Subject : Response to Universal Single Number Integrated Emergency Communication

To,
The Advisor (Networks, Spectrum and Licensing),
TRAI

Sir,
Please find my response below on consultation paper

4.1 What are the types of emergency services that should be made available through single emergency number?

Primary purpose of "single" emergency number is to create a centralized number which can provide quick help in any kind of distress. As currently mentioned in paper, India has multiple set of helpline number which at times can become deterrent in distress situations. Therefore, single emergency number should cater as single point to contact for all primary emergency services related to Police, Ambulance, Fire, Women helpline, Emergency Disaster Management, and Accidents

4.2 What universal number (e.g. 100,108 etc) should be assigned for the integrated emergency communication and response system in India?

Most of Indian population has highest recall for 100 as primary number is case of distress. This number is also popular in rural areas. It is important that we consider an Indian number with existing top recall as emergency number in order to reduce change management effort after rolling out single emergency number. It is an easy number to remember, easier/shorter to pronounce in local language and can even be shown by an Indian currency in case person in distress wants someone to contact 100 and is not able to speak the number.
ITU may have recommended universal number but since there is no timeframe for the same, it is important that we focus on single emergency number which has highest recall by Indians. Therefore, we should assign 100 as emergency number.
Although 108 is fast growing on recall, but still 100 is top recall, even on mind of kids.

4.3 Should there be primary / secondary access numbers defined for the integrated emergency communication and response system in India? If yes, what should these numbers be?

It will be good idea to have Primary and secondary number. As mentioned above, primary number can be created as 100 since it has highest recall and secondary number can be based on ITU recommendation. 112 can be potential secondary number since it is used by most of other countries and will be easy to remember by foreign tourists specially Europeans which form a big part of foreign tourist population visiting India.

4.4 For implementing single number based Integrated Emergency Communication and Response System in India, should the database with information of telephone users be maintained by the individual service providers or should there be a centralized database?

Time is a critical component while responding in emergency situations. A centralized database is recommended for implementing single number based Integrated Emergency Communication and Response System in India. This can avoid delay in inter-operator co-ordination in time of need and centralized database will have more direct control by government authority if required. This database can be controlled by neutral body with strict security parameter in order to ensure customer's privacy.

4.5 In case of centralized database which agency (one of the designated telecom service provider, a Central Government department or a designated third party) should be responsible for maintaining the database?

Centralised database should be given to a third party for maintaining the database. Third party hiring for this database can be driven by strict SLA based governance model. This will also help in creating well defined framework for single number based emergency management system with well defined stakeholders including that of centralized database.

4.6 What are the technical issues involved in transfer of location of a mobile user in real time?

Accuracy of location is one such constraint wherein tower location changes in case of movement of source.
It starts with fetching of source number, searching details from centralized database and populating details of mobile user on screen and updating location.
While source number can be traced from CLI, key technical challenge will be creating smart algorithm to search details in real time from centralized database of more than 500 million mobile subscribers.
Second technical challenge will be locating exact location of source and more challenging if source is moving , ex in train, car etc

4.7 What accuracy should be mandated for the location information to be provided by the mobile service provider?

- Mobile service provider should be mandated to provide accuracy level upto 10 meters
- Service provider should also provide whether target is stationary or moving
- Direction of movement should also be provided from last detected point

4.8 Should emergency number access be allowed from inactive SIMs or handsets without SIMs? Please justify your answer.

No, emergency number access should not be allowed from inactive SIMs or handsets without SIMs which will only :
- Add to number of hoax calls with no tracebility of source
- Hoax calls will also increase load on the emergency number network
- It is also a security issue with someone else handset/SIM be used
- It will be in rarest of rare case wherein someone will carry inactive SIM or will be carrying handset without SIM, therefore just for few cases it should not be allowed to ensure above challenges don't crop up

4.9 Should emergency access be allowed through SMS or email or data based calls? If yes, what will be the challenges in its implementation?

Emergency access through SMS can be explored for implementation which is more practical and applicable is many emergency situations like:
- Kidnapping
- Person met with an accident and not able to talk
- Threat around due to which voice call can't be made
- Requesting other to send distress SMS

Access through email and data based calls although sounds good but since mobile teledensity in India is higher, probability of person having access to mobile is way higher than having email or data based calls, hence SMS option alone will be quite effective here.

Some of the expected challenges for implementing SMS based Emergency response system are:
- Distress SMS not reaching to Emergency system in time
- Distress SMS not reaching to Emergency system at all. In many emergency situations, like terrorist attacks , most of mobile network gets jammed, hence SMS invariably are lost in network.
- During festival time like diwali and holi when ambulance request are received, mobile network are congested due to heavy traffic
- Segregating genuine distress SMS from Hoax SMSes
- Limitation of Text allowed to type in single SMS
- Integrating SMS response received to a system/GUI which can be viewed by User in Help centre. Integration of help centre will also be required with centralized database wherein call centre use will raise a request to find out details of number and location as against voice call wherein these details will be programmed to be uploaded automatically
- Acknowledgement of Distress SMS to sender

- Whether to call back on the number or not since there maybe threat nearby to the person

4.10 Is it technically possible to get Location information in case of SMS or data based calls on real time basis? If yes, please elaborate the process and technical challenges if any.

