ICT@COST (European COoperation in Science and Technology)

August 2009

By Dr. Gian Mario Maggio
COST Office (Brussels)
About COST
COST (European COoperation in Science and Technology) is an inter-governmental framework, founded in 1971, for cooperation in Science and Technology allowing the coordination of nationally-funded research on a European level, through the support of cooperation and mobility of researchers.
COST – Main Features

- “Bottom-up” – No fixed programmes/priorities
- “Non-competitive” (pre-normative, public utility)
- Incubator for emerging disciplines & FP projects
- Foster inter-disciplinary cooperation
- Enabling agent – Promotion of Early-Stage Researchers
- Open Call/Equal access
- Flexible ‘à la carte’ participation
- Coordination through cooperation in networks
- Networks relying on research funded otherwise (national level, FP6/7, etc.)
- Pan-European dimension
- Open to global cooperation (mutual benefit principle)
COST Map – 36 Countries

- EU-27 Member States
- EFTA Member States
  - Iceland
  - Norway
  - Switzerland

- Candidate Countries
  - Croatia
  - FYROM (Macedonia)
  - Turkey

- Potential Candidate Countries
  - Bosnia and Herzegovina
  - Republic of Serbia

- COST Cooperating States
  - Israel
COST is supported by the EU RTD Framework Programme

ESF provides the COST Office through an EC contract

COST – Neighbouring Countries

- Special budget line in the COST system to facilitate collaborations
- Specific exchange activities (Short Term Scientific Missions; focus on Early-Stage Researchers)

90 participations in 45 Actions (2009)
COST – Global Participation

→ 36 countries/251 participations in 103 Actions (2009)
COST Actions: Networks integrating research funded otherwise (min 5 countries) receive a financial contribution based on a (4 year) joint work programme for:

- Scientific/Working Group meetings
- Workshops and Seminars
- Short Term Scientific Missions (STSMs)
- Training Schools and Research Conferences
- Dissemination

**Exploratory/Strategic Workshops:** To explore future scientific or societal needs, support policy developments or stimulate new (inter-disciplinary) research activities
COST Scientific & Technical Domains

1. BMBS – Biomedicine and Molecular Biosciences
2. CMST – Chemistry and Molecular Sciences & Technologies
3. ESSEM – Earth System Science & Environmental Management
4. FA – Food and Agriculture
5. FPS – Forests, their Products and Services
6. ICT – Information & Communication Technologies
7. ISCH – Individuals, Societies, Cultures & Health
8. MPNS – Materials, Physical & Nanosciences
9. TUD – Transport & Urban Development

+ Open Call – Trans-Domain Proposals (2+ Domains)
ICT Domain
ICT – Domain Description

• **Scope**: Coordination of Research on Information science and technologies, Communication technologies and Societal aspects of ICT
  - Close collaboration with European Commission (e.g. DG-INFSO)

• **Brief history**:
  - Until 1999: Telecommunications only
  - 1999-2006: TIST (Telecommunications and Information Sciences and Technologies)
  - 2006: Creation of ICT Domain
ICT Domain – Facts Sheet

- Actions: 24 Actions (2009)
- Impact: ~1000 Organisations, ~3000 Researchers
- Evolution of no. of Actions:
Positioning of COST-ICT within the ERA

Top-Down Approach

- FET Proactive (FP7-ICT)
- European Science Foundation (ESF)

Bottom-Up Approach

- COST-ICT
- Applied Research
- Innovation/Exploitation

FP7-ICT Programme

<table>
<thead>
<tr>
<th>NoE</th>
<th>CA/SSA</th>
<th>STREP/Integrated Projects</th>
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<tbody>
<tr>
<td>FET Open (FP7-ICT)</td>
<td>COST-ICT</td>
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<tr>
<td>JTIs</td>
<td>EUREKA</td>
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ICT Domain – Thematic Areas

Telecommunications

- Antennas & Propagation
- Network Analysis/Design
- Wireless & Mobile Communications
- Optical Components/Networks

Information Systems

- AI
- HPC
- Software Engineering
- Information Management

e-Society

- Human-Machine Interaction
- Information Society
- Energy Efficiency
- Security
- e-Health

8 Actions

9 Actions

7 Actions
Example 1: Telecommunications

COST Action 2100: Pervasive Mobile & Ambient Wireless Communications (2006-10)

Goal:
Develop paradigms of pervasive and ambient wireless communications for next-generation mobile communications

Scientific Focus:
- Transmission Techniques and Signal Processing
- Radio Channel Modeling
- Radio Network Aspects: Heterogeneous networks; network planning and network optimisation
COST Action IC0602: Algorithmic Decision Theory (2006-11)

Objectives:
New algorithmic solutions for decision theoretic problems arising from: Use of **large amount of information**, in the presence of **uncertainty** as well as of **complex** structures of data

→ Cross-fertilization between AI & Computer Science
COST Action 219ter: Accessibility for All to Services and Terminals for Next-Generation Networks (2002-08)

Rationale: A major issue as we move towards a fully connected society is maintaining accessibility for all. How new telecommunications services can benefit elderly people as well as people with disabilities?

