

THE EUROPLANET RESEARCH INFRASTRUCTURE AND TECHNOLOGY FORESIGHT.

M. Grande on behalf of the Europlanet Community

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The **Europlanet 2020 Research Infrastructure (RI)** is a project to integrate and support planetary science activities across Europe. The project is funded under the European Commission's Horizon 2020 programme; it was launched on 1st September 2015 and will run until 31 August 2019. has 33 beneficiary institutions from 19 European countries. Europlanet 2020 RI is a European Research Infrastructure that is addressing key scientific and technological challenges facing modern planetary science by providing open access to state-of-the-art research data, models and facilities across the European Research Area.



Europlanet 2020 RI provides:

- Transnational access to world-leading laboratory facilities that simulate conditions found on planetary bodies as well as specific analogue field sites for Mars, Europa and Titan.
- Virtual access to diverse datasets and visualisation tools needed for comparing and understanding planetary environments in the Solar System and beyond.
- Networking activities to enhance cooperation and effective synergies between its different components: space exploration, ground-based observations, laboratory and field experiments, numerical modelling, and technology. EPN2020-RI will disseminate its results to a wide range of stakeholders including industry, policy makers, the media and the public. It will use a combination of traditional media activities and new educational and social media tools to engage the widest possible European audience with the science resulting from EPN2020-RI.
- Europlanet 2020 RI places particular emphasis on widening the participation of previously under-represented research communities and stakeholders.

Europlanet 2020 Innovation and Foresight Working Group

The Innovation and Foresight group brings together science and industrial teams to promote the innovation that is inherent in space activities because of the challenging environments they work in. The very existence of a structured community of European planetary scientists is of considerable added value for the European industry, not only for the large companies of the space sector but even more importantly for SMEs and non-space industry, which must identify

relevant interlocutors. Identifying a market is vital in order to invest in technology. For an SME or for a larger non-space company, assessing opportunities for planetary science applications remains a challenge. The technical foresight group helps to identify specific topics relevant to SMEs. We promote thematic workshops with participants from industry and academia. Outcomes from will be rapidly disseminated to build industry involvement in later years. This will result in:

- ✓ Topical Working Groups with participants from planetary science groups, SMEs and other industrial partners to promote innovation in planetary science (with SMEs);
- ✓ Workshops on innovative instrumentation for planetary missions. The specific new observational challenges suggested by the scientific groups will be assessed in the light of existing technological possibilities, and the need/cost of new instrumentation development will be discussed and analysed;
- ✓ Workshops on cooperation between EUROSPACE and the European planetary science academia. (EUROSPACE - www.eurospace.org- is the trade association of the European Space Industry representing 90% of the total turnover of the European Space Industry.)

We also aim to provide a way of responding to our stakeholders in industry. Will to promote innovative measurement techniques in forthcoming planetary science/missions, with commercial and industrial companies including SMEs;

Key questions to address are:

- What are the major science drivers for the next 15 years? (i.e. from now to 2030)
- How will science instrumentation change over the next 15 years?
- What methods will we need to address these science challenges (Resolution, radiation Hardness, readout speed etc.)?
- What are the priority technologies that we must invest in now to meet these future science challenges?
- What are the priority constituent technologies that we must invest in now to meet these future science challenges? (e.g. materials technology, computing, etc.)
- Are there nearer term technologies that we can significantly improve, and how?
- What will the planetary technology road-map look like from now to 2030?

