



**DIGITAL** radio mondiale

The **FUTURE** of global radio

## **“Flexible and Complete Digital Radio for Europe”**

DRM European Workshop

In conjunction with the DRM General Assembly

6th - 7th April 2016 - Erlangen, Germany



## **DRM Status Report Germany**



**Current situation and outlook for DRM in principal  
Status and support of Digital Radio**



## ► *Status and Outlook for DRM30 (LW/MW – SW)*

### **Current situation in the LW/MW – SW bands:**

- All LW/MW transmitters are switched off (due to DAB+ development)
- Some transmitter sites are still built-up and can still be used

### **DRM30 on SW in operation:**

**Nauen** (near Berlin), varying frequencies, 200 kW, maritime service

**Erlangen**, 15,785 kHz, 1 kW, “Bit Express”

**Berlin**, 26,040 kHz, 10 W, Campus-Radio “Beuth on Air” (temp)

**Hanover**, 26,045 kHz, 100 W, RFmondial & University of Hanover (temp)

### **Outlook for DRM30:**

- At present DRM30 is not a matter to broadcast audio programmes to the general public (due to DAB+ development)
- Data broadcast or special interest programmes could be a business model depending on content providers



## ► *Status and Outlook for DRM+ (FM band 87.5 – 108 MHz)*

### **Current situation in the FM band:**

Overcrowded with FM transmitters

- Not sufficient space for DRM+ transmitters in addition

Coordination of DRM+ (besides temporary operation) recently impossible:

- In-band: cross-modulation interferences onto FM receivers
- adjacent-band (above 108 MHz): OFDM interferences onto aeronautical radio navigation devices (*see ECC report 141*)

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### **DRM+ temporary in test operation:**

**Erlangen**, 87.9 MHz, 10 W, “Bit Express”

**Hanover**, 95.2 MHz, 30 W, RFmondial & University of Hanover

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### **Outlook for DRM+:**

The FM band is much suitable for DRM+

in a long term sight after the switch-off of FM transmissions



## ► *Status and Outlook for DRM+ (VHF band III 174 – 230 MHz)*

### **Current situation in the VHF band III:**

Completely provided for DAB+ allotments with 7 layers based on RRC-06

- 2-3 DAB+ layers are in operation, the rest is in consideration
- Frequencies for DRM+ requirements are sufficiently available

### **DRM+ test operations are currently feasible:**

**Hanover**, RFmondial & University of Hanover

**Kaiserslautern**, University of Applied Sciences

### **Outlook for DRM+:**

- DRM+ could practically and regulatory be used immediately and compatible in VHF band III as a complement to DAB+
- The complete commercial viability is still lacking only due to missing multi-standard receivers for DAB, FM and DRM+



## ► *Support of Digital Radio*

### **The German Digitalradio Board:**

- The German Federal Ministry of Transport and Digital Infrastructure (BMVI) has established the “**Digitalradio Board**” in 2015
- **Members are** all major broadcasters and their organizations, network operators, the radio and car industry, the media authorities, and the Federal States
- **Aim is** to support the development of digital sound broadcasting (only with DAB+) and at a long time range to switch-off FM sound broadcasting

**DRM+ is not discussed in any way**, due to the lack of DRM+ receivers available and therefore the missing commercial viability,  
**although**

- the German DRM Platform has been providing the advantages of DRM+
- DAB/DAB+ is not a practical solution for local coverages
- DRM+ is stated as most suitable for local service provision



## ► Evaluation of the use of DRM+ in VHF band III

**DRM+ is stated as most suitable for local service provision:**

**Report of the German Media Authorities** (die medienanstalten) on the “*Evaluation of Digital Broadcast Technologies and Recommendation for Local Service Provision (DAB/DAB+, DRM+, and LTE-A)*“, 2015/2016

### **Result for DRM+:**

**[+]** benefits in case of distribution of a low number of services per multiplex (especially in local distribution areas which DAB cannot serve)

**[-]** business requirements are rarely supported today mainly due to the lack of DRM+ receivers available

**[+]** implementation in digital multi-standard radio receivers with DAB/DAB+ is easily feasible due to the similarity of DRM and DAB

**[!]** a commercial launch of local radio broadcast services based on DRM+ can (only) be successful if multi-standard DAB+/DRM+ receivers get available at the market



## ► *Status of Digital Radio*

### **Current situation of Digital Radio:**

Terrestrial digital sound broadcasting uses **DAB+ only**.

### **Versatile program distribution:**

- 12 programmes nationwide (technical coverage 92%)
- In addition up to 30 regional programmes in several Federal States
- Mostly programmes of the public broadcasters  
(most of the commercial broadcasters intend to stay on FM for now)

### **Increasing receiver market:**

- 11% penetration of DAB+/FM/partial IP receivers (6.4 m receivers)
- 143 m FM receivers are still in use that are to be replaced

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### **Inevitable requirement to consider DRM+ in the current development:**

- to implement DRM+ in **ALL** multi-standard receivers (both in-car and in-house) as a standard application **NOW** before DAB+-only radios have such a high market penetration that DRM+ broadcasters get a uncatchable competitive disadvantage



## ► Summary

### DRM30 in Germany:

- [-]** is not more be supported as a radio broadcasting service for the general public by the major broadcasters
- [+]** has great potentials to broadcast radio and data to special interest groups of national and international purposes, e.g. maritime services and B2B applications.

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### DRM+ in Germany:

- [+]** is the most suitable system to to serve the local coverage areas as complement DAB+ that is not able to achieve this.
- [+]** is market ready and can be operated immediately in the VHF band III and in a long term range in VHF band II (FM band)
- [-]** is not be taken into account by the policy makers in the Digitalradio Board due to missing multi-standard receivers with DRM+
- [?] To provide DRM+ we need DAB+/DRM+ receivers urgently!**





► *Finally...*

*Thank you for your kind attention*

*For more information please contact  
the presenter directly thereafter*



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