Achievements:
• Promoted a communications infrastructure that is accessible to all
• Took part in adapting and designing the equipment accordingly—”Design for all” concept
• Created liaisons with relevant organisations (e.g. ETSI, ITU) and raised awareness among policy makers
ICT Domain – Research Areas

- **Antennas & Radio Propagation**
  - COST IC0603, IC0802

- **Multimedia & Human-Machine Interaction**
  - COST 2102, IC0601, IC0904

- **Wireless & Mobile Communications**
  - COST 297, 2100, IC0803, IC0902

- **e-Society**
  - COST 298, 2101, 2103, IC0604, IC0804, IC0806

- **Information Systems**
  - COST IC0602, IC0701, IC0702, IC0801, IC0805, IC0901, IC0903

- **Optical Components/Networks**
  - COST 299

- **Network Analysis & Design**
  - COST IC0703
COST-ICT Actions
ICT Domain – Telecommunications (1/2)

- **Antennas & Radio Propagation**
  - **COST IC0603**: ASSIST – Antenna Systems & Sensors for Information Society Technologies
  - **COST IC0802**: Propagation tools and data for integrated Telecommunication, Navigation and Earth Observation systems

- **Optical Components & Networks**
  - **COST 299**: Optical Fibres for New Challenges Facing the Information Society

- **Network Analysis & Design**
  - **COST IC0703**: Data Traffic Monitoring and Analysis: theory, techniques, tools and applications for the future networks
• Wireless & Mobile Communications
  – **COST 297**: HAPCOS – High Altitude Platforms for Communications and Other Services
  – **COST 2100**: Pervasive Mobile & Ambient Wireless Communications
  – **COST IC0803**: RFCSET – RF/Microwave Communication Subsystems for Emerging Wireless Technologies
  – **COST IC0902**<sup>NEW!</sup>: Cognitive Radio and Networking for Cooperative Coexistence of Heterogeneous Wireless Networks
ICT Domain – Information Systems

- **Artificial Intelligence & Software Agents**
  - COST IC0602: Algorithmic Decision Theory
  - COST IC0801: Agreement Technologies

- **Software Engineering**
  - COST IC0701: Formal Verification of Object-Oriented Software

- **HPC (High-Performance Computing)**
  - COST IC0805: Open European Network for High Performance Computing on Complex Environments

- **Modelling & Information Management**
  - COST IC0702: Combining Soft Computing Techniques and Statistical Methods to Improve Data Analysis Solutions
  - COST IC0901**NEW!**: Rich-Model Toolkit - An Infrastructure for Reliable Computer Systems
  - COST IC0903**NEW!**: Knowledge Discovery from Moving Objects
ICT Domain – e-Society (1/2)

• **Information Society**
  – **COST 298**: Participation in the Broadband Society

• **e-Health**
  – **COST 2103**: Advanced Voice Function Assessment
  – **COST IC0604**: EURO-TELEPATH – Telepathology Network in Europe

• **e-Infrastructures**
  – **COST IC0806**: Intelligent Monitoring, Control and Security of Critical Infrastructure

• **Energy Efficiency**
  – **COST IC0804**: Energy Efficiency in Large Scale Distributed Systems
• Security
  – COST 2101: Biometrics for Identity Documents and Smart cards

• Multimedia & Human-Machine Interaction (HMI)
  – COST 2102: Cross-Modal Analysis of Verbal and Non-verbal Communication
  – COST IC0601: SID – Sonic Interaction Design
  – COST IC0904\textsuperscript{NEW!}: Towards the Integration of Transectorial IT Design and Evaluation
Strategic Activities
COST Foresight 2030: A New Society in the Making
– A COST Interdisciplinary Strategic Initiative in the Wake of the Digital Revolution (2009-10)

- **COST Foresight 2030** aims at stimulating discussions on potential future scenarios in a world permeated and shaped by the **Digital Revolution**
- ICT as **enabling technology**
- The Workshops will focus on **societal-driven research** topics and favour inter-disciplinary exchange
COST Open Call
COST – Open Call

