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# **Research and Innovation Strategies for Smart Specialisation**

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# What is Smart Specialisation?

## S3 the policy concept:

- Promote inclusive and sustainable growth
- Place-based policy:
  - Valorise existing assets and local specificities
  - Mobilize local economic players as the main actors of economic change
- Based on selection of economic activities with high transformative potential for the economy

## RIS3 the strategy:

- National or regional agenda for economic transformation
- Coordinate financial and entrepreneurial resources to support the selected economic activities
- Define governance and monitoring mechanisms

# What's new in the Smart Specialisation approach?

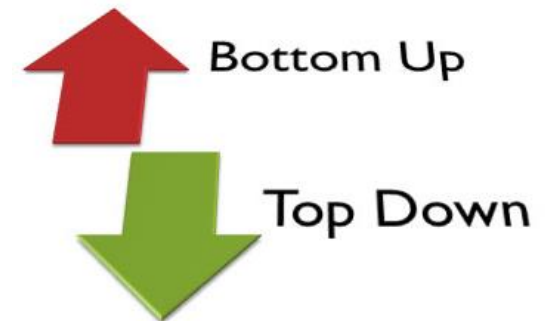


Not a "Neutral" Policy

- S3 does not act only through horizontal measures that cut across the whole economy
- It requires policy makers to take the risk associated with selection of a limited number of activities to support

Choices Based on Entrepreneurial Knowledge

- No central and omniscient planner
- Policy makers will rely on and exploit the fundamental knowledge of the local entrepreneurs
- Interactive process of knowledge exchange and creation: the entrepreneurial discovery process



- Permanent stakeholder fora, stable engagement process based on participation → Continuous entrepreneurial discovery.
- Network of institutional and stakeholder relationships that:
  - Is persistent in time
  - Continuously produce information
  - Re-act according to new information
  - Evaluate the results and feed information back
- Integration of monitoring systems aimed to learn about actual processes, building trust among stakeholders, guarantee accountability.

Most Regions and Countries have started the **implementation phase** of RIS3:

- RIS3 are generally stronger at analysis and weaker at monitoring & evaluation
- S3 principles are sometimes not fully taken on board in the prioritisation process
- Sometimes involvement of stakeholders limited in depth and scope and not continuous/on-going

Our **challenges** ahead:

- Preserve the bottom-up component of strategy development
- Develop models and share experience on how to operationalize the entrepreneurial discovery process in different contexts
- "Give voice to the voiceless", avoid capture by closed clubs of incumbent stakeholders
- Progress from a triple to a quadruple-helix governance



# RI in the context of smart specialisation

Should be:

- Integral part of the RIS3
- Identified in an entrepreneurial discovery process, jointly by academia, researchers and enterprises.
- Designed to impact on regional development: science and technology parks, clusters, incubators, firm cooperation, LivingLabs, demonstrators, etc.

## S3 Theme: Digital growth

The **digital growth within their RIS3** will enable regions to identify the priorities for ICT investment relevant to their specific territory, balancing the needs between offer and demand for ICT infrastructure, applications and services. ICT uptake and innovative applications indeed can play a crucial role in the context of the RIS3 priority setting exercise and the identification of future areas of specialisation.

The aim of this initiative is to provide support to national and regional policy makers to successfully develop and implement ICT-based innovation in their RIS3 and related EU cohesion policy operational programmes (OP).



