



# Ethical and Societal issues in robotics

## The EU-ICT programme

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**European Commission**



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I AM  
A ROBOT

# What is a robot ?



*28/11/2014 – Toulouse –  
Cité de l'Espace  
RoCKIn  
1<sup>st</sup> competition*



*Answer from a little girl of 7 years old in  
the audience:*

***"Something to help humans"***

# Ethical and Societal issues in robotics : (many) open questions

*What is an intelligent/autonomous system?*

*What is an autonomous system?*

*What can a robot do?*

*Can a robot be dangerous?*

*Who is responsible for what the robot is doing?*

*How can technology support humans efficiently?*

*How is a robot interfering with my privacy?*

*Will a robot take my job ?*

- **[NR: many recent studies show that robots create jobs]**

- **VALID QUESTIONS FOR ANY AUTONOMOUS OR AUTOMATISED SYSTEM, NOT ONLY ROBOTS**



# **Ethical and societal issues in robotics : a multi-disciplinary effort**

*COLLABORATIVE effort*

*roboticists, engineers, neuroscientists*

*but also*

*philosophers, sociologists, lawyers, psychologists*

*and*

*citizens*

*ASKING THE RIGHT QUESTIONS /*

*SEARCHING FOR ANSWERS /*

*COMMUNICATION / OUTREACH / DISSEMINATION*



# **EU-FUNDED ACTIVITIES in Ethical and Societal issues for robotics**

***NOW***

# Activities

*EuCog NoE - <http://www.eucognition.org/>*

*SPARC Topic Group on Ethical-Legal-Socio-Economic Issues*

*But also Topic Groups on*

- AI and Cognition in Robotics
- Robot Companions for Assisted Living
- Healthcare
- Natural Interaction with Social Robots
- Socially Intelligent Robotics
- Education



# The Eurobarometer survey

*More later*

*(see Björn's presentation)*





# RRI-SSH DG CONNECT Network

*The overall purpose of the RRI/SSH network of DG Connect is to ensure the implementation of two cross-cutting issues, which are **social sciences and humanities (SSH)**, on the one hand, and **responsible research and innovation (RRI)** on the other hand, throughout ICT-related parts of H2020.*

*The network will also pay special attention to the contribution it can bring to the bridging of research and policy.*



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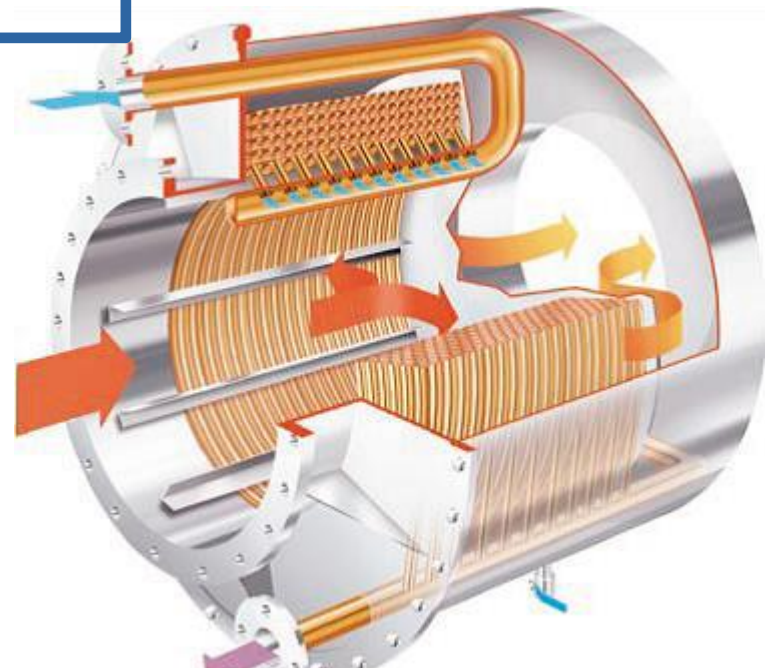


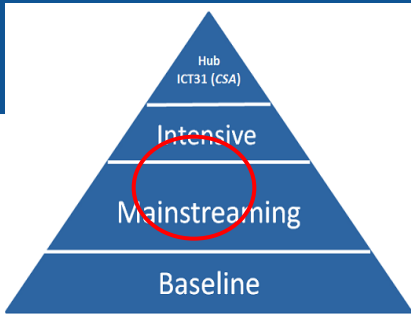
**More than  
compliance**



**Avoid silos**

**Encourage interactions**





## Hub: Human-Centric Digital Age

### CSA project: RRI-ICT Forum

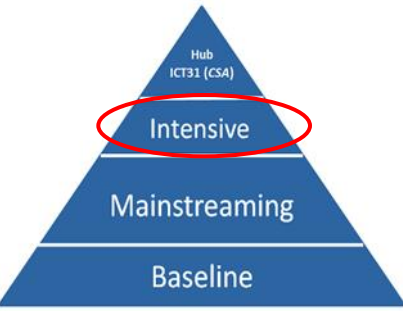
- Co-ordinating overall RRI-SSH action
- Duration: 36 months
- Start date: 1 January, 2015
- Co-ordinator: Roger Torrenti

