Next-Generation Broadcasting: Challenges and Prospects for Developing Countries – ITU-D

Digital Radio – Smart Radio for All

DRM – the Resilient e-Platform for All

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DRM DIGITAL radio mondiale

Digital Radio – Much More than Audio – the Future

Analogue FM Radio

Limited User Experience



DRM Digital Radio

Enhanced User Experience +
Extra services like EWF and e-learning



DRM Digital Radio Mondiale – Some Facts

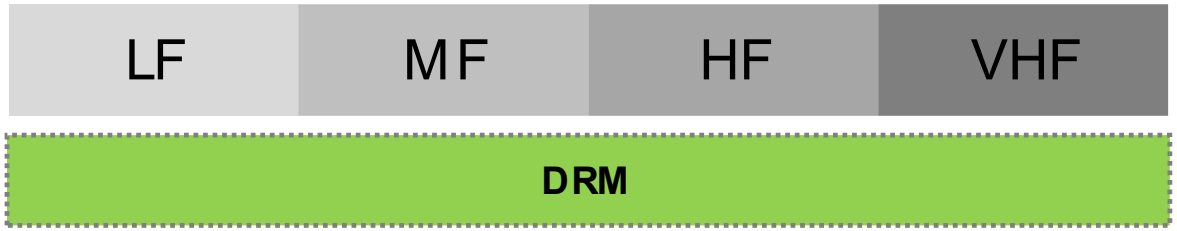
DRM Technology

Standard

- Global open digital radio standard
- ITU Endorsed
- Public Specification

Accessible to All

- Non-proprietary
- Full and free access to spec by all
- No trade secrets or not under control of a single company



All Band Support

- The only ITU standard supporting all frequency bands and coverage needs
- Same standard and features for all bands

→ **Direct digital successor technology for analogue AM/FM**

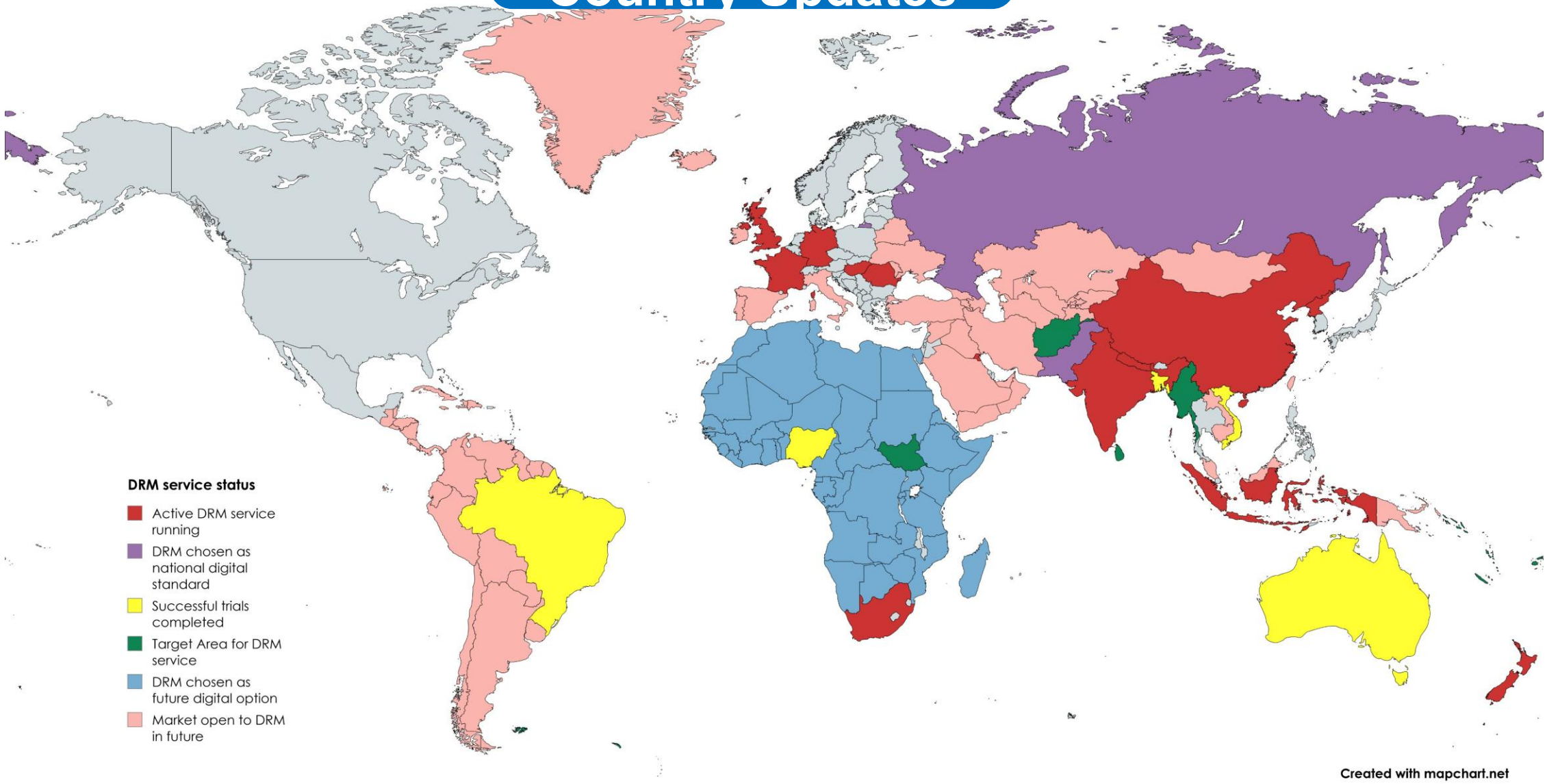
Digital Radio DRM – Meeting the Challenge

