



# Robotics in Horizon 2020

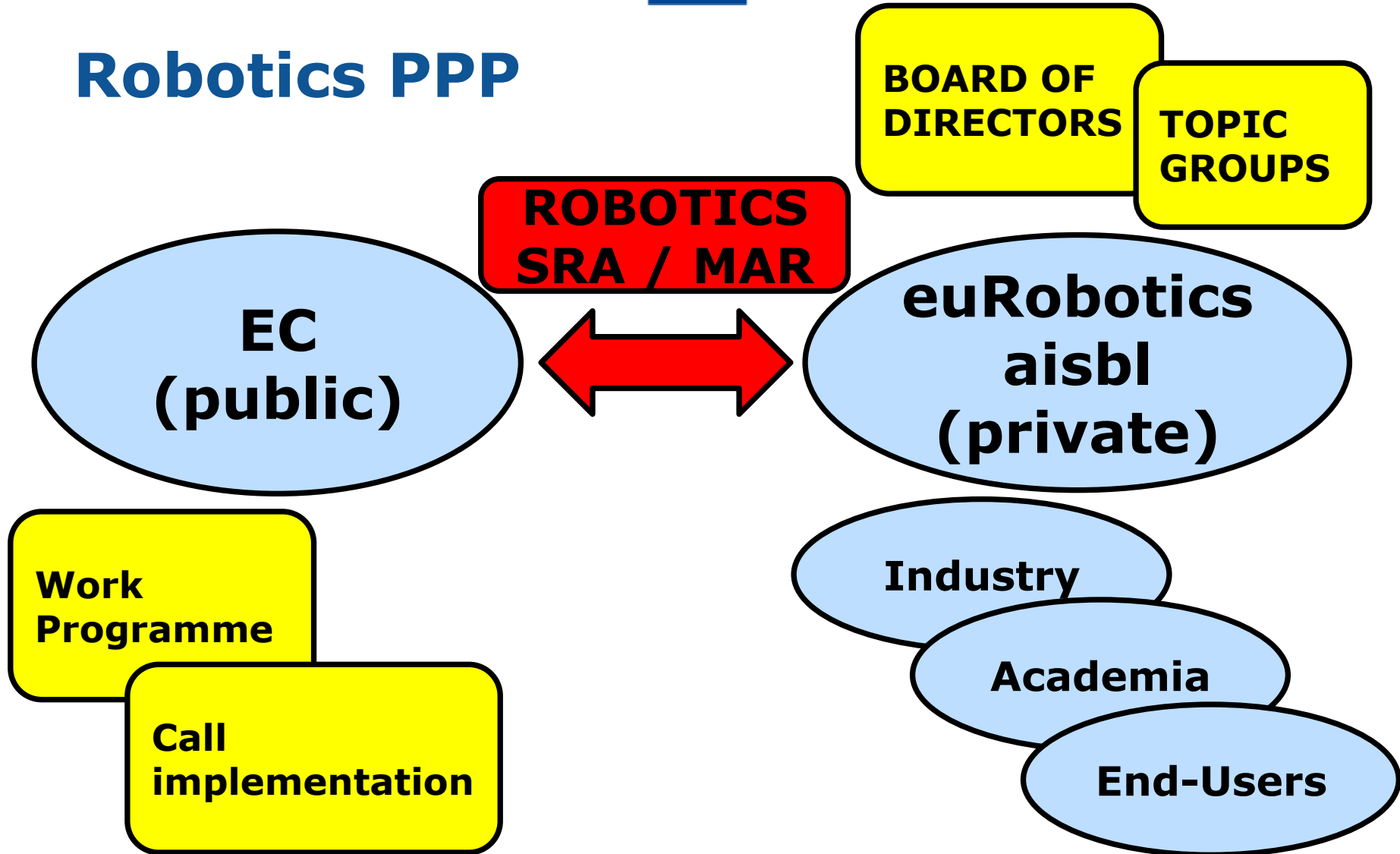
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European Commission

