



SUMMARY OF DISCUSSIONS AND RECOMMENDATIONS FROM THE

## **Symposium**

# **“Enhancing emergency response by leveraging satellite applications”**

*Organised by OCHA and UNITAR*

14 December 2005

Palais des Nations, Geneva, Switzerland

### **Introduction**

UNITAR and OCHA took the initiative to convene this symposium based on their respective expertise in the field of satellite applications for crisis response and vulnerability reduction and the role of OCHA in providing leadership in emergency relief through effective and systematic crisis management. The meeting will also build on the central recommendations issued by the 2001 *Symposium on Humanitarian Information Exchange*, organised by OCHA.

Emergency disaster response has become more articulate, complex and also more frequent. This puts an additional burden on the humanitarian community in terms of co-ordination, preparedness, needs assessment and monitoring. Technology has always been part of emergency management and is now entering humanitarian relief through the development of integrated information exchange systems while geographic information has become an essential support for rapid decision making and effective response.

Satellite technology has reached a level of maturity that guarantees a sound decision support and monitoring tool for both emergency response organisations and the donor community. The humanitarian community at large is discussing how the humanitarian sector should look at the role of emerging technologies in emergency response.

The symposium was intended as a contribution to exploring how satellite applications can be integrated in preparedness and emergency response to facilitate the work of the humanitarian community and build an objective information basis for humanitarian co-ordination, rapid decision making, needs assessment and field operations.



## Summary of discussions and recommendations

### OPENING

The symposium was inaugurated by Ms. Yvette Stevens, Assistant Emergency Relief Coordinator and Director of OCHA Geneva who acted as chairperson. After highlighting the benefits of technology in the area of emergency response and preparedness, Ms. Stevens illustrated the objectives of the symposium:

- ♦ To generate information on the current capabilities of space based applications
- ♦ To discuss mapping needs and requirements specific to the emergency response community
- ♦ To identify areas of concern and indicate possible improvements

The Director of UNOSAT, Mr. Alain Retière, welcomed all participants and speakers on behalf of Mr. Marcel Boisard, Executive Director of UNITAR.

### KEYNOTE ADDRESS

Mr. Gerard Brachet, Chairman-elect of the UN Committee on the Peaceful Uses of Outer Space (COPUOS) was invited to make a keynote speech. In his address he noted how satellite imagery had evolved from a seldom used and sometimes sensitive matter to a decision support and monitoring instrument that is today universally accepted and utilized. On this point he clarified that there is no legal restriction on the use of imagery of the Earth taken from space.



Yvette Stevens of OCHA

Since the 1970's the United Nations have constantly developed their interest for satellite technology and their applications. Major international initiatives came with the creation of CEOS (the Committee on Earth Observation Systems) in 1984 and the International Charter on Space and Major Disasters in 2000. The latter is currently used by the UN in emergency response to natural disasters since the UN became associated with this mechanism in 2003.

Speaking about progress in the field of space based tools; the development of GPS is a case in point. GPS has grown to become a basic tool used in the support of field operations. In parallel, significant progress has been made in the management and communication of large data files, which makes geographical information much easier to handle.

Much has changed even in the realm of ethics also due to the inescapable capacity of new technologies. These give all of us access to essential information anywhere upon the globe for planning and other activities. Mr. Brachet showed a well known map of the Aceh province generated by UNOSAT to illustrate what can be done and how this information can be applied.

In another important area, that of weather and climate forecasting, much progress has been made. It is well accepted that most disasters affecting our societies are related to the "weather". Thus weather forecasting is very important to the emergency community. Space based resources can reveal differences in the balance of energy between land and oceanic masses and significant progress is being made in the area of seasonal forecasting.



Gérard Brachet

In summarizing what satellite techniques can do today to help the humanitarian community Mr. Brachet indicated the following areas:

- 1 – Support to emergency response with crisis and rapid mapping
- 2 – Contribution to forecasting extreme events causing disasters
- 3 – Support to emergency telecommunications including broad band internet, GPS, 3G, relay of emergency distress signals (Mr. Brachet illustrated here the example of the SARSAT/COSPAS system, which has saved 15,000 human lives since its creation)
- 4 – Support to recovery and reconstruction.

