1450.4 meeting minutes – 12/10/09

Attendees: Jim O'Reilly, Markus Seuring, Bruce Parnas, Ernie Wahl, Ajay Khoche
Not present:
Agenda:

- IEEE Meeting Preamble (No discussion of proprietary information).
- Discussion items
    - Variable type promotion rules – C/C++ rules apply unless there's a reason to do something different for STIL.
        - Ernie constructed a test case, the results of which showed conversion and promotion between Integer and Double, Integer and Boolean, enumerated type and Boolean, and enumerated type Integer.
        - Based on the results, we've decided to allow conversion between Integer and Boolean, Double and Boolean, exclude conversions between enumerated types and anything else, and follow C/C++ rules for Integer -> Double and Double -> Integer.
    - We need to generate a table showing equivalence between C/C++ types and STIL types. (See table 7, p17 of IEEE-1450.1-2005 for example).
    - Question: Do we need both Real and Double? Or just Double?
        - Resolution – Double only (any type that would have been represented by Real can also be Represented by Double). If we get pushback during balloting, we'll revisit. Delete **Real** type from *real_var_type* (beginning at line 23 of D29 syntax doc. Dated Dec. 3, 2009).
    - Bool: Follow C++ rules. (and state those rules).
        - Based on the results of Ernie's test case, we'll allow conversion from Boolean to Integer (and Double) (False -> 0, True -> 1) and Integer (and Double) to Boolean (0 -> False, non-zero -> True).
    - SpecVariable – only a reference to actual spec variables – can't create new ones this way.
        - Spec variables already include units (seconds, volts, amps, ohms, or complex expressions – i.e. '1V/1nS'). No other units for spec variables are currently available. This may be an area to discuss – should we allow specs of type Power (or Watts), for instance?
    - Modulus operator.
        - Already in dot1 (see Table 2, p6, IEEE-1450.1-2005). Follow dot1 rules, then C/C++ rules. Per those rules, modulus operator applies ONLY to integers. Any other use is illegal.
    - Power operator (a**2 or a^2).
        - Not needed – defer to later.
    - *real_var_type* keyword names and units: Should keywords for these types (see lines 23-37 of D29 syntax doc dated Dec. 3, 2009) that represent physical quantities be named after the quantities themselves, or the units commonly used with such quantities (i.e., should we use **Current** or **Amperes**? **Power** or **Watts**?)
        - If we use keywords based on the physical quantities, some types (notably Length, Temperature, and – maybe – Time) would need to have units specified (for instance, meters or inches, degC or DegF). This implies that all these types (except Double/Real) would need a units attribute (to specify the units), and a Units operator (to determine what the units of a variable are).
        - If we use keywords based on the Units (Amperes instead of Current, Watts instead of Power), units are in general not needed (as they're implied). However, it does mean that we may need both DegC and DegF, Inches and Meters, and probably specify that there is an automatic conversion between related types if assigning a variable of type DegC to a variable of type DegF, for instance.

        Discussion, but no conclusions. This issue will be discussed at the next WG meeting.

- Open issues - are there other open issues that should be considered? A review of the open issues list can guide us here.
    - http://spreadsheets.google.com/ccc?key=pEI1-gPUmt2ZTw_kcCTgnKw&inv=jim_oreilly@ieee.org&t=933048453488551871&guest.
    - If logged into your google account, can edit. If not, can only view.

- Next Meeting 12/17/09.

For reference STIL .4 information can be found at the IEEE STIL website:
http://grouper.ieee.org/groups/1450/ (select the P1450.4 link from the table) or use the direct link
http://grouper.ieee.org/groups/1450/dot4/index.html