



"Space Imaging/CRISP-Singapore"

Space Technology and Disaster Management

RESPOND

Responding to Emergencies Using Dedicated Space-based Applications

Space-based remote sensing provides solutions to assess damages caused by disasters quickly by using a wide range of satellite data that can be turned into images, damage assessment maps, and other information resources. Observing the disaster-affected areas from space contributes to improving disaster response and prevention. Consequently, humanitarian aid can be provided where it is needed. But even if satellite images of the affected area exist, they may not be accessible or not related to the users' specific needs.



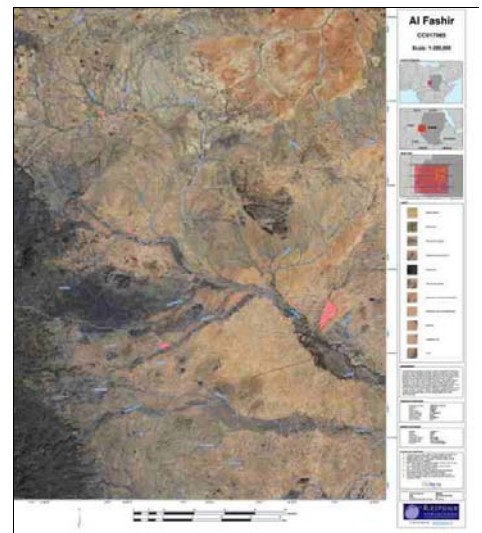
Darfur 2004: UNHCR Khartoum staff making use of maps produced by Respond partners.

Providing Services for Humanitarian Relief

The EC and ESA have created an initiative called Global Monitoring for the Environment and Security (GMES) (www.gmes.info), which aims to coordinate the activities and results of numerous disparate bodies within Europe involved with the environment and security. Respond is one of 12 GMES Service Elements (GSE) set up to enact specific aspects of this initiative. Respond aims to help humanitarian aid agencies by providing beneficial space-based products and services. This is achieved by bringing together a variety of skills and capacity in conjunction with an emphasis on user-driven services.

Respond is an alliance of European and International organisations working with the humanitarian community to improve access to maps, satellite imagery and geo-

graphic information. The consortium consists of service providers such as the European Commission Joint Research Centre, Reuters AlertNet, UNOSAT, and DLR; value adding organizations (Metria, Keyobs, Sertit, Infoterra, MapAction); system engineers and consultants (Kayser-Threde, SciSys, ControlWare, ESYS Consulting, Surrey Satellite Technology); and finally the users, initially based on a core of five organisations: UNOCHA (United Nations Office for the Coordination of Humanitarian Affairs), DRK (the German part of the Red Cross), THW (the German governmental disaster relief organization), UN/ISDR (United Nations International Strategy for Disaster Reduction), and UNOPS (United Nations Office for Project Services). There are other users who provide valuable feedback on Respond products. Recently the UNHCR (United Nations High Commissioner for Refugees), UNDPKO (The United Nations Department for Peacekeeping Operations) and the World Food Programme (WFP) have opted



Darfur 2004: Infoterra UK (Respond prime contractor) was one of several Respond partners which produced base maps for DRK (German Red Cross).

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to join the Respond consortium. The organisation and management of the consortium rests with Infoterra UK, as prime contractor.

Objectives and Services of Respond

Respond works during all parts of a crisis cycle where geographic information helps deploy humanitarian and development aid. Rather than being just a vision, Respond will pave the way to a set of sustainable services. It has been set up to identify the space-based information that is regularly used by humanitarian agencies when anticipating or responding to a crisis. Apart from pure mapping and satellite-derived information, Respond also supports training, support services and infrastructure, forecasting, and alert services. Therefore, it covers a large part of the disaster management cycle. The services are intended to respond to slow onset disasters (e.g. famine, desertification) as well as



Tsunami 2004: Respond –partner MapAction provided a vital supporting role, with local agency IWMI, inside the Centre for National Operations [Colombo, Sri Lanka. 3rd Jan. '05].

to sudden emergencies (e.g. tsunami, earthquakes, and floods).

Respond is entering a five year staged programme that aims to provide guaranteed access to global mapping, access to an archive of detailed base mapping, imagery and thematic mapping (e.g. situation maps, refugee support maps, health maps), access to rapid assessment maps for a major crisis (e.g. crisis and damage maps, environmental impact assessment maps), alert services, and communication and reporting resources.

One of the key aspects of Respond is the “multiplication factor”: for example, when a product is produced for UNHCR, it is made available via a variety of channels (including the Internet and the UN-HICs) so that other us-

ers can benefit from it. Via its members, Respond has effective channels for distribution of products to the UN, EU and NGOs.

