

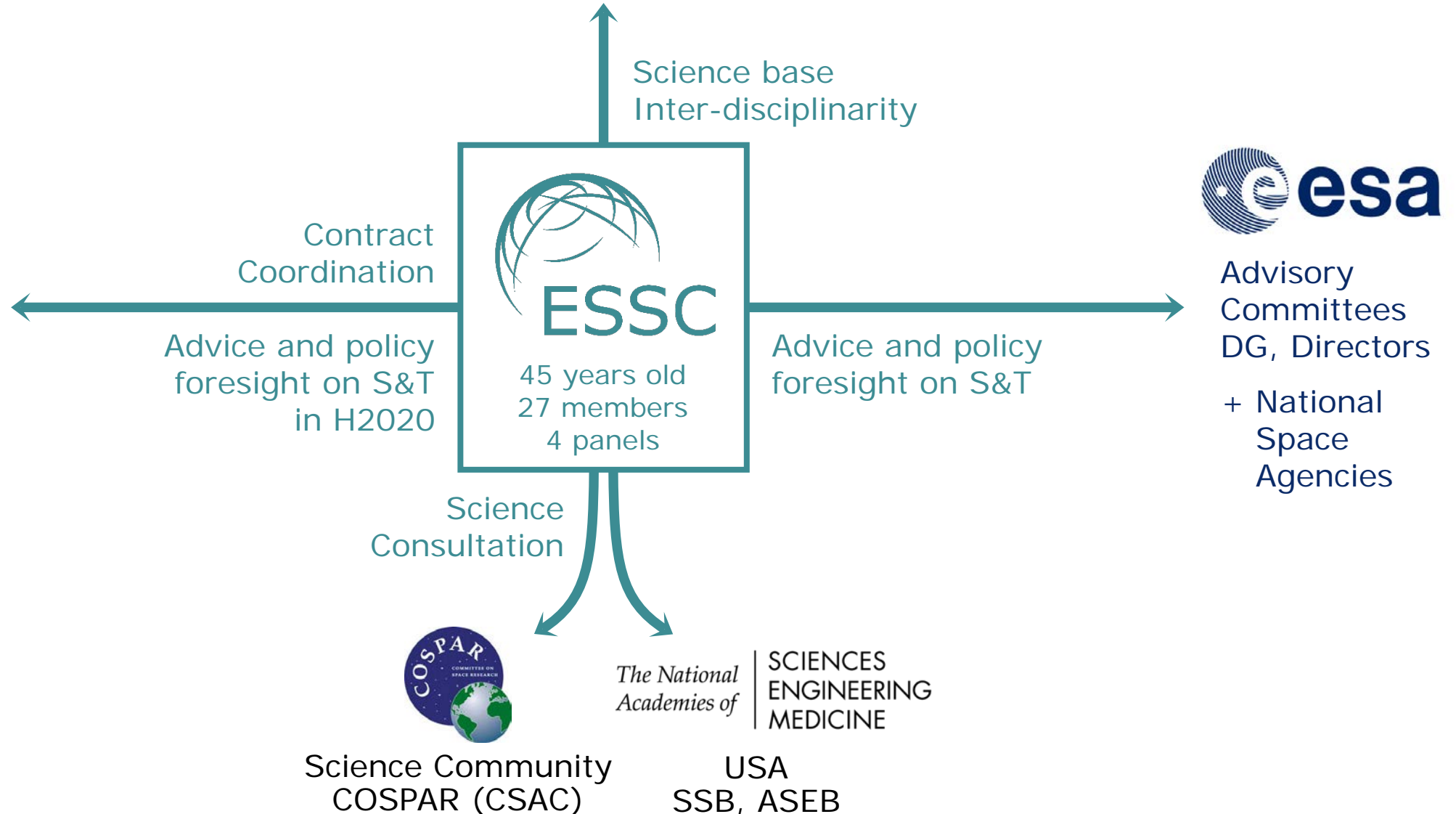
European Space Sciences Committee

Life and Physical Sciences panel Update

Activities: February 2019 – March 2020



SAG in H2020
DG-ENT,
Copernicus
Academy



Astronomy & Fundamental Physics

Panel Chair:

Stéphane Udry

- Conny Aerts
- Nabila Aghanim
- Michael Perryman
- Manolis Plionis
- Juri Poutanen
- Alexander Tielens

