

## **THE DOWNSTREAM SECTOR IN ITALY: ASI's ROLE and PROGRAMMES in the NATIONAL ECOSYSTEM**

In the era of the “space society”, satellite services represent a key element that has to be valued and promoted by institutions at local and global level. Earth Observation (EO), Navigation (NAV) and Telecommunication (TLC) satellites represent the space sectors with the most relevant growth, not only for the level of maturity, quality and quantity of the existing operational infrastructures, but mostly for the potential of wide diffusion for applications and connected services (known as downstream). These applications and services are suitable to ensure a sustainable economic development, fostering a significant progress in several domains and generating benefits for citizens and society. For this reason, they have been recognized as top strategic priorities of the Italian space policies (Resolution of the President of the Council, March 2019).

Considering that Italian Space Agency (ASI) is a governmental organization having the responsibility to promote space technology for the development of the Country, ASI has set up a programme called Innovation for Downstream Preparation (I4DP) further articulated in three intervention lines to better leverage on needs of that communities: Public Institutional entities, Science and Commercial operators. The main focus of this initiative is to stimulate the downstream sector growth, offering a concrete support to set-up innovative and powerful space solutions for emerging demand and, at the same time, consolidating and enriching existing national know how both at scientific and industrial level.

The implementation of the programme is based on thematic periodic calls for each category of target users, as mentioned above (PA i.e. Public Administrations, SCIENCE i.e. Scientific Community, MARKET i.e. Economic Operators).

The first cycle of the programme has been initiated in 2021, with the issue of 3 calls focused on the following topics: Effects of climate change and extreme events (I4DP\_PA), Sustainable Cities (I4DP\_SCIENCE), Management and monitoring of Stability of Infrastructures and/or critical infrastructures also in relation to landscape conservation and Precision Farming for I4DP\_MARKET. All the calls were successfully closed in 2022 with the selection of about 20 innovative projects.

I4DP\_PA aims to promote demonstrations and pre-operational developments of innovative complex services value chains responding to a well-defined institutional need (e.g. related to activities that the involved PA has to perform by law) based on the use of data and services from EO, SATNAV, SATCOM systems, also combined in a synergistic way and, where and as necessary, integrated with non-space data and services, in order to prepare new generation downstream services that can be useful to the institutions responsible for territorial governance, civil protection and economic resources management, while promoting the full exploitation of national and European space systems, operational or under development. The final objective of the I4DP\_PA calls is to promote an active involvement of Public Administrations, as end users of the services and, at the same time, allow an acceleration of scientific and technological developments, as well as the experimentation of new (pre-)operational procedures EO-based. This approach allows to highlight actual operational gaps and so can help the preparation and the support respect to other national and European investments in infrastructures to better enable the realization of the services themselves. The proposed projects should make use of already existent infrastructures, becoming part, by design, of the architectures of the national system. In this perspective, the I4DP\_PA calls are particularly challenging because at present there is still no single system to support the creation and distribution of institutional downstream services, and tools, products and services are fragmented and distributed among a number of different actors, and moreover institutional competences sometimes are overlapped.

I4DP\_SCIENCE aims to promote the demonstrative development of innovative value-added services based on the use of EO, SATNAV, SATCOM systems in order to prepare new

generation downstream services and promote the full use of national and European space systems, operational or under development.

I4DP\_MARKET calls aim at supporting the development of innovative projects with a high starting TRL level, in order to promote commercial exploitation of services and products based on innovative data processing, analysis and integration techniques. This initiative is also aimed at guarantee a constant increase in the national technological capacity of the downstream sector, allowing participation in the selection procedure of SMEs, startups and university spin-off. In the long term, these calls will consolidate the Italian entrepreneurial texture in the exploitation of the services and data provided by the current and future satellite infrastructures, in synergy with the terrestrial ones.

The proposed workshop aims to provide a complete picture about the ASI's ongoing I4DP activities and their future perspectives, highlighting effects in support of the whole Italian communities along the whole space service value chain and of economic downstream sector, providing a focus on selected projects in the framework of the first cycle of the I4DP Programme.