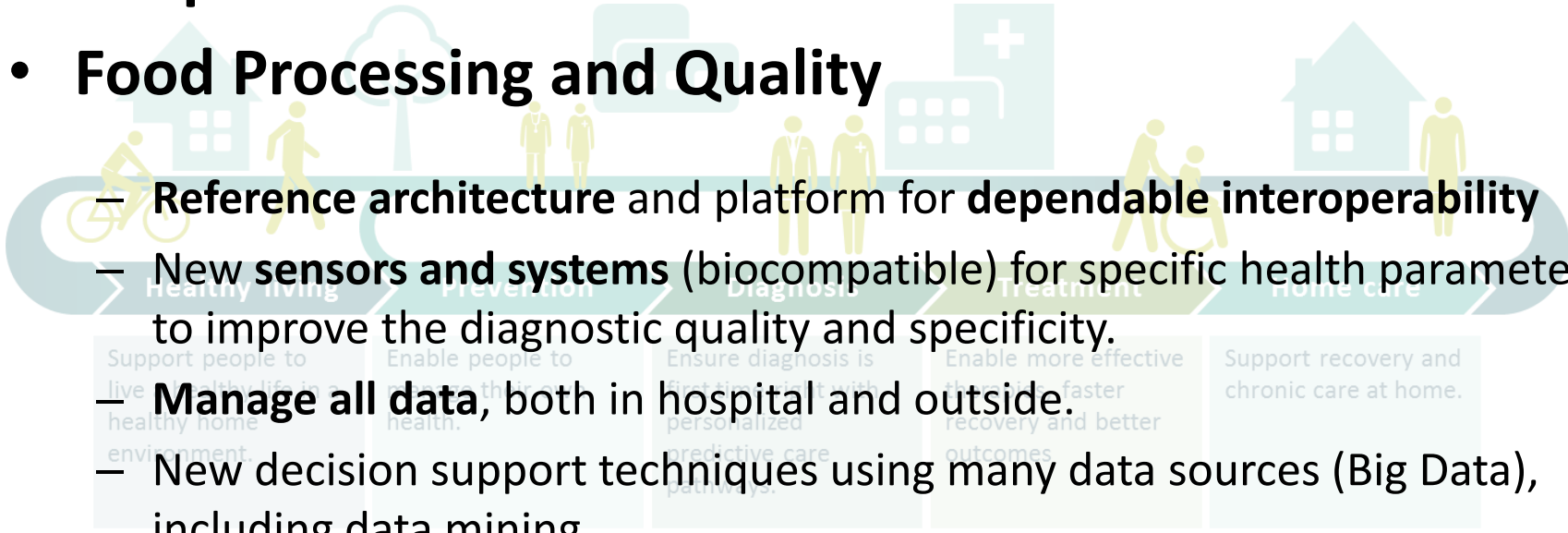


# Smart Energy

- **Sustainable power generation and energy conversion**
  - Efficiency improvements; lifetime, robustness and reduced life cycle cost including **smart maintenance**
  - Intelligent and **highly efficient converter**
- **Reduction of energy consumption**
  - Efficient energy usage; scavenging,
  - intelligent drive controls; smart controls for demand site integration, system monitoring by sensor networks
- **Efficient community energy management**
  - Self-organizing grids and multi-modal energy systems, incl. energy storage, resilient and self-healing infrastructure, energy scavenging and IoT services