- ✓ One standard
- ✓ Full country coverage
- ✓ Spectrum efficiency
- ✓ Energy savings
- ✓ Low investment
- ✓ Smooth transition



- ✓ Extra benefits like disaster Emergency Warning Functionality EWF+Distance learning
- ✓ **Low-cost, dual-standard receivers (from day one) can be ordered and procured**
- ✓ **Latest multi-standard receives for cars (13.2mill in India alone), standalone and mobiles**

Country Updates



DRM Key Features and Benefits – Listeners' Perspective

- **More choice** for listeners
  - Up to **3 programmes + multimedia on 1 frequency**
  - Simulcast analogue / digital
- **Excellent audio** quality
  - No distortion or interference
  - Stereo and 5.1 surround sound
- **Multimedia Applications**
  - Great listener benefits
  - Extra revenue opportunities for broadcasters
- **Good coverage** area and robust signal
  - Supporting SFN (Single Frequency Networks)
- **Automatic tuning**
  - by station name, no longer by frequency
  - re-tunes when leaving coverage area
- **Emergency Warning Functionality (EWF)**
  - Automatic wake-up, all stations switch, present audio and text information
- **Distance Learning (e-Learning)**
  - Delivers educational material directly via radio waves
  - Data and Audio Services for text-based lessons, maps, and exercises
  - No Internet Required



Essential Digital Radio (DRM) Applications

Use digital radio to make transition to digital in developing countries

DRM Distance Learning

e-learning.drm.org



A First!! In Africa 2025
The project continues! 2026/27

How It Works - Resilient Education Systems

Education content (live or recorded audio, textbooks and images) - using digital shortwave radio (DRM), ensuring broad coverage, **even in the most remote areas.**

Specially designed **DRM receivers** with integrated Wi-Fi create local **hotspots** for students to access updated lessons on their devices **without internet** dependency.

Students receive **live lessons** and **pre-recorded materials**, supporting flexible and inclusive education models - **anywhere and at any time.**

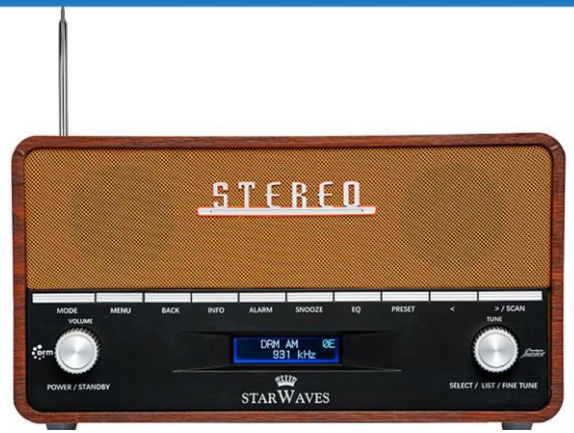
Digital Radio Broadcasts → **Wi-Fi Enabled Receivers** → **Connect with Smart Devices**



