


ACROSS Centre of Research Excellence for Advanced Cooperative Systems

FP7-REGPOT-2011-1 project:

ACROSS – – Centre of Research Excellence for Advanced Cooperative Systems

(Overview of the project)

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Presentation Outline

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- ACROSS Strategic Research Domains
- ACROSS Project Concept
- ACROSS Sub-Objectives and Action Plan
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- ACROSS Long-term Sustainability

ACROSS Global Objetive

- **To create a Centre of Research Excellence for Advanced Cooperative Systems within UNIZG-FER.**
- **The Centre should:**
  - strengthen research potential of UNIZG-FER for the benefit of the national and EU community.
  - be at the forefront of research and development of novel methodologies and advanced engineering approaches for cooperative systems.
  - act as a point of contact between academia and industry, providing an infrastructure for scientific exchange.

ACROSS Strategic Research Domains – 1/6

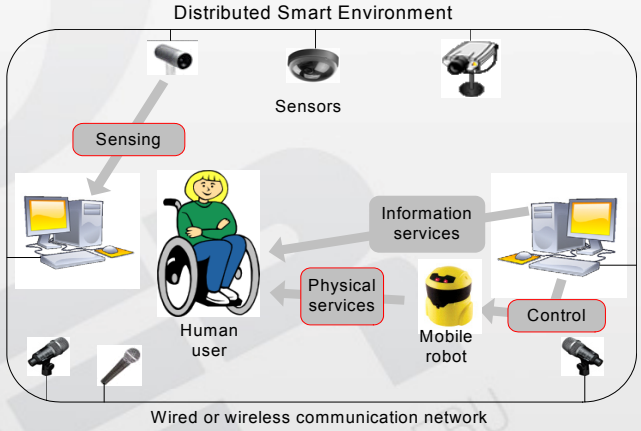
- **Application oriented SRDs:**
  - SRD1: Cooperative Cognitive and Robotic Systems;
  - SRD2: Cooperative Networked Embedded Systems;
  - SRD3: Cooperative Renewable Energy Systems;
- **Fundamental Enabling Technology Domain:**
  - SRD4: Cooperative Control Methods.
- **These SRDs are chosen due to:**
  - UNIZG-FER's Existing expertise
  - The future perspectives of these domains at EU and world level

