

SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
Integrated Applications End-to-End Solutions (1)

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A EUROPEAN CRISIS RESPONSE SPACE ARCHITECTURE.

Abstract

The paper introduces the ESA-coordinated actions in the domain of responsive space presenting the objectives, scope, content, roadmap and the key issues to be examined, including the preliminary results of the independent assessment carried out by ESA through its Concurrent Design Facility. Space-based services can help supporting the full spectrum of internal and external civil security missions in the context of national and EU policies, including border surveillance, maritime surveillance, illegal activities monitoring, non-proliferation and treaties monitoring, natural disaster management (earthquakes, floods, tsunami), technological accident management and man-made crisis management (illegal immigration, pollution, etc.). These domains are largely supported by developing space-based services (e.g. GMES Security services, GMES Emergency services, Long Range Identification and Tracking, Galileo PRS, Automated Identification Systems, etc.). The European services contributing to Europe's security however suffers limitations. Reflecting on their experiences, civil security actors have expressed in various fora the need for operational and sustainable space-based services that would be guaranteed, more responsive and integrated. These considerations converge on the need to develop a European space architecture for crisis response. Its objective would be to provide European and national security actors with a comprehensive set of space-based services for their missions within and outside EU borders. It would thus aim at bringing the right information and services to the right people, when they need it (at headquarters as well as at field level). Such a concept is aimed at primarily satisfying civilian needs. Potentially interested national institutions could include: Civil Protections, Fire Brigades, Police, Customs, Coast Guards, and officers from Ministries of Foreign Affairs. Various EU institutions, depending on their mandates and operational scope, could also be potential users. In this respect, ESA could contribute to: the design of the overall European integrated space architecture; the preparation of the relevant enabling technologies; the development of the missing space infrastructure. To support internal technical discussions regarding a space architecture for crisis response, ESA's Concurrent Design Facility (CDF) was used to better ascertain obstacles, opportunities and range of solutions. This work was actively supported and monitored by some ESA Member States delegations through the Integrated Project Team (IPT). The responsive space architectural concept is based on an integrated space solution within a system-of-systems (SoS) configuration (Earth Observation, Telecom, Navigation), founded on the subsidiarity principle, complementing the available infrastructures and services, preparing the future technology, while preparing the future European infrastructures and services.