



**Telecom Regulatory Authority of India**

**Consultation Paper**

**on**

***Tariff issues related to SMS and Cell Broadcast alerts disseminated through Common Alerting Protocol (CAP) platform during disasters/non-disasters***

**New Delhi, 3<sup>rd</sup> November 2021**

Mahanagar Door Sanchar Bhawan,  
Jawahar Lal Nehru Marg,  
New Delhi – 110002  
Website: [www.trai.gov.in](http://www.trai.gov.in)

Stakeholders are requested to furnish their written comments by 1<sup>st</sup> December 2021 and counter-comments by 15<sup>th</sup> December 2021 to Shri Kaushal Kishore, Advisor (Finance & Economic Analysis), TRAI. Comments and counter-comments would be posted on TRAI's website [www.traigov.in](http://www.traigov.in). The comments and counter-comments may also be sent by e-mail to [advfea1@traigov.in](mailto:advfea1@traigov.in). For any clarification/information, Advisor (F&EA) may be contacted at Tel. No. +91 11 23230752 /Fax No.: +91 11 23236650.

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## **Chapter 1: Introduction**

### **Feasibility of SMS and Cell Broadcast dissemination through CAP Platform:**

1.1. Cell Broadcast Service (CBS) has existed since 1988 and is standardized in 3GPP. Some important standards for Cell Broadcast are:

- 3GPP TS 23.041 - Technical Realisation of CBS
- 3GPP TS 44.012 - Short Message Service Cell Broadcast (SMSCB)

1.2. ITU has issued specific guidelines for “Requirements for Land Mobile Alerting Broadcast Capabilities for Civic Purposes” which outlines best practices and design considerations for the deployment of Public Warning Systems (PWS). The focus is to promote the use of the Common Alerting Protocol (CAP) standard for public alerts and hazard notification in disasters and emergency situations.

1.3. Cell Broadcast platform is being utilized for sending messages to multiple users in a defined geographical area at the same time. It is also known as Short Message Service – Cell Broadcast. The broadcast range can be varied from a single cell to the entire network. Mobile service providers can send broadcast messages related to location, emergency alert, local news, advertisement etc. Cell Broadcast Centre (CBC) has evolved to support 2G, 3G and LTE.

1.4. Cell Broadcast has been included in current 3GPP 2G, 3G and LTE standards. In its simplest implementation CBS consists of one CBC, which is typically located in the network of a mobile operator, and at least one Cell Broadcast Entity (CBE), which for early warning systems are often based with government or a trusted authority.

1.5. The CBE is the messaging interface to the CBC. The message is sent to the CBC, which maps the target area to the mobile network cells and then sends the cell broadcast message to the required radio access network (GSM, 3G, LTE), which will manage the message broadcast to the end user.

CBS and Short Message Service (SMS) are technologies used for delivering mobile-driven Public Warning Systems (PWS).

1.6. SMS is ideal as a personal one-to-one messaging solution. However, bulk messaging applications such as PWS, require the establishment and maintenance of a database of target numbers. It necessitates that messages are sent individually to each number in the database. In an emergency, networks are often severely congested, and this can further increase congestion and lead to delays in message delivery.

Moreover, SMS is sent directly to the handset number and messages received on the handset are independent of its location. Therefore, when a warning message is sent, there is no guarantee the recipient is present in an area that the warning applies to.

1.7. Another advantage of CBS is that the recipients remain anonymous as CBS does not require registration of numbers or maintenance of a number database, and messages are sent to all users within a geographic area. The area can be as large as an entire network or as small as a single cell. Therefore, it does not violate citizen's privacy. CBS messages can only be sent by authorized personnel who have been given access to the system.

1.8. In case of Cell Broadcast, the message can be displayed on the handset with no user interaction and a distinct warning tone sounded. Further, as it works on a broadcast mode, one message can be sent to millions of devices quickly within a designated target area without channel congestion. It can also send differentiated messages to designated areas.

Further, SMS uses signalling channels, which may be subjected to congestion in disaster and huge volumes may face delays during disaster situations.

1.9. Many countries and regions such as United States, Japan, South Korea, Canada etc have implemented location-based alert systems based on cell broadcast and many others such as United Kingdom, Denmark etc are in the process of implementing such systems.