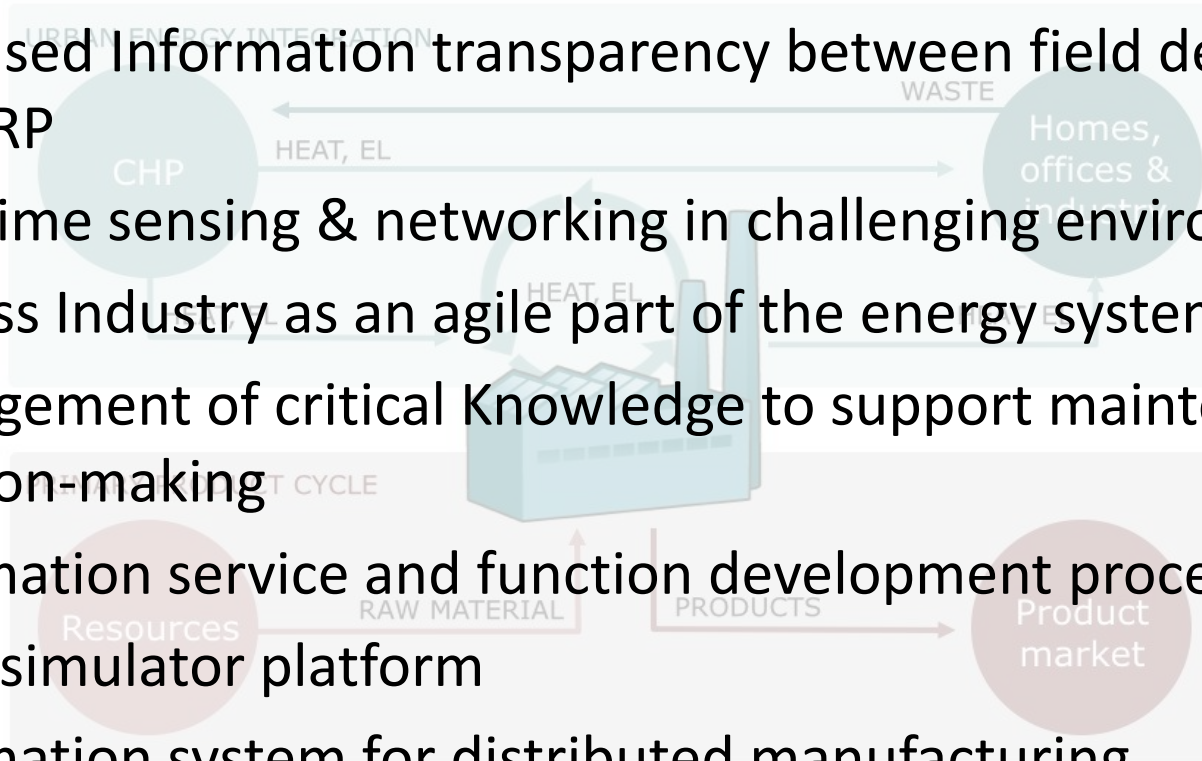
# Smart Health

- Home Care and Well-being
  - Hospital and Heuristic Care
  - Food Processing and Quality
- 
- Reference architecture and platform for **dependable interoperability**
  - New **sensors and systems** (biocompatible) for specific health parameters to improve the diagnostic quality and specificity.
  - **Manage all data**, both in hospital and outside.
  - New decision support techniques using many data sources (Big Data), including data mining, ...
  - ... taking **security, privacy and ethics** into account



# Smart Production

- Instant access to a (Digital and) Virtual dynamic factory
- Increased Information transparency between field devices and ERP
- Real-time sensing & networking in challenging environments
- Process Industry as an agile part of the energy system
- Management of critical Knowledge to support maintenance decision-making
- Automation service and function development process
- Open simulator platform
- Automation system for distributed manufacturing
- Balancing of system security and production flexibility





# SEMICONDUCTOR MANUFACTURING, TECHNOLOGY, EQUIPMENT AND MATERIALS

- Equipment and Materials for “**More Moore** / Advanced and Beyond CMOS”
- Equipment and Materials for “**More than Moore**”
- Process Technologies for Advanced and Emerging “More Moore” semiconductor processes
- Process Technologies for Semiconductor Process Differentiation
- Process Technologies for **System in Package**



# DESIGN TECHNOLOGIES

- Technologies for Model-Based and Virtual Engineering
- Managing complexity, safety and security
- Managing diversity
- Managing Reliability, Yield, and Robustness

*“Design methods and technologies cover the entire value chain, from semiconductor materials and processes to chip level and systems including the development of applications / platforms.”*



# CYBER-PHYSICAL SYSTEMS

- **Architectures principles & models for dependable CPS**
  - interoperable, distributed and certifiable CPS architectures
  - (“Dependability” includes: reliability, maintainability, resilience, safety and security requirements)
- **CPS for autonomy and cooperation**
  - Safe and robust perception of environment. Efficient use of resources. Machine learning and adaptive behaviour. Data Analytics in the loop. Advanced methods and techniques for V&V, qualification and certification. Standardization
- **Computing Platforms**
  - Energy efficiency, by all possible means
  - Ensuring Quality of the Service (QoS - real-time)
  - Decreasing global cost (and development costs in new technology nodes)
  - Edge Computing






# SMART SYSTEMS INTEGRATION

- **Building blocks of Smart Systems**
  - sensors, actuators, controls and interfaces
- **Safe, secure and efficient transfer of information and power**
- **Integration methods enabling smart functionality, automation and reliable operation in harsh and complex environments**





