

**CONSUMER PROTECTION ASSOCIATION  
HIMMATNAGAR  
DIST. : SABARKANTHA  
GUJARAT**



**Comments on Consultation paper**

**On**

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

**Introduction :**

Continuously throughout the world, emergencies and disasters lead to the tragic loss of lives and livelihoods. Too much of this loss is due to ineffective public warning: emergency alerts that are not timely enough, not understandable enough, or fail to reach everyone at risk. Yet, these tragic losses can be reduced. This is well demonstrated by all-media, all-hazards public warning that leverages today's amazing communications technology and international standards.

## **The Vision should be :**

Timely Alert and Warning to Indian People in the preservation of life and property.

## **The Mission should be :**

- (i) Provide integrated services and capabilities to local, state, and Central authorities that enable them to alert and warn their respective communities via multiple communications methods.
- (ii) **Modernize** and **integrate existing** alert and warning systems at the **national, state, territorial, local** levels in a **single, cohesive** platform.
- (iii) **Implementation** of **Common Alerting Protocol (CAP)** for crisis information interchange between organizations.
- (iv) Forecasting agencies can **address public or the First Responders** of a **specific area** simultaneously cover all media coverage (**SMS, IVR call, TV, Radio, Siren, Road Signage, Railway station announcement system, social media** etc.) in **all vernacular languages**.

## **Strategic Goal should be :**

- Goal 1 – Create and maintain an integrated interoperable environment for alert and warning
- Goal 2 – Make alert and warning more effective
- Goal 3 – Strengthen the Resilience of Infrastructure

**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?**

**Comments :**

**Technical Options available with Telecom and Broadcasting service Providers :**

1. Telecom Service Providers
2. Internet Service Providers – Pop Up on Internet
3. All India Radio
4. Broadcasting Service - Television
5. IVR Calls
6. Public Addressing System
7. Social Media
8. Railway Announcement System
9. Google Public Alert
10. Cell Broadcast

11. Alerts to be transmitted in SAME through the legacy system, triggering alerts down through the “daisy-chain” of participants, ( i.e. **The daisy-chaining method involves** connecting all the devices that can request an interrupt in a serial manner ). **This configuration should be governed by the priority of the devices. The device with the highest priority is placed first followed by the second highest priority device and so on,** providing redundancy for the IP-based CAP system. This “CAP-in, SAME-out” transitional approach is both practical and cost-efficient because the legacy network still has many benefits (including the ability to operate during power and Internet outages, which would disable a wholly CAP based system when Internet access is disabled) and because the existing system is already so wide-spread and generally functions well.
12. Emergency Management LINK should be established, which gives registered users a quick, comprehensive and up-to-date listing of emergency management related geospatial web services for a chosen hazard and/or region. This should be used by staff in Central, state and territory government agencies as well as those employed in the recovery, humanitarian and critical infrastructure sectors to assist with sharing information about the extent of current and potential disasters.
13. Fax
14. Multimedia Broadcast Multicast Service ( MBMS )

15. Multimedia Messaging Service ( MMS )
16. Unstructured Supplementary Service Data ( USSD )
17. E-mail
18. Instant messaging ( IM )

Among these Cell Broadcast Service (CBS) and Short Message Service (SMS) are the most suitable technologies for delivering a mobile-driven Public Awareness System ( PWS ).

### **Challenges :**

- Un-even population distribution. Dense to very dense population huge number of SMS dissemination in a small area.
- A significant percentage of mobile phones do not support Cell Broadcasting
- Ensuring Quality of Service (QoS) in bulk SMS dissemination
- Real time extraction of mobile number in the selected area by analyzing large set of Visitor Location Register ( VLR )
- Large Population, density varies
- Alerting mechanism is different for different states
- Different Hazard Profile for Different Areas
- Smartphone penetration is less only about 40% so SMS and Cell Broadcasting both options need to implement
- Support for Multilingual Message broadcast as India has 22 major languages

- Large number of Government and Private Organizations need to be integrated with CAP Early Warning Platform through Inter Working Functions, Support for Legacy systems

## **Question 2:**

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

### **Comments :**

Following key requirements are necessary for an emergency messaging service :

- Capacity and speed - The provision of alerts that take a maximum of three minutes to arrive and can reach 97% of the citizens in the targeted area within five minutes.
- Network Congestion - The system must be able to deliver high message volumes across congested networks.
- Security and authentication - Public Warning messages should only be sent from authorized users. Subscriber privacy should be maintained.
- Performance - The system must be configured for high availability and geographical redundancy where possible.