ACROSS Strategic Research Domains – 2/6

- **SRD1: Cooperative Cognitive and Robotic Systems**

a Cooperative Human-Robots System

a Cooperative Heterogeneous Multi-Robot System

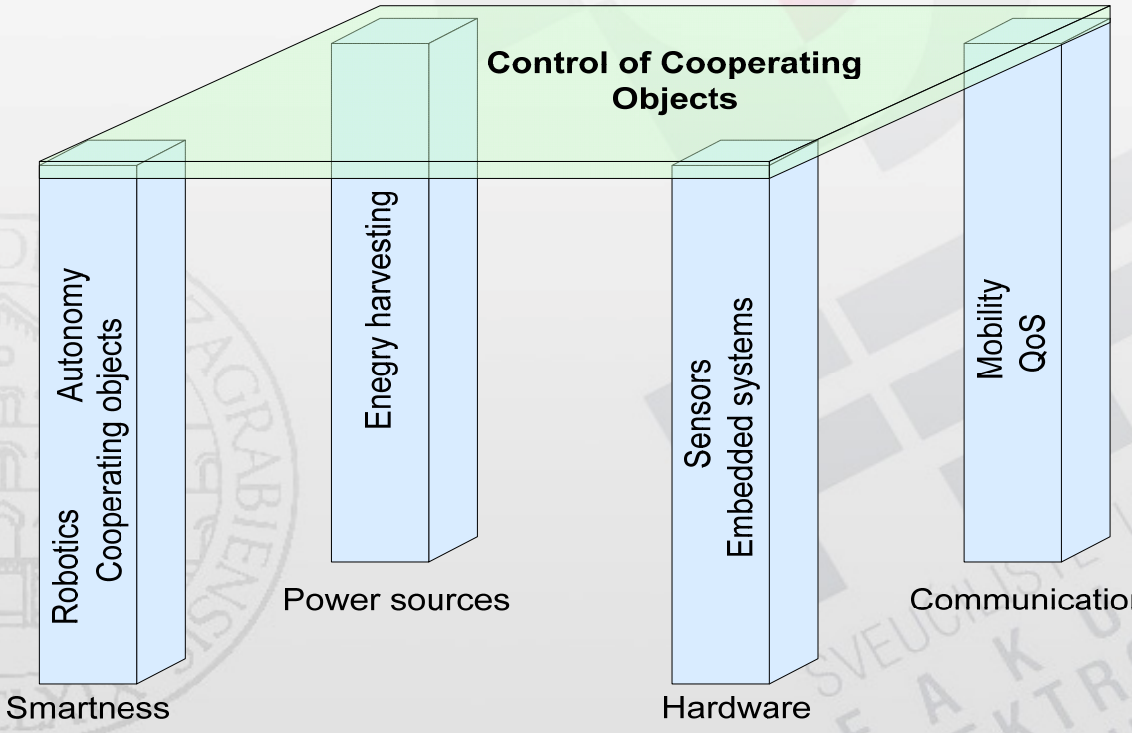


a Robot Embodied in a Distributed Smart Environment – Ambient assisted living scenario

