

COST – a flexible research networking tool to foster innovation

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The COST mission

Strengthen Europe in scientific and technological research for peaceful purposes through the support of cooperation and interaction between European researchers

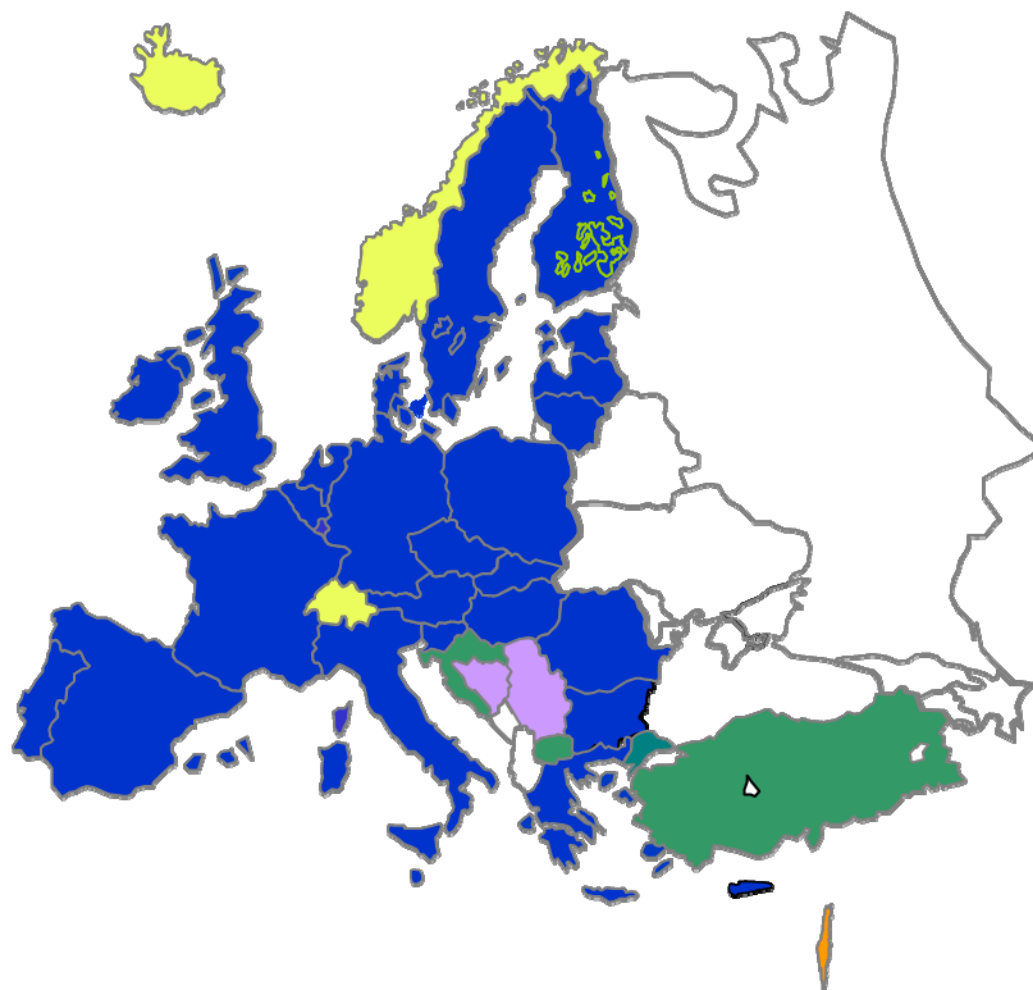
The COST programme, based on an inter-governmental agreement, is a long-running, economical and highly successful way to spread awareness and build networks between Europe's researchers.

It reflects the human dimension of science, helping researchers to share not only the results of their work but also their aims and methods.