Mr. Brachet concluded by mentioning new institutional developments such as DMISCO (in the context of UN COPUOS) and the Global Earth Observation System of Systems (GEOSS) that in his opinion must build on the groundwork done by UNOSAT and its partners and by the *International Charter Space and Major Disasters*.

## **PANEL ONE - Humanitarian coordination and field support**

*This panel of speakers from organisations active in humanitarian coordination and field support discussed how coordination has evolved over time, and which aspects could benefit from technological solutions. Emergency response to disasters, for instance, has specific requirements such as rapid situation assessment, clear identification of geographic location of affected areas, the need for efficient and rapid transfer of information to and from the field. Satellite imagery offers today a range of mature products that may be the basis of tomorrow's GIS services in support of humanitarian relief.*

Moderator: Ms. Yvette Stevens, Director, OCHA Geneva

Rapporteur: Mr. Suha Ulgen, OCHA New York

Panellists:

Mr. Jean Salvadori, Euro-Mediterranean Institute for Major Risk (IERM)

Mr. Jean-Christophe Bouvier, UNOPS Geneva

Mr. Arjun Katoch, OCHA

Ms. Paola De Salvo, WFP

Mr. Luc St. Pierre, UNHCR

Mr. Salvadori illustrated the nature and functions of **IERM**, which carries out research and training in association with the University of Haute Corse in France. The Centre had implemented a fact finding mission in the Aceh Province in the aftermath of the earthquake and tsunami. Mr. Salvadori explained that the mission, composed of emergency response experts, had produced a report, which he summarized in his presentation. The report identified some important weaknesses of the international response to the disaster at hand and called on the international community to reaffirm the coordination role of the United Nations. More robust UN led coordination should be accompanied by a serious training effort in which national personnel should be offered international training enabling them to operate with greater efficiency once deployed on the ground. The report also indicated the need to strengthen the pre-deployment capacity, for example by training and maintaining special early deployment teams. These would be the first international personnel to arrive in a disaster area and would be devoted to preparing the arrival of UNDAC and SAR teams, which typically need efficient communication and information support immediately upon arrival. Finally the report highlighted how lessons learned are not exploited enough in the international emergency relief practice and policies.

Mr. Jean-Christophe Bouvier of **UNOPS** began his intervention by observing the similarity between the assessment by IERM as an independent organisation, and the lessons derived by other response agencies during the Indian Ocean tsunami. He added that these observations are still insufficiently transformed into lessons learned and some mistakes are therefore repeated. In addition emergency response as it appears on the ground in the way of supply is sometimes the product of goodwill rather than a response to expressed needs. One difficult issue to overcome is how to respond efficiently locally when the humanitarian system is built internationally and has presence in capital cities. He thus pointed out the critical importance of building local capacity from the start and the necessity of undertaking the co-ordination at the local level instead of orchestrating the response far from the disaster area, for example at the capital city. He added that rebuilding what was there before should not be the main concern in post disaster recovery. He also highlighted the importance of attaining an immediate picture of the situation which is generally facilitated by satellite imagery especially if qualified staff were trained to interpret such imagery to support decision making on the

ground. One important benefit of satellite imagery is the comparison of images before and after the disaster and GIS layers showing population density, road network and lifelines.



[Arjun Katoch of OCHA and Paola De Salvo of WFP](#)

and communication infrastructures were decimated and response capacities of these communities were literally wiped out due to extensive casualties suffered by local professional framework. He added that the influx of responders to the disaster scene presents a special coordination challenge. National and international media outlets who arrive at the site and immediately broadcast news and commentary build political pressure on local authorities, which in turn narrows the time cycle for decision making. Mr. Katoch pointed out that contrary to the common perception emergency response is today mostly bilateral. This adds further complexity to response coordination.

Mr. Arjun Katoch of **OCHA** focused on three specific aspects: 1 - the conditions under which natural disaster response operations typically take place; 2 - what emergency response teams need; and 3 - how technology can help.

