

13 April 2010 @ NAB, Las Vegas

**Digital Radio Mondiale –
DRM+ Completes The DRM Standard**

Hal Kneller, CPBE

Nautel, Ltd.

Member DRM Steering Board
and DRM Executive Board

DRM – Digital Radio Mondiale System

DRM System (DRM30 and DRM+):

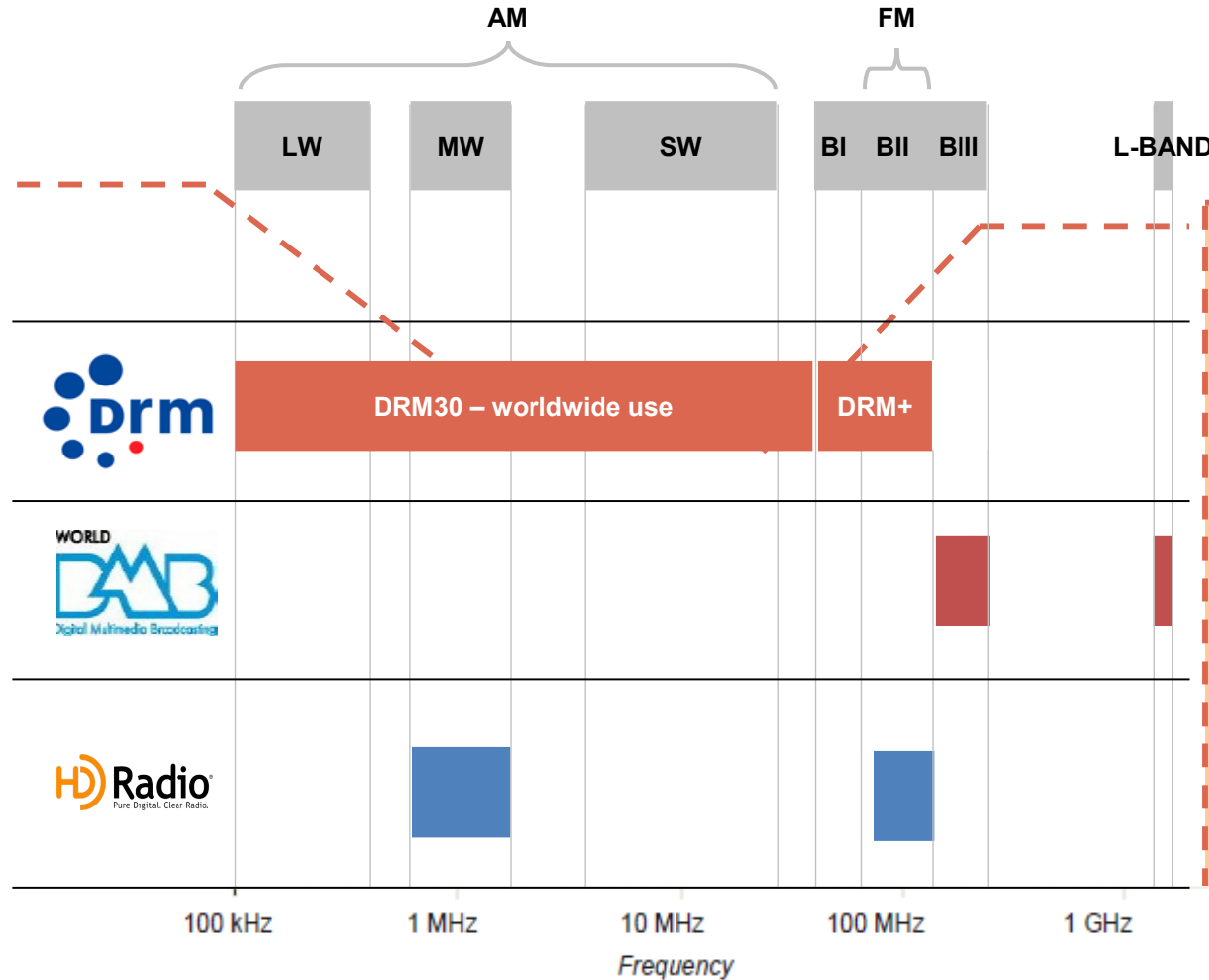
Global open standard for digital radio

- One station – One frequency:
Covering large areas/international broadcast (AM bands: DRM30)
and local/regional markets (VHF bands: DRM+)
- Radio with the “Extras”:
Convenience Features (Labels, AFS, EPG), 5.1 Surround Sound,
Multimedia Services (Slideshow, Journaline, real-time traffic, videos)
- Fits and works seamlessly
with DAB family and other standards