# Robotics PPP



# PPP and you

- **The call organisation and operations are run by the Commission**
- **The evaluation and selection of proposals does not involve the private side of the PPP – done by the Commission with the help of independent experts**
- **Proposers need not be PPP members**
- **PPP membership gives no advantage or preferential treatment in evaluations**

# Horizon 2020 – changes

*Some points to note*

- **Terminology**
- **Types of action**
- **Types of contribution**
- **Horizon 2020 grant agreement changes**
- **Submission**
- **Evaluation criteria**

# Horizon 2020 – changes

## *Terminology*

- **aligned with the terminology of the legal texts (the Financial Regulation)**
- **N.B. 'action' is the official term used for 'project' in the Model Grant Agreement**

# Horizon 2020 – changes

## *Types of action (instruments)*

- **Research and Innovation Actions**

- Actions primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution.

- **Innovation Actions**

- Actions primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services.
- **Robotics use cases**

- **Coordination and Support Actions**

- Actions consisting primarily of accompanying measures

# Horizon 2020 – changes

## *Types of action (instruments)*

- **Programme Co-Fund**

- Pre-commercial Procurement (PcP)
  - 'Pre-commercial procurement' means procurement of research and development services involving risk-benefit sharing under market conditions and competitive development in phases
- Public Procurement of Innovation solutions (PPI, not in ICT23 & ICT24)
- ERA-NET (not in ICT23 & ICT24)

- **SME Instrument**

- not in ICT23 & ICT24

# Horizon 2020 – changes

## *Types of projects in terms of contribution*

- **Expressed in terms of indicative budget (requested funding)**
- **Cut-off point €4-5 million – *Large Contribution v. Small Contribution***
- **The distinction does not correspond to the old distinction IP v. STReP**
- **The Work Programme may varyingly call for either large or small projects or both – important to check**



# Horizon 2020 – changes

## *Horizon 2020 funding rates*

- **Research and Innovation Actions + Coordination and Support Actions**
  - up to 100%
- **Innovation Actions**
  - up to 70%
  - up to 100% (non-profit entities)
- **Indirect Costs – 25% of eligible direct costs less subcontracting**

# Horizon 2020 – changes

## *Proposal submission – points to note*

- much shorter time to grant – work in advance
- Part A of the proposal, administrative part – submission of legal data to the Research Executive Agency as soon as requested
- self-check of SME status – financial viability: do it carefully as might be very critical at a later stage
- **page limit** for technical content in Part B (excluding partner descriptions)
  - **70 pages** (50 pp for Coordination Actions)
  - pages exceeding the limit will not be evaluated

# Horizon 2020 – changes

## *Proposal submission – points to note*

- **demonstrate your operational capability – competence and availability of resources**
- **thoroughly describe ethical issues and how they are dealt with**
- **Impact section of primary importance**
- **check the proposal template on the Participant Portal for more information**

# Horizon 2020 – changes

## *Proposal submission – points to note*

- **a short contract preparation phase – a proposal has to be close to a final project work plan, not a sales brochure**
- **the maturity, specificity and completeness of the work plan will be taken into account at the evaluation stage and weaknesses will be penalised**
- **lay out specific, well-defined and challenging yet realistic objectives and how they will be reached**
- **great idea not enough – credible work plan essential**

