

***RECENT SATELLITE DATA CONTRIBUTION FOR RAPID MAPPING ACTIVITIES, NATURAL DISASTERS
MANAGEMENT, HUMANITARIAN OPERATIONS AND EARLY RECOVERY PLANNING***

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ABSTRACT:

During and after a disaster, decision makers and humanitarian actors are always in need of more accurate and factual information about the situation. This information has to be delivered in a short span of time for planning the relief operations and early recovery actions, and inform longer term disaster recovery activities.

Throughout the last years remote sensing applications for rapid mapping have evolved due to the increase of accessible commercial sensors with sub-meter pixel size. At the same time, an increase of the expectations from the field actors has developed. Moreover, the profusion of commercial optical imagery sources ensures a better spatial and temporal coverage of affected areas enabling a more effective monitoring during crises especially in the early events phases where there is a lack of reliable information. Critically, all this information must be analysed and delivered to end users within short timeframes and under operational pressures which can include multiple ongoing events and technical problems common to software and satellite imagery.

The objective of this presentation is to illustrate the evolution of different approaches and techniques applied for rapid mapping activities through the analysis of a series of conceptual examples for different types of events going from natural disasters, such as floods, landslides and earthquakes (e.g. Solomon Islands 2014; Pakistan floods 2010 and 2014; Hunza Landslide 2010; Haiti Earthquake 2010) to complex emergency situations related to conflicts and security events (e.g. Iraq 2014; South Sudan 2014; Syria 2011-2014; Gaza 2009 and 2014 conflicts). This will provide an insight on the benefits this evolution has produced and its impact on the humanitarian operations during actual emergencies. Analyses of such events often combine multispectral image classification techniques, allowing automated extraction of flood waters or refugee shelters, with visual review of imagery, which refines and verifies automated methods. Indeed the finer sub-meter spatial resolution, the general spectral improvements and the increased spatial coverage that commercial optical satellites provide have widened the scope of the analysis that can be delivered to assist in humanitarian response and early recovery operations.