1450.4 meeting minutes – 05/28/09

Attendees: Bruce Parnas, Jim O'Reilly, Ernie Wahl, Ajay Khoche, Markus Seuring

Not present:

Agenda:
- IEEE Meeting Preamble (No discussion of proprietary information)
- Meeting minutes from most recent meeting (05/07/09) are now posted on the web.
- Continue discussion of binning. Most recent version of binning document is on the web. Updated syntax document is also posted on the web.
    - Note a potential issue with some of the group, axis, and bin properties. For instance, groups have a property isAnyBinSet, axes have properties highestSetBin and lowestBinSet, and bins have property isSet. Each of these implies some runtime and/or API support - i.e., if we were to translate these to a specific system (such as SmarTest, Envision, or ASAP), how would one tranlate these constructs. We need to think about these before we include such features. They CAN be included as advanced features, not guaranteed to be easily portable, but they should be portable somehow (even if it's difficult). Let's talk about this.
        - Testers that need the API support – older Advantest (T3300 series?), maybe the Credence SC212 and Quartet/Octet-type systems.
    - Spent most of the call discussing the various types of binning strategies that have been used over time. Basically, they fall into one of two categories:
        - Single bin – a list of bins is available, and at the completion of a particular test or flow node, one of N bins can be selected. When a bin is selected, it becomes the "current set bin", replacing the "previous set bin". At end of test, the "current set bin" determines how the device is binned. Systems that use this approach are:
            - Verigy SmarTest
            - Schlumberger ASAP (and, I believe, its descendents in the NPTest/Credence XTOS and Diamond languages)
            - LTX Envision
            - Advantest OTPL
            - Teradyne J953/J971/J973
        - Bit binning. Binning is essentially a 16 (or 32) bit integer – at each binning point, one or more bits can be set. At the end of the test, the bits that are set are examined to determine how to bin the device. More than one bit can be set at any one time (in contrast to the "single-assigned-bin" scheme described above). It's this type of binning that would require the ability to determine "highest-bin-set" and "lowest-bin-set", as mentioned in the original problem statement. Systems that use this type of binning are:
            - Credence SC212 (and, I believe, the Quartet/Octet systems).
            - Schlumberger ASAP also supports a bit-binning scheme, which operates in conjunction with the "single-assigned-bin" scheme. With this method, the bit binning is used to modify the softbin number that ultimately gets mapped to a hard-bin. So this is really just a slight enhancement to the "single-assigned-bin" scheme.ASAP also supports a "Flow ID" type of binning that operates independently of the "single-assigned-bin" scheme – it's a 128x32bit (or 4K) array in which each flow node executed can set one of these 4K bits. At end of test, the array of flow-id bits is examined to determine the path through the flow, and to either set a bin from the standard bins, or to do something custom.
    - As part of the above discussion, the issue was raised about whether the hard bins should be a simple integer number (as they are in the current proposal), or a more complex data

object (which would allow them to be named, and have other properties). This issue needs to be studied further; for context, a wider variety of existing systems' SW needs to be looked at.

- Discussion of syntax document open issues list. Issues list (showing resolved and unresolved issues) is also on the web.
- 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
- Other?

- Actions:
  - Jim:
    - Finalize proposals for handling spec/category/spec variable dot0-dot4 integration (in progress)
    - Query the users of various systems to learn more about binning on those systems. Primarily, the older Advantest and Credence systems, and also some of the Teradyne analog/mixed-signal systems (A5XX, Catalyst).
    - Summarize the binning capabilities of the various systems being studied for this effort.
  - Jim/Ernie:
    - Update binning and syntax documents to reflect decisions made regarding binmap syntax (ongoing per discussions).
  - Bruce:
    - Review and update TestBase proposals.
      - Distributed. Will be discussed in the coming weeks.

- Next Meeting 06/04/09.

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