October 29, 2010

Minutes of IEEE 1149.1 - Initialize Sub-Group Meeting

Attendees:
    Carl Barnhart
    C J Clark
    Roland Latvala
    Ken Parker
    Carol Pyron
    Francisco Russi
    Brian Turmelle

Minutes:

Today's meeting started with a Ken's question about whether INIT data and results can be held through TLR if CLAMP_HOLD is on.
- Carol: Since CLAMP_HOLD forces the Mode bit (and test mode) then the initialized state of the I/O can be persistent through TLR. No problem.
- Ken: So the initialized state of the I/O need not be persistent through TLR if CLAMP_HOLD is not on or not implemented.
- Ken: Some of the internal testing contemplated being supported by CLAMP_HOLD may mean that some of the internal initialization may not be able to be held (PLL's, etc.)
- Carol: we still need to resolve the interactions of the sticky-bit with other instructions: standard, user public, and user private.
- Carol: If CLAMP_HOLD is active, HIGHZ would take priority.
- Ken: I will generate a paper showing the effect of CLAMP_HOLD on other instructions.

We returned to the topic of how to clear the sticky bit if the chain breaks.
- CJ: The context is field testing which may not have been planned for by the chip designers.
- Ken: Without TLR, TRST* would be required
- CJ: Not going to happen; chips are dropping TRST*.
- Carol: Give CLAMP_HOLD a one bit TDR (not Bypass reg) that selects whether BYPASS instruction clears sticky-bit.
- CJ: Things are getting too complicated.
- Carl: BYPASS is supposed to be a NOOP, now we are giving it a specific function of CLAMP_RELEASE, and we no longer have a NOOP instruction. Just stick with CLAMP_HOLD & CLAMP_RELEASE.
- Carl: There is no guarantee that you can load BYPASS when the chain is broken anyway, so using BYPASS to clear the sticky-bit is insufficient anyway.
- Carol: Some pins need to be active for tests like MEMBIST.
- CJ: Yes, for chip test and maybe on board, but not for system in-situ testing. Then CLAMP_HOLD takes over and ensures that all that data is not being dumped into the system.
- Ken: Board test problem that needs solution is having a board simultaneously lobotomized and in system mode. This is dangerous.
- CJ: Just power down. That's what everyone does.
- Ken: Problem is between tests, and full power cycle is way too expensive.
- The discussion continued; CJ is trying to solve an in-situ system test problem where a chip needs to be isolated to allow internal testing, and Ken wants to prevent a board from leaving test mode, once test mode is entered. (Editor: Who knows what other uses for CLAMP_HOLD the industry will come up with once they have it in hand.)

The meeting adjourned on time.

Current Status:

Formalize Rules – In progress.

BSDL Constructs - – BNF coding in progress, semantic checks in progress.

Formalize PDL constructs – In Progress.

Incorporate INIT into 1149.1 Std.

Actions:
- Ken to provide a table of effects of CLAMP_HOLD on other instructions.
- Carol to provide custom bidir IO example diagram.

Next meeting date:
There is no meeting next week due to ITC.
Same time, Friday, November 12th.