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 (NEW!)
  - Republic of Serbia
- **COST Cooperating States**
  - Israel

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COST – Neighbouring Countries

- COST countries
- 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)
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→ 36 countries/251 participations in 103 Actions (2009)
**What is funded by COST?**

**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
**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
• Actions: 24 Actions (2009)
• Impact: ~1000 Organisations, ~3000 Researchers
• Evolution of no. of Actions:

![Graph showing the evolution of total and starting actions from 1996 to 2009.](image_url)
Positioning of COST-ICT within the ERA

Top-Down Approach

FET Proactive (FP7-ICT)

European Science Foundation (ESF)

FET Open (FP7-ICT)

FP7-ICT Programme

NoE

CA/SSA

STREP/Integrated Projects

Bottom-Up Approach

COST-ICT

JTIs

EUREKA

Basic Research

Applied Research

Innovation/Exploitation

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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
**Example 2: Information Systems**

**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
Example 3: e-Society

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

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

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

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

**Optical Components/Networks**
COST 299

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

**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\textsuperscript{NEW!}: Rich-Model Toolkit - An Infrastructure for Reliable Computer Systems
  - COST IC0903\textsuperscript{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** NEW!: Towards the Integration of Transectorial IT Design and Evaluation
Strategic Activities

- 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
“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

Two Stage Process
(max. 9 months)

Implementation
(4 years)

Dissemination
(x years)

Assessment

External experts & DC assess full proposals

Monitoring

Evaluation

DC assesses pre-proposals

CSO approves MoU

1st MC Meeting
min. 5 countries join MoU

time

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Selection Process – Preliminary Proposals

Collection Date

Eligibility Check
Allocation to Domains anonymised distribution

Electronic Rating
Automatic Ranking
Filtering of the Proposals ranked by the DCs

Invitation of top 90 for Full Proposals

Minimum time span

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

2 weeks
3 weeks
3 days


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## Assessment Criteria – Preliminary Proposals

<table>
<thead>
<tr>
<th></th>
<th>Criteria</th>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.1</td>
<td>RIGHT FOR COST?</td>
<td>Is COST the best mechanism for achieving the Action’s objectives? A SCORE OF 2 OR 1 AUTOMATICALLY TRIGGERS LOW SCORES IN THE FOLLOWING CRITERIA</td>
<td>yes/no</td>
</tr>
<tr>
<td>I.2</td>
<td>SCIENCE</td>
<td>Does the proposed Action address real current problems/scientific issues?</td>
<td>yes/no</td>
</tr>
<tr>
<td>I.3</td>
<td>INNOVATION</td>
<td>Is the proposed Action innovative?</td>
<td>high/low</td>
</tr>
<tr>
<td>I.4</td>
<td>IMPACT</td>
<td>Would the proposed network make a significant difference in terms of knowledge, capacity building, social impacts, etc?</td>
<td>yes/no</td>
</tr>
<tr>
<td>I.5</td>
<td>PRESENTATION</td>
<td>Is the proposed Action presented in a clear and understandable way?</td>
<td>yes/no</td>
</tr>
</tbody>
</table>
Selection Process – Full Proposals

- **Establishment of External Expert Panels**
  - Deadline: 10 weeks
  - Full Proposals: 7 weeks

- **Rating by EEP in panel meetings in Brussels**
  - Presentation of proposals: 2 weeks
  - Ranking by DCs: 2 weeks
  - Meeting of DC chairs: 2 weeks
  - Final List for approval: 4 weeks

- **Approval by the CSO**

- **Start of the new Action**

**Dates**

- "CD6" 31-07-2009
- 11-09-2009
- 02-10-2009
- 05-11-2009
- 01-12-2009

- "CD7" 15-01-2010
- 26-02-2010
- 19-03-2010
- 02-05-2010
- 28-05-2010

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# Assessment Criteria – Full Proposals

## A. CRITICAL CRITERIA

| A.1 | IS THIS RIGHT FOR COST NETWORKING OF EUROPEAN NATIONAL RESEARCH TEAMS? Is COST the right funding mechanism for achieving the proposal's objectives? | 4 3 2 1 |
| A.2 | IS THE PROPOSAL PRESENTED IN A CLEAR, CONVINCING, AND APPROPRIATE WAY? A SCORE OF 2 OR 1 AUTOMATICALLY TRIGGERS REJECTION | 4 3 2 1 |