Talking about the conditions that characterise most natural disasters, Mr. Katoch gave examples from his experiences in the Pakistan and Iran earthquakes where transportation

Mr. Katoch illustrated some of the typical emergency response needs and pointed at the importance of early warning when this is possible. He indicated that the Global Disaster Alert and Coordination System (GDACS) is a positive move in this direction. Like Mr. Bouvier, he mentioned the importance of assessing the extent of the disaster rapidly and the need for real-time availability of information on assets deployed. He added that speed is one decisive factor and technology can help in this regard. Information dissemination and sharing has to be carried out at multiple levels: among actors on the ground via the Humanitarian Information Centre (HIC), for instance, as well as between HQ units of the UN and other organizations.

Mr. Katoch said technology can help in early warning and the production of rapid map products that are understandable and relevant. Satellite and mobile telecommunications can facilitate remote communication even in difficult connectivity environments. Tracking logistics requirements can be assisted by space technologies. Standard information management tools deployed in HICs can facilitate effective information exchange among humanitarian partners.

In answering a question from the floor on the subject of accreditation of technical staff such as GIS experts who could be trained in disaster response so that quality and accountability problems are minimized, Mr. Katoch admitted that such an arrangement would be difficult to accomplish but nevertheless ideal. Mr. Katoch emphasized the importance of developing capacity that is quantifiable so that quality and accountability concerns can be addressed properly.

Ms. Paola De Salvo of **WFP** explained that the World Food Program is the Food Aid arm of the UN with presence in 80 countries worldwide. She emphasized the importance of capacity building in advance of disasters through the integration of local partners. She made the example of the Sudan Interagency Mapping Initiative as a best practice. She stated that

concrete experience points to the importance of data and information collection and storage as essential ingredients of emergency preparedness for efficient humanitarian relief. In this regard, the development of baseline information is also a critical factor and can support all phases of emergency management, not only response.

Mr. Luc St-Pierre of **UNHCR** began his intervention stating that the use of GIS and remote sensing by the UN High Commissioner for Refugees had been limited in the past. He however believed that repatriation operations, for example, can be facilitated by space technologies. In another example, UNHCR experience in Chad with refugees from Sudan included the use of remote sensing to help locate underground water resources thus identifying the optimal location for refugee camps. This is a unique project that involves UNOSAT and illustrates emerging capabilities. Recently UNHCR has been mandated to take on new responsibilities in dealing with Internally Displaced Persons or IDPs. This new challenge has invoked the need to broaden knowledge and expertise in the areas of remote sensing and GIS. Urban mapping and better data on population density are areas of particular importance, but it also necessary to ensure that data and information on IDPs become part of the larger humanitarian information network.

## **PANEL TWO - Information management**

*In 2001 a Symposium on Humanitarian Information Exchange, organised by OCHA, discussed the importance of this area and defined some principles that inspire today's use of information management tools in emergency response. Since then there has been a substantial evolution in the capacity of geographic information systems (GIS) to integrate logistic, operational and socio-economic data. This new aspect and the benefits that it could represent for the humanitarian community were discussed during this panel, also taking stock of current global and specialised processes (GMES, GEOSS, UNGIWG, WGET, GDACS, etc.).*

Moderator: Mr. Hong Yan, Deputy Secretary-General, WMO

Rapporteur: Mr. Michael Meier, OCHA

Panellists:

Mr. Alain Retière, UNOSAT

Mr. Jesper Lund, OCHA

Mr. Philippe Bally, European Space Agency

Dr. Daniele Ehrlich, European Commission, DG Joint Research Centre

Mr. Mark Jones, AlertNet

Mr. Jean-Loup Denblyden, CERN

During the discussion, which explored areas well beyond the specific issue of information management, it was recognized that spatial applications are today a central element of disaster response and that technology had brought large benefits over recent years in administrative as well as operational levels. Pilot initiatives developed within the UN itself with the support of the *International Charter* and other emerging experiences such as GDACS and GMES Respond have proven that the products and applications provided to humanitarian users are highly appreciated by them and became quickly part of field practice, for example in the cases of the Indian Ocean Tsunami and the South Asia earthquake.