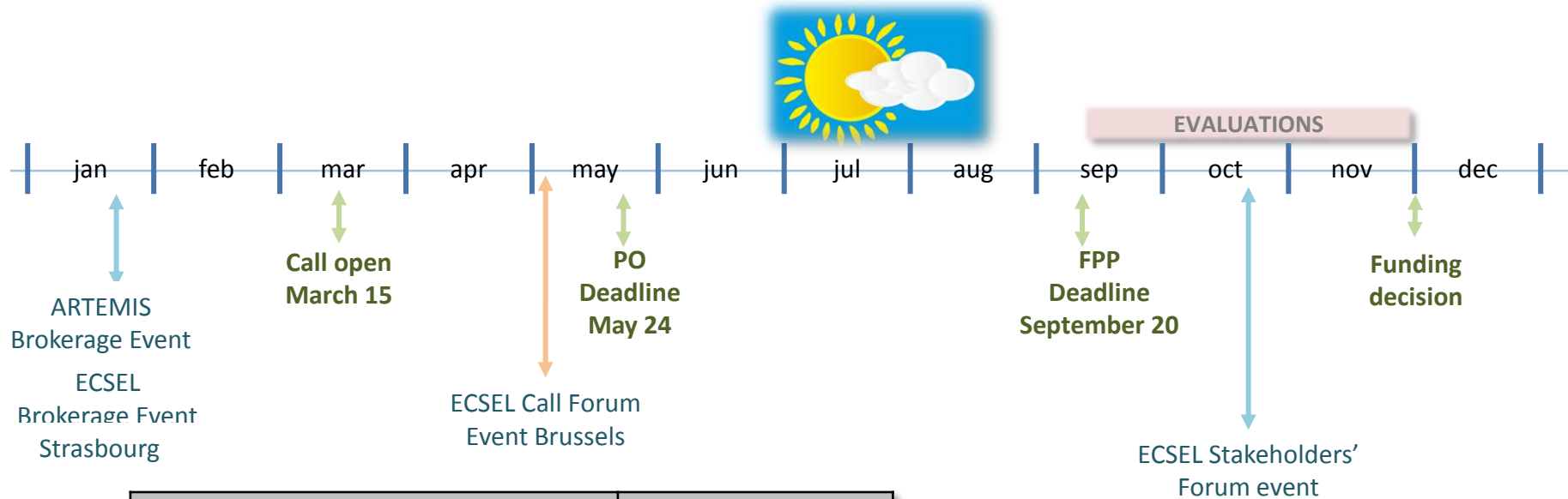
# 2016 Calls Planning

- 2 x 2-phase Calls in parallel: RIA, IA
-  “Lighthouse Initiatives” as a separate, parallel action
- Call Published: March 15<sup>th</sup> 2016
- PO deadline : May 24<sup>th</sup> 2016
- FPP deadline : September 20<sup>th</sup> 2016
- Funding decision :  
Target End November 2016



# Timeline 2016

## Call and related ECSEL JU events



Association Events	Date / Place
EPoSS - Smart System Integration Congress	8-11 March, Munich
ARTEMIS - Spring Event	13-14 April, Vienna
ARTEMIS Summer Camp	22-23 June
ARTEMIS Technology Conference	9-10 November
EPoSS Forum	Late 2016
Aeneas Brokerage & Euro Nanoelectronics Forum	22-24 November, Rome

ECSEL Events	Date / Place
ECSEL Brokerage event	27-28/01 Strasbourg
ECSEL Call Forum	Early May, Brussels
ECSEL Stakeholders' Forum	Late October, Brussels



# ECSEL JU “Lighthouse Initiatives”

- Build on well identified market-pull related to societal needs, with a strong pan-European dimension
- Create ecosystems along the relevant value and supply chains, where appropriate:
  - Working towards clustering of projects
  - Having a strategic IP management policy
  - Establishing a standardization strategy
  - Addressing the relevant non-technical aspects (legislative, regulatory, social, ...)



# For your agenda: “ECSEL Call Forum 2016”

- Similar to the “ECSEL Consortium Building Event”
  - In Brussels
  - Target date: early May (week of 4<sup>th</sup>)
- Agenda:
  - **Update Call info, submission, ...**
  - **Facilitate Proposal consolidation and Partner engagement**
- Focus on **Networking / Poster Session**



# Calls 2016

- 1: Information of the Calls
- 2: Lighthouse initiative
- 3: Submitting a proposal



# 1: Information of the Calls

- 2 Calls
  - Research Innovation Action (RIA)
  - Innovation Action (IA)

Call	Type	Type equivalence	TRL focus
ECSEL 2016-1	Research and Innovation Action (RIA)	Industrial/Applied Research projects	3-4
ECSEL 2016-2	Innovation Action (IA)	Experimental development projects	5-8



# Schedule: Same for both calls

Date	Activity
<i>16 February</i>	<i>Governing Board</i>
<b>15 March</b>	Call launch
<b>24 May</b> at 17:00:00	Deadline Project Outline (PO)
End June	Feedback on PO
<b>20 September</b> at 17:00:00	Deadline Full Project Proposal (FPP)
10 November	Selection of projects for funding
November - April	Grant Preparation phase



# Budgets: EU estimated expenditure

RIA	IA
65 MEuro	85 MEuro





# Reimbursement rates

Type	RIA	IA
For profit (non SME)	25%	<b>20%</b>
SME	30%	25%
University/Other	<b>35%</b>	<b>35%</b>

**EU Contribution as % of the eligible cost according to H2020 (beneficiaries may ask for a lower contribution)**  
**National contributions: see Annex of the Work Plan**



# National budgets and funding rules

Not yet defined for all NFAs

For the Call 2015: ca. 160M€



# Parts of a proposal

An ECSEL JU proposal consists of three parts at PO phase and three or four parts at FPP phase:

❑ **Part A** for the administrative information similar to H2020 (both PO and FPP)

❑ **Part B** for the technical description similar to H2020 (both PO and FPP)

❑ **Part C** for country specific information unique to ECSEL JU (both PO and FPP)

❑ **ECSEL Lighthouse Initiative** - Expression of Interest (Eol) unique to ECSEL JU (only FPP)



