



European Satellite Operators Association

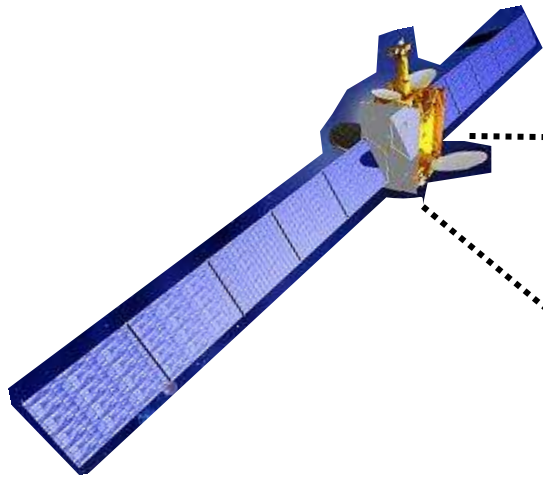
Activities of the European Satellite Operators Association (ESOA) Disaster Management

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One Satellite can see
1/3 of the Globe from Space



Satellites enable:

- Imagery
- Communications

Satellites are not vulnerable to natural/ man-made disasters



International Charter

Space and Major Disasters

Space Agencies
together support
humanitarian
relief efforts
around the world.



Recognised by the International Community

- In 1999, Space Agencies came together to provide *satellite imagery* to UN Member States
- The Charter has been triggered over 80 times by the UN itself
- Provides satellite imagery to nations in need following a disaster



Example: Satellite Imagery for Earthquake in Indonesia



BEFORE: 11 July 2003



AFTER: 31 May 2006

Natural hazards cannot be prevented; however, their impacts can be reduced through the cost-effective use of appropriate technologies.

A number of space-based technologies (e.g. telecommunications, Earth observation, ge-positioning and meteorology) can contribute to the information requirements of the different phases of a disaster management programme and therefore offer significant potential for minimizing the impact of natural hazards.

The Disaster Cycle & The Need for Communications



Coms for early warning

Emergency Coms when land-based infrastructure is lost

Satellite Imagery to aid relief efforts

Coms during reconstruction/recovery until other infrastructure restored

Communications in a Crisis

- Terrestrial and cellular networks are vulnerable to catastrophic events
- Hurricanes, earthquakes, floods and fires can damage ground infrastructures within minutes
- And yet it is in times of crisis that communications are needed most
- Communications is a major enabler in the management of humanitarian aid and emergency response



Satellites - A Portable Infrastructure



When land lines are down or overloaded, a portable space-based solution can save the day

A portable satellite terminal that supports voice, facsimile, data transfer, video & two-way communications from a disaster field

Satellites - Even on a Construction Site

A satellite dish can
be installed
anywhere, even in
rubble

The only
requirement is a
direct 'line of sight'
- the terminal
needs to 'see' the
satellite



Satellites - A Transportable Infrastructure



Where roads
remain intact,
satellite vans can
be deployed to
assist
communications

*Van that supports voice,
facsimile, data transfer video
and two-way communications
from a disaster field*

Co-operation to provide Satellite Communications

- While the international space community has a framework to provide satellite imagery in times of need, the same does not exist for satellite communications
- Land-based communications infrastructure is one of the first thing to fall in a disaster
- In 2007, *Satellite Operators* have come together to assist the UN with satellite connectivity in emergency regions

