



T.C.I

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

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# Topics

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



## **Telecommunications in the service of humanitarian assistance**

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**Disaster communication systems for relief purposes**

**The communication needs of disaster management:**

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

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



## The organization and regulatory framework of disaster communications

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**Telecommunications in disaster response :public & private  
NWs, A R S 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**

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**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 its role in disaster and emergency communications**

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**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

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**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 on disaster communications matters like minimizing regulatory barriers, customs clearance procedures, and provision of telecommunications assistance**



## **Resolution No.7 (disaster communications)**

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**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**

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**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 UNERC and WGET 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**

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**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 UNERC and WGET 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**

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**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**

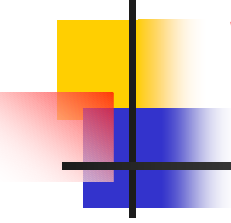
### **Telecommunications in the service of humanitarian assistance**

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**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 communication system**

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**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**

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### **Virtual Emergency Management Information system (Canada):**

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

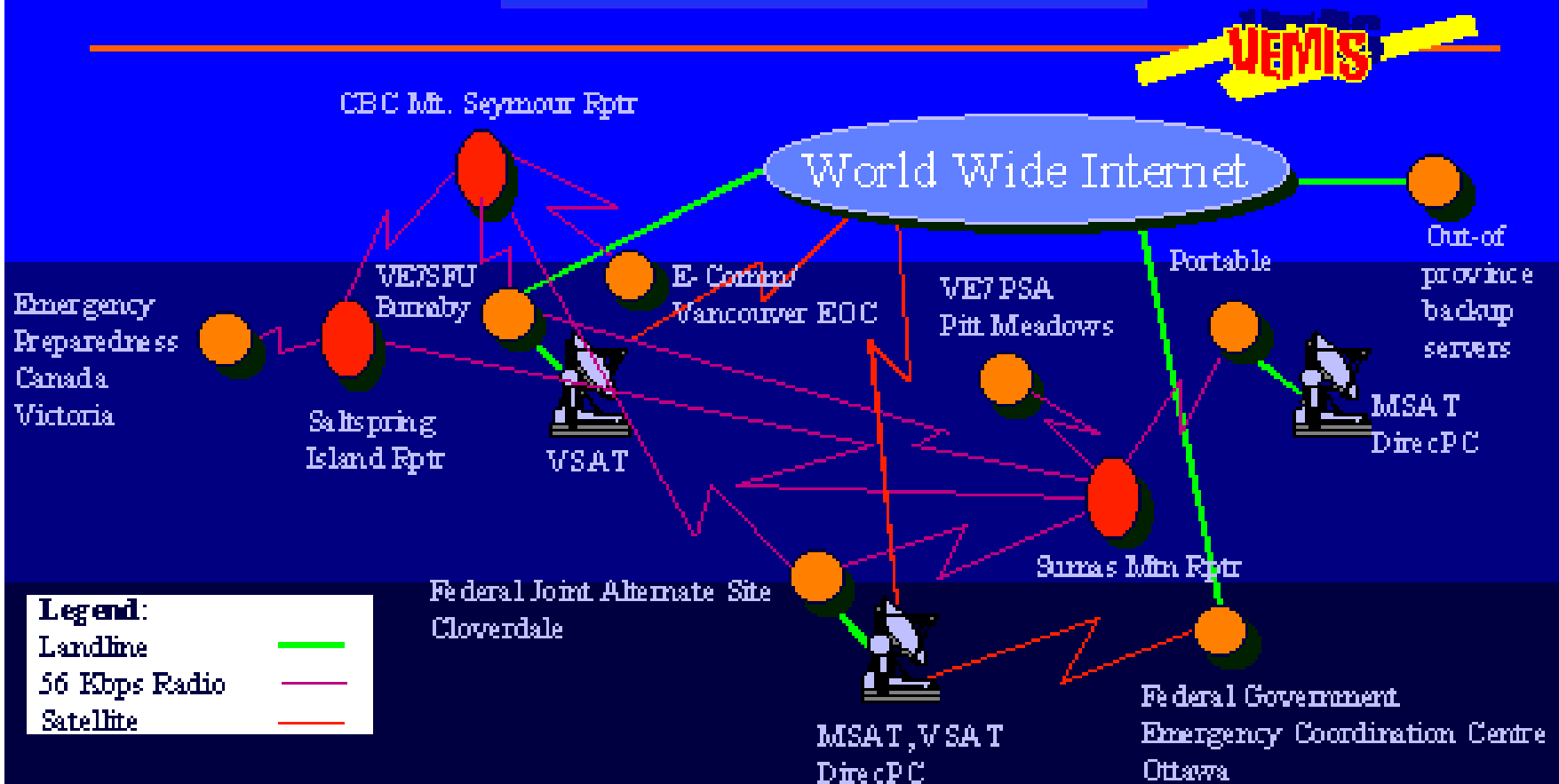
**It includes:**

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

**Satellite(Msat,Vsat,Direc PC)**

# VEMIS Configuration

## CANADA





## **MESA PROJECT**

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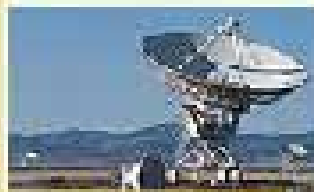
**Mobility for Emergency and Safety Applications or MESA Project**

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

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

**For support 2 Mb/s for mobile applications**

MESA addresses the standardization needs...