- **Three illustrative examples of cooperative cognitive robotic systems**

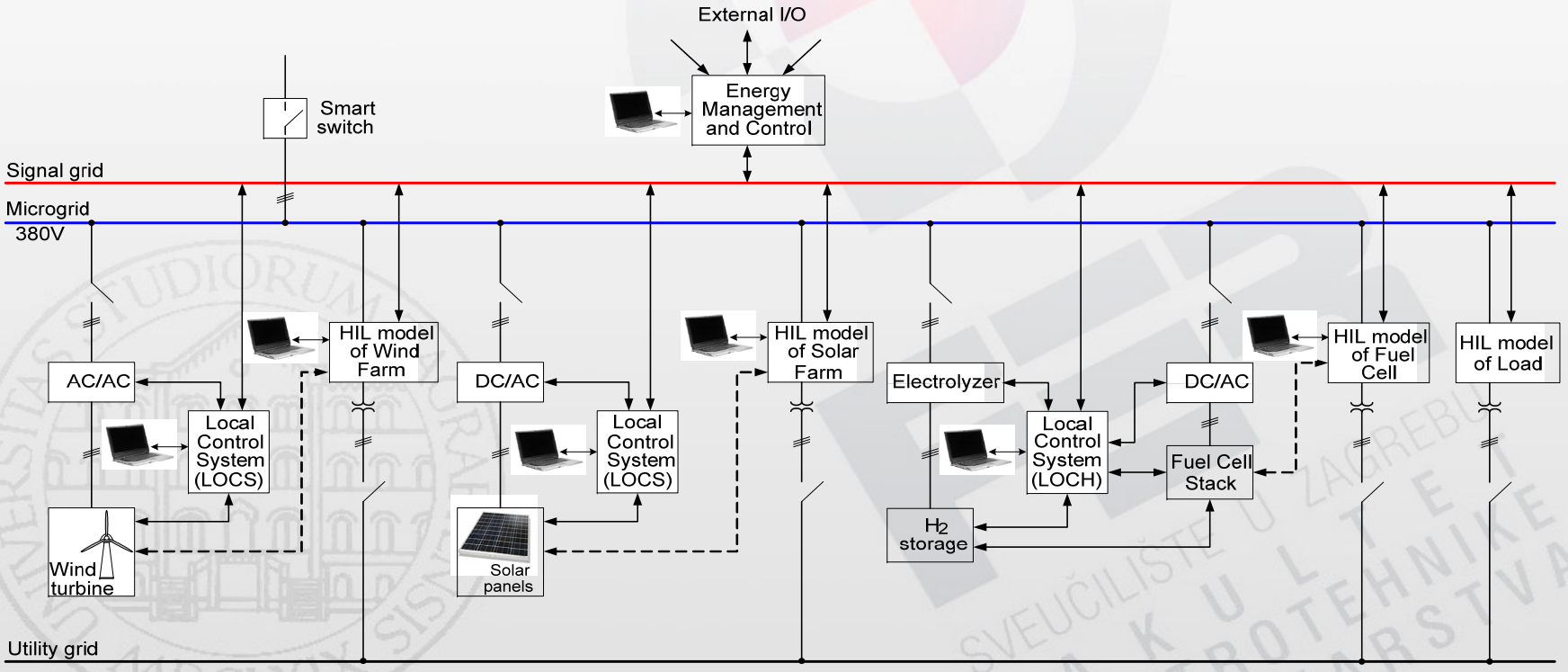
ACROSS Strategic Research Domains – 3/6

- **SRD2: Cooperative Networked Embedded Systems**



ACROSS Strategic Research Domains – 4/6

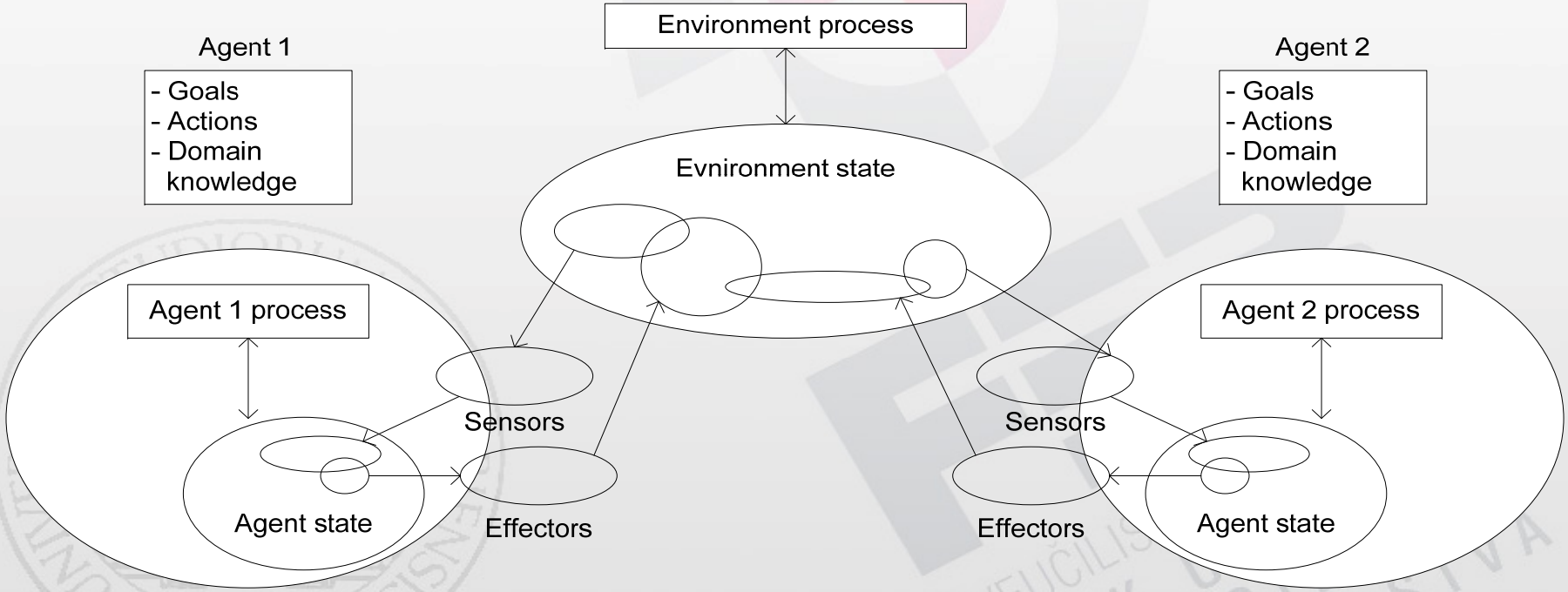
- **SRD3: Cooperative Renewable Energy Systems**