• “Open Call” = Continuous (with 2 Collection Dates per year) and thematically open
  – Ensures quality
  – Furthers competitiveness
  – Encourages trans-disciplinary proposals

• Emphasis on Early Stage researchers

• Selection criteria are public

• Specific collection dates (i.e. 27 March 2009)

• 2-stage process / peer reviewed

• Successful COST Actions proposals can expect to start activities within 9 months after the Collection Date
COST Actions – Life Cycle

- **Open Call**
  - Collection Date
  - DC assesses pre-proposals

- **Two Stage Process**
  - (max. 9 months)
  - CSO approves MoU
  - External experts & DC assess full proposals

- **Implementation**
  - (4 years)
  - Monitoring
  - 1st MC Meeting
  - min. 5 countries join MoU

- **Dissemination**
  - (x years)
  - Evaluation

COST is supported by the EU RTD Framework Programme

ICT@COST (August 2009) – Slide 28
Selection Process – Preliminary Proposals

Collection Date

Eligibility Check: 27-03-2009
Allocation to Domains anonymised distribution: 15-04-2009

2 weeks

Automatic Ranking: 06-11-2009
Filtering of the Proposals ranked by the DCs: 13-05-2009

3 weeks

Invitation of top 90 for Full Proposals: 13-11-2009

3 days

“CD6” 25-09-2009
“CD7” 08-10-2009
### Assessment Criteria – Preliminary Proposals

<table>
<thead>
<tr>
<th>I.1</th>
<th>RIGHT FOR COST?</th>
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<tbody>
<tr>
<td></td>
<td><em>Is COST the best mechanism for achieving the Action’s objectives?</em></td>
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<td></td>
<td>A SCORE OF 2 OR 1 AUTOMATICALLY TRIGGERS LOW SCORES IN THE FOLLOWING CRITERIA</td>
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<td>yes</td>
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<tr>
<th>I.2</th>
<th>SCIENCE</th>
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<tr>
<td></td>
<td><em>Does the proposed Action address real current problems/ scientific issues?</em></td>
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<td></td>
<td>yes</td>
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<tr>
<th>I.3</th>
<th>INNOVATION</th>
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<tr>
<td></td>
<td><em>Is the proposed Action innovative?</em></td>
</tr>
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<td>high</td>
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<tr>
<th>I.4</th>
<th>IMPACT</th>
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<tr>
<td></td>
<td><em>Would the proposed network make a significant difference in terms of knowledge, capacity building, social impacts, etc?</em></td>
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<tr>
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<td>yes</td>
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<th>I.5</th>
<th>PRESENTATION</th>
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<tr>
<td></td>
<td><em>Is the proposed Action presented in a clear and understandable way?</em></td>
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<td></td>
<td>yes</td>
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Selection Process – Full Proposals

- **Establishment of External Expert Panels**: 10 weeks
- **Deadline for Full Proposals**: 31-07-2009
- **Rating by EEP in panel meetings in Brussels**: 2 weeks, 11-09-2009
- **Presentation of proposals**: 2 weeks
- **Ranking by DCs**: 02-10-2009
- **Meeting of DC chairs**: 05-11-2009
- **Final List for approval**: 02-05-2010
- **JAF**: 28-05-2010
- **Approval by the CSO**: Minimum time span
- **Start of the new Action**

