



**AUSPI's response on TRAI's Consultation Paper No. 11/2012 regarding Telecom network failures during Emergencies/Disasters-Priority routing of Calls of persons engaged in 'response and recovery dt. 10<sup>th</sup> May2012**

At the outset, we appreciate the Authority's decision to initiate a consultation process to analyze mechanisms for priority call routing for persons engaged in recovery work during emergencies. We fully appreciate the need for providing reliable and dedicated communications at the time of emergencies particularly in rescue and relief operations for the affected people. Hence putting in place processes and structures to ensure reliable means of communications during disasters/emergencies in India can definitely help in better response and recovery.

While we recognize the need for maintaining reliable communications during time of emergencies, it is equally important for the Authority to recognize that TSPs in India at present are under tremendous inflationary pressure. This includes low ARPU. Further worsening the scenario are steadily falling ARPU. Under such circumstances, it will be critically important for the Authority to explore technical options for call routing during emergencies which involves least additional CAPEX and OPEX.

Various countries have adopted different methodologies for emergency call routing. Implementation of such arrangements in these countries was done based on specific needs and dynamics of respective telecom markets. Hence, replicating any of such methodology may or may not address the need for India. We might have to explore some other different solutions to address this challenge keeping in mind the cost factors as mentioned above.

The convergence of networks and services is happening and communications are not restricted to voice communications only. We, therefore, urge the Authority to consider the following while finalizing its recommendations:

- a. Apart from mobile networks, data networks are dynamically routed and hence are much more redundant under stressful conditions. Past experience across the world reveals that data networks continue to work even if there is loss of some infrastructure.



- b. Similarly, Wire line telephones can also be considered for emergency deployment in and around disaster sites which can augment existing mobile networks for emergency communications. It would be much faster to provision emergency wire line connections from POPs nearest to the emergency sites rather than trying to restore and repair damaged cell sites. Also, wire line networks have substantially more capacity than mobile networks for carriage of voice and data.
- c. Other technologies such as PMRTS, VSAT etc. networks can also prove to be helpful for emergency communications and these can be deployed with equal ease and efficiency by the government.

**AUSPI's Response to the specific questions raised in the consultation paper are as follows:**

- 1) *Should there be a direction from regulator on the network dimensioning - both for operating in normal as well as emergency situations?*

Presently, network dimensioning and provisioning is left at the discretion of individual Telecom Operators. The only guiding principle that has to be kept in mind in this regard is to dimension the network with sufficient capacity to meet or exceed network Quality of Service parameters as defined by the Authority.

This model has worked well in India as it provides the required flexibility to operators to balance network cost vis-à-vis network performance so long as QOS benchmarks are being met. We strongly feel that there should not be any regulatory intervention on network dimensioning either on normal or emergency situations.

The learning from past emergency and disaster situations, it is observed that emergency situation may NOT happen throughout the network at the same time, but will happen in different pockets. While over dimensioning of network can take care of the sudden increase in



traffic to an extent during emergencies. The traffic volumes during times of natural disasters or emergencies cannot be predicted and will vary based on situation. It would be almost impossible to correctly dimension the network to take care of all cases of emergencies.

**Thus AUSPI does not support direction from regulator on the network dimensioning - both for operating in normal as well as emergency situations.**

- 2) *In your opinion, which of the three possibilities as discussed in Chapter IV i.e. (a) Solutions based on combination of MTPAS of UK and GETS of US (b) Solution based on MVNO concept (c) Solution based on eMLPP would be best suited for implementation in India and Why? In case there is any other methodology that is suggested, the details of the same may be provided?*

AUSPI's views on the 3 proposed approaches are as follows:

**Solutions based on combination of MTPAS of UK and GETS of US:** This hybrid solution seems to overcome some of the challenges faced in standalone implementation of MTPAS and GETS. In the MTPAS system, the civilian usage of the network in certain areas (Cell or group of Cell Sites) is completely prohibited and communication is made available to the entitled users via special SIMs. Since Mobile has become a primary mode of communication in India, hence this method has to be used with extreme caution. Whereas the GETS system allows high priority calls to bypass the congested network and receive priority by dialing a universal code say XXXXX+ PIN+ destination number without majorly affecting the services offered to other users.

However, the hybrid solution proposed will need substantial CAPEX to be invested both by the mobile operators and the Government. Considering the present financial health of cellular operators, this option should not be considered.



**Solution based on MVNO Concept: As per the proposed concept: This concept is similar to network dimensioning and so, AUSPI does not support it.**

All mobile operators to provide an Emergency Virtual Network Operator service similar to an MVNO. This virtual operator shall have subscriptions from among their regular subscribers as approved by a central committee. The capacity of this virtual operator shall be dynamic and the percentage share of the total capacity will depend upon the severity of the emergency and its impact. The virtual operator shall cater only to the Emergency Response Group. During regular (non-emergency) state, the virtual operator shall lie inactive. This 'special virtual operator' may be invoked only in emergency situations by a pre-determined chain of command.

While the above concept seems innovative, we foresee several critical bottlenecks enumerated below that would need much more detailed deliberations before this model can be considered:

1. Critical and scarce resources are to be allocated to the MVNO which would lie idle most of the time, leading to non-optimized usage of these resources. These resources include but not limited to spectrum, numbering series / levels, POIs and separate trunk groups.
2. **There would be a cost associated with resources allocated to the MVNO operations.** This will increase cost of operations and may have adverse impact on tariffs, network expansion and upgradation.