- **A concept of the microgrid that will be established**

ACROSS Strategic Research Domains – 5/6

- **SRD4: Cooperative Control Methods**

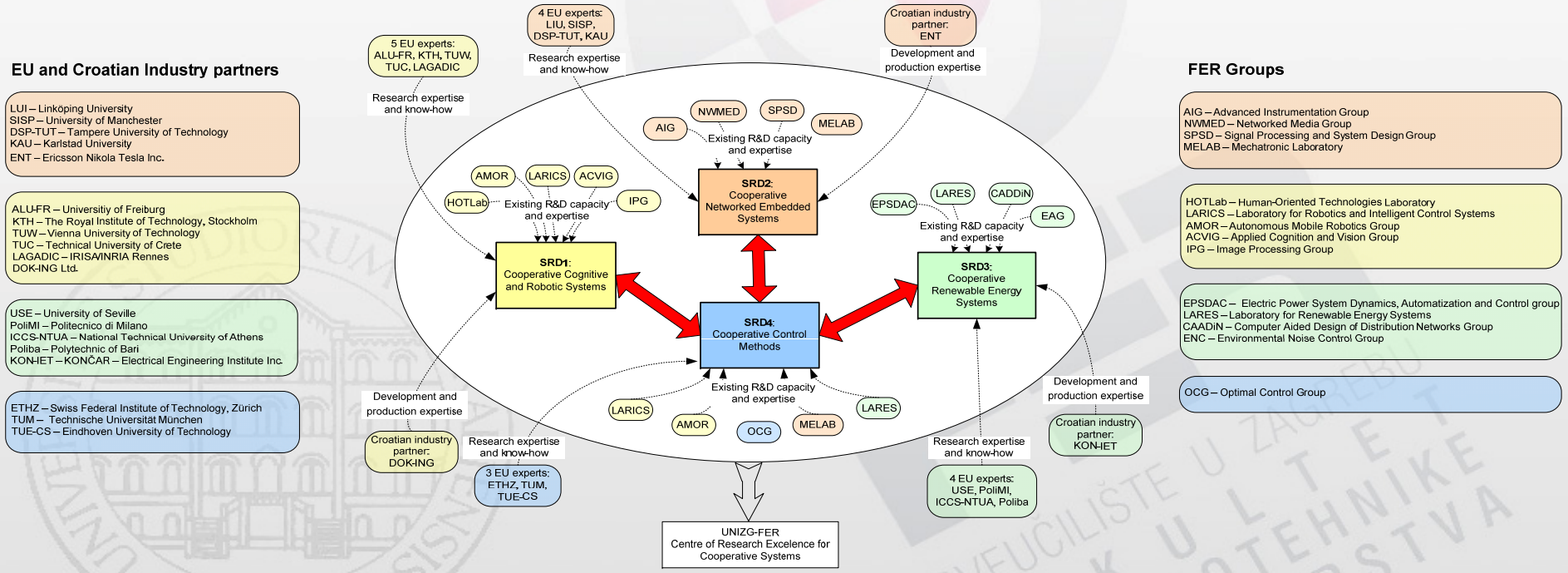


- **A general concept of the multi-agent architecture of cooperative control**

ACROSS Strategic Research Domains – 6/6

- **Possible applications of such cooperative systems are numerous:**
  - advanced flexible manufacturing,
  - home and office automation,
  - transport and logistics,
  - environmental monitoring,
  - healthcare,
  - security and surveillance,
  - human augmentation,
  - renewable and sustainable energy
  - etc.

