



TÜBİTAK

Information and Communication Technologies in FP7

A guide through the 2009-10 Work Programme

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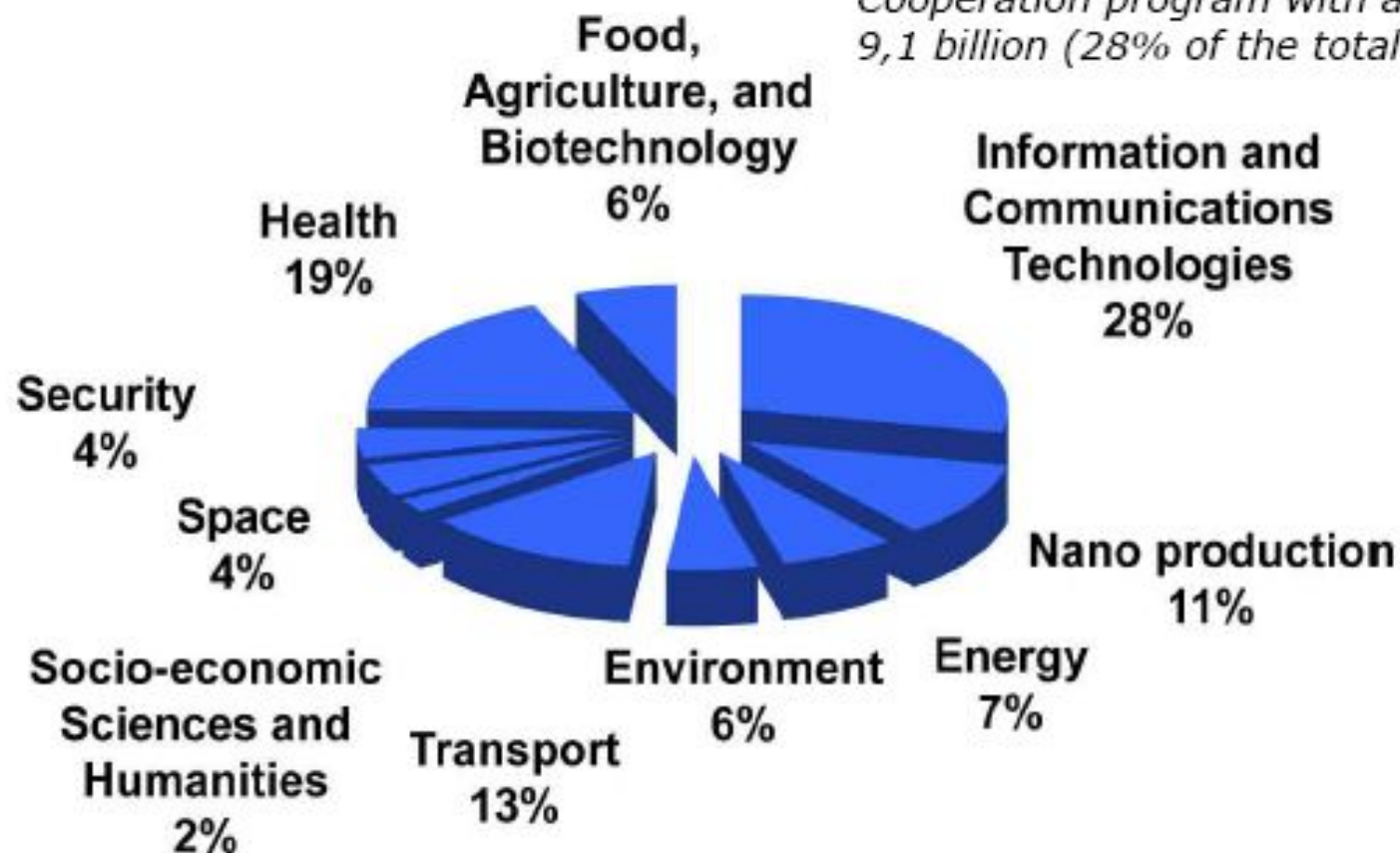


Outline

- FP7 ICT
- Minimum Consortia
- SouthEast Asian Countries and FP7 ICT
- Positioning of the Programme
- Programme approach and features
- 7 Challenges, FET and International Cooperation