It was also recognised that there is ample room for improvement and several issues were raised by the panellists in this regard:

1. **Operability:** how to bring the services and the products to the field? Technological, logistical and time constraints still remain, which require further efforts and financial investment. Satellite telecommunications is one of the possible solutions.
2. **Sustainability:** how to make better use of the data produced during the emergency phase of a crisis for recovery purposes? This leads to the crucial question of the hand-over to the relevant authorities and their capacity to use and handle the data.
3. **Adequacy:** how to train users on the products and the tools while adapting products and services to match the user's needs? There is a recognised need for bridging the gap between the developers and the IT specialists and the end users by training "power users" who can have a role of interface. It was also stressed in this connection that geographic information and GIS in general are also planning and management tools, while maps have become a powerful tool for communication and advocacy. As such they are increasingly used for raising awareness about forgotten crises.

Alain Retière of **UNOSAT** made the point that the appreciation of satellite based information and telecommunication technology has changed since the UN has access to the *International Charter Space and Major Disasters*. This has had an impact on how the UN works today and has generated in turn experience and lessons learned. UNOSAT in consultation with UN/OOSA interpreted the needs of several operational users and offered to the Secretariat of the *International Charter* some specific recommendations for the future development of this tool that is considered a precious asset for the UN system.

Today there is a demand for readily usable products and GIS applications. This creates a requirement to which UNOSAT is very sensitive: the need to have baseline data immediately available after a crisis occurs – ideally within 2 hours (today some 6 – 12 hours are necessary). Mr. Retière explained how UNOSAT contributes to the Virtual OSOCC and how map dissemination happens via OSOCC and HIC and through Reliefweb.

Mr. Retière illustrated also how the partnership between UNOSAT and WMO was enabling the employment of meteorological data to produce satellite derived maps supporting early warning and early reaction. In one concrete example, UNOSAT was modelling "snow cover maps" to support both snow clearance operations and humanitarian relief in Pakistan in the aftermath of the earthquake. Mr. Retière thought that this is a concrete example of how innovative approaches to using technology can turn into usable tools for humanitarians in relatively short time and asked the question why adequate resources are still not available to guarantee that this work receives regular support.



Participants in Panel 2

Mr. Jesper Lund of **OCHA** explained how OCHA could not purchase maps directly and how UNOSAT's offer of dedicated maps derived from satellite remote sensing is now providing a solution to part of the problem. Conversely, he believed that the readability of some maps is still a problem for most humanitarian officers. This is aggravated by limited internet

bandwidth and connectivity in the field. He recommended that users' needs should be taken into greater account and at least some of the maps should be tailored to their level of understanding so that instead of generating more products attention should be focused on generating those products that are useful to and understood by the user. On this last point there was general agreement that users should have more exposure to and even training on the basics of remote sensing and map interpretation to facilitate the use of these important tools in emergency response.

Mark Jones of **ALERTNET** illustrated how maps are becoming accepted and used in the field by the NGO family. AlertNet offers these NGOs a range of on-line support tools, including maps and satellite derived information from UNOSAT and other private sector partners. For Mr. Jones, it was clear that maps have become a central tool in the field. Yet, he said, we are not considering enough the value of visual images in media communication, policy making and information in general (studies, reports, appeals).

In speaking of space-based imagery in particular, he stressed that maps can also serve as communication tools. This is an underappreciated area today but one of constant development. Maps can guide insight as to what options in a given situation exist and which options are capable of best serving as a solution. Maps are also used to capture interest.

Speaking of options for improvement, Mr. Jones pointed at means to share common tools, such as an online map customizing tools and the need to pay more attention to forgotten emergencies, which are receiving limited mapping coverage. Furthermore, maps can and ought to be tailored for managers, technicians and donors. The more intensive use of maps and GIS in the field depended heavily on the future improvement of internet accessibility and band width.

