

## Report of the Technology Task Force

### ARRL Board of Directors 2006 Annual Meeting Windsor Locks, Connecticut January 20, 2006

Members: Howard Huntington, K9KM Chair  
Tom Frenaye, K1KI  
Mike Raisbeck, K1TWF  
Paul Rinaldo, W4RI  
ARRL Staff Liaison Ed Hare, W1RFI

#### Technology Task Force.

There have been no new members added to the working groups since we have added five in the first half of 2005. Tom Frenaye has assisted to generate some PR for the three technical awards. Applications are due March 31 and info for nominations appeared recently in the news stories at arrl.org. More publicity should appear in advance of the March deadline and hopefully there will be an improved number of nominations available. Tom also did a search of QST and QEX publications and has recommended to encourage more publications from the Working Groups.

Paul will assist with the process to apply with an Experimental license or STA whichever is appropriate in support of the Working Groups. To date, neither application has been prepared although now recommended by HSMM for 6m.

The TTF participated to consider the 3.5 kHz bandwidth limit as in the proposal resulting in RM-11306 and provided input to the EC. With the filing of the proposal in November the TTF and Working Groups are

#### TTF Working Groups

##### 1. High Speed and Multimedia Working Group.

The full report of the HSMM WG is attached. An experimental license is recommended to support 200 kHz bandwidth at 6m and 2 MHz bandwidth at 450 MHz with modems built by the HSMM WG.

The Board at Minute 36 of the July, 2004 Second Meeting had approved filing a proposal to permit encryption above 50 MHz. Encryption continues to be of great interest to the HSMM WG particularly for bands shared with Part 15 users. A lengthy analysis of the need to protect amateur Part 97 wireless networks, for example 802.11b networks, from intruders and possible harm to the amateurs computing systems prepared by Gerry Creager, N5JXS is attached as part of the HSMM report. Gerry has extensive experience in the security of networks. In addition to spectrum shared with Part 15, other bands need this capability also for emergency communications where the served agencies require certain data to be protected.

##### 2. Software Designed Radio Working Group.

The SDR WG has proposed an OFDM coding scheme that would dramatically improve the efficiency of data transmission at HF and with some reasonable bandwidth promises to exceed the HSMM 56 kb/s defined bar. This is a complex system in the planning stage that would bring together modern coding techniques, SDR, and open source code sound card demodulation. The system could operate reliably at a much lower signal to noise ration than that of present digital modes and could operate at low power with extremely low power spectral density. This is envisioned for the future and should be taken into account in bandplanning for the future.

The WG is also working on a system of four phased antennas for the purpose of beam and null steering.

Respectfully submitted,

Howard Huntington, K9KM  
Chairman, Technology Task Force