1.10. Therefore, Cell Broadcast System is technically feasible and offers many advantages over SMS based system though there are certain limitations as well such as:-

- (i) As CBS is a one way communication, therefore, the CBS platform cannot keep track of individual successful delivery count of the message,
- (ii) Cell Broadcast may face handset compatibility issues. Subscriber may disable the cell broadcast channel on handset and may not get the message.

1.11. The first set of issues of consultation related to technical feasibility of SMS/Cell Broadcast system are:

**Question 1: What are the technical options available with the Telecom Service Providers for mass message dissemination through Common Alerting Protocol (CAP) platform during disasters and non-disasters and what are the challenges being faced with respect to these technology options?**

**Question 2: Which method of mass message dissemination for alert, Short Service Message or Cell Broadcast Service, is preferred? Please provide supporting reasons.**

**Question 3: What is the success rate in delivery of messages in each of the methods adopted by the operators for dissemination of messages to the masses? Please provide details.**

**Question 4: What are the challenges related to customer end devices that may arise due to Cell Broadcast Service? If so, what are they and what is the extent (total number as well as percentage) of such cases encountered so far? In case an operator has first-hand experience, then the same may be shared with facts.**

## **Chapter 2: Identification of other Tariff issues for consultation**

2.1. Section 11(2) of TRAI Act, 1997 , inter alia, states the following:

***“Notwithstanding anything contained in the Indian Telegraph Act, 1885 (13 of 1885), the Authority may, from time to time, by order, notify in Official Gazette the rates at which the telecommunication services within India and outside India shall be provided under this Act including the rates at which messages shall be transmitted to any country outside India:***

***Provided that the Authority may notify different rates for different persons or class of persons for similar telecommunication services and where different rates are fixed as aforesaid the Authority shall record the reasons therefor”***

2.2. Department of Telecom vide their letter dated 25th March 2021 (Annexure-I) has requested TRAI to provide tariff for SMS and Cell Broadcast alerts/messages to be disseminated by TSPs through CAP platform during disasters/ non-disasters in which it is, inter-alia, stated that:

The National Digital Communication Policy (NDCP)-2018 of Government of India envisages, inter-alia, the following strategy under para 3.4 of its 'Secure India' mission:

- i) Developing a comprehensive plan for network preparedness, disaster response relief, restoration and reconstruction
- ii) Establishing institutional framework to promote monitoring of activities, rapid dissemination of early warning disaster notifications and better coordination and collaboration between relevant Ministries / Departments, including the National Disaster Management Authority of India.”

Based on the request of National Disaster Management Authority (NDMA), the Centre for Development of Telematics (C-DOT) developed a CAP based pilot platform for dissemination of geo intelligent alert messages (through Telecom network) for State of Tamil Nadu at a cost of Rs 14.99 Crs. The Pilot project is at advanced stage of completion. The capabilities of this platform were demonstrated during pandemic/natural disasters of Covid-19 and Cyclones in recent times.

2.3. Upscaled CAP project for pan-India implementation is entrusted by NDMA to C-DOT at a cost of Rs 354 Cr (including 10 years AMC). The project envisages integration of India Meteorological Department (IMD), Central Water Commission (CWC), Indian National Centre for Ocean Information Services (INCOIS), GPS Aided Geo Augmented Navigation (GAGAN), Navigation with Indian Constellation (NAVIC), Snow and Avalanche Study Establishment (SASE), 36 State Disaster Management Authorities (SDMAs), Telecom Service Providers (TSPs) for SMS/Cell Broadcast based geo intelligent alert dissemination and Proof of Concept (PoC)/demonstration of alert dissemination through Cell Broadcast, TV, Radio, Indian Railways (public address systems & displays) and Coastal Sirens.

2.4. The system allows sending geo intelligent CAP messages as per latitude and longitude of the targeted area. Upon receipt of CAP alert message , TSPs identify Base Transceiver Station (BTS) and their latched subscribers within targeted area. Then SMS/Cell Broadcast is disseminated to identified subscribers within targeted area automatically. Therefore, dissemination of CAP alert SMS through TSPs network is different from propagation of conventional peer-to-peer SMS.

