



T.C.I

Study and Design of Portable Communication Systems for Disaster Relief in Iran

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Topics

- ❖ **Telecommunications in the service of humanitarian assistance**
- ❖ **The organization and regulatory framework for disaster communications**
- ❖ **Introduction of international organizations ,regulatory framework and their role**
- ❖ **Overview of some existing disaster telecommunication systems and projects in other countries**
- ❖ **Selection and propose disaster telecommunication systems for Iran**



Telecommunications in the service of humanitarian assistance

Disaster communication systems for relief purposes

The communication needs of disaster management:

Tactical communications (among relief workers on disaster site with province & state administrations)

Strategic communications (among affected area with country and the outside world)



The organization and regulatory framework for disaster communications

Telecommunications systems in disaster response :public & private networks,Amateur Radio Service and the additional telecommunication Requirements during a sudden on-set disaster for co-ordination purposes:

Local link; between relief workers with On Site Operations Co-ordination Center

National link; between OSOCC with disaster management team and National Emergency Operation Center

International link; between NEOC with related international organizations



National frameworks in relation to D C includes

National Disaster Management structures ; a national disaster coordinator in Tehran & regional disaster coordinator in each province , and links among them ,service providers and authority telecomm

The National Regulatory Framework for issues like facilitating law & regulation for importing and setting up disaster telecommunication systems

Confidentially considerations for disaster; preparation exact layout of systems,classified as a national secret, agreement need to sign with operators

Telecommunications operators



The international regulatory framework and their role in disaster & emergency communications

UN(United Nation) , UN OOSA(United Nation Office for Outer Space Affairs , OCHA(UN Office for Coordination of Humanitarian Affairs), International Telecommunication Union (ITU-R,T,D), NGO(Non Governmental Organization), ICRC(International Committee of the Red Cross) , IASC (Inter Agency Standing Committee including sub WGET ,A,B),regional and national organizations,the Tampere Convention includes 17 articles , different Resolutions about disaster and emergency communication like Resolutions number 7 ,19,36 ,644,54/233



Tampere Convention

Following massive tragedies caused cyclones in Bangladesh, earthquakes In Iran ,drought , famine in Sudan and other countries, in 1998 at the invitation of Finland Government 76 states participated in Tampere Finland and the Convention was signed by 33 states.

For entering into force it should be ratified by 30 countries , up to Now

Twenty four states has ratified the Convention.

It includes 17 articles about disaster communications matters for minimizing regulatory barriers, customs clearance procedures , and provision of telecommunications assistance



Resolution No.7 (disaster communications)

Resolution No. 7 of the first World Telecommunication Development Conference (WTDC-94, Buenos Aires, 1994).

This Resolution urges all administrations to remove national regulatory barriers in order to allow the unhindered use of telecommunications in disaster mitigation and relief.



Resolution No.644(Telecommunication resources for disaster mitigation and relief operations)

Resolution No.644 of the WRC-97 requests ITU-R to continue to study use of radiocommunications services including ARS, mobile and portable satellite terminals for disaster communications.

It invites UN Emergency Relief Coordinator and Working Group on Emergency Telecommunications to collaborate closely with ITU Toward implementing this resolution and adapting the convention On the provision of Telecommunication Resources for disaster mitigation and relief operations .



Resolution No.19(Telecommunication resources for disaster mitigation and relief operations)

Resolution No.19 of the WTDC-1998(Valetta) requests the ITU-D Consideration be given to emergency communications and use of radiocommunications services including ARS, mobile and portable satellite terminals for disaster communications.

It invites UN Emergency Relief Coordinator and Working Group On Emergency Telecommunications to collaborate closely with ITU toward implementing this resolution and adapting the convention on the provision of Telecommunication Resources for disaster mitigation and relief operations .



Res No. 54/233(International cooperation on humanitarian assistance in the field of natural disasters from relief to development)

The 54th session of the United Nations General Assembly 1999, called in its resolution 54/233 for the ratification and Implementation of the Tampere Convention.

It also requires international cooperation on humanitarian assistance in the field of natural disasters from relief to development



Res No.36(Telecommunications in the service of humanitarian assistance)

**Resolution No. 36 of the ITU PP-94, Kyoto, 1994&Rev in PP-98
Minneapolis**

Resolution No. 36 reiterates the need for an international convention on disaster communications, and

**Echoes Resolution No. 7 in urging administrations to reduce and/or remove regulatory barriers to facilitate rapid deployment
And effective use of telecommunication resources for disaster
Relief operations.**



Selection of appropriate technology for disaster and emergency communications systems:

Desired features ; portable by airlift & truck ,fast deployable,proven reliability,wide area coverage ,etc

Typical systems for disaster relief:Vsat/Macro cell, Vsat/ Micro cell , satellite phone and PMR;TETRA,iDEN, Trunked land mobile radio

Comparison of different technologies

Selection of appropriate technologies



Operational disaster communication systems and projects in other countries

Virtual Emergency Management Information system (Canada):

To enable emergency managers to remain in contact regardless of physical location

It includes:

Terrestrial systems(Cellular , VHF/UHF/HF Radio,HSSSR,landline)

Satellite systems(Msat,Vsat,Direc PC)



MESA PROJECT

Mobility for Emergency and Safety Applications or MESA Project

It's agreement was ratified in Jan,2001 in Mesa city, Arizona

It's aim is for public protection & Disaster relief in globally applicable

It support 2 Mb/s for mobile applications

MESA addresses the standardization needs...