Solar System Exploration

Panel Chair:

Hermann Opgenoorth

- Mahesh Anand
- Antonella Barucci
- Luisa M. Lara Lopez
- Gerhard Paar
- François Raulin
- Robert Wimmer-Schweingruber

Life & Physical Sciences in Space

Panel Chair:

Dominique Langevin

- Sarah Baatout
- Alexander Choukèr
- Marc Heppener
- Anne Pavy Le Traon
- Peter Preu
- Hubertus Thomas

Earth Sciences

Panel Chair:

Maarten Krol

- Rosemary Morrow
- Sindy Sterckx
- Pepijn Veefkind

+ inviting new members
to fill-in the EO panel

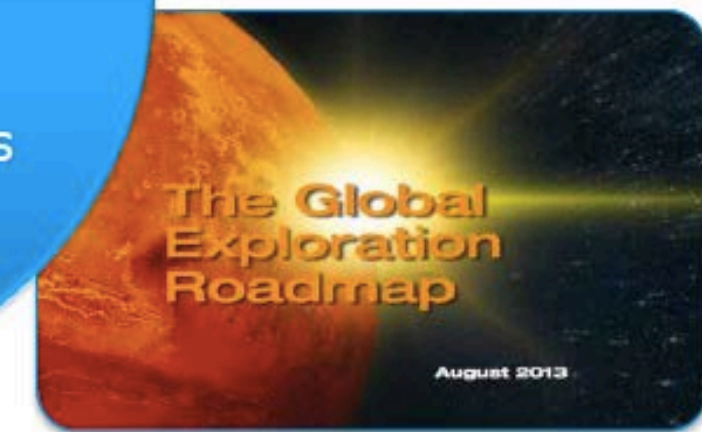
Executive Scientific Secretary: Emmanouil Detsis

Ex-officio:

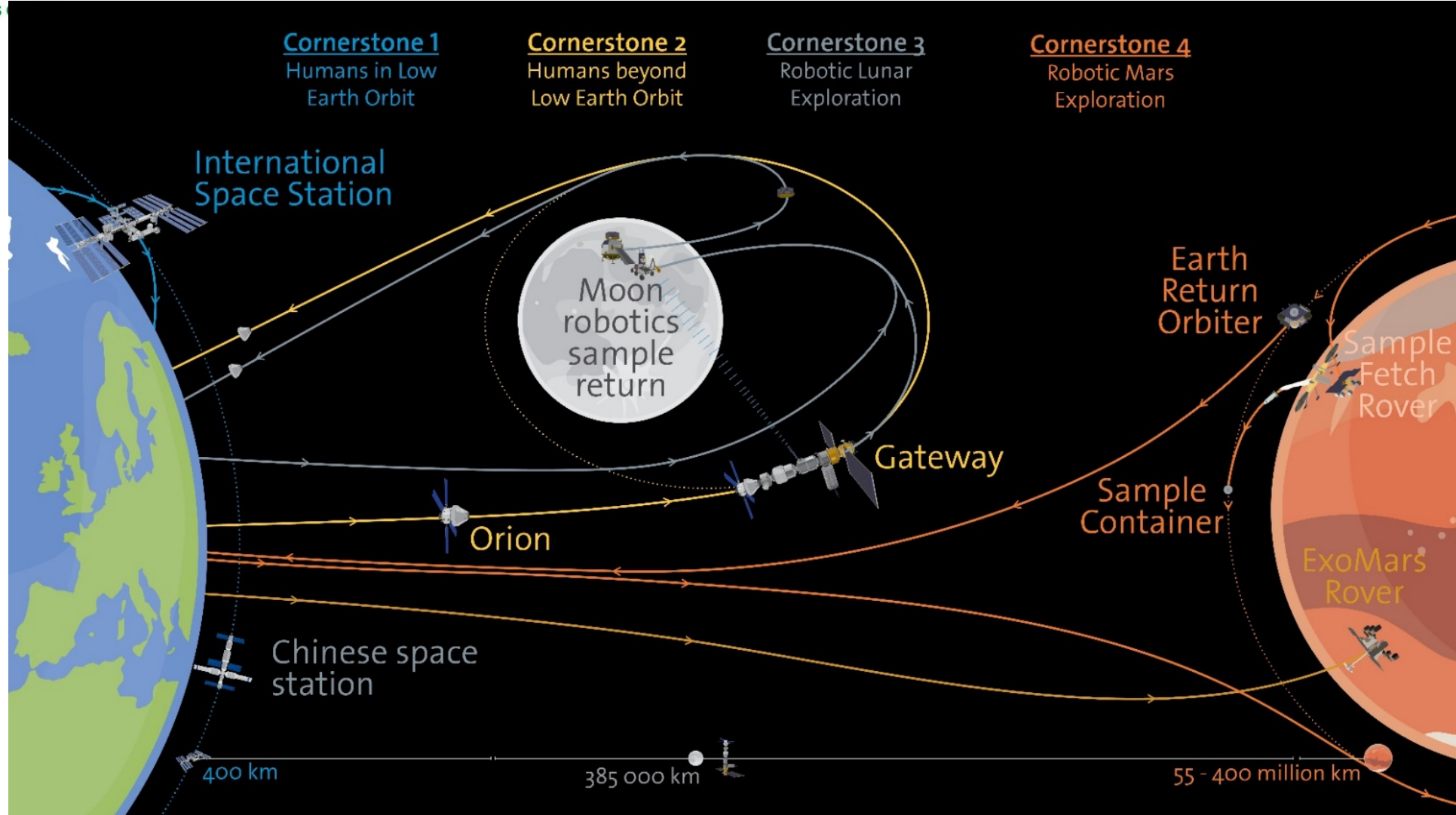
- ESF CEO Nicolas Walter
- COSPAR Exec. Dir: Jean Claude Worms