FP7 Information and Communication Technologies

The ICT thematic area is the largest in the Cooperation program with a budget of € 9,1 billion (28% of the total budget)



Minimum Consortia

- Three independent legal entities from three different EU Member States or Associated countries (presently: Albania (AL), Croatia (HR), Iceland (IS), Israel (IL), Liechtenstein (LI), FYR of Macedonia (MK), Montenegro (ME), Norway (NO), Serbia (SR), Switzerland (CH), Turkey (TR))
- International (intergovernmental) organisations can participate
- **Participants from third countries if in addition to minima**
- Collaborative projects for specific cooperation actions (SICA) dedicated to international cooperation partner countries (ICPC): minimum 4 participants of which 2 in different MS or AC and 2 in different ICPC countries unless otherwise specified

International S&T Cooperation in FP7

- ✓ **Member States – EU 27**
- ✓ **Associated Countries - (same conditions as EU Member States)**
 - Iceland, Liechtenstein, Norway
 - Switzerland, Israel
 - Turkey, Croatia, Serbia, Macedonia (FYROM)
- **International Cooperation Partner Countries**
 - ACP Countries (African, Caribbean, Pacific)
 - EECA (Eastern Europe and Central Asia)
 - MPC (Mediterranean Partner Countries)
 - WBC (Western Balkan Countries)
 - Latin America
 - **Asia**
- **Third Countries**
 - USA, Canada, Japan, Australia, NZ

ICT in FP7: 7 Challenges + FET+ Horizontal Actions

		Socio-economic goals			
Budget share		4. Digital libraries & content	5. ICT for health	6. ICT for mobility & sustainable growth	7. ICT for independent living and inclusion
Industry/Tech needs	1. Network and service infrastructures	~10%	~9%	~8%	~4%
	2. Cognitive systems, interaction, robotics	~30%			
	3. Components, systems, engineering	~10%			
					Future and Emerging Technologies (FET)
					~9%

Horizontal Actions:

- 9.1 International Cooperation
- 9.2 Supplements to Support International Cooperation between Ongoing Projects
- 9.3 General Accompanying Measures
- 9.4 : Strengthening Cooperation in ICT R&D in an Enlarged Europe

SouthEast Asian Countries and FP7 ICT

- Cambodia (SEACOOOP, FLOSSINCLUDE)
- Laos (SEACOOOP)
- Indonesia (SEACOOOP)
- Malaysia (SEACOOOP)
- Philippines (SEACOOOP)
- Singapore (EUWB, GRIFS, WOMBAT, SEACOOOP)
- Thailand (SEACOOOP)
- Vietnam (SEACOOOP)
- Brunei (SEACOOOP)
- Myanmar (---

Singapore

EUWB, GRIFS, WOMBAT, SEACOOOP

- **EUWB** - Coexisting short range radio by advanced ultra-wideband radio technology