# Project Outline

Some changes:

- Threshold per criteria: 2
- Total threshold: 6
- ALSO Criteria 3 needs to be filled in
- Information of Part A and B to be filled in, although it can change in the FPP



## 2: Lighthouse Initiative

Focus part of the ECSEL JU activities on:

- achieving concrete socio-economic objectives along an agreed approach
- including for establishing de facto standards when appropriate
  - > Value chain approach, market pull supported by appropriate technology push**



# Lighthouse Initiative

Should improve and accelerate the **impact** of ECSEL JU by:

- engaging **all** needed actors in the supply/value chain to achieve these goals
- **connecting**
  - (without duplicating) investment in R&I in ECSEL JU to investments done for example in application areas in the Societal Challenges in HORIZON 2020 as well as
  - to other **policy measures** such as standardisation or deployment, and when needed regulatory measures



# Lighthouse Initiative

Can give industry in Europe

- **differentiating factors** to compete in next generation integrated solutions and in platforms for "Smart X" markets
- by building on and combining its strong presence in cyber-physical systems, smart systems integration and MEMS as well as low power and secure components



# Lighthouse initiatives

- Should enable **closer cooperation** between **Europe's key actors**, including technology providers, system integrators, application providers, users industries **and end users** in a meaningful and substantial way, in **innovation** and **regulation** contributing to the overall goal of the ECSEL JU.





# Lighthouse initiatives

- Should strengthen Europe's position in key parts of future digital value chains and notably digital platforms.
- Should address concrete and convincing measures to facilitate deployment and should include an effective outreach strategy.



# Lighthouse initiatives

Projects for the lighthouse initiatives shall be adopted out of the projects selected for funding by the PAB in the two calls (RIA and IA) and the total EU expenditure estimate for those adopted projects shall be **up to approximately 45 M€**

**Further details** are provided in the **Guidelines for applicants** as part of the PAB decision for the call launch.

-Eol submitted in the FPP phase.



# 3: Submitting a proposal

1. Check out the ECSEL website and the participant portal for H2020

2. Documents:

- **Work Plan:** schedule, budget, topics, evaluation procedure including criteria, national rules, TRLs
- **Grant Agreement template**
- **Guide for applicants:** further details on Part A, B and C; regional funding; further explanation on evaluation criteria

**Check out the Annexes !**

3. Other: H2020 guides on the Participant portal



# Calls

Call	Type	Type equivalence	TRL focus
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ECSEL 2016-2	Innovation Action (IA)	Experimental development projects	5-8

3-4

5-8

**TRLs? Look for them in the Work Plan**



# Topics: Example

## Chapter Sub Chapter / Topic

### 6.5 Smart Production

- 5.1.5-1 Instant access to a Virtual dynamic factory.
- 5.1.5-2 Increased Information transparency between field devices and ERP.
- 5.1.5-3 Real-time sensing & networking in challenging Environments.
- 5.1.5-4 Process Industry as an agile part of the Energy system.
- 5.1.5-5 Management of critical Knowledge to support maintenance decision making.
- 5.1.5-6 Automation service and function development process.
- 5.1.5-7 Open simulator platform.
- 5.1.5-8 Automation system for distributed manufacturing.
- 5.1.5-9 Balancing of system security and production flexibility.
- 5.2 Semiconductor manufacturing

**MASP**  
**2016**

1.4 SMART PRODUCTION	
	5.1 Instant access to a (Digital and) Virtual dynamic factory.
	5.2 Increased Information transparency between field devices and ERP.
	5.3 Real-time sensing & networking in challenging environments.
	5.4 Process Industry as an agile part of the energy system.
	5.5 Management of critical Knowledge to support maintenance decision-making.
	5.6 Automation service and function development process.
	5.7 Open simulator platform.
	5.8 Automation system for distributed manufacturing.
	5.9 Balancing of system security and production flexibility.



# Topics

- Maximum three topics, most important one at level of call page
- Note that National priorities may be applicable to specific topics (refer to the Annexes of the WP2016).
- Objectives of each topic can be found in the MASP.
- Proposals that cut across disciplines, support platform building, interoperability, establishment of open standards are particularly encouraged.



# PO versus FPP

## Project Outline

- some information is not yet required
- Participants, budgets: **as complete and precise as possible**
- Changes are possible afterwards! But limited!
- Evaluated by two experts
- Blocking but with low threshold
- Expect feedback from national authorities



# PO versus FPP

## Full Project Proposal

- **ALL** information is required
- Participants and budgets: definitive
- Evaluated by four experts
- Selection is a PAB decision based on a ranked list of proposals established by the PAB
- Evaluation report will be made available after the PAB decision.





