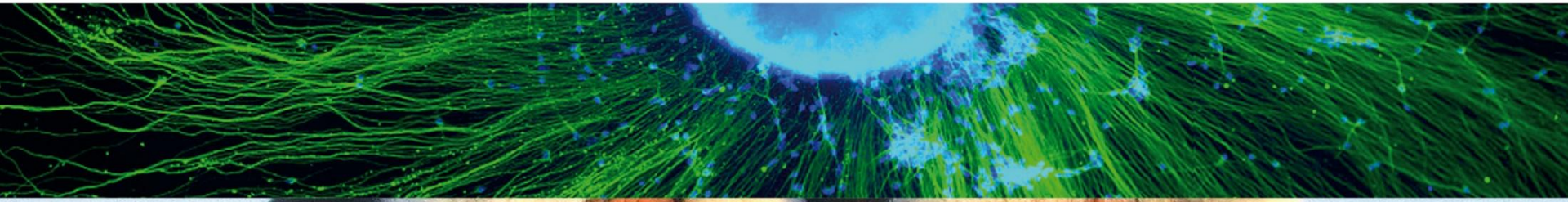
EUROPEAN SCIENCE FOUNDATION

European Science Foundation



NEWS FROM ESSC

AND ESF SPACE ACTIVITIES

Jean-Pierre SWINGS
Chairman ESSC-ESF

Since last SSB…

- Liège plenary meeting
  - CSL/AMOS visit; meet 2 new ESA Directors (Giménez, Ongaro)
  - Guests: COSPAR (Fellous, Ubertini), SSB (Moloney)
  - Discussion on Ubertini's presentation
  - Discussion on need for adjusting US & European mission timeline (US decadal, European planning) → how to harmonise agencies planning?
  - Discussion on GMES & ExoMars
- Orléans plenary meeting
  - Main discussion point: GMES → letters to EC, EU President, EP, ESA
  - Strong concerns expressed re: ExoMars in quickly evolving situation
  - ISECG/GER vs. Lucca process

INPUT

  - GER: not politically induced; technical input from various space agencies
  - Lucca: more political and strategic; conducted at DG level & Heads of States

2011 Review of ESF Expert Boards

- Took place between April and August 2011
- All 6 ESF Expert Boards assessed by one Panel
- Chair: Martin Huber
- Space related members: W. Baumjohann and M. Garrett
- Some delay due to the ESF-EUROHORCS merger (context taken into account in the review process)
- General outcome with regards to ESSC was very positive (report: www.esf.org)
- Recommendations – ESSC should:
  - continue its advisory role to ESA, national space agencies, the European Commission and Parliament on space related matters
  - continue its efforts in establishing a 'European Space Board'
  - look for ways of making the internal structure of the Committee more efficient (improving attendance at meetings, involving members more, increasing impact of output)
  - develop future collaborations with counterparts in Japan, Brazil, India and China

Study for ESA D-TEC on Planetary Protection (MSR)

"Recommend the level of certainty for the exclusion of an unintended release of a potential Martian life form into the Earth's biosphere for a Mars Sample Return mission"

International Study Group

Microbiology

- Petra Rettberg, DLR, DE
- John Barros, University of Washington, USA
- Erko Stackebrandt, DSMZ (Retired), DE

Biosafety

- Hervé Raoul, INSERM - Jean Mérieux P4 laboratory, FR
- Alan Bennett, Health Protection Agency, UK

Risks

- Walter Ammann, Global Risk Forum GRF Davos, CH
- Jim Bridges, University of Surrey, UK
- Joseph Fragola, Valador, Inc, USA *(Technical risk assessment)*

Public Health

- Mika Salminen, ECDC, EU/SE

International Legislation

- Armel Kerrest, University of Western Brittany, FR

COSPAR PPP Liaison - John Rummel


EUROPEAN
SCIENCE
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SETTING SCIENCE AGENDAS FOR EUROPE
TECHBREAK
ESF-ESA FORWARD LOOK

Overwhelming drivers

1. Build a spacecraft that lasts 50 years
2. Put a 30m+ telescope into space
3. Human survival for a Mars mission
4. Autonomous geophysical survey of planets
5. Spacecraft mass reduction
6. Very high I_{SP} propulsion
   (may be combined with 3)