**OTHER?**



**FIRE**



**LAW  
ENFORCEMENT**



**DISASTER  
RESPONSE**



**PEACEKEEPING**



**EMS**

... of Public Safety Users



## Proposed disaster communication systems for Iran

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By using Intelsat 902@62°E Spot1, Ku band Transponder

Proposed system will include:

- One portable Vsat/MSC or portable V sat/WLL
- One portable Vsat/telemedicine (transportable by airlift & truck)
- Seven fixed Vsat terminals
- One Vsat hub E/S

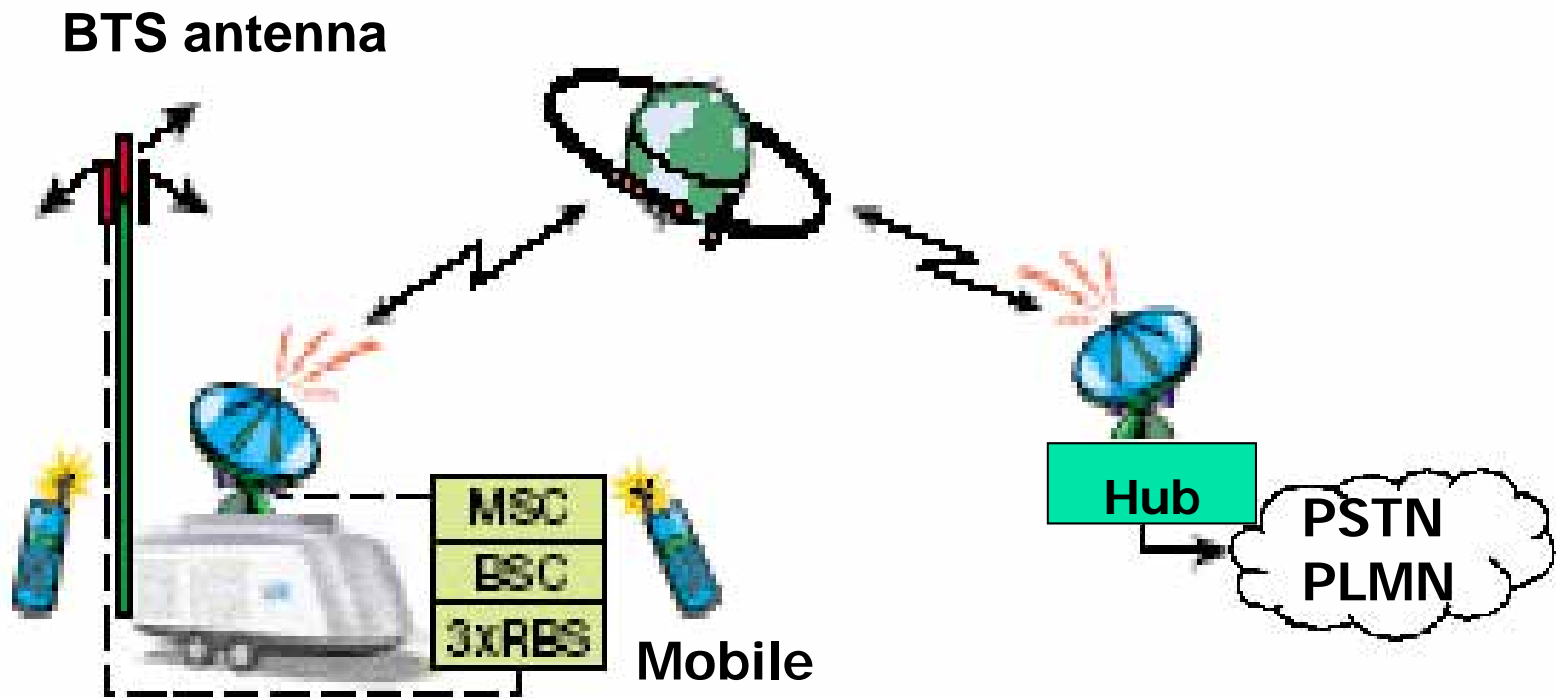
The seven fixed Vsat terminals will be installed in seven STD centers

A number of satphone terminals including INMARSAT and Thuraya

terminals will be provided for disaster area for international

Communications in disaster area

## A typical Vsat/MSC link for affected area(Local & Long distance)





## Local network

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**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.**

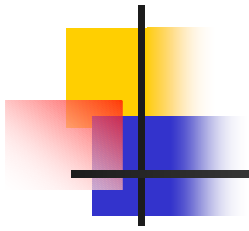
**It can be a part of public network.**

**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

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



THANK YOU