## B. SCIENCE

| B.1 | Does the proposed Action address real current problems/scientific issues? | 4 3 2 1 |
| B.2 | Does the proposed Action show awareness of the state-of-the-art of the relevant scientific/technical fields? | 4 3 2 1 |
| B.3 | Is the proposed Action innovative? | 4 3 2 1 |

## C. IMPACT

| C.1A | If the proposed Action aims primarily to meet European economic or societal needs, how likely is it to achieve useful impacts? | 4 3 2 1 |
| C.1B | 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? | 4 3 2 1 |
| C.1C | 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? | 4 3 2 1 |
| C.2 | Are there clear plans for stimulating the production of high quality outputs? | 4 3 2 1 |
| C.3 | Is attention given to the potential application of results (including, where appropriate, fostering their commercial exploitation)? | 4 3 2 1 |

## D. STRUCTURE AND ORGANISATION

| D.1 | Are the workplan and organisation appropriate? | 4 3 2 1 |
| D.2 | Are the time schedule and the setting of milestones appropriate? | 4 3 2 1 |
| D.3 | Are appropriate plans made for monitoring and evaluating the achievement of objectives? | 4 3 2 1 |

## E. CONTRIBUTION TO WIDER COST GOALS

| E.1 | How well does the proposed Action aim to involve early stage researchers? | 4 3 2 1 |
| E.2 | How well does the proposed Action aim at gender balance? | 4 3 2 1 |
| E.3 | Will the proposed Action attract interest from a wide range of European countries? | 4 3 2 1 |
Statistics – Distribution by Country

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

<table>
<thead>
<tr>
<th>Activity</th>
<th>2009-1</th>
<th>2009-2</th>
<th>2010-1</th>
</tr>
</thead>
<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>
</tr>
</tbody>
</table>

*Dates to be confirmed

For more information please visit:

www.cost.esf.org/opencall
Thanks for your attention!

For more information (G.M. Maggio):
E-mail: gmmaggio@cost.esf.org
WWW: www.cost.esf.org
BACKUP SLIDES
About COST
COST – Funding

• COST is funded through a contract between the EC (European Commission) and the ESF (European Science Foundation), as its implementing agent
• COST has no legal status; however its governance is autonomous
• Operated by the COST Office (Brussels)
• **FP6: SSA – Strengthening the European Research Area**
• **FP7: Cooperation**
  – 210 M€ - 250 M€ for 2007-2013
  → 50%-80% increase on FP6/year
  → Mid-term evaluation (2010)
What is a COST Action?

Council
COST
Secretariat

COMMITTEE OF SENIOR OFFICIALS (CSO)

COST National
Coordinators

9 COST
Domain
Committees

WORKING GROUPS
…… ~ 30,000 researchers

Scientific Domain

MC = Management Committee
WG = Working group

F&A

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COST’s Role in the ERA
COST’s Vision in the ERA 2020 (1/2)

• COST continues to be a **flexible, effective and efficient tool to network** and coordinate nationally funded research activities at project level, bringing motivated scientists together under light strategic guidance and letting them work out their ideas, thus contributing to **overcome the fragmentation of research** in the ERA.

• COST responds to future needs; it acts as an **exploratorium for new ideas** and addresses emerging and unforeseen developments; COST Actions are objective-driven and often **multidisciplinary**.

• COST provides a **framework for pre-normative cooperation** leading to international norms and standards.
COST’s Vision in the ERA 2020 (2/2)

- COST acts as a catalyst for long-term networking and in particular supports early career scientists and newly established research groups, strengthening their future participation in European and other international research initiatives.
- COST is an inclusive and flexible international framework for the benefit of the European scientific community.
- COST has a worldwide geographical coverage which will be further extended in a pragmatic way by continuing to involve non-member countries in its Actions and through a more structured series of collaborative arrangements.
COST Governance
COST governance and partnership

- Ministerial Conference
- Committee of Senior Officials
  - JAF
- Domain Committees
- Action Management Committees
- Working Groups

COST Secretariat
- General Secretariat of the Council of the EU

COST Office

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contract with the European Community
The role of the Domain Committees (DCs)

• **Assessment** of proposals in the Open Call
  – Reviewing and rating of Preliminary Proposals
  – Hearings and Ranking of Full Proposals
  – Participation in establishing final selection