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# SMART SPECIALISATION PLATFORM



European Commission / Smart Specialisation Platform / S3 Sections / S3 Themes / Digital Growth / Digital Agenda Toolbox

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## S3 Themes

S3P Energy

Digital Growth

### Digital Agenda Toolbox

- [Broadband infrastructure](#)
- [eInfrastructure](#)
- [Cloud computing](#)
- [KETs and manufacturing](#)
- [eHealth](#)
- [Active and healthy ageing](#)
- [eGovernment](#)
- [Intelligent transport systems](#)
- [Smart cities](#)
- [Smart grids](#)
- [Open data](#)
- [Digitisation of Cultural Heritage](#)
- [Language resources](#)
- [Network and information security](#)
- [Innovation voucher](#)

## Digital Agenda Toolbox

The [Digital Agenda Toolbox](#) provides support to regional and national authorities to develop a thorough understanding of the digital growth potential stemming from the Digital Agenda for Europe (DAE). It highlights the opportunities Information and Communication Technology (ICT) entails as a key element in their national or regional research and innovation strategies for smart specialisation (RIS3) and related Operational Programmes (OPs). At the same time, this Toolbox provides guidance for the fulfilment of the DAE-related ex-ante conditionalities that will form the basis for using European Regional Development Funds (ERDF) for ICT investments. It thus complements the [RIS3 Guide](#) and other related policy documents such as the [Guide on Broadband Investment](#). The Toolbox furthermore provides hands-on assistance for developing a strategic policy framework for digital growth by discussing the do's and don'ts of the process and giving examples of good practises.

Strategies for digital growth can build on an ICT-specific policy framework that encompasses one or several documents and also incorporates related prior policies. Such a framework can be a standalone document or may be incorporated in broader research and innovation strategies. Regardless of which option is chosen, this Toolbox provides guidance on how to design a policy framework to reinforce competitiveness, improve social, economic and territorial cohesion while contributing to the objectives set out within the Digital Agenda for Europe, and the National Reform Programmes where applicable.

The Toolbox is the outcome of joint activities between the Smart Specialisation Platform of the Joint Research Centre, DG CNECT and DG REGIO.

## Online Toolbox Subsections

### ICT as enabling infrastructure

[Broadband infrastructure - Next Generation Networks \(NGN\)](#)

[H2020 R&D / e-Infrastructure for R&D](#)

[Cloud Computing](#)

[Key Enabling Technologies \(KETs\)](#)

### ICT applications, services & products

[eHealth](#)

[Active and healthy ageing](#)

[eGovernment](#)

[Intelligent transport systems](#)

[Smart cities](#)

[Smart grids](#)

[Open data portals](#)

[Digitisation of cultural heritage to boost innovation](#)

[Language resources](#)

[Network and information security](#)

### ICT up-take

[Innovation vouchers](#)

[Web entrepreneurs and start-ups](#)

[Digital skills](#)

# Digital Agenda Toolbox

E-infrastructure, Living Labs, Cloud computing, Next Generation Networks, etc.





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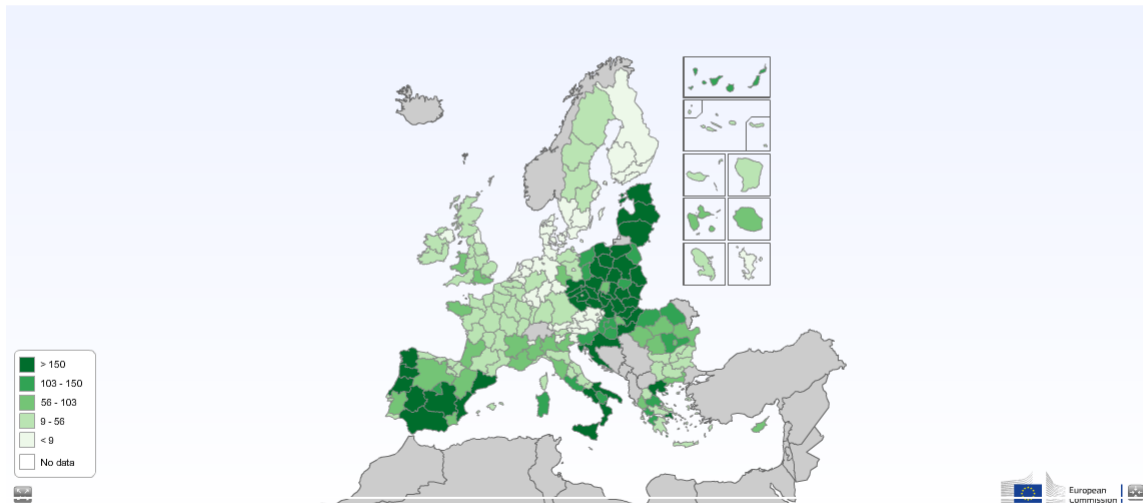
# ICT Monitoring - Planned ICT Investments under ESIF

