



VIL/LT/12-13/118  
18<sup>th</sup> April 2013

Telecom Regulatory Authority of India  
Mahanagar Doorsanchar Bhawan,  
Jawahar Lal Nehru Marg, old Minto Road  
New Delhi -110002

**Kind Attention : Shri Sanjeev Banzal, Advisor (Networks, Spectrum and Licensing)**  
**Subject : Consultation Paper on Universal Single Number Based Integrated Emergency Communication and Response System**

Dear Sir,

This is with reference to the Consultation Paper issued by TRAI on 15<sup>th</sup> March 2013 on the captioned subject.

We are pleased to submit our comments and views on the Consultation Paper on "Universal Single Number Based Integrated Emergency Communication and Response System".

We hope that our submissions will merit your kind consideration.

Thanking you,

Yours sincerely,  
For **Vodafone India Limited**

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**Summary**

1. VIL believes that a communication network that facilitates the people in distress to access the concerned agencies from anywhere, at any time and get a proper and immediate response, is desirable.
2. We agree that there is a requirement for an easy to remember, single emergency number through which one can reach to the desired help agency; and since 100 is the most citizen friendly number being in use for decades, the same may be considered for this purpose.
3. While we welcome the TRAI consultation on the issue, however it is also important to note that such an Integrated Emergency Communication and Response System (IECRS) would have certain challenges in implementation, primarily concerning the following aspects:
  - a. The fundamental aspect is that the consultation paper at present does not provide clarity on the Public Safety Answering Point (PSAP) architecture and delivery of the calls to control rooms further from the PSAP. **Therefore, before the finalization of recommendations, the architecture and the functioning of the PSAP needs to be discussed in detail with all the stakeholders**
  - b. The **database concerning information of all the subscribers, whether would be centralized or state-wide needs to be understood and debated in detail**. Both of the issues above (architecture and database) need to ensure data security, IT security and privacy aspects of subscribers and callers.
  - c. **The interconnectivity** (direct or routed through any other operator) with PSAPs should be left to service providers wherein operators should not be refused direct connectivity. However, in case of routing to designated service providers/indirect routing /transit connectivity, **the Interconnection charges must be clearly defined in view of larger public interest.**
4. We request the Authority to kindly take note of these issues, and discuss these further through meetings with the industry, before formulating the final recommendations.

In the following paragraphs, we present our response to the various questions raised in the consultation paper.



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

**Response:**

All level '1' emergency services/helplines like Police, Fire, Ambulance, Women helpline, Disaster management, Blood Bank, Eye Bank, Accident/Trauma etc. that are presently defined as emergency service in the National Numbering Plan should be made available through single emergency number. However, in view of the plethora of agencies, we request that an objective criterion should be created and adopted by the Ministry of Home Affairs in order to provide emergency services status to any particular agency.

All existing emergency short-code allocations should be screened against the objective criterion based on approval from the Ministry of Home Affairs for authorizing any agency for its inclusion in the list of emergency service agencies. This approach can be adopted for inclusion of any new agencies as well in the above-mentioned list. All information related services should be excluded from this list. There should be a clear definition of which services can be classified as emergency services for which the IECRS method shall be applicable.

**4.2 What universal number (e.g. 100,108 etc.) should be assigned for the Integrated Emergency Communication and Response System in India?**

**Response:**

- a. Since the requirement is to have an easy to remember, single emergency number through which one can reach to the desired help agency, **we agree with TRAI that 100 is the most popular & easy to remember number, being used by public from decades, hence the most preferred number for this purpose.**
- b. However it is pertinent that we continue with the current numbering plan for a specific time period and then discontinue after necessary and adequate publication of the universal number by the Government.
- c. In view of the above we recommend the following:
  1. Once all the relevant emergency services are migrated to the single emergency number (e.g. 100); the erstwhile numbers of such migrated emergency services should be freed-up to put these numbers to more productive use and also to avoid confusion later.
  2. TRAI should recommend to DoT to holistically review all the level-I numbers and services after settlement of universal emergency service.



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**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?**

**Response:**

- a. Only primary access numbers should be defined for the Emergency Communication and Response System in India. Assignment of the multiple access numbers as primary/secondary would be counterproductive.
- b. In the past also, the obligation to identify correct number corresponding to the emergency help needed, has been on the consumer, which many times lead to wrong number dialing and repeated attempts to reach desired service operator. The best learning to be adopted for the IECRS would be to make consumer fully clear that he has to dial only one number irrespective of any type of emergency, without any strings or conditions attached, otherwise it may confuse the person who is facing the emergency.

**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?  
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**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?**

**Response:**

- a. VIL recommends that there should be a centralized database at a circle level.
- b. The stakeholders should be kept to minimum, for ensuring that objectives of such integration are met. Since the PSAPs would be established by the Government across the country, the database should also be maintained by Government/PSAP with adequate security measures and data privacy.
- c. The timelines, location, and facilities at the PSAP should be intimated to the TSPs for undertaking connectivity to the PSAP. The TSPs can provide the number, name and address of the subscribers for updating of the database on a fortnightly basis.
- d. **The architecture and the functioning of the PSAP needs to be discussed in detail with all the stakeholders** like IT, PSAP, Regulator etc. to get more clarity on the functionality, and to understand and finalize process and solutions, while ensuring database security and subscriber data privacy.



