

**IEEE 1451.4 Standard Working Group
Telephone Meetings, February 11 & 13, 2003
Meeting Minutes, issued Feb 14, 2003, approved Aug 14, 2003**

Chair: T. Licht

Secretary : P. Hufnagel

Attendance:

Mike Dillon, Modal Shop, Mdillon@modalshop.com

Paul Hufnagel, Kistler Instruments, Paul.Hufnagel@kistler.com

Charles Jones, Edwards AFB, Charles.Jones@edwards.af.mil

Kang Lee, NIST, Kang.Lee@nist.gov

Torben Licht, B&K, trlicht@bksv.com

Carlos Lopez-Reyna, Scitefair, CLopez@scitefair.com

David Potter, National Instrument, David.Potter@ni.com

Bill Schuh, Watlow, Bshuh@watlow.com

Eugene Song, NIST, Ysong@cne.nist.gov

Charles Summey, MPI Softech, Csummey@mpi-softech

Darold Wobschall, Esensors, mailto:ecedcw@acsu.buffalo.edu

The current Draft is 1451.4/0.9977, Jan 30, 2003.

1) Cover, Contents and Introduction:

- a) Complete.

2) Clauses 1, 2 and 3:

- a) Complete.

3) Clause 4:

- a) Corrections submitted by C. Summey. **Action: T. Licht will edit the Draft and distribute the suggested corrections to the Working Group for review and discussion on Feb 13.**
- b) 4.3.5: Suggested change of "the" 64-bit registration number to "a" 64-bit registration number is not made, due to the very specific nature of "the" number.

4) Clause 5:

- a) Corrections submitted by C. Summey. On review, most of the changes are of a grammatical nature, and may be accepted. Figure 4 has been modified. The block title terminology "1451.4 Instrument" has been replaced by "measurement/control device". No strong opinions voiced for either terminology, so the Figure will be accepted as edited, with the addition of "IEEE 1451.4" and capitalization of the new block title. Also, one of the graphic elements appears to have been modified, and this needs to be restored. **Action: T. Licht will edit the Draft.**

5) Clause 6:

- a) Figure 6.5: A modification is suggested to allow multiple template access, for the case of a TEDS which changes content dynamically, during use. One instance might be interchanging mic cartridges on a fixed preamp. The new mic must be discovered and the TEDS data read anew. A suggested approach is to add a bit to the selector of descriptor, but there may be other approaches not requiring this change. This may be one case of hot swapping. **See 9)a): General agreement of the Working Group is that development of a template with select cases is preferable to modifying the flowchart.**
- b) Corrections submitted by C. Summey. **Action: T. Licht will edit the Draft.**
- c) 6.3.1: Proposed expression, "majority of valid selector values", is in question. All selector values are valid, even if unused. **Action: T. Licht will examine the change and propose alternate wording.**

d) 6.5: Remaining reference to “sub template” corrected.

6) Clause 7:

- a) 7.2.5: Does the validation keycode work? The algorithm appears to be correct. **Action: T. Licht and G. Foote to supply an example. The example cannot occupy a lone sub-clause, according to the Style Manual, but must be integrated into the clause above.**
- b) 7.4.5.3: Some variable names and other expressions use an underscore, some are spaced and some are run together. These should use a consistent technique. Also, clarify the reference for all ones in a binary signifying “Not a Number” (NaN). **Action: T. Licht.**
- c) 7.4.7.2: Add statement “exponents shall be decimal numbers, to allow fractional exponents of either sign. Add a similar statement to Table 13. **Action: T. Licht.**

7) Clause 8:

- a) Complete.

8) Clause 9:

- a) The 1451.3 Working Group has made a decision to vastly simplify the description of the T-Block, reasoning that the level of detail is presently excessive, and potentially will limit the latitude of any possible implementation. Is this a move appropriate for 1451.4? Will such an action delay the balloting and release of the Standard, and will less detailed treatment actually delay widespread adoption of the Standard by hindering the development of products using the T-Block function? Should the definition of the T-Block not be carried in the 1451.3 and 1451.4 standards, will the definition eventually be included in the emerging 1451.0 standard, and if so, when? **Action: Working Group to consider seriously all the ramifications of such a move at this point in the development of the Standard.**
- b) Corrections forwarded by C. Lopez have been incorporated.

9) Annex A: Template Listing (D. Potter, G. Foote)

- a) The templates for preamps and microphones do not presently fit together well, two templates cannot be linked dynamically and the reference frequency needs to be selectable. It is desirable to add a property for “Associated Template” possibly by using an include file as a mechanism for appending one template to another. The case of a preamp with interchangeable microphones makes this an advantage.
- b) T. Licht has proposed a combined mic/preamp template and an accel/preamp template using a select case to access the microphone- or accel Basic TEDS. One drawback may be the need for more than 256 bits, restricting the template to use with larger memories. The use of select cases in the template avoids changes to the flowchart in Clause 6, by avoiding the addition of one bit to the selector of descriptor. Selector bits are part of the TEDS, and are resolved by the template, during TEDS parsing. Use of the select case may also avoid an association with Basic TEDS, avoiding effects on Clause 9. A Basic TEDS property will need to be added in the templates, affecting Clause 7 and annex A. The charge amp portion of the template defines “gain”, while the accel portion of the template defines “sens@ref”, which is the outcome of gain plus element sensitivity. The accel Basic TEDS must be written in the preamp template, to associate the two components. This is accomplished with the “Basic TEDS” property, which needs to be added to the property table. This template should be adaptable to force sensors and mics. **Action: Membership to review the proposed template.**
- c) The concept of UTID and UTIDT need to be revisited, since these are useful tools for quickly identifying and locating templates.
- d) Total bit counts on all templates are in question. A note as to the total available bit count should be added. **Action: C. Jones will determine bit count when the templates are run through the grammar checker. T. Licht will add a note on the available bits in memory.**