#### Objectives

- Monitoring, analysing, supporting and promoting SSH contribution to, and RRI approach in ICT research and innovation under H2020

#### Contact

- Website: <http://www.rri-ict-forum.eu/> (site under construction)
- Email: [INFO@RRI-ICT-FORUM.EU](mailto:INFO@RRI-ICT-FORUM.EU)



# Intensive Topics

|  | LEIT   | EXC | SC   |
|--|--|-----|--|
| <p><b>Need for SSH-expertise and RRI-actions assured via RRI/SSH Intensive Topics?</b></p> | <p><b>ICT 10 - 2015:</b><br/>Collective Awareness Platforms for Sustainability and Social Innovation</p> | -   | <p><b>DS 7-2015:</b><br/>Value-sensitive technological innovation in Cybersecurity</p> |

| AREA  | TOPIC   | DEADLINE           |
|---|---|--------------------|
| LEIT - ICT                                      | ICT 10, 19, 20, <b>24</b> , 30, 39            | April 14, 2015     |
| SC 1 – Health, Demographic Change and Wellbeing | PHC 21, 25, 27, 28, 29, 30                    | April 21, 2015     |
| SC 4 – Smart, Green and Integrated Transport    | MG.3.6a                                       | April 23, 2015     |
| SC 3 – Secure, Clean and Efficient Energy       | SCC-1, SCC-3                                  | May 5, 2015        |
| SC 6 – Europe in a Changing World               | EURO-6, REFLECTIVE-6, INSO-1                  | May 28, 2015       |
| SC 3 – Secure, Clean and Efficient Energy       | EE-11   | June 4, 2015       |
| SC 7 – Secure Societies                         | DS-3, DS-4, DS-5, DS-7                        | August 27, 2015    |
| EXC   | FETOPEN - Research Projects,<br>FETOPEN - CSA | September 29, 2015 |
| SC 4 – Smart, Green and Integrated Transport    | MG.3.6b                                       | October 15, 2015   |

**b. Innovation Actions: Technology transfer - Industry-academia cross-fertilisation**

The aim is to gear up and accelerate cross-fertilisation between academic and industrial robotics research to strengthen synergies between their respective research agendas through joint industrially-relevant scenarios, shared research infrastructures and joint small- to medium-scale experiments with industrial platforms. Proposals are expected to demonstrate technology transfer in professional or service robotics, in application areas such as manufacturing, commercial, civil, agriculture, healthcare, consumer or transport. Activities are expected to be clustered to facilitate a sectorial structured dialogue and to substantially improve overall impact. The action may involve financial support to third parties in line with the conditions set out in Part K of the General Annexes. In such case, the consortium will define the selection process for additional academic/research organisations, industry or end-users as appropriate to carry out the experiments in order to reach the objectives defined in the proposals.

<sup>24</sup> The input comes from the Strategic research agenda of the PPP that is publicly available on the euRobotics AISBL website (<http://www.eu-robotics.net/ppp/downloads/>); its content results from continuous consultation of the whole European robotics community. The prioritisation of the topics follows a formal procedure established by the euRobotics AISBL, whose membership is open to all European stakeholders in Robotics - <http://www.eu-robotics.net/ppp>.

**c. Innovation Actions: Technology transfer - Robotics use cases**

Using leading edge science and technology, a targeted effort will aim at introducing, testing and validating promising and innovative robotics solutions in industrial and service sectors. The focus will be on the robust operational deployment of these robotic solutions, based on performance objectives, metrics, and user needs. The strong involvement of all relevant stakeholders in the value chain is essential.

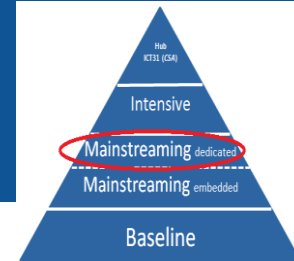
**d. Pre-commercial procurement in robotics**

Demand-driven innovation actions will be pursued in areas of public interest, including pre-commercial procurement of innovative robotics solutions for the healthcare sector.

**e. Coordination Actions: Community building and Robotic competitions**

- Supporting the European robotics community with respect to networking, education, outreach, public awareness, technology watch, standardisation, and industry-academia collaboration as well as building links to national programmes and initiatives. Also, ethical, legal, societal and economical aspects of robotics will be addressed to ensure wider take up of the technology by citizens and businesses.
- Support international cooperation, where the impact of the action is demonstrated and matching resources are provided from cooperating parties.
- Coordinating work on the next generation of cognitive systems and robotics to reinforce the links between the different research disciplines ensuring transfer of knowledge and community building.
- Coordination and support actions for organising robotic competitions will be called for to speed up progress towards smarter robots.

