

Report of the Technology Task Force

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In a nutshell, the charter of the TTF is to take the work completed by various Working Groups that report to Chief Technology Officer Paul Rinaldo and make recommendations to the board on how best to apply those technologies. This is a departure from previous years when the Working Groups have reported directly to the TTF, so this report from the TTF is a bit differently organized. As of this writing, no formal reports from the Working Groups have been published. However, Mr. Rinaldo did provide TTF members with progress reports on the Working Groups, which are reported upon herein. The TTF also has a number of recommendations for 2007 and beyond, which are also included here.

1. Progress of Current Working Groups (Those Existing Between 2001 and 2006).

- Software Defined Radio (SDR), Chaired by Bob McGwier, N4HY

The SDR Working Group has been making excellent progress. Their work should continue. See "Proposals for 2007 Working Groups."

- High Speed Multimedia (HSMM), Chaired by John Champa, K8OCL

The HSMM Working Group exploited the use of IEEE 802.11 technology under Part 97. This work has now moved to a new forum.

- Digital Voice (DV), Chaired by Doug Smith, KF6DX

Digital Voice has made some progress, and evidenced by HF transatlantic contacts and several products currently on the market, but it needs a boost. See "Proposals for 2007 Working Groups."

2. ARRL Strategy for New Technology

Our strategy for new technology should be to increase the understanding of and involvement in new technologies by amateur operators.

The main initiatives to implement this strategy will be the responsibility of the Chief Technology Officer, working through Working Groups of volunteers as well as the Editorial & Production Department, via our periodicals and other technology publications. We also plan to use W1AW as a catalyst to increase interest in the promising HF digital modes.

3. Technology Forecast

Technology problems are not necessarily limited to the introduction of new technologies, but also include solving everyday problems of radio amateurs, such as:

- Amateurs operating in apartments or on restricted real estate
 - Antennas for apartment or "small lot" use
 - Remote operation via the Internet
- Skills enhancement through hardware construction and software development

4. Proposals for 2007 Working Groups

- Software Defined Radio (Continue Working Group)

The SDR Working Group should continue to show ARRL support for SDR. The editors of QST and QEX should solicit general interest and technical articles during 2007. We should make a presentation to IRAC and look for opportunities to publish amateur SDR articles in other technical media.

- Digital Multimedia Above 50 MHz (New Working Group)

Digital Multimedia above 50 MHz needs further development. John Stephensen, KD6OZH, has developed a scalable OFDM system and tested it on 6 meters under an experimental license. Digital amateur television and other multimedia applications should be encouraged. So as not to repeat the errors of the past, this group should be restricted to using only amateur frequencies and protocols (i.e. stay away from Part 15 devices and 802.11), and to focus on developing technologies rather than getting involved with proposing changes to FCC rules and/or ARRL policy.

- Activity Detection (New Working Group)

Activity detection is needed for all digital modes, particularly those under automatic control where an operator is presented only with the decoded output and is not listening to the raw analog channel.

- Digital Voice (Staff action, W1AW, Publications)

We are not likely to invent new DV technology, but we could demonstrate it on the air and evaluate the performance of the systems that have already been developed. We should work with amateur DV groups to promote on-air activities and use W1AW HF bulletins to allow amateurs to make comparative reports. We should address D-Star and P25 interoperability.

- Data Communications Protocol (Challenge)

Amateurs need Data Communications Protocols that are open-source, nonproprietary, and inexpensive to implement. Pactor-III, Clover 2000, and even implementations of NATO STANAG 4539 are proprietary, though the standard itself is not. Inexpensive implementation probably dictates the use of sound cards. The problem is how to interest designers in developing protocols and implementations while releasing intellectual property rights. To overcome this, ARRL could issue a design challenge with a substantial monetary prize.

Respectfully submitted,

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Chairperson, Technology Task Force