

October 22, 2010

Minutes of IEEE 1149.1 - Initialize Sub-Group Meeting

Attendees:

Carl Barnhart
John Braden
C J Clark
Dave Dubberke
Hieko Ehrenberg
Roland Latvala
Adam Ley
Ken Parker
Carol Pyron
Francisco Russi
Brian Turmelle

Minutes:

Today's meeting started with an update of status on the items at the bottom of these minutes. There was nothing new to report, CJ and his staff have been busy with ITC preparation, so not much has been done. Carol is, to some degree, waiting for the BNF work to be completed.

CJ suggested changing the field and mnemonic attribute names from "Register_*" to "TDR_*". There were no objections, just a question from Adam as to whether we wanted to support fields and mnemonics for the Instruction Register, as the name TDR would preclude that. This question was tabled for further thought and later discussion.

CJ wanted to settle some issues on the "sticky-bit", and brought up his latest incarnation of the schematic:

- Ken asked why we are clearing the bit with BYPASS and IDCODE decodes.
- CJ asserted that constantly asserting the asynchronous reset to the flop was the only way to deal with Single Event Upsets (SEU) such as cosmic rays.
- Carol asserted that it was bad design practice from a power standpoint to constantly assert asynchronous inputs.
- CJ and Ken had a lengthy discussion repeating previously stated positions: 1) Ken and the test software he represents generate totally independent tests that may be run in any order, and therefore have to have the IDCODE/BYPASS chain integrity test at the start of each test, something not possible if the sticky-bit is as currently defined; and 2) CJ insists that there are several ways of testing scan chain integrity, and that it is all a software issue in any case and therefore solvable. (Editor comment: I think this all comes down to Ken wanting to maintain the traditional independence of ATPG generated tests, and CJ being willing to accept, and manage, test interdependence.) Nothing was settled.

At this point, Carol suggested we review the most recent version of the INIT rules:

- We need to add CLAMP_HOLD (and the sticky bit?) to the list of instructions in several of the rules/notes (action for Carl).
- Carol: can user instructions also release CLAMP_HOLD, and if so, how is that documented in the BSDL?
- Carol: would execution of the IC_RESET (or RESTORE or whatever we call it) require a new INIT process to resume test?
- Carol: "We need a very clear definition of when we are in 'Test Mode'."
- Ken: "... and what happens when we leave that mode."

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:

- Carol to provide custom bidir IO example diagram.
- CJ to distribute his Board Test Workshop slides.

Next meeting date:

Same time next Friday October 29th.