- Handset or device requirements - Emergency messages should be instantly recognizable as an alert and remain on the handset until manually cancelled by the user. The system should allow for different alert levels to be set .

### **SMS Characteristics:**

SMS is familiar to most mobile users worldwide. It is ideal as a personal one-to-one messaging solution, however for bulk messaging applications such as a Public Warning System ( PWS ) :

- ❖ it requires the establishment and maintenance of a database of target numbers.
- ❖ Any bulk messaging solution necessitates that messages must be sent individually to each number in the database.
- ❖ In an emergency situation, where networks are often severely congested, the volumes created can further increase congestion and lead to delays in message delivery.
- ❖ The SMS message is sent direct 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, potentially leading to confusion.

### **Cell Broadcasting Service ( CBS ) Characteristics:**

The Cell Broadcasting Service is currently the most practical mobile-based technology that satisfies the majority of criteria defined internationally as requirements for a PWS and operates effectively on

GSM, UMTS and E-UTRAN networks in addition it is the only standardized PWS technology.

Although Cell Broadcast System (CBS) is not as familiar as SMS to most mobile users, it has several key distinctions that make it more applicable as a PWS service. These include:

- ❖ Message Display - The message can be displayed on the handset with no user interaction and a distinct warning tone sounded.
- ❖ CBS also has the capability to deliver messages in multiple languages.
- ❖ Message Delivery - CBS works on a broadcast i.e. one-to-many basis; One message can be sent to millions of devices quickly and the message is broadcast to all connected handsets within a designated target area.
- ❖ A CBS system enables the fast delivery of important information on a broadcast one-to-many basis and can be targeted to areas that can be as large as a country or as small as a single cell.
- ❖ Message Security - Another key advantage of CBS is that it addresses certain security concerns. 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.
- ❖ Unlike SMS, where messages can be sent from any source and the identity of the sender is difficult to verify, CBS messages can only be sent by authorized personnel who have been given access to the system.

CBS therefore has key practical advantages in terms of implementation for a disaster alerting and warning system:

- It can be displayed automatically with no user interaction,
- It can be delivered quickly to millions in seconds
- It can send differentiated messages to designated areas,
- It is not affected by and will not lead to network congestion,
- It does not violate citizen privacy
- CBS can only be sent from authorized, verified sources.

Despite these disadvantages, CBS is the most implemented technology in delivering PWS.

Government of India has initiated National Disaster Management Authority ( NDMA ) and adopted a comprehensive dynamic National Disaster Management Plan, in which :

- (i) State and District Level Disaster Management Plans prepared and Institutional Standard Operating Procedure (SOP) for disaster situations put in place subsequently.
- (ii) Each State Disaster Management Authority prepared hazard profile of State.
- (iii) Collaboration with different ministries for better disaster risk reduction and mitigation.
- (iv) Implementation of National Cyclone Risk Mitigation Project (NCRMP), funded by World Bank in Coastal States of India.

- (v) Provision of Disaster management policies in National Digital Communication Policy (NDCP), 2018 by Ministry of Communication.
- (vi) DoT further involved Centre for Development of Telematics (C-DoT), India's premier telecommunications R&D center, under Ministry of Communication total solutions to architect, design and development of **CAP compliant Integrated Early Warning Platform** along with integrating all forecasting and dissemination agencies and State to local level authorities.

There are several forecasting agencies in India like :

Sr. No.	Forecasting Agencies	Forecast
1.	Indian Meteorological Department ( IMD )	Snow Fall, Thunderstorm, Fog, Sand Storm, Rainfall, High Tide, Heat Wave, Cyclone
2.	Central Water Commission ( CWC )	Flood, Flash Flood
3.	Geological Survey of India ( GSI )	Landslides
4.	Indian National Center for Ocean Information Services ( INCOIS )	Tsunami
5.	National center for Seismology ( NCS )	Earthquake
6.	Snow and Avalanche Study Establishment ( SASE )	Avalanche

7.	Ministry of Environment, Forecast and Climate Change	Forest Fire
8.	Ministry of Health and Family Welfare	Human Epidemic
9.	Ministry of Environment, Forest and Climate Change ( MoEFCC )	
10.	Ministry of Agriculture and Farmer's Welfare ( MoAFW )	

