Future Networks Research in FP7 and H2020

RIPE 64 – 19/04/2012
Ljubljana

Rüdiger Martin

Unit ‘Future Networks’
European Commission – Information Society and Media
EU Research Framework Programme 7 (2007-13)
Total Funding: 50,5 B€

Specific Programmes
EU Research Framework Programme 7 (2007-13)
Total Funding: 50,5 B€
EU Research Framework Programme 7 (2007-13)

Basic Project Facts (I)

Who can participate?

Any undertaking, university or research centre or other legal entity, whether established in a Member State (MS) or Associated Country (AC) or third country

Minimum consortia

Three independent legal entities from three different EU Member States or Associated countries
FP7 Cooperation Programme: 32,413 M€

10 Themes

- Health, 6100, 19%
- ICT, 9050, 28%
- NMT, 3475, 11%
- Transport, 4160, 13%
- Environment, 1890, 6%
- Energy, 2350, 7%
- Socio-economics, 623, 2%
- Space, 1430, 4%
- Security, 1400, 4%
- Food, ..., 1935, 6%
- ICT, 9050, 28%
- Health, 6100, 19%
FP7 Cooperation Programme: 32,413 M€

Basic Project Facts (II)

Who can get funding?

- Legal entities from Member States (MS) and Associated Countries (AC) or created under Community law (and the JRC)
- International European interest organisations
- Legal entities established in international cooperation partner countries (ICPC-INCO)

but

- International organisations and
- Legal entities established in 3rd countries other than ICPC-INCO
  only exceptionally if provided for in SP or WP or essential for carrying out action; or if provision for funding is provided for in a bilateral agreement between Community and that country

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ICT, 9050, 28%
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FP7/ICT Programme Structure

ICT for socio-economic challenges

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<td></td>
<td>625 M€, 26%</td>
<td>155 M€, 6%</td>
<td>402 M€, 17%</td>
<td>165 M€, 7%</td>
<td>260 M€, 11%</td>
<td>280 M€, 12%</td>
<td>140 M€, 6%</td>
<td>100 M€, 4%</td>
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International cooperation, Cooperation in an enlarged Europe, Pre-commercial Procurement

2 years budgets 2011/12

261 M€, 11%
Challenge 1: Pervasive and Trustworthy Network and Service Infrastructures
[In short]

EU Research Framework Programme 7 (2007-13)

- Specific Cooperation Programme
  - Theme - ICT
    - Challenge - Network and Service Infrastructures
    - Objective - Future Networks
Which Networks for our Future?
Connecting the Digital Society

Future Networks Research

for the ubiquitous **ultrafast Internet of the future** enabling every European to have a **broadband connection to the digital society** (Digital Agenda)

Currently 3 clusters of projects
Future Internet Technologies

Converged and Optical Networks

Application Server

Public Internet

Optical Transmission

Gateway

Operator A

Optical Switching

High Speed Broadband Access

Ad-Hoc Mesh Relay

Personal Space

Object and Sensor Networks

Radio Access and Spectrum Use

High Speed Broadband Access

Application Server

Vehicle

Cellular and beyond

Broadcast
Future Internet Technologies

Radio Access and Spectrum Use

Converged and Optical Networks
Project Example

Objective: To Enable Innovation in the Internet Architecture through Flexible Flow-Processing Extensions
Project Example

Start Date: 2010-10-01
Duration: 36 months
End Date: 2013-09-30
Project Total Cost: 5.6 million Euro
EC Contribution/Funding: 3.9 million Euro
Webpage: CHANGE (http://www.change-project.eu)

11 Partners:
Eurescom GmbH, Germany
NEC Europe Ltd, United Kingdom
Deutsche Telekom AG, Germany
University College London, United Kingdom
Lancaster University, United Kingdom
Université Catholique de Louvain, Belgium
Technische Universität Berlin, Germany
Universitatea Plitehnica din Bucaresti, Romania
DreamLab Technologies AG, Switzerland
Nextworks, Italy
Università die Pisa, Italy
Novel Internet Architectures

Clean Slate/Visionary Internet

- Information-Centric Networks
- Software Defined Networks (OpenFlow...)
- Network of Objects and People
- Virtualization
- Content Distribution
- Service-aware Networking
- Cloud Networking
- Network Coding
- Delay-tolerant Networking
- Design-for-Tussle
- Mobile Cloud

Evolutionary Internet

- NETWORK MANAGEMENT and CONTROL: measurements, QoE, self, autonomic
- SOCIO-ECONOMICS OF THE INTERNET
- GREEN INTERNET
Project Lifecycle

Participate?