Search by: **Amounts** [Keywords](#) [Financial Forms](#)

**Countries** All selected (28) **Regions** All selected (209) **Predefined filters** 10 selected

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Total: 18,194 M

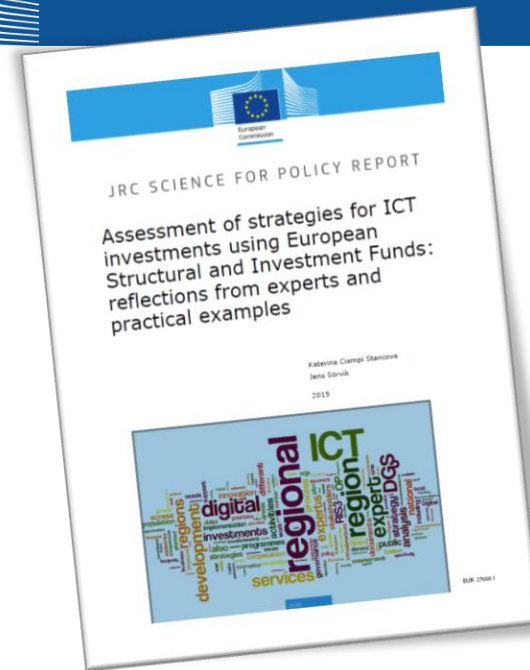
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DG Connect and DG JRC have been supporting MSs and regions in fostering the ICT dimension of planned investments under ESIF. As part of this activity, assistance has been given to seven EU regions: Abruzzo, Apulia, Italy; Burgundy, France; Łódzkie, Poland; Sicily, Tuscany, Italy; and West Romania, Romania. This paper provides a systematic summary of the experts' findings and discusses critical issues.



The S3P has arranged three learning workshops on ICT strategies and digital growth. This paper presents the findings from three learning workshops where Andalusia (ES), Lodz (PL), Lombardy (IT), Malopolska (PL), Noordvleugel (NL) and Scotland (UK).

# Synergies Examples

Synergies examples are provided in which SF/ ESIF and FP7/H2020 funds have been combined in order to amplify the R&I investments and their impact, using different forms of innovation and competitiveness support, or carrying innovative ideas further along the innovation cycle or value chain to bring them to the market.

| S&T Theme                                    | Type of synergies             | Country | Synergy Example  |
|--|-------------------------------|---------|--|
| <b>Environment; Energy; NMP; SME support</b> | Sequential + Parallel Funding | Int'l   | Climate-KIC "Pioneer Cities" & "Transition Cities" Projects (EIT)  |
| <b>Biotechnology</b>                         | Parallel Funding              | MT      | Development of capacity at the University of Malta   |
| <b>Biotechnology</b>                         | Sequential + Parallel Funding | FR      | Innovative therapeutics in Alsace Region through the case of the biotech SME Rhenovia-Pharma   |
| <b>Biotechnology; Health</b>                 | Sequential Funding            | HR      | Ruder Boškovic Institute (RBI)   |
| <b>Biotechnology; Health; NMP</b>            | Sequential Funding            | CZ      | Central European Institute of Technology (CEITEC)  |
| <b>Biotechnology; Health; NMP</b>            | Sequential Funding            | RO      | Centre of Advanced Research in Bionanoconjugates and Biopolymers – IntelCentre of "Petru Poni" Institute of Macromolecular Chemistry of the Romanian Academy |
| <b>Biotechnology; ICT</b>                    | Sequential + Parallel Funding | PL      | Molecular scissors for double stranded RNA - International Institute of Molecular and Cell Biology   |
| <b>Energy</b>                                | Sequential + Parallel Funding | UK      | Collaboration between EMEC (European Maritime Energy Center) and CENSIS (Innovation Centre for Sensor & Imaging Systems), Scotland                           |
| <b>Energy</b>                                | Sequential Funding            | CY      | The Cyprus Institute: Concentrated Solar Power   |
| <b>Energy; Environment</b>                   | Sequential Funding            | HU      | Integrated energy system of the city Mórahalom   |
| <b>Food, Agriculture &amp; Fisheries</b>     | Sequential Funding            | EE      | Innovative tools against potato blight, Jõgeva Plant Breeding Institute  |
| <b>Environment</b>                           | Sequential Funding            | CZ      | CzechGlobe – Global Change Research Centre   |