# Electronic tools

- EPS: Electronic Proposal System
- COMPASS: Workflow
- SyGMa: System for Grant Management
- **Use of electronic signature**
- Paperless



# H2020 Information

H2020 Participant Portal:

<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

Online manual for H2020:

[http://ec.europa.eu/research/participants/docs/h2020-funding-guide/index\\_en.htm](http://ec.europa.eu/research/participants/docs/h2020-funding-guide/index_en.htm)

User guide for the submission tool:

[http://ec.europa.eu/research/participants/data/support/sep\\_use\\_rmanual.pdf](http://ec.europa.eu/research/participants/data/support/sep_use_rmanual.pdf)

Annotated JU GA (AmGA):

[http://ec.europa.eu/research/participants/data/ref/h2020/grants\\_manual/amga/h2020-amga\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf)



# H2020 Helpdesks

For questions on any aspect of grant applications and the EU Research Framework Programmes, including beneficiary registration and data updates, please refer to the :

<http://ec.europa.eu/research/index.cfm?pg=enquiries>

For any IT-related problems that you might experience with the Submission system, please contact the :

<http://ec.europa.eu/research/participants/api/contact/index.html>



# ECSEL Information and Helpdesk

Our website (specific webpage with links to documents and actualized information)

<http://www.ecsel.eu/>

Questions specific to ECSEL:

[calls@ecsel.europa.eu](mailto:calls@ecsel.europa.eu)



# Proposal submission

- Register your company (PIC number)
- Use the portal to register your proposal (coordinator)

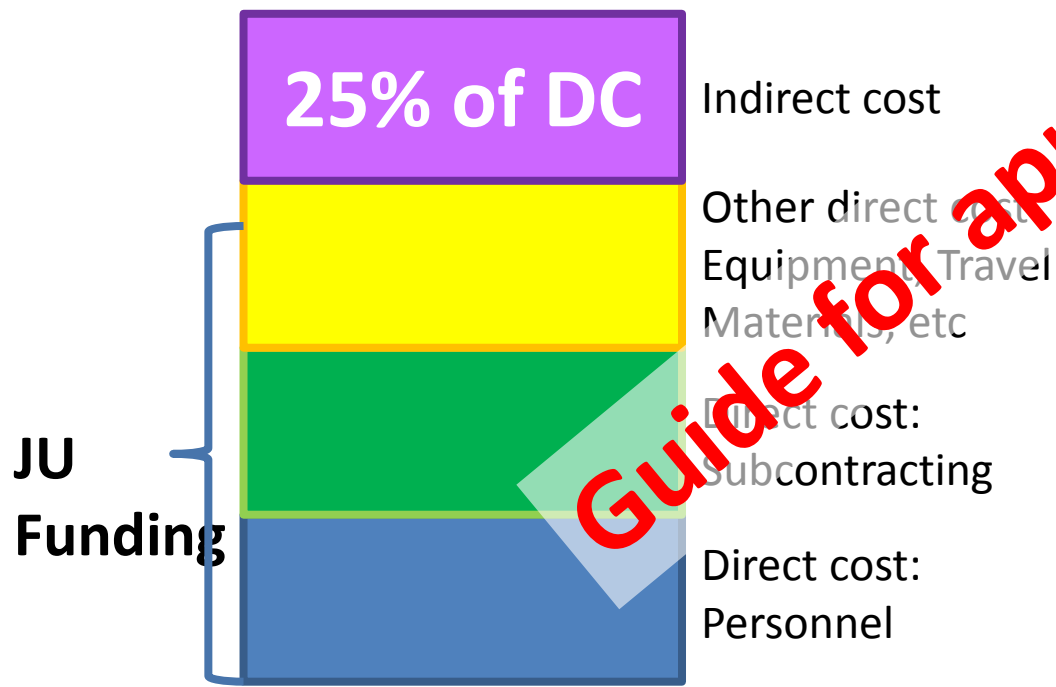
Proposal consists of:

- Part A: consortium information including financial information (cost, funding)
- Part B: Pdf with technical description
- **Part C: Country specific information required (specific for ECSEL)**

