

Doc.IWG-6/046 (Rev.2)  
11 July 2001  
Walt Ireland  
wireland@mindspring.com

### *Informal Working Group 6*

## **PRELIMINARY VIEW ON WRC-03**

**WRC-2003 Agenda Item 1.2:** *to review and take action, as required, on No. S5.134 and related Resolutions 517 (Rev.WRC-97) and 537 (WRC-97) and Recommendations 515 (REV.WRC-97), 517 (Rev. WRC-2000), 519 (WARC-92) and Appendix S11, in the light of the studies and actions set out therein, having particular regard to the advancement of new modulation techniques, including digital techniques, capable of providing an optimum balance between sound quality, bandwidth and circuit reliability in the use of the HF bands allocated to the broadcasting service;*

**ISSUE:** To support the introduction of digital modulation techniques in the HF bands allocated to the broadcasting service and to prepare the regulatory way for this introduction.

### **BACKGROUND:**

#### **RESOLUTION 517 (Rev.WRC-97) and its ANNEX**

*considering b)* states: that single-sideband (SSB) techniques allow more efficient utilization of the frequency spectrum than double-sideband (DSB) techniques;

*invites ITU-R* states: to continue its studies on digital techniques in HF broadcasting as a matter of urgency with a view to the development of this technology for future use.

*ANNEX, ITEM 2* states: All DSB emissions shall cease not later than 31 December 2015, at 2359 hours UTC.

**RESOLUTION 537 (WRC-97)** called for a survey of HF broadcasting transmitters and receivers with emphasis on the worldwide distribution SSB transmitters and receivers. This survey was completed in 1999 showing the results that although some countries had or could easily convert to SSB, there were few SSB receivers at a reasonable cost available anywhere in the world to justify the conversion from DSB to SSB.

However, it is recognized that digital modulation design and development for HF is under way.

**RECOMMENDATION 517 (HFBC-87)** deals with relative protection ratio values for SSB emissions. ITU-R TG 6/7 is currently developing protection ratios for digital transmission techniques and is expected to be completed by the next meeting of SG 6 in September 2001.

**RECOMMENDATION 519 (WARC-92)** deals with the introduction of SSB emissions and the possible advancement of the date for cessation of the use of DSB emissions.

*considering d)* states: that the new extension bands allocated by WARC-92 for HF broadcasting are reserved only for SSB emissions;

Starting around 1995, active design and experimentation is being done on the use of digital modulation techniques for use in all the broadcasting bands below 30 MHz. Because of the special international broadcasting role at HF, documentation of an essentially regulatory nature began to be introduced within the ITU-R, initially through SG 10 (now SG 6).

WRC-97, in response to the development up to that time of digital modulation for HF broadcasting, modified some of the articles, resolutions and recommendations pertinent to HF broadcasting. However, there was no agenda item at WRC-2000 associated with HF broadcasting to deal with these issues.

Since WARC-92 digital modulations technologies have developed to the field-testing stage. Digital emission systems currently under development will be compatible with present 9 -10 kHz channels.

**PRELIMINARY VIEW:** The U.S. supports developing the necessary changes to the resolutions, recommendations, and radio regulations cited in this agenda item to accommodate the introduction of digital modulation techniques for those HF bands allocated to the broadcasting service in accordance with Article S5. (July 11, 2001)