| S&T Theme  | Type of synergies             | Country | Synergy Example   |
|--|-------------------------------|---------|---|
| <b>Health</b>                                      | Sequential Funding            | LT      | JSC "Vittamed"  |
| <b>Health; Materials</b>                           | Sequential Funding            | LT      | Strengthened R&D infrastructure (KTU's K. Baršauskas Ultrasound Research Institute)                       |
| <b>Health; Nanosciences &amp; Nanotechnologies</b> | Sequential + Parallel Funding | LV      | Latvian Institute of Organic Synthesis  |
| <b>Health; NMP; Biotechnology</b>                  | Sequential Funding            | UK      | Centre for NanoHealth, University of Swansea, Wales   |
| <b>ICT</b>   | Sequential Funding            | RO      | Faculty of Automatic Control and Computers, University "Politehnica" of Bucharest                         |
| <b>ICT</b>   | Parallel Funding              | BG      | Institute of Information and Communication Technologies (IICT) at the Bulgarian Academy of Sciences (BAS) |
| <b>ICT</b>   | Parallel Funding              | MT      | Combining video images  |
| <b>ICT</b>   | Parallel Funding              | SK      | The ZTS VVU Košice – Research in robotics   |
| <b>ICT</b>   | Sequential + Parallel Funding | CZ      | IT4Innovations  |
| <b>NMP</b>   | Sequential Funding            | FR      | Microtechnology sector in the Franche-Comté region, France  |
| <b>NMP</b>   | Sequential Funding            | LT      | Promotion of high level international research  |
| <b>NMP</b>   | Sequential + Parallel Funding | PL      | Research in novel materials with unusual electromagnetic properties (ITME)                                |
| <b>NMP</b>   | Sequential + Parallel Funding | SI      | Nanotechnology Centre   |