- e) All templates have 3- "chr5" fields, totaling 15 bits, for calibration initials. Are these really necessary? **Some discussion, but no decision.**
 - f) The terms "compact TEDS" and "CTEDS" need to be searched and removed from the Draft. **Action: T. Licht.**
- 10) Annex B: Template Properties (D. Potter, G. Foote)
- a) Complete.
- 11) Annex C: TDL Formal Grammar (**C. Jones**)
- a) C.2: All of the templates need to be tested successfully for adherence to the syntax rules in C.2. **Action: C. Jones.**
- 12) Annex D: Sub Template File Checksum Example (T. Licht)
- a) A C++ program for checksum has replaced the Visual Basic program previously used. The only comment is that the code should contain comments.
- 13) Annex E: Dallas Semiconductor DS2430 (P. Hufnagel)
- a) Complete.
- 14) Annex F: Dallas Semiconductor Family Codes (D. Smiczek)
- a) Suggestion to replace Fig 2, an XML Configuration file example, with XML Configuration files from Annex G. On discussion, due to the informative nature of Annex F and normative nature of Annex G, this is not a good idea. **Action: T. Licht to query D. Smiczek on the advisability of changing Annex F, Figure 2.**
- 15) Annex G: 1451.4 XML device description schema (C. Lopez)
- a) Complete.
- 16) Annex H: MicroLAN Communication (D. Smiczek)
- a) Complete.
- 17) Annex I: IEEE Template Change Procedure (**K. Lee**)
- a) Working Group decision made to define the issuing authority for manufacturing numbers and template authorization, etc. as "the 1451.4 Working Group or its designee". **Action: T. Licht will insert this statement where needed.**
 - b) The IEEE Registration Authority has been contacted for a second time, for a ruling on an appropriate issuing authority and procedure. A response from the RAC indicates that this matter will be discussed during their March meeting. **Decision of the Working Group is to release the Draft for ballot, with the procedures as they are presently, as our best guess, and to revise them after ballot, if the RAC has other inputs, in order to avoid delaying the release of the final Standard.**
- 18) Annex J: IEEE P1451.4 v0.9 Reference Data (**T. Licht**)
- a) Complete.
- 19) Annex K: Enumerated Listing of Manufacturer Codes (M. Dillon, K. Lee)
- a) Complete.
- 20) Annex L: IEEE 1451.4 TBOM Schema (C. Lopez)
- a) Complete.
- 21) Annex M: Bibliography (T. Licht)
- a) Complete.
- 22) Annex N: Dot 1 Interface (C. Lopez)
- a) Not included in this Draft, may be added at a later time.

23) Adoption of the Draft

- a) **The Draft was released for IEEE Style Editing, on Jan 15, 2003.** Some technical additions are still needed. Kudos to our long-suffering technical editor.
- b) Target date for ballot-ready Draft, Jan 30, 2003. The Working Group may delay plans to vote on the adoption of the Draft, on that date, pending receiving editorial comments from the IEEE Editorial Review Committee. Target date for editorial comments is Feb 12, 2003. The earliest vote for adoption could be Feb 13. As of Feb 13, nothing has been heard from the Editorial Review Committee. **Action: K. Lee will contact them and find out what is happening, and also will request a list of balloters presently assigned to 1451.4.**
- c) The original PAR was forwarded to T. Licht, by IEEE, for confirmation of continued validity. **Action: T. Licht will send a letter confirming validity of the PAR.**

24) Upcoming Events:

- a) Sensors Expo, June 2003: On Tuesday, June 3, an afternoon session on practical uses of 1451.4 is being considered. This will follow Jamie Wiczer's morning session on Smart Sensors. **Action: Any interested members please propose papers to K. Lee. D. Potter has begun a skeleton agenda.**
- b) Sensors Expo Show Management has offered 1451.4 participants the option of participating in an Emerging Technology Pavilion. **Action: Interested members contact K. Lee. With some interest shown by members, K. Lee will commit to participating in the pavilion. A catchy title is needed.**

25) Next Meeting:

- a) **Action: T. Licht to request a letter permitting the unrestricted use of Dallas products by anyone implementing 1451.4 systems.**
- b) Hewlett-Packard patent: The Working Group received a letter from the H-P legal department, allowing implementers of the 1451.4 Standard to license H-P patents. This letter is believed to be in the possession of S. Chen, but may need to be renewed, with the separation of Agilent Technologies from Hewlett-Packard. **Action: K. Lee has asked whether the letter is still with S. Chen. No reply, to date.**
- c) **Meetings will continue at 3:00pm EST, Tuesdays and 2:00pm EST, Thursdays,** to allow final polishing of the Draft and completion of the Annexes, following the presentation of the Draft to the Editorial Review Board.
- d) **The next meeting will be Thursday, Feb 20, 2003, at 2:00 pm EST.**
- e) Adjourn: 3:40 pm EST, Feb 11, 2003.
- f) Adjourn: 3:33 pm EST, Feb 13, 2003.