COST main characteristics

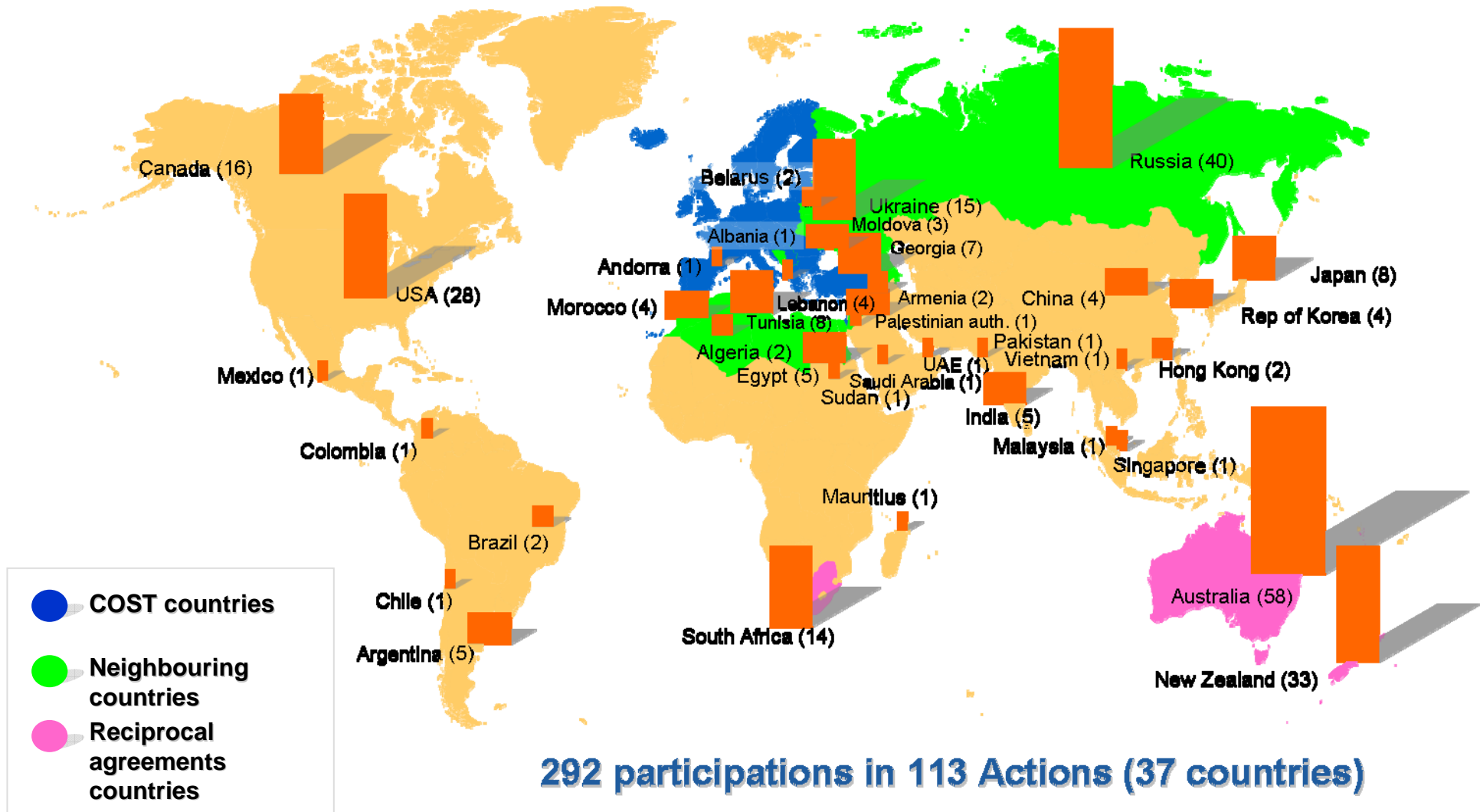
- **“Bottom-up” - no fixed programmes / priorities**
- **À la carte participation - Coordination of national efforts through networking**
- **Networks based on funded (research) projects – national responsibility**
- **Open to global cooperation in the mutual interest**
- **Building bridges between research communities**
- **Enabling agent – focus on Early Stage Researchers**
- **Pan-European dimension**
- **Scientific scope incl. pre-normative and public utility research & technologies**
- **Focus on multidisciplinary cooperation fostering innovation**
- **Equal access / Open Call**
- **Transparent procedures**