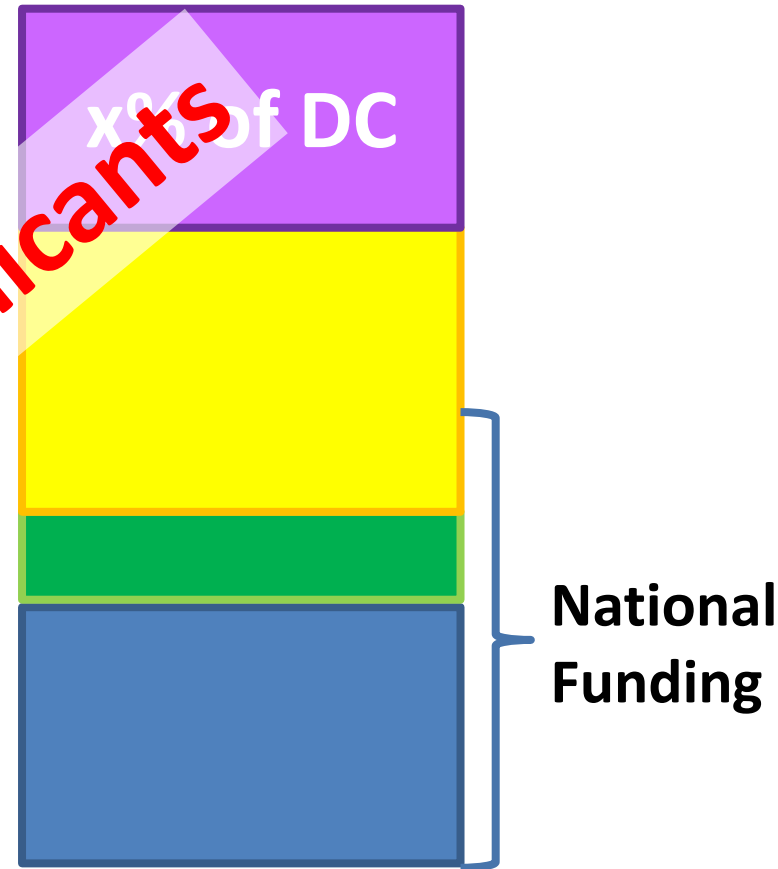


# Two Budgets !!

Budget according to H2020 rules



Budget according to national rules



# Compelling motivation

The ECSEL programme welcomes proposals of any size that will be evaluated on their merits against the defined criteria. However, the PAB will expect compelling motivation for any proposal with a total Requested EU contribution approaching or exceeding respectively **1/4 of the EU budget of the RIA call** or **1/3 of the IA call**.

The compelling motivation will be described in Part B of the proposal under chapter 2.1 Expected impacts.



# SME

The SMEs will have to do a self-assessment, please refer to the SME chapter in this document for further information





# Legal Status

**Participants are encouraged to check/update their legal data, in particular the “Research and Innovation legal status” as funding percentages depend on it.**



# Part B

- Use the template !!!
- For the FPP fill in all sections, including the public summary



# Part C

- Check out in the Work Plan under the section on national rules what you are expected to provide to national authorities. Not all require a Part C.
- Upload this in the Part C section



# Page limits

- None!
- Provide a right balance between general and detail.



# Grant Agreement

Differences with the H2020 grant agreement:

1. The funding percentages for the EU contribution are different than under H2020. The applicable values for these Calls are given in the WP2016.
2. (For partners from entrusting states (see WP2016) the national contribution is added to the EU contribution; the sum of the two contributions represents the JU Grant.)



# Grant Agreement

3. Amendments are required when changing the budgets of the partners



# From proposal to project

## Selection of projects

Submission of Full Project Proposal



Admissibility and JU eligibility check



Evaluation by experts



Score of proposals  
(under/above threshold)