Human and Robotic Exploration Programme: European Exploration Envelope (E3P) Program Recent developments

Europe's Space Exploration Vision



From the Earth to Mars (via the Moon)



Plenary Meetings in 2019

8-10 May 2019
Royal Academy Amsterdam



1-3 October 2019
Royal Academy Belgium



- Local space-related representatives
- ESA and EC Directors and representatives
- Spring meetings: international space agencies



Inputs to ESA programmes and Advisory Structure (SSAC, HESAC, ACEO)

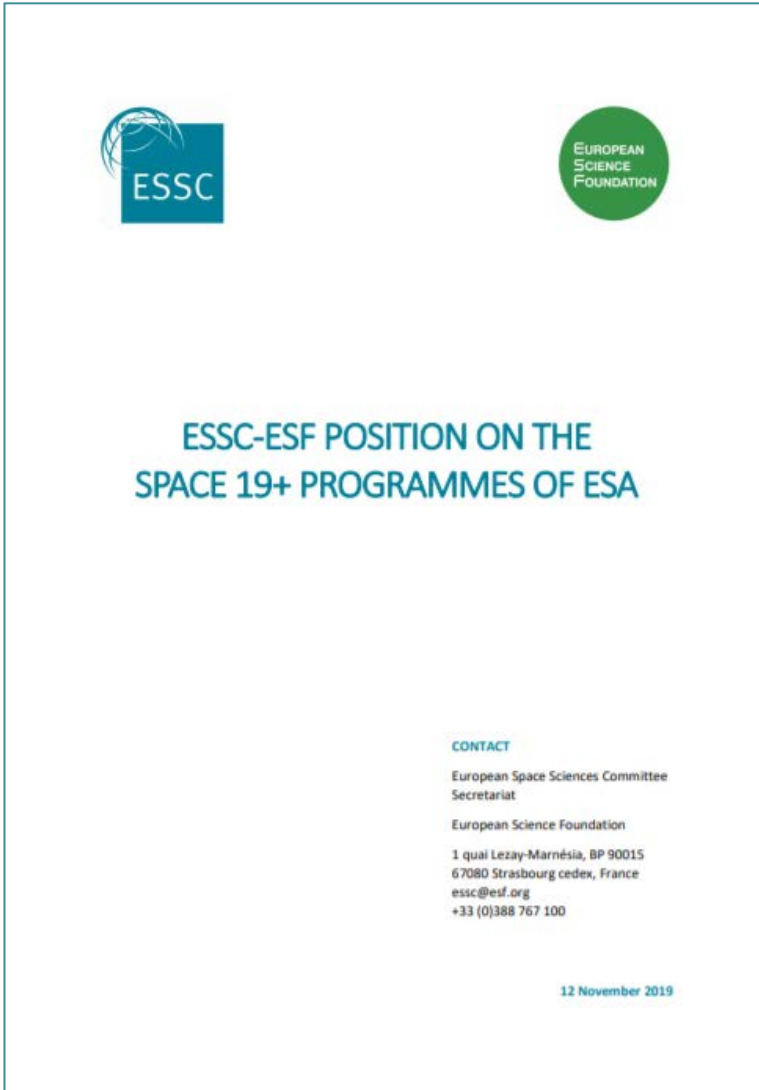
- ESSC Recommendations and advice on the ESA programmes related to science via advisory structure
 - Science Mandatory programme – SCI (SSAC)
 - Human and Exploration programme – HRE (HESAC)
 - Earth Observations programme – EO (ACEO)
 - Safety and Security – SSA
- The ESSC Chair has on the occasion of the advisory committees meetings expressed the views and recommendations of the different ESSC panels on the agency's programmes and the preparation of the *Space 19+*