36 COST Countries



- ◆ **The 27 EU Member States**
- ◆ **EFTA Member States**
 - ▶ Iceland
 - ▶ Norway
 - ▶ Switzerland
- ◆ **Acceding & Candidate Countries**
 - ▶ Croatia
 - ▶ FYR of Macedonia
 - ▶ Turkey
- ◆ **Potential Candidate Countries**
 - ▶ Bosnia and Herzegovina
 - ▶ Republic of Serbia
- ◆ **COST Co-operating States**
 - ▶ Israel

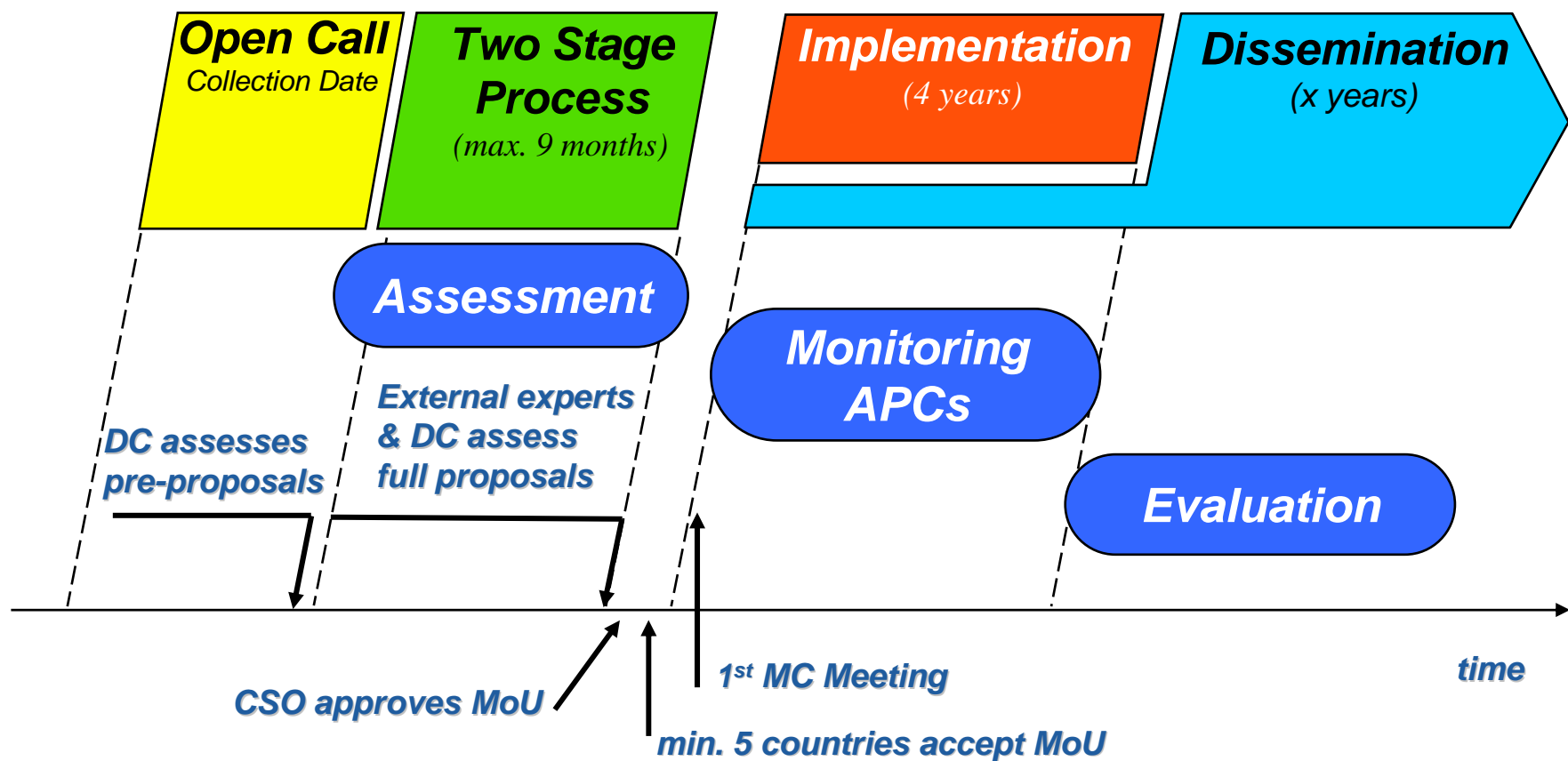
COST Actions: global participation (status: November 2009)



What is funded by COST?