**CD6**: 31-07-2009

**CD7**: 15-01-2010

26-02-2010
### Assessment Criteria – Full Proposals

<table>
<thead>
<tr>
<th>A</th>
<th>CRITICAL CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1</td>
<td>IS THIS RIGHT FOR COST NETWORKING OF EUROPEAN NATIONAL RESEARCH TEAMS? Is COST the right funding mechanism for achieving the proposal’s objectives? A SCORE OF 2 OR 1 AUTOMATICALLY TRIGGERS REJECTION</td>
</tr>
<tr>
<td>A.2</td>
<td>IS THE PROPOSAL PRESENTED IN A CLEAR, CONVINCING, AND APPROPRIATE WAY? A SCORE OF 2 OR 1 AUTOMATICALLY TRIGGERS REJECTION</td>
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<tr>
<th>B</th>
<th>SCIENCE</th>
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<tbody>
<tr>
<td>B.1</td>
<td>Does the proposed Action address real current problems/scientific issues?</td>
</tr>
<tr>
<td>B.2</td>
<td>Does the proposed Action show awareness of the state-of-the-art of the relevant scientific/technical fields?</td>
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<td>B.3</td>
<td>Is the proposed Action innovative?</td>
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<tr>
<th>C</th>
<th>IMPACT</th>
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<tbody>
<tr>
<td>C.1A</td>
<td>If the proposed Action aims primarily to meet European economic or societal needs, how likely is it to achieve useful impacts?</td>
</tr>
<tr>
<td>C.1B</td>
<td>If the proposed Action aims primarily to contribute to the development of the scientific or technological field, how likely is it to achieve useful impacts?</td>
</tr>
<tr>
<td>C.1C</td>
<td>If the proposed Action aims BOTH to meet European economic or societal needs, AND to contribute to the development of the scientific or technological field, how likely is it to achieve useful impacts?</td>
</tr>
<tr>
<td>C.2</td>
<td>Are there clear plans for stimulating the production of high quality outputs?</td>
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<tr>
<td>C.3</td>
<td>Is attention given to the potential application of results (including, where appropriate, fostering their commercial exploitation)?</td>
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<thead>
<tr>
<th>D</th>
<th>STRUCTURE AND ORGANISATION</th>
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<tbody>
<tr>
<td>D.1</td>
<td>Are the workplan and organisation appropriate?</td>
</tr>
<tr>
<td>D.2</td>
<td>Are the time schedule and the setting of milestones appropriate?</td>
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<tr>
<td>D.3</td>
<td>Are appropriate plans made for monitoring and evaluating the achievement of objectives?</td>
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<thead>
<tr>
<th>E</th>
<th>CONTRIBUTION TO WIDER COST GOALS</th>
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<tbody>
<tr>
<td>E.1</td>
<td>How well does the proposed Action aim to involve early stage researchers?</td>
</tr>
<tr>
<td>E.2</td>
<td>How well does the proposed Action aim at gender balance?</td>
</tr>
<tr>
<td>E.3</td>
<td>Will the proposed Action attract interest from a wide range of European countries?</td>
</tr>
</tbody>
</table>
Statistics – Relative Demand by Domain

- BMBS
- FA
- FPS
- CMST
- ESSEM
- MPNS
- ICT
- ISCH
- TUD
- TDP

Eligible Preliminary Proposals

COST is supported by the EU RTD Framework Programme

ESF provides the COST Office through an EC contract
Statistics – Distribution by Country

- UK: 18%
- IT: 16%
- DE: 8%
- NL: 7%
- ES: 7%
- Other: 8%
- CH: 4%
- FR: 7%
- CZ: 2%
- SE: 2%
- AT: 3%
- PT: 2%
- FI: 3%
- BE: 3%
- GR: 3%
- IL: 2%
- PL: 2%
- Other: 8%
- UK: 18%
- IT: 16%
- DE: 8%
- NL: 7%
- ES: 7%
- Other: 8%
- CH: 4%
- FR: 7%
- CZ: 2%
- SE: 2%
- AT: 3%
- PT: 2%
- FI: 3%
- BE: 3%
- GR: 3%
- IL: 2%
- PL: 2%
- Other: 8%
## Open Call – Calendar

<table>
<thead>
<tr>
<th>Event</th>
<th>2009-1</th>
<th>2009-2</th>
<th>2010-1</th>
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<tbody>
<tr>
<td>Collection Date</td>
<td>27/03/2009</td>
<td>25/09/2009</td>
<td>26/03/2010</td>
</tr>
<tr>
<td>Eligibility check &amp; Allocation to DCs</td>
<td>15/04/2009</td>
<td>8/10/2009</td>
<td>13/04/2010</td>
</tr>
<tr>
<td>Domain Committee electronic ranking</td>
<td>17/05/2009</td>
<td>6/11/2009</td>
<td>16/05/2010</td>
</tr>
<tr>
<td>Invitation for Full Proposals</td>
<td>15/05/2009</td>
<td>13/11/2009</td>
<td>14/05/2010</td>
</tr>
<tr>
<td>Deadline for Full Proposals</td>
<td>31/07/2009</td>
<td>15/01/2010</td>
<td>30/07/2010</td>
</tr>
<tr>
<td>Deadline EEP comments</td>
<td>28/08/2009</td>
<td>12/02/2010</td>
<td>27/08/2010</td>
</tr>
<tr>
<td>Final list of new Actions proposals</td>
<td>8/10/2009</td>
<td>25/03/2010</td>
<td>7/10/2010</td>
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*dates to be confirmed

For more information please visit: [www.cost.esf.org/opencall](http://www.cost.esf.org/opencall)
Thanks for your attention!

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WWW: www.cost.esf.org