ESSC Inputs provided to ESA:

- For E3P Period 2
 - inputs and recommendations provided on ESA Earth Observation Programmes Draft Proposals
- For Earth Observation Programmes
 - First inputs on ESA Earth Observation Programmes Draft Proposals provided
 - Towards a European Cal/Val Service for Earth Observation : Cal/Val report and publication in February 2020
- For the Science Mandatory Programme
 - Recommendations provided in September 2019
- For Safety and Security
 - Space weather report provided to the ESA DG and Programme Advisor, publication in early 2020

<https://www.essc.esf.org/studies-and-publications/>

ESA Council at Ministerial Level



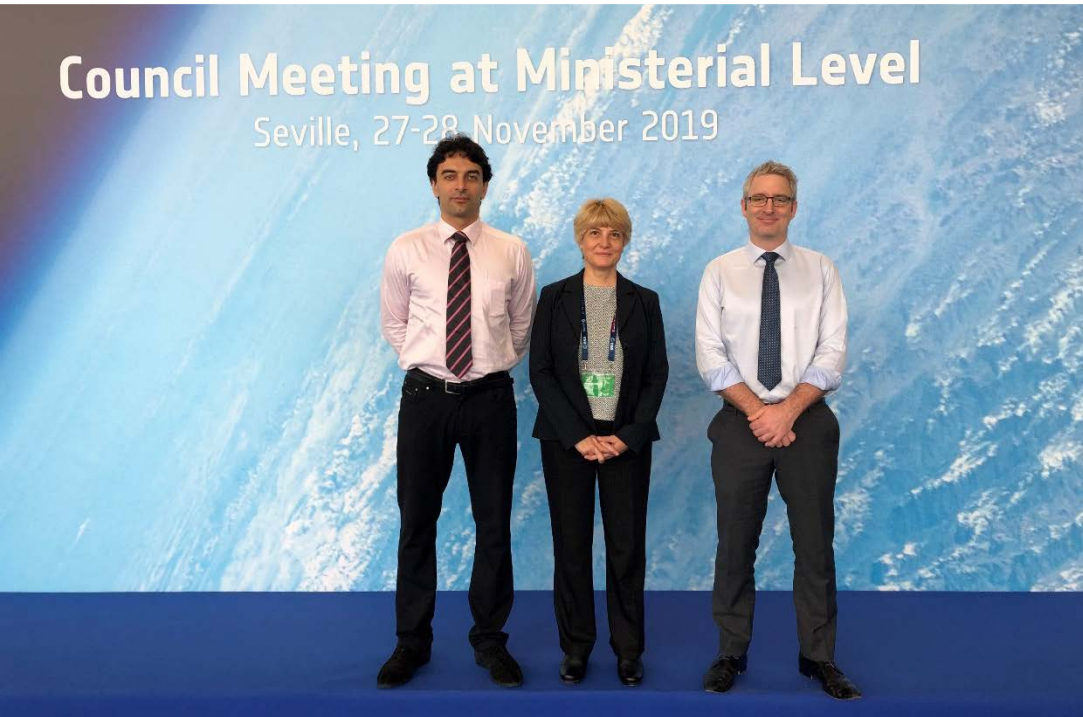
ESSC Inputs provided to ESA

- All these inputs were compiled to the official ESSC position on Space19+ programmes, which was disseminated to ESA, Member States, Programme Board delegates and other ESF/ESSC national and international contacts