Work programme X

Independent Experts

Project start

Grant

Periodic review

Negotiation

Selection

Evaluation

Project end

Call for proposals

Register as an expert: [Cordis database](https://cordis.europa.eu/emmfp7/index.cfm)

Talk to us! (Send your reference number to us)
Project Lifecycle

Call 8 (01/2012):
...
-a) Wireless and mobile broadband systems
   - LTE-Advanced and post-LTE systems; ... new radio transmission paradigms and system designs ...
   - Enabling technologies for flexible spectrum usage ... cognitive radio ...
   - Novel radio network topologies ...
   - Integration of radio technologies with optical fibre networks ...
-b) High capacity end-to-end infrastructure technologies
-c) Novel Internet architectures, management and operation frameworks
-d) Flexible, resilient, broadband and integrated satellite communication

Register as an expert: Cordis database (https://cordis.europa.eu/emmfp7/index.cfm)
Talk to us! (Send your reference number to us)
Participate in current Future Networks Web Consultation
Ongoing Future Networks Consultation

Barriers and challenges

- Filling the gap between demand and capacity
- Spectrum scarcity
- Co-existence of various wireless technologies and connections
- Adoption of cognitive radio systems
- Increasing complexity of network management and operations
- Conciliate security, trust and privacy constraints
- End-to-end QoS / QoE
- Dependability, robustness and resilience of networks
- Energy-efficiency in networks
- Inertia
Ongoing Future Networks Consultation

Technical evolutions

• Emergence of M2M communications
• Virtualization and integration of communication networks, storage and computing resources
• Proliferation of cloud concepts
• Convergence of ‘macro’ and ‘micro’ networking
• Emergence of content-centric networks
• 5G wireless systems
• Emergence of cognitive radio and dynamic spectrum allocation (as mature technologies)
• Development of Photonic Integration
• Evolution of terminals and tablets
Horizon 2020 – Objectives and structure

Europe 2020 priorities

Shared objectives and principles

Creating Industrial Leadership and Competitive Frameworks
- Leadership in enabling and industrial technologies
  - ICT
  - Nanotech., Materials, Manuf. and Processing
  - Biotechnology
  - Space
- Access to risk finance; Innovation in SMEs

Tackling Societal Challenges
- Health, demographic change and wellbeing
- Food security, sustainable agriculture and the bio-based economy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, resource efficiency and raw materials
- Inclusive, innovative and secure societies

Excellence in the Science Base
- Frontier research (ERC)
- Future and Emerging Technologies (FET)
- Skills and career development (Marie Curie)
- Research infrastructures

EIT

JRC

Simplified access

Common rules, toolkit of funding schemes

International cooperation

European Research Area

Dissemination & knowledge transfer
Next steps

**From 30/11:** Parliament and Council negotiations on the basis of the Commission proposals

**Ongoing:** Parliament and Council negotiations on EU budget 2014-20 (including overall budget for Horizon 2020)

**Mid 2012:** Final calls under 7th Framework Programme for Research to bridge gap towards Horizon 2020

**By end 2013:** Adoption of legislative acts by Parliament and Council on Horizon 2020

**1/1/2014:** Horizon 2020 starts; launch of first Calls
Thank you for your attention!

Do participate to our consultation on network communications challenges to be addressed in HORIZON2020 research programme

How?
- Web-based consultation
- Deadline: 15 May 2012
- Open Workshop: 29 June 2012 in Brussels
  the highest-quality/most relevant contributions will be invited to present & discuss their ideas for HORIZON2020 Future Networks Research

Keep in touch:
Future Networks Webpage
INFSO-FUTURE-NETWORKS@ec.europa.eu
Future Networks Newsflash