“ICT nei tre pilastri H2020: Excellence Science, Industrial Leadership, Societal Challenges e Schemi di Finanziamento”
Agenda

• Context and link to Strategic programme
• H2020 overview
• ICT IN FP7 – some figures
• Overview of ICT in Excellent Science
• ICT LEIT Work-programme 2014-15
• Overview of ICT in Societal Challenges
• Highlights on Rules for Participation and instruments
What is Horizon 2020

Initial Commission proposal for a €80 billion research and innovation funding programme (2014-2020); now just over €70 billion

A core part of Europe 2020, Innovation Union & European Research Area:

– Responding to the economic crisis to **invest in future jobs and growth**

– **Addressing people’s concerns** about their livelihoods, safety and environment

– **Strengthening the EU’s global position in research, innovation and technology**
What is new?

- A single programme (*FP7 + CIP + EIT*)
- Strong focus on societal challenges *(game changing for ICT...)*
- More innovation
- Reaching out to non-traditional actors
- More risk taking
- Strengthened support for high-tech SMEs
- More open, light & fast schemes
Three priorities

Excellent science

Industrial leadership

Societal challenges
Priority 1.
Excellent science

Why:

• World class science is the foundation of tomorrow’s technologies, jobs and wellbeing
• Europe needs to develop, attract and retain research talent
• Researchers need access to the best infrastructures
Proposed funding (€ million, 2014-2020)*

<table>
<thead>
<tr>
<th><strong>European Research Council (ERC)</strong></th>
<th>13 095</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontier research by the best individual teams</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Future and Emerging Technologies</strong></th>
<th>2 696</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborative research to open new fields of innovation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Marie Skłodowska-Curie actions (MSCA)</strong></th>
<th>6 162</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities for training and career development</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Research infrastructures (including e-infrastructure)</strong></th>
<th>2 488</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensuring access to world-class facilities</td>
<td>(ICT: 863)</td>
</tr>
</tbody>
</table>

All funding figures in this presentation are subject to the pending Multiannual Financial Framework Regulation by the EP and the Council
Priority 2. Industrial leadership

Why:

• Strategic investments in key technologies (e.g. advanced manufacturing, micro-electronics) underpin innovation across existing and emerging sectors

• Europe needs to attract more private investment in research and innovation

• Europe needs more innovative small and medium-sized enterprises (SMEs) to create growth and jobs
## Proposed funding (€ million, 2014-2020)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership in enabling and industrial technologies (LEITs)</strong></td>
<td>(ICT, nanotechnologies, materials, biotechnology, manufacturing, space)</td>
<td>13 557 (ICT:7 360)</td>
</tr>
<tr>
<td><strong>Access to risk finance</strong></td>
<td>Leveraging private finance and venture capital for research and innovation</td>
<td>2 842</td>
</tr>
<tr>
<td><strong>Innovation in SMEs</strong></td>
<td>Fostering all forms of innovation in all types of SMEs</td>
<td>616 + complemented by expected 20% of budget of societal challenges + LEITs and ‘Access to risk finance’ with strong SME focus</td>
</tr>
</tbody>
</table>
Priority 3.
Societal challenges

Why:

• Concerns of citizens and society/EU policy objectives (climate, environment, energy, transport, etc) cannot be achieved without innovation

• Breakthrough solutions come from multi-disciplinary collaborations, including social sciences & humanities

• Promising solutions need to be tested, demonstrated and scaled up
**Proposed funding (€ million, 2014-2020)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Funding 2014-2020 (€ million)</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health, demographic change and wellbeing</td>
<td>7 472</td>
<td>15%</td>
</tr>
<tr>
<td>Food security, sustainable agriculture, marine and maritime research &amp; the Bioeconomy</td>
<td>3 851</td>
<td>0%</td>
</tr>
<tr>
<td>Secure, clean and efficient energy</td>
<td>5 931</td>
<td>5%</td>
</tr>
<tr>
<td>Smart, green and integrated transport</td>
<td>6 339</td>
<td>6%</td>
</tr>
<tr>
<td>Climate action, resource efficiency and raw materials</td>
<td>3 081</td>
<td>3.5%</td>
</tr>
<tr>
<td>Innovative, inclusive and reflective societies</td>
<td>1 309</td>
<td>25%</td>
</tr>
<tr>
<td>Secure societies</td>
<td>1 695</td>
<td>25%</td>
</tr>
<tr>
<td>Science with and for society</td>
<td>462</td>
<td>0%</td>
</tr>
<tr>
<td>Spreading excellence and widening participation</td>
<td>816</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Total: 46 788 € million**
## Role of the EIT and JRC in Horizon 2020

<table>
<thead>
<tr>
<th><strong>Proposed funding</strong> (€ million, 2014-2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>European Institute of Innovation &amp; Technology (EIT)</strong></td>
</tr>
<tr>
<td>Combining research, innovation &amp; training in knowledge and Innovation Communities</td>
</tr>
<tr>
<td><strong>Joint Research Centre (JRC)</strong> *</td>
</tr>
<tr>
<td>Providing a robust, evidence base for EU policies</td>
</tr>
</tbody>
</table>

Additional funding for the JRC for Euratom Treaty activities
Next steps

• December 10: WP adoption by Commission
• December 11: Publication of first calls
• Spring 2014: closing of first call
Budget: past & present

Billion €
- H2020 - 70.2
- EIT - 0.31
- CIP - 3.62
- FP7 - 53.2

2007-2013
2014-2020
La partecipazione italiana in sintesi - ICT FP7* (1)

- La partecipazione italiana nel tema ICT ha subito una diminuzione tra il V e VI Programma Quadro al VII Programma Quadro, infatti si è avuto un passaggio dai 12.3% circa al 10.2%.

- La partecipazioni delle grandi imprese italiane si aggira intorno al 22%, mentre la partecipazione delle PMI è intorno al 12%. STMicroelectronics Srl, Engineering SPA, e Telecom Italia sono tra i maggiori beneficiari.


- Il finanziamento CE è maggiormente diretto a due hubs di Milano e Roma. Altri due maggiori clusters si evidenziano nelle città industriali di Torino e Genova o nei centri universitari di Pisa, Trento o Bologna.

La partecipazione italiana in sintesi - ICT FP7* (2)