Selection in PAB, funding, synergy  
with EU and national policies



Final ranking

## GAP

Signature of JU GA



PAB decision on change requests



Handling of change requests



Communication to coordinator

4-5 months

3 months



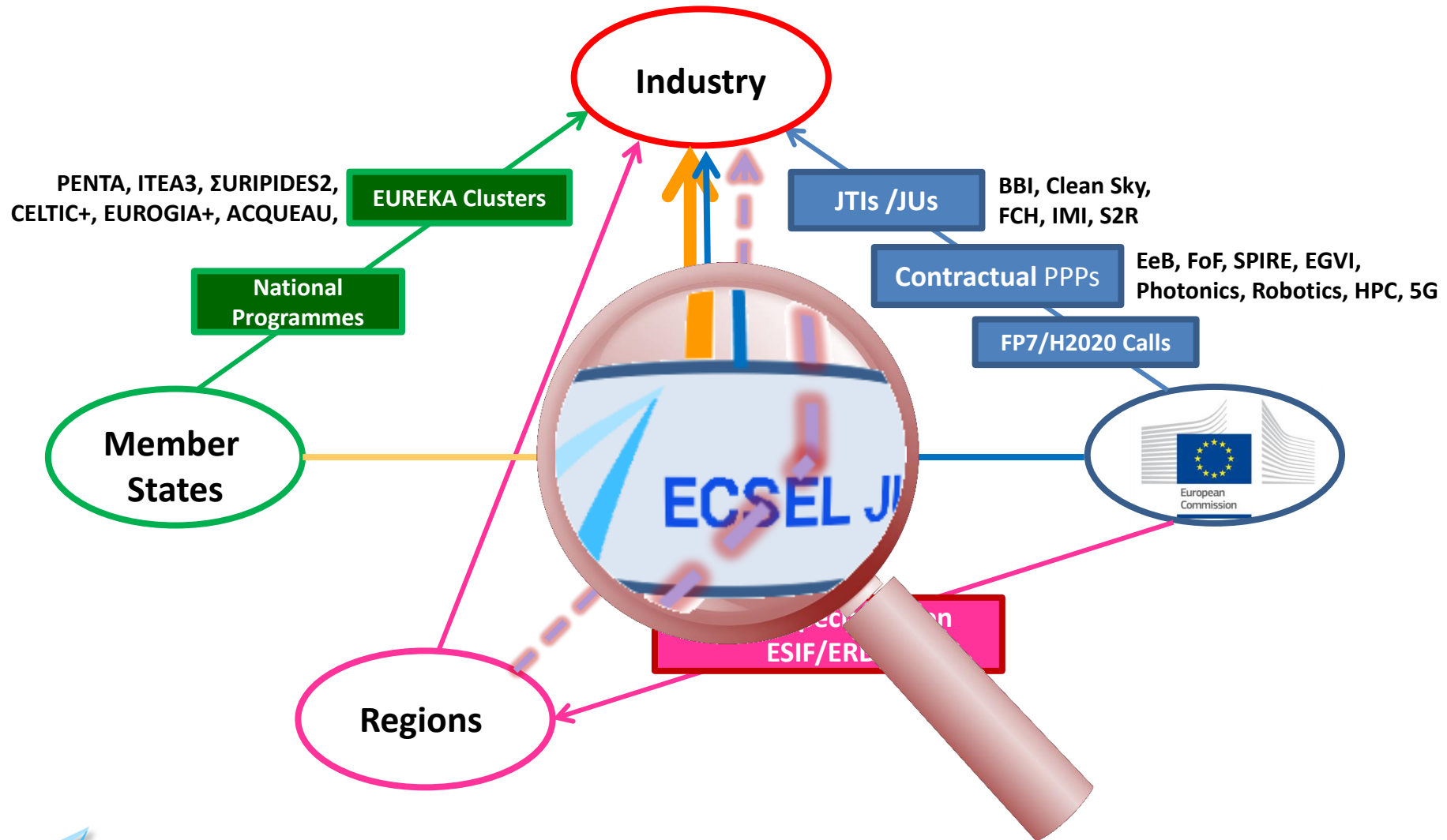
# ESI funding

- If activities with costs are funded through ESI funds, then those activities cannot obtain ECSEL-EU funding.
- Various possibilities to include activities funded by ESI funds described in Guide for Applicants
- Main issue: no overlap
- Risk mitigation: what happens if the activity does not get the ESI funding?