## ICT 24 - 2015: Robotics



### ICT 24. e CSA: community building and robotic competitions (2 CSAs?)

## Supporting the Robotics Public-Private Partnership

<http://www.eu-robotics.net/ppp/>

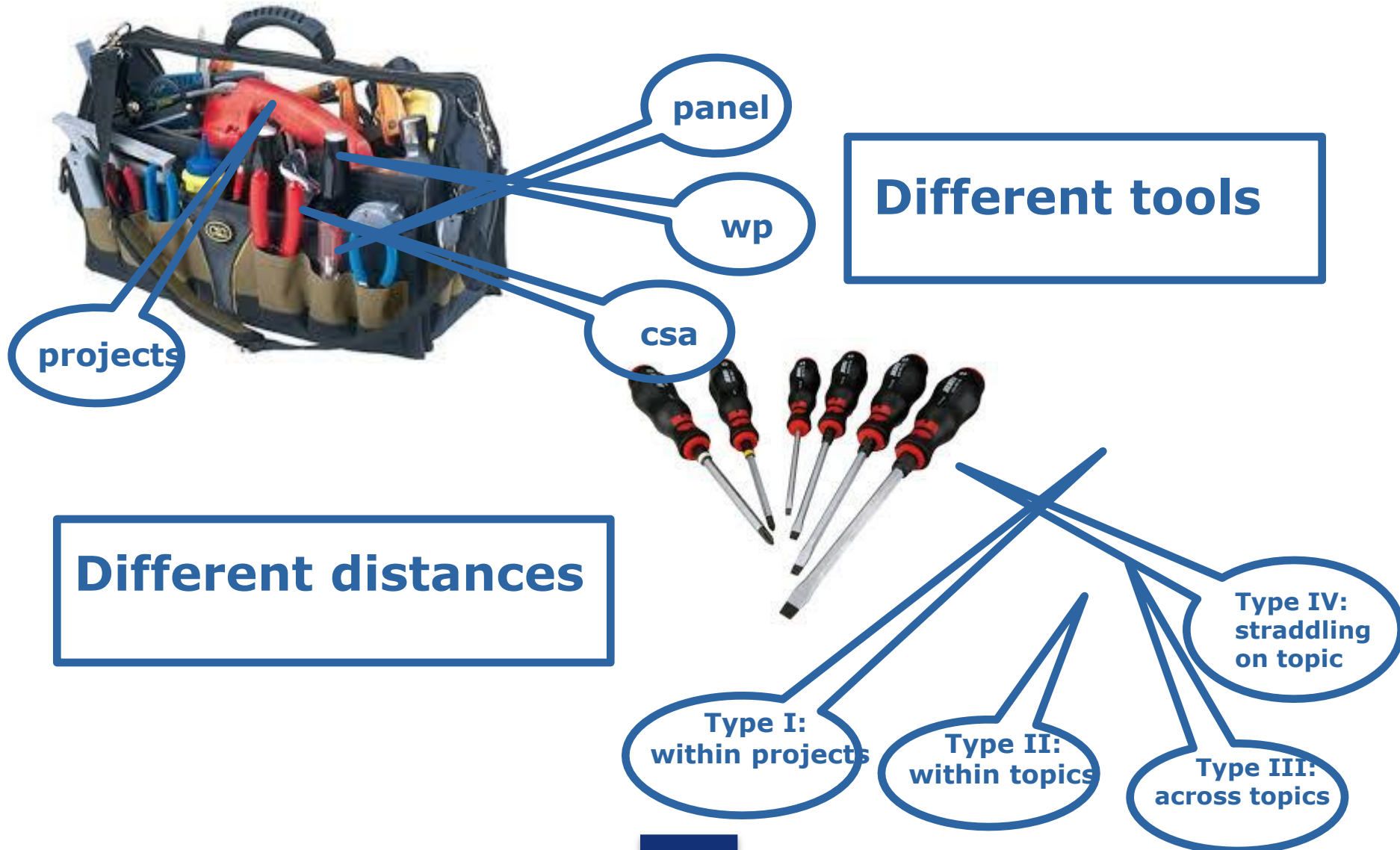
**More specifically support for:  
Networking, education, public  
awareness, standardisation,  
connecting to national  
programmes, intern. cooperation;  
ethical, legal, societal and  
economic issues**

**Also to be covered: Coordinating  
the cognitive systems community  
and reinforcing links between  
robotics and cognitive systems**



# **EU-FUNDED ACTIVITIES IN ELS issues for robotics**

***COMING SOON***







# Type I: within projects

- *Mix of disciplines within the project*
- *Review of societal issues*
- *WorkPackage or within a WorkPackage*



*Dialogue of disciplines takes place **within** the topic:*

- *Panel, sounding board*
- *Topical coordinated support action*

*Eye-opener for both sides, interactive and constructive conversation.*

## *Societal issues **across** topics:*

- *Reformulation of human rights, needs and aspirations*
- *New frontiers of human/machine interactions*



❖ *Small budget, big scope...*

# Type IV: sister projects



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- Unveiling implicit biases
- Propose constructive alternative framings
- Foster innovation through widening of imaginaries
- Provide challenging questions, issues and solutions
  
- RIAs of 300K-500K
- Simple project structure
- Pilot

# ELS in robotics: working together



**Attract top quality SSH-RRI actors**  
**Involve the robotics R&I community**  
**Include users and citizens**



# THANK YOU

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