- **COST Actions:** A network of (nationally) funded projects (min. 5 participating COST countries) receive a financial contribution based on a **joint work programme** (4 years) for:
 - Science management / working group meetings
 - Scientific workshops and seminars
 - Short Term Scientific Missions (STSMs)
 - Training Schools and Research Conferences
 - Dissemination and Publications
- *Average funding +/- 100 000 € per year per Action*
- **Exploratory/Strategic Workshops:** to explore future scientific or societal needs, support policy developments or stimulate innovative activities

COST Action life cycle



What is funded by COST?

In the year 2009 COST supported *to be completed*:

- **242 COST Actions**
- **900 scientific workshops** and meetings (4.3 per working day over the year) with more than **29 500** participants
- **1200 STSMs** with an average duration of 3 weeks (5.6 STSMs starting every working day over the year)
- **90 Training Schools** with more than **2000** funded participants
- **100 high ranking publications**

Examples of COST Actions

Cyberbullying: Coping with Negative and Enhancing Positive uses of New Technologies, in Relationships in Educational Settings – COST Action IS0801

- Refers to bullying and harassment of others by means of new electronic technologies
- Share expertise on cyberbullying in educational settings, develop measurement techniques across researchers
- Also include expertise from outside the research community (legal experts, mobile phone companies, internet providers, etc.)
- Increase awareness of the issue and move towards a common set of guidelines applicable in Europe and other countries



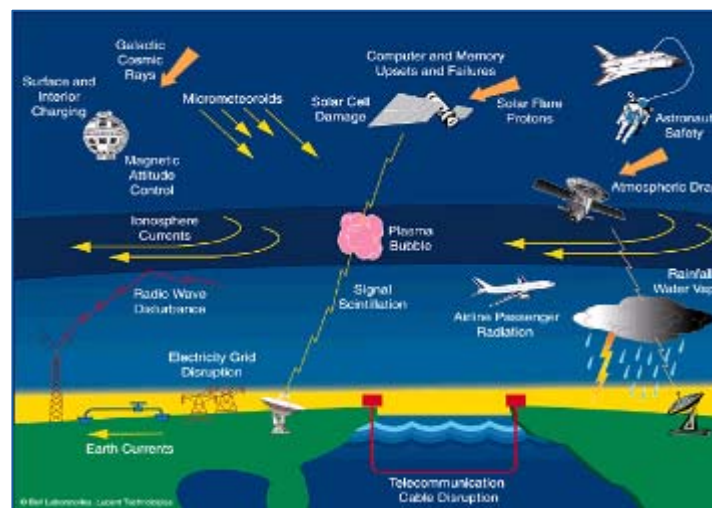
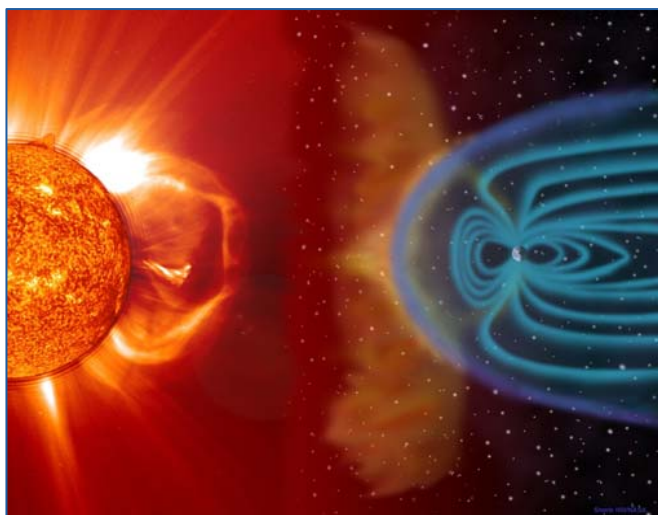
<http://www.gold.ac.uk/is0801/>

Examples of COST Actions

Developing space weather products and services in Europe – COST Action ES0803

In Europe, a better coordination between the national research programmes, and warning system developers and operators is needed to develop European reliable Space Weather observational and forecasting products and services.