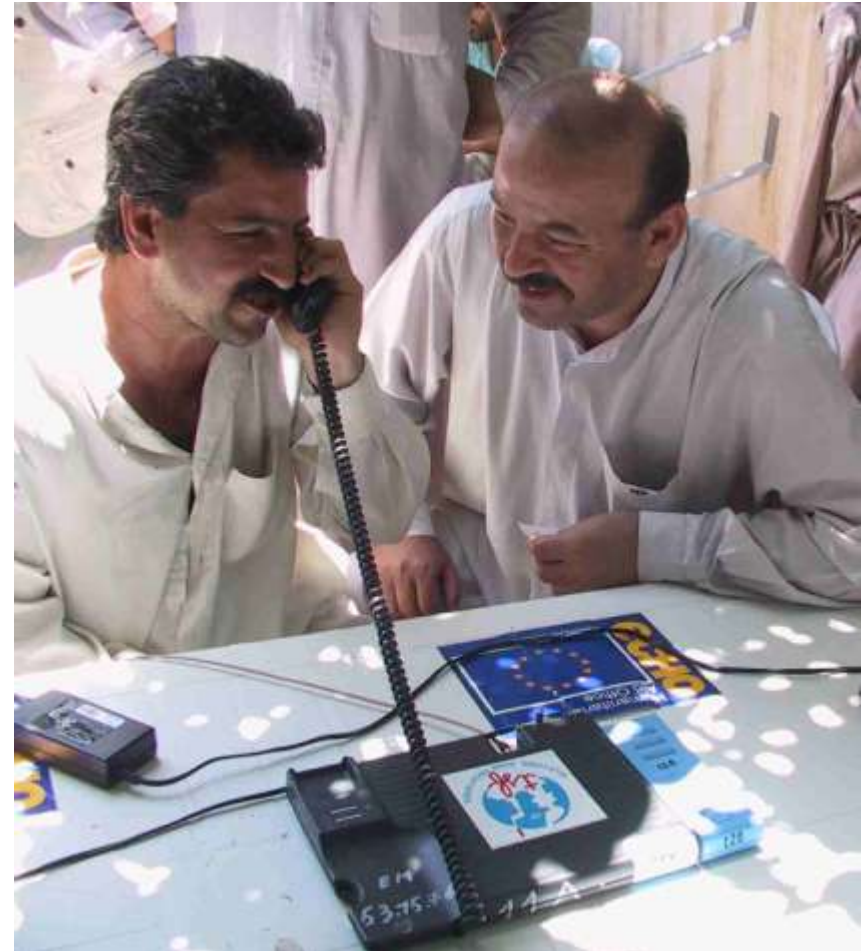


AGREEMENT

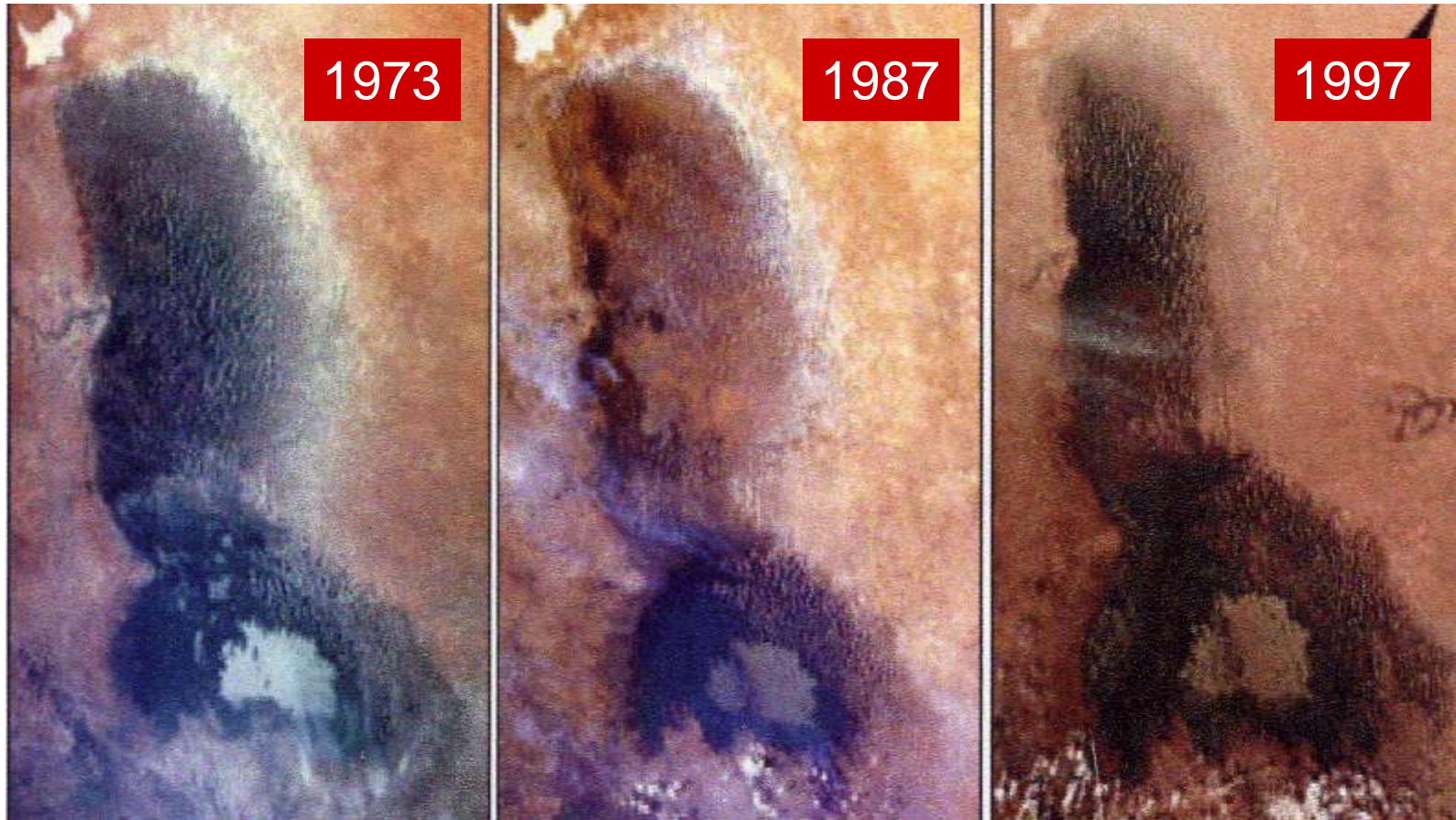


The Power of Satellites

- Satellites can provide essential communications within hours of a crisis
- From vital co-ordination of relief efforts, to giving reassurance to family and friends
- ESOA members deliver fixed and mobile communications
- Voice and broadband data