• **Monitoring** of Actions in progress
  – “Progress Report” submitted every year by Actions
  – Presentation by the Action Chair at Annual Review Meeting (ARM) and advising the COST Office on budget

• **Evaluation** of completed Actions
  – Peer review by the Evaluation Panel
  – Approval of the “Evaluation Report”
The role of the Management Committees (MCs)

- Supervises and coordinates the implementation of the Action
- Each party has one vote
- Providing decisions as “legal basis” for expenditures
- Composed of:
  - Maximum 2 representatives of each party
    - ensuring the scientific coordination at national level
  - One representative of any non-COST institution admitted to participate
  - Representatives of the COST Office
  - Invited experts
The tasks of the Management Committees (MCs)

• Managing the Action’s budget

• Submitting the annual “work and budget plan”
  – Submitted by the Chair on behalf of MC
  – Preliminary Financial Report to be submitted
  – Final Financial Report to be submitted at a later stage
  – Audit Committee to certify the expenditures by the Grant Holder to be line with the MC decisions

• Progress Report within a given deadline

• Contributions to the Domains Annual Review Meeting to be organised
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ICT Domain
ICT Domain – Actions Portfolio

**e-Society**

- COST 298, 2101, 2102, 2103, IC0601, IC0604, IC0804, IC0806, **IC0904**

**Telecommunications**

- COST 297, 299, 2100, IC0603, IC0703, IC0802, IC0803, **IC0902**

**Information Systems**

- COST IC0602, IC0701, IC0702, IC0801 IC0805, IC0901 IC0903

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• Participation to COST-ICT Actions by country (2008):
• Participation of Non-COST countries to ICT Actions (2008):
Breakdown of ICT/ICT-related Actions

• Statistics (Oct. 2008):
  – ICT running Actions = 24
  – ICT-related Actions = 39
  – Total no. of Actions = 216

71%

ICT

ICT-related

Others

18%

11%
COST Open Call
COST Open Call

COST invites researchers throughout Europe to submit proposals for research networks and use this unique opportunity to exchange knowledge and to embark on new European perspectives

www.cost.esf.org/opencall

This continuous call is thematically open; Proposals from all Scientific Domains are welcome; The next collection date for preliminary proposals is 25 September 2009
Trans-Domain Proposals

- Trans-Domain Proposals (TDP) offer scientists fertile ground for future networks across many scientific disciplines, by allowing broad, inter-disciplinary proposals to strike across the scientific Domains.

- A Standing Assessment Body (SAB) reviews submitted TDPs and, once approved, assigns the Trans-Domain COST Action to one of the nine scientific Domains.

- The SAB is composed of the Chairs of the nine COST Domain Committees, as well as two additional scientific experts per Domain, and is led by a neutral coordinator, Georges Wanet, who is directly appointed by the CSO President; The COST Office's own Science Officers may also serve as experts with the SAB.
Open Call Statistics
Preliminary proposal distribution by Domain
(378 eligible proposals)

- ISCH: 24%
- TDP: 21%
- BMBS: 13%
- FA: 9%
- MPNS: 7%
- ICT: 6%
- ESSEM: 6%
- FPS: 5%
- CMST: 4%
- TUD: 4%

- Life Sciences
- Natural Sciences
- Science in Society

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Full Proposal distribution by Domain

- Life Sciences
- Natural Sciences
- Science in Society

<table>
<thead>
<tr>
<th>Domain</th>
<th>Life Sciences</th>
<th>Natural Sciences</th>
<th>Science in Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCH</td>
<td>14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDP</td>
<td>14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMBS</td>
<td>14%</td>
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<tr>
<td>FA</td>
<td>13%</td>
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<tr>
<td>MPNS</td>
<td>10%</td>
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</tr>
<tr>
<td>ICT</td>
<td>9%</td>
<td></td>
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</tr>
<tr>
<td>ESSEM</td>
<td>8%</td>
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<td>FPS</td>
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<tr>
<td>CMST</td>
<td>6%</td>
<td></td>
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</tr>
<tr>
<td>TUD</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Preliminary proposal distribution by Domain
Comparison between the 5 collection dates

- 2006/1: 25%
- 2007/1: 17%
- 2007/2: 15%
- 2008/1: 10%
- 2008/2: 5%

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Full Proposal distribution by Domain
Comparison between the 5 collection dates

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ICT@COST (August 2009) – Slide 62
Preliminary proposal distribution by Country

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