

United States of America

EMERGENCY AND DISASTER RELIEF TELECOMMUNICATIONS IN HAITI

1. Introduction

The earthquake that struck Haiti on January 12, 2010 knocked out most of the island nation's telecommunication infrastructure. The few cell towers that were operational were quickly overloaded with an enormous surge of calls. As a result there was very little communication capability to enable connectivity among the organizations which would be in position to provide assistance.

Emergency Communications has been one of the priorities of the ITU Radiocommunication Sector, and this tragedy underscores the urgency of the work being done by the ITU and its Members to help disaster preparedness and response efforts around the world. ITU-R Study Groups and Working Parties have recently revised or adopted Recommendations on Disaster Relief related to various services including the Mobile-Satellite Service, and the Fixed-Satellite Service, Terrestrial Services and the Amateur Radio Service. These provide information on frequency bands and characteristics of systems available for use in such situations. In addition to technical information, these Recommendations identify several Resolutions calling for the ITU Membership to provide support to such disasters, and provide links to information on organizations which have agreements with the ITU to do so.

This contribution provides a report on the communications response efforts activated in the immediate aftermath of this disaster to stress the importance of the R-Sector's continued work in this area and to encourage future study of the Haiti response to help improve future efforts.

2. Response of ITU, Regional Groups, Member States and Sector Members

While Haiti recovery efforts are still very much underway, information about actions taken by ITU, Regional Organizations, Member States and Sector Members to support the critical telecommunications needs in the immediate wake of this disaster can be valuable. These have taken different forms.

2.1 The Role of the ITU

The ITU has played a significant role in responding to the Haiti disaster.

To begin with, the ITU has established 60 satellite and broadband centers around Port-au-Prince and has begun work with the communications Ministry and the local telecom regulator.

In addition, the ITU is preparing for a sweeping assessment of Haiti's infrastructure, to ensure that future aid and services can be coordinated properly.

In a 21 January circular (CL 187), the ITU highlighted the contributions of its partners - Inmarsat, Iridium, Qualcomm, Vizada, and Wireless Reach (See Attachment 1).

The Study Groups and Working Parties of the Radiocommunication Sector have adopted Recommendations concerning the various radio services regarding Emergency and Disaster Relief. Several of the most recent are: Recommendation ITU-R M.1854, "Use of mobile satellite service (MSS) in disaster response and relief", and Recommendation ITU-R S.1001-2, "Use of systems in the fixed-satellite service in the event of natural disasters and similar emergencies for warning and relief operations." Complementary Reports ITU-R M.2149 and ITU-R M.2151 offer uses and examples of MSS and FSS systems respectively.

Moreover, ITU-D recently approved a Report, "Guidelines for Implementation of Satellite Telecommunications for Disaster Management in Developing Countries" which provides information for developing countries on implementation of the satellite and communications technologies referenced in the above ITU-R Recommendations and Resolutions.

2.2 Regional Action

- a) The Inter-American Telecommunication Commission (CITEL) of the Organization of American States (OAS) has established a joint task force to work on telecommunications for the disaster relief of Haiti. This task force is coordinating the deployment of the many offers of telecommunication equipment and services. It is identifying regulatory and spectrum related issues and appropriate solutions; cooperating with foreign government, international agencies, local authorities and operators to facilitate immediate deployment of telecommunication capabilities. A recent update on this regional coordination effort is attached. (See Attachment 2.)
- b) In addition to aid provided directly by the United States and other countries such as Argentina, and Brazil, ITU Sector Members which are operators and manufacturers of satellite and terrestrial networks have taken a lead role in donating telecommunications equipment and services to facilitate the relief efforts.

2.3 Satellite Operators

- a) Within hours, the operator of the Iridium Satellite System undertook actions to facilitate the rapid deployment of satellite phones, equipment and air time to support first responders, rescue workers, and relief teams. Within 48 hours there was a dramatic increase in calls to and from Haiti. Iridium was able to reconfigure its constellation to provide for a significant increase in its capacity.

As a consequence there are presently over 50 organizations/agencies as well as additional individuals volunteers utilizing the Iridium system capabilities. These include Haitian government, NGO-aid agencies, military and civilian agencies from around the world, hospital organizations, airlines, television networks. The voice and data capability has provided the only communications available from a handheld in some areas of the country.
- b) Fixed-Satellite Services (FSS) also are playing a vital role in supporting the international relief efforts in Haiti. Ironically, even though the main international cable serving the island nation was broken Internet connectivity was maintained because most of the ISPs are reliant on satellites.

In addition to already existing capability which was not impacted, SES WORLD SKIES has donated satellite capacity on five of its spacecraft and access to teleport facilities in support of relief efforts, disaster recovery and in order to cover vital communications needs. The SES WORLD SKIES satellites provide inbound and outbound connectivity for the disaster zone as well as internal communication links. The first additional satellite-based networks for Haiti went live on January 14, 2010.