2.5. The provisions mentioned in para 6.2(xii) of Standard Operating Procedure (SOP)-2020 of DoT for responding to disasters, is reproduced below for ready reference:

"TSPs shall broadcast messages at regular intervals, in consultation with State/ National Telecom Disaster Coordination Committee (STDCC/ NTDCC) to all the subscribers in the affected areas through SMSs / Cell broadcast free of cost during disaster period based upon instructions of Nodal authorities as per DM act 2005 i.e. National Executive Committee (NEC)/National Crisis Management Committee (NCCM)/ State Executive Committee (SEC).

This shall provide details about:

- a) Details of TSPs helpline numbers.
- b) Details about rescue and relief activities of state government such as tentative schedule of food / water distribution / nearest shelter/ shelter camp etc. as per need of State agencies."

2.6. As per the above SOP, DoT allows SMS/ Cell Broadcast free of cost only for a definite period and for events where specific request for free of cost messages comes from NEC/ NCMC/ SEC/ Nodal Authorities. However, there are occasions where the government would like to send alert messages to the public forewarning of a possible disaster or occasions where public has to be informed of special events such as holding of relief/ vaccine/ medical camps/ specific law and order related situations etc. Platform is not meant to disseminate political/commercial messages. As per DM Act 2005 and SOP following four possible categories of alerts/messages may be sent through CAP:-

- (i) Alerts/messages sent during non-disaster situation which may be on chargeable basis;
- (ii) Alerts/messages sent by designated nodal agencies as per DM Act 2005 prior to notification of disaster which may be on chargeable basis;
- (iii) Alerts/messages sent during disaster by/on instructions of designated nodal agencies as per DM Act 2005 and extant SOP which will be free, and
- (iv) Alerts/messages that are unrelated to disaster but sent during disaster by agencies other than designated nodal agencies as per DM Act 2005 which may be on chargeable basis.

2.7. The Authority has issued a regulation The Telecom Commercial Communication Customer Preference Regulations (TCCCPR)[2], 2018. As per provisions of regulation 35 of TCCCPR, 2018, Terminating Access Provider (TAP) may charge Originating Access Provider (OAP) for Commercial communication messages as following:-

- 1. Up to Rs.0.05(five paisa only) for each promotional SMS;
- 2. Up to Rs.0.05 (five paisa only) for each service SMS;

Provided that there shall be no service SMS charge on:

- i. any message transmitted by or on the directions of the Central Government or State Government;
- ii. any message transmitted by or on the directions of bodies established under the Constitution;



- iii. any message transmitted by or on the directions of the Authority;
- iv. any message transmitted by any agency authorized by the Authority from time to time;

2.8. Detailed guidelines to grant exemption on SMS charges with respect to TCCCPR, 2018 are provided in Annexure - II.

2.9. The purpose of this consultation paper is to elicit stakeholders' views on the tariff for SMS/Cell Broadcast disseminated by TSPs through CAP platform during disasters/ non-disasters and to understand the technical aspects that might have an impact on the costing of the service.

2.10 Following are the next set of issues for consultation related to tariff:

**Question 5: Is there a need for an elaborate tariff fixation exercise for CAP messages? In the alternative, would it be better from the perspective of ease of regulation to keep all categories of alerts/ messages given in paragraph 2.6 above including those at categories (i),(ii) and (iv) thereof, free of charge? Is keeping all CAP alerts/ messages free of charge an economically prudent and viable option?**

**Question 6: If answer to the question number 5 is No, then whether the service SMS charges of up to Rs 0.05 (up to five paise) as mentioned at Regulation 35 of TCCCPR 2018 be adopted for SMS/Cell Broadcast alerts/ messages sent through CAP platform?**

**Question 7: What tariffs should be charged by TSPs for SMS and Cell Broadcast alerts/ messages under category (i), (ii) & (iv) as given at paragraph 2.6 above, in case SMS charges of up to Rs 0.05 (up to five paise) as mentioned at Regulation 35 of TCCCPR 2018 is not to be adopted?**

**Question 8: What are the operational challenges for disseminating mass messages through Short Service Message and Cell Broadcast Service? What is the impact of these operational challenges on the costs involved in such dissemination? Please justify.**