ACROSS Project Concept

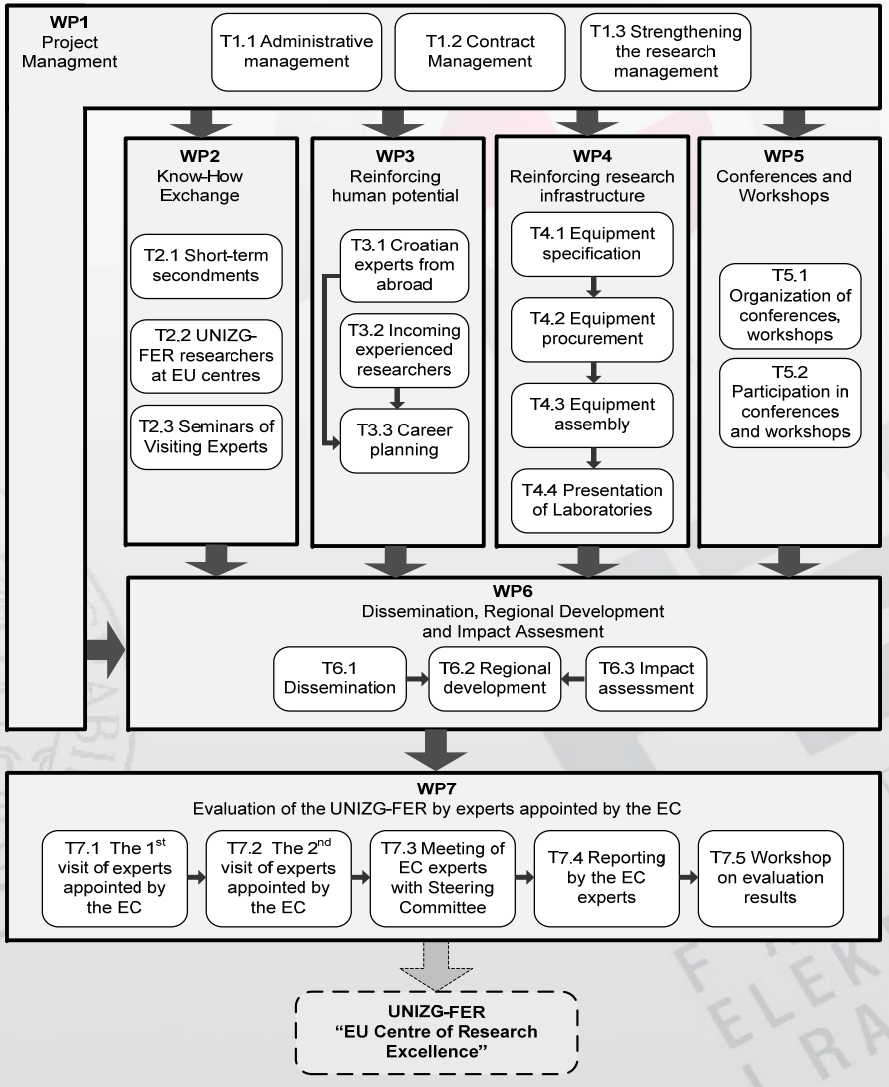


ACROSS Sub-Objectives and Action Plan

Table 1.4 Matrix of the ACROSS Action Plan

ACROSS Strategic Research Domains		ACROSS Sub-Objectives						
		SO1. Increase Research Manage-ment Potential	SO2. Develop Strategic Partnerships with Outstanding EU and Croatian Partners	SO3. Increase Human Potential	SO4. Increase Technology Potential	SO5. Increase Scientific Visibility and International Reputation	SO6. Improve responses to socio-economic needs of Croatia	SO7. Receive a certified recognition „EU Centre of Research Excellence“
	SRD1: Cooperative Cognitive and Robotic Systems	**WP1** – Project Management	**WP2** - Know-How Exchange	**WP3** - Reinforcing human potential	**WP4** – Reinforcing research infrastructure	**WP5** – Workshops and Conference Organisation and Participation	**WP6** – Dissemination, Regional Development and Impact Assessment	**WP7** – Evaluation of the UNIZG-FER by experts appointed by the EC
	SRD2: Cooperative Networked Embedded Systems							
	SRD3: Cooperative Renewable Energy Systems							
	SRD4: Cooperative Control Methods							