# Horizon 2020 – changes

## *Proposal submission – evaluation criteria*

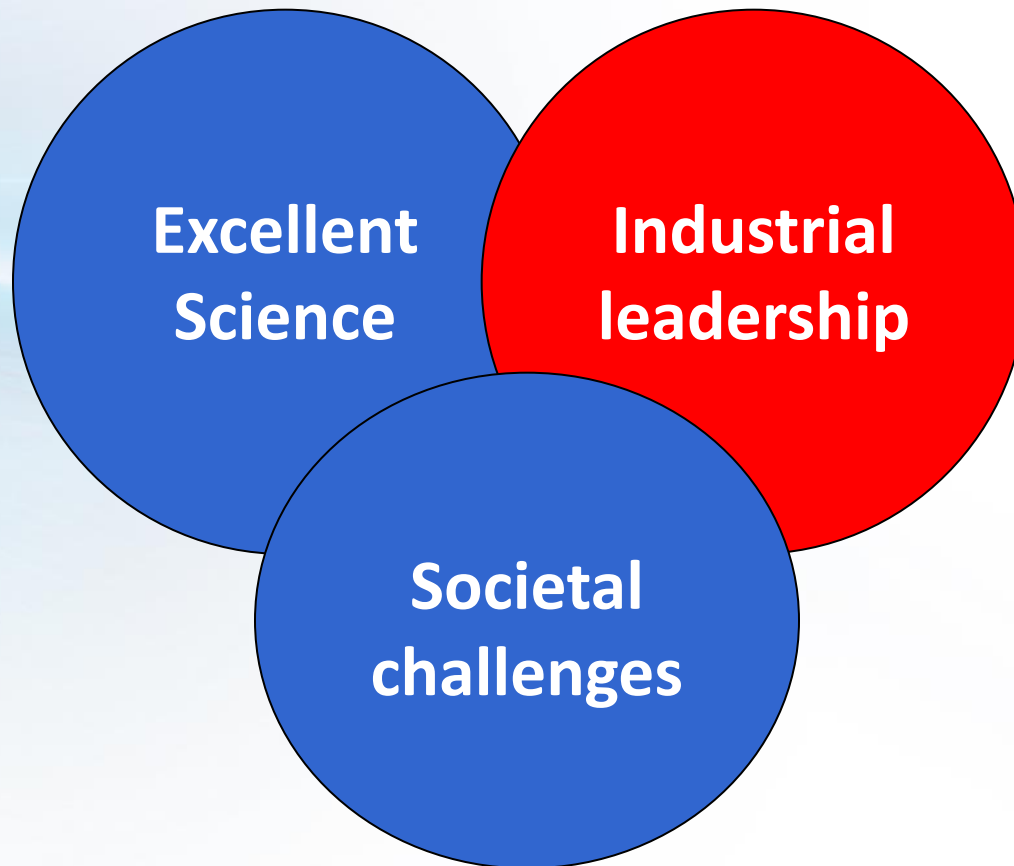
- **3 criteria: Excellence, Impact, Implementation**
- **innovation aspect more strongly incorporated**
- **0-5 points, threshold 3 pts for individual criteria**
- **overall threshold 10 points**
- **for Innovation Actions, weighting of Impact 1.5**

# Horizon 2020 – changes

## *Proposal submission – points to note*

- **Be ready if you are selected (time to grant significantly reduced)**
  - Availability of Coordinator and Consortium essential after evaluation results published
  - Consortium Agreement to be prepared sufficiently long in advance
  - Legal and financial documents ready to be submitted as soon as requested

# H2020



# Robotics in H2020: ICT23 – 2014

<p><b>LEIT CHALLENGE 5: ROBOTICS</b>  Roadmap-based R&amp;D&amp;I in Robotics  Publication: <b>11 December 2013</b>  Submission deadline: <b>23 April 2014</b></p>	<p><b>€74m</b></p>
<p><b>ICT23.a - Research and Innovation Action</b>  <b>PRIORITY:</b> Market domains: manufacturing, commercial, civil, agriculture  RTD to advance key technologies relevant for industrial and service robotics, <b>including shared resources and assessment</b></p>	<p><b>€57m</b></p>
<p><b>ICT23.b - Technology transfer - Robotics use cases</b>  Industrial and service sectors</p>	<p><b>€12m</b></p>
<p><b>ICT23.c - Pre-commercial procurement in robotics</b>  Public safety and monitoring of environment and infrastructure</p>	<p><b>€5m</b></p>