OTHER?



FIRE



**LAW
ENFORCEMENT**



PEACEKEEPING



**DISASTER
RESPONSE**



EMS

... of Public Safety Users



Proposed disaster communication systems for Iran

Existing space segment for satellite communications in Iran;
Intelsat **902@62°E Spot1**, Ku band Transponder

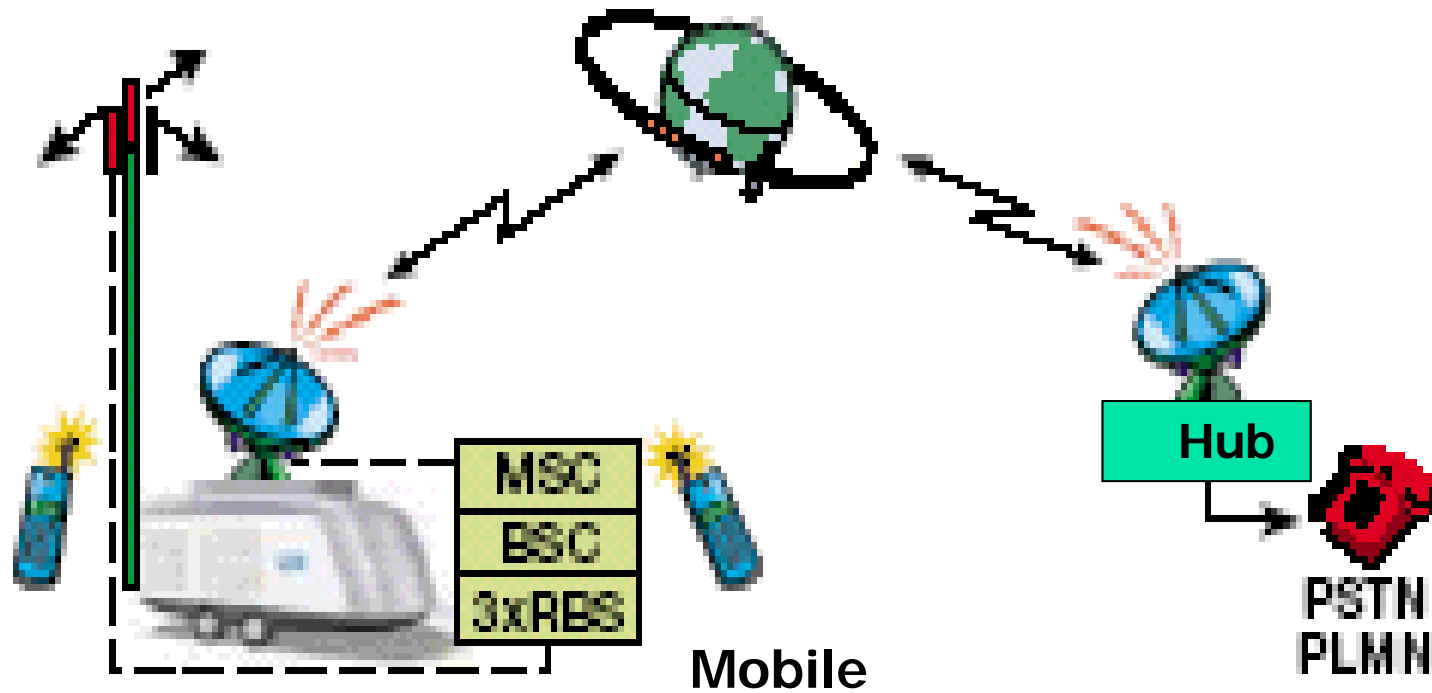
Link will include:

- One transportable Vsat/MSC or V sat/WLL
- One transportable Vsat/telemedicine Seven fixed Vsat terminals
- One new Vsat hub E/S

The seven fixed Vsat terminals will be installed in seven STD centers
A number of satphone terminals including INMARSAT and Thuraya terminals will be provided for disaster area for international communications

A typical Vsat/MSC link for affected area

BTS antenna





Local network

A complete MSC based on GSM or WLL based on GSM will be hosted on the BOX and provide the local communications Of the disaster area.

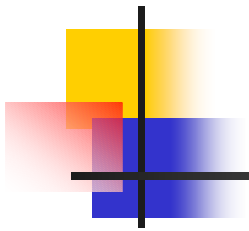
It can be a part of public network.

The transmission interface will be E1 standard & power supply for MSC & Vsat (generator & UPS) will be installed on the box.



TYPICAL PORTABLE GSM NETWORK ON WHEEL

Technology	GSM 900/1800,PCS 1900,GSM900
BSC platform	BSC up to 3 BTS
No of TX	Up to 18
Typical coverage(R)	1800/1900(1-7.2 Km),900 S(3.1-16.4Km)
Switch platform	MSC with HLR,VLR
Mon/Con	LOCAL/REMOTE
Antenna	15m/pneumatic
Power supply	220V,integrated bat/UPS,EXT or INT generator
Deployment time	30 min typically



THANK YOU