

Title: LS - Use of SMS and CBS for Emergencies

Response to: ETSI/AT(04) 10_026

Release:

Work Item:

Source: 3GPP TSG-T

To: AT-NGN@Home , atsupport@etsi.org , ted.laverack@etsi.org

Cc : 3GPP T2, EMTel, 3GPP SA1

Contact Person:

Name: Ian Harris

Tel. Number: +44 776 4217416

E-mail Address: iharris@rim.com

Attachments: None

1. Overall Description:

3GPP TSG-T has discussed the above LS and its attached document Draft ETSI TR EmFxAT v1.3.5 and wishes to comment on section 4.4.3 relating to the use of SMS for emergencies.

TSG-T wishes to make AT-NGN@Home aware that discussions on the use of SMS for emergencies and for deaf people to make emergency calls are already taking place in the UK through the Office of the Deputy Prime Minister. Similar discussions are also taking place in the USA. There may well be discussions taking place in other countries.

TSG-T feels that these discussions should be focussed in one place and it would seem that EMTel may be the appropriate forum.

The responsibility and rapporteurship for the 3GPP SMS and 3GPP CBS specifications (TS 23.040 and TS 23.041 respectively) lie within 3GPP TSG-T WG2 in which there is long standing commercial and technical expertise on SMS and CBS since their inception in the late 1980s.

Originally, SMS was defined as 2 services:-

- SMS - Point to Point, now referred to as SMS.
- SMS - Cell Broadcast, now referred to as CBS (Cell Broadcast Service).

SMS has been deployed on virtually every GSM network whereas CBS has been deployed on almost no GSM networks.

The reason for CBS not being deployed is largely due to the difficulty in business case justification (revenue), MMI difficulties and high battery drain in the receiving mobile phone.

3GPP TSG-T feels that it is important to distinguish between 2 fundamental use cases for emergency text messages.

Case 1

Mobile originated Emergency text messages to 112 and other national emergency service numbers (e.g Police , Fire , Ambulance).

Case 2

Network originated broadcast text messages (National or local area emergencies).

The further analysis below is presented as a set of first thoughts on this matter from TSG-T and we have not fully researched all the detailed issues involved in these two cases. Further work would be needed to establish a comprehensive list of issues.

For case 1 it is possible that SMS could satisfy this requirement provided that the receiving entity was within the fixed network and not another mobile phone. The reason for this is that the majority of users perception of SMS

poor performance is based on 2 way text messaging mobile to mobile where the main reason for non delivery on the first attempt from the SMS-SC is the non availability of the receiving mobile (i.e poor radio coverage or turned off). Typically, 38% of messages are NOT delivered to a destination that is a mobile phone on the first delivery attempt primarily for that reason.

However, once a message has been received by the SMS-SC then there is a very high probability that the message will be delivered within typically a few seconds to a fixed network destination which does not suffer from the same problems as a mobile phone. In fact some network operators have given figures of about 98% delivery success within 5 seconds of all messages on the first delivery attempt sent to a fixed network.

The sender of a mobile originated SMS message can request delivery confirmation at the time of sending. That delivery confirmation confirms the delivery of the SMS message to its destination. Unfortunately many user mistake the indication 'Message Sent' on many mobile phones as meaning delivery confirmation whereas it only means that the message has reached the SMS-SC.

Despite all this, the capabilities of SMS need more analysis against a clear set of requirements to determine whether SMS is appropriate as an emergency mechanism.

SMS in itself provides no location information. Such information would have to be obtained by secondary means such as agreement with the network operator for cell location.

There is no capability for SMS to be sent without both a *smart card* and a *valid subscription*.

In order for case 1 to be considered for emergency messages then 3GPP TSG-T makes the following recommendations:-

- It should be possible for the mobile user to set the SMS message Destination Address to 112 or any other national emergency number and for network operators SMS-SC's to route the message to the 112 emergency service.
- It should be possible for the MMI on mobile phones to have an easy menu selection for sending emergency SMS messages which could include a predefined text string and automated delivery confirmation request.
- The use of a reply SMS message needs to be treated with caution because of the risk of message delay due to the recipient mobile being in poor coverage.
- National legislation may be necessary to ensure that network operators receive appropriate funding to provide support for SMS emergency messages.
- Pre-pay phones must be capable of sending an emergency message irrespective of credit worthiness.
- Provision should be made for mobile networks to trace malicious emergency SMS calls .

For case 2, it would seem that CBS is a possible candidate for reaching as many mobiles as possible.

The problem with using SMS in such a scenario is that it can only target specific mobile phones which may or may not be in good radio coverage and so the message may not reach critical recipients for further dissemination.

By using CBS all mobile phones in a particular area can be targeted and even though some of them may be in poor radio coverage, the probability of reaching many recipients is high and the message could be easily disseminated.

There are drawbacks to the use of CBS for emergency matters – the primary concern is related to battery life. If the Cell Broadcast channel is continuously monitored then there will be a considerable battery drain approximately halving the battery life. For this reason, mobile phones are normally shipped with the Cell Broadcast feature switched off. The feasibility of using Cell Broadcast is therefore questioned.

3GPP has the expertise to devise additional 3GPP features which would enable the support of a low battery drain emergency broadcast message, however we would need to discuss the requirements more closely with the organisations envisioning mass market emergency broadcast capabilities.

Whatever the eventual mechanism used for broadcast, TSG-T makes the following recommendations:-

- The MMI on mobile phones needs to be considerably improved so that there is immediate recognition and display of such broadcast emergency messages.
- National legislation may be necessary to ensure that network operators receive appropriate funding to provide support for such a service
- It will be necessary to prevent malicious emergency messages being broadcast or to authenticate their source

In conclusion, 3GPP TSG-T SMS/CBS experts looks forward to participation in further discussions on this subject to offer the benefit of their expertise.

2. Actions:

To AT-NGN@Home group.

3GPP TSG-T proposes that this work is furthered in one forum and that communication is made with groups dealing with emergency use of mobile phones such as EMTEL. 3GPP TSG-T asks that it is kept informed of all work concerning the use of SMS or CBS messaging

emergency services so that expert advice can be provided. 3GPP TSG-T believes that the 3GPP project as a whole should be involved in the development of the overall strategy and would like to understand the details of the requirements, for example whether the solution has to work on terminals on the market today.

If changes are required to 3GPP specifications in order to meet

service requirements then TSG-T would expect that discussions on these changes would take place in 3GPP.

3. Date of next 3GPP TSGs Meetings:

TSGs#28	1-3 Jun 2005	Quebec, Canada
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