- Meeting immediate and on-going needs of government agencies and NGOs



Example I: Connecting Points around Lake CHAD



Since 1966 Lake Chad has reduced from 25,000 km to less than 1,500 km
Satellite communications are foreseen to support water management activities

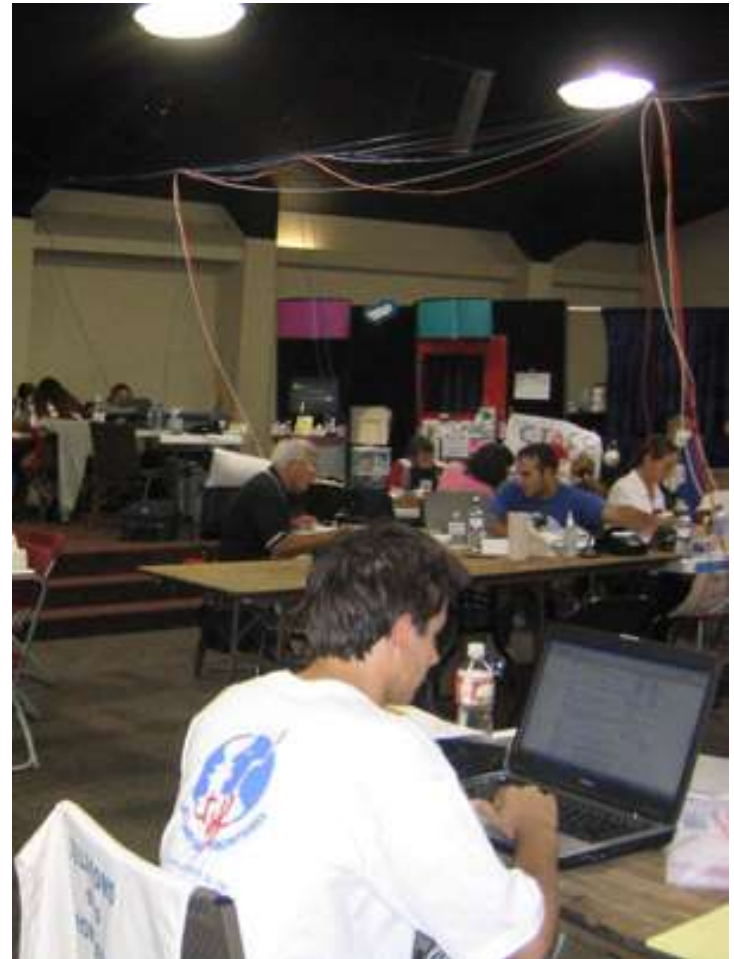
Example II: Connecting families in Lebanon