The Action will validate and demonstrate prototypes of near-real time Space Weather information services for operational use



Examples of COST Actions

New Strategies to Combat Bacterial Resistance: Antibiotic Transport and Efflux – BM0701

A coordinated effort is for the control of drug efflux mechanisms that mediate resistance against all antibiotic families in bacterial pathogens.



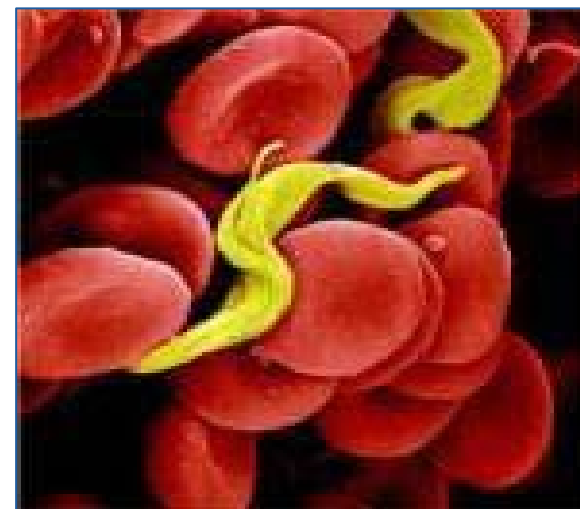
Examples of COST Actions

New drugs for neglected diseases - CM0801

The Action aims at developing new trypanocidal drug compounds to fight African Sleeping Sickness, Chaga's disease and Leishmaniasis.

Validated drug targets will serve as tools in drug discovery processes using:

- high throughput screening of natural products
- in silico screening of virtual libraries
- chemical synthesis of identified leads
- structure based inhibitor design



Examples of COST Actions

European procedures for flood frequency estimation (FloodFreq) – COST Action ES0901

Pan-European comparison and evaluation of methods for flood frequency estimation under the various climatologic and geographic conditions found in Europe, and different levels of data availability.

Goals

- Compile dataset and inventories of existing data and methods
- Use of statistical methods for flood frequency estimation
- Flood frequency analysis using rainfall-runoff methods
- Flood frequency estimation methods and environmental change



Examples of COST Actions

Euroberry Research: from Genomics to Sustainable Production, Quality & Health – COST Action 863

Berry production is an economically significant part of agriculture in most European countries. However, until recently the scientific knowledge necessary to support this sector lagged behind the competition from non-European markets. COST helped berry growers to grow.



Thanks to this Action, a topic for this specific thematic area has been included in the EU 7th Framework Programme.

Examples of COST Actions

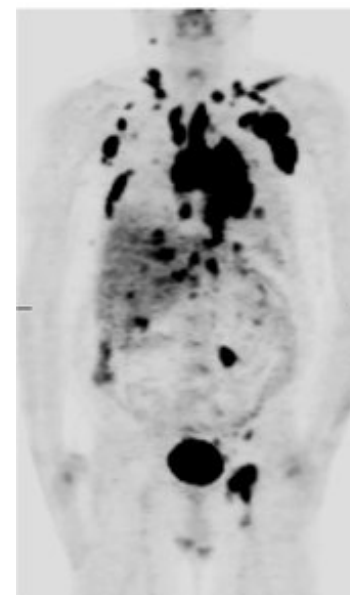
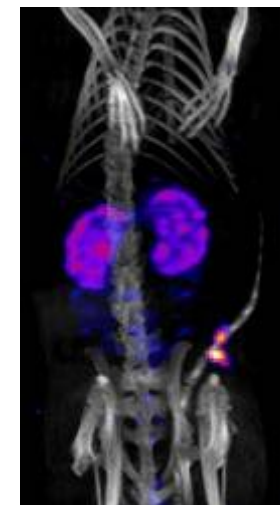
Targeted Radionuclide Therapy - TRNT: COST Action BM0607