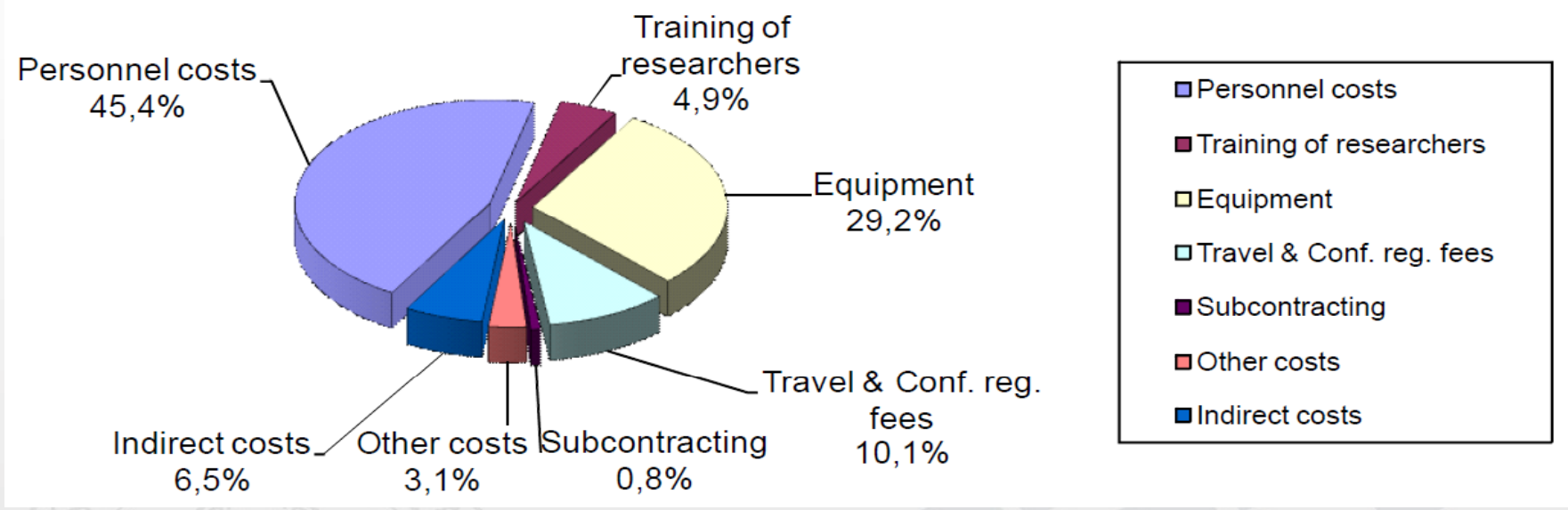
ACROSS Workplan

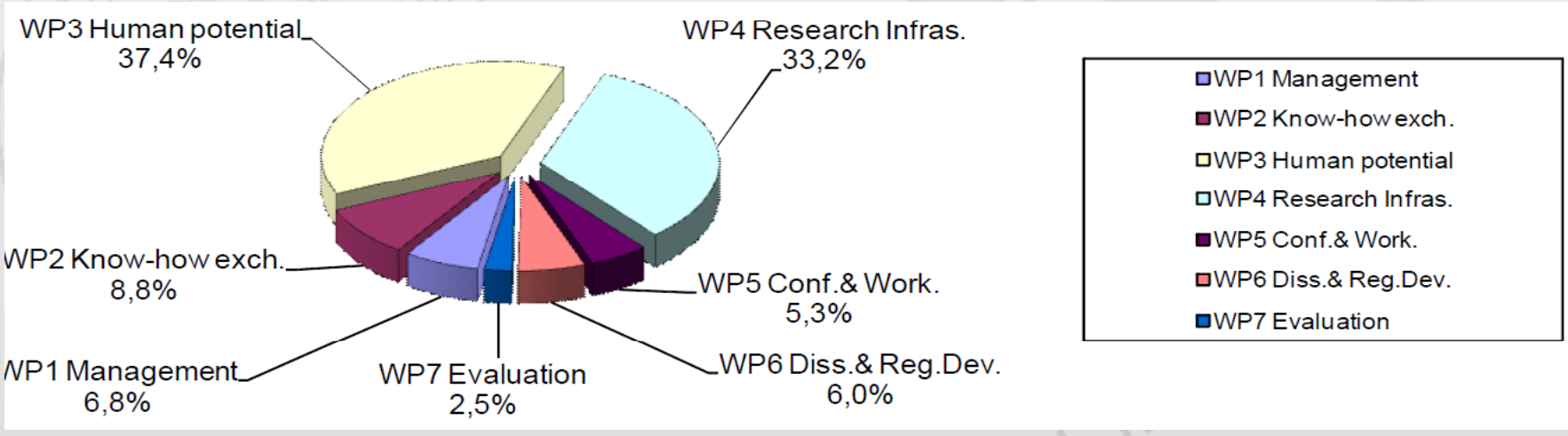


ACROSS Expected Impacts

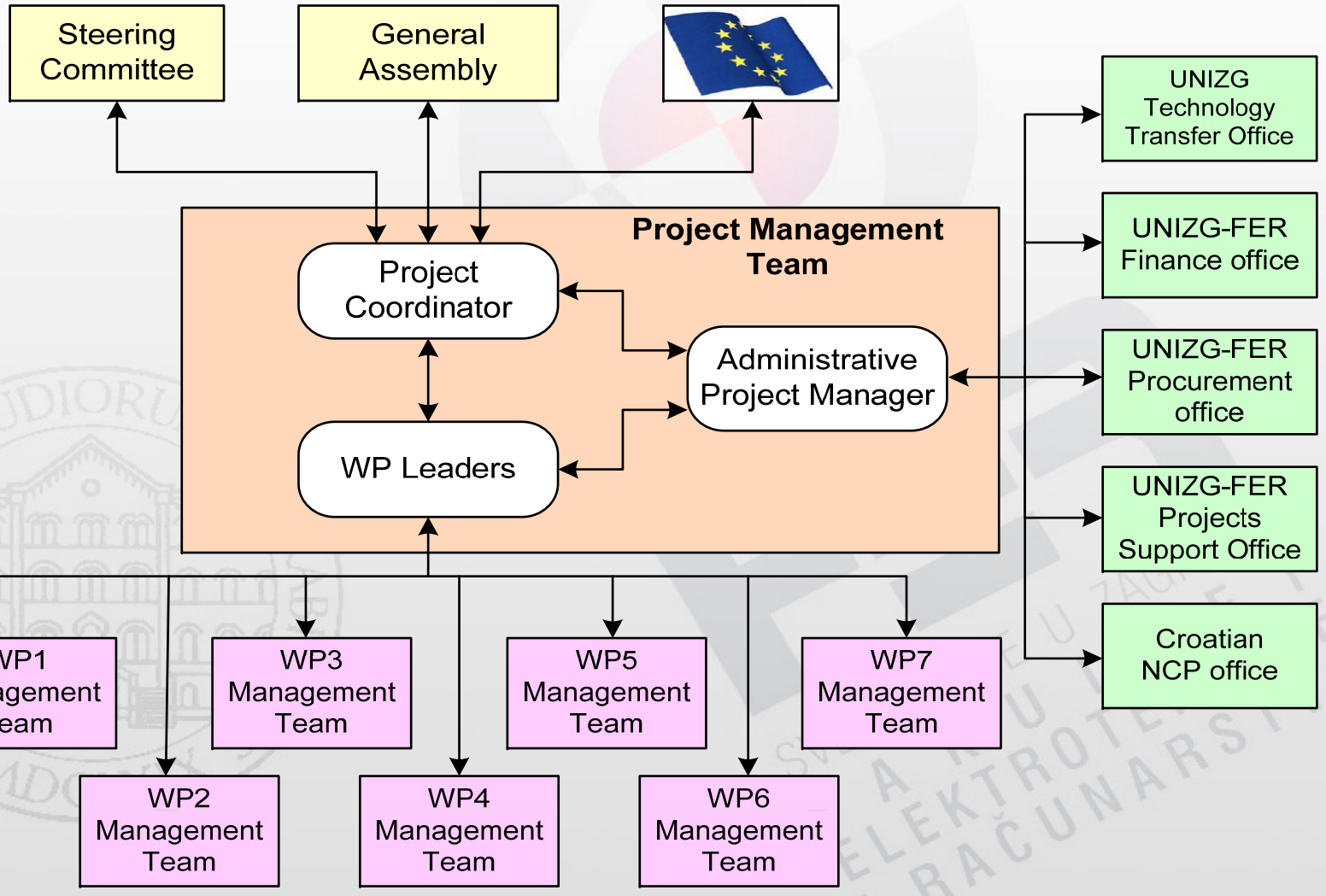
- Better integration of the UNIZG-FER in the European Research Area.
- Increased RTD capacity and capability as well as the quality of research carried out at the UNIZ-FER.
- Increased contribution to Croatian economic and social development.
- Increased participation of the UNIZG-FER in EU-level projects.

ACROSS Funding by the EC (In total 3.351.776 €)





ACROSS Management structure



ACROSS Long-term Sustainability

- **The most important measures we will focus on are:**
  - Long-term research strategy in the area of cooperative systems that will be enabled by the ACROSS
  - The means of the research strategy implementation by integration of UNIZG-FER's research potential
  - Sustainability measures implemented in close cooperation with national stakeholders
  - Synergies between the ACROSS Action Plan and the EU Cohesion Policy programmes

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