Another is the strength of the Respond production capacity. As part of Respond’s response to user requirements for the Darfur crisis in 2004, ten instruments from nine different satellites were cross-indexed to provide the final products; in the four weeks after the Tsunami, the Respond partners produced over 200 maps through their individual operational remits; Respond is now working to deploy this information in the reconstruction phase.

Future activities of Respond include the consolidation of a database of mapping and imagery that is instantly accessible via the Internet. Additionally, Respond will proactively maintain an archive of geographic information for crisis areas, and areas where crises are likely to occur.

For further information, visit: www.respond-int.org.

(Thank-you to Jessica Lohmann and Alex Irving for contributing this article to the STDM Newsletter)



Tsunami 2004: Part of the web page for Respond-partner Joint Research Council (JRC) featuring some of the 200+ available maps.

Coordinating Entity

Under the theme “Space benefits for humanity in the twenty-first century”, UNISPACE III was held in Vienna from 19 to 30 July 1999. The most important result of UNISPACE III was the adoption of the Vienna Declaration on Space and Human Development in which 33 specific actions were recommended that should be carried out to enable space technologies to contribute to the global challenges of the new millennium.

Global system to manage natural disasters

Participants recognized the need to help developing countries have access and be in a position to use space-based technologies (earth observation satellites, meteorological satellites, communication satellites and global navigation satellite systems) for risk reduction and disaster management. This led to the recommendation for a joint effort “to

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implement an integrated, global system, especially through international cooperation, to manage natural disaster mitigation, relief and prevention efforts, especially of an international nature, through Earth observation, communications and other space-based services, making maximum use of existing capabilities and filling gaps in worldwide satellite coverage”.

Action Team 7

This recommendation led to the establishment of an action team working under COPUOS (Committee for the Peaceful Uses of Outer Space), known as Action Team 7, led by Canada, China and France, which met several times from 2001 to 2004 and in its final report put forward three recommendations for further action: establishment of a coordinating entity to provide for coordination and the means for optimizing the effectiveness of space-based services for use in disaster management; establishment of a fund to provide sustainable resources, and; countries should allocate funds to enable the incorporation of space technology in disaster management activities and also should identify a single point of contact between the coordination entity and the country.

The General Assembly adopted in 2004 a resolution (A/RES/59/2) following its five-year review of the implementation of the recommendations of UNISPACE III which included the proposal of the Committee on the Peaceful Uses of Outer Space for a study to be conducted on the possibility of creating an international entity to provide for coordination and the means for optimizing the effectiveness of space-based services for use in disaster management. The study is currently being prepared by an ad-hoc expert group, with experts being provided by interested Member States and relevant international organizations, and once concluded will define the format of a coordinating mechanism which once in place would contribute to helping developing countries to have access and incorporate space-based technology solutions for risk reduction and disaster management, building upon existing initiatives such as RE-SPOND

CRECTEALC

UNOOSA's Programme on Space Applications is providing support to the establishment of regional centres for

space science and technology education at existing research and higher education institutions in each region covered by the United Nations Economic Commissions: Africa, Asia and the Pacific, Europe, Latin America and the Caribbean, and Western Asia. Each centre is conceived as an institution that should offer the best possible education, research and applications programmes, opportunities and experience to the participants in all areas of space technology. CRECTEALC (Centro Regional de Educação em Ciência e Tecnologia Espaciais para América Latina e Caribe) is the Centre for the Latin American and Caribbean Region. Below is a picture of the group of international students that began last March the 3rd course in Remote Sensing and GIS to be given at the Brazilian campus. Further information can be found on the Centre's website: <http://www.inpe.br/unidades/cep/atividadescep/crectecal/>



STDM 2005 Activities

In May we are organising the United Nations /Algeria/ European Space Agency International Seminar on the Use of Space Technology for Disaster Management: Prevention and Management of Natural Disasters - 22 - 26 May 2005, Algiers, Algeria.

Further information can be found on the website indicated below in the contact details.



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The United Nations Office for Outer Space Affairs (OOSA) implements the decisions of the General Assembly and of the Committee on the Peaceful Uses of Outer Space and its two Subcommittees, the Scientific and Technical Subcommittee and the Legal Subcommittee. The Office is responsible for promoting international cooperation in the peaceful uses of outer space, and assisting developing countries in using space science and technology. Located in Vienna, Austria, OOSA maintains a website at <http://www.oosa.unvienna.org>.