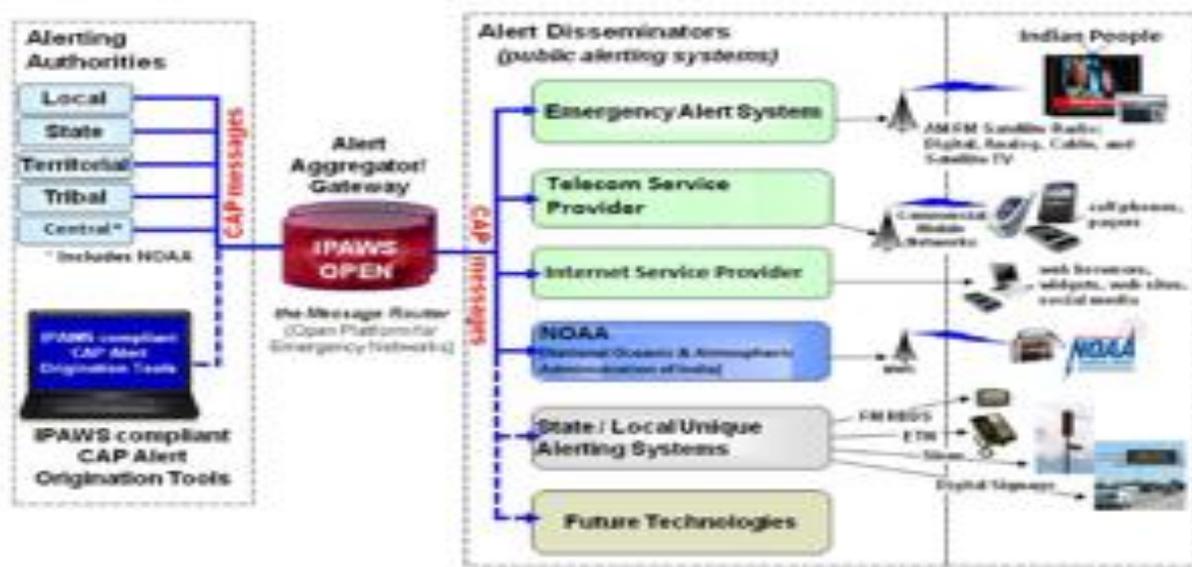
During an emergency, alert and warning need to provide the public with life-saving information quickly. **There should be Integrated Public Alert and Warning System (IPAWS) which should have modernization and integration of the nation's alert and warning infrastructure. It should integrate new and existing public alert and warning systems and technologies. Central, State, territorial, tribal, and local government alert and warning systems should be able to integrate with the national alert and warning infrastructure providing a broader range of message options and communications pathways for the delivery of alert and warning information to the Indian people before, during, and after a disaster by providing one message over more media to more people for the preservation of life and property.**

The Authority should build the IPAWS capabilities to ensure that under all conditions the responsible authorities can alert and warn the Indian people. It should be available to support central, State, local, tribal, and territorial alert and warning authorities. ***Local emergency managers***

**may choose to use the IPAWS alert services and may also integrate local systems that use CAP standards with the IPAWS infrastructure.**

IPAWS and other CAP enabled systems should give public safety officials an effective way to alert and warn the public about serious emergencies using the Emergency Alert System (EAS), the Commercial Mobile Alert System (TSPs), National Weather Radio (NWR) and other public alerting systems from a single interface. IPAWS should save time when time matters, while maximizing the reach and impact of alerts before, during, and after an emergency.

Multiple types of Emergency Alert System (EAS) devices, TSPs, ISPs, Indian National Oceanic and Atmospheric Administration services, State and local alerting systems, including a variety of commercial encoder/decoder devices, and alerting technologies for persons with disabilities, monitor the IPAWS-OPEN system for CAP messages to alarm equipment based on the message types and geo-location information contained in the messages.



### **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.**

### **Comments :**

In an emergency, effective public communication about the event and provision of advice on how to respond can lessen the negative impacts of a disaster and save lives. The quicker this communication is disseminated, the better. Several technologies can be used to facilitate this, including television, radio, the Internet and social media. Mobile phone text messages have also been used to disseminate information rapidly in several recent emergencies .