Research area: ICT-2007.1.1 The network of the future

- **GRIFS**- Global RFID interoperability forum for standards

Research area: ICT-2007.1.3 ICT in support of the networked enterprise

- **WOMBAT**-Worldwide observatory of malicious behaviors and attack threats

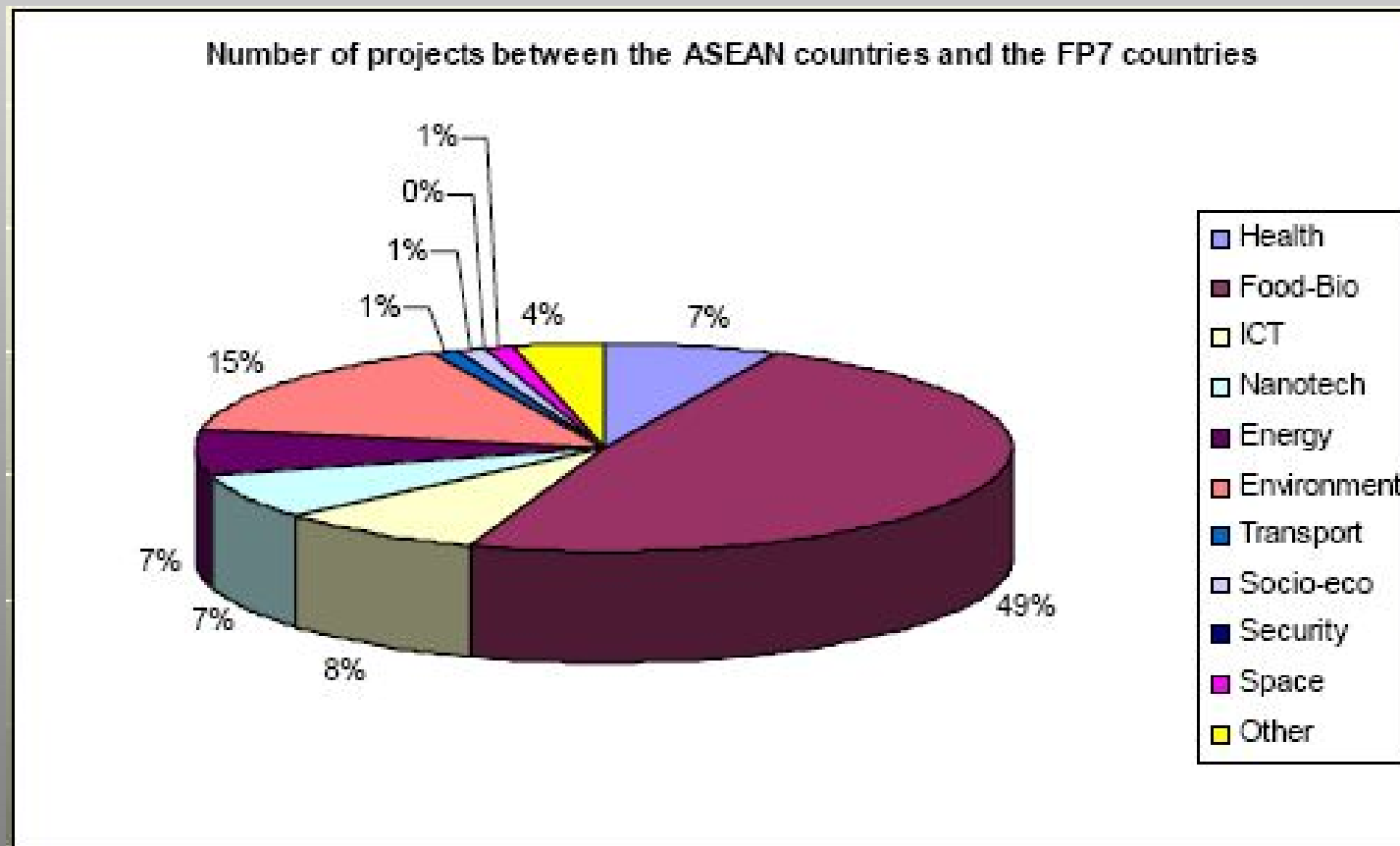
Research area: ICT-2007.1.4 Secure, dependable and trusted infrastructures

- **SEACOOOP**- Further developing strategic R&D cooperation with South-East Asia on ICT

Research area: ICT-2007.9.1 International cooperation

Cooperation Based on Bilateral Intergovernmental S&T Agreements

=> Results of the Structured Survey of Europe-Southeast Asia S&T Cooperation



- 85 bilateral projects based on intergovernmental agreements.
- In the range of the cooperation in the frame of the FP7.

Where do we stand?

- Behind us:
 - Three main Calls (+ FET Open + Joint Call Sec) for proposals in 2007-08
 - 2.1 B€ of EU funding,
 - Around 500 projects launched or to be launched (out of ~3000 proposals received)

- Ahead of us
 - WP 2009-10, 1.9 B€ funding
 - Projects launched in 2009-10 to have impact in 2015-20

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Approach: Maintain the structure and Challenges

- ✓ Continue to focus on the identified limited set of **Challenges** and the FET scheme
- ✓ Address Challenges through a limited set of **objectives**
- ✓ Indicate the set of **outcomes** **targeted** by the research work and their **expected impact**
- ✓ Continuity
 - of structure
- ✓ Adaptations
 - of challenges and objectives
 - also through different weights between priorities