Mr. Philippe Bally of **ESA/ESRIN** expressed the point of view of the European Space Agency concerning actions being conducted via the GMES programme and in particular via the GMES Service Elements (GSE) with regard to operational services delivered to end users in response to needs associated with European policy sectors. Mr. Bally observed that technological changes take time and that the process to achieve service acceptance and reach an adequate level of engagement by a community of users as broad and diverse as the humanitarian one is time consuming even though the basic satellite technology required is mature today. In the laborious exercise of meeting supply and demand issues in the area of humanitarian aid and disaster reduction the Agency is supporting the United Nations in various forms through ESA programmes. In this framework the Agency has provided continuous support to UNOSAT over the last two years. It is the purpose of ESA GSE actions to provide user driven geo-information services, and GMES Respond and GMFS (Food Security) are two concrete examples of this commitment. Both actions aim at providing products and services to support aid and development both in the field and at headquarters.

Mr. Jean-Loup Denblyden of **CERN** highlighted in particular the importance of communication means in general and in the specific case of humanitarian relief. CERN has been providing substantial support to UNOSAT work for the past few years and even houses the UNOSAT production office. The partnership between UNOSAT and CERN is one made of technological support but also of shared interests in putting scientific progress at the disposal of humankind in the form of usable solutions.

Dr. Daniele Ehrlich of the **European Commission Joint Research Centre** in Ispra explained that JRC believes in the current development of satellite applications. Institutionally the EC

supports Reliefweb, GDACS and UNOSAT (including via Respond), while cooperation with OCHA has begun in 1999. He noted how since the OCHA Symposium of humanitarian information exchange in 2001 a lot of ground had been covered bringing technology to areas such as telecommunications and damage assessment. For example the Space Shuttle scientific mission for radar topography allows today the elaboration of digital elevation models (DEM) of any area of the planet, which is an important asset for humanitarians.

Mr. Ehrlich spoke also of the Global Disasters Alert and Co-ordination System (GDACS). This is a joint initiative by EC/JRC and OCHA, involving UNOSAT to support mapping. He stated that the system is fully operational. He also pointed out that geographic information systems need data to work and that such data can be acquired also using earth observation from satellites. However it is important that a conscious effort be made so that data resident within different UN agencies can be interoperable and therefore shareable.

In commenting on the discussion as Moderator, Mr. Hong Yan, Deputy Secretary-General of **WMO** said that WMO considered very important that data are interoperable and shared among users. He explained that WMO and UNOSAT had concluded a memorandum of understanding in this spirit and that data being conveyed to UNOSAT are being used to elaborate mapping products for emergency response. He also suggested that focus be enlarged from natural disasters to cover other humanitarian emergencies and that although maps and GIS are the core there are other satellite applications worth developing. Mr. Hong Yan also invited UNOSAT to hold a joint workshop with WMO on these issues.

Several participants, including ILO, UNOPS and OCHA, offered comments on the importance of training. The representative from ILO made a point on the possibility of training "power users" that can later become an interface between ICT<sup>1</sup> and the end users. UNOPS summarised the views of many that there should be a training service available to all users concerned, for example by building on UNOSAT experience, and that this service should be on-going and not just occasional. The representative from OCHA agreed on this point and added that it is important that the decision support tools like satellite observations are understood by human resources before the emergency phase so that they can be used at best.

### **PANEL 3 – Field needs and requirements**

*Preparedness, coordination and information exchange can all be regarded as efforts dedicated to increasing the impact and efficiency of relief in the field. This panel is designed to discuss the most important segment of the disaster response chain: emergency relief in the field. Some expert groups are already trying to quantify the benefits that technology and satellite applications in particular could bring about in terms of effectiveness and efficiency. While information and geographic information remain essential requirements in any emergency, it is their ease of acquisition, transfer and use that will determine their real utility.*

Moderator: Mr. Angel L. Vidal, International Training Centre of the International Labour Organization (ILO)

Rapporteur: Mr. Jean Salvadori, Euro-Mediterranean Institute for Major Risks (IERM)