# Robotics in H2020: ICT24 – 2015

<b>CHALLENGE 5: ROBOTICS</b> <b>Roadmap-based R&amp;D&amp;I in Robotics - second Call</b> <b>Publication: 15 October 2014 (TBC)</b> <b>Deadline: 21 April 2015 (TBC)</b>	<b>€83m</b>
<b>ICT24.a – PRIORITY: healthcare, consumer, transport</b> <b>RTD to advance key technologies relevant for industrial and service robotics</b>	<b>€50m</b>
<b>ICT24.b - Technology transfer - Industry-academia cross-fertilisation</b>	<b>€12m</b>
<b>ICT24.c - Technology transfer - Robotics use cases</b>	<b>€12m</b>
<b>ICT24.d - Pre-commercial procurement in robotics: healthcare</b>	<b>€5m</b>
<b>ICT24.e - Community building and Robotic competitions</b>	<b>€4m</b>

# How is it new/different from previous calls?

1/2

- **ICT 23.a & ICT 24.a:**

While the robotics technologies and abilities that still are to be advanced are not very different from the previous research efforts, they now have to be advanced in the **context of some market domains prioritised in the call** and progress has to be demonstrated in **real-life setup relevant for these market domains**

- **ICT 23.b & ICT 24.c:**

- use-cases – similar to FP7 ICT Call 10 Challenge 2
- relatively recent – proposers must understand the **focus on technology transfer** as opposed to R&D

# How is it new/different from previous calls?

2/2

- **ICT 23.c:** PcP in Monitoring and safety / **ICT 24.d:** PcP in Healthcare
  - first time called in robotics
  - concept of PcP (PcP Pilot) exists in ECHORD++
  - relevant projects: SMART@FIRE <http://www.smartatfire.eu/> , SILVER <http://www.silverpcp.eu/>
- **ICT CT 24.b:** Technology transfer – Industry-academia cross-fertilisation
  - similar to **ECHORD** <http://www.echord.info/> and **ECHORD++**, however, with a **different administrative mechanism** – possibility to include third parties as opposed to add partners

## Role of industries and end users

- **Industry** has a far **greater role** to play in Robotics R&I than before. Involvement of industry as manufacturers, system suppliers, integrators or users is welcome, as appropriate, depending on the needs of the project and on the technology readiness level addressed.
- The involvement of **end users** in R&I projects is **welcome**. In Robotics **Use Cases**, which target industrial and service sectors, and **Pre-commercial Procurement** it is a **must**.

# Robotics elsewhere in LEIT

**ICT 29 2015: Internet of Things and Platforms for Connected Smart Objects – covers multiple devices including robots**

**ICT 30 2015: Internet of Things and Platforms for Connected Smart Objects – covers multiple devices including robots**

**ICT 34 2015: ICT contribution to pilot for co-investments by business angels in innovative ICT firms – including robotics**

**ICT 37 2014-2015: Open Disruptive Innovation Scheme (SME instrument)**

## **Advanced Manufacturing & Processing**

**FoF 6 – 2014: Symbiotic human-robot collaborations for safe and dynamic multimodal manufacturing systems**

**FoF 9 – 2015: ICT Innovation for Manufacturing SMEs (I4MS), including "Highly flexible and near-autonomous robotics systems (application experiments)".**

**FoF 11 – 2015: Flexible production systems based on integrated tools for rapid reconfiguration of machinery and robots**