One attractive feature of mobile phone networks for emergency communication is the ability to target messages to all phones in a specific location. Such location-based messages can use the traditional short messaging service (SMS) or cell broadcast capability. Cell broadcast allows text messages to be sent to all phones that are connected to a base station within a specific geographic area. Cell broadcasting is reliable for use during emergencies as it operates on a separate frequency channel/network from the frequencies used for phone calls and radio communications. Mobile phone networks often remain functional even in the aftermath of major natural disasters, as demonstrated during the 2004 Indian Ocean Tsunami and the 2010 Haiti earthquake.

Successful emergency communication is determined not just by how quickly or reliably a message can be disseminated, but also by how people respond to the information that they receive. Previous research has suggested that a system based on sending emergency messages via mobile phone text message would be generally well accepted by the public and likely to improve uptake of protective behaviour when combined with other approaches. Studies indicate that people go through the sequential processes of perceiving (hearing or receiving the information), understanding (“attachment of meaning” to the information), believing (belief in the information and the accuracy of it) and personalizing (perception of risk to themselves) emergency information, which culminates in their response. Although emergency information broadcasted via mobile phone networks tends to be highly perceptible due to its reach and reliability, the extent to which it is easy to understand, believe and personalize is less clear.

The dissemination of message should be focus on the factors that influence compliance with information received via text alerts, that is understanding, believing and personalizing. These may include the following:

- ✓ degree of trust in the agency sending the alert;
- ✓ desensitization to messages that are sent too frequently for situations that are not relevant to the recipient or for situations that are not perceived as sufficiently serious;
- ✓ how other people respond to the message;

- ✓ whether messages can be verified by checking with other sources; and
- ✓ whether people perceive themselves or their loved ones to be at risk of harm.

The sequential model of response to emergency information and Understanding was influenced by the amount of information provided and the availability of additional sources for information verification, which could be constrained by the character-limited nature of mobile alerts. Belief and compliance were dependent on whether people knew about the alert system and recognized the sender. All of these tied in together to influence how people personalized information and perceived themselves to be at risk. An additional finding was that the lack of personalized messages and two-way communication between sender and recipient limited the efficacy of wireless emergency alerts.

#### **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.**

#### **Comments :**

A mobile phone text alert system is not a complete answer to the problem of disseminating emergency messages quickly during a crisis. the customer may miss an alert entirely, depending on contextual factors such

as whether they were at school where phones may be banned, at home with their phone left in their bedroom, or out of range of a mobile phone signal. A text alert system should be only used in conjunction with other methods of communication to ensure that messages reach as many people as possible. Despite this, the widespread uptake of mobile phones among adolescents suggests that text alerts may be a particularly effective way of disseminating emergency messages.

There are few primary areas where CBS is perceived to have a disadvantage when it is compared to SMS for use as a PWS.

- The CBS is often not enabled by default on many handsets and requires the user to enable the service manually; this process is again different on many handsets and can lead to confusion amongst users.
- The first is that it can only be used for 1-way communication .
- Secondly, it has not been standardized as a method of display on handsets , which has led to differing levels of support across handset models and may require manual configuration by users.
- Main Challenges to Effective CBS Implementations :

**( i ) Difficulty in business case for operators:**

**Investment in PWS.** Many operators have yet to consider it a worthwhile CSR initiative.

However, cell broadcast is available as a software feature on most existing networks and the cost is not large when compared to other network implementations.

Operator involvement is better instigated as part of a government-led, countrywide warning strategy where multiple operators should be committed and where many of the operational costs should be borne by the state or a governmental body.

**( ii ) Handset Problems:**

There were initial concerns that enabling cell broadcast functionality in a handset would lead to significant increased battery consumption. A 2007 report by the University of Linköping, Sweden found that additional battery consumption is small in comparison to other features available on handsets (namely MP3, Java gaming and camera/flash). This is even more relevant for today's high-performance handsets with features such as Bluetooth, Wi-Fi, UMTS, full color displays, and built-in MP3 players – all features that consume significant battery power.

**( iii ) Handset Compatibility and Interface:**

For cell broadcast to be truly effective as a PWS, its implementation needs to be standardized across the majority of handsets. Currently, the service still needs to be enabled manually on most handsets and this process can be different for various brands and types of handsets. This is seen as a major barrier for implementation. There is also a lack of a standard interface to the user: options for cell broadcast can be difficult to find and hidden away in settings or options menus, messages.