The main objective of the Action is to improve the potential of cancer therapy through the development and application of innovative vectors labeled with therapeutic radionuclides for 'targeted radionuclide therapy' of disseminated cancer

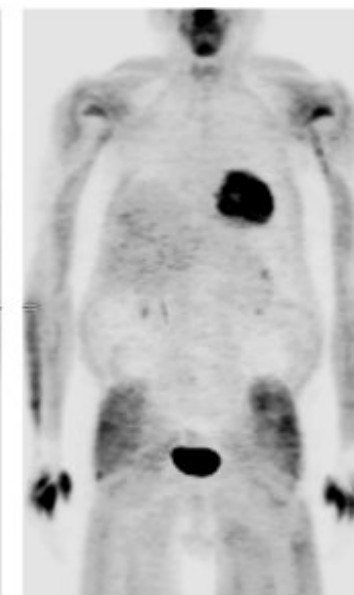
Advantage of TRNT over chemotherapy?
We can easily - quickly see what we are doing
- Crossfire effect



Cancer Cell



Pre



Post

Radioimmunotherapy of Non-Hodgkin's Lymphoma 6th leading cause of cancer death in the United States

Examples of COST Actions

Structural Glass- Novel Design Methods and Next Generation Products areas - TUO905

Better predictions of complex loads on glass structures, material characterisation, incorporation of risk analysis and post-fracture performance, and production of novel glass assemblies

Goals

- European standard
- Strengthen Europe's leading position in the glass products market
- Improve safety of glass products & buildings
- Reduction in embodied energy



Examples of COST Actions

The Physics of Lightning Flash and its Effects - P18

Understand the workings behind lightning to improve public safety. Over 4 years, they measured the characteristics of lightning flashes in Europe and modeled lightning reaction to objects.

Published an up-to-date lightning safety brochure available for use by the general public across Europe.

<http://www.costp18-lightning.org/>



Examples of COST Actions

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Examples of COST Actions

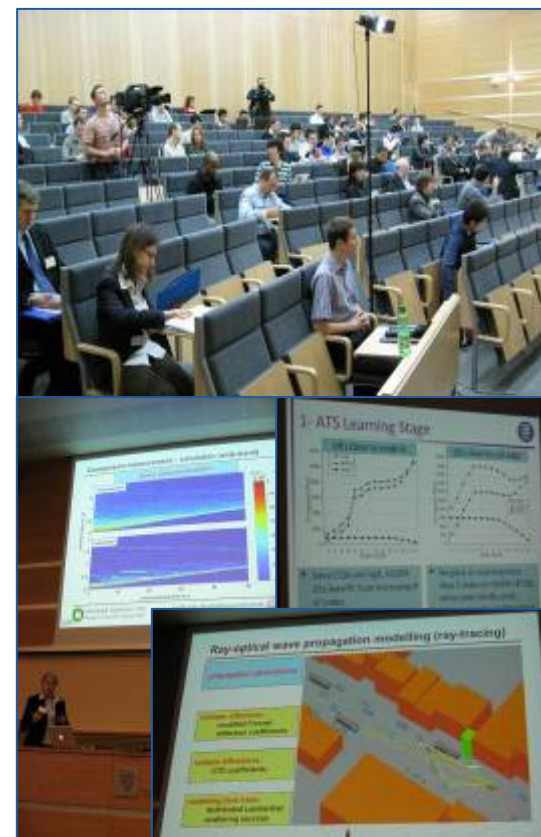
Pervasive Mobile & Ambient Wireless Communications - 2100