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<sup>1</sup> Information and Communication Technology

Panellists:

Mr. Cherif Ghaly, OCHA

Ms. Paola De Salvo, WFP

Mr. Antonio Cruciani, ILO

Mr. Suha Ulgen, OCHA

Mr. Olivier J. Cottray, UN Joint Logistic Centre

Mr Cherif Ghaly and Mr. Suha Ulgen represented the point of view of **OCHA** and explained how the sector of telecommunications and information technology has evolved into a vital support tool for emergency response. Such was the case of the response to the Indian Ocean Tsunami, which had been supported by unprecedented ICT, although not evenly distributed. On the negative side, he recalled that duplication and uneven service are still issues of concern. To help solve these problems, training and capacity building must be realised before the emergency response phase.

In parallel to technological advance the international community is developing coordination mechanisms and legal frameworks to facilitate emergency response work. The Tampere Convention, entered into force in 2005 as a legal framework for international assistance to a disaster stricken country. The Convention is a positive step forward but procedures on the ground can still be time consuming. He also mentioned the UN Working Group on Emergency Telecommunications (WGET) whose key messages can be summarised as follows: build partnerships and implement training before times of crisis; issue evacuation warning using cell phone networks; facilitate quick deployment of satellite mapping and telecommunications; use rapid mapping as a crisis response support tool.



Rescue workers using satellite maps during the response to the South Asia Earthquake (Photo TSF)

OCHA underlined that in still too many cases these technologies do not reach the community level where they are needed to make a difference. In agreeing on the importance of being prepared to respond, he said that best response can be achieved through “data preparedness”. Groups like the UN Geographic Information Working Group (UNGIWG), and the OCHA-led GIST are contributing to uniform data policy across the UN system. One urgent need is the compilation of existing data and to compile readily available data for just in case and just in time information. OCHA is working with UNOSAT to create this value chain. Geo-network is also a development worth noting. This is a network of geospatial data. OCHA is seeking standards in geo spatial data for increased interoperability.

It was pointed out that it is necessary at one point to begin to mainstream geospatial technology and spread its use in the UN system. Today there is still the risk of UN managers buying tools they do not need nor know how to use as a result of commercial push. Across-the-board initiatives like UNOSAT can help decrease this risk because they act as a unified portal towards the UN community of users and as a procurement agent for the users towards the private sector. Of course humanitarian agencies need to be informed and possibly trained to some extent to know what is available, what can be used efficiently in emergency response and how to obtain it.

Comments offered by **KEYOBS** (a private service provider from Belgium) and **UNITAR** highlighted the well known fact that today the problem is that there is no availability of funds to buy geo info before the actual emergency. The donor community should therefore engage in facilitating and supporting both data preparedness and core funding in the area of remote sensing for emergency response. At the present resources are too limited for both **UNOSAT** and the private sector to produce geographic information before the actual emergency. This is affecting negatively the use of geographic information in recipient countries and UN agencies alike.

The fact that satellite technology is funded and applied mostly in the emergency phase is another factor likely to increase the gap separating relief from development. **UNOSAT** has proven that data generated in the affluent phase of emergency can be used in early recovery and reconstruction in order to plan the latter upon reliable information and geo data to avoid creating new vulnerability. In this context Mr. Antonio Cruciani of **ILO** recalled that the UN is developing policy in the area of early recovery. Under **OCHA** coordination the **IASC** set up clusters including one on reconstruction, setting a new example in emergency response, which traditionally did not go beyond search and rescue and life-saving activity.

Mr. Cruciani recommended that a basic package of informations and maps should be put together and provided to each agency via the usual channels in each humanitarian operation. While doing this, one should also take into greater account the local authorities' needs and requirements so that information can be left in the hands of local communities after the acute phase of the emergency.

