

Emergency Communications (EMTEL); Analysis of Mobile Device Functionality for PWS



Reference

DTR/EMTEL-00017

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Foreword

This Technical Report (TR) has been produced by ETSI Special Committee Emergency Communications (EMTEL).

Introduction

The present document provides an overview of requirement specifications with emphasis on functionality that is specific for the mobile device in a public warning service. Requirements specifications have generic aspects and regional aspects. The generic aspects should be specified by 3GPP and the regional aspects by the regional SDO.

A number of EU member states is investigating the possibility to deploy a public warning service in their country. The Netherlands have taken the lead in a EC funded project on "European Cooperation on Cell Broadcast", after having announced publicly that the Netherlands will deploy such a service in 2010.

The present document investigates if there is a need for an ETSI Technical Specification for Mobile devices to support a public warning service.

1 Scope

The present document is an overview of existing requirements and recommendations for mobile devices able to receive messages used in a Public Warning Service (PWS). It has been prepared mainly with reference to the GSM and UMTS mobile infrastructure, but any functional requirement can be relevant for other contexts (WiFi, WLAN, etc.)

The result of this overview is an advice on a possible need for an ETSI Technical Specification on Mobile Device Specifications for a PWS, if this is so decided by a Technical Committee.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

Not applicable.

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI TS 102 182: "Emergency Communications (EMTEL); Requirements for communications from authorities/organizations to individuals, groups or the general public during emergencies".
- [i.2] ETSI TR 122 968: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Study for requirements for a Public Warning System (PWS) service (3GPP TR 22.968)".
- [i.3] ETSI TS 122 268: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Public Warning System (PWS) requirements (3GPP TS 22.268)".
- [i.4] Joint ATIS/TIA specification J-STD-100: "CMAS Mobile Device Behavior Specification".
- [i.5] Draft ITU-T Recommendation COM 2 - LS 113 - E: "Administration and allocation of multicast addresses for civic purposes", Geneva, 23 September 2008.
- [i.6] Draft ITU-T Recommendation COM 2 - LS8 - E: "Requirements for Land Mobile Alerting Broadcast Capabilities for Civic Purposes", Geneva, 24 March - 2 April 2009.
- [i.7] Position Paper of EU Project on CB.

NOTE: <https://service.projectplace.com/pub/english.cgi/0/283748154>.

- [i.8] Support letter Dutch Ministry Interior and Kingdom Relations, 24 February 2009, see annex A.

- [i.9] ETSI TR 102 444: "Emergency Communications (EMTEL); Analysis of the Short Message Service (SMS) and Cell Broadcast Service (CBS) for Emergency Messaging applications; Emergency Messaging; SMS and CBS".
- [i.10] ETSI TS 123 041: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Technical realization of Cell Broadcast Service (CBS) (3GPP TS 23.041)".
- [i.11] ATIS "CMAS via GSM/UMTS Cell Broadcast Service Specification", to be published.

2.3 References to requirements from other documents

Throughout the present document requirements from other documents have been copied unchanged for reference. These requirements are indicated by brackets at the start of the sentence, for example:

[xxx] Requirement text copied.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

Legacy Mobile Device: Mobile Device that is or has been sold without including the PWS features; as opposed to mobile devices that could or will be developed with these features

WARN Act: Warning Alert and Response Network Act

NOTE: The WARN Act was signed by US President Bush in October 2007, which led to CMAS.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ATIS	Alliance for Telecommunications Industry Solutions
CBS	Cell Broadcast Service
CMAS	Commercial Mobile Alert Service
EMS	Enhanced Messaging Service
ETWS	Earthquake and Tsunami Warning System
HPLMN	Home Public Land Mobile Network
MMI	Man Machine Interface
MMS	Multimedia Messaging Service
PWS	Public Warning System
SMS	Short Message Service
TIA	Telecommunications Industry Association
UE	User Equipment
VPLMN	Visited Public Land Mobile Network
WiFi	Wireless Fidelity
WLAN	Wireless Local Area Network

4 Background

TS 102 182 [i.1] provides an overview of the requirements for communication from authorities/organizations to individuals, groups or the general public in all types of emergencies. It collects operational and organizational requirements as a basis for a common notification service, including targeting of the area to be notified. Although many of the requirements relate to national public policies and regulation, there are a number of service and technical aspects which are better dealt with on the European level to ensure harmonized access and services over Europe and service effectiveness through increased user awareness by using standardized solutions.