Challenge 1: Network and Service Infrastructures

Challenges

- Current Internet: severe limitations in terms of scalability, mobility, flexibility, security, trust and robustness of networks and services

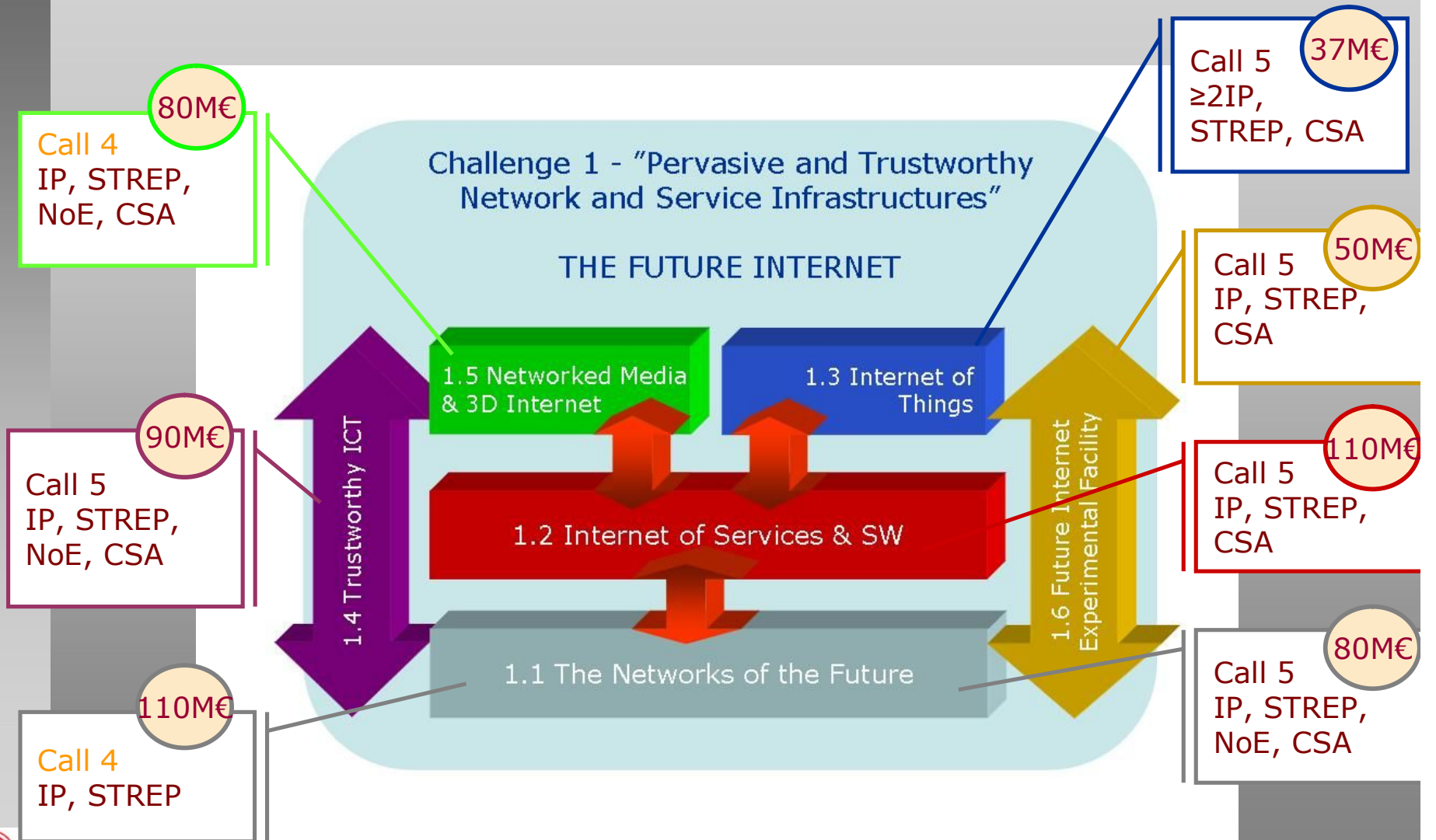
Need to:

- rethink networking architectures
- support an “Internet of Services”
- support an “Internet of Things”
- be trustworthy
- support a “3D Media Internet”
- bridge the gap between long-term research and large-scale experimentation
- federate research activities across Europe

Expected Impact

- Strengthened position of European industry
- European leadership in supply of integrated business solutions
- Global standards, interoperability and European IPRs
- Wider market opportunities from new classes of applications taking advantage of convergence
- Integrated large scale Experimental Facility
- Improved coordination and integration of research activities in Europe

Pervasive and Trustworthy Network and Service Infrastructures



557 M€
(~30%
of total budget)

Target outcomes (I)

1.1 The Network of the Future (IP, STREP)

- Call 4 -

Spectrum-efficient radio access to Future Networks

Converged infrastructures in support of Future Networks

- Call 5 -

"Future Internet" Architectures and Network Technologies

Networks of Excellence and Coordination/ Support actions (NoE, CSA)

1.2 Internet of Services, Software and Virtualisation (IP, STREP) -Call 5 -

Service Architectures and Platforms for the "Future Internet"

Innovative Service / Software Engineering

Coordination and support actions (CSA)

1.3 Internet of Things and Enterprise environments (≥2 IP, STREP) - Call 5 -

Architectures and technologies for an "Internet of Things"

Future-Internet based enterprise systems

International cooperation and coordination (CSA)

Target outcomes (II)

1.4 Trustworthy ICT -Call 5 -

"Trustworthy Network Infrastructures" (IP)

"Trustworthy Service Infrastructures" (IP)

Technology and Tools for Trustworthy ICT (STREP)

Networking, Coordination and Support (NoE, CSA)

1.5 Networked Media and 3D Internet - Call 4 -

Content aware networks and network aware applications (IP/STREP/NoE)

"3D Media Internet" (IP/STP/NoE)

Networked search and retrieval (IP/ STREP)

Immersive media experiences (IP/STREP/NoE)

Support measures (CSA)

1.6 "Future Internet" experimental facility and experimentally-driven research - Call 5 -

Building the Experimental Facility and stimulating its use (IP)

1/ FIRE Components:
operational prototype facility
2/ FIRE Users:
open calls; results of mutual interest

Experimentally-driven Research (STREP)

Coordination actions (CSA)

Challenge 2

Cognitive Systems, Interaction, Robotics

State of the Art & Challenges

- Robots operating in 'modelled', 'structured' and 'constrained' environments
- Basic understanding of computational representations of cognitive processes
- Human-robot interactions rather static/passive

- Machine translation of limited quality, human supervised
- Automatic translation in limited domains / language pairs
- Content / workflow management not automated

