

Requirements on Civil Security and Availability of High Resolution Earth Observation Systems in Europe

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The European Global Monitoring for Environment and Security Initiative (GMES) has so far highlighted the environmental use of space borne earth observation data. Only recently various actions and initiatives have been launched by both the European Commission and the European Space Agency to also focus on the civilian security aspects. Besides the obvious use of earth observation in the mitigation and relief for natural disasters, civilian security will address humanitarian aid, monitoring of infrastructure (e.g. pipelines, nuclear facilities) and control of illegal activities (illicit crop plantations and trafficking). Pilot projects with the GMES framework as well as a complete new preparatory action on "Security Research" within the European Commission prepare for a new separate funding line in the 7th EU Framework programme on research starting in 2007. In addition, a new panel of experts on Space and Security gives the European Commission advice for new directions to follow in this domain. The author – being directly involved in these activities – will give timely information on their status. Nearly all earth observation applications in civil security require very high resolution earth observation sensors and rapid access to their data. So far dominated by a few suppliers from the United States, very high resolution data starts now to become available from alternative sources. Apart from other space faring nations such as India, Europe is now preparing for a fleet of high resolution national missions, especially but not exclusively in the SAR domain. TerraSAR-X, Cosmo Skymed, Pleiades, RapidEye and DMC will be accompanied by the classified Helios and SARLupe missions. The paper will give a comprehensive overview on the status of these missions and their use for civil security applications. Whilst these missions address the very high resolution demands, ESA is launching a fleet of earth observation missions – the Sentinels – which are aimed to continue the successful series of ESA missions. Also these will contribute to enhancing the security of the European citizen and help to protect their environment.