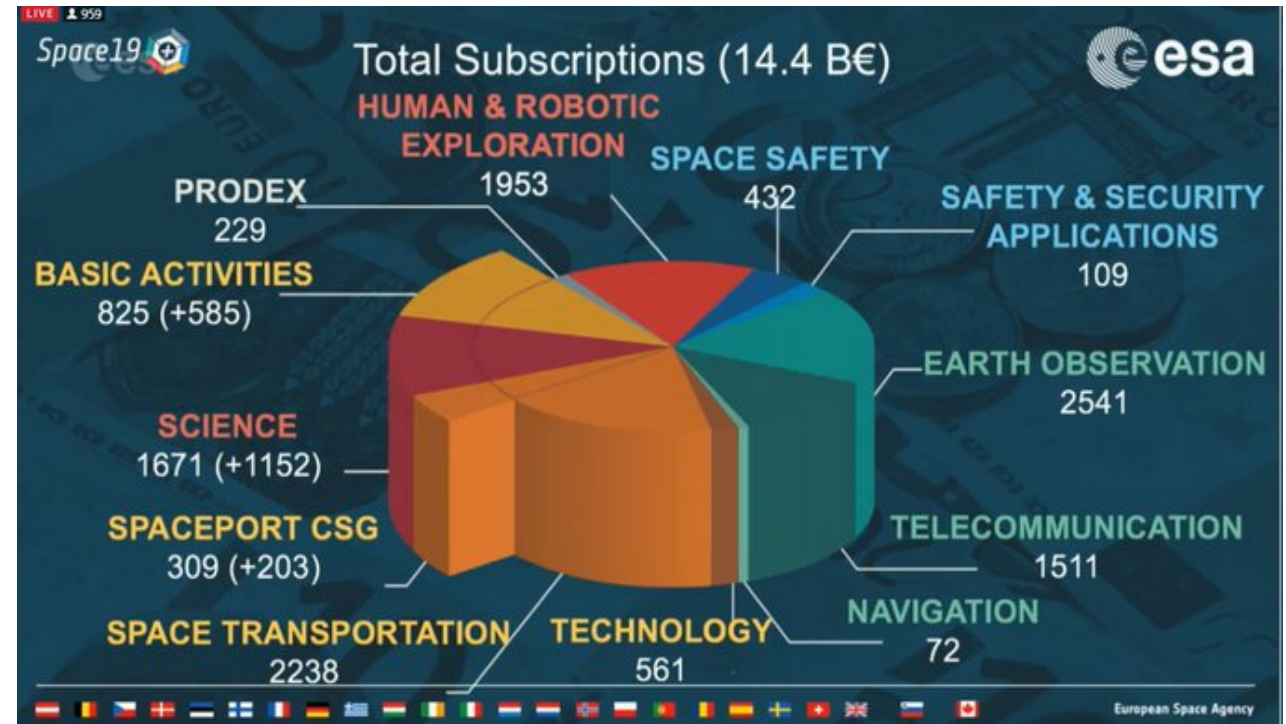
ESSC Key Messages

- Despite significantly lower funding compared to NASA, Europe nevertheless accomplishes extraordinary feats
- Noted the reasonable levels of resources requested at this meeting come with a significant gain in programmatic efficiency.
- Recognised that Europe has all the required expertise, knowledge, infrastructures and facilities to pursue and implement bold, decade-spanning science programmes.
- **Mandatory Science Programme** should never be perceived as a forced entry fee, but as an opportunity
- Recognised the value of the **European Exploration Envelope Programme** flexible approach, recommended support to SciSpacE and MSR
- Acknowledged the value of the FutureEO proposal as a basis for achievements in the worldwide-recognised **Earth Observation programme**
- **Encouraged ESA to continue the coordination with the European Commission and the science community**
- Reported constructive suggestions on how to improve the programmes outcomes

ESA Council at Ministerial Level



- The ESSC Chair made a written and oral statement, much appreciated both by Member States and ESA Executives
- Meeting Outcome: 10% increase in the Mandatory program, *quasi*-full subscription to HRE optional programs and oversubscriptions in some cases for EO (overall EO programmes @ 85%).
- The ESSC had the opportunity to talk with several delegations (notably Italy, Portugal, Greece, Cyprus & Romania)
- Post-meeting press release outlining the major success of the Council meeting and the ESSC contribution



