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

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CONTRIBUTION OF EARTH OBSERVATION SATELLITES AND SERVICES TO SECURITY MISSIONS: LESSONS LEARNT FROM LATEST EUROPEAN STUDIES

Abstract

Use of earth observation capacities in the security domain is one of the most promising but also most challenging developments which have been undertaken during the last five years at European level in the context of GMES (Global Monitoring for Environment and Security). Space technologies have been exploited for defence use for many years. Until recently, these military systems were implemented through dedicated, proprietary and mainly national missions. The increasing role of Europe in space and the enabling boost brought by the GMES programme opened new opportunities for dual use applications. Beside the initiatives launched at national level with missions such as Pléiades or TerraSAR-X, ambitious studies and pre-operational projects aiming at shaping the future security systems and services have been launched by European organisations: European Commission, European Space Agency, European Defence Agency. Astrium is one of the major contributors and has been involved in following activities: - The GMOSAIC project, co-funded by the European Commission (7th RD framework programme). - The ESA study "Security dimension of GMES", which reviews the security needs and proposes options for the space infrastructure and its operations. - Within the frame of GIANUS (Global Integrated Architecture for iNnovative Utilisation of space for Security), SACREE study, funded by ESA, defines a responsive, cost effective architecture at European, providing services to actors involved in the crisis response. This study is based on by four crisis response scenarios. - The ICPA study, contracted by EDA to a consortium composed of Astrium, Cassidian and FOI, aiming at modelling and simulating the value of Intelligence, Surveillance and Reconnaissance (ISR) capabilities in support of Common Security and Defence Policy (CSDP) operations. Through these four activities, significant achievements have been made, related to operational needs (responsiveness, timeliness, reliability, integrity and protection of information), their impact on the technical performance, the organisational, governance and economic issues (right balance between national assets and the means shared at global level, role of civilian missions, gaps filled by specific components). These outcomes will be illustrated with an overview of the proposed concepts and examples demonstrating the benefits for users, including the synergies with the crisis management sector. Addressing the "system of systems" dimension and the interfacing with other information sources, the presentation will also show how these complex issues can be addressed at system level, by using Concurrent Design Facilities (CDF). The paper will present the lessons learnt and the main recommendations for future work.