**Solution based on eMLPP:** The eMLPP service provides different levels of priority which are applied at call set-up and in the case of handover. The service provides a higher grade of service for urgent or emergency calls. It allows priority handling of calls, provision of priority information by the mobile user during call establishment, allows queuing in radio network based on the priority, pre-emption of radio resources and called party pre-emption by high priority



calls. A pre-emption can result in disconnecting an ongoing low priority call in order to establish a call with higher priority.

- 3) *Is priority call routing for certain users based on Enhanced Multi-Level Precedence and pre-emption service (eMLPP) possible in intra-operator and inter-operator scenario in your network?*
- (a) If yes, provide the detail methodology that you will suggest for its implementation in India.*
- (b) If no, please indicate the time and costs required to upgrade your network and implement the same in your network.*

eMLPP is a feature in GSM networks that supports pre-emption and allows us to assign different levels of priority to different users. In CDMA networks, similar feature is available but is known by a different nomenclature, namely, PACA (Priority Access and Channel Assignment).

Even if these technologies are theoretically available in GSM and CDMA networks, the same has not been activated as of now for any subscriber. In case of GSM network switches are capable of activating eMLP however we would need incremental CAPEX for the services to the vendor for deployment in live network.

However, a real challenge exists in activating PACA in CDMA networks operating with legacy switching systems as they need complete replacement with significant Capex investments. Currently CDMA operators have switches operational which do not support PACA. It will require replacement of CDMA switching systems, some of the core platforms and networks such as HLR, NLD network, etc will also need feature upgrade with significant Capex investments. It may not be cost effective to implement solution on all possible networks.

Priority access feature and pre-emption is technically possible in inter-operator scenario as well provided both the originating switch and the terminating switch supports the feature by using special parameters (eMLPP precedence and Sub Cat) in ISUP messages.



In view of the above, we would urge the Authority to initiate a more detailed study for assessing the readiness of eMLPP in a multi operator scenario. What is most important is to assess the total amount of investment that would be required to make all the network elements eMLPP / PACA compliant as the investment required is sizable and telecom operators are not in a position to invest such kind of CAPEX looking at various other financial / regulatory obligations that have to be met in immediate future.

- 4) *Which organizations and government departments that are involved in 'response and recovery' during emergency situations do you think should be part of this scheme? and*
- 5) *What mechanism should be followed to identify which personnel working in organizations identified in Q5.4 above should get priority routing?*

We would like to reiterate that whichever methodology is to be finally chosen would have to be efficient and cost effective. No telecom Licensee today has the capacity to invest any incremental CAPEX or shoulder any additional OPEX to keep this system running.

Therefore, whichever system is put in place the same needs to be tightly monitored and access to the same needs to be carefully regulated. Prima-facie, access to this scheme should be available to local fire department, local law enforcement agencies, hospital and Para-medical staff.

In addition to the above, carefully selected, evaluated and registered group of NGOs should also be considered for access to the scheme.

It is to be noted that while all above agencies may be 'provisioned' access to the scheme, actual access should not be made available under normal circumstances. Each of the above agencies should have a senior official earmarked who would have the right to invoke access to the scheme through a water tight 2-way authentication system. Actual access should be made available only after the



authentication procedure is successfully validated to avoid any misuse of such a system.

Each of the above agencies should be assigned a pre-defined limit on number of connections being provided with priority access from each service provider. When an emergency situation is witnessed, senior officials of the respective agencies would be empowered to decide who should be provided how much access and till what time. For example, local fire station may be assigned 10 SIM cards which have been provisioned for priority access. The fire station chief should be able to decide who uses the SIM cards during an emergency and to what extent.

- 6) *In your opinion should there be a separate Unit/Division under DoT/ TRAI to monitor the implementation of the scheme. If yes, what should be the structure and role of this unit?*

We believe at this stage, the first priority is to decide on the technology to be used / network topography, call routing, cost estimates, funding of the entire scheme, etc. Detailed study on these would allow us to decide if such schemes would be cost-effective. The monitoring body and mechanism can be decided at a later point of time. Further similar planning is under way at NDMA in collaboration with TEC to evolve certain guidelines in providing such emergency services in case of natural calamities and disaster.

- 7) *In your opinion what can be the major bottlenecks in service delivery of priority call routing? and*
- 8) *How should the service delivery model for implementing the priority call routing be designed? and*
- 9) *What charges, if any, should be levied from the users for availing the facility of priority call routing? Please justify your answer.*

We have already highlighted the various operational bottle-necks above which would require much more detailed deliberations. In addition, we would like to put forth the following:



- Cost estimates of implementing the entire scheme needs to be worked out. It is imperative that no service provider is asked to bear the additional CAPEX for implementation of the scheme. AUSPI recommends support from the USO fund for provisioning of these emergency services .
- Respective agencies that would be identified for providing priority access to the scheme should be charged on actual-cost basis to meet the requirement of OPEX for running the scheme. It is to be noted that such a system would lie idle most of the time but there would be OPEX associated in keeping such a system in a constant state of readiness. Respective agencies should be willing to pay a monthly / yearly rental for availing such a service all through the year even if no emergency arises.
- Regulator and licensor may issue necessary directions / amendments after fixation of tariffs and rentals for availing emergency access.

**Charges for availing the facility of priority call routing should not be regulated and tariff should be under forbearance.**