Integrating telecommunication and geopositioning functions to deliver better and faster the satellite imagery to disaster managers

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What is UNOSAT

1. The United Nations Institute for Training and Research (UNITAR) Operational Satellite Applications Programme - a unique UN programme entirely dedicated to providing satellite based solutions to the UN, local governments, international organizations and NGOs.

2. Supports early warning, crisis response, sustainable recovery, vulnerability reduction and local capacity building

3. Countries in the south are UNOSAT’s main beneficiaries

4. UNOSAT is the main implementing agency within the UN for the International Charter “Space and Major Disasters”

5. Has evolved into a mature UN service with global outreach and supported by a network of partners world wide

6. Diversifying the offer of satellite & IT based services and adapt it to specific user needs of the international community

7. UNOSAT works always upon request of at least one major organization directly or indirectly involved in field operations and validated by relevant UN coordination mechanisms
UNOSAT promotes the UN Reform by making satellite imagery affordable.
Basic Service Platform

Procurement Service
- Satellite imagery procurement
- Orthorectification chain

Mapping Service
- Humanitarian and Conflict Mapping
- Environmental Mapping
- Rapid Mapping
- Vulnerability Reduction Services

IT and Web Service
- Information dissemination (ImageWebServer)
- Data hosting
- User website development

Training Service
- Project-based (operational)
- On-line modules: GIS and RS (New!!)

Advisory Service
- Support to resource mobilization
- Project implementation

Public Relations
- Humanitarian awareness
- Technologies dissemination
- Financial assistance to users
www.unosat.org

A powerful on-line data catalogue hosted at CERN, accessible from anywhere
UNOSAT open partnership
EO and the disaster cycle
Criteria for selecting space telecom and navigation technology

- Common standard for all agencies
- Rapid deployment
- Low installation and operation cost
- Robust systems
- Highly transferable to host-countries
International Charter on Space and Disasters

- Open to the UN member-states through UN agencies since July 2003
- Charter triggered 80 times by UNOSAT on behalf of sister agencies
- Note: images are free, but need to be converted into information and maps (which has a cost).
The pioneer partnership with OCHA and TSF:
we finished that map at 10 pm in Geneva, it was available at 6am on the Muzaffarabad airfield …
Example: Before-after image comparison, Guningkelir, Bawqukan Satu and Tegalrejo villages in Pleret subdistrict.
“Matagalpa Misión Agua”: General Context

deforestation of the surrounding hills

Settled and steep slope

Flat and dense urban centre
1. Deforestation due to urban growth
2. Steep Slopes
3. Terrain stability
4. Pollution
5. Buildings almost inside the river channel or in flood prone areas
6. Typical Urban Drainage System
7. Drainage Canals and Culverts
Evaluating Flood Protection Measures: Gabions (3)

Barrio Rodolfo Lopez: Flood scenario without gabions
Barrio Rodolfo Lopez: Flood scenario with gabions (for a given discharge rate)
Fleet Management Project

satellite tracking and data capture for all
Examples of on board equipment

- Screwed
- Magnetic stand

In cab
Vehicle exact position on a satellite image

Vehicle tracking

Navigation
Scale: 1:23954

Selection (meters)
TLX: TLY: BRX: BRY:

Time: 13:23:45
Lat: 12:55:27.72N
Lon: 85:55:2.4W

Vehicle type: Toyota Landcruiser

License plates: CD 3511 MG

Personnel onboard:
Marta Delgado
John Carson
Driver: Carlos Sanchez
Satellite operators
satellite access providers
hardware suppliers

• Support to installation
• Web portal
• Training
• User feedback
• Contracting

Humanitarian organizations
HCR
WFP
MSF
…
Emerging cooperation with sat telecom operators
(MoU ESOA-UNOSAT)
Recommendations

1. Internet is the key vector for new technologies, digital divide a burden
2. Space is the best alternative to bridge digital divide despite the high cost
3. Charter « space and major disasters » is a successful partnership that can be extended for food security
4. Same mechanisms should apply for telecoms and navigation services
5. Micro satellite technology offer affordable solutions for emerging countries
6. Interoperability of systems must be ensured and strengthened
Thank you for your attention

Merci de votre attention