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New Delhi – 110 002**

Subject: Response to consultation paper on Universal Single Number based Integrated Emergency Communication and Response system.

Dear Sir,

Please find below our response to the questions raised in the consultation paper on Universal Single Number based Integrated Emergency Communication and Response system.

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

TTL comments:

At the outset, we would like to mention that the Government may like to classify emergency services according to the gravity and seriousness of the same and also the fact whether that is an emergency of an individual in distress or is a disaster.

Some of the examples could be as follows:

- Individual or communities experiencing emergency situations with need to call Police, Fire, Rescue, Ambulance services etc
- Natural disasters
- Terrorist and other disruptive activities

For all the above different possibilities, the respective tailor made best practices may be adapted optimally. For example, BCMS based systems are well established for handling Natural Disasters with well defined processes and clearly documented roles, responsibilities as well as incident management systems.

There is also a need to have proactive robustness that will be required to reduce the effect of such disruptions and clearly defined measures during the emergencies as well post disaster recoveries.

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We understand from the intent of the consultation paper that the Government may want to consider all the above scenarios but may like to incorporate the same in phases.

Based on the above, and in light of the India's geographical diversity, we suggest that the Government may implement such emergency services progressively and in different phases as per the need of the population at large and category of emergencies.

We also suggest that in the first phase Police service, Fire and Rescue related emergency services should be made available through single emergency number. Later, Ambulance services can also be included.

Once these services are tested and successfully deployed, we can then move to the next phase of implementing more services integrated into the system as well as more advanced methodologies deploying more advanced technologies.

During the implementation of first phase, we suggest that the Government should continue the existing methodologies to handle the emergency services including natural calamities and terrorist attacks etc.

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

And

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?

And

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

TTL comments:

We recommend 100 as a primary universal access number to be defined and assigned for IECRS. 101 or 102 can be used as a secondary access number. Please note that the public at large may still confuse 100, 101 and 102 as a number which is reserved for police, Fire and Ambulance and would require unlearning the concepts about the new system. To make it effective, the Government should run an extensive awareness campaign to make IECRS successful and fruitful with above mentioned primary and secondary universal access numbers.



- 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?**

TTL comments:

We suggest that the subscriber database should remain with the individual service provider which further needs to be integrated with PSAP platform through connectivity arranged by the Government. Based on the query made by the PSAP platform, relevant response from operator database can be pushed/ reverted back to the PSAP operator.

Government can also consider the choice of centralized data base replicating all operators' data which may have integral advantages of single window coordination. But, It may be mentioned here that immense care has to be taken to reduce if not eliminate the possible chances that private data of customer may be mishandled in case of centralized database topology. Such centralized data base will also have high cost implications.

However in both the cases, the PSAP platforms need to be integrated with the individual databases for which operators could enable identification of authentic query and a pushed response mechanism. This would involve IT based development and re-engineered works flow mediating the function in the network/databases.

Please note that both the above mentioned options being complex in nature therefore would require feasibility study, data work flow & routing, corresponding IT development and POC by the Government before finalizing the recommendations. The centralized system may also face latency and access limitation problems as report and experienced in other EU countries.

- 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?**

TTL comments:

We suggest that a Central Government Department who has an expertise in emergency services should be made responsible for maintaining the database.

- 6. What are the technical issues involved in transfer of location of a mobile user in real time?**



TTL Comments:

Existing LBS solutions that are currently available for CDMA and GSM technologies do not completely meet DOT mandated guidelines/ table in terms of accuracy and consistency because of various technical reasons.

Cell ID or enhance Cell location information could though be provided if PSAP and existing LBS platforms are integrated with suitable APIs matching the query and response push mechanism. This requires detailed feasibility testing as operators are progressively deploying or implementing such technologies under information to DOT for Location information of subscribers needed by Lawful agencies.

However, such systems are presently limited to query by the authorized lawful agencies only and have limited dimension of access. For any other Government agency, regulation would have to be looked into as the system has limited access for simultaneous query triggers. Also, lawful agencies may not agree to share the administrative trigger for all other agencies system for security reasons.

There could be some dimensioning issues also on simultaneous handling of number of calls by users, the latency and processing speed of the system and lawful/r regulatory validity or authorization/ authenticity of query put to the system. This would need a comprehensive Techno-Regulatory feasibility study and a combined proof of concept by the Government in phases if the methodology is finally agreed upon. This Problem would greatly be simplified is AGPS handsets are progressively mandated by the Government

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

TTL Comments:

While implementing DOT guidelines on LBS, it is found during various POCs conducted by various operators that no LBS vendor is able to demonstrate the accuracy levels mandated by DOT due to technology and radio network limitations.