FM-Band
100 km
0110101101

or

Short Wave
> 2000 km
0 1 1 0 1 0 1 1 0 1



WiFi



Digital Radio On Mobile Phone – Advanced DRM Receiver Solution

1. DRM BROADCAST

Free-to-air digital radio across FM, VHF, MW, SW



Robust. Reliable. Resilient.

2. WEARABLE ACCESSORY (DRM CHIP)

Receives DRM signal, decodes audio & data, and delivers via Bluetooth



Low Power · High Sensitivity · DRM Optimized · Long Battery Life

Plug. Pair. Listen.

3. BLUETOOTH

Seamless, low-power connection to your smartphone

Works even when mobile networks fail

4. SMARTPHONE APP

Controls, displays and personalizes your DRM experience



Inform. Control. Connect.

5. AUDIO + JOURNALINE + EMERGENCY ALERTS

AUDIO
High-quality digital audio for a better listening experience

JOURNALINE
Text, images and data services for richer information

EMERGENCY ALERTS
Critical alerts and warnings when you need them most

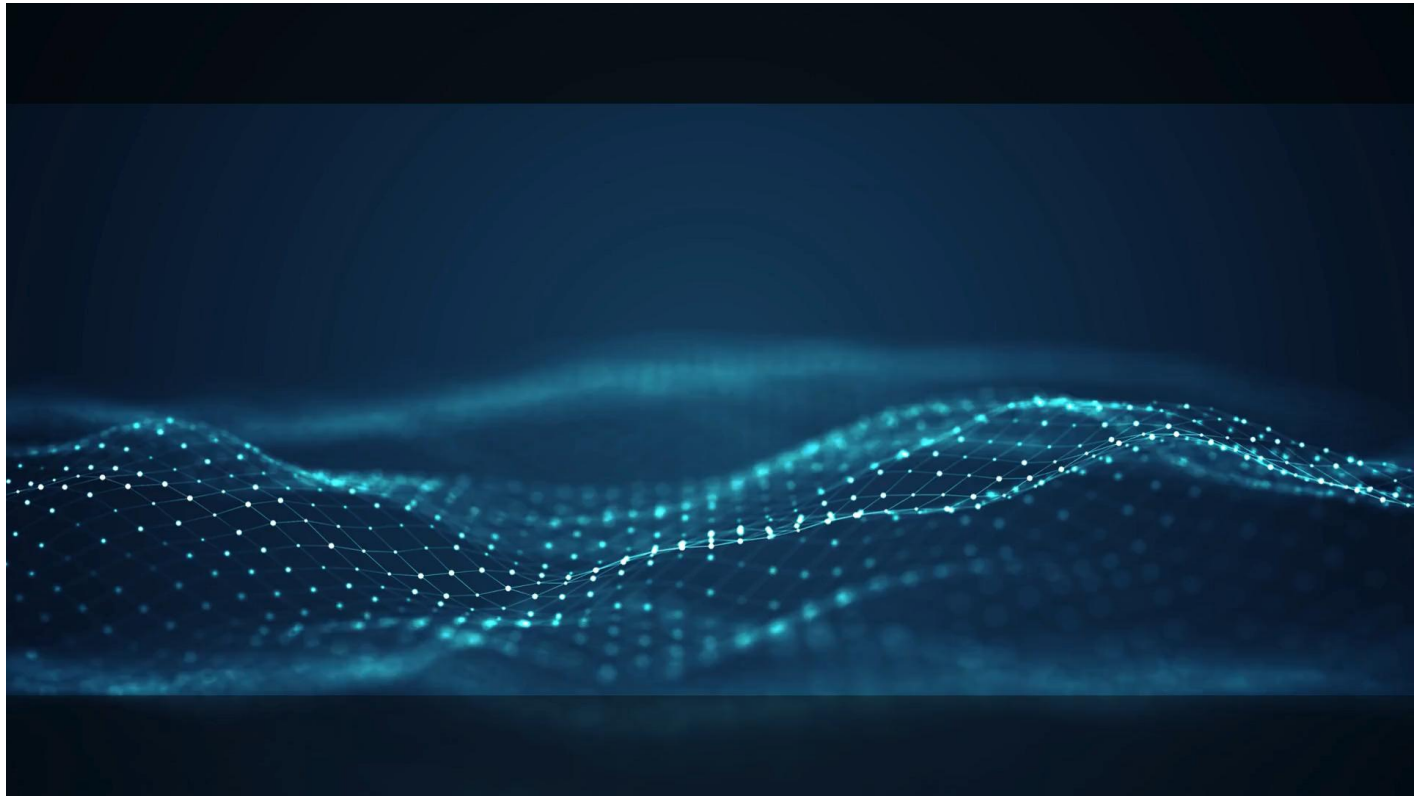
Informing. Alerting. Saving Lives.

