TDR

Telecommunications for disaster relief and mitigation
(Some considerations by Les Homan Vice Chairman ITU-T SG2 February 2005)

Background

Unexpected natural and manmade disasters may occur anywhere at any time. The very nature of disasters requires immediate response for organizing and coordinating recovery operations. Critical disaster recovery activities may be aided by ready availability and accessibility to public telecommunication resources to support urgent communications. The development and standardization of telecommunication capabilities to support emergency and disaster relief communications is needed.

Activities to date

In 2002 TDR was present in most of the ITU-T study groups. SG2 already had recommendation E.106 that described an international emergency preference scheme that might be used to facilitate the progress of TDR related calls.

However, it became very clear that whilst ITU-T had the outline of the concept, the detailed requirements were elsewhere with other bodies not normally involved in ITU-T activities. The TDR workshop in 2003 provided a good insight into the scale of the problem and from this the came the decision to create the Partnership Co-ordination Panel (PCP-TDR). The main objective of the PCP-TDR is to facilitate participation from organisations working in the disaster relief and mitigation who would not normally attend meeting of the ITU Study Groups.

Recent discussions between the office of the UN Secretary General and the Secretary General of the ITU together with the ubiquitous use of 'Sat-Phones' and 'Video-phones' for media electronic news gathering have given a slightly different perspective to the TDR concept.

The Tampere convention gives scope to get telecommunications hardware into a TDR region. However, in isolation that equipment can only perform a local service. But if that equipment could be given a predetermined name and address within the international telecommunications infrastructure then there might be scope to quickly establish international connectivity with any TDR location. The advantage of current mobile satellite terminals (INMARSAT, Iridium, Thuraya etc) is that they have their own unique telephone numbers regardless of the physical location of the satellite terminals. They can make and receive calls from anywhere to anywhere. The NGO TSF, (telecommunications sans frontière) demonstrates this most effectively with the support they offer to disaster areas in the provision of communications to all affected by the disaster.

The future vision – Image or Mirage?

So the Image, hopefully not a mirage is of a TDR telecommunications capability that could be deployed in any location but with a location independent address within the

international telecommunications environment that could be activated at short notice to provide the relief organisations with basic telecommunications that they could further configure to their own requirements

The concept of making an E.164 country code available to the UN to be subdivided in such a way as to uniquely identify one or more TDR sites at any given time is currently under consideration.

The quickest way to deploy communications capability is to use those that are already in existence for public communications. To this end ITU-T SG3 have been considering if there would be charging and accounting implications associated with such a UN shared E.164 code and if this could be catered for within current standard arrangements. SG3's initial reaction is that whilst there are probably no restrictions they would need to have greater details of any such implementations before making a definitive comment.

We need therefore to consider the theoretical implications of being able to identify what might be described as trunk capability mobile satellite terminals that might support both telephone and internet access. The international connectivity would need to be sufficient to support adequate international telephone capacity whilst at the same time being able to have a multiplexed broadband capability for Internet connectivity to support programmes such as 'I am alive' database access.

Based on the model of a personal mobile satellite terminal the concept would be for a compact communication unit comprising a small dish (VSAT) earth station capable of supporting an international trunk of say 2Mbps using a normal telephone multiplexing system giving 30 X 64 Kbps telephone channels. With a GSM cellar base station and/or wireless PABX and a Cyber café style suite of PCs for Internet access.

The TDR unit would be given an E.164 identity of the shared code for the UN TDR say 889 but sub divided by an area code of say 333. This could be entered into the global telephone system and calls directed uniquely to that TDR site regardless of the country of its physical location.

The trunk route to the TDR site could be from an international transit centre sufficiently distant from the TDR site to be unaffected by the disaster. The TDR trunk group and the traffic stream could be clearly identified and suitable network and traffic management arrangements applied.

Nationally the TDR country could establish a link to the TDR site by means of the nominated TDR trunk completely independent of national network conditions and potential congestion.

This is not necessarily **the solution** but a theoretical example of what might be achieved.

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