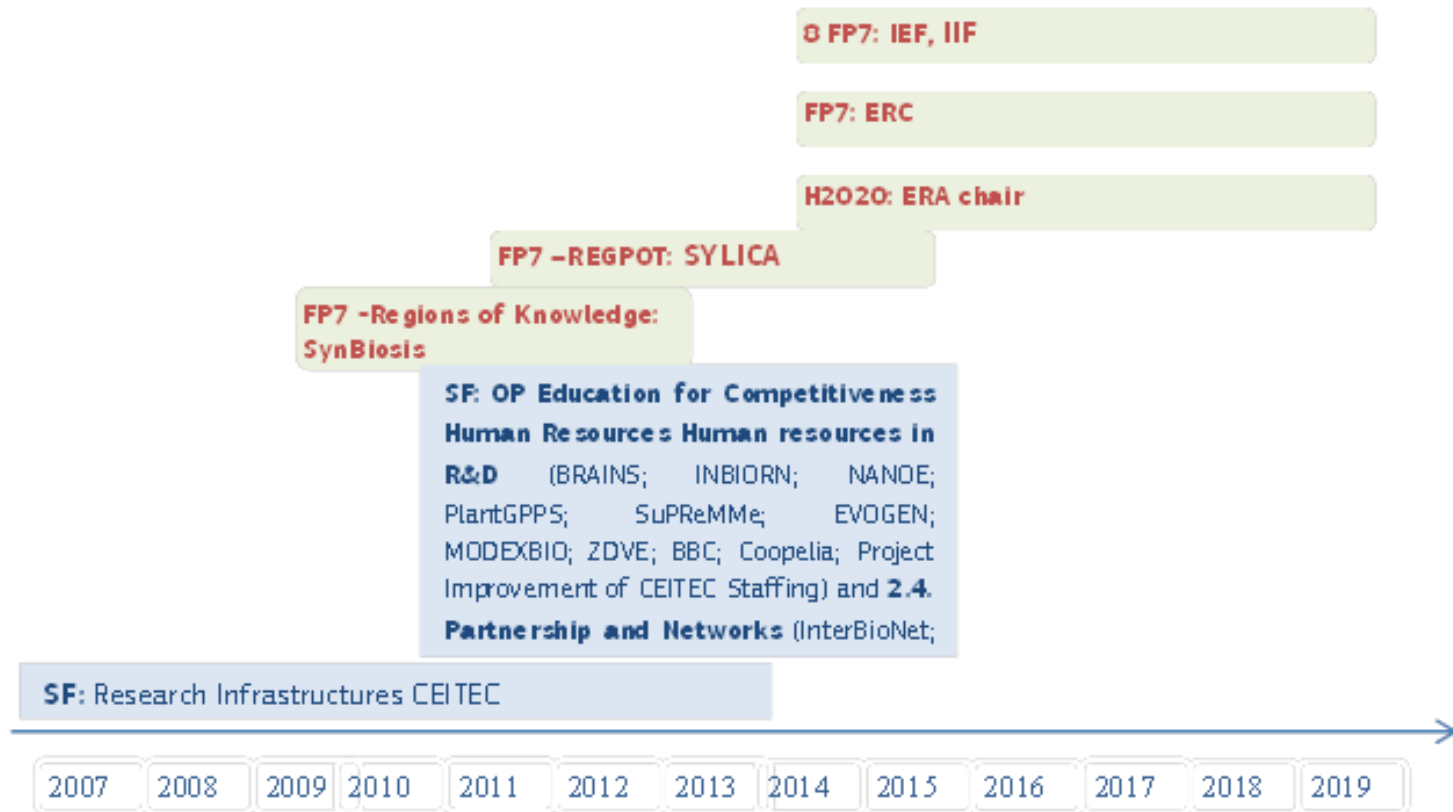
## **Example: Central European Institute of Technology (CEITEC), Czech Republic**

CEITEC is a research centre in the fields of life sciences, advanced materials and technologies with the aim to catalyse the existing research resources in South Moravia and establish itself through research based on synergy and collaboration as a prominent European centre of scientific excellence. It has been created with a total investment of around €300m (85% from Structural Funds Structural funds – European Regional Development Fund and OP Research and Development for Innovations), with the scope to concentrate cutting-edge equipment and top laboratory facilities in one place. Various funding mechanisms were subsequently implemented and combined in a complementary manner to use the "core facilities" as motivator to attract and support top national and foreign researchers and engage them in competitive international and inter-sectorial research projects.