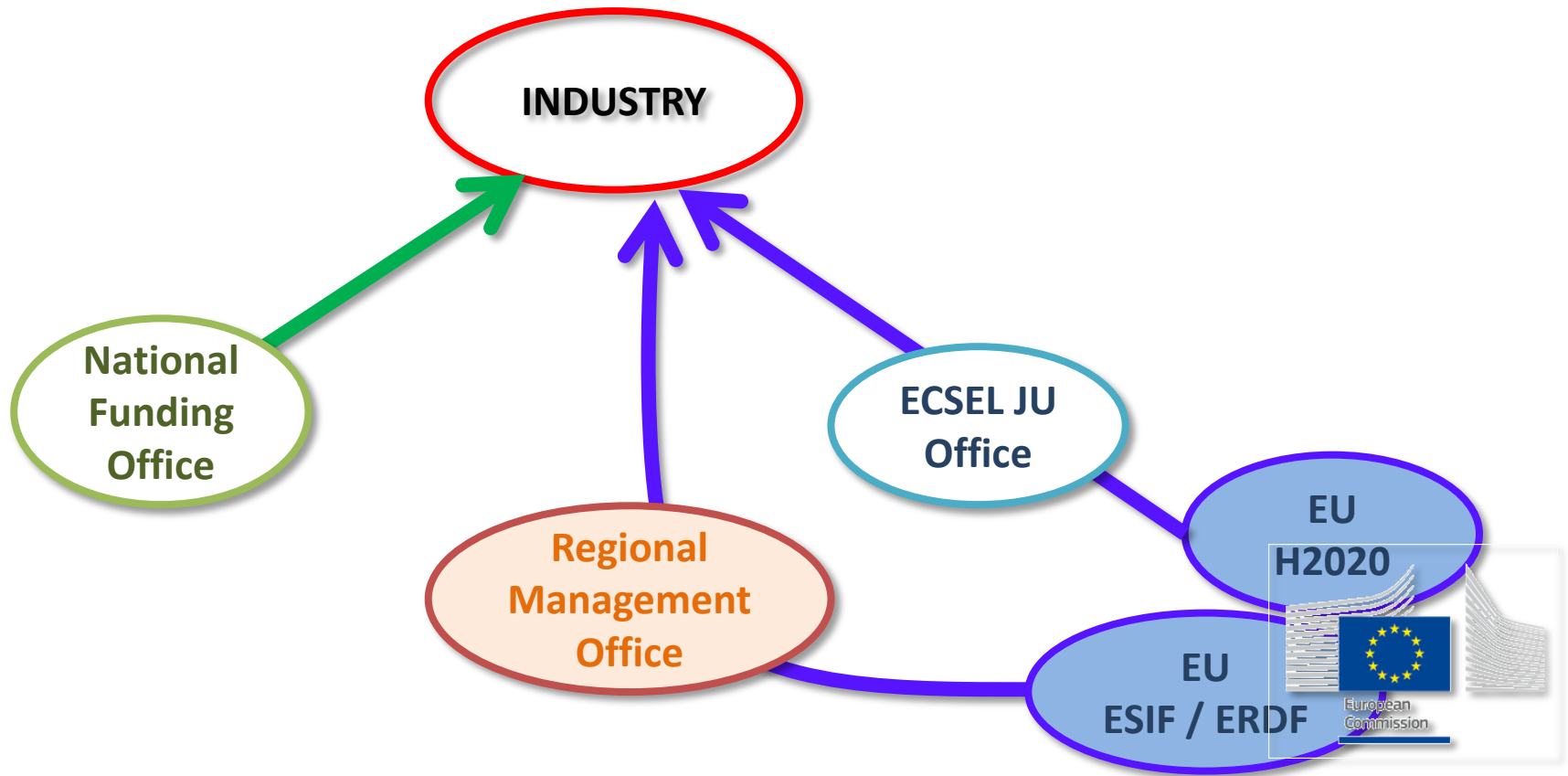




# ECSEL JU: a Mechanism among Other Best Suitable for Combining Funding



# What would happen in detail...

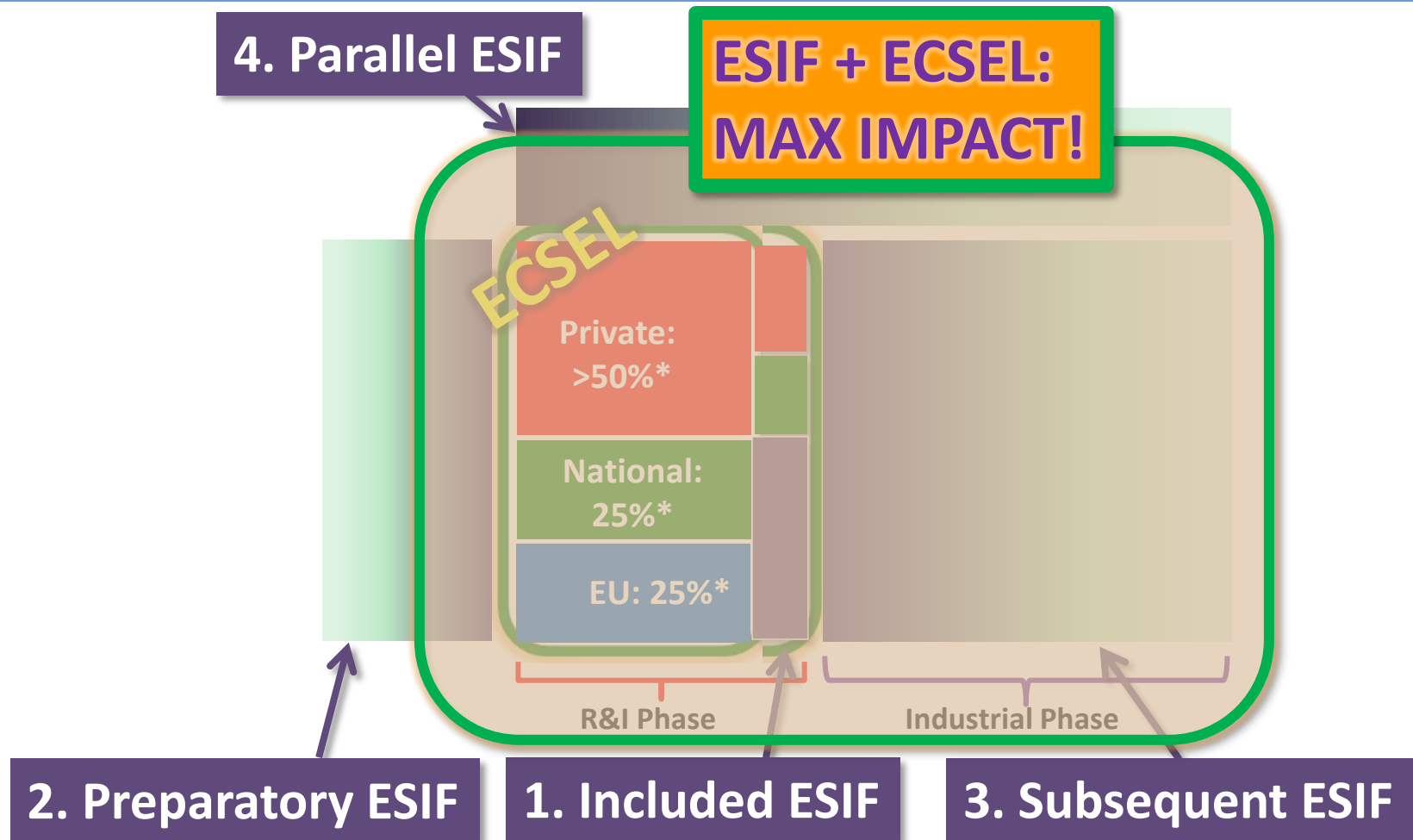


# In Practice...

- Cost Reporting for ECSEL JU and ESIF/ERDF work must be kept separate!
  - Clearly identified workpackage within a project
    - Fiddley...
  - Separate “Co-Project”
    - A little more pain, a lot more gain
    - Issues – RISK management and IPR exchange



# Why Co-Funding: Larger, Stronger Actions



\*: percentages for illustration only, actual value will vary according to different criteria



# Thank You

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