- Télécom Sans Frontières (TSF) appointed by United Nations to deploy satellite communications in Lebanon, August 2006
- Two telecoms centres
- Supported 22 aid organisations and over 600 displaced families
- In under one month, 3 gigabytes of data sent and 1,850 minutes of calls



Satellites as Critical Infrastructure

- Provide logistics support for relief agencies
- Telephony, email, internet access, videoconferencing, instant messaging
- Telemedicine connects to world-class trauma specialists
- Tele-education to bring normality to displaced children or destroyed schools
- Media coverage raises the profile of the disaster
- Supports business continuity, which in turn supports the community



SatComs have been deployed over long & short periods in recent emergency situations:

- Tsunami (Dec 2004 - Indonesia and Sri Lanka)
- Katrina Hurricane (Aug 2005- New Orleans, US)
- Earthquake (North Pakistan Oct 2005 , Peru Aug 2007)
- Flood (Bangladesh Nov 2007, Mexico Oct 2007, Mozambique Jan 2008)

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INMARSAT'S BROADBAND GLOBAL AREA NETWORK

Using the power of the Inmarsat-4
satellites, BGAN delivers:



Broadband IP data (up to 492kbps)



...plus voice at cell phone quality
accessible simultaneously
through a single hand-portable device



With guaranteed data rates on demand



Available globally

CONTACT:

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Satellites

- A “drive-away” Infrastructure



- VoIP Telephony
- Teleconference system
- Electric Power Generator
- UPS
- Air-conditioning system

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DVB-RCS Transportable Van equipped with:

- DVB-RCS Auto-track 1.2 m Antenna & modem
- WiFi System (wide coverage)
- Remotely-controlled camera



ONE STOP SHOP Solutions & Services - "In-Field Command Post"



Wi-Fi



GSM
PMR



VHF/UHF
DECT
VoIP



- Transportable Station (Truck-based or Man-based) for Communication Network Extension by Satellite
 - GSM, PMR, VoIP, DECT, UHF/VHF
 - Internet Access, Wi-Fi
 - RISKFRAME
- Send/Retrieve Information to/from in-field areas
 - Infoterra earth observation & geo-information products & services



// ND SatCom solutions for Disaster response, business continuity – securing telecommunication in difficult times //

// Governments prepare for the worst: telecommunication is vital to all relief work for police, fire departments, rescue, medical and technical support teams //

Applications: voice, data, videoconferencing, disaster video contribution, internet, database access, radio relay, control and command etc.



- ESOA represents ALL European satellite operators
- The Association works with policy-makers to ensure that satellite technology and services are taken into proper account in the delivery of public sector objectives so citizens all over the globe can benefit from them
- The availability of satellite services depends on political support, a favourable regulatory environment, a fair industrial policy and **AWARENESS**
- The Members of ESOA are:

