ASD-EUROSPACE
The Space group in ASD

Eurospace views and concerns for CMIN 14

1- **The European space industry supports the on-going missions, notably ExoMars and the ISS exploitation, and stresses the importance of the preparation of the next long-term exploration missions, in continuity of the on-going ones.**

2- **Industry looks for clear political support with a long-term planning and an adequate funding to:**
   - Secure the continuity of exploration technology developments sustained by robust roadmaps and associated programmes
   - Maintain the European industry technical excellence and competitiveness

3- **Industry believes that international partnerships are a key for space exploration. To reap the full benefits of these collaborations, Europe should on one hand increase its non-dependency in European-led missions, and on the other hand focus on key capabilities for future use in missions led by international partners.**

4- **Space Exploration is a focus of European excellence and drives innovation in scientific and technological fields and generates economic, political and societal benefits and returns.**

TOWARDS AN AFFORDABLE EUROPEAN SPACE EXPLORATION PROGRAMME IN INTERNATIONAL COOPERATION

For the European exploration community the ISS exploitation, the ExoMars missions and access to space are the current priorities that allow Europe to proceed in implementing its Exploration strategy.

The ISS is widely recognized as the test bed for preparing Exploration beyond Low Earth Orbit (LEO). In the short term and in view of the Ministerial Conference of next December the priority interest for industry is the coverage of 3rd BFC (Binding Financial Commitment), including the continuation of the core operations and the completion of the MPCV-European Service Module.
For the future, European industry wishes that the ISS exploitation will be at least extended until 2024 providing additional opportunities to European Industry, including the continuation of the MPCV-ESM production beyond the EM 1 mission. The MPCV-ESM asset creates perspectives for Europe's future role in the international architecture for human exploration, which will include human presence in lunar vicinity and sustained human presence on the Lunar and Mars surfaces.

Another priority for Europe is the full funding of the ExoMars mission 2018 to be secured via additional subscriptions from member States in 2014.
Beyond that, European industry encourages ESA to initiate or engage in post-ExoMars exploration missions - such as Lunar or Phobos Sample Return, mission to the Moon South Pole region or Precision Landing on Mars - and to prepare and secure them by technology developments, paving the way towards the MSR mission.
For European industry it is important to continue development and evolution of relevant technologies and ensure the sustainability of the exploration programme, through adequate and continuous funding. To that end, we also support international collaborations and strategic partnerships that help us maintaining an uninterrupted implementation of the European roadmap for exploration.

STAKES ARE HIGH FOR INDUSTRY AND EUROPE

Through the support of its Member States, European Space industry has acquired leading and highly visible capabilities & technologies across space exploration:

- In Space Transportation, Europe is a leader in launchers, with Ariane and Vega, and is ready to launch this year IXV.
- In Human Space Flight, Europe has built several ISS pressurized modules, is operating the European part of the Station, is utilizing and reaping benefits from the scientific utilization of the ISS, and has established an active Astronaut corps.
- For Rendezvous and Docking, Europe has established the highly successful ATV and developed technologies such as the IBDM.
- In the Interplanetary environment, Europe has been operating world-class missions in orbit around Mars, Venus, en route to a comet, and on Saturn's moon Titan.

However, currently Europe risks more than ever with the discontinuation of activities in many areas of Exploration. Key capabilities built up with important investments in money and skills are at risk and could be dispersed.

At the same time, the world picture of potential competitors and collaborators is becoming ever more complex, providing both threats and opportunities for Europe. China is powering ahead with capabilities in launchers, human spaceflight and lunar exploration. India too shares a broad ambition and is developing a set of capabilities. Our traditional collaborators, the United States, are heavily investing in space transportation, lacking the funds to continue collaborations with Europe, such as ExoMars. Conversely, Russia appears to seek long-term partnerships with ESA in future exploration missions.

If Europe remains outside a worldwide trend towards large space exploration programmes, it will naturally not reap any benefits but will even be adversely affected:

- there will be less influence and involvement of the European scientific community in worldwide scientific experimentation;
- the European industry will be set aside the network emerging from international exploration ventures, and would be marginal in the process of developing innovative solutions and technologies to overcome this unprecedented challenge;
- European brain drain to other countries engaged in exploration ventures will probably occur;
- Europe will be forced to procure, instead of developing, technologies and capabilities coming from spin-offs from space exploration.

It must be stressed that, should the European space industry not take part in to this ambitious endeavour, it will suffer a severe competitive disadvantage. Thus, the participation of Europe to the space exploration initiative is mandatory to ensure a level playing field for its industry.

SUGGESTIONS FOR IMPROVED SUSTAINABILITY OF A EUROPEAN EXPLORATION PROGRAMME

Seeds of reflection on how to improve the sustainability of a European exploration programme can be summarized as follows:

- Ensure coherence across budgetary lines and between European and national agencies to maximise the impact of technological investment: It is noted that the intimate link between technologies for science-driven planetary missions and wider space exploration needs to be exploited.

- To remain an effective and a reliable mission partner, Europe must contribute through significant or major elements to international partnerships, i.e. through contribution of Autonomous Elements (Building Blocks)/ Capabilities and Key Enabling Technologies. As a mission leader, Europe should ensure only a limited dependency on its partners and have no mission elements on the critical path assigned to those partners.

- Strengthen good management practice to implement major missions only on the basis of a sufficient and demonstrated technology readiness and integration level. Rigorous use of mission development phasing – in particular for a detailed definition - and reviews must apply in all cases.

- Strive to promote and de-risk innovation via a range of methods for technology demonstration and TRL raising, including the use of dedicated in-orbit platforms, the ISS and other opportunities at appropriate cost levels. Low risk, low cost opportunities for maintaining the pace of technology maturation and growth in expertise are strongly welcomed.

- Communicate more effectively to tax payers and politicians the benefits that exploration will bring in terms of knowledge, innovation, spin-offs, highly skilled employment and European identity and cohesion. Engage in high visibility manned exploration preparatory activities such as simulations on Earth, simulations on ISS, or technological and scientific robotic missions focused on manned related topics (radiations assessments, in situ productions,...).