At present, the cell ID and enhanced Cell Id based technology is the only possibility for CDMA/GSM technologies and accuracy is based on inter cell site distance amongst other dependencies. Hence, in present scenario, cell ID based response may be provided if query is generated by the PSAP platform subject to successful API integration and clearance of the same by Law enforcement agencies.

The Technology may get matured in due course of time with more accurate results and progressively the same would be more accurate in future.



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

TTL Comments:

It is suggested that for security reasons, the emergency number access should not be allowed for inactive SIMs and handsets without SIMs. The security aspect is very important for such cases as it will lead to misleading and hoax calls, hampering desired, robust, foolproof and efficient operations of PSAP operator.

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

TTL Comments:

We are of the view that Emergency access should also be allowed through SMS or email or data based calls. But the same should be tested and implemented in second phase. It will also require exhaustive testing and vendor support with additional CAPEX requirement.

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.**

TTL comments:

Presently, it is not supported. This limitation has already been expressed by operators and associations to the Government.

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?**

TTL comments:

It is recommended to establish disaster recovery site based on BCMS principles with clear roles and responsibilities of stake holders. Once centralized architecture is chosen, any site location could be geared up as DR site for the other and Critical Service priority could be allocated based on gravity of the need.

Secondly, the existing emergency numbers may also be in place for some time in parallel to the single number emergency services. As far as vulnerability to the software is concerned, the network elements (both Hardware and software) are now being deployed after due certification. Therefore, the issues related to software attacks due to virus, malware, hacking etc. can be mitigated to a large



extent. The system can be audited periodically. Also, access security policy can be clearly defined.

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

TTL Comments:

In the existing network setup, the emergency levels are generally tagged in the respective network elements like MSCs as emergency calls for routing in the network. However, there are issues in implementing priority routing for emergency numbers over normal calls in the following cases:

- For example in CDMA technology, there is an issue with the old legacy systems which do not support EPACA.
- Further, there is a need of development of this feature at Radio Access Node side.
- The EMLPP tag may not be carried by transit switches for prioritize the call (end to end) in case of congestion in the Network
- NLD network does not support of prioritization of call (Especially NGN), therefore it will not be able to allocate resources for the emergency call in NLD network. This needs further study.

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

TTL Comments:

It is suggested that TRAI may advise using the existing provisions as defined in the law of the land for handling such issues.

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?

TTL Comments:

We suggest that the funding requirement based cost should be entirely borne by Central/ State Governments. It should also include the interconnection cost that will be borne by the operators for provision of such emergency services.

In other words, the operators should not charge each other for provision of such emergency services by way of using each other network.



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.

TTL Comments:

KPIs related to response time should not be mandated for PSAPs. However, TRAI may decide KPI's based on various factor like available manpower, average call volume, response time of the PSAP operator, distributing correctly the responsibilities to right service agencies based on callers need by the PSAP operators, security of the data in the custody of the PSAP agency, etc.

Escalation of queries and complaints to higher levels, audit, exercising and review clauses in KPIs may also be defined.

16. Should use of language translation services be mandated for PSAPs?

TTL Comments:

The language translation services should not be mandated for PSAPs as the same will be funded by the Government.

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?

TTL Comments:

Selecting one or two operators will lead to single point of failure therefore, all operators should be accessible to PSAP with redundancy to other operator network for handling emergency calls.

In today's scenario all operators are connected to BSNL for final termination of the emergency service calls. These calls are free to the subscribers but are funded by the operators.

Once the IECRS is fully functional and all the operators are connected to it with redundancy then all the calls relating to all type of emergency should be routed to PSAP and operators should not be charged.

Also, the operators should not charge each other for provision of such emergency services by way of using each other's network as and when required.



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.

TTL Comments:

- Providing Location is very Capex intensive which is already conveyed to DOT as there is no mature technology available. Using triangulation technologies with much higher cost and complex test drives also does not work where coverage is received by only one/two sites.
- As PSAP location will be distributed to have disaster recovery in place, Priority calling feature implementation will have limitation as it needs end to end handling of EMLPP tag including NLD network which does not have such standard in place. Solution need to be developed keeping in mind the technical feasibility and costs implications
- Providing lat-long in CDR is another issue as it also needs developments across switched and technology which is very mammoth task and is voluminous data.
- The number of implementing agencies and topology of customers is yet another issue.
- Non-usage of AGPS handsets, Google or location mapping of streets, roads and locations is yet very inaccurate or non-existent in many cases.
- Awareness, amongst the populace of an integrated numbers and appreciation of real emergencies would be a challenge.
- During disaster, the number of people reporting in panic could add to limitations.

We sincerely hope that our inputs will be given due cognizance by TRAI.

Thanking you and assuring you of our best attention always.

Yours sincerely,

Anand Dalal
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