3GPP WG SA1 conducted a study for requirements for PWS in TR 122 968 [i.2], where the EMTEL specification [i.1], requirements from Japan for ETWS and requirements from the US for CMAS were used as input.

From this study, SA1 delivered a specification with PWS Requirements in TS 122 268 [i.3]. This specification covers PWS in general, where both ETWS and CMAS are regional adaptations of PWS.

4.1 Mobile Device requirement specifications

PWS Requirements in TS 122 268 [i.3] contains a number of mobile device specific requirements of a general nature. Specific mobile device requirements for CMAS have been specified by ATIS and TIA in J-STD-100 [i.4]. Specific mobile device requirements for ETWS in English are unknown.

4.2 Draft ITU-T recommendations

The draft ITU-T recommendations [i.5] and [i.6] address PWS issues with the notion that PWS could be deployed with legacy mobile devices, since many ITU member states have a cash poor citizenship.

Specific issues that these recommendations address are:

- Types of messages, such as alert messages and advisory messages.
- Support for roaming.
- Support for multiple languages.

In more detail a solution for these issues with Cell Broadcast has been described.

4.3 EU Project Position Paper

The EC funded project "European Cooperation on Cell Broadcast" was initiated by the Ministry of Interior and Kingdom Relations of the Netherlands. The purpose of the project was to share knowledge and experiences and identification and standardization of (technical) requirements among the participating EU member states.

A result of the project is the EU Project Position Paper [i.7]. The content of this paper is supported by a number of member states. See annex A for an example of the supporting letter from the Dutch government [i.8] and an overview of EU member states that signed the support letter.

The EU Project Position Paper details a number of specific mobile device requirements.

5 Mobile Device requirements from TS 102 182

TS 102 182 [i.1] lists specific MMI requirements in clause 5.2.9 of that document. Clauses 5.1 and 5.2 list those requirements.

5.1 MMI Requirements

5.1.1 Recognizing the emergency message

- [501] An emergency alert message should be immediately recognizable. (Emergency messages shall be specifically recognizable as being an emergency message that cannot be mistaken for an ordinary message.)

5.1.2 Displaying the message on mobile phones

- [502] The emergency warning message should stay on the display regardless of the user setting, until the message indication is cancelled by the user. It shall be possible for the user to review the message at a later time.

6 Mobile Device requirements from TS 122 268

TS 122 268 [i.3] lists specific PWS-UE requirements in clause 4.6 of that document. Clauses 6.1 and 6.2 list those requirements.

6.1 PWS-UE Requirements

6.1.1 General Requirements

- [601] PWS-UEs shall only be required to receive and present Warning Notifications in languages as presented by the Warning Notification Provider.
- [602] There shall be no requirement for language translation in the UE.
- [603] It shall be possible for the Warning Notification to be displayed on the PWS-UE upon reception and without any user interaction.
- [604] It shall be possible for users to configure the behavior of a PWS-UE with regard to Warning Notification alerting and should allow at least volume adjustment.
- [605] The PWS-UE shall support a dedicated alerting indication (audio attention signal and a dedicated vibration cadence) and be distinct from any other device alerts and restricted to use for Warning Notification purposes.
- [606] The alerting indication for a specific Warning Notification shall continue until suppressed by users' manual operation (e.g. by pushing keys). The frequency and duration of the continued alerting indication is mobile device implementation specific. This shall not suppress the alerting indication for subsequent Warning Notifications.
- [607] The PWS-UE shall automatically suppress duplicate notifications. A duplicate is a repetition of a previous notification as determined by unique parameters.
- [608] The PWS-UE shall not support any capabilities to forward received Warning Notifications, to reply to received Warning Notifications, or to copy and paste the content of Warning Notifications.
- [609] PWS-UEs should have the ability to present previously displayed Warning Notifications if requested by the user.
- [610] PWS-UE shall be able to support concurrent reception of multiple Warning Notifications.

6.1.2 Support of non-Warning Notification capable UEs

- [611] Support of non-Warning Notification capable UEs is subject to regulatory requirements and/or operator's policy.

6.1.3 Battery Life of PWS-UE

- [612] Battery life of the PWS-UE shall not be significantly reduced by PWS.