In this context **UNOSAT** observed that the Humanitarian Information Centres (**HIC**) represent a wealth of information that should be effectively reorganized to live longer than the emergency phase. **UNOSAT** could offer the appropriate support to implement a transition towards a locally based information centre, in cooperation with **OCHA** and others. **UNOPS** agreed on this point since there are applications that are very useful for prevention that today are used mainly for emergency response. There is need to build a bridge between these two categories and space technology can be the opportunity to do so. The representative of **MICROSOFT** added that mapping can be used as a common platform for different people to contribute information on a certain area. This method can lead for example to maps of "who does what where" much more quickly.

Paola De Salvo of **WFP** reported that at its meeting in Addis Ababa, **UNGIWG** congratulated **UNOSAT** on the added value brought about by their maps. Thanks to these continued efforts, maps are entering the daily work of agencies. Now what is needed is to pull capacities together so to generate more added value and synergy. Most agencies need the same basic information layers. A lot of additional information exists that can be georeferenced and displayed geospatially. The sum of this information can be shared among agencies for their specific use. To achieve the integration of space supported tools into emergency response it is necessary that agencies operating in the field be aware of who are the accredited partners from who certified information tools can be obtained. They should also be better informed of what is possible and what is not possible using satellite remote sensing and mapping. But at the same time, she insisted, it is important to decentralize capacity towards the local level where knowledge and skills can already be found. Local actors need to be empowered to tackle risk locally. This is one reason why local capacity building ought to be a central goal. In adding to this specific point, Alain Retière of **UNOSAT** briefly illustrated the example of a **UNOSAT**-led programme launched in Nicaragua after hurricane Mitch (1998) using the wealth of remote sensing data generated for the response to help recovery, reconstruction and

longer term vulnerability reduction. Today local capacities are fully developed in the area of GIS and remote sensing and commonly used for development planning and disaster prevention. Mr. Retière added that indicators showed that the Nicaragua experience can be replicated in other countries with relatively low funding.

### **Concluding Remarks by Mr. Antoine Battesti, IERM**

Mr. Battesti from the Euro-Mediterranean Centre for Major Risks in Corsica thanked UNOSAT and OCHA for inviting the Institute to take part in the Symposium. He took the opportunity of the concluding remarks to stress some of the points made previously by his colleague Mr. Jean Salvadori, and offered a proposal to participants.

He both acknowledged and praised the specific know-how, competencies, and skills of response actors and the importance of actors meeting together through events such as this Symposium. He added that his opinions might appear controversial but that in his professional experience he became convinced that a host of problems confront the response community and that these problems need to be faced head-on.

He stressed that no real common culture exists bringing together the variety of humanitarian actors at the operational level, in particular in the areas of communication and cooperation. Too often actors act independently and often with little awareness of local knowledge and capacity. As a result much effort is wasted or poorly directed. He pointed out the lack of a common language, common training, and knowledge sharing, particularly in the important area of “lessons learned”.

Against this background, he stated that to him it was important that all response actors active internationally recognise and refer to the coordination authority of the United Nations. In parallel the UN can and ought to be allowed to exercise efficient centralized co-ordination in international humanitarian relief efforts in the field. He stressed that in emergency response the concept of “who is in charge” is of central importance. He suggested that outside of local authorities in domestic contexts, the UN was the only entity capable of serving in this role.

After offering some examples from his personal experience as rescue worker and trainer, Mr. Battesti concluded by suggesting that an innovative programme of practical training be hosted by the IERM in Corsica, which could concentrate on the subjects of methodology, practical training, and gathering of experience. He explained the motivations behind the Euro-Mediterranean Institute for Major Risks and the important role it plays in furthering practical knowledge and skills development through the application of “lessons learned” and the development of specialised curricula.

He suggested the need of a dialogue between those who are “convinced” of the application of new technologies and those who are not. He stressed that the scientific community has to be involved in this dialogue and that remote sensing experts should be kept abreast of humanitarian needs and understand the contextual use of remote sensing resources.

Mr. Brachet acting as Chair formally closed the Symposium and thanked all panellists and participants.