One possible solution is to standardize settings in a similar fashion to the presentation and management of SMS or to include it within the SMS management menus. Remote activation of the CBS

service on the handset, though defined within 3<sup>rd</sup> Generation Partnership Project ( 3GPP ), does not appear to be implemented in any current PWS system. Although standardization of user interface and phone compatibility is still a problem, many of the proposed PWS implementations seem likely to follow the New Public Alarming System ( CMAS ) implementation where a client application is implemented on the handset - The client standardizes the presentation and maintains the integrity of the compulsory Presidential alert. Thus, as the Commercial Mobile Alerting System (CMAS) alert capable phones should be made available for the Indian market, it will become commonplace for device manufacturers to enable the feature automatically on new models. In the Netherlands CMAS based clients are implemented by some manufacturers as CMAS and EU-Alert are compatible.

**( vi ) National Legislation:**

This is the key factor for PWS implementation. All successful PWS implementations have to be supported by government and regulatory bodies. In the USA, the national legislation and framework provided by the Federal Communication Commission (FCC) subsequent to the Warning, Alert and Response Network (WARN) act enabled a large take up of CMAS among operators despite the participation being voluntary. In addition, the key role in aggregating and validating alerts has to be played by a national agency or governmental body to lend credibility and legitimacy to the message sources.

### **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?**

### **Comments :**

TSPs should broadcast messages at regular intervals, to all the subscribers in the affected areas through SMS/Cell Broadcast free of charge before, during and after disaster period **as a CSR responsibilities.**

Corporate social responsibility (CSR) is a company's commitment to manage the social, environmental and economic effects of its operations responsibly and in line with public expectations.

It is part of a company's approach to corporate governance and often touches every part of the business—operations, human resources, manufacturing, supply chain, health and safety, and more.

Implementation in 2020 is a mixed bag, what with COVID-19 activities taking up the biggest chunk of funding. A number of cyclones and floods wreaked havoc in large parts of the subcontinent. As a result, funds were also directed to disaster relief operations in Assam, Kerala, Bihar, Odisha and West Bengal.

Although telecom company Bharti Airtel was under no obligation to spend on CSR activities this year (due to net losses), the company has contributed Rs. 31.62 Crore to CSR, mainly in education. Additionally, the Company has contributed Rs. 23.5 lakh towards other charitable causes which are not covered within the CSR ambit, taking the total spend on social responsibility to 31.8 Crore. Bharati Airtel can spare some fund for CAP messages.

Vodafone Idea Ltd is committed to developing communities where it operates in. It's commitment to social sector is clearly stated in its vision statement – "to connect and inspire every Indian to build a better tomorrow,' and further refined in the mission statement – 'Be the most respected company by leveraging technology and purposeful innovation to catalyze social prosperity, digital literacy and inclusivity.' In Financial Year 2019-20, the Company has spent 32.53 crores towards CSR activities.

The company carries out its CSR initiatives through Vodafone Idea Foundation. Its current CSR portfolio focusses on Vidya (Education), Swasth (Healthcare), Aamdani (Livelihoods and Women Empowerment), and transformative projects in each of these domains that offer the potential to improve wellbeing of millions, while showcasing innovative use of mobile technology and development approaches.

In view of the losses incurred by the Company during the last two financial years, the Company had no obligation for CSR spend during the Financial Year 2019-20. However, through its CSR initiatives positively impacted the lives of around 28 lakh people across 18 states in the country.

Vodafone Idea can also spare some fund for CAP messages.

We are unaware about the CRS activities of Reliance Jio. There is no name of Reliance Jio in top 100 companies in India for CRS in 2020. But, Reliance Infrastructure as a responsible corporate entity undertakes appropriate Corporate Social Responsibility (CSR) measures having positive economic, social and environmental impact to transform lives and to help build more capable & vibrant communities by integrating its business values and strengths. Reliance Jio should also start such type of CRS activities.

**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?**

**Comments :** Yes.

**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?**

**Comments :** Mentioned above.

**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.**

**Comments :**           **Mentioned above.**

**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.**

**Comments :**           **Mentioned above.**

**Question 10:**

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

**Comments :** **No**

**Thanks.**

Yours faithfully,

( Dr. Kashyapnath )  
President