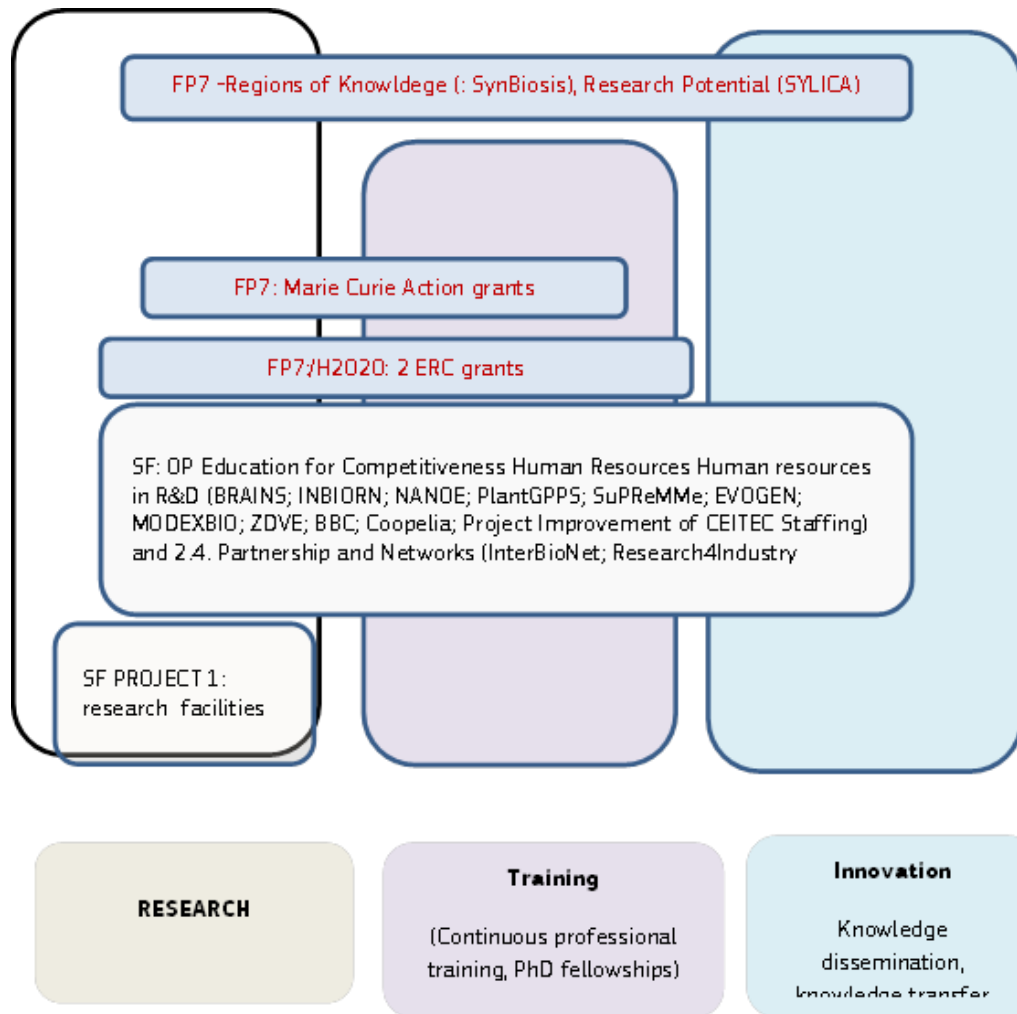
**Type of synergies:** Upstream and downstream, Sequential funding

**S&T field targeted by the synergies:** Biotechnology, Health, Nanosciences and Nanotechnologies, Materials

## Diagram of chronology of the main projects involved in synergies



## Diagram of the complementarities of the funds in the knowledge triangle/flow







## **Example: Collaboration between EMEC (European Maritime Energy Center) and CENSIS (Innovation Centre for Sensor & Imaging Systems) to support innovation & development of new sensor technologies. Scotland, United Kingdom**

Since May 2015 EMEC and CENSIS are collaborating to support innovation and development of new sensor technologies. They jointly help innovative sensor technologies to develop through TRLs and provide independent performance verification as technologies enter the market.

This joint effort illustrates how the combination funds at all levels can act together for growth and jobs, translating both innovation and knowledge from academia into businesses.