Example - Using DRM Bluetooth to support remote education



- Low power receiver located for optimum reception
- Bluetooth low energy connection receiver can operate from **a solar charged battery**
- Low-cost computer equipment used to ‘process’ DRM content
- ‘**Standard media files’ and ‘Curriculum library**’
- ‘Serve’ to low-cost tablets and Chromebooks with high-capacity web server such as ‘Nginx’
- A Raspberry-PI 4 running Nginx can serve 100’s of simultaneous connections for ‘static’ content

e-Learning via DRM – Gambia Demo Recap



Saving Lives Everywhere - Essential Digital Radio (DRM) Applications

Digital Radio part of national disaster preparedness!



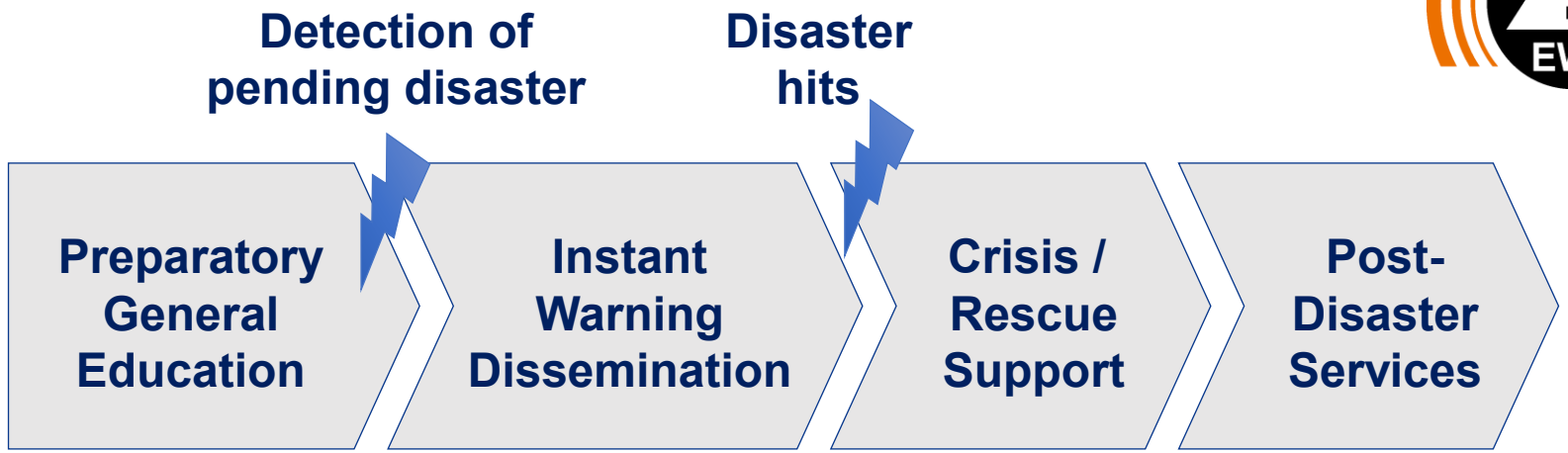
DRM Emergency Warning Functionality (EWF)