# “Enhancing emergency response by leveraging satellite applications”

## AGENDA

14 December 2005

Palais des Nations, Geneva, Switzerland

### **The symposium is convened with three main objectives:**

1. To generate updated information on the current availability and use of decision support tools in emergency response, especially satellite based imagery and GIS applications
2. To further the ongoing discussion among interested entities concerning specific mapping and geographic information needs for emergency response
3. To identify avenues to rationalise and augment capacities to harness satellite based applications for emergency response across the humanitarian community

9h30

### **Opening remarks from the Chair**

Ms. Yvette Stevens, Assistant Emergency Relief Coordinator, Director, United Nations Office for the Coordination of Humanitarian Affairs (OCHA), Geneva

### **Welcome from UNITAR**

### **Keynote**

Mr. Gerard Brachet, Chairman-elect of the UN Committee on the Peaceful Uses of Outer Space (COPUOS)

10h15 - 12h

### **1 - Humanitarian coordination and field support**

**Moderator:** Ms. Yvette Stevens, Director, United Nations Office for the Coordination of Humanitarian Affairs (OCHA), Geneva

**Rapporteur:** Mr. Suha Ulgen, Technical Coordinator, Field Information Support Project, United Nations Office for the Coordination of Humanitarian Affairs (OCHA), New York

### **Panellists**

- Mr. Jean-Christophe Bouvier, UNOPS Geneva
- Mr. Arjun Katoch, OCHA
- Ms. Paola De Salvo, WFP
- Mr. Karl Steinacker, UNHCR
- Mr. Jean Salvadori, Euro-Mediterranean Institute for Major Risks (IERM)

14h - 15h30

2 – Information management

**Moderator:** Mr. Hong Yan, Deputy Secretary-General, World Meteorological Organization (WMO)

**Rapporteur:** Mr. Michael Meier, Coordination Response Division, Office for the Coordination of Humanitarian Affairs (OCHA)

**Panellists:**

- Mr. Alain Retière, UNOSAT
- Mr. Jesper Lund, OCHA
- Mr. Philippe Bally, European Space Agency
- Dr. Daniele Ehrlich, European Commission, DG Joint Research Centre
- Mr. Mark Jones, AlertNet
- Mr. Jean-Loup Denblyden, CERN

15h45 – 17h15 3 – Field needs and requirements

**Moderator:** Mr. Angel L. Vidal, International Training Centre of the International Labour Organization (ILO)

**Rapporteur:** Mr. Jean Salvadori, Euro-Mediterranean Institute for Major Risks (IERM)

**Panellists:**

- Mr. Cherif Ghaly, OCHA
- Ms. Paola De Salvo, WFP
- Mr. Suha Ulgen, OCHA
- Mr. Antonio Cruciani, ILO
- Mr. Olivier J. Cottray, UN Joint Logistic Centre

17:15 – 18:00 Conclusions and Recommendations

OCHA, UNITAR and the rapporteurs

Concluding Remarks by Mr. Antoine Battesti, University of Haute-Corse

# List of participants

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## Enhancing emergency response by leveraging satellite applications

*A Symposium organised by OCHA and UNITAR*

14 December 2005, Geneva, Palais des Nations, Room XXI

**Chaired by** Ms. Yvette Stevens, Assistant Emergency Relief Coordinator and Director of OCHA Geneva

**Keynote by** Mr. Gérard Brachet, Chairman-elect of the UN Committee On the Peaceful Uses of Outer Space

Food and Agriculture Organization (FAO)	Mr. Giovanni Simonelli
	Mr. Paul Paredes-Portella
International Labour Organization (ILO)	Mr. Antonio Cruciani
	Mr. Angel L. Vidal (ITC/ILO)
	Mr. Guillaume Loonis-Quelen
International Organization for Migration (IOM)	Mr. Amr Taha
Office for the Coordination of Humanitarian Affairs (OCHA)	Mr. Arjun Katoch
	Mr. Charles Royce
	Mr. Suha Ulgen
	Mr. Michael Meier
	Mr. Cherif Ghaly
	Mr. Jesper Lund
	Mr. Joel Opulencia (ReliefWeb)
UN Children's Fund (UNICEF)	Ms. Heidi Peugeot
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