

Meeting Title

Location Meeting Date

Disaster Recovery

Leveraging Satellite Applications
to Save Lives

The BCom Tsunami Experience



one world, one source, infinite possibilities

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BCom at a Glance

- Specialized in VSAT installation, support, & maintenance services since 1997
- Intervened in over 35 countries, most recently in Tsunami-stricken Indonesia with Intelsat for UN Refugee Agency UNHCR
- Past disaster recovery & emergency response experience is not limited to 'natural' but also 'man-made' disasters :
 - VSAT Network for UNHCR in Kosovo, Albania, & Macedonia at the end of military operations in Oct1999
 - Installations in Kabul-Afghanistan & Baghdad-Iraq immediately after military operations
- Project Management capabilities in a compressed time period specially demonstrated in latest Tsunami project



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BCom at a Glance (cont'd)

BCom's other interventions in 'Man-Made' Disasters:

Pristina Kosovo 1999



Kabul Afghanistan 2002



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BCom's Tsunami Experience Feb2005



Calang, Northern
Sumatra, Indonesia



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BCom's Tsunami Experience Feb2005



Meulaboh, Northern
Sumatra, Indonesia



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BCom's Tsunami Experience Feb2005

Banda Ache, Northern
Sumatra, Indonesia



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BCom's Tsunami Experience Feb2005

Lamno, Northern
Sumatra, Indonesia



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Disaster Recovery Response Stages

In a disaster, relief sites' connectivity needs develop in 3 stages:

- 1. 1st wave of relief personnel to arrive on site such as ICRC operate in total uncertainties are best served by personal mobile satellite (Thuraya, Inmarsat etc.).**
- 2. The 2nd stage, 2-3 weeks after disaster, small camps start to develop requiring 'thin-route' data/voice connectivity 64/128kbps with <1.8mtr antennas**
- 3. The 3rd stage, 6-12 weeks after disaster, larger permanent relief camps & offices develop. Agencies such as UNDP, UNICEF, etc. with larger number of staff, requires bandwidth to satisfy applications (PeopleSoft, Telemedicine, Video Conf, etc.) 512k → 2048kbps.**



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Disaster Recovery Response Stages (cont'd)



Development of Small Mobile Relief Camps



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Disaster Recovery Response Stages (cont'd)

- **A narrow window of opportunity for VSAT introduction exists when relief efforts are initially at full pace:**
- **In the hot stage of the catastrophe, local authorities are tolerant with VSAT importation & operation licensing due to UN or NGO privileges**
 - **Logistical support for VSAT deployment is in full swing the first few weeks**
 - **Free transport is usually assured by special civilian & military flights with local helicopter logistics to the relief zone or VSAT sites**
 - **Availability of VSAT equipment, special packing & readiness to install are crucial**
- **Met the opportunity window in the Tsunami Indonesia case but in Sri Lanka, the equipment *remains in customs to date***



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Disaster Recovery Response Stages (cont'd)



Full Swing
Logistical
Operation



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Disaster Recovery Response Stages (cont'd)



Full Swing
Logistical
Operation



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Disaster Recovery Response Stages (cont'd)



Full Swing
Logistical
Operation



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Disaster Recovery Response Stages (cont'd)



Full Swing
Logistical
Operation



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Disaster Recovery Response Stages (cont'd)



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VSAT Deployment in a Disaster

- **Field VSAT installation & support is very different in a disaster. In the Tsunami case:**
 - Required continuous adaptation to a changing environment & moving targets
 - Irregular non-commercial flight schedules for transporting equipment & installation teams
 - Abnormal on-site working hours due to an 12-hour time difference with satellite provider headquarters
 - Site preparation (enabling works) delays affected installation schedules
 - Delays with power supply preparation
 - Delays with concrete slabs & sometimes having to fly in cement
 - Installation team creativity & on-site management is critical



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VSAT Deployment in a Disaster (cont'd)

Using plant pots in place of hard-to-find cement ballast blocks



Note: N.B. Cement plant in Banda Aceh was washed away, with concrete having to be flown in by helicopters



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VSAT Deployment in a Disaster (cont'd)

- **Field VSAT installation & support is very different in a disaster. In the Tsunami case this required: (cont'd)**
 - Aligning installation schedules with rationed electricity supply periods especially at night where even lighting maybe absent
 - Relying on mobile satellite telephony & data access in the absence of telephone or reliable GSM networks
 - Local camp communication needs sometimes different from initial HQ requirements
 - Adjusting to frequent relocation of relief camps & difficult living conditions
 - Prioritizing safety & security of installation team & relief camp residents



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VSAT Deployment in a Disaster (cont'd)



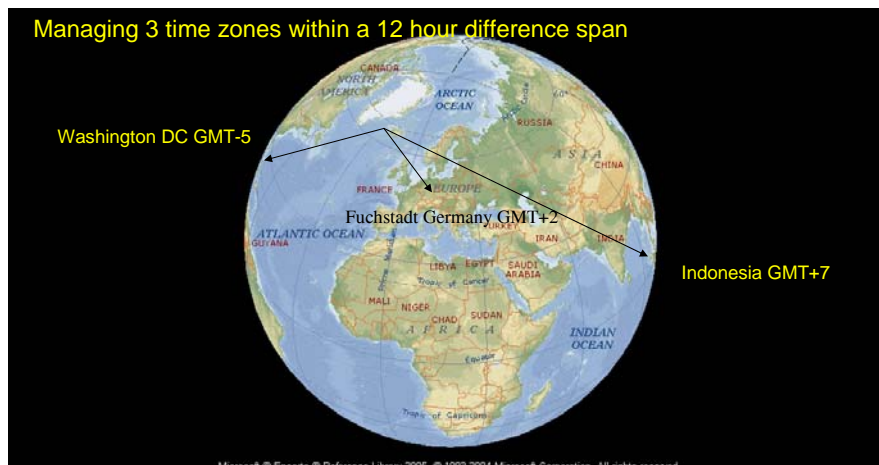
Working under car headlamps & torches



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VSAT Deployment in a Disaster (cont'd)

Managing 3 time zones within a 12 hour difference span



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Intelsat-BCom ... A proven partnership...



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