<table>
<thead>
<tr>
<th>Categoria</th>
<th>Italia</th>
<th>Germania</th>
<th>Francia</th>
<th>Inghilterra</th>
<th>Spagna</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT for health</td>
<td>12,10%</td>
<td>14,60%</td>
<td>6,40%</td>
<td>15,30%</td>
<td>8,90%</td>
</tr>
<tr>
<td>Digital libraries</td>
<td>5,20%</td>
<td>17%</td>
<td>8,20%</td>
<td>18,40%</td>
<td>5,30%</td>
</tr>
<tr>
<td>ICT and ageing</td>
<td>14,90%</td>
<td>17,70%</td>
<td>17,40%</td>
<td>4%</td>
<td>10,40%</td>
</tr>
<tr>
<td>Future networks and internet</td>
<td>6,60%</td>
<td>17,60%</td>
<td>16,30%</td>
<td>4%</td>
<td>9,90%</td>
</tr>
<tr>
<td>Embedded systems</td>
<td>10,70%</td>
<td>17,70%</td>
<td>12,90%</td>
<td>4%</td>
<td>10,70%</td>
</tr>
<tr>
<td>ICT for inclusion</td>
<td>8,30%</td>
<td>17,90%</td>
<td>5,20%</td>
<td>10,10%</td>
<td>16,60%</td>
</tr>
<tr>
<td>ICT for energy efficiency</td>
<td>9,70%</td>
<td>18,10%</td>
<td>6,50%</td>
<td>8,70%</td>
<td>12,70%</td>
</tr>
<tr>
<td>FET</td>
<td>13,50%</td>
<td>19,10%</td>
<td>12%</td>
<td>12,80%</td>
<td>6,30%</td>
</tr>
<tr>
<td>ICT for learning</td>
<td>10,50%</td>
<td>19,10%</td>
<td>5,50%</td>
<td>17,90%</td>
<td>5,50%</td>
</tr>
<tr>
<td>Networked media</td>
<td>8,60%</td>
<td>19,40%</td>
<td>10,80%</td>
<td>14,60%</td>
<td>7,70%</td>
</tr>
<tr>
<td>ICT for governance and Policy Modelling</td>
<td>10,20%</td>
<td>20,40%</td>
<td>2,60%</td>
<td>15,20%</td>
<td>5%</td>
</tr>
<tr>
<td>Language technologies</td>
<td>11,10%</td>
<td>22%</td>
<td>7,10%</td>
<td>15,60%</td>
<td>10,90%</td>
</tr>
<tr>
<td>Software, services and internet connected object</td>
<td>11%</td>
<td>22,10%</td>
<td>11,10%</td>
<td>11,40%</td>
<td>10,60%</td>
</tr>
<tr>
<td>Micro/nanosystem</td>
<td>8,70%</td>
<td>22,70%</td>
<td>16,50%</td>
<td>7,10%</td>
<td>4,10%</td>
</tr>
<tr>
<td>Trustworthy ICT</td>
<td>13,30%</td>
<td>24%</td>
<td>9,40%</td>
<td>7,10%</td>
<td>6,40%</td>
</tr>
<tr>
<td>Nanoelectronics</td>
<td>9,40%</td>
<td>24,30%</td>
<td>16,90%</td>
<td>5,00%</td>
<td>10,10%</td>
</tr>
<tr>
<td>Intelligent information management</td>
<td>8,40%</td>
<td>25,50%</td>
<td>4,20%</td>
<td>12,50%</td>
<td>5,70%</td>
</tr>
<tr>
<td>Organic and large area electronics</td>
<td>8,20%</td>
<td>26,30%</td>
<td>8,90%</td>
<td>8,50%</td>
<td>2,90%</td>
</tr>
<tr>
<td>Photonics</td>
<td>16,60%</td>
<td>26,30%</td>
<td>11,80%</td>
<td>13,90%</td>
<td>4,60%</td>
</tr>
<tr>
<td>Cognitive system and robotics</td>
<td>13,90%</td>
<td>27%</td>
<td>5,80%</td>
<td>16,10%</td>
<td>4,60%</td>
</tr>
<tr>
<td>ICT for transport</td>
<td>8,60%</td>
<td>29,60%</td>
<td>7,80%</td>
<td>7,30%</td>
<td>5,50%</td>
</tr>
<tr>
<td>ICT for the enterprise</td>
<td>14,40%</td>
<td>31,10%</td>
<td>5,70%</td>
<td>8,90%</td>
<td>7,10%</td>
</tr>
</tbody>
</table>
H2020 balance

FP7 + CIP budgets mapped on H2020 Pillars and Challenges (% of total – 9.8B€)

- LEIT 55%
- Societal Challenge 31%
- Excellent Science 14%

- Components and systems
- Next Gen computing
- Future Internet
- Content and info management
- Interfaces and Robots
- Micro-nano & Photonics
- Health and wellbeing
- Energy
- Transport
- Climate and resource efficiency
- Inclusive, innovative and reflective societies
- Secure societies
- FET
- e-Infra

@APRE 2013
H2020 Priorities

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 reflective societies
- Secure Societies

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

EXCELLENCE IN THE SCIENCE BASE
- Frontier research (ERC)
- Future and Emerging Technologies (FET)
- Skills and career development (Marie Curie)
- Research infrastructures

Simplified access  Common rules, toolkit of funding schemes  Dissemination & knowledge transfer
1° PILLAR

ICT in EXCELLENT SCIENCE
### Excellent Science
- **European Research Council**
  - Frontier research by the best individual teams
- **Future and Emerging Technologies**
  - Collaborative research to open new fields of innovation
- **Marie Skłodowska Curie actions**
  - Opportunities for training and career development
- **Research infrastructures**
  - Including e-infrastructure
  - Ensuring access to world-class facilities

### Industrial Technologies
- **Leadership in enabling and industrial technologies**
  - ICT, nanotechnologies, materials, biotechnology, manufacturing, space
- **Access to risk finance**
  - Leveraging private finance and venture capital for research and innovation
- **Innovation in SMEs**
  - Fostering all forms of innovation in all types of SMEs

### Societal Challenges
- **Health, demographic change and wellbeing**
- **Food security, sustainable agriculture, marine and maritime research & the bioeconomy**
- **Secure, clean and efficient energy**
- **Smart, green and integrated transport**
- **Climate action, resource efficiency and raw materials**
- **Inclusive, innovative and reflective societies**
- **Security society**

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**European Institute of Innovation and Technology (EIT)**

**Spreading Excellence and Widening Participation**

**Science with and for society**

**Joint Research Center (JRC)**
Excellent Science - ICT

• Future and Emerging Technologies (FET)
  • FET Open: fostering novel ideas
  • FET Proactive: nurturing emerging themes and communities
  • FET Flagships: pursuing grand interdisciplinary science and technology challenges

• Research infrastructures
  • Developing the European research infrastructure for 2020 and beyond
    • Development, deployment and operation of ICT-based e-infrastructures
"Future and emerging technologies shall support collaborative research in order to extend Europe’s capacity for advanced and paradigm-changing innovation. It shall foster scientific collaboration across disciplines on radically new, high-risk ideas and accelerate development of the most promising emerging areas of science and technology as well as the Union wide structuring of the corresponding scientific communities."

COMMISSION PROPOSAL ON ESTABLISHING HORIZON 2020 - THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION (2014-2020)
FET – three complementary funding schemes

Open, light and agile  →  Roadmap based research

FET-Open

*Early Ideas*
Uncorrelated Research projects

Exploring novel ideas

FET Proactive

*Exploration and Incubation*
Topical clusters of research projects

Developing topics & communities

FET Flagships

*Large-Scale Partnering Initiatives*
Common research agendas

Addressing grand challenges
ICT in Excellent Science/3
Future and Emerging Technologies (FET) / 2014-2015

**FET Open**
- All technologies, no topical scope
- Light and fast scheme
  - Several cut-off dates per year, one-step submission of ~15 pages
  - One stage evaluation

**FET Flagship**
- Graphene
- Human Brain Project

**FET Proactive**
- Global Systems Science (GSS)
  - Improve the way in which scientific knowledge can stimulate, guide, and help evaluate policy and societal responses to global challenges
  - Knowing, doing, being: cognition beyond problem solving
  - New approaches to cognitive systems
- Towards exascale high performance computing
  - To be coordinated with complementary work in LEIT

⚠️ Warning: content subject to change – WP preparation process still on-going 🔄
eInfrastructures / 2014-2015 (indicative basis)

• ICT infrastructure resources and services for Research
  • Provision of core services across e-infrastructures
  • Research and Education Networking – GEANT
  • eInfrastructures for virtual research environments

• Access to and management of scientific data
  • Managing, preserving and computing with big research data
  • Towards global data e-infrastructures – Research Data Alliance
  • eInfrastructure for Open Access

• High Performance Computing
  • Pan-European High Performance Computing infrastructure and services
  • Centres of Excellence for computing applications
  • Network of HPC competence centres for SMEs

► Warning: content subject to change – WP preparation process still on-going ◄
'Open is open': all technologies, **no topical scope**.