**Question 9: What methodology should be adopted to do the costing of the Cell Broadcast alerts/ messages? What are the cost items which should be factored in? Please provide supporting reasons.**

**Question 10: If there are any other issues/suggestions relevant to the subject, stakeholders are invited to submit the same with proper justification.**

### **Chapter 3: Consolidated list of Issues for consultation**

**Question 1: What are the technical options available with the Telecom Service Providers for mass message dissemination through Common Alerting Protocol (CAP) platform during disasters and non-disasters and what are the challenges being faced with respect to these technology options?**

**Question 2: Which method of mass message dissemination for alert, Short Service Message or Cell Broadcast Service, is preferred? Please provide supporting reasons.**

**Question 3: What is the success rate in delivery of messages in each of the methods adopted by the operators for dissemination of messages to the masses? Please provide details.**

**Question 4: What are the challenges related to customer end devices that may arise due to Cell Broadcast Service? If so, what are they and what is the extent (total number as well as percentage) of such cases encountered so far? In case an operator has first-hand experience, then the same may be shared with facts.**

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Government of India  
Ministry of  
Communications

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Department of Telecom  
(Disaster Management Unit)

F. No. 15-2/2017-DS-I/DM(Vol-II)

Dated: 25<sup>th</sup> March, 2021

To,  
Secretary,  
Telecom Regulatory Authority of India.  
Mahanagar Doorsanchar Bhawan,  
Old Minto Road, New  
Delhi- 110002.

**Subject: Seeking tariff for SMS & Cell Broadcast alerts disseminated through CAP platform**

The National Digital Communication Policy (NDCP)-2018 of Government of India envisages, inter-alia the following strategy under para 3.4 of its 'Secure India' mission:

**3.4 Developing a comprehensive plan for network preparedness, disaster response relief, restoration and reconstruction**

1. Establishing institutional framework to promote monitoring of activities, rapid dissemination of early warning disaster notifications and better coordination and collaboration between relevant Ministries / Departments, including the National Disaster Management Authority of India.
2. Common Alerting Protocol (CAP) is International Telecommunication Union standard adopted as recommendation X.1303 worldwide for dissemination of early warning information across all mediums.
3. Based on the request of NDMA, C-DOT developed a CAP based pilot platform for dissemination of Geo intelligent alert messages (through Telecom network) for State of Tamilnadu at a cost of Rs 14.99 Crs. The Pilot project is at advance stage of completion. The capabilities of this platform were demonstrated during pandemic/ disasters of Covid-19, Cyclone Amphan, Cyclone Nisarga, Cyclone Nivar etc.
4. Upscaled CAP project for pan-India implementation is entrusted by NDMA to C-DOT at a cost of Rs 354 Crs (including 10 years AMC). The project envisages to integrate Indian Meteorological Department (IMD), Central Water Commission (CWC), Indian National Centre for Ocean Information Services (INCOIS), GPS Aided Geo Augmented Navigation (GAGAN), Navigation with Indian Constellation (NAVIC), Snow and

Avalanche Study Establishment (SASE), 36 State Disaster Management Authorities (SDMAs), Telecom Service Providers (TSPs) for SMS based geo intelligent alert dissemination and Proof of Concept (PoC) / demonstration of alert dissemination through Cell Broadcast, TV, Radio, Indian Railways (public address systems & displays) and Coastal Sirens.

5. The system allows sending geo-intelligent CAP messages as per latitude-longitude of the targeted area. Upon receipt of CAP alert message from SDMA, TSPs identify Base Transceiver Station (BTS) and their latched subscribers within targeted area. Then SMS is disseminated to identified subscribers within targeted area automatically. Therefore, dissemination of CAP alert SMS through TSPs network is different from propagation of conventional peer-to-peer SMS.

