



# The CB Way Forward

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**End of project seminar**  
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## Cell Broadcast as it was till recently

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- CB specified by 3GPP for GSM and UMTS
  - Stage 1 requirements specification: does not exist
  - Stage 2 service specification: 3GPP TS 23.041
  - Stage 3 protocol specification (between CBC and access network):
    - GSM: does not exist
    - UMTS: 3GPP TS 25.419
- 3GPP does not specify mobile device behaviour
  - Mobile device vendors can sell competitive devices
  - CB (menu) not easy to manage
- CB has not been successful as SMS is, but is making its come-back now.

## CB for Public Warning

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- CB is the right technology for public warning:  
With CB it is possible to send a text message to
  - a large number of subscribers,
    - The US Presidential message targets 255 million mobile phones
  - including visitors from other countries,
    - You can receive CB messages from Turkcell right here and now
  - in near real-time,
    - Japanese government has a requirement to reach citizens in 4 s (of which 35 million are in Tokyo alone)
  - with location specific information
  - in their desired language
  - even when the network is congested
    - During network congestion first the traffic channels (voice) go then the signaling channels (SMS)

## PWS overview in 3GPP terminology

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- Public Warning System (PWS)
  - Is a generic service
- Earthquake and Tsunami Warning System (ETWS)
  - Is a regional (now Japanese) variant of PWS
  - Has additional broadcasting capabilities
  - Standardization in 3GPP
- Commercial Mobile Alert Service (CMAS)
  - Is a US variant of PWS as per WARN Act (2006)
  - Standardization in ATIS

## CB and ETWS

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- Japanese government requires an alert to arrive on the mobile device within 4 seconds
  - Not even generic CB can do that
- ETWS is CB plus extra parameters:
  - ETWS flag
  - ETWS type (tsunami, earthquake or both)
- ETWS-CB message consists of
  - A primary notification over the paging channel
  - A secondary message via CB
- ETWS primary notification
  - Displays a predefined message
  - May activate CB
    - Currently being studied in 3GPP RAN and CT1 working groups

## CB and CMAS

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- CMAS is per WARN Act and FCC Report and Order
- CMAS
  - Only viable technology is CB
  - Is being specified in ATIS
    - Joint ATIS and TIA Interface Specification
    - CMAS via CB
    - Mobile Device Behavior Specification (MDB Spec)
- MDB Specification contains requirements:
  - Message shall pop up without the need for user interaction
  - Special alert notification (well known US siren)
  - Special menu to activate CMAS and emergency levels
  - Only English is supported
  - Legacy devices shall not be supported

## CB cooperation project

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- EU member states cooperate in a project to share knowledge on CB
- Project publishes Positioning Paper
  - Message shall pop-up without the need for user interaction
  - Specific EU alert tone
  - Support for multiple languages
  - Support of legacy devices
  - Easy CB activation

## Requirement for pop-up and alert tone (1)

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- An alert message shall be displayed without the need for user intervention
- An alert message shall have a specific notification
- 3GPP TS 23.041 already has a solution for ETWS
- CR submitted in 3GPP CT1 meeting (this week in L.A.) to extend this solution to PWS.
  - MIs are above 1000:
    - PWS = 4352 – 6399
    - ETWS = 4352 - 4359
    - CMAS = 4370 – 4399
  - Any country starting with PWS shall reserve MIs
- ETWS and CMAS MIs are settable from the MMI!
  - No such requirement (yet) for rest of PWS

## Requirement for pop-up and alert tone (2)

- Serial number is used to reject a message if it has been displayed before

Octet 1								Octet 2							
7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
GS		Message Code										Update Number			

- In case the MI is in the PWS range then the serial number supports pop-up and special alert tone

5	4	3	2	1	0	7	6	5	4
Emergency User Alert	Popup								

## Requirement for languages support

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- CB natively supports multiple languages
- The issues are:
  - How shall the citizen select his languages of preference?
  - Are languages still supported when crossing a border?
- There are two solutions today:
  - Assign a single MI for all PWS across the EU and use a language filter
    - Japan and the US use multiple MIs (depending on severity, type or language)
    - Class 0 message (pop-up) cannot be combined with languages
  - Assign an MI to each language (and standardize those MIs)
- Solution for tomorrow:
  - 3GPP SA1 requirement: “PWS shall support roaming”
  - EU countries could adopt CMAS with support for languages

## CB and LTE

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- Cell broadcasting capability also required in LTE:
  - Service specification: 3GPP TS 23.401
  - Protocol specification: 3GPP TS 29.168
- Currently only ETWS is specified
  - No update, no cancel
- ATIS submitted work item to add full cell broadcasting capability to LTE

# Is Cell Broadcast an obsolete technology?

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On the contrary

Thanks