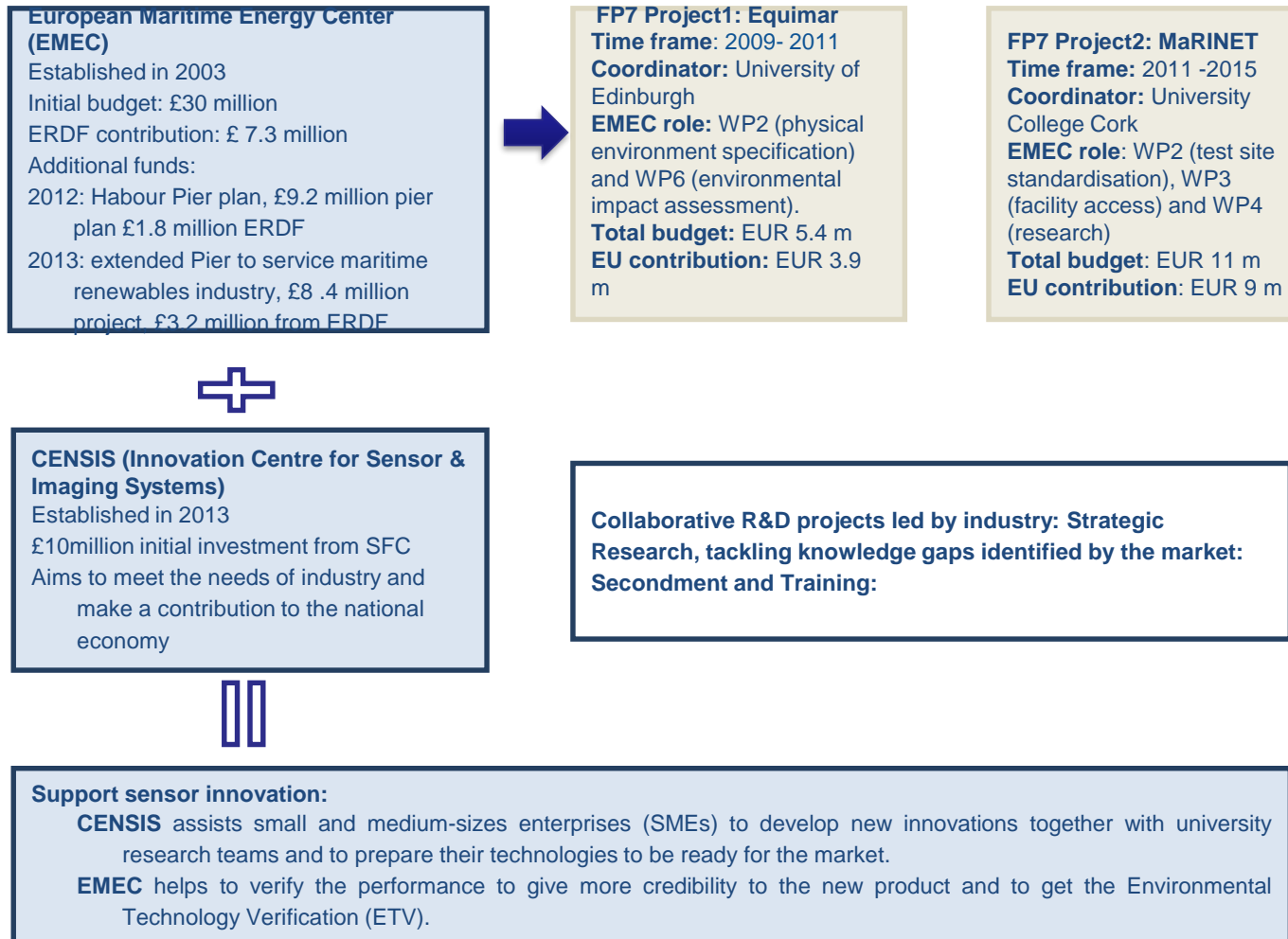
### ***Type of synergies:***

*Upstream and downstream activities*

*Sequential and parallel funding*

***S&T field targeted by the synergies: Energy***

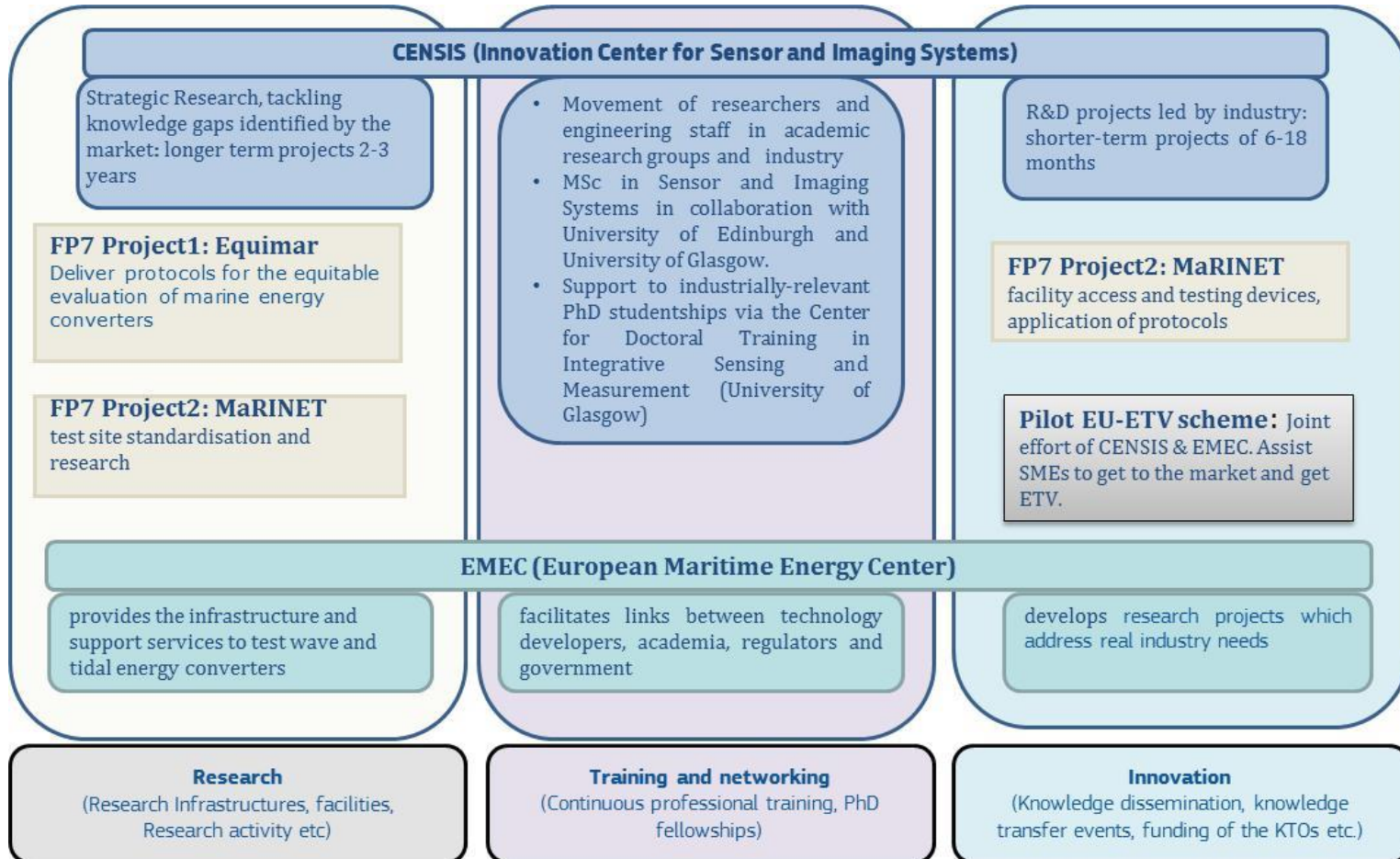
## Diagram of the main projects involved in synergies





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## Diagram of the complementarities of the funds in the knowledge triangle/flow



# Thank you!



and keep in touch:

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