**Bottom-up, but targeted - not blue sky research**

**40% of the FET budget** in H2020 (>1B€).
FET gatekeepers define the kind of research that FET is looking for.

An **end-to-end light and fast scheme**:
- **Deadline free** (indicative 30/09/2014)
- **15 page proposals**
- **1 step submission, 1 stage evaluation**
- **3 evaluation criteria**

**Instruments**
- Research and Innovation Action (100% funding) → **77 M € 2014**
- Coordination and Support actions (100% funding) **3 M € 2014**
  - 2014 activities mainly focused on observatory, communication, roadmapping, conference.
Future FET Proactives

Topics coming out of the on-line consultation

1297 contributions received to the FET on-line consultation on future pro-actives

Structured around 9 candidate topics (see next slide)

Complemented by a special action:

Towards exascale high-performance computing, as part of the High Performance Computing Public-Private Partnership.
ICT in Excellent Science/5

FET Proactive

Collaborative research
Structured around 9 candidate topics.

A set of thematic initiatives on promising emerging research themes.

• Fixed deadlines calls
• 15 page proposals
• 1 step submission, 1 stage evaluation
• 3 evaluation criteria

Instrument
• Research and Innovation Actions (100% funding)
ICT in Excellent Science/6
FET Proactive – WP 2014 - 2015

Four proactive initiatives will be funded under WP 2014 - 2015:

- Global Systems Science (GSS)
- Knowing, doing, being: cognition beyond problem solving
- Quantum simulation
- Towards exascale high performance computing

The first three are implemented by this call. The fourth initiative implements, through a separate call (H2020-FETHPC), part of the HPC strategy elaborated in the context of the HPC Public-Private Partnership by ETP4HPC.

Publication date: 11/12/2013
Deadline: 01/04/2014
Instruments: Research and innovation actions
Indicative budget: 33 Meuro (HPC excluded)

Warning: content subject to change – WP preparation process still on-going
Global Systems Science (GSS) – *(FETPROACT 1 – 2014)*
- to improve the way scientific knowledge can help inform and evaluate policy and societal responses to global challenges like climate change, global financial crises, global pandemics, and growth of cities – urbanisation and migration patterns.

Knowing, doing, being: cognition beyond problem solving - *(FETPROACT 2 – 2014)*
- interdisciplinary fundamentals of knowing, thinking, doing and being, in close synergy with foundational research on future artificial cognitive systems, robots, smart artefacts and large scale cyber-physical systems.

Quantum simulation- *(FETPROACT 3 – 2014)*
- This objective challenges the research community to develop solutions using quantum technologies that will ultimately address real world problem, with potential for disruptive change.

Warning: content subject to change – WP preparation process still on-going
Towards exascale high performance computing — (H2020-FETHPC – 2014)

- HPC strategy combining three elements:
  
  (a) Computer Science: towards exascale High Performance Computing;  
  \[HPC \text{ in FET, deadline 25/11/2014} – 97.4 \text{ Meuro}\]

  (b) achieving excellence in HPC applications;  
  \[e\text{-infrastructures}\]

  (c) providing access to the best supercomputing facilities and services for both industry and academia;  
  \[e\text{-infrastructures}\]

  - complemented with training, education and skills development in HPC
HPC: What for?

Weather, Climate & Earth Sciences

Bio/Life Sciences

New applications e.g. Health, Big data

Fundamental sciences: Physics, Chemistry, Material Sciences, Astrophysics

Industrial & Engineering
Information Day in Brussels

What?
- H2020 proposal guidelines and submission procedures
- Overview of the first FET-Proactive objectives
- Presentation of ideas for projects and networking

When?
- 20 January, 2014

Where?
- Brussels, Conference Centre Albert Borschette (CCAB)*

Deadline for registration?
- 12 January, 2014
The topics in this call are aimed at ensuring the continuation of the two initiatives after the ramp-up phase:

- Establishing a Framework Partnership Agreement with each of the two Flagships (topic 1 – no budget)
- Providing EU support through a core project to each of the two Flagships (topic 2 and 3 – no budget)
- Providing EU support for policy development actions for FET Flagship (topic 4, 1.6 Meuro budget for 2014).
ICT in Excellent Science/10
FET Flagship genesis

Graphene & Human Brain Project selected

- Call for Preparatory Actions: 21 → 6 July 2010
- Preparatory Phase Pilots: 05/2011 - 04/2012
- Stimulating ideas & structuring the scientific community: 2009 - 2010
- Flagship selection: 6 → 2 winners end 2012
- Start 2013-10-01
- FP7 ramp-up phase: 10/2013-03/2016
- Starting with 80-85 partners per flagship
- EC funding of €54 millions each for 30 months
ICT in Excellent Science/11
FET Flagship genesis

Complementing and widening expertise with new partners - ensuring openness – right now!

Call 'Human Brain Project' (just closed):
https://www.humanbrainproject.eu/
2013-10-01 – 2013-11-06 (deadline)

Call 'Graphene' (preliminary info):
http://www.graphene-flagship.eu/
2013-11-25 – 2014-02-03 (deadline)

Competitive calls under **FP7 rules**

20-30 *new & full partners* added to each flagship, must be *legally independent* from current partners

~ **€ 9 millions** in each flagship 2014 - 2016

**FP7 Flagship ramp-up**
phase 10/2013- 03/2016
Developing the European research infrastructures for 2020 and beyond

- Developing new world-class RI
- Integrating and opening existing national RI of pan-European interest
- Development, deployment & operation of ICT-based e-Infrastructures

Fostering the innovation potential of Ris and their human capital

Reinforcing European RI policy and international cooperation

Matrix approach to implementation
ICT in Excellent Science/13

Research Infrastructures

RESEARCH INFRASTRUCTURE (DRAFT)
Work Programme 2014-2015

CALL 1
Developing new world class infrastructures
- Design studies
- Support to preparatory phase of ESFRI projects
- Support to the individual implementation and operation of ESFRI projects
- Support to the implementation of cross-cutting infrastructure services and solutions for cluster of ESFRI and other relevant research infrastructure initiatives in a given thematic area

CALL 2
Integrating and opening existing national and regional research infrastructures of pan-European interest
- Integrating and opening existing national and regional research infrastructures of pan-European interest

CALL 3
E-Infrastructures
- Managing, preserving and computing with big research data
- E-Infrastructures for open access
- Towards global data e-infrastructures: research data alliance
- Pan-European high performance computing infrastructure and services
- Provision of core services across e-infrastructures
- Research and education networking - GEANT
- E-Infrastructures for virtual research environments (VRE)

CALL 4
Support to innovation, human resources, policy and international cooperation for research infrastructures
- Centres of excellence for computing applications
- Network of HPC competence centres for SMEs
- Strengthening the human capital of research infrastructures
- New professions and skills for e-infrastructures
- Innovation support measures
- Innovative procurement pilot action in the field of scientific instrumentation
- E-infrastructure policy development and international cooperation
- Policy measures for research infrastructures
- International cooperation for research infrastructures
- Network of national contact points
# Indicative call deadlines and budgets - Call 3

<table>
<thead>
<tr>
<th>Project Code</th>
<th>Deadline</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINFRA-2-2014</td>
<td>15/04/2014 at 17.00.00 Brussels time</td>
<td></td>
</tr>
<tr>
<td>EINFRA-1-2014, EINFRA-3-2014, EINFRA-4-2014, EINFRA-6-2014, EINFRA-7-2014 and EINFRA-8-2014</td>
<td>02/09/2014 at 17.00.00 Brussels time</td>
<td></td>
</tr>
<tr>
<td>EINFRA-5-2015 and EINFRA-9-2015</td>
<td>[14/01/2015 at 17.00.00 Brussels time]</td>
<td></td>
</tr>
</tbody>
</table>

**Overall indicative budget:** EUR 95.00 million from the 2014 budget\(^1\) and EUR 82 million from the 2015 budget\(^2\)

<table>
<thead>
<tr>
<th>Project Code</th>
<th>2014 EUR million</th>
<th>2015 EUR million</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINFRA-1-2014</td>
<td>55.00</td>
<td></td>
<td>Single stage</td>
</tr>
<tr>
<td>EINFRA-2-2014</td>
<td>13.00</td>
<td></td>
<td>Single stage</td>
</tr>
<tr>
<td>EINFRA-3-2014</td>
<td>4.00</td>
<td></td>
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</table>

\(^1\): European Union (EU) Budget 2014
\(^2\): European Union (EU) Budget 2015
\(^3\): The remaining budget from the 2014 budget
## Indicative call deadlines and budgets - Call 4, topics 4 and 7

| INFRASUPP-1-2014, INFRASUPP-3-2014, INFRASUPP-5-2014, INFRASUPP-6-2014, INFRASUPP-7-2014 and INFRASUPP-8-2014 | 02/09/2014 at 17.00.00 Brussels time |
| INFRASUPP-2-2015 and INFRASUPP-4-2015 | [14/01/2015 at 17.00.00 Brussels time] |

### Overall indicative budget:

EUR 22 million from the 2014 budget\(^1\) and EUR 16.5 million from the 2015 budget\(^2\)

| INFRASUPP-1-2014 | 2.00 | 2015 EUR million | Single stage |
| INFRASUPP-2-2015 | 2.00 | 14.00 | Single stage |
| INFRASUPP-3-2014 | 2.00 | Single stage |
| INFRASUPP-4-2015 | 4.00 | 2.50 | Single stage |
| INFRASUPP-5-2014 | 4.00 | Single stage |
| INFRASUPP-6-2014 | 7.00 | Single stage |
| INFRASUPP-7-2014 | 5.00 | Single stage |
| INFRASUPP-8-2014 | 2.00 | Single stage |
2° PILLAR

INDUSTRIAL LEADERSHIP
## Struttura del programma

<table>
<thead>
<tr>
<th><strong>Excellent Science</strong></th>
<th><strong>Industrial Technologies</strong></th>
<th><strong>Societal Challenges</strong></th>
</tr>
</thead>
</table>
| ▪ European Research Council  
  ▪ Frontier research by the best individual teams | ▪ **Leadership in enabling and industrial technologies**  
  ▪ ICT, nanotechnologies, materials, biotechnology, manufacturing, space  
  ▪ **Access to risk finance**  
  ▪ Leveraging private finance and venture capital for research and innovation  
  ▪ **Innovation in SMEs**  
  ▪ Fostering all forms of innovation in all types of SMEs | ▪ Health, demographic change and wellbeing  
  ▪ Food security, sustainable agriculture, marine and maritime research & the bioeconomy  
  ▪ Secure, clean and efficient energy  
  ▪ Smart, green and integrated transport  
  ▪ Climate action, resource efficiency and raw materials  
  ▪ Inclusive, innovative and reflective societies  
  ▪ Security society |
| ▪ Future and Emerging Technologies  
  ▪ Collaborative research to open new fields of innovation |                         |                         |
| ▪ Marie Skłodowska Curie actions  
  ▪ Opportunities for training and career development |                         |                         |
| ▪ Research infrastructures (including e-infrastructure)  
  ▪ Ensuring access to world-class facilities |                         |                         |

### European Institute of Innovation and Technology (EIT)

Spreading Excellence and Widening Participation

Science with and for society

Joint Research Center (JRC)
ICT in Industrial Leadership/ 1
WP LEIT ICT 2014-15

1. Components and systems
2. Advanced Computing
3. Future Internet
4. Content technologies and information management
5. Robotics
6. Key Enabling Technologies: Micronano-electronics and photonics
   + Factory of the Future cPPP
   + International Cooperation actions (EU-Brazil, EU-Japan)

ICT Cross cutting activities:
• Internet of Things
• Human-centric Digital Age
• Cybersecurity

ICT Innovation actions
• Access to finance
• Innovation policy support
• Open disruptive innovation scheme (SME instrument)
A balanced approach

For growth and jobs and for addressing societal challenges Europe needs:
1. to maintain expertise in key technology value chains
2. to move quicker from research excellence to the market

This requires...

1. **Strong industrial roadmaps:**
   - long term commitment
   - continuity and stability
   - new actors to exploit and leverage new technologies

2. **Disruptive innovation:**
   - flexibility and openness
   - dynamic eco-systems
   - new actors to initiate and drive change

@APRE 2013
ICT in Industrial Leadership/ 2

WP LEIT ICT 2014-15 – Budget Overview
**ICT in Industrial Leadership/ 1**


- Covers **systemic integration** from smart integrated components to cyber-physical systems
- **Complementary** to the JTI Electronic Components and Systems (ECSEL)
- Organised in three related topics:
  - **Smart cyber-physical systems** *(ICT 1 – 2014)*
    - Next generation embedded and connected systems
  - **Smart system integration** *(ICT 2 – 2014)*
    - Integration of heterogeneous micro- and nanotechnologies into smart systems
  - **Advanced Thin, Organic and Large Area Electronics** *(ICT 3– 2014)*

- R&I in this area will also contribute to the implementation of the SRA on Energy Efficient Buildings

*Warning: content subject to change – WP preparation process still on-going*
ICT 1 – 2014: Smart Cyber-Physical Systems

**Objectives**: new paradigms, concepts, platforms or tool-chains laying the foundation for future Cyber-Physical Systems (CPS)

**Stakeholders**: suppliers and users of CPS, tool and sub-system providers, system integrators, auditors/certification bodies and related academia and research institutes

**Application sectors**: energy, transport, medical, but also food, chemistry and others.

**Driven by JTIs (ARTEMIS, ECSEL)**

- **RIAs** (Small and Large projects); **IAs**(Small and Large projects); **CSAs**

▶️ Warning: content subject to change – WP preparation process still on-going
ICT in Industrial Leadership/ 4
WP LEIT ICT 2014-15 – A new generation of components and systems

ICT 2 – 2014: Smart System Integration

Objectives:

- Next generations smart systems: technologies and solutions on Systemic Miniaturisation & Integration (Heterogeneous Technologies; Functions; Materials)
- European competitive ecosystems (Design, R&D; Prototyping and Testing; Manufacturing and Industrialization)

Application sectors: Health, Food and Beverage quality and safety, Smart buildings (multi-sensors), Security (biometry), Large area electronic technologies

Driven by ETP (EPOSS) and Key Actors JTIs (ENIAC, ARTEMIS)

- RIAs (Small and Large projects); IAs (Small and Large projects); PcP (Small projects); CSAs

⚠️ Warning: content subject to change – WP preparation process still on-going ⬅️
ICT in Industrial Leadership/ 5
WP LEIT ICT 2014-15 – A new generation of components and systems

**ICT 3- 2014:** Advanced Thin, Organic and Large Area Electronics (TOLAE) technologies

**Objectives:**

a) R&D To advance the state of the art of TOLAE technologies and manufacturing processes

b) Innovation: To develop and demonstrate novel, innovative products enabled by TOLAE technologies in smart packaging, advertisement and sensing

c) Technology Take-up and Innovation Support actions

d) electronic textile solutions for health care applications

Driven by ETP and PPP (Photonics21) and the OE-A association

- RIA\(s\) (Small projects); IAS\(s\) (Large projects); RIA\(s\) (Small projects); PcP

⚠️ Warning: content subject to change – WP preparation process still on-going
Reinforce and expand Europe's industrial and technology strengths in low-power ICT

Focus is on integration of advanced components on all levels in computing systems

Complementary to and coordinated with work in the Future Internet area (on Cloud Computing) and in Excellence Science pillar under Research Infrastructures and FET (on High Performance Computing)