- c) Another FSS operator, Intelsat, was able to rapidly deploy two communications networks via capacity on its Intelsat 907 and Horizons 2 satellites. The two networks, established via Intelsat's satellite and terrestrial network infrastructure, are supporting broadband connectivity and other communications requirements of governments, non-governmental organizations, network service providers, media and humanitarian efforts countrywide. This was accomplished as one of the first satellite operators with a dedicated team and a fly-away system and was able to place it at the International Airport in Port-au-Prince, to provide on-site coordination and transmission services for media entities. Subsequently Intelsat also provided services into Haiti on various additional satellites.
- d) SkyTerra has provided units support to first responder customers that deployed to Haiti, including new units and providing training. SkyTerra also activated SMART talkgroups for use in Haiti, which allows immediate interoperability across federal, state and local push-to-talk users. SkyTerra also provided units to FCC personnel deployed to Haiti allowing communication within their group, with other responders, and directly to FCC headquarters. Finally, SkyTerra worked with Inmarsat to share spectrum and ensure availability of service over Inmarsat BGANs terminals in Haiti.
- e) Immediately after the earthquake, Inmarsat's mobile satellite communications services were deployed to support emergency relief efforts in Haiti. Inmarsat-sponsored Télécoms Sans Frontières (TSF) dispatched a team equipped with Inmarsat mobile voice and broadband terminals. The TSF teams have been using Inmarsat BGAN and Mini-M equipment to provide essential communications services - a critical requirement for coordinating the early stages of the response - for the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and other NGOs assisting with relief efforts. TSF has also been providing communications for the local population, enabling them to call family and loved ones. Inmarsat provided additional support to government and NGO users in the region, including the United Nations, World Vision, and other first responders and navies that have joined the relief efforts. The ability of the Inmarsat-4 satellites to dynamically reallocate spot beams to areas of high demand, as well as sharing resources with SkyTerra, has ensured that vital communications services are available to essential government and aid operations in the region.

2.4 Terrestrial Operators

The vast majority of telephone service in Haiti has been provided by cellular mobile networks. Restoration and assessment is now underway with the following developments being reported:

- a) By 28 January 2010, Digicel reported that 92% of its base stations were fully operations with the remaining 8% being replaced with mobile cell sites, some of which have already been deployed with the remainder scheduled to be commissioned in February. In addition, the company significantly increased its international circuits to support its over two million customers and the major increase in international traffic into and out of the country. T-Mobile donated four Liberty Jeeps, 35 generators and 2,000 Motorola W160 phones and chargers to assist with the relief effort.

- b) The Ericsson Response GSM System "Brage" was sent to the UN camp in Haiti Port au Prince from being deployed in Brindisi (Italy). The Ericsson Response volunteers setup the system and provide the camp with the missing voice services. The container GSM system basic configuration consist of 3 sectors i.e. approx 90 simultaneous calls/lines. With additional material delivery the system can expand. The Response system can be connected to different power supply versions by configuration of the power intake. The system can be used as a standalone network or can be integrated to other networks using a micro link, satellite link, cable, etc.
- c) The ITU will also set up a Qualcomm Deployable Base Station (QDBS), a reliable, responsive and complete cellular system to strengthen disaster relief.
- d) Assistance is being provided to the indigenous cell operators to restore their networks by organizations such as AT&T.
- e) Amateur radio operators in Haiti were able to communicate via their stations within minutes of the earthquake, providing capability while other systems were repaired. Amateur stations continue to supplement commercial systems during recovery; and the ARRL, the IARU Member Society for the United States, has provided equipment to recovery groups including transmitters, receivers, and high gain antennas. In addition, radio amateurs from neighboring Dominican Republic have travelled into Haiti to help set up equipment.
- f) The earthquake damaged the electrical grid and communications systems in Port-au-Prince, the capital, making it difficult to get information to citizens. After such a crisis, people have critical needs: food, shelter, medical aid. They also need information. Radio and television are important sources of news, information and entertainment in Haiti, especially now. Many radio and television stations are able to operate but with restricted schedules. Since the earthquake, efforts of broadcasters have included programming of helpful information, use of back-up power and transmitters, and operation from off-site studios. A significant role of the broadcasters relates to providing information on missing persons, medical and food related reports, safety and survival tips. Many reports have revealed the numerous cases where families have been reunited because of announcements by the broadcast stations.

3. Summary

In summary, while there is still a great deal of work ahead for Haiti recovery, there already has been a significant amount of coordination and actual provision of radiocommunications facilities underway in Haiti. These efforts have been facilitated by provisions of the ITU framework for responding to disasters, as well as the cooperation afforded by regional organizations. As more lessons are learned following the Haiti earthquake response, it will be important for the ITU to continue its work and study of this important topic.

Attachments: 2

ATTACHMENT 2

CITEL/CI.6/10 rev.1

January 25, 2010

TO: **OAS Member States**
Associate members of PCC.I and PCC.II, and Observers to CITEL

SUBJECT: SECOND CIRCULAR: **Tragedy of Haiti**

The Secretariat of the Inter-American Telecommunication Commission (CITEL) of the Organization of American States (OAS), as a follow-up of circular CITEL/3/10 regarding the massive earthquake that hit Haiti on the evening of Tuesday, January 12th, informs that it has established a joint task force with the Federal Communications Commission (FCC) to work on telecommunications for disaster relief and assistance in Haiti. The task force will explore ways to coordinate the many offers of telecommunications support to Haiti received by both CITEL and the FCC. This would facilitate deployment of equipment and services to areas of most urgent need for the local population and humanitarian assistance crews.

The task force will compile and structure a database with information about telecommunications donors and their respective offers; liaise with OAS-PADF and other involved agencies to identify the most pressing needs and logistical problems to be tackled; identify regulatory and spectrum related issues and appropriate solutions; and cooperate with foreign governments, international agencies, local authorities and operators to facilitate the immediate deployment of telecommunications capabilities where required.

The FCC's International Bureau has detailed a telecommunications expert, Mr. Dante Ibarra, to be part of the above referred task group, operating within the CITEL Secretariat.

Please inform the Secretariat of CITEL (fax: 202 458 6854, e-mail: citel@oas.org) as soon as possible of any assistance that you can offer for Haiti so as to be able to direct and coordinate the information.

Clovis Baptista
Executive Secretary of CITEL