6. It is pertinent to refer to provisions mentioned in para 6.2(xii) of Standard Operating Procedure (SOP)-2020 of DoT for responding to disasters, which is reproduced below for ready reference:

*"TSPs shall broadcast messages at regular intervals, in consultation with State/ National Telecom Disaster Coordination Committee (STDCC/ NTDCC) to all the subscribers in the affected areas through SMSs / Cell broadcast free of cost during disaster period based upon instructions of Nodal authorities as per DM act 2005 i.e. National Executive Committee (NEC)/ National Crisis Management Committee (NCMC)/ State Executive Committee/SEC). This shall provide details about:*

*A Details of TSPs helpline numbers.*

*b Details about rescue and relief activities of state government such as tentative schedule of food / water distribution / nearest shelter/ shelter camp etc. as per need of State agencies."*

7. As per the above SOP, DoT allows SMS/ Cell Broadcast free of cost only for a definite period and for events where specific request for free of cost messages comes from NEC/ NCMC/ SEC/ Nodal Authorities. However, there are occasions where the government would like to send alert messages to the public forewarning of a possible disaster or occasions where public has to be informed of special events such as holding of relief/ vaccine/ medical camps/ specific law and order related situations etc. For such cases, SMS/ Cell Broadcast would not be free of cost. Platform is not meant to disseminate political/ commercial messages. Necessary payment for disseminated SMS is going to be made by the user i.e. MHA/NDMA/State Governments/SDMAs.

8. In view of the above, TRAI is requested to provide tariff for SMS and Cell Broadcast disseminated by TSPs through CAP platform during disasters/ non-disasters under section 11(2) of TRAI Act 1997 (as amended).

This issues with the approval of Competent Authority.

(S. S. Jain)  
Director (DM-A)  
No. 23210079

**Guidelines to grant up to 5 paisa exemption on SMS charges with respect to TCCCPR, 2018**

1. Application seeking exemption of SMS charges will be scrutinized by the Committee comprising of Secretary, Advisor (QoS), Advisor (Legal) of TRAI, as members.
2. As per the provisions of The Telecom Commercial Communication Customer Preference Regulations (TCCCPR) 2018:
  - a. Commercial communication using access providers' network only takes place using registered header(s) assigned to the sender(s) for the purpose of commercial communication.
  - b. Service messages may only be sent with the recipient's consent and using a template registered for the purpose.
  - c. Messages sent by Govt. entities and statutory bodies for awareness purpose are considered as service messages.
3. Exemption shall be granted to organizations/department (Central Government, State Government and bodies established under the constitution) where purpose of sending messages is related to sending citizen centric messages and creating awareness for the general public such as messages with regard to campaigns related to Polio, AIDS, Swine Flu, Women Safety etc. However, no exemption would be given to State or Central Govt departments, who is charging customers for messages or sending messages for commercial purpose.
4. Exemption shall not be given to any organisations/ departments, which are not Central, State Government or bodies established under the Constitution, but are Societies, Autonomous bodies, Corporation, Institutes, Bureaus, Project based Boards, Limited companies, Councils etc.
5. The application for exemption shall only be considered after completion of Government entity KYC and header registration with Telecom Service Providers (TSPs) against the above specified purpose.
6. For sending service messages with exemption, the sender needs to register Template of content against the purpose registered with exempted header. Such Template may be a combination of fixed part of content and variable part of content. Accordingly, Government entities (Senders) need to register template of content with TSPs as per the provisions of TCCCPR, 2018.
7. Exemption shall be granted only when request for new exemption or renewal of exemption are received as per the *proforma* finalized by Authority. Authority may modify the said *proforma* from time to time.
8. Application is required to be sent with the approval of Head of the Department. Application that are incomplete or not supported by relevant documents shall be rejected by the Committee.

9. With application for exemption, applicant (sender) need to submit a letter to the Authority from the competent authority of department, on the letter head of such department/govt body, conveying the direction of Central or State Government or constitutional or statutory bodies. An officer of the rank of Joint Secretary or equivalent shall be deemed to be the Competent Authority.
10. The period of exemption will depend on requirement of the sender but shall not be granted for more than one year at a time. Thereafter, sender needs to request for renewal of exemption. However, in extraordinary cases, the Committee may grant exemption for more than one year after examining the requirement of such header, service description and content of such messages.
11. The application for Renewal of exemption would only be considered one month before the expiry of exemption. In case of delay, sender needs to apply with a new application for exemption.
12. Exemption shall be granted on case to case basis.
13. Any other points as deemed fit by the committee for the reasons to be recorded in writing.
14. Authority reserves the right to grant exemption in any other cases, on case-to-case basis, for the reasons to be recorded in writing.