# Robotics elsewhere in LEIT

## Space

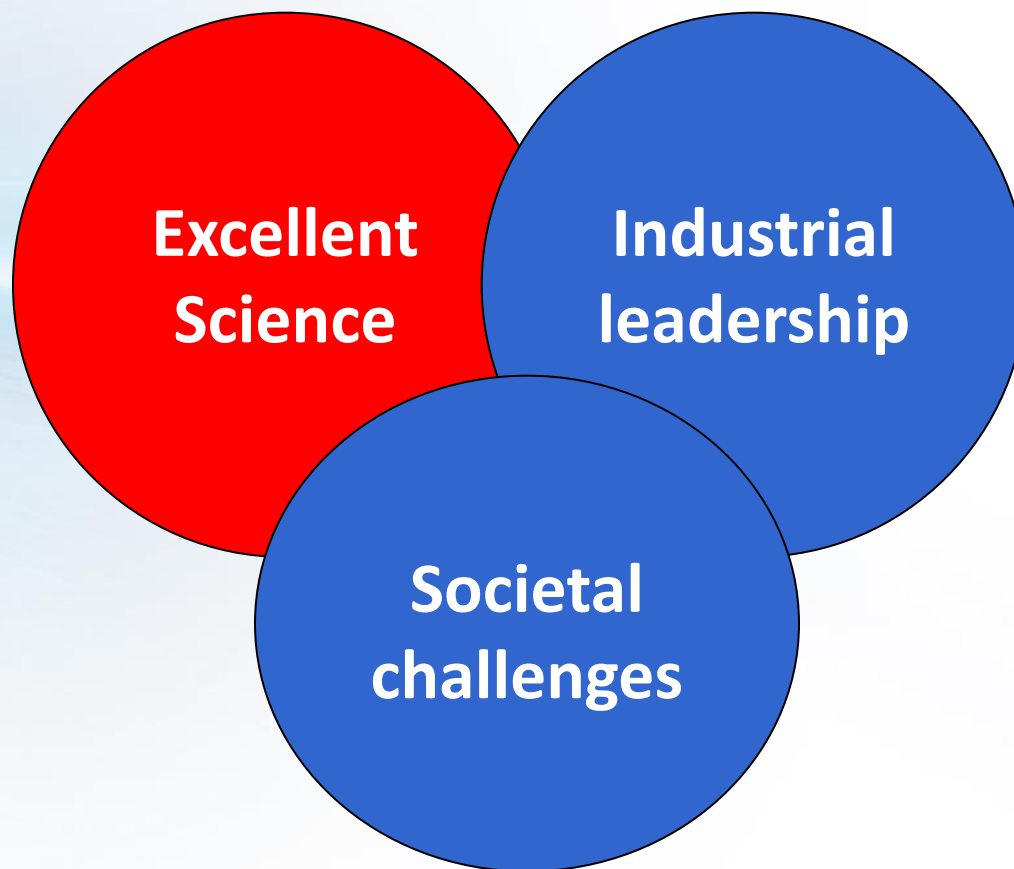
**COMPET 4 – 2014: Space Robotics Technologies (incl. robotics)**

**COMPET 6 – 2014: Bottom up space technologies at low Technology Readiness Level (incl. robotics)**

**COMPET – 9 2014 Technology Demonstrator projects for exploration (incl. robotics)**

**COMPET 3 – 2015: Bottom up space technologies at low TRL**

# H2020



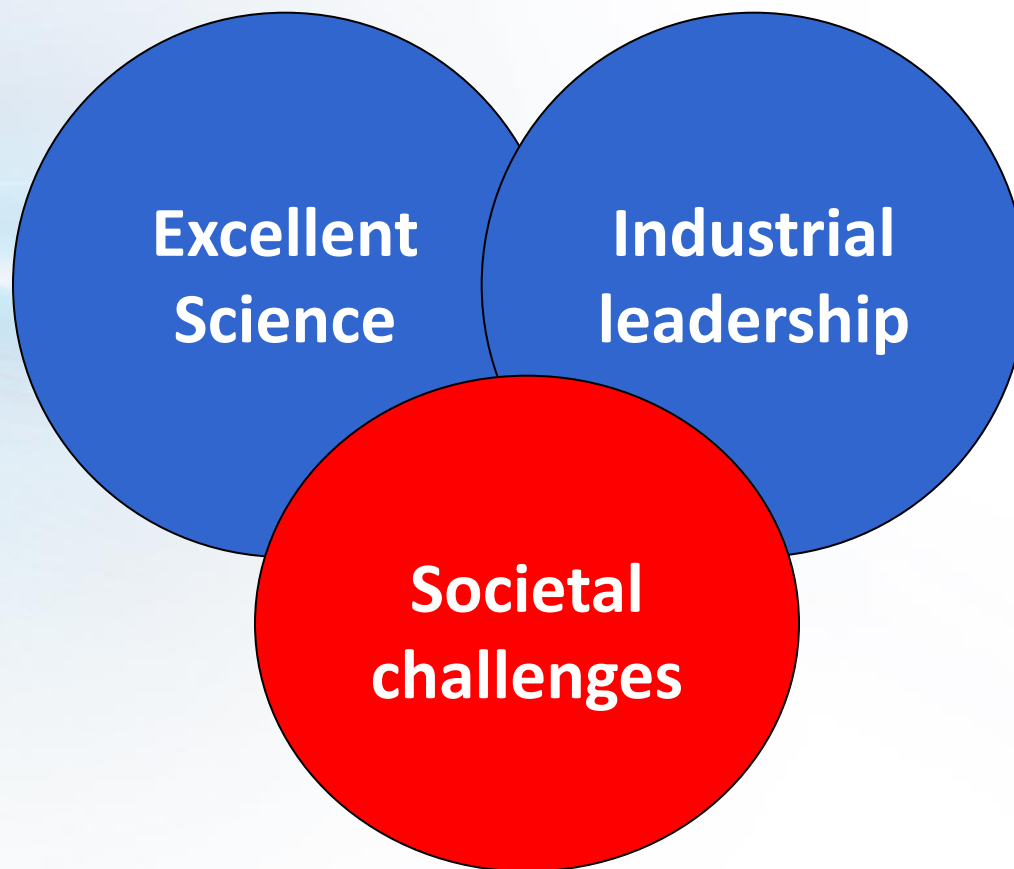
# Cognitive Systems and Robotics in the Excellent Science pillar

