# Report of the Technology Task Force

## ARRL Board of Directors
## 2004 Board of Directors Meeting
## Newington, Connecticut
## July 16, 2004

Members:        Howard Huntington, K9KM Chair

                  Tom Frenaye, K1KI

                  Mike Raisbeck, K1TWF

                  Paul Rinaldo, W4RI

ARRL Staff Liaison Ed Hare, W1RFI

## 1. High Speed and Multimedia Working Group.

Probably the most significant topic relating to the HSMM WG is the request for Board of Directors support to petition for Part 97 changes to permit encryption and strong security protocols above 50 MHz in line with recent WRC 03 changes. This would allow amateur facilities to be protected with the same tools now in use for Part 15 networks. Details of this request are attached to the HSMM report in a white paper titled Security & Data Integrity on a Modern Amateur Radio Network authored by HSMM WG Paul Toth NA4AR. The TTF and HSMM WG support this request. The HSMM WG is also requesting a 200 kHz bandwidth at the 50 MHz band for high speed data and is developing an OFDM modem for this purpose. The HSMM report summarizes recommendations, development of the OFDM modem, publications including contributions to the 2005 Handbook and a proposed QEX series on the OFDM modem, presentations at Dayton by Mark Williams, AB8LN, and a presentation at Hamcom in Dallas as well as other HSMM forums.

## 2. Software Designed Radio Working Group.

Input from the SDR WG regarding FCC's NPRM&O to significantly restrict SDR components formed a basis for ARRL FCC comments on this matter.

The FlexRadio SDR1000 has been highly successful with 450 units now in the field and was prominently displayed at the Dayton FlexRadio booth. The success is due to a great extent to open source software from global amateur contributors, including SDR WG members, for a variety of applications beyond just a transceiver. DSP software contributions and a new RF front end have brought significant performance enhancements. For example, a rather high performance spectrum analyzer can be implemented in software. Future expansion is limited only by the number of amateur developers willing to contribute open source software and the trend is rapid growth.

SDR WG members Gerald Youngblood, AC5OG, and Bob McGwier, N4HY, participated in the Dayton TTF Forum.

**3. Digital Voice Working Group.**

Digital Voice has not yet gained widespread use as to date there is no simple low cost implementation available. AOR had a very visible display of the ARD9800 at their Dayton booth and Yoshi Nishimura, JA6UHL, was available to explain technical details. The ARD9800 also had a good review in the RSGB Radcom. A low cost solution is necessary to gain widespread use as has been known from the beginning. Like PSK31, a simple sound card and open source software PC solution would be ideal but is not available. Charles Brain, G4BUO, has been responding to global inquiries.

Yoshi and Matt Yellen, KB7TSE, of Icom participated in the Dayton TTF Forum. Yoshi presented technical details of the ARD9800 including nonvoice SSTV and data mode capabilities as well as voice. Matt Yellen of Icom presented a D-Star repeaters system design with potential to bring digital improvements to the typical VHF/UHF repeater.

**4. TTF.**

The TTF Forum at Dayton Hamvention was well attended with about 40 present, rather substantial for Sunday morning at Dayton. All three WGs were represented and the program actually ran over about 15 minutes as it was the concluding forum in Room 1. A high level of enthusiasm was evident in questions from the attendees.

The TTF has reviewed nominations for the three technical awards.

Respectfully submitted,

Howard Huntington, K9KM
Chairman, Technology Task Force