6.1.4 Enabling and disabling of Warning Notifications

- [613] The PWS-UE shall be configured to receive all Warning Notifications.
- [614] It shall be possible for users to disable (e.g., opt-out) presentation of some or all of the Warning Notifications, subject to regulatory requirements and/or operator policy. The user shall be able to select PWS-UE enabling/disabling options via the User Interface to disable, or later enable, the PWS-UE behavior in response to some or all Warning Notifications.

6.2 Roaming Requirements

- [615] It shall be possible for PWS-UEs that are enabled for Warning Notifications in the HPLMN to receive Warning Notifications from the VPLMN supporting PWS when roaming. A PWS-UE that does not support the PWS requirements of the VPLMN's PWS service may not receive Warning Notifications from that VPLMN.

7 CMAS Mobile Device requirements from J-STD-100

The CMAS Mobile Device Behavior Specification [i.4] provides requirements and behavior specifications for CMAS capable mobile devices. Most non-US specific requirements were brought into 3GPP and are contained in TS 122 268 [i.3].

7.1 Mandated Mobile Device Requirements

Mobile devices are required to perform the following functions:

- [701] Maintaining subscriber alert opt-out selections, if any.
- [702] Maintaining subscriber alert language preferences, if any.
- [703] Extraction of alert content in English or the subscriber's preferred language, if applicable.
- [704] Presentation of alert content to the device, consistent with subscriber opt-out selections. Presidential Alerts must always be presented.
- [705] Detection and suppression of presentation of duplicate alerts.
- [706] CMAS capable mobile devices shall not enable an Alert Message to preempt an active voice or data session.
- [707] A CMAS mobile device shall include an audio attention signal and vibration cadence that meet specific US requirements (signal and cadence definition not included).
- [708] The audio attention signal and vibration cadence must be restricted to use for Alert Messages under CMAS.
- [709] A device may include the capability to mute the audio attention signal and the vibration cadence.

7.2 General mobile device requirements

This clause contains the general guidelines and requirements for the functions to be performed by the mobile device:

- [710] If both the CMAS audio attention signal and vibration cadence alert modes are enabled, the temporal patterns of the two modes do not need to be synchronized.
- [711] The presentation of the received CMAS alert message should take priority over other mobile device functions.
- [712] The presentation of CMAS alert messages to the subscriber on the mobile device should be such that the CMAS alert message are distinguishable from any other types of textual messages received by the mobile device subject to mobile device capabilities.
 - Color cannot be a required method for distinguishing CMAS alert messages from other types of text messages on the mobile device since all mobile devices do not have color display capabilities.
 - Since some individuals may have color blindness, thus color should not be used as the sole method for conveying alert information and should not be used as the sole indicator to distinguish CMAS alert message from other messages.
- [713] It is desirable to have the CMAS displayable message text prominently presented on the mobile device consistent with user settings for presentation of incoming phone calls and SMS messages (including the illumination of the visual display) without user interaction when the CMAS alert message is received.
- [714] A duplicate CMAS alert message which was previously presented to the subscriber may be re-presented to the subscriber following a power-on of the mobile device. The non-volatile storage of the CMAS alert message identification on mobile devices is an implementation option.
- [715] There shall be no requirement for language translation in the mobile device.
- [716] Mobile devices shall not support any user interface capabilities to forward received CMAS alerts, to reply to received CMAS alerts, or to copy and paste CMAS alert contents.
- [717] The need to scroll or manipulate the mobile device to review the received CMAS alert message should be minimized.
- [718] The subscriber should not be required to remember or to use a unique command to turn off the notification of the CMAS alert message. A familiar command, consistent with the other commands used for call or message handling on the mobile device, is recommended.
- [719] Mobile devices should have the ability to recall alert messages for review by the subscriber.
- [720] The mobile device should use fonts for the display of the CMAS alert message that are easily readable and decorative fonts should be available. The goal in the selection of the font is for easily recognizable character especially for individuals with vision impairments. Examples of easily readable fonts would be Roman, Sans Serif, and Arial.
- [721] If technically feasible, the mobile device display should provide a high contrast display and should provide adjustable font size.
- [722] The mobile device may provide a unique indicator that identifies a stored CMAS alert message. This CMAS alert message indicator would allow a user the ability to immediately recognize a previously received or stored CMAS alert message.

8 Mobile Device requirements from the EU Project Position Paper

The EU Project Position Paper [i.7] contains requirements for the mobile device, which are listed in clause 8.1. The service is called EU-Alert with specific names for each country: NL-Alert for the Netherlands, UK-alert in the UK, etc.