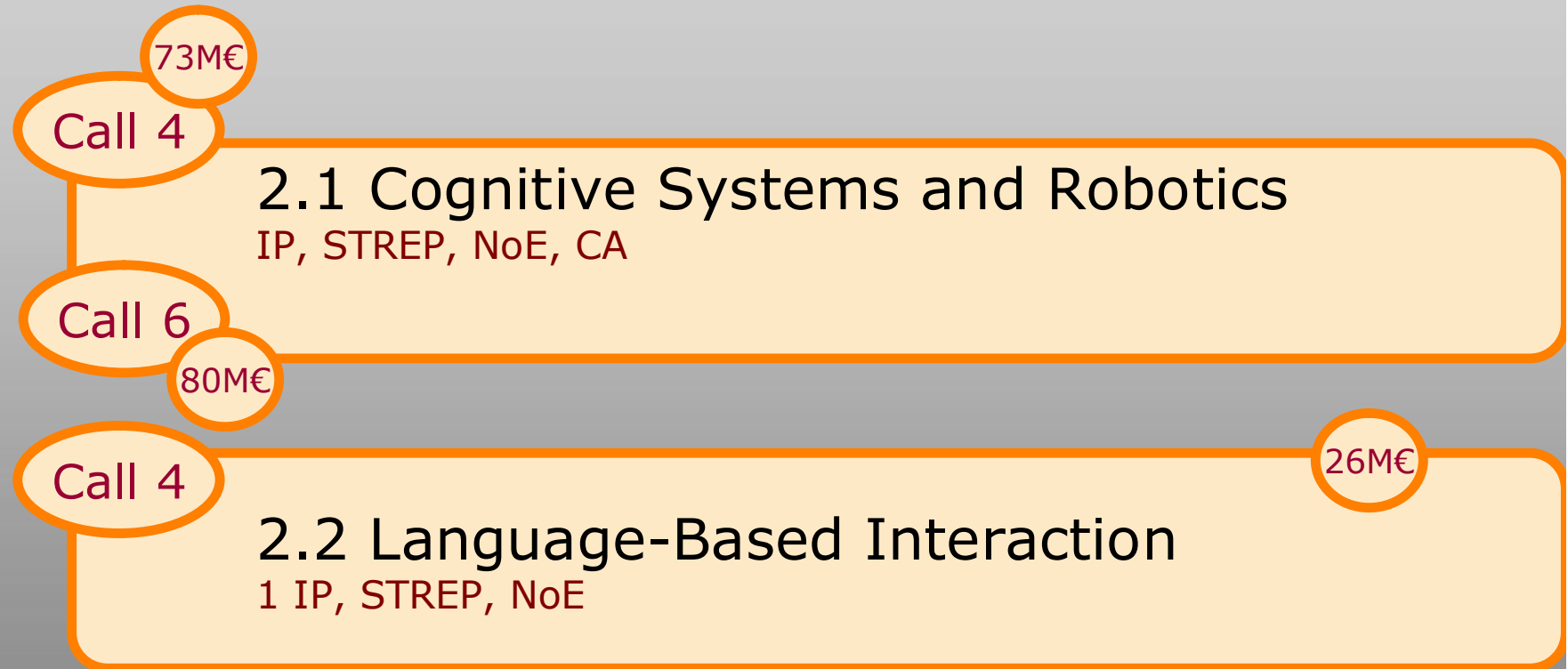
Expected Impact

- More competitive robotics industry + more innovation capacity in application domains
- Robots, machines and systems exhibiting advanced behaviour
- Machines and systems that understand their users / context
- Robotic systems with rich interaction

- Higher quality automatic translation
- Faster human translation
- Self-learning machine translation
- Progressive independence from topic and language pair
- Automated versioning and management of multilingual web sites

2 Objectives: ICT-2009.2.1/2

179 M€
(~10%)



Target outcomes

2.1 Cognitive Systems and Robotics - Call 4 -

Robots with advanced perception and action capabilities, bench-marks and tests (STREP)

System architectures integrating communication, control, and cognitive capabilities (IP)

+

Integration of diverse research areas (NoE)

Coordination of robotics community (CA)

2.1 Cognitive Systems and Robotics - Call 6 -

Engineering of artificial cognitive systems (STREP)

Complete robotic systems (IP)

Facilitate cross-fertilisation between academic and industrial research (IP)

+

Coordination of artificial cognitive systems research community (CA)

2.2 Language-based interaction - Call 4 -

Core research (1 IP)

- multi-disciplinarity
- architectures & technologies

Selected challenges in a usage context (STREP)

- online translation for the masses
- translation in distributed collaborative environments
- managing multilingual content & communication

+

Community building & networking (NoE)

Challenge 3: Components, systems, engineering

Challenges

Trends: miniaturisation, diversification, increasing software content and emphasis on systems approach

Challenges:

- Integrated hardware/software systems
- Heterogeneous micro-systems
- Widely distributed systems
- Multi-disciplinarity

Cross cutting issues:

- Efficient energy management
- Minimising environmental footprint of manufacturing

Opportunities:

New types of devices & intelligent system

Expected Impact

- Strengthened competitiveness of EU industry through risk sharing and pooling of resources in generic technology developments
- Higher attractiveness of EU to investments and skills
- Maintained leading position of EU in product innovation and design
- Wider use of smart devices and systems in various application sectors
- Exploration of alternative paths, fostering of new types of collaborations, emergence and growth of new companies
- Closer cooperation between Member States, and internationally
- Higher energy efficiency and lower environmental impact

