

Eurospace Exploration WG Key Messages to Europlanet on Planetary Exploration: Inspiring European Innovation

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Why Planetology is a key topic for Europe

Planetary exploration is part of human desire to better understand the universe. It is fully backed by a combination of scientific, technological, economic, political and societal motivations.

As for **science**, Planetary exploration improves our knowledge of the solar system and beyond, of the origin of life, and of the planets physics including the Earth itself. Return samples from Mars, for instance, will have a unique scientific value to understand the evolution of our solar system.

From an **economic** standpoint, it stimulates and innovates across a wide range of technologies and it boosts highly qualified employment and investments in high-tech domains, as well as synergies with other sectors. It is a documented motivator of students towards careers in science and technology. Although still at the very beginning, some space exploration initiatives aim at using valuable resources from celestial bodies (like noble or rare metals, but also components for life support and fuel production), which may increase the economic and commercial benefits of space exploration activities significantly in the future.

As for **politics**, it is a driver to consolidate the Union on the internal scene (EU image in the public) as well as on the international scene, demonstrating that our strength is a leverage for the European international policy. Mastering ambitious exploration missions will allow to strengthen the European role in international co-operations on a level-playing field with other nations.

For **society**, the contribution of Europe, as opposed to single nations, to discover the Universe will strengthen our identity, setting out for us a clear set of ambitious objectives that can only be achieved together.

Stakes are high for industry and Europe

The participation of Europe to space Exploration&Science programmes is necessary to ensure a leveled playing field for its industry and to maintain and enhance its competitiveness.

If Europe remains outside a worldwide trend towards big space exploration programmes, it will naturally not reap any benefits but will even be adversely affected. Exploration programmes and the involved technologies are promoters for the development of many building blocks used in other space domains (like robotics, life science, scientific instruments and sensors to mention just a few). If Europe would stay outside these endeavors, it could not exploit these synergies, having negative effects also on these other space programmes. Probably the European laboratories could still be involved in scientific experimentations – to a lesser extent and with less influence on the orientations – but European industries, both the large ones and SMEs, and scientific organisations would definitely be set aside the large world-coordinated network which will emerge from international ventures. Such networking being also the basis for initiatives in different fields (such as energy, space resource utilization, medical spin-offs, etc.), our industries and scientific bodies could be out of the game for such new activities.

Also, being excluded from big programmes will have consequences on European brain drain to other countries. Key to this is the fact that other nations are going forward with their own activities, developing technologies and capabilities essential to non-space sectors as well, which European industry and citizens will be forced to acquire or outsource. Furthermore, there will be less influence and involvement of the European scientific community in worldwide scientific research.

It must also be stressed that space exploration programmes have structural effects on European space industries. As a matter of fact, they provide unique long term perspectives and stimulate the development of innovative solutions and technologies to overcome these unprecedented challenges. The European space industry not being able to take part to this ambitious endeavour would result in a severe competitive disadvantage.

Thus, the participation of Europe to space exploration is necessary to ensure its industry a level in the playing field with its competitors, to secure high-quality work places in Europe, and to create and sustain an efficient network of cooperation between large industry and SMEs.

European space industry is fully aware that growth in Europe is unthinkable without the hundreds of SMEs in the continent, in particular the incoming ones from the new Member States: they form in fact one of the foundations for innovation, competition and jobs. At the same time it is fully recognized that SMEs have some weak points, which are notably linked to: globalization, difficult

access to public funds and capital investment, lack of training for efficiently entering a bid process at European level, in order to find their proper role in the EU's single market, if not in the global economy.

The European space large industry considers SMEs and the new Member States as key to ensuring the whole European economic growth, innovation, job creation and social integration in the EU. This is why cooperating with SMEs and new member States is the recognized way to contribute in making Europe a more attractive place for doing business, and more competitive worldwide.