

CONSIDERING PLANETARY PROTECTION OF OUTER SOLAR SYSTEM BODIES – THE EUROPEAN PPOSS PROJECT N. Walter¹, P. Cabezas¹, J. L. Fellous², A. Haddaji², G. Kminek², P. Rettberg³, E. Rabbow³, J. C. Treuet⁴, S. Lawlor McKenna⁵, M. Sephton⁶, S. Royle⁶, J. R. Brucato⁷ and A. Meneghin⁷. ¹European Science Foundation (ESF), France. ²Committee on Space Research (COSPAR), France. ³Deutsches Zentrum für Luft- und Raumfahrt (DLR), Germany. ⁴Eurospace, France. ⁵STIL, Ireland. ⁶Imperial College (IC), UK. ⁷Istituto Nazionale di Astrofisica (INAF), Italy.

Introduction: With the increasing evidences of the presence of liquid water in the outer solar system, the number of potential habitable environment increases, as a consequence, the issue of contaminating these environments is more and more important and relevant. There are currently six ongoing missions to the outer solar system and small bodies and the main space agencies are currently planning several exploration missions to the outer solar system (in particular asteroids and the Jovian system).

Space exploration missions are international endeavours and planetary protection is by nature an issue of global relevance. While planetary protection policy is discussed and defined at the international level, it is important to reach a common understanding of planetary protection issues, in particular in the context of future collaborative exploration missions.

The PPOSS project is an initiative supported by the European Commission under the H2020 programme and will provide an international platform and forum where science, industry and policy actors will meet to nurture and catalyse discussions, exchange of knowledge and produce policy recommendations on the matter of planetary protection. It will look at case studies, lessons learnt and good practices in order to pave the way for an improved and more informed policy for planetary protection of outer solar system bodies, in particular icy moons. Looking forward, PPOSS will identify scientific challenges and knowledge gaps as well as define scientific requirements for outer Solar system bodies planetary protection. PPOSS will also involve interactions with the European industry and will develop a set of European industry roadmaps. Eventually PPOSS will integrate the information and knowledge generated through the project to provide science and policy recommendations for the definition, improvement, and implementation of an adequate planetary protection policy for outer solar system bodies.

PPOSS will be active for three years (2016-2018) and is structured around a well-defined and coherent workplan that includes five lines of actions:

- 1) International Planetary Protection Handbook: describe the state of the art and good practice for implementing planetary protection requirements, and identify good practices and lessons to be learnt.
- 2) Research White Book: identify scientific challenges, scientific requirements and knowledge gaps related to planetary protection of outer solar system bodies, including small solar system bodies.
- 3) European Planetary Protection Industry Roadmap: develop an European engineering roadmap for the industry sector.
- 4) Strategic advice and recommendations: review of the international outer solar system planetary protection regulation structure and categorisation, suggest improvements.
- 5) Transfer of knowledge: facilitate the dissemination of knowledge related to planetary protection.



Acknowledgement: PPOSS is supported by European Community's Horizon 2020 programme under Grant Agreement 687373.