

ITU activities, with regard to 26 MHz and modifications to ITU-R Recommendations to recognise DRM+

Geoff Spells

Consultant to VT Communications

Vice-Chairman ITU-R Working Party 6A

ITU Activities regarding DRM+ and DRM30



- **DRM+**
 - Proposed modification to Recommendation ITU-R BS.1114
 - DRM in VHF Band I
- **DRM30**
 - Preliminary Draft New Report ITU-R BS. [DRM26LOCAL]
 - Draft Revision to Recommendation ITU-R BS.1514
 - Proposed methodology for calculation of RF protection ratios for DRM in the bands below 30 MHz
- **Other ITU documents relevant to DRM**
- **Further work required**

- Recommendation ITU-R BS.1114 - Systems for terrestrial digital sound broadcasting to vehicular, portable and fixed receivers in the frequency range 30-3 000 MHz
- Recommends 3 digital sound broadcasting systems:-
 - Digital System A – Eureka 147 (DAB)
 - Digital System C – IBOC (now HDRadio)
 - Digital System F - ISDB-T_{SB}
- Proposal to add Digital System G – DRM+
- Preliminary draft revision of Recommendation ITU-R BS.1114 not approved as 1 administration wanted more test data (ITU-R WP6A/TEMP/136)
- To be reconsidered in April 2010

DRM+

DRM in VHF Band I



- EBU contribution in Document 6A/240 describes opportunities for digital sound broadcasting services in VHF Band I
- Document notes both DRM+ and DRM30 have been successfully tested in VHF Band I
- Also identifies situation in VHF Band I in ITU Region 1
- Working Party 6A prepares Document 6A/TEMP/138 to be attached to WP6A Chairman's report for further consideration

DRM30

Preliminary Draft New Report ITU-R BS.[DRM26LOCAL]



- Preliminary Draft New Report ITU-R BS.[DRM26LOCAL] prepared from input Documents 6A/227 (Italy), 240 (EBU) and 260 (DRM Consortium)
- Provides frequency planning scenarios and results from trials
- Responds to Question ITU-R 127/6 - Mitigation techniques required for the use of digital modulation in the “26 MHz” broadcasting band for local coverage
- PDN Report attached to WP6A Chairman’s Report as Document 6A/TEMP/134

DRM30

Draft Revision Recommendation ITU-R BS.1514



- Recommendation ITU-R BS.1514 - System for digital sound broadcasting in the broadcasting bands below 30 MHz – recommends DRM30 in the bands below 30 MHz and IBOC (HDRadio) in the MF bands
- Proposed revision invites receiver manufacturers to develop portable, multi-band, multi-standard receivers capable of receiving all digital radio broadcasting systems including the wide-bandwidth modes
- Revision not approved by Study Group 6 so returned to Working Party 6A for further consideration

DRM30

Proposed methodology for calculation of DRM RF protection ratios



- Recommendation ITU-R BS.1615 - “Planning parameters” for digital sound broadcasting at frequencies below 30 MHz - provides planning parameters for digital broadcasting systems
- For DRM30, only modes with RF bandwidths up to 10 kHz considered although DRM30 has modes for 18 kHz and 20 kHz
- Additional “planning parameters” required for additional wide bandwidth modes for use in the MF and 26 MHz bands
- Original method for calculation of DRM protection ratios not readily available
- Administrations encouraged to consider proposed methodology which modifies original calculated values by applying change in spectrum mask since 2001

Other ITU Documentation



- Report ITU-R BS.2144 – Planning parameters and coverage for Digital Radio Mondiale (DRM) broadcasting at frequencies below 30 MHz
 - Approved as an amended version of Document 6/142 but not yet available on ITU-R website
 - Explains why and how a broadcaster might go digital.
 - Is a reference technical document for DRM planning.
 - Provides new information based on the practical experience in DRM
- ITU Circular letter CCRR 20 – gives results of special study regarding use of digital modulation systems in the LF/MF broadcasting bands and proposed new Rules of Procedure

DRM+

Further work required



- Input results of tests and trials of DRM+ to ITU-R WP6A by April 2010 in order to consider revision of Recommendation ITU-R BS.1114 to include DRM+
- Input “planning parameters” for DRM+ to ITU-R WP6A to initiate consideration of implementation of DRM+
- Consider what further information required to progress the studies on DRM in VHF Band I

DRM30

Further work required



- Input further studies on DRM30 in response to Question ITU-R 127/6 with a view to enhancing PDN Report ITU-R BS.[DRM26LOCAL] prior to possible publication
- Consider methodology for calculation of additional planning parameters with a view to propose a revision to Recommendation ITU-R BS.1615
- Consider proposed revision of Recommendation ITU-R BS.1514