*FETPROACT 2: Knowing, doing and being, cognition beyond problem solving*

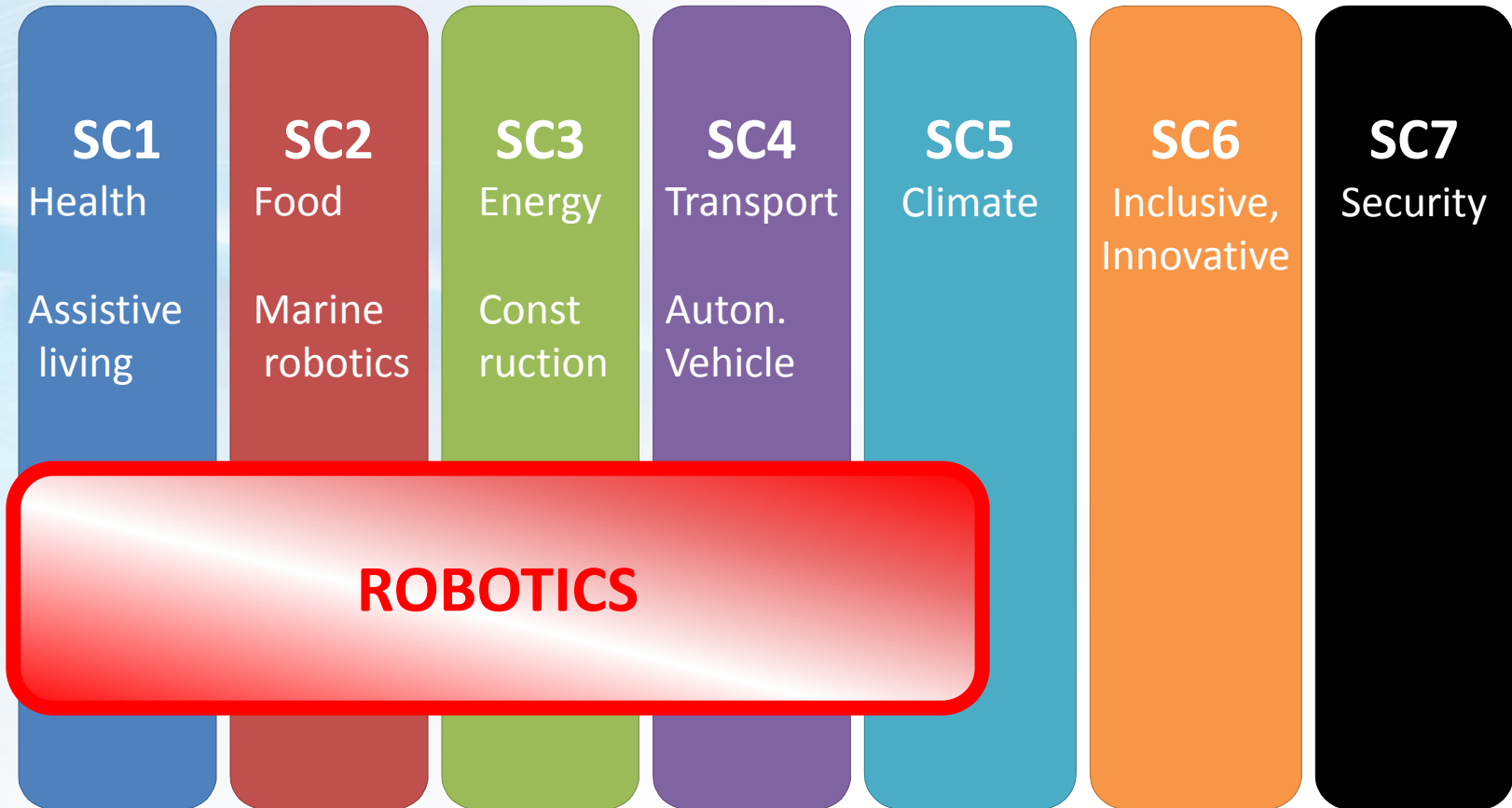
- **Foundational research on future artificial cognitive systems and robots**
- **Multidisciplinary: knowledge, cognition and related issues (incl. embodiment, learning, motivation, autonomy, knowledge)**
- **Takes artificial cognitive systems beyond the level of dull task execution**
- **Demonstrate robust performance for future robotics systems**
- **Budget: €15 million – N.B. different call timetable**