Organised in one topic:
  - Customised and low power computing
ICT 4- 2015: Customised and low power computing

Objectives:

a) Next generation computing systems: scalable micro-servers (Low-power, low-cost, high-density, secure, reliable, scalable)

b) Programming approaches for the computing continuum: productivity, multi-parameter optimisation

c) Platform-building for problems with real-time constraints; application experiments in cyber-physical systems

From EUROSERVER FP7 project results, but focused on hardware: integration across all layers (HW & SW);
From I4MS FP7 project results, need a similar initiative for customised and low-power computing

Key Stakeholders: System integrators (Bull, Eurotech, Ericsson, IBM, Thales) Hardware (ST-Microelectronics, ARM, Infineon, Intel) Research (Barcelona Supercomputing Center, FORTH, Fraunhofer, INRIA, POLIMI, UNI-Stuttgart, TU-Wien) Industrial users (Airbus, Comau, EDF, Philips)
Focused on network and computing infrastructures to accelerate innovation and address the most critical technical and use aspects of the Internet

Organised in ten topics:

- Smart networks and novel Internet architectures
- Smart optical and wireless network technologies
- Advanced 5G Network Infrastructure for the Future Internet
- Advanced cloud infrastructures and services
- Boosting public sector productivity and innovation through cloud computing services
- Tools and methods for Software Development
- FIRE+ (Future Internet Research & Experimentation)
- More Experimentation for the Future Internet
- Collective Awareness Platforms for sustainability and social innovation
- Web Entrepreneurship
Objectives:

a) Novel architectural and networking approaches to information delivery and access;
b) Solve unsolved remaining issues;
c) Get closer to deployment, validate migration paths

Key functionalities: Security, trust, mobility and scalability (built-in)

Some important issues:

- Strengthen the EU datacom/telecom industry;
- Contribution to industrial strategies and roadmaps;
- Establish links with international initiatives;
- Contribution to large scale trials
ICT in Industrial Leadership/ 8
WP LEIT ICT 2014-15 – 3. Future Internet

ICT 6- 2014: Smart optical and wireless networks technologies

Objectives:

a) Focus on optical networks: Flexible management; Very high speed transmission and access; Efficient data center architectures; Scalability, cost and energy efficiency

b) Focus on Wireless networks: New paradigms for wireless connectivity; Flexible use of spectrum; Addressing usage diversity; Hybrid (terrestrial/satellite) infrastructure for extensive coverage and resilience

Expected impact:

- Strengthen current EU industrial capabilities on wireless and optical
- Reduce energy consumption (10x)
- Higher spectrum efficiency, lower radiation
- Support new applications and services

⚠️ Warning: content subject to change – WP preparation process still on-going ⚠️
Objectives:

Research and Innovation Actions:

a) High performance heterogeneous cloud infrastructures

b) Federated cloud networking

c) Dynamic configuration, automated provisioning and orchestration of cloud resources

d) Automated discovery and composition of services (cloud of public services)

e) Cloud security

Innovation Actions: Innovation platforms for trusted cloud systems

a) Open source software for innovative and trusted cloud-based services
ICT 8-2015: Boosting public sector productivity and innovation through cloud computing services

Objectives:

a) Pre-commercial procurement for public sector cloud computing services (PCP)
   - common requirements and terms of reference for future procurement of cloud computing services
   - large projects

b) Public procurement of innovative cloud computing solutions (PPI)
   - organizing joint procurement of innovative cloud services by public authorities
   - large projects

Warning: content subject to change – WP preparation process still on-going
ICT in Industrial Leadership/ 11
WP LEIT ICT 2014-15 – 3. Future Internet

ICT 9- 2014: Tools and Methods for Software Development

Objectives:

a) Software of excellent quality (reliability, resilience and automatic adaptation) for complex & critical systems;

b) Need for innovative tools and methods for software development

Long term impact: Use cases of productivity gains for EU industry

Key Stakeholders: European software industries; Software related research institutes/university labs; Specialized SMEs (apps providers, web & cloud service providers)

ETP references: Networked European Software and Services Initiative (NESSI)

▶ Warning: content subject to change – WP preparation process still on-going ◀
Objectives:

a) Tap the innovation potential of bottom-up solutions based on collective intelligence

b) Demonstrate the innovative combination of network solutions (social networks, sensor networks, knowledge co-creation networks)

c) Leverage on these experiments to get a better understanding of the underlying techno-social issues

NO proposals technology-driven, or aiming at purely commercial solutions

YES consortia with at least two partners which are focused on non-ICT disciplines

Key Stakeholders: NGOs (e.g. NESTA engaged since long time in Social Innovation activities), civil society; multidisciplinary academia/research centers; SMEs, local communities, students
Objectives:

a) Build a Strategic Experimental Infrastructure (FIRE+)

b) Controlled and replicable conditions for experiments

c) Seamless experimentation regardless of geography

d) Affordable access for small- and medium-size innovators

e) Real-world prototyping and experimenting environments

f) Reap benefits from similar initiatives around the world.

► Warning: content subject to change – WP preparation process still on-going
ICT in Industrial Leadership/ 14
WP LEIT ICT 2014-15 – 3. Future Internet

ICT 12- 2015: Integrating experiments & facilities in FIRE+

Research & Innovation Actions (small projects)
Integration of experimental facilities from Call 1 into FIRE+
Experimentally-driven research on top of existing experimental infrastructures in any of the areas under Call 1
At least 50% of funding for selecting users, experiments, etc.

Innovation Actions (small projects)
Technically mature experiments for close-to-market products, applications or services (SME participation – EIT)

Impact: Standardisation and interoperability; Reduce the time to experiment; Reduce the time to experiment

► Warning: content subject to change – WP preparation process still on-going ◄
Objectives:

a) To deliver a consistent set of platforms to provide new across-borders services for web entrepreneurs by connecting local web entrepreneurship ecosystems. Services, physical or online, which will, in turn, help entrepreneurs to start and stay in Europe while scaling up at European level.

b) Focus on creating new cross borders services (physical or online).

c) To provide infrastructures that will: 1. allow networking of the scene's stakeholders, 2. celebrate and promote web entrepreneurship and 3. developing web talent.

d) Support the Startup Europe Initiative.

Key Stakeholders: Investors, startups associations and Accelerators; Big corporations and higher education with entities that support startups; Regional organisations focused on web entrepreneurship.

⚠️ Warning: content subject to change – WP preparation process still on-going
ICT 14- 2014: Advanced 5G Network Infrastructure for the Future Internet

Objectives:

• From IoT to U-HDTV, ubiquity
• Restless Pressure on bandwidth, spectrum crunch
• Complex traffic – usage patterns
• Complex management
• Cloud computing reshaping the networks
• Energy consumption

Driven by Advanced 5G Network Infrastructure for Future Internet PPP

► Warning: content subject to change – WP preparation process still on-going
Addresses:
- **Big Data** with focus on both innovative data products and services and solving research problems
- **Machine translation** in order to overcome barriers to multilingual online communication
- **Tools for creative, media and learning industries** in order to mobilise the innovation potential of SMEs active in the area
- **Multimodal and natural computer interaction**

Organised in eight topics:
- Big data innovation and take-up
- Big data research
- Cracking the language barrier
- Support to the growth of ICT innovative creative industries SMEs
- Technologies for creative industries, social media and convergence
- Technologies for better human learning and teaching
- Advanced digital gaming/gamification technologies
- Multimodal and natural computer interaction
ICT in Industrial Leadership/ 17

ICT 15- 2014: Big Data innovation and take-up

Objectives:

Help EU companies build innovative multilingual data products and services by addressing systemic and technological barriers

a) 1. Establishment of a EU integration and reuse incubator for SMEs to foster the development of open data supply chains