8.1 Handsets which support at least the following features for civil alert

- [801] Receive alert messages accompanied by a special ring tone, preferably an EU standardised ring tone.
- [802] Various alert levels, e.g. emergency, imminent and advisory.
- [803] Sending out emergency messages to users, preferably in their own language, but when not practicable, then in the language of the message originator.
- [804] Alert messages received are displayed immediately on the handset display, even during a voice call.
- [805] Ability to store messages.
- [806] A simple user interface that enables the user to switch the alert service on or off.
- [807] A seamless service, even when travelling.

8.2 Mobile Device features for further study

- [808] The possibility to send a message, accompanied by an 'all clear' tone, to inform citizens that the crisis has ended.
- [809] The possibility to make use of pictograms to inform citizens on the type of crisis and possibly on the type of action that is required.

9 Analyses of requirement specifications

Requirements for Mobile Device behavior in PWS should be listed in TS 122 268 [i.3] for all generic aspects and in regional specification from ATIS in J-STD-100 [i.4] and ETSI for regional aspects, such as the specification for the specific ring-tone. An ETSI specification may be the result of the study conducted in the present document.

A comparison of the requirements of clauses 5 till 8 is given in annex B.

9.1 Analyses of TS 102 182

MMI specific requirements from TS 102 182 [i.1] are all contained in TS 122 268 [i.3], even though the ETSI specification is not referenced in this 3GPP specification. See the table in annex B for the references to the applicable requirements.

9.2 Analyses of the EU Project Position Paper

The EU Project Position Paper has been written with Cell Broadcast as a bearer service in mind. Cell Broadcast has been specified in TS 123 041 [i.10].

Requirements from the EU Project Position Paper are all contained in TS 122 268 [i.3] but one: requirement 802.

Requirement 802 "Various alert levels, e.g. emergency, imminent and advisory", may be a network related requirement, rather than a device related requirement.

Requirement 804 requires messages to be displayed immediately, even during a voice call. This is not a requirement to preempt voice calls! Displaying and alerting a user who is engaged in a voice call is a unique requirement from the EU Project Position Paper and is not present in the 3GPP specification. For example, according to the 3GPP Cell Broadcast specification [i.10] it is not a requirement for the Mobile Device to process CB messages when engaged in a voice call.

Requirement 808 "The possibility to send a message accompanied by an 'all clear' tone, to inform citizens that the crisis has ended", which is indicated to be an item for further study, is currently not contained in any 3GPP specification.

Requirement 809 which is indicated to be an item for further study, and requires the use of pictograms, may be possible with EMS.

9.3 Analyses of CMAS J-STD-100

Various requirements from the CMAS Mobile Device Requirements specification J-STD-100 [i.4] may be useful to include in a future ETSI Technical Specification on Mobile Device Functionality.

9.3.1 Analyses of requirements in J-STD-100

The CMAS J-STD-100 [i.4] contains a number of requirements that are applicable for the US, but not to a generic 3GPP specification. Examples of these are [703], [704] and [707].

[703] Extraction of alert content in English or the subscriber's preferred language, if applicable.

A generic requirement would be that: "the alert content shall be displayed in the language chosen by the subscriber, if applicable".

[704] [...] Presidential Alerts must always be presented.

This requirement originates from the legislation (the WARN Act) and may not be applicable elsewhere.

[707] A CMAS mobile device shall include an audio attention signal and vibration cadence that meet specific US requirements (singal and cadence definition not included).

Audio attention and vibration signals should be defined regionally. The EU Project Position Paper states that some or all of the EU member states require an EU specific ringtone; therefore this should be specified in an ETSI specification, analogue to the ATIS specification J-STD-100 [i.4].

9.3.2 Analyses of feature descriptions in J-STD-100

J-STD-100 [i.4] describes the desired behavior for a mobile device in the following circumstances:

- Reception when the mobile device is busy.
- CMAS message initiation of other functions on mobile device.
- Behavior when CMAS alert received after SMS or MMS.
- Behavior when CMAS alert received after non-CMAS broadcast message.
- Behavior when SMS or MMS received after CMAS alert.
- Behavior when non-CMAS broadcast message received after CMAS alert.
- Behavior when incoming phone call received after CMAS alert.
- Behavior when voice mail notification received after CMAS alert.
- Behavior for multiple CMAS alerts.

A future ETSI specification on Mobile Device functionality should not be in conflict with these descriptions.

