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Space Assets and Disaster Management (4)

Author: Mr. RICCARDO INGROSSO
Italian Space Agency (ASI), Italy, riccardo.ingrosso@est.asi.it

Mrs. germana spirito
Italian Space Agency (ASI), Italy, germana.spirito@asi.it

Mr. Fabrizio Battazza
ASI, Italy, fabrizio.battazza@asi.it

COPERNICUS EMERGENCY MANAGEMENT SERVICE (EMS) AND THE COSMO-SKYMED
CONTRIBUTION

Abstract

Natural hazards are of increasing frequency and severity in the modern world and the world's population has never been exposed to such a high level of disaster risk, and this is likely to grow in the coming years. With increasing global population, mega-cities, climate change and poverty, a growing number of people face the impact of catastrophes with increasing exposure of persons and assets in all countries, thus generating new risks and a steady rise in disaster related losses, with a significant economic, social, health, cultural and environmental impact in the short, medium and long term. Natural Hazards and the natural disasters that result are exacerbated also by climate change and impeding progress towards sustainable development. There is the need of addressing the impact of these events not only by reacting after episodes but also by enhancing prevention and preparedness. Earth Observation Satellites can contribute to tackling most of these natural hazard types efficiently by providing hazard mapping, supporting services for the assessment of exposure, vulnerability and risk and reconstruction monitoring. However, sustainable mechanisms for the generation of that information and its management are required to ensure ongoing availability of the data. Progress in every aspect of Disaster Risk Reduction (DRR) requires strong international collaboration. In Europe, the European Commission, through the Copernicus programme, has established the Emergency Management Service (EMS) that integrates satellite data with operational value-adding services to support Disaster Risk Management and is currently developing new applications using earth observation satellites. The Copernicus Emergency Management Service (EMS), managed directly by the European Commission via the Joint Research Centre (JRC), delivers warnings and risk assessments of natural hazard and provides geospatial information derived from satellite images on the impact of natural and man-made disasters all over the world. Scope of this paper is to describe the functionalities of the Copernicus EMS, and the benefits deriving from the system for the reduction and management of risks. A special focus will be given to the Italian contribution with Cosmo Sky-Med constellation, formed of four identical spacecrafts equipped with Synthetic Aperture Radar (SAR) and his practical use in different natural disasters that occurred in these recent years.