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

**Response:**

- a. There is no mandate in the country on all handsets to be GPS enabled. For real time transfer of location, the location information would be required by the MSCs which interface with the IECRS. Presently, none of the interfaces deployed are capable of transferring this information to the MSC. Also, the location information will not be available in case of a subscriber is roaming
- b. The location as latitude/longitude can be provided off-line by operators, which would be near real time. We recommend that this should be a pull from the PSAP (applicable for Voice & SMS).
- c. We suggest to use ISUP based Cell ID information to find-out the tentative location of the subscriber; this can be made available in the real-time along with the ISUP SS7 call setup; Further, in this approach the time to react will be very less compared to query based solution since in this option the Cell ID information is part of emergency call setup message, and this ensure that every call which reaches the PSAP setup has location information.

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

**Response:**

- a. The kind of accuracies mentioned by the DoT in its letter No. 10-15/2011-AS.III/(21) dated 31<sup>st</sup> May, 2011 is technically not possible. The challenges in meeting them have already been presented by the industry to DoT and TEC.
- b. The industry has proposed to provide the kind of accuracies that can be achieved by the ECGI methodology. The details are given below:
  - i. **ECGI Methodology:** Enhanced Global Cell ID uses GMLC and SMLC components to integrate with GSM/3G network elements to derive the location information of the subscriber. The LI application integrates with GMLC to query the location information (longitude/ latitude) of the target subscriber. GMLC routes these location query to GSM network; while SMLC integrates with Radio network (BSC) to query Cell ID, Timing Advance (TA) and Network Measurement Report (NMR) of serving and neighboring cells.



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Basis the provided inputs SMLC runs the location algorithm to predict the best probable location of the target subscriber. The actual longitude/latitude of the target subscriber is sent to LI application via GMLC.

- ii. **Accuracy in different scenarios:** The accuracies would be dependent on various issues mainly inter-site distances, network topology, etc. however, the average accuracies in different scenarios would be as follows:

Environment	Accuracies
Urban	250 mts to 500 mts
Semi urban and rural	500 mts to 2 kms
Remote / highways	3 kms to 5 kms

- d. Since these accuracies are acceptable to various Law Enforcement agencies we believe that these accuracies would also be helpful for emergency situations.

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

**Response:**

This may be considered in larger public interest subject to technical feasibilities.

**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?**

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

**Response:**

- a. Emergency access can be allowed through SMS. PSAP can use the pull based mechanism to get the location details. However, technically this will require investments to develop the capability to provide the location details which are currently available. It must be noted that the requirements mentioned in the DoT's letter dated 31<sup>st</sup> may 2011 are not technically possible.



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- b. However, emergency access from E-mails originated from a mobile / fixed user terminal are technically not feasible due to implementation issues like identification of the originator, location of the originator, etc.

**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?**

**Response:**

Adequate security measures and data privacy should be taken care of by the Government. Moreover, most of these can be discussed when there is clarity on the architecture and functioning of the PSAP.

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

**Response:**

Prioritization of calls to emergency access number is subject to technical feasibility and required outcome. However, interface to PSAP should be dimensioned to provide no congestion for emergency calls. For Radio Access priority, available solutions do not yield required results in case of overloads and are not recommended.

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

**Response:**

We believe that legal/penal provisions w.r.t hoax calls should be left to Central Government and State administrations. It is desirable to have a legal/penal provision based on best international practices in such cases to avoid hoax / wrong calls which presently constitute the bulk of calls as per various press reports.



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**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?**

**Response:**

- a. Yes, the cost should be borne entirely by the Central/State Government – this includes the cost of setting up and maintaining the telecom network in terms of the database connectivity and its periodic updation as well as capability for location information for voice and SMS and its real time transfer.
- b. In case of EMRI also, the operational expenses have been absorbed by the respective State Governments.

**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.**

**Response:**

The KPIs should be left to SLAs/agreements between state government and the PSAPs.

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

**Response:**

While a language translation services is desirable in consumer interest, however the same should be left to PSAPs and state administration based on their requirements as and when need arises.

**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?**

**Response:**

- a. PSAP should be mandated to provide opportunity of connectivity separately to each operator since emergency services are license conditions for all operators.





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- b. Any operator desirous of direct connectivity with the PSAP should not be refused to connect. Further, in such cases where operators connect directly with the PSAP, the PSAP should provide all facilities (set-up, premises, AC, ducting etc.) at no cost to the operators.
- c. Direct connectivity would ensure minimal issues related to inter-operator billing, charging and settlements and would also avoid an extra leg of connectivity which could lead to inter-operator call congestion issues.
- d. In case, if TRAI does not find direct connectivity suitable, then the originating operator should be allowed to handover the emergency traffic at his preferred point of interconnection within the circle, and the terminating operator should only charge IUC on per minute basis for the emergency calls considering it to be linked with larger consumer interests.

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

**Response:**

We strongly believe that such public service platforms have to be all inclusive in nature and need to be able serve all sections of the society. However, with special applications and hand-set features available today, we believe all requirements can be met by the proposed single number.

An alternate number may pose an additional challenge of advertising the same in the minds of the citizens. We shall look forward to more clarity from the Authority on the need for a separate number.

**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.**

**Response:**

The paper at present does not give the details about the architecture and the functioning of the PSAP that are immensely critical to the whole aspect of IECRS, hence we request the Authority to provide the details of the architecture and the functioning of the PSAP and **deliberate with all stakeholders before finalizing the recommendations.**