ELIPS 4

- ESA D-HSO asked ESF-ESSC to conduct a prospective evaluation of ELIPS for the 4th time since 2000
- Different format than previous instances (previously: broad consultations)
- One single international evaluation committee with two co-Chairs (life and physical sciences)
- Faster-track exercise: report due in April

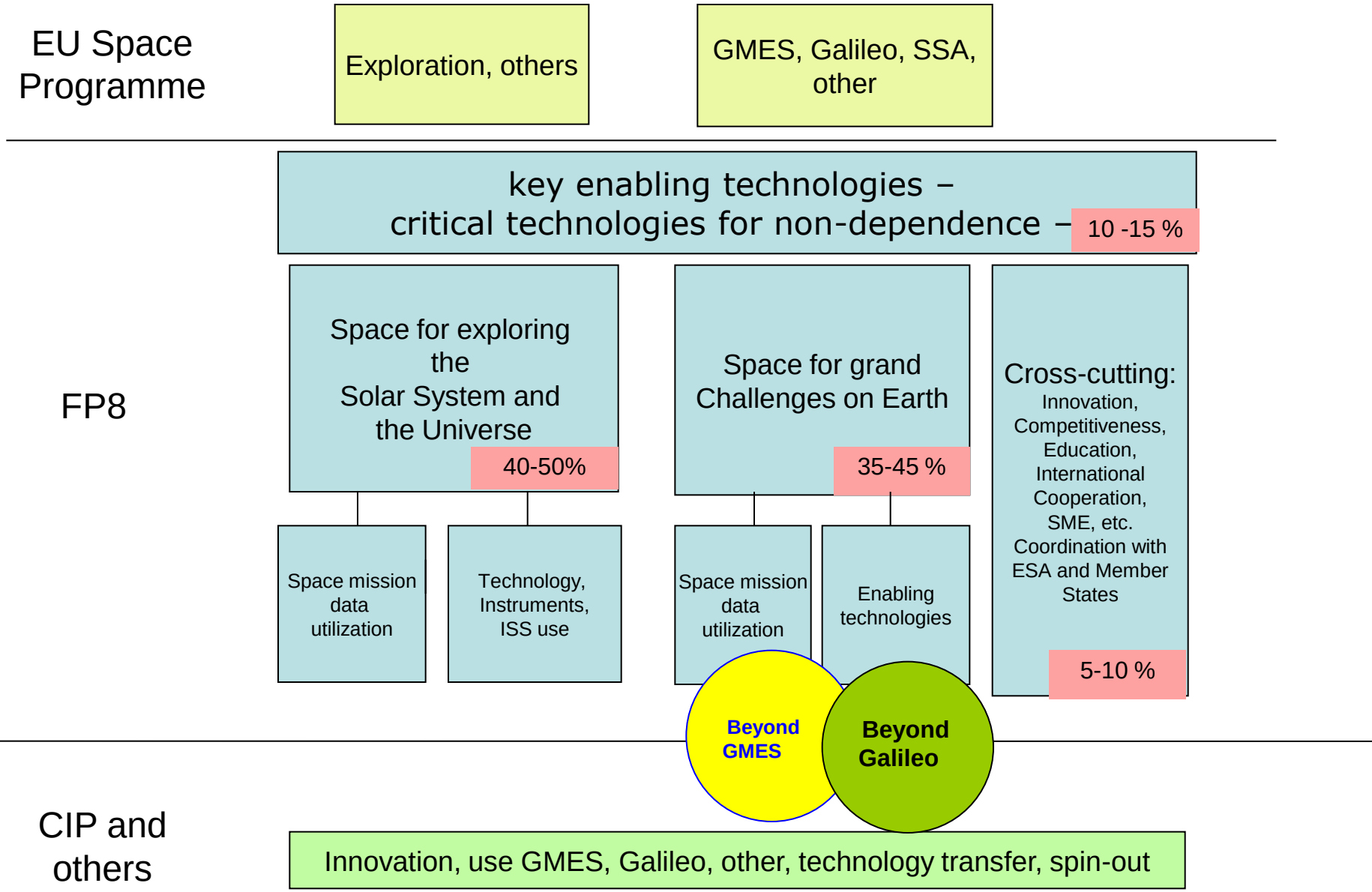
Privileged science partner for the EC

- ESSC members in EC's Space Advisory Group
- ESSC Chair in FP7 interim review panel
- EC systematic presence in ESSC plenary meetings
- Observer role and keynote presentations on EC-ESA international ministerial conferences on space exploration (Prague 10/2009, Brussels 10/2010)
- ESSC keynote/framework presentations on Space in FP8 at an EC Hearing (Brussels, December 2010)
- ESSC keynote presentation, round table participation and concluding speech at an EC conference on FP7-SPACE (Budapest, May 2011)
- ESSC keynote presentation at an FP7-CSF conference (Lisbon, May 2011)
- ESSC Rapporteur presentation at an EC conference on space technologies (Brussels, July 2011)

HORIZON 2020 PREPARATION

- ESSC active in preparation of SAG document "Space in H2020“

ESSC is a key partner in the preparation of EC’s *Horizon 2020* programme. Inputs and recommendations provided in written form as well as via invited keynote presentations and roundtable discussions at major European *Horizon 2020* preparation events reinforced ESSC’s position as a recognised independent advisory body and valuable partner for European institutions on all space sciences matters. The important contribution of the Committee to the development of *Horizon 2020* has already been publicly acknowledged by EC’s officials at several occasions, increasing the Committee’s visibility and making it the EC’s privileged partner when evaluating European space sciences.


EU Space Programme
Exploration, others
GMES, Galileo, SSA, other
key enabling technologies –
critical technologies for non-dependence –
10 -15 %
FP8
Space for exploring the Solar System and the Universe
40-50%
Space for grand Challenges on Earth
35-45 %
Cross-cutting:
Innovation, Competitiveness, Education, International Cooperation, SME, etc. Coordination with ESA and Member States
5-10 %
Space mission data utilization
Technology, Instruments, ISS use
Space mission data utilization
Enabling technologies
Beyond GMES
Beyond Galileo
CIP and others
Innovation, use GMES, Galileo, other, technology transfer, spin-out

H2020 PREPARATION (cont'd)

- Now involved in new document along 4 objectives:
  - European competitiveness in space (incl. SMEs)
  - Advances in space technologies
  - Exploitation of space data
  - Participation in global space endeavours