- **ESSC enthusiastic with the outstanding outcome of ESA's Space 19+ Council Meeting at ministerial level**
- The European Space Sciences Committee (ESSC – www.essc.esf.org) represented the scientific community at ESA's Space 19+ Council Meeting at ministerial level, held on 27 and 28 of November 2019 in Seville, Spain, and addressed the participants. The ESSC warmly welcomes the very positive outcome on this occasion. The decisions made by the ESA Member States and the levels of financial support granted will guarantee Europe's access to space, allow for a fruitful scientific exploration and exploitation of outer space as well as strengthen Europe's competitiveness in the coming years. Statement made at the Space19+ council by ESSC: http://www.essc.esf.org/fileadmin/user_upload/essc/documents/ESSC_address_V2.pdf

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ESSC

Studies

ExoOceans

- Identify current scientific priorities and European challenges in the context of the exploration of ExoOceans. Special issue within the Space Science Series of ISSI (Springer 2020)

Space Weather

- Explore challenges and monitor the approaches being taken around the globe, in order to carry out a gap and requirement analysis with special consideration of potential European. Published in the [Journal of Space Weather and Space Climate \(SWSC\)](#)– Open Access

Cal/Val Copernicus

- Address the Copernicus Calibration/Validation issues in the context of the scientific exploitation of Copernicus data. Submitted for [publication \(Open Access\)](#) in the [International Journal of Remote Sensing](#).

20 Years of ISS : project



International Representation

- ESSC has ongoing tight links and exchanges with **US National Academies Space Studies Board** invited to attend and present at the ESSC Plenary meetings and common studies. NAS/SSB Director is attending ESSC meetings and reports on their activities
- ESSC has regular exchanges with the
 - Chinese Academy of Sciences (CASC, CAS and CAST),
 - the Space Research Institute of Russian Academy of Sciences/IKI
 - the Japan Aerospace Exploration Agency.
- Ties with **COSPAR Leadership and COSPAR Panel on Planetary Protection**

- Attendance of ESSC Chair and secretary to SSB meetings - May and Nov. 2019 – Update on European space sciences landscape
- Attendance of the NAS ASEB/SSB director (Colleen Hartman) to the Plenary ESSC meeting – Update on US space sciences landscape
- ESSC members invited to the SSB Space Sciences Week (26-28 March 2019) – very important event. Participation and presentation to Standing committees meetings
- ESSC Members invited in SSB studies
- Explore more possibilities for collaboration between ESSC and SSB
 - More joint studies on subjects of common interest to us and to our stakeholders
 - Investigate having more international interactions during Space Science Week
 - Workshops on International collaboration in space, programmatic issues, planetary protection,...
 - ESSC prepared to bring European perspectives to any relevant US studies/decadals
 - Joint SSB-ESSC (even partial: Chairs+) meeting perhaps in conjunction with an event (COSPAR, AGU...)?



16 Funding Organisations from 13 countries (+1 European Organisation)

- FWF, Austria
- FWO, Belgium
- FNRS, Belgium
- Academy of Finland, Finland
- CNES, France
- DLR, Germany
- National Observatory of Athens, Greece
- FNR, Luxembourg
- NWO, Netherlands
- Research Council of Norway, Norway
- Norwegian Space Centre, Norway
- Spanish National Research Council (CSIC), Spain
- Swedish National Space Board, Sweden
- SNF, Switzerland
- UK Space Agency, UK
- ESA

Outlook for 2020

- Next Plenary Meeting: 15 May 2020 (remotely)
- Finalisation of ESSC Studies
- Launch of new studies (20 years of ISS)
- Contribution to Horizon Europe development and to the ESA programs in view of the CMIN 19 outcome (remotely for now)
- Future SSB meetings : June and November 2020 (Space Science Week 2020 in March remotely)



[ESSC-ESF Address to the ESA Council at Ministerial level](#)



[ESSC-ESF Position on the Space 19+ Programmes of ESA](#)



[ESSC Contribution, Consultation Horizon Europe - October 2019](#)



[Assessment and recommendations for a consolidated European approach to Space Weather \(full\)](#)



[Assessment and recommendations for a consolidated European approach to Space Weather \(condensed\)](#)