No Comments

4.11 How to build redundancy in operations of Centralized response centers or PSAPs as they may be vulnerable to attack – both Physical and Application software related (Virus, Malware, denial of service, hacking) or to Network failures or Congestion i.e. Call Overload?

Although the idea is to create centralized response centre, but structure of these system will be based on distributed structure. There has to be a disaster management system in place wherein backup of centralized data will be available in 2-3 location within India.
Secondly, instead of single location, such centre will be created in atleast one city in case of smaller state and 2 in case of bigger states which will then cover emergency calls from that state.
Software system as expected should have proper IT security framework implemented.
In case of physical attack, calls for that centre should be routed to nearest centre. This logic need to be built-in while creating complete infrastructure.
Same is true for congestion, alternate location strategy should be followed in such cases.

4.12 Should all the calls made to universal emergency number be prioritized over normal calls? Please justify your answer.

Yes, all the calls made to universal emergency number should be prioritized over normal calls
Need for prioritisation is required when something has higher importance that other activity state. In this case, emergency calls have higher importance than normal calls.
Normal caller can wait and retry again, but emergency number caller can't and in many cases delay can prove fatal also.
Same rule should be applied here which are applied for other emergency services like ambulance on roads

4.13 What legal/penal provisions should be made to deal with the problem of Hoax or fake calls to emergency numbers?

Strict penalty should be imposed for people sending hoax calls/sms as per IPC

4.14 How should the funding requirement be met for costs involved in implementation of IECRS? Should the cost be entirely borne by Central/State Governments or are there other possible ways to meet the funding requirements?

IECRS which require help beyond government authorities on similar lines as happening today. There are many NGOs and corporate who contribute for emergency services.

Creation of core structure can be funded by Central government. These can consist of creation of Centralised database, Infrastructure for connectivity, IT security and maintenance and Overall Program Management

State government can fund activities required on the ground like allocating dedicated police personal for IECRS, ambulance and law and order support.

NGOs and corporate fund resources required like ambulances, cloth, manpower etc depending on nature of emergency services covered.

4.15 Should Key Performance Indicators (KPIs) related to response time be mandated for PSAPs? If yes, what should be the KPIs? Please justify your suggestions.

Key Performance Indicators (KPIs) should be defined for each of areas to be covered under IECRS, example police, ambulance, fire etc

Some of KPIs for IECRS can be:
- Ninety-five (95%) of all calls should be answered within twenty (20) seconds
- Ninety percent (90%) should be answered within ten (10) seconds during the busy hour
    o In crime related scenario wherein need for police is raised, average time which person gets to make a call is not more than 10-20 seconds. Therefore, response should be provided within 20 seconds
- Percent of current call taker that are conversationally bi-lingual- 90%
    o It is important in India to know regional languages for taking emergency calls
- Time to dispatch queue for Police Priority 1 calls: 2 minutes
- Mean emergency response time arrival – 10 mins
    o On an average, medical attention is required to a patient in need within 5-10 minutes to avoid any fatal chances.
- Mean emergency transport time interval- Depends on city/area

4.16 Should use of language translation services be mandated for PSAPs?

Yes, it is very important that use of language translation services be mandated for PSAPs. India is a country wherein dialect changes every 22 kms. In order to ensure prompt service in case of emergency, atleast state level languages be supported and translators be provided to staff handling it.

4.17 In your opinion, what issues related to interconnectivity and IUC may come up in implementation of IECRS in India? What are the suggested approaches to deal with them?

There maybe few issue related to interconnectivity and IUC which may come up in implementation of IECRS:

- Updation of centralized subscriber information database- There has to be strict SLA be defined for operators to update centralized database, maybe every 2 days or so.
- Calls made on roaming- In case customer makes a call while on roaming, cost of such calls made need to adjusted between the operator. There has to be statement of account being created by each operator for all such calls made on other operator network. This need to be settled to see any additional expenses which say operator X is incurred. An obligation fund be created by government wherein operator need to contribute certain amount of revenue towards such IECRS expenses
- In case of any dispute, operator can apply to TDSAT for hearing of such matter

4.18 Should a separate emergency number for differently able persons be mandated in India? How the use of this number be administered?

Yes, a separate emergency number for differently able persons should be mandated in India. These special people require different method of communication and should be covered accordingly for IECRS. We may learn from best practices from Europe and US and apply for IECRS

4.19 In your opinion, apart from the issues discussed in this consultation paper, are there any other technical, commercial or regulatory issues that may be involved in implementation of IECRS in India? Please elaborate.
No Comments

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