When the mobile device is active in voice or data session, the mobile device is not required to receive any CMAS message. The mobile device may receive and present CMAS message, but while doing so the mobile device should not preempt voice and data calls. This is consistent with requirement [804] of the EU Project Position Paper [i.7].

9.3.3 Analyses of configuration options in J-STD-100

The mobile device should maintain configuration of CMAS alert options including the following:

- Subscriber's choices of CMAS alert opt-out selections.

- Subscriber's choices for the CMAS audio attention signal options.
- Subscriber's choices for the CMAS vibration cadence options.

The opt-out options are about opting out of various types of alerts, similar to the options mentioned in requirement [802] of the EU Project Position Paper [i.7]: "emergency", "imminent" or "advisory". These options are presented in a proposed, illustrative menu.

A future ETSI specification on Mobile Device functionality should contain similar guidelines.

10 Analyses of Cell Broadcast as bearer technology

ETWS uses the Cell Broadcast Service (CBS) as bearer technology, with the addition of a primary notification over the paging channel.

CMAS is technology independent, but the only implementation that has been specified by ATIS is based on CBS as bearer technology [i.11].

The EU Project Position Paper [i.7] is a deliverable from the EU project on "European Cooperation on Cell Broadcast" is also based on CBS as a bearer service.

Although CBS is a very suitable bearer technology for PWS, there are a number of points for improvement, also for the MMI, as explained in more detail in TR 102 444 [i.9].

CBS offers a number of options to support multiple languages and messages can be broadcasted with a large number of Message Identifiers [i.10]. An agreement has to be reached on which way multiple languages are to be supported and which Message Identifiers are to be used. This should preferably be done across all the EU member states that wish to deploy PWS via CBS on legacy mobile devices. A use case is described in annex C.

A future ETSI specification on Mobile Device functionality may address these issues.

11 Recommendations

A number of analyses carried out in the present document have led to the conclusion that topics may need or should be addressed in an ETSI Technical Specification on Mobile Device Functionality. This is particularly important when PWS, based on CBS, would be deployed in a number of EU member states.

Annex A: Support Letter

The EU Project Position Paper is presented in a letter from the Dutch Ministry of Interior and Kingdom Relations [i.8]. The Dutch Ministry does the project management for the project "EU Cooperation on CB".



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Date February 24, 2009
Subject Position Paper EU Project Cell Broadcast

Enclosure
1

Whomever it may concern,

Hereby I would like to present to you the Position Paper, which is the result of discussions held during the workshops of the EC funded project "Cell Broadcast for public warning - Sharing knowledge and experiences and identification and standardisation of (technical) requirements."

With this position paper, we aim to describe the common position of the partner and participating countries of the project towards the possible use of cell broadcast for civil alert applications. The objective is to provide direction for the mobile (standardization) industry and the European Commission in order to offer our citizens a seamless Cell Broadcast service for alerting and informing the public in times of crisis at both national and international level. As a partner country of this project, we support all statements made in the position paper.

Yours faithfully,

Jenk Geyske

Director National Security of the Dutch Ministry Interior and Kingdom
Relations

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The support letter has been signed by:

- The Director National Security of the Dutch Ministry of Interior and Kingdom Relations.

Copies of this letter (same text, but different letter head and signature) have been signed by:

- The Director General Civil Contingencies in the UK Cabinet Office.
- The Head of Training, Exercises & Emergency Preparedness Department of the Swedish Civil Contingencies Agency.
- The Head of the Norwegian Directorate of Civil Preparedness.
- The Deputy Secretary-General for Internal Security of the Estonian Ministry of Interior.
- The Federal Office for Civil Protection and Disaster Assistance of the German Ministry of Interior.
- A French government representative during the closing seminar of the EU project in the Netherlands.
- Hungary.
- Poland.
- Finland.
- Spain.

It was deemed necessary to have member states sign a support letter, since the project is not an official EU government body and officially ended in December 2009.

Annex B: Comparison of requirements

The requirements of the various specifications can be compared for similar or duplicate requirements. The result is summarized in table B.1.

