EARTH OBSERVATION SYMPOSIUM (B1)
Dual Use Earth Observation (6)

Author: Dr. Antonio Ciccolella
European Space Agency (ESA), Italy

Dr. Josef Aschbacher
European Space Agency (ESA), Italy

REFLECTIONS ON EARTH OBSERVATION FOR CIVIL SECURITY IN EUROPE

Abstract

Earth observation from space is an essential element for security applications and a significant set of related systems currently exists in Europe or are planned at both national and multi-national level. European space capacities address a diversity of environmental, economic and security challenges of a global or regional scale. It is expected that the EU will need to further strengthen its ability to respond to these challenges, including in the security and defence domains, both through improved coordination and the development of own capacities. The individual space assets and their associated ground segments, designed for civil, dual-use or defence purposes, can be potential contributors to a wider System of Systems. The different ownership arrangements and the independent control of such assets by different user communities indeed pose a particular challenge for their design and interface, in order to generate added value and ensure near-real time data and products. Many remote sensing products fulfilling typical observation requirements related to security (e.g. VHR imaging with high responsiveness) are commercially available and have intrinsically dual-use nature. This tendency to associate space observation assets for civil and defence applications is dictated by rationalising investments in space infrastructure (except for those having a uniquely defence character) and reducing the operational costs. Recently, some EU Member States started to develop capability to obtain data fulfilling national policies including commercial-dual use (i.e. with financial participation of the national MoD) or Public Private Partnerships (PPP) for civil use. Defence actors, on the other hand, increasingly seek access to the services and products of civil, commercially operated remote sensing systems giving momentum to the relevant market. This paper addresses some reflections on the technical feasibility of space infrastructure as cooperative system of systems, which can fulfil the observation needs of possible EU civil security demands consistently with on-going discussions at institutional levels. The existing or planned space assets available or accessible to European Member States are the starting point of the analysis. Additional space assets to complement existing space infrastructure in Europe for better revisit and coverage, new space infrastructure for achieving better situation awareness through sensor complementarity and cooperative ground segments are options for improving performances. Effective response to contemporary crises and security threats, including natural disasters, need to rely on both civilian and dual-use capabilities and require closer cooperation between them provided that potential limitations, e.g. due to shutter control and data policy, are taken into consideration.