

Revision of US Military HF Radio Standards

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Working Group

- Voting members represent
 - Lead Standardization Activity: DISA
 - Preparing Activity: USAF OKC Air Logistics Ctr
 - Custodians
- Observers
 - Industry
 - Academia

Custodians – HF Standards

- Air Force
 - Oklahoma City Air Logistics Center
- Army
 - Communications – Electronics Command
- Navy
 - Space and Naval Warfare Systems Command
- Additional departments and agencies

Technical Advisory Committee

- Informal team reporting to Working Group
- Small group of technical experts
 - Government, industry, academia reps
- Suggests changes to reflect state of the art
- Provides technical “sanity check”
- Corporate/agency/marketing/political issues remain outside the TAC

Development Process

- Unofficial TAC Draft(s)
- Working Group Draft
- Coordination Draft (late 2008 or early 2009?)
- Comments
 - Essential
 - Suggested
- Resolution Meeting
- Approval

Current Status of HF Standards

Standards Revision Progress

- TAC met June 2007
 - Thorough review of updates since last revisions
 - New recommended changes
 - TAC Drafts sent to Working Group late in 2007
 - TAC development continued
- Working Group met 5 February 2008
 - Approved major changes recommended by TAC
 - Many technical comments to be sent to TAC

MIL-STD-188-110B

- “Interoperability and Performance Standards for Data Modems”
- Current issue is dated 27 April 2000

MIL-STD-188-110C

- Working Group approved some major surgery:
 - Remove VF, wireline, LF, and UHF modems
 - Remove Appendix A (16-tone waveform)
 - **Remove Appendix B (39 tone) unless still needed**
 - Remove Appendix D (subnetwork interface)
 - Remove Appendix E (data link protocol pointer)
- Still in development:
 - New Appendix G (LAN interface)
 - New Appendix H (channel simulator specs)

MIL-STD-188-110C

- TAC recommendations – Fine tuning:
 - Clean up electrical interface specs
 - Unused D1/D2 codes now reserved for future use
 - Some SNR degradation allowed for embedded modems
 - 1 dB for PSK modem (5.3.2)
 - 2 dB for HDR modem (Appendix C), 3 dB at 9600 bps
 - Appendix C: recommend Square Root Nyquist filter
 - Corrected channel 0 definition in Appendix F
- Technical comments from the services

MIL-STD-188-141B

- “Interoperability and Performance Standards for Medium- and High-Frequency Radio Systems”
- Current issue is Change Notice 1, dated 31 August 2001

MIL-STD-188-141C

- Working Group approved some major surgery:
 - Add wideband radio specs (up to 24 kHz channels)
 - Appendix C (3G): replace with reference to STANAG 4538
 - Working Group requested TAC research on LSU mode(s).
 - Remove Appendix D (HF networking)
 - Appendix E (HF Applications) to be informative only
 - Working Group will provide guidance on applications to be covered.
 - Remove Appendix F (3G Anti-jam)
 - Remove Appendix G (2G data link protocol)
 - Remove Appendix H (HF MIB)

MIL-STD-188-141C

- TAC recommendations – Radio specs:
 - Removed narrowband FM operation
 - Line-level analog interface optional with internal modem
 - Co-sited operation explained (will be revised per WG)
 - Broadband and discrete emission requirements clarified
 - Electrical interface specs clarified
 - AGC specs revised
- Technical comments from the services

MIL-STD-188-141C

- TAC recommendations

Appendix A – 2G ALE specs:

- Clarified mandatory *vs* optional in
 - Programmable operating parameters (A.4.3.4)
 - Orderwire commands (Table A-XVI)
- Time exchange mandatory only with AL-2 or higher LP
- Slot wait timing formulas corrected; added an example

AFCEA HF Radio Class

- Introduction to HF radio and HF standards
- Next class scheduled this year in Fairfax, VA
 - 26-28 August (before US Labor Day holiday)

Questions?