Table B.1

Requirement from TS 122 268 [i.3] or other if not available	TS 122 268 [i.3]	TS 102 182 [i.1]	Position Paper	J-STD-100
UE shall only be required to receive and present Warning Notifications in languages as presented by the Warning Notification Provider.	601		803	
There shall be no requirement for language translation in the UE.	602			715
It shall be possible for the Warning Notification to be displayed on the UE upon reception and without any user interaction.	603		804	711,713
It shall be possible for users to configure the behavior of a UE with regard to Warning Notification alerting and should allow at least volume adjustment.	604			709
The UE shall support a dedicated alerting indication (audio attention signal and a dedicated vibration cadence) and be distinct from any other device alerts and restricted to use for Warning Notification purposes.	605	501	801	707,708
The alerting indication for a specific Warning Notification shall continue until suppressed by users' manual operation (e.g. by pushing keys).	606	502		718
The UE shall automatically suppress duplicate notifications.	607			705
The UE shall not support any capabilities to forward received Warning Notifications, to reply to received Warning Notifications, or to copy and paste the content of Warning Notifications.	608			716
UEs should have the ability to present previously displayed Warning Notifications.	609		805	719
UE shall be able to support concurrent reception of multiple Warning Notifications.	610			
Support of non-Warning Notification capable UEs is subject to regulatory requirements and/or operator's policy.	611			
Battery life of the UE shall not be significantly reduced by PWS.	612			
The UE shall be configured to receive all Warning Notifications.	613			
It shall be possible for users to disable (e.g., opt-out) presentation of some or all of the Warning Notifications, subject to regulatory requirements and/or operator policy. The user shall be able to select UE enabling/disabling options via the User Interface to disable, or later enable, the UE behavior in response to some or all Warning Notifications.	614		806	701, 704
It shall be possible for UEs that are enabled for Warning Notifications in the HPLMN to receive Warning Notifications from the VPLMN supporting PWS when roaming.	615		807	
Various alert levels, e.g. local, regional and national level.			802	
Maintaining subscriber alert language preferences, if any.				702
Extraction of alert content in English or the subscriber's preferred language, if applicable.				703
CMAS capable mobile devices shall not enable an Alert Message to preempt an active voice or data session.				706
If both the CMAS audio attention signal and vibration cadence alert modes are enabled, the temporal patterns of the two modes do not need to be synchronized.				710
The presentation of CMAS alert messages to the subscriber on the mobile device should be such that the CMAS alert message are distinguishable from any other types of textual messages received by the mobile device subject to mobile device capabilities.				712
A duplicate CMAS alert message which was previously presented to the subscriber may be re-presented to the subscriber following a power-on of the mobile device. The non-volatile storage of the CMAS alert message identification on mobile devices is an implementation option.				714
The need to scroll or manipulate the mobile device to review the received CMAS alert message should be minimized.				717

Requirement from TS 122 268 [i.3] or other if not available	TS 122 268 [i.3]	TS 102 182 [i.1]	Position Paper	J-STD-100
The mobile device should use fonts for the display of the CMAS alert message that are easily readable and decorative fonts should be available. The goal in the selection of the font is for easily recognizable character especially for individuals with vision impairments. Examples of easily readable fonts would be Roman, Sans Serif, and Arial.				720
If technically feasible, the mobile device display should provide a high contrast display and should provide adjustable font size.				721
The mobile device may provide a unique indicator that identifies a stored CMAS alert message. This CMAS alert message indicator would allow a user the ability to immediately recognize a previously received or stored CMAS alert message.				722

Annex C:

Use case for languages support

The various specification documents contain a number of requirements for the support of multiple languages, for example:

- [601] PWS-UEs shall only be required to receive and present Warning Notifications in languages as presented by the Warning Notification Provider.
- [703] Extraction of alert content in English or the subscriber's preferred language, if applicable.
- [803] Sending out emergency messages to users, preferably in their own language, but when not practicable, then in the language of the message originator.

Supporting multiple languages is most likely going to be mandatory in a number of countries that deploy PWS. This annex describes a use case for the support of multiple languages on a mobile device.

In case CBS is used to broadcast alert messages, these alert messages should be displayed in the preferred language, which could (by default) be the language of the MMI of the mobile device. In many cases this would be the native language of the user of the mobile device. Alert messages that are also broadcasted in other languages are preferably not displayed.

In case this user roams in another country, alert messages should be displayed in the preferred language if that is being broadcasted. In case that is not broadcasted, the message should be displayed in the second preferred language, which could be English for many non-English citizens. Apart from English, Spanish may also be a good candidate for many parts in the world. If neither the first, nor the second preferred language is used, then the message should be displayed in the local language. The user will at least have an idea that an alert message is being received.

History

Document history		
V1.1.1	August 2010	Publication