Goal

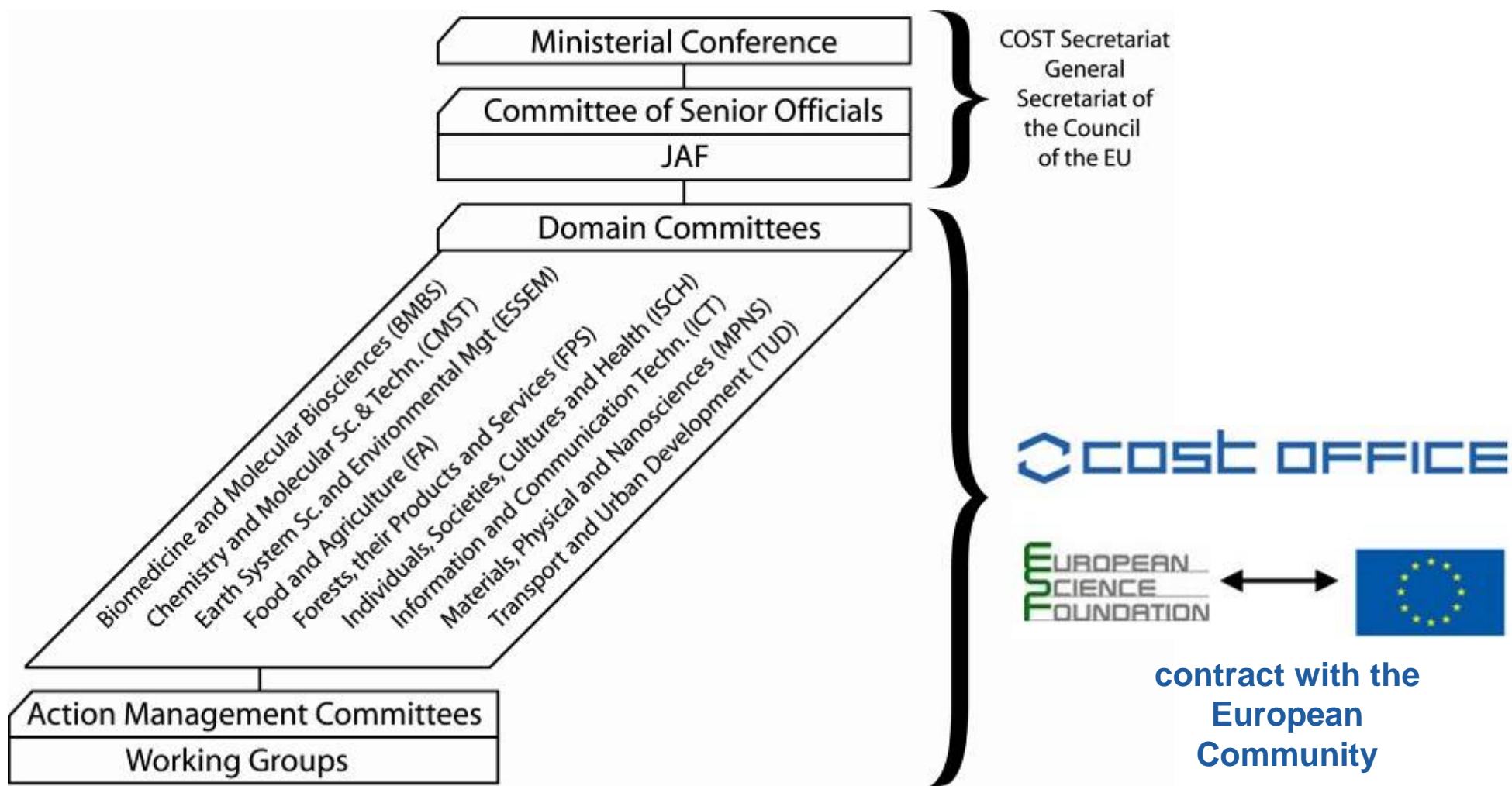
Develop paradigms of pervasive and ambient wireless communications for next-generation mobile communications

Scientific Focus

- Transmission Techniques and Signal Processing
- Radio Channel Modeling
- Radio Network Aspects: Heterogeneous networks; network planning and network optimisation

