

Future of HF Standards

“An Industry Perspective”

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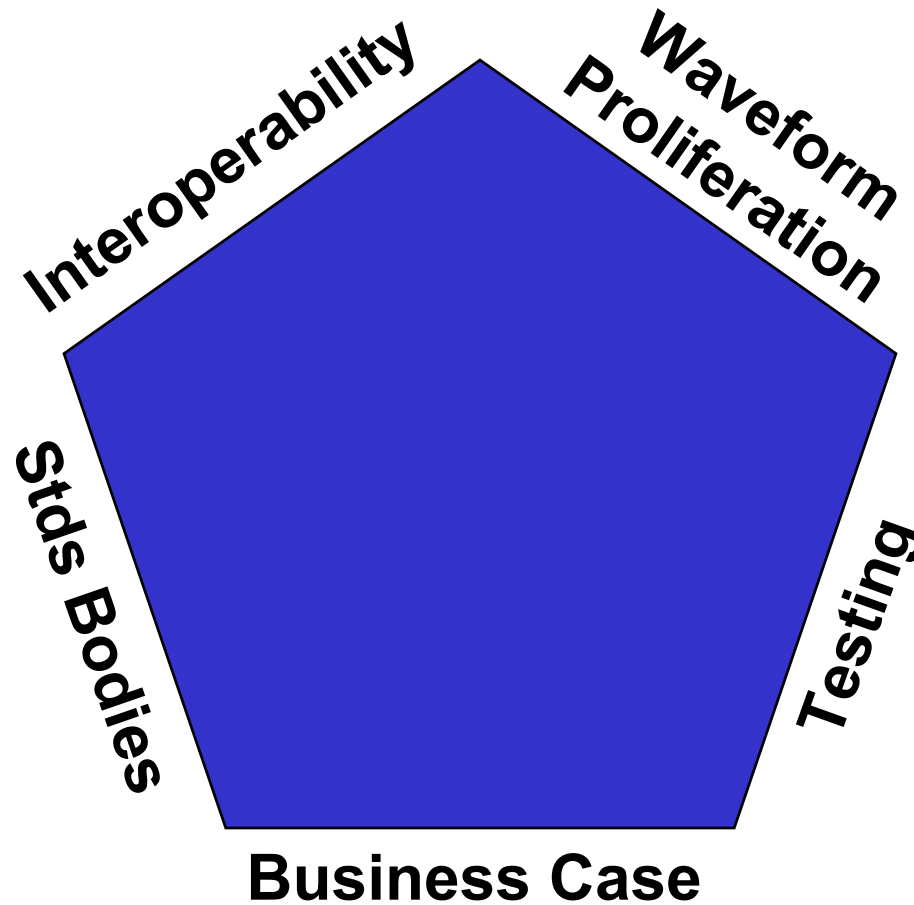
*This presentation is intended
to generate discussion on the
role of the HFIA in future
standards development*

It contains Subjective Material

- What's the same ?
 - Fierce competition
 - Market ebbs and flows
 - Threats to HF come and go
- What's different ?
 - Industry consolidation and fall out
 - Globalization
 - Emphasis on mobility
 - Email
 - Networking (all things IP)
 - Cost of participating

- Definition of “success”
 - Industry makes more money than it would have if the std didn't exist
 - Customers have better equipment at an overall lower cost
 - Interoperability exists where it matters
- Some standardization successes
 - MIL-STD-188-110A
 - MIL-STD-188-141A
 - STANAG 4539/MIL-STD-188-110B
- Some standardization failures
 - STANAG 4444
 - FED-STD-1046/47, MIL-STD-187-721
 - Digital voice
- Expected to be successful but not yet determined
 - STANAG 5066
 - STANAG 4538

- Standards that customers will buy
- Tradeoffs objectively made (ie feature value)
- Timely and regular maintenance
- Manageable configurability
- Testable without going “shall by shall”
- Minimal spec gaps
- Feature set based on *COMMOM* requirements
- Optional, yet standardized features
- Room for innovation without affecting interoperability



- Waveforms today solve difficult problems
- Several overlapping waveforms
- Highly confusing to customers
 - Try explaining 1045, 141A, 141B, 2G, 3G, FLSU, RLSU, AQC
- Expensive to all
- Interoperability
- Maintenance

- New waveforms are highly complex
- Interact with external systems (ie networks)
- Difficult to make work between 2 of the same radio
- Interoperability between different vendors very hard
- Not easy for vendors to test interoperability
- Need mechanisms
 - Test
 - Problem resolution
 - Quickly change/amend standard
 - Establish and publish standardized system configs

- Conformance and Interoperability
 - Two different things
- Need approved test authorities
- Current labs “work for food”
 - Minimal investment when no program
 - Effort focused on unique system when there is
 - Generally not involved during std development
 - Painful learning curve
 - Needs to be timely and cost effective

- MIL-STDs
 - Good process – evolved over past 15 years
 - Can be political
 - Subject to funding ebbs and flows
 - Spotty involvement by user advocates
 - Now only convened when need from USG program
 - Often not aligned with STANAGS
- STANAGs
 - Strong NATO participation – Gov't and Industry
 - Can be highly political
 - Subject to filibustering
 - 1-2 year approval cycles
 - Gov't dominated, but usually no lead agency
 - Not viable for maintenance

- Issue summed up as “level of mandatory-ness”
- Emphasis (grossly simplified):
 - Industry: positive ROI on development
 - Gov’t stds: provide full function working system
 - Gov’t users: get working and supported system at a good price
- Std’s are usually initiated by government(s)
- Standards and their features developed for many reasons: programs, IOP, problems, etc
- Cost effectiveness not always a high priority
- Result can be Std that is expensive to implement and maintain
- Customers pay for this
- Not unusual that the capabilities that are used 10% of the time, consume half the cost

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- Exert a more unified front when discussing requirements
 - Establish an interoperability test center
 - Create and document standard configurations for interoperability
 - Make an HFIA recommendations on waveform consolidation
 - Develop “HFIA standards” or “HFIA working drafts” when the gov’t process is not timely enough
 - HFIA review and/or generation conformance and interoperability test plans