- Document expected in June 2012

In the future…

- Membership evolution (new members at next plenary meeting, Oslo, May 2012)
- Management of new EC contracts (Coordination & Suppoet Actions) in the timeframe 2013-2015 – TBC
- Developments of contact and advisory role w.r.t. the European Parliament (STOA)
- New Strategic Plan 2013-2017
- Towards a European Space Board !

www.esf.org/space

Backup Slides

SAG recommendations (1)

1. Space has a very strong technology development dimension, but it should be highlighted that space goes far beyond technology: it is an industry sector in its own right with very major contributions to both societal challenges and science, whilst being heavily dependent on research to continuously foster its technological development. As such, space should find a position within the overall Horizon 2020 scheme that is commensurate with its significant and growing importance.
2. Horizon 2020 must aim to support the competitiveness of European industry and promote innovation, in particular by supporting (i) the internal market in Europe for space; (ii) measures that strengthen the industrial chain; (iii) the adoption of instruments suited to these types of actions and the promotion of innovation and SME participation; (iv) technology development, supporting industry- or consortia-defined roadmaps.
3. H2020 must take into account the potential for cooperation and the stronger competition in the new world context.
4. H2020 shall complement the overall European effort with clear objectives and mechanisms and provide additional resources, in coordination with the existing programmes.

SAG recommendations (2)

5. H2020 shall support research for (i) bridging the current gap in the exploitation of data from both scientific and operational space missions; (ii) preparing future missions, including Earth-based preparatory research programmes as stepping stone for space exploration; (iii) the scientific exploitation of the ISS.
6. H2020 shall support the education and training of the next generation of space scientists and engineers.
7. H2020 shall support space technology by (i) devoting greater resources to the development of basic technologies for space with emphasis on critical technologies for strategic non-dependence; (ii) supporting upstream technology development (low TRL level), breakthrough technologies and open innovation on enabling technologies ←→ Accept “trust” and “risk”.
8. H2020's support to space must take into account the long lead times for preparing and executing space missions (e.g., international exploration missions) and should adopt a long-term programmatic approach, which should also foster collaboration between academia/research institutes and industry.