DAB EWF – Emergency Warning & Alert Functionality

DAB Tools, Features and Considerations

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DAB EWF – Emergency Warning & Alert Functionality

1. DAB EWF – Emergency Warning & Alert Functionality
   - The Task
   - Digital Radio – Benefits for EWF

2. Technical DAB Tool Set
   - Announcements
   - DAB Multimedia Applications

3. DAB EWF Implementation
   - Functional Overview
   - Listener Experience

4. Conclusion
Emergency Warning & Alert
The Task

In case of pending or current disasters / catastrophes, inform the **public** (+authorities) with **maximum reach** as **quickly** as possible, giving **all relevant information**.

→ How can DAB help to fulfil this requirement?
Emergency Warning & Alert
Stages of a Disaster Operation

Detection of pending disaster
Preparatory General Education

Disaster hits
Instant Warning Dissemination

Crisis / Rescue Support

Post-Disaster Services

Digital Radio provides essential services in all these stages, as it:

a) reaches the affected people reliably
b) detailed multi-lingual infos as text and slides (if available)
Emergency Warning & Alert
Tools for Information Dissemination

What is your country’s approach today on information dissemination in case of disasters?

- Analog AM/FM Radio
- Mobile phones, SMS
- Internet / Social Media
- TV (satellite, terrestrial)
- Special Devices, Alarm Systems

→ All important; plus
Digital Radio as the corner stone
Emergency Warning & Alert
Unique Benefits for Information Dissemination

- Radio is **ubiquitously available**:
  - at home
  - at work
  - in the car
  - as portables & in mobile phones
  - outdoors & indoors

- Radio is a companion with an **everyday purpose**
  - → unintrusive and always present
Emergency Warning & Alert
Unique Benefits for Information Dissemination

- Radio is **independent** from local infrastructure:
  - Battery powered / wind-up
  - No satellite dishes / settop boxes
  - Transmitter coverage from outside disaster area:
    - E.g. high power, high tower
  - Secured transmitter sites (backup power etc.)
  - Well-controlled infrastructure
Emergency Warning & Alert
Scale of Emergencies

- **Low level** – the broadcaster will most likely provide periodic information, e.g. every 15 mins or so

- **Medium level** – information will be broadcast on the same service (or indication to listen to station XXX for further info)

- **High level** – imminent life threatening danger

→ how to disseminate information?
Two types of emergency warning:

- **EWS** – Emergency Warning System
  „The EWS feature is intended to provide for the coding of warning messages [...] and will only be evaluated by special receivers.“
  → E.g. Siren activation

- **EWF** – Emergency Warning Functionality
  Emergency Broadcast to the public giving all relevant information.
DAB EWF – Emergency Warning & Alert Functionality

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Emergency Warning & Alert Announcements

Announcements:
Signal special on-air content to receivers

- Types: **Alarm**, **Warning/Service**, Road Traffic, News Flash, etc.

- **Automatic receiver switching and emergency wake up**
  - tune to subchannel with audio & PAD
  - Visual signalling + volume increase
# Emergency Warning & Alert

## Relevant standardized data applications

<table>
<thead>
<tr>
<th>DAB Dynamic Label</th>
<th>Journaline</th>
<th>Slideshow</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>scrolling text sequence</strong></td>
<td><strong>advanced on-demand text</strong></td>
<td><strong>image sequence</strong></td>
</tr>
<tr>
<td>Tsunami pending in Shanghai at 16:00</td>
<td><img src="NewsService_Journaline.png" alt="Journaline logo" /></td>
<td><img src="Slideshow.png" alt="Slideshow image" /></td>
</tr>
</tbody>
</table>

- **DAB Dynamic Label**
  - Max. 128 characters, typ. every 20 sec.
  - Automatic sequence: no user-interaction

- **Journaline**
  - Full news articles with topic structure (menus)
  - On-demand look-up
  - Multilingual (Unicode)

- **Slideshow**
  - Images, typ. 320x240
  - Automatic sequence: no user-interaction (optional categories)

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**All Receiver Classes**
(text-only screen)

**Multimedia Rx**
(colour graphics screen)
Emergency Warning & Alert
Standardized Data Applications

The advanced text application enables

- **Multilingual instructions:**
  What happened? / Which area? / What do I need to do? …

- Integrated **images** (SLS or online)

- **Hot-Button** interactivity:
  links to phone, web, e-mail, SMS

- **Geo-referencing**

- Small foot-print → **all rx classes**

→ **Serves non-native speakers** and the **hearing impaired** with **full instructions instantly**
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Functional Overview

1. Receiver switches on and/or re-tunes automatically
2. Visual / acoustic signaling
3. Emergency audio broadcast + multi-lingual look-up of text instructions and slides (if available)

Supporting EWF coverage from outside disaster area; E.g. high power, high tower

Information in English
What is going on?
What area is affected?
► What do I need to do?
Where can I get help?

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Emergency Warning & Alert
Listener Experience

When the **alarm signal is triggered** by authorities:

- All running digital receivers pick up alarm signal from currently received service, and switch to emergency broadcast (if required)
- Turned-off receivers may switch on automatically (requirement to be communicated to rx mfcts)

→ Receivers present the **audio content** of the emergency programme
→ Receivers with appropriate screen in addition present
  - **detailed information and instructions** (Journaline),
  - **text-headlines** (Dynamic Labels) and
  - **Images** (Slideshow, if available)
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Conclusion

DAB provides listeners (including impaired users) with complete and detailed information by audio, slides and multilingual on-demand text.

Extensive Field trials ongoing in many countries (Australia, Germany, …)

WorldDMB TC attending to the task

The DAB standard has all required tools built-in for a quick and complete mass-notification in case of disasters / catastrophes.
Thank you!

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