   2. Innovation and technology transfer projects in multilingual data harvesting and analytics solutions and services

b) 1. Lay the foundation for effective exchange and reuse of data assets

   2. Design and Coordination of EU skills centres for big data technologies and business development

   3. Creation of a Big Data integrator platform in support of H2020 user communities

This Objective as a following up FP7-ICT-SME-DCL, FP7-ICT-SME-DCA
ICT 16- 2015: Big Data - research

**Objectives:**

a) Fundamental research in Big Data technologies, addressing analytics (i.e. data mining, machine learning, language understanding, visualization, scalability, responsiveness)

b) User defined and industry validated challenges

**Implemented by:**

Research and Innovation Actions (Large and small projects)

- Big Data technologies
- Benchmarks

Coordination and Support Actions

- Prediction and deep analysis competitions (prizes)

⚠️ Warning: content subject to change – WP preparation process still on-going ⚠️
ICT in Industrial Leadership/ 19

ICT 17- 2014: Cracking the language barrier

Objectives:
Explore new avenues, methods, approaches to achieve significant improvement in translation quality in fully automatic MT

Approach:
1. Self-learning/self-improving, fully automatic systems, making best use of available data and language resources
2. Systems dealing with huge volumes, high variety of languages and text styles
3. Systems delivering results in reasonable time

Impact:
a. By 2025, an online EU internal market free of language barriers
b. Significant improvement in quality, coverage and technical maturity of MT
c. widely agreed benchmarks for machine translation quality

▶ Warning: content subject to change – WP preparation process still on-going ◀
ICT in Industrial Leadership/ 20

ICT 18- 2014: Support the growth of ICT innovative Creative Industries SMEs

Objectives:
Stimulate the adoption and deployment of innovative ICT solutions by the creative industries SMEs.

Target Innovation Actions:
Leveraging emerging ICT technologies for the development of innovative products, tools, applications and services in the creative industries

Target Coordination and Support Actions:
To stimulate the take up of advanced ICT in the European creative industries on a broad geographical coverage

Driven by NEM ETP

⚠️ Warning: content subject to change – WP preparation process still on-going ⚠️
Objectives:

Foster new or emerging technologies for digital content creation and to unlock complex information and media and interacting with them

a) Research in new technologies and tools to support creative industries in the creative process from idea conception to production

b) New services, pilots, large scale demonstrations on Interactive / Convergence; Multimodal multidisciplinary search; Immersive environments;

c) Increase cooperation between policy and research on Converge and Social Media and Support on Convergence and Social Media activities (dissemination, research roadmap)

Driven by NEM ETP

► Warning: content subject to change – WP preparation process still on-going ◄
ICT in Industrial Leadership/ 22

ICT 20- 2015: Technologies for better human learning and teaching

Content:

a) Technology is disrupting Education (MOOCs, Cloud, tablets,)
b) Changes in education – open, flexible access to learning,
c) Demands for 21st century skills
d) Demand for learning and training that is responsive and adaptive to needs of learners
e) Opening Up Education initiative

Objectives:

a) Development & Integration of digital technologies for learning
b) Building blocks of the digital learning ecosystem
c) Boost European market for and innovation in educational technologies

► Warning: content subject to change – WP preparation process still on-going
ICT 21- 2014: Advanced digital gaming/ gamification technologies

Content:

a) Support R&I on digital games applied in non-leisure contexts for the emergence of a prospering market

b) Requiring development of new methodologies and tools to produce, apply and use digital games and gamification techniques in non-leisure contexts,

Objectives: Increase collaboration between industry & research community, intermediaries and users

a) Increase effectiveness of Digital games;

b) people with disabilities

c) risk of exclusion

d) unsuited for education

Warning: content subject to change – WP preparation process still on-going
ICT in Industrial Leadership/ 24

ICT 22- 2014: Multimodal and Natural computer interaction

Content:

a) achieve transparency and invisibility of technology
b) effortless, effective human-machine dialogue
c) easy use of complex and powerful systems, easy access to information
d) Multidisciplinary research: communication technologies, language/speech processing, cognitive & behavioural analysis, creative industries...
e) Various uses: search, information retrieval, elderly, people with special needs, designers/artists

Actions:

Several research projects on advanced human machine interaction
R&I projects on Multimodal and Natural interaction
Several Innovation projects on multimodal interfaces

► Warning: content subject to change – WP preparation process still on-going ◄
• Roadmap-based research driven by application needs

• Effort to close the innovation gap to allow large scale deployment of robots and foster market take-up: use-cases, pre-commercial procurement, industry-academia cross-fertilisation
  • Includes two pre-commercial procurement actions (health-care sector, public safety and environmental monitoring)

• Additional activities: shared resources, performance evaluation & benchmarking, community building and robotic competitions

• Organised in two annual calls

► Warning: content subject to change – WP preparation process still on-going
ICT in Industrial Leadership/ 26

ICT 23- 2014: Robotics

PRIORITY:

1. Market domains: manufacturing, commercial, civil, agriculture
   RTD to advance key technologies relevant for industrial and service robotics, including shared resources and assessment

2. Technology transfer - Robotics use cases Industrial and service sectors

3. Pre-commercial procurement in robotics
   Public safety and monitoring of environment and infrastructure
1. **PRIORITY:** healthcare, consumer, transport
   RTD to advance key technologies relevant for industrial and service robotics

2. **Technology transfer** - Industry-academia cross-fertilisation
3. **Technology transfer** - Robotics use cases
4. **Pre-commercial procurement** in robotics: healthcare
5. **Community building** and Robotic competitions
Micro- and nano-electronics and photonics
Key Enabling Technologies / 2014-2015
(indicative basis)

• Covers generic technology developments on micro- and nano-electronics
  focused on advanced research and lower Technology Readiness Levels (TRLs)
  • Complementary to the JTI Electronic Components and Systems

• Addresses the full innovation and value chain in markets sectors where the
  European photonics industry is particularly strong (optical communications,
  lighting, medical photonics, laser technologies, etc.)
  • Includes calls for ERANETs as well as public procurement actions (roll-out
    and deployment of optical networking technologies)
Key Enabling Technologies

The European Commission tabled on 26 June 2012 its strategy to boost the industrial production of KETs-based products, e.g. innovative products and applications of the future. The strategy aims to keep pace with the EU’s main international competitors, restore growth in Europe and create jobs in industry, at the same time addressing today's burning societal challenges. "A European strategy for Key Enabling Technologies - A bridge to growth and jobs" Communication adopted on 26 June 2012.

These technologies enable the development of new goods and services and the restructuring of industrial processes needed to modernise EU industry and make the transition to a knowledge-based and low carbon resource-efficient economy.
ICT 25- 2015: Generic micro- and nano-electronic technologies

• To keep Europe's position at the forefront of advanced micro- and nano-electronic technologies developments
• To ensure strategic electronic design and manufacturing capability in Europe avoiding dependencies from other regions

• Technology update (e.g. 22nm -> 16nm)
• New topic: quantum and neuromorphic computing
• Call 11 projects serve as a “bridge” between FP7 and H2020. No disruption.

• Leading Players: Industry: ST, INTEL, Global Foundries, Infineon, IBM, NXP, ... Regional clusters Dresden – GF/Fraunhofer Grenoble – CEA/ST Leuven – IMEC ... and SMEs around them
Photonics: Major S&T and R&I progress to sustain competitiveness & leadership in market sectors where Europe has the lead (communications, lighting, laser-based manufacturing, medical photonics, safety & security).