9 Objectives: ICT-2009.3.1 to 9

375 M€ (~20%)
+ Artemis
+ Eniac

Call 5	3.1 Nanoelectronics Technology ≥ 1 IP, STREP, NoE	35M€
Call 4	3.2 Design of semiconductor components ... ≥ 1 IP, STREP	25M€
Call 4	3.3 Flexible, organic and large area electronics IP, STREP, NoE	60M€
Call 4	3.4 Embedded Systems Design 2 IP, STREP	28M€
Call 5	3.5 Engineering of mon. & control systems 2 IP, STREP, NoE	32M€
Call 4	3.6 Computing systems STREP	25M€
Call 5	3.7 Photonics IP, STREP + ERANETPlus (10M€)	60M€
Call 4	3.8 Organic photonics... STREP, NoE	30M€
Call 5	3.9 Microsystems and smart miniaturised systems IP, STREP	80M€

ERANETPlus: Call 4

Coordination, roadmaps and networking
CSA



Target outcomes (I)

3.1 Nanoelectronics Technology - Call 5 -

Miniaturisation and functionalisation

- Beyond 22 nm devices (STREP)
- Merging of 'Beyond CMOS' and advanced 'More than Moore' devices and processes (NoE)

Manufacturing technologies (≥1 IP, STREP)

Support measures (CSA)

3.2 Design of Semiconductor Components and Electronic Based Miniaturised Systems - Call 4 -

Improved design platforms, interfaces, methods and tools

≥ one IP: design platforms and modelling
STREP: specific tools, methods or targeting specific needs

Support measures (CSA)

(Complementary to ENIAC JTI)

3.3 Flexible, Organic and Large Area Electronics (IP, STREP) - Call 4 -

Flexible, organic and large area electronic devices and building blocks

Flexible or foil-based systems

Network of Excellence (NoE)

Support measures (CSA)

Target outcomes (II)

3.4 Embedded Systems Design

- Call 4 -

Theory and novel methods for embedded system design

One IP: end-to-end design methodologies and associated tool chains

STREP: specific methods and tools

Modules and tools for embedded platform-based design

One IP: address design tool integration

STREP: specific issues or topics

Coordination of national, regional and EU-wide R&D strategies (CSA)

(Complementary to ARTEMIS JTI)

3.5 Engineering of Networked Monitoring and Control systems

- Call 5 -

Foundations of complex systems engineering (STREP, NoE)

Wireless Sensor Networks and Cooperating Objects

One IP: architectures and integration platforms

STREP: specific issues or topics

Control of large-scale systems

One IP: architect, develop and demonstrate process automation systems

STREP: specific issues or topics

International cooperation (CSA)

(Complementary to ARTEMIS JTI)

3.6 Computing Systems

- Call 4 -
(STREP)

Parallelisation & programmability

Methodologies, techniques and tools

System simulation and analysis

Technology implications

Coordination (CSA)

Target outcomes (III)

3.7 Photonics - Call 5 -

Photonics technologies, components and (sub)systems

- Communications (IP/STREP)
- Lighting and light sources (IP/STREP)
- Biophotonics (STREP)
- Imaging for Safety & Security (STREP)
- Integrated components for power lasers (STREP)

Cost-effective versatile foundry processes for photonic integrated components (IP)

ERA-NET Plus action

Coordination and support actions (CSA)

**Canada, Russia, USA,
Australia**

3.8 Organic Photonics and Other Disruptive Photonics Technologies - Call 4 -

Organic Photonics (STREP)

Disruptive / cutting-edge photonic technologies and materials (STREP)

**Australia, Russia and the
United States**

3.9 Microsystems and Smart Miniaturised Systems - Call 5 -

Heterogeneous Integration (IP, STREP)

Autonomous energy efficient smart systems (STREP)

Application-specific microsystems and smart miniaturised systems (IP, STREP)

- Biomedical
- Telecommunications
- Environment and food/beverage
- Transport, safety and security
- Smart Fabrics and Interactive Textiles

Coordination and support actions (CSA)

For more information

- FP7: <http://ec.europa.eu/fp7/ict>
- FP6: <http://cordis.europa.eu/ist>

Thank You

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Funding

- Third country participants on the list of (targeted) **International Cooperation Partner Countries (ICPCs)** **are funded** by the European Commission
- They are funded on exactly **the same basis as** participants from an **EU Member State**
- Alternatively they may opt for a lump-sum payment