Where DRM fits – Introducing DRM+

Frequency bands of different digital technologies

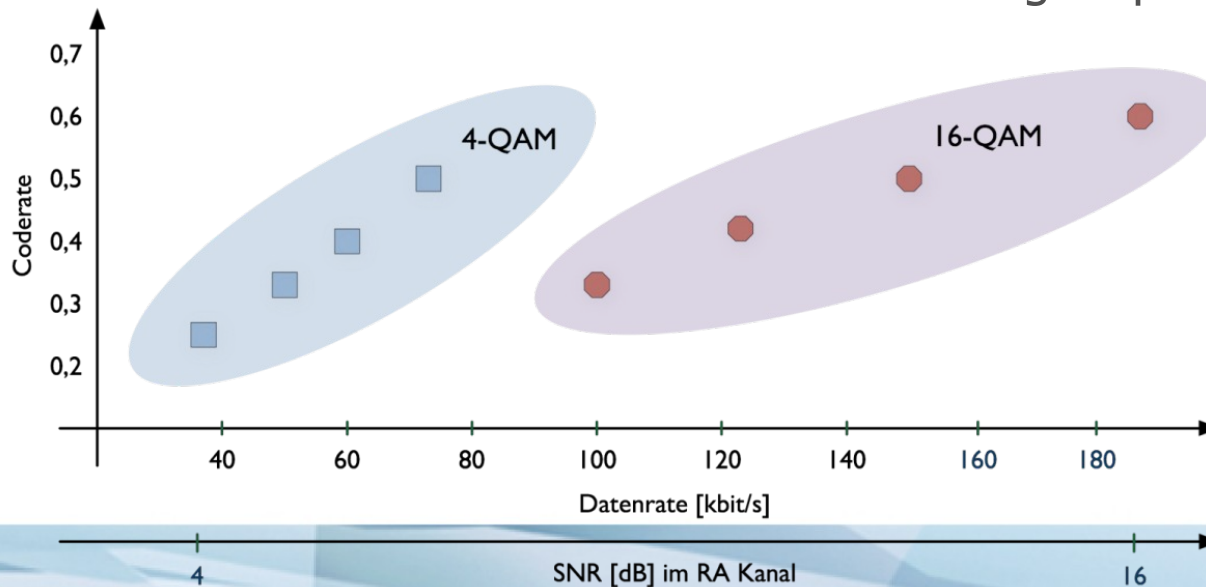
DRM30
for **AM** broadcasting bands up to 30 MHz: short wave, medium wave and long wave
Large coverage areas
Robust against fading and interference



DRM+ is designed to cover spectrum **above 30 MHz**, including band I / band II (FM).
ETSI ratified on 2009-08-31; ITU recomm. prepared



- Extension to the DRM system:
Robustness Mode E
- Includes
band I and II (FM)
- **Useful content bit rate 37–186 kbps**
- **Worldwide spectrum compatibility:**
100 kHz bandwidth
- **Minimum signal delay:** 0.6 sec
- Flexible trade-off between content bit rate and signal protection:

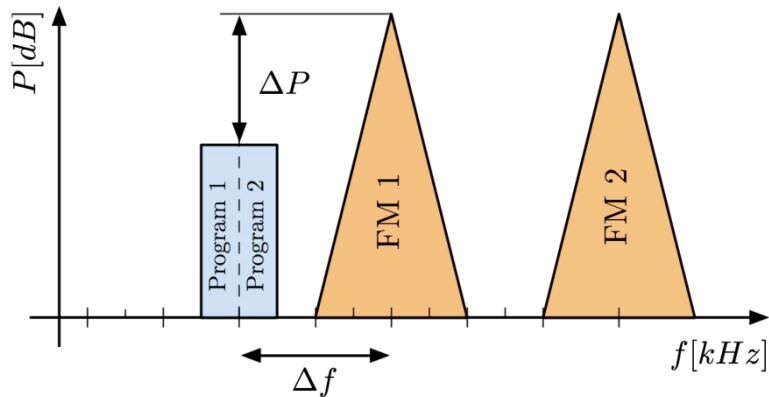


DRM+

DRM Above 30 MHz to 174 MHz

Introduction scenarios:

- **Anywhere in the VHF bands**
(seamless receiver switching)
- **Adjacent to linked FM signal:**



Recommended values:
 $\Delta f = \text{min. } 150 \text{ kHz}$
 $\Delta P > 20 \text{ dB for } \Delta f = 150 \text{ kHz}$

- **SFN Support**

(Single Frequency Network)
→ Efficient spectrum usage

