DRM – Digital Radio Mondiale
Emergency Warning and Alert
Emergency Warning Systems

- Radio – The obvious solution in times of emergency
- Part of DRM standard as recommended by ITU and ETSI
- Must cover large areas with very high reliability
- Must work when everyday services don’t
- Must do something else useful
  - Emergencies are comparatively rare
  - People need to carry the warning devices

DRM30 is an ideal technology
DRM has all required tools built-in for a quick and complete mass-notification in case of disasters / catastrophes.

**Preparation** is required in terms of:

- Alarm trigger routing (central authority)
- Content preparation for immediate availability (text information, audio feed)
- Receiver functionality (e.g. wake-up)
DRM Multimedia Applications

Relevant DRM multimedia applications for Emergency Programmes:

**DRM TextMessages**
programme accompanying labels (Unicode),
max. 128 characters, max. every 20 sec.
→ short messages on Rx screen

**Journaline**
text based information service (Unicode),
supporting all classes of receivers,
triggers interactivity and geo-awareness
→ detailed textual information
→ multiple languages / scripts in parallel
Listener Experience

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

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

→ All DRM receivers present the **audio content** of the emergency programme

→ DRM receivers with text screen in addition present
  - **text-headlines** (DRM TextMessages) +
  - **detailed information and instructions** (Journaline)
Audio programme can only service one language

→ DRM’s multimedia capabilities enhance audience & speed-up information

DRM enables accompanying detailed text information, such as:

• **Reason** for the alarm signal
• **Instructions** what to do
• Contact details for **further information**
• List of affected areas
• List of affected people (search messages)
• etc.

→ Textual information immediately available in **multiple languages / scripts** with one single broadcast
Examples for receiver screen renderings, emergency text content (Journaline):

**AIR Emergency Broadcast**

- Information in English
  - हिंदी में सूचना (Hindi)
  - 在中国的信息 (Chinese)
  - Info auf deutsch

**What is going on?**
A major tsunami is expected for the Mumbai region at 16:00 today.
The tsunami will hit the

**What do I need to do?**
1. Move away from shore!
2. Evacuation has started.
Find the nearest meeting point: Look for green

**Information in English**

- What is going on?
- What do I need to do?
  - Where can I get help?
DRM Broadcast Networks

Typical structure of a DRM broadcast network:

- **Studio**
  - Generates audio + text
  - Defines DRM configuration

- **DRM ContentServer „Program A+B“**
  - Creates DRM Multiplex signal
  - One per region or program-set

- **DRM ContentServer „Program C,D,E“**
  - Creates DRM Multiplex signal
  - One per region or program-set

- **Modulator / Tx**
  - Broadcast DRM signal on-air

MDI via IP
When emergency alarm is triggered:

- **Central authority** triggers alarm for **ALL** DRM programs
- **ContentServers** insert Alarm signal
- Optional Dynamic Service-Reconfiguration (making room for 1 emergency program)
Examples for delivering the alarm signal from a central authority / studio to a DRM ContentServer:

- **UECP**
  International standard for automated announcement transfer in studio infrastructure

- **Web interface**
  Allows to manually enable the alarm trigger in a ContentServer (e.g. from operator panel, or as backup mechanism)
DRM Broadcast Networks

Considerations for the DRM Broadcast Chain:

1. Prepare in advance:
   - Enable alarm signalling for all DRM broadcasts (+ AFS link to emergency programs)
   - Establish alarm trigger signal paths from central authorities to all stations
   - Prepare textual information content + access to emergency audio program

2. In case of emergency alert:
   - Broadcast 1 emergency program with audio + text (with maximum coverage)
   - Send switch trigger to all DRM receivers
More information on DRM is available at www.drm.org

DRM Introduction and Implementation Guide

For any inquiries or comments, please write to projectoffice@drm.org
DRM Benefits

**LISTENERS**
- Excellent quality sound in stereo DRM30, CD quality in DRM+
- Data such as text, pictures and Journaline
- Easy tuning on station name

**MANUFACTURERS**
- Replace receivers with new digital receivers
- Increase the market potential
- Increase possibilities for new areas of interest and content

**BROADCASTERS**
- Multilingual programme are possible plus extra information
- Reduced power consumption of up to 40-50%
- Increased opportunity for revenue generation streams
- Full coverage in DRM maintained

**REGULATORS**
- Uses less spectrum and release spectrum for other use
- An international standard
- Lower power costs – green broadcasting
- Emergency warning alert
Download All you need to know on DRM Free

DRM Introduction and Implementation Guide

More information on DRM on:

www.drm.org

For Monthly DRM updates subscribe to: www.drm.org/newsletters

For any inquiries or comments, please write to: projectoffice@drm.org