- Address fragmented and uncoordinated developments between national, and regional players EU value chain(s) and business ecosystem(s)
- Address the "valley of death" (turn R&D results into innovative products)
- Exploit the large enabling potential of photonics in many industrial sectors & in major societal challenges (such as health and well-being, energy efficiency or safety)
### ICT 27: Photonics KET 2015: 44 M€

| Research & Innovation (30 M€) | **Optical communication** for data centres  
High-throughput **laser-based manufacturing**  
Device, circuit and fabrication technology for **Photonic Integrated Circuits** (PICs) |
| Innovation (PPI) (5 M€) | Pilot deployment of **software-defined optics in backbone networks** |
| ERANETs (6 M€) | Actions with the Member States |
| Coordination & support actions (3M€) | Open access of Researchers and SMEs to advanced facilities; Networking of clusters and national platforms for increasing SME innovation potential |

### ICT 28: Cross-Cutting ICT KETs 2015: 56 M€

| Innovation (14 M€) | ICT-KET integrated **platforms for the healthcare and food sectors** (13 M€)  
Coordination of stakeholders in the health sector (bio-photonics and micro-nano-bio solutions) (1M€) |
| Pilot Lines (3x14 M€) | Pilot line for **OLEDs on flexible substrates**  
Pilot line for **analytical mid-infrared (MIR) micro-sensors**  
Pilot line for **PIC fabrication on III-V and/or dielectric based platforms** |
Research & Innovation Actions should focus on materials, process and device technology for OLED lighting.

The aim is to realise OLED devices over larger surfaces, with higher brightness, larger uniformity and longer lifetimes. A demonstrator should be provided at the end of every project.
Factory of the Future / 2014-2015
(indicative basis)

• Focuses on ICT components of innovative production systems in all sectors (for more personalised, diversified and mass-produced product portfolio and for rapid adaptations to market changes)

• Organised in three topics:
  • Process optimisation of manufacturing assets
  • ICT-enabled modelling, simulation, analytics and forecasting technologies
  • ICT Innovation for Manufacturing SMEs

► Warning: content subject to change – WP preparation process still on-going
ICT Cross-Cutting Activities / 2014-2015
(indicative basis)

• Internet of Things and platforms for Connected Smart Objects
• Cutting across several LEIT-ICT areas (smart systems integration, smart networks, big data)
• Bringing together different generic ICT technologies and their stakeholder constituencies

• Human-centric Digital Age
• Understanding technologies, networks and new digital and social media and how these are changing the way people behave, think, interact and socialise as persons, citizens, workers and consumers

• Cyber-security, Trustworthy ICT
• Focuses on security-by-design for end to end security and a specific activity on cryptography
• Complementary to Cyber-security in Societal Challenge 7

► Warning: content subject to change – WP preparation process still on-going ◄
ICT innovation actions / 2014-2015
(indicative basis)
• **Support for access to finance**
  - Pilot action for business angels to co-invest in ICT innovative companies
  - Implemented by EIF and closely coordinated with "Access to risk finance" part of H2020

• **Innovation and Entrepreneurship Support**
  - ICT business idea contests in universities and high schools
  - ICT entrepreneurship summer academy
  - ICT entrepreneurship labs
  - Campaign on entrepreneurship culture in innovative ICT sectors
  - Support for definition and implementation of inducement prizes
  - European networks of procurers
  - Pre-commercial procurement

• **Open Disruptive Innovation Scheme**
  - Support to a large set of early stage high risk innovative SMEs in ICT
  - Implementation through the SME instrument
    - -> Continuously open calls with several (3) cut-off dates/year
    - -> 5% of LEIT budget
  
  ➤ Warning: content subject to change – WP preparation process still on-going ➤
International cooperation actions / 2014-2015
(indicative basis)

• Coordinated calls

• EU-Brazil
  • Cloud computing, including security aspects
  • High performance computing
  • Experimental platforms

• EU-Japan
  • Technologies combining big data, internet of things in the cloud
  • Optical communications
  • Acces networks for densely located users
  • Experimentation and development on federated Japan-EU testbeds

• International partnership building and support to dialogues with high income countries (USA, Canada, East Asia and Oceania)

• International partnership building in low and middle income countries

► Warning: content subject to change – WP preparation process still on-going
H2020-ICT-2014

Publication date: 11 December 2013
Opening: 11 December 2013 except topic ICT37 that opens on 01/03/2014 for phase 1 and phase and topic ICT14 that opens on 15 July 2014.

Deadline(s):

Overall indicative budget: EUR 703.5 million
3° PILLAR

SOCIETAL CHALLENGES
Struttura del programma

**Excellent Science**
- European Research Council
  - Frontier research by the best individual teams
- Future and Emerging Technologies
  - Collaborative research to open new fields of innovation
- Marie Skłodowska Curie actions
  - Opportunities for training and career development
- Research infrastructures (including e-infrastructure)
  - Ensuring access to world-class facilities

**Industrial Technologies**
- Leadership in enabling and industrial technologies
  - ICT, nanotechnologies, materials, biotechnology, manufacturing, space
- Access to risk finance
  - Leveraging private finance and venture capital for research and innovation
- Innovation in SMEs
  - Fostering all forms of innovation in all types of SMEs

**Societal Challenges**
- Health, demographic change and wellbeing
- Food security, sustainable agriculture, marine and maritime research & the bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, resource efficiency and raw materials
- Inclusive, innovative and reflective societies
- Security society
H2020

SOCIETAL CHALLENGES

• Health, Demographic Change and Wellbeing;
• Food Security, Sustainable Agriculture, Marine and Maritime Research & the Bio-economy;
• Secure, Clean and Efficient Energy;
• Smart, Green and Integrated Transport;
• Climate Action, Resource Efficiency and Raw Materials;
• Inclusive, Innovative and Reflective Societies;
• Secure Societies.

COOPERATION

HEALTH
KBBE
ENERGY
TRANSPORT
ENVIRONMENT
SSH
SECURITY
INTERNATIONAL COOPERATION
**Proposed funding (€ million, 2014-2020)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Funding (€ million)</th>
<th>%</th>
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<td>Health, demographic change and wellbeing</td>
<td>7,472</td>
<td>15%</td>
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<td>Food security, sustainable agriculture, marine and maritime research &amp; the Bioeconomy</td>
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<tr>
<td>Secure, clean and efficient energy</td>
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<tr>
<td>Smart, green and integrated transport</td>
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<tr>
<td>Climate action, resource efficiency and raw materials</td>
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<td>Innovative, inclusive and reflective societies</td>
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<tr>
<td>Secure societies</td>
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<tr>
<td>Science with and for society</td>
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</tr>
<tr>
<td>Spreading excellence and widening participation</td>
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Il budget per le Societal Challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy:
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Inclusive, innovative and reflective Societies
- Secure Societies
Societal Challenges - ICT

• Health, demographic change and wellbeing
• Food security, sustainable agriculture, and forestry, marine, maritime and inland water research, and the bioeconomy
• Secure, clean and efficient energy
• Smart, green and integrated transport
• Climate action, environment, resource efficiency and raw materials
• Europe in a changing world – inclusive, innovative and reflective societies
• Secure societies – protecting freedom and security of Europe and its citizens
ICT in SC1 - Health, demographic change and wellbeing

1. Health, Demographic Change And Wellbeing

1.1. Understanding health, wellbeing and disease
1.2. Preventing disease
1.3. Treating and managing disease
1.4. Active ageing and self-management of health
1.5. Methods and data
1.6. Health care provision and integrated care

* Area attività: Proposta Commissione Europea
ICT in SC1 - Health, demographic change and wellbeing

• Advancing active and healthy ageing with ICT
  • PHC 19 -2014: Service robotics within assisted living environment
  • PHC 20 -2014: ICT solutions for independent living with cognitive impairments
  • PHC 21 – 2015: Early risk detection and intervention