# H2020



# Robotics in H2020 Societal Challenges



# Cognitive Systems and Robotics in the Societal Challenges pillar

## SC 1 Health, demographic change and wellbeing

- **PHC 19 – 2014: Advancing active and healthy ageing with ICT: Service robotics within assisted living environments**

## SC 2 Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bio economy

- **Blue Growth 5 - 2014: Preparing for the future innovative offshore economy – including robotics / ROVs**
- **Blue Growth 6 - 2014: Delivering sub-sea technologies for new services at sea - including robotics / ROVs / AUVs**
- **Blue Growth 7 - 2015: Response capacities to oil spills and marine pollutions - including the use of specialised vessels and underwater (autonomous) vehicles**

## SC 3 Energy Challenge

- **EE 1 – 2014/15: Manufacturing of prefabricated modules for renovation of building - including automated/robotised tools for construction**

# Cognitive Systems and Robotics in the Societal Challenges pillar

## SC 4 Smart, green and integrated transport

- **MG.3.6-2015 Safe and connected automation in road transport - including autonomous driving applications**

## SC 5 Climate action, environment, resource efficiency and raw materials

- **SC5-11-2014/2015: New solutions for sustainable production of raw materials**
  - c) **Deep mining on continent and in sea-bed [2015] - new highly-automated technological sustainable solutions**



## Info Day

### **RRI/SSH in ICT-Related Topics in Horizon 2020's Work Programme 2014-2015**

***Presenting the many opportunities for Social Sciences and Humanities (SSH) researchers contained in the WP's organic approach to Responsible Research and Innovation (RRI).***

*When: January 21, 2014*

*Where: European Commission, 25 Avenue de Beaulieu, 1160 Brussels*

*More information and how to register @  
<http://bit.ly/21Jan14>*

## More information...

- *Current project portfolio:*  
<http://cordis.europa.eu/fp7/ict/robotics>
- *Background document with Q&A – a revised version is now available:*
- [http://ec.europa.eu/information\\_society/newsroom/cf/dae/document.cfm?doc\\_id=3660](http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?doc_id=3660)



European  
Commission

**THANK YOU!**