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# GMES Emergency Response - Fire mapping experience within EO-based Rapid Mapping

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Civil protection authorities have been requesting the services of dedicated Rapid Mapping Services since at least 2003 with the aim of obtaining geographical information on fire affected area, dynamics and impact and this as fast as possible. In the past the service was nearly exclusively delivered through the International Charter "Space and Major Disasters" (Charter) in terms of activation management and raw satellite data provision, in combination with projects that finance service provider activities. These activities remain under the umbrella of Global Monitoring Environment and Security projects such as the previous European Space Agency's GMES Service Element (GSE) programmes and the present European Commission FP7 research programme framework of the SAFER project. Like the past GSE projects, the SAFER project aims to develop and provide a pre-operational version of the GMES Emergency Response Service (ERS), a main component of which is the rapid mapping service called Emergency Mapping. Overall, the Emergency Service's main objective is to set up an operational service for future operational environments in the GMES Initial Operations (GIO) and further on in a fully operational context. In terms of overall provision the service has expanded from dealing 22 activations in year 1 to 51 in year 2, with some of these representing the equivalent of many smaller events. The service has concentrated on further improving the service structure, the portfolio and the technical background to target improvements in response time and the quality of the crisis map products.
Within this Emergency service satellite-based information products are generated providing coverage during natural or man-made disasters, with examples from the second year being the Haiti Earthquake, the Polish, Romanian and Pakistan floods, the Xynthia storm in France and the alkali mud flow in Hungary to support disaster management and a few fires including, notably, the December 2010 Israeli Mount Carmel fire. In fact fire mapping constitutes one of the core themes, along with flooding, in which the rapid mapping service regularly delivers information on fire affected areas, fire dynamics and impact in the most timely and pertinent manner.
To provide a background to this rapid mapping work this article will firstly present the operational context; what are the different service elements and how these interact and chain together, from activation triggering through satellite data programming and acquisition to map product delivery to users – the overall Emergency Mapping Service model. As one might imagine the overall rapid mapping service depends on each link in the chain performing in order to deliver products within a pertinent timeframe. Then, an outline of the service provision standards will be given including the product portfolio's product categories and nomenclature namely what is meant by fire affected area, fire dynamics and fire impact. SERTIT's specifically developed rapid mapping fire response portfolio is used for illustration, with examples taken from both past and recent work including the Greek 2007, Portugal 2009, Corsica 2009, Italy, 2009, SE French 2010 and Mount Carmel, Haifa 2010 fire events. The reactivity of the service will be analysed through recent fire activation examples. Furthermore, the issue of quality control, ie field survey validation, will be treated, while, finally, the services' achievements, viewed through the eyes of user feedback, and lessons learnt will also be dealt with.