• Integrated, sustainable, citizen-centred care
  • PHC 25 – 2015: Advanced ICT systems and services for Integrated Care
  • PHC 26 -2014: Self-management of health and disease: citizen engagement and mHealth
  • PHC 27 – 2015: Self-management of health and disease and patient empowerment supported by ICT
  • PHC 28 – 2015: Self-management of health and disease and decision support systems based on predictive computer modelling used by the patient him or herself
  • PHC 29 – 2015: Public-procurement of innovative eHealth services
  • PHC 30- 2015: eHealth Sectoral Inducement Prize

⚠️ Warning: content subject to change – WP preparation process still on-going
ICT in SC1 - Health, demographic change and wellbeing

• Improving health information, data exploitation and providing an evidence base for health policies and regulation
  • PHC 31 -2015: Digital representation of health data to improve disease diagnosis and treatment
  • PHC 35 -2014: eHealth interoperability

• In addition CSAs:
  • HCO 1 -2014: Innovation Partnership: Support for the European Innovation Partnership on Active and Healthy Ageing
  • HCO 2 -2014: Joint Programming: Coordination Action for the Joint Programming Initiative (JPI) “More Years, Better Lives – the Challenges and Opportunities of Demographic Change”

⚠️ Warning: content subject to change – WP preparation process still on-going
2. Food Security, Sustainable Agriculture, Marine And Maritime Research And The Bio-economy

2.1. Sustainable agriculture & forestry

2.2. Sustainable and competitive agri-food sector for a safe and healthy diet

2.3 Unlocking the potential of aquatic living resources

2.4 Sustainable and competitive bio-based industries and supporting the development of a European bio-economy
3. Secure, Clean And Efficient Energy

3.1. Reducing energy consumption and carbon footprint by smart and sustainable use

3.2. Low cost, low carbon electricity supply

3.3. Alternative fuels and mobile energy sources

3.4. A single, smart European electricity grid

3.5. New knowledge and technologies

3.6. Robust decision making and public engagement

3.7 Market uptake of energy innovation
ICT in SC3 - Secure, clean and efficient energy

• **Energy efficiency / buildings and consumers**
  - EE 8 - 2014: Public procurement of innovative sustainable solutions, support Public Authorities in procuring fast-evolving ICT such as **Green Data Centres**
  - EE 11: New ICT-based solutions for energy efficiency

• **Competitive low-carbon energy / modernising the single European electricity grid**
  - LCE 7 – 2015: Distribution grid and retail market

• **Smart cities and communities**
  - SCC 1 – 2014/2015: Smart Cities and Communities solutions integrating energy, transport, ICT sectors through lighthouse (large scale demonstration - first of the kind) projects
  - SCC 2 – 2014: Developing a framework for common, transparent data collection and performance measurement to allow comparability and replication between solutions and best-practice identification
  - SCC 3 – 2015: Development of system standards for smart cities and communities solutions
  - SCC 4 – 2014: Establishing networks of public procurers in local administrations on smart city solutions
  - SCC 5 – 2014: Establishing a challenge prize competition: Smart solutions for creating better cities and communities

⚠️ **Warning: content subject to change – WP preparation process still on-going**
4. Smart, Green and Integrated Transport

4.1 Resource efficient transport that respects the environment

4.2. Better mobility, less congestion, more safety and security

4.3. Global leadership for the European transport industry

4.4 Socio-economic and behavioural research and forward looking activities for policy making
ICT in SC4 - Smart, green and integrated transport

- Mobility for Growth
  - Road
    - MG.3.5 – 2014: Cooperative Intelligent Transport Systems for Safe, congestion-free and sustainable mobility
    - MG.3.6 – 2015: Safe and connected automation in road transport
  - Urban Mobility
    - MG.5.3 – 2014: Trackling urban road congestion
  - Logistics
    - MG.6.3 – 2015: Common Communication and navigation platforms for pan-European logistics applications
  - Intelligent Transport Systems
    - MG.7.1 - 2014: Connectivity and information sharing for intelligent mobility
    - MG.7.2 - 2014: Towards seamless mobility addressing fragmentation in ITS deployment in Europe
  - Green Vehicles
    - G8 – 2015: Electric Vehicles’ enhanced performance and integration into the transport system and the grid

⚠️ Warning: content subject to change – WP preparation process still on-going
5. Climate Action, Resource Efficiency and Raw Materials

5.1. Fighting and adapting to climate change

5.2. Protecting the environment, sustainably managing natural resources, water, biodiversity and ecosystems

5.3. Ensuring sustainable supply of non-energy & non-agricultural raw materials

5.4. Enabling the transition towards a green economy and society through eco-innovation

5.5. Developing comprehensive and sustained global environmental observation and information systems

* Area attività: Proposta Commissione Europea
ICT in SC5 – Climate Action, environment, resource efficiency and raw materials

- Waste: A Resource to Recycle, Reuse and Recover Raw Materials
  - WASTE-1-2014: Moving towards a circular economy through industrial symbiosis
  - WASTE-2-2014: A systems approach for the reduction, recycling and reuse of food waste
  - WASTE-3-2014: Recycling of raw materials form products and buildings
  - WASTE-4-2014/2015: Towards near-zero waste at European and global level

- Water Innovation: Boosting its value for Europe
  - WATER-1-2014/2015: Bridging the gap: from innovative water solutions to market replication

Warning: content subject to change – WP preparation process still on-going
6. Europe in a changing world – Inclusive, Innovative and Reflective societies

6.1. Inclusive societies

6.2. Innovative societies

6.3. Make use of the innovative, creative and productive potential of all generations

6.4. Ensure societal engagement in research and innovation

6.5. Promote coherent and effective cooperation with third countries

6.6. Reflective Societies – cultural heritage and European identity
ICT in SC6 - Europe in a changing world – inclusive, innovative and reflective societies

- Reflective societies: cultural heritage and European Identities
  - REFLECTIVE 6- 2015: Innovative ecosystems of digital cultural assets
  - REFLECTIVE 7- 2014: Advanced 3D modelling for accessing and understanding European cultural assets

- New forms of innovation
  - INSO 1 -2015: Innovation in the public sector by using emerging ICT technologies
  - INSO 2 -2014: ICT-enabled open government
  - INSO 9 -2014: Innovative mobile e-governement applications by SME

- CSA on ICT for Learning and Inclusion
  - INSO 8 – 2014: Platform for ICT for Learning and Inclusion

⚠️ Warning: content subject to change – WP preparation process still on-going
7. Secure Societies – Protecting Freedom And Security of Europe and its Citizens

7.1 Fight crime, illegal trafficking and terrorism, including understanding and tackling terrorist ideas and beliefs
7.2 Protect and improve the resilience of critical infrastructures, supply chains and transport modes
7.3 Strengthen security through border management
7.4 Improve cyber security
7.5 Increase Europe's resilience to crises and disasters
7.6 Ensure privacy and freedom, including in the Internet and enhance the societal dimension legal and ethical understanding of all areas of security, risk and management
7.7 Enhance standardisation and interoperability of systems, including for emergency purposes
7.8 Support the Union's external security policies, including conflict prevention and peace-building

* Area attività: Proposta Commissione Europea
ICT in SC7 - Secure societies – protecting freedom and security of Europe and its citizens

- Digital security: cybersecurity, privacy and trust (DS)

- DS 1 – 2014: Privacy
- DS 2 – 2014: Access Control
- DS 3 – 2014: The role of ICT in Critical Infrastructures Protection
- DS 4 – 2015: Secure Information Sharing
- DS 5 – 2015: Trust eServices
- DS 6 – 2015: Risk management and assurance models

Warning: content subject to change – WP preparation process still on-going
Next steps - ICT

- Opinion by Member States representatives on WP2014-15  
  *October 2013*
- ICT 2013 event in Vilnius  
  *6-8 November 2013*
- Publication of first calls for proposals  
  *11 December 2013*
- Closing of first calls  
  *Spring 2014*
GRAZIE PER L’ATTENZIONE!

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