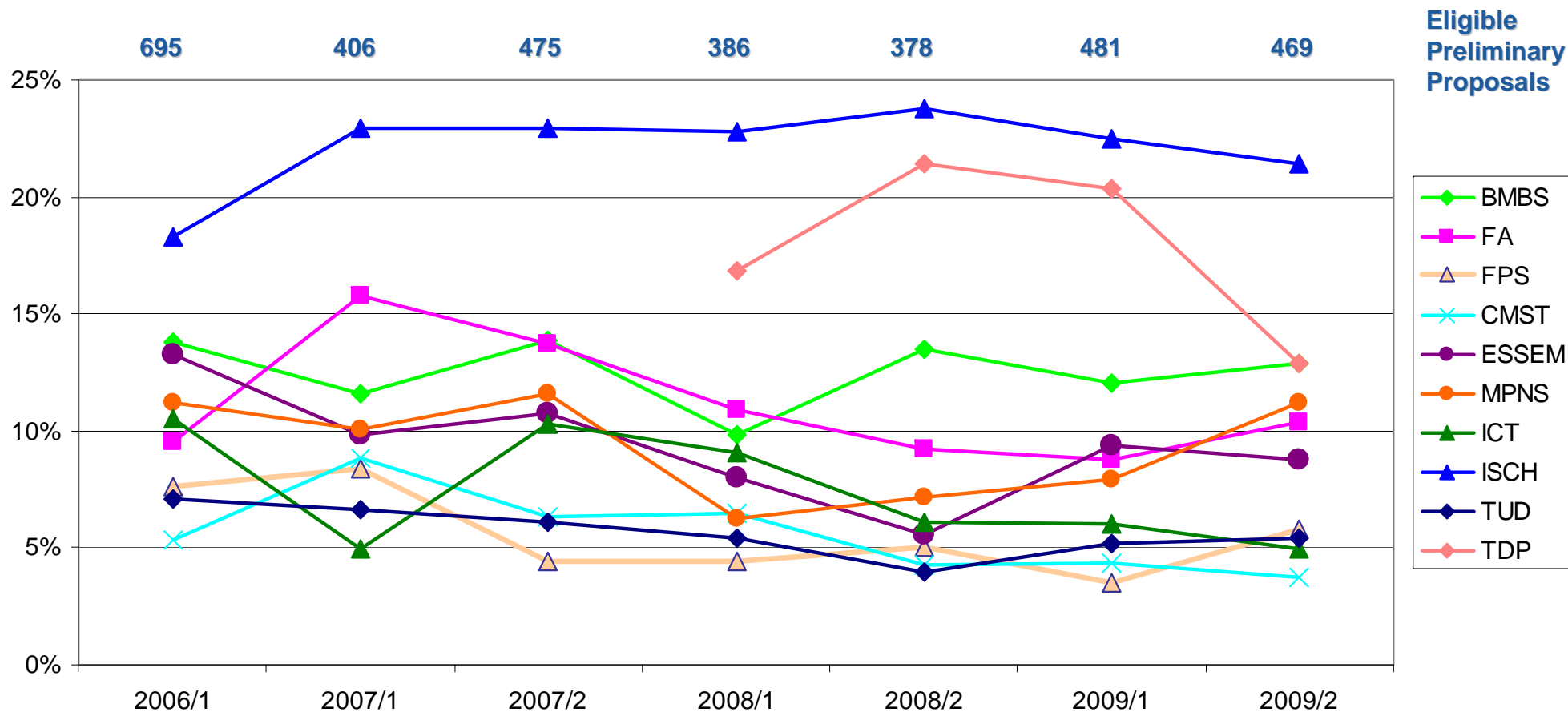


COST governance and partnership



COST Open Call Collection Dates

Relative demand by Domain and Collection Date



28/09/2009

COST Vision 2020 [COST 248/09]

(1/2)

- COST continues to be a **flexible, fast, 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 ideas and addresses emerging and unforeseen developments. COST Actions are **objective-driven** and often **multi-disciplinary**. Their objectives are clearly defined and information arising from COST Actions provides well-structured evidence-based input for policy making and they contribute to Europe's competitiveness and socio-economic development.

COST Vision 2020 [COST 248/09]

(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 provides a framework for pre-normative cooperation leading to international **norms and standards**.**
- **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.**



www.cost.esf.org