🔗 ewf.drm.org

Radio (digital) last line of resistance when evthg. else fails

DRM Digital Radio for Emergency Warnings – Complete Cover of All Disaster Stages

Emergency Warning Functionality





Digital Radio provides essential, resilient services as it:

a) **reaches the affected people reliably – mass reach**

b) enables detailed **multi-lingual text infos and pictures**

c) serves different communities i.e. the disabled

Implementation is Clear and Demos/Technical Support Is At Hand

ewf.drm.org

Emergency Warning Functionality

National Infrastructure

Decision taking for public alert (by authorities)

Digital Radio EWF Manager

Content provision to DRM ContentServers

Alarm Signaling

Alarm announcement + **AFS** Alternative Frequency Signaling

3-Level **Regionalization**:

- Tx selection by coverage
- AFS geofencing
- Accurate geo- & string-based in Journaline

Emergency Programme

Audio announcement (dedicated service)

NewsService Journaline®

+ **Multilingual text** information on radio screen

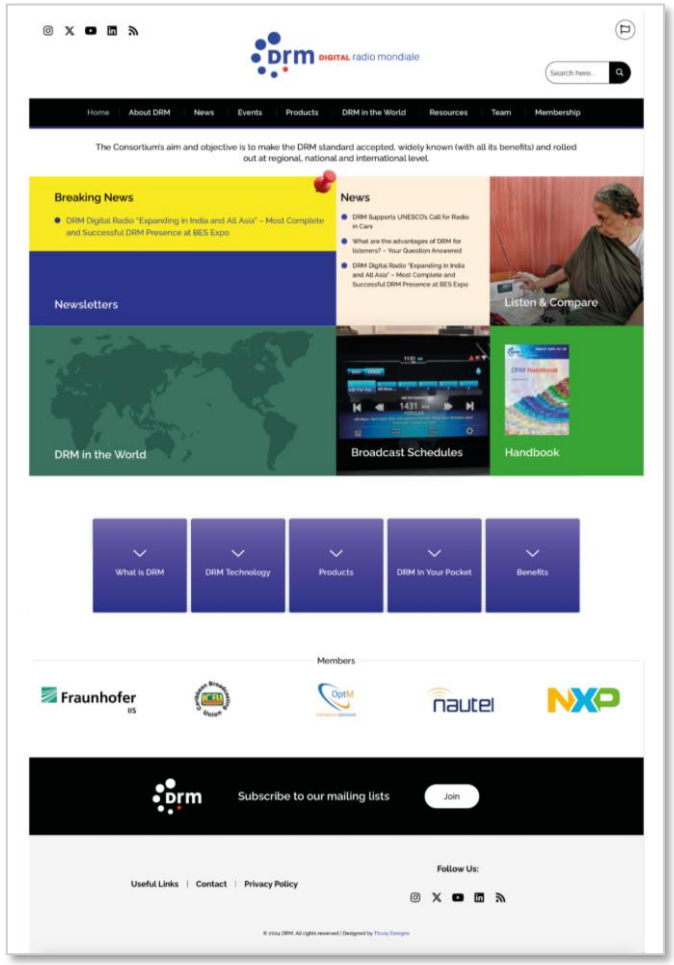
Opportunity and Challenge for Persons' Protection

- In its resolution 79/128, the UN General Assembly decided to elaborate and conclude a legally binding instrument **on the protection of persons in the event of disasters**, by the end of 2027 at the latest.
- The concepts agreed will be ultimately reflected in the **legal instrument** and could shape how States Parties implement their obligations on **protecting persons and saving lives**.
- For this it might be necessary to have **an early-warning system that includes *multi-lingual, accessible and interoperable multi-channel and long-distance dissemination, particularly when normal telecommunications networks are unavailable.***
- Therefore, we invite you to bring to the attention of the national authorities and legal teams preparing their national positions for the 2027 Bangkok negotiations, and where appropriate, support their reflection in Article 9.
- It looks like now is the moment for governments to consider these characteristics, so they become part of the discussions October,12 in New York and during the Bangkok negotiations in Jan-Feb '27
- **The expertise and solutions are at hand.**

Protecting Persons is Becoming a Must and the Tools to Do It Exist!

DRM Smart Radio Benefitting All Listeners

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