



IEEE P1687 Working Group

IJTAG for the Phil meeting at ITC 2008

Outline:

- **What is IJTAG?**
- **IJTAG Hardware**
- **IJTAG Software**
- **IJTAG Status**
- **IJTAG at AMD**

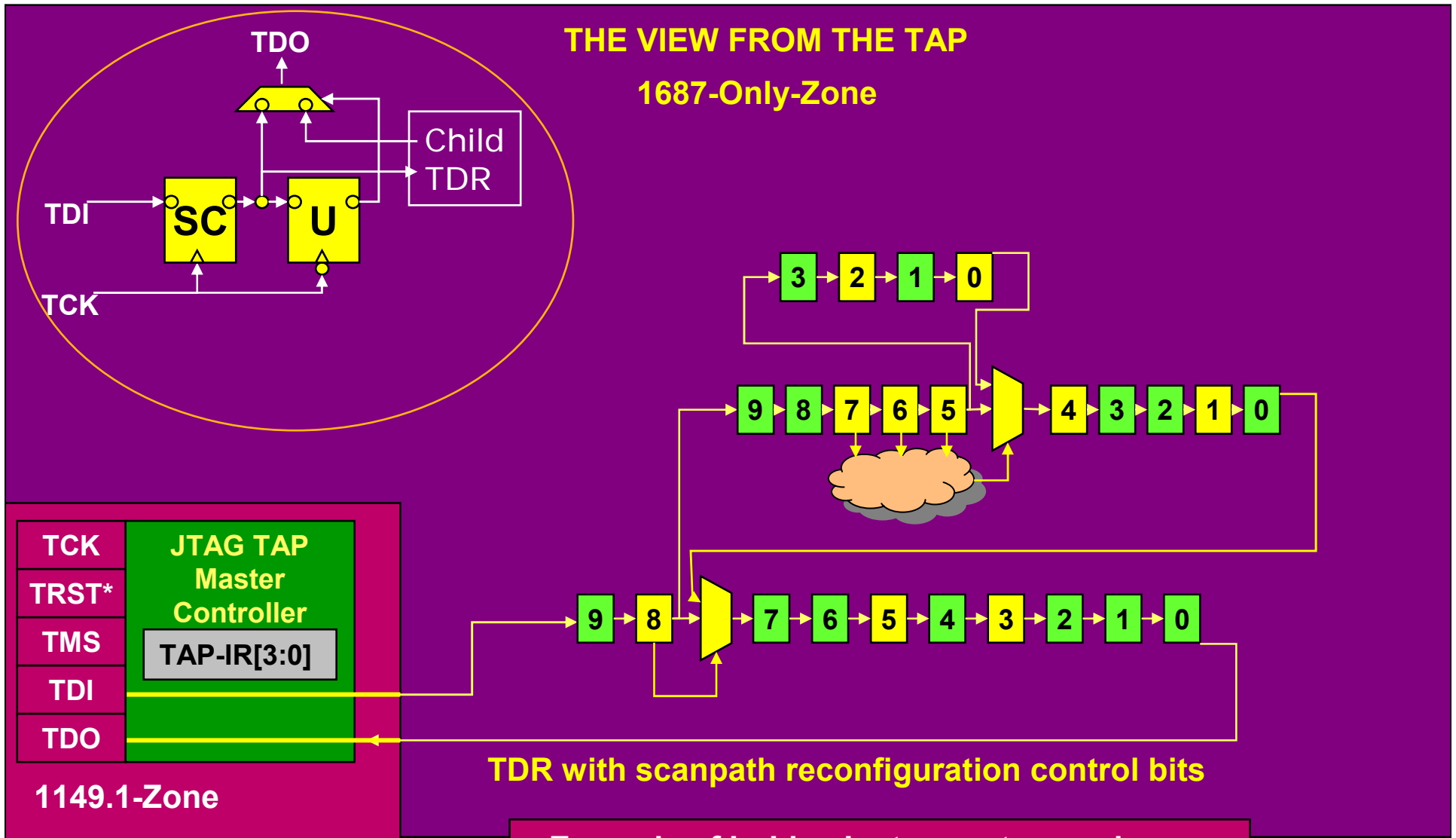
Jeff Rearick
October 27, 2008



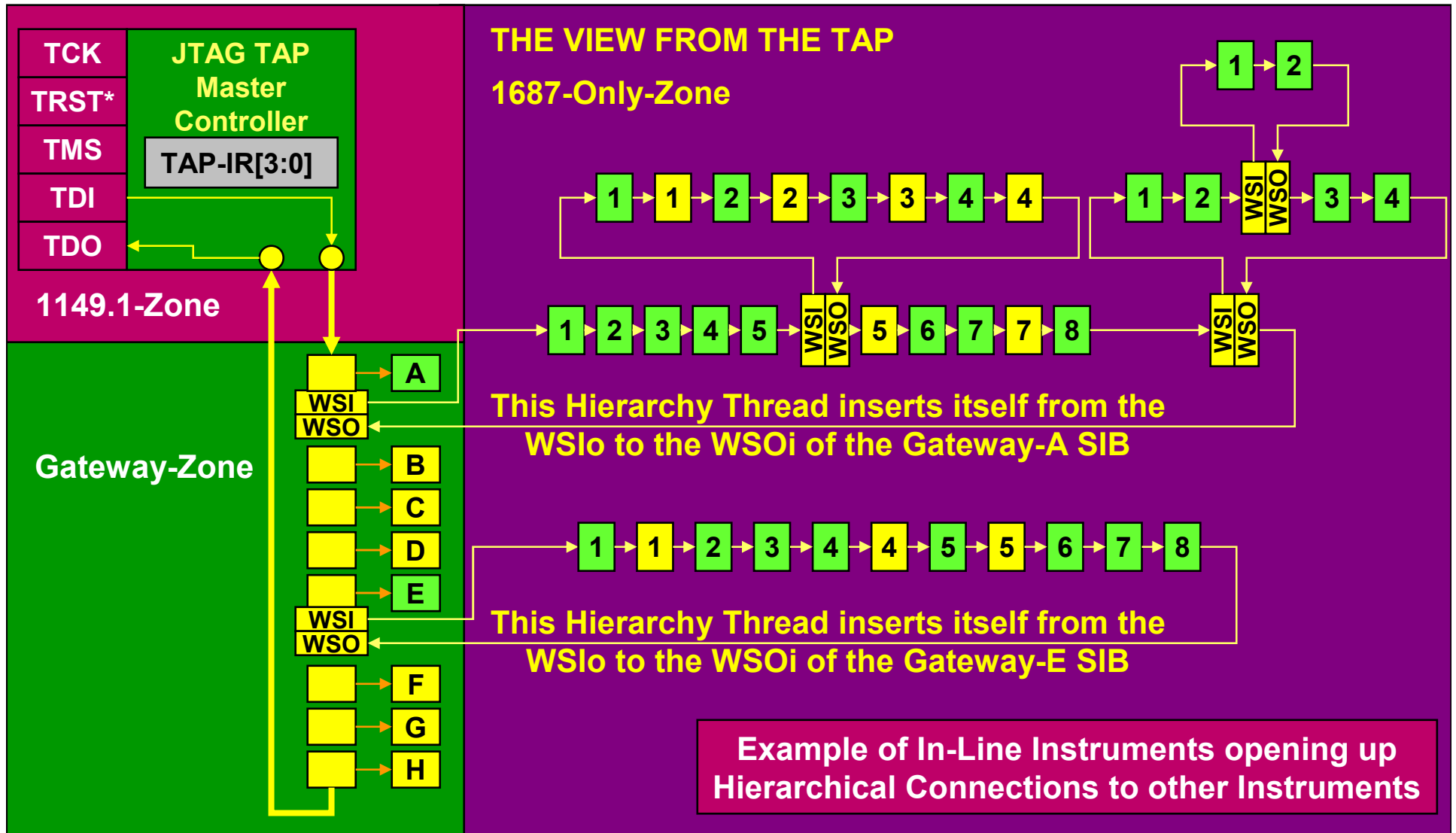
What is IJTAG?

- ❑ Title: *IEEE P1687: Draft Standard for Access and Control of Instrumentation Embedded Within a Semiconductor Device*
- ❑ Problems addressed:
 - ❑ Re-using on-chip test/debug IP at board/system level
 - ❑ Standardized hardware description language for internal TDRs
 - ❑ Standardized instrument procedure language
 - ❑ Efficient instrument connection architecture
- ❑ Why not just stick with 1149.1 de facto?
 - ❑ 1149.1 TDRs are fixed length
 - ❑ 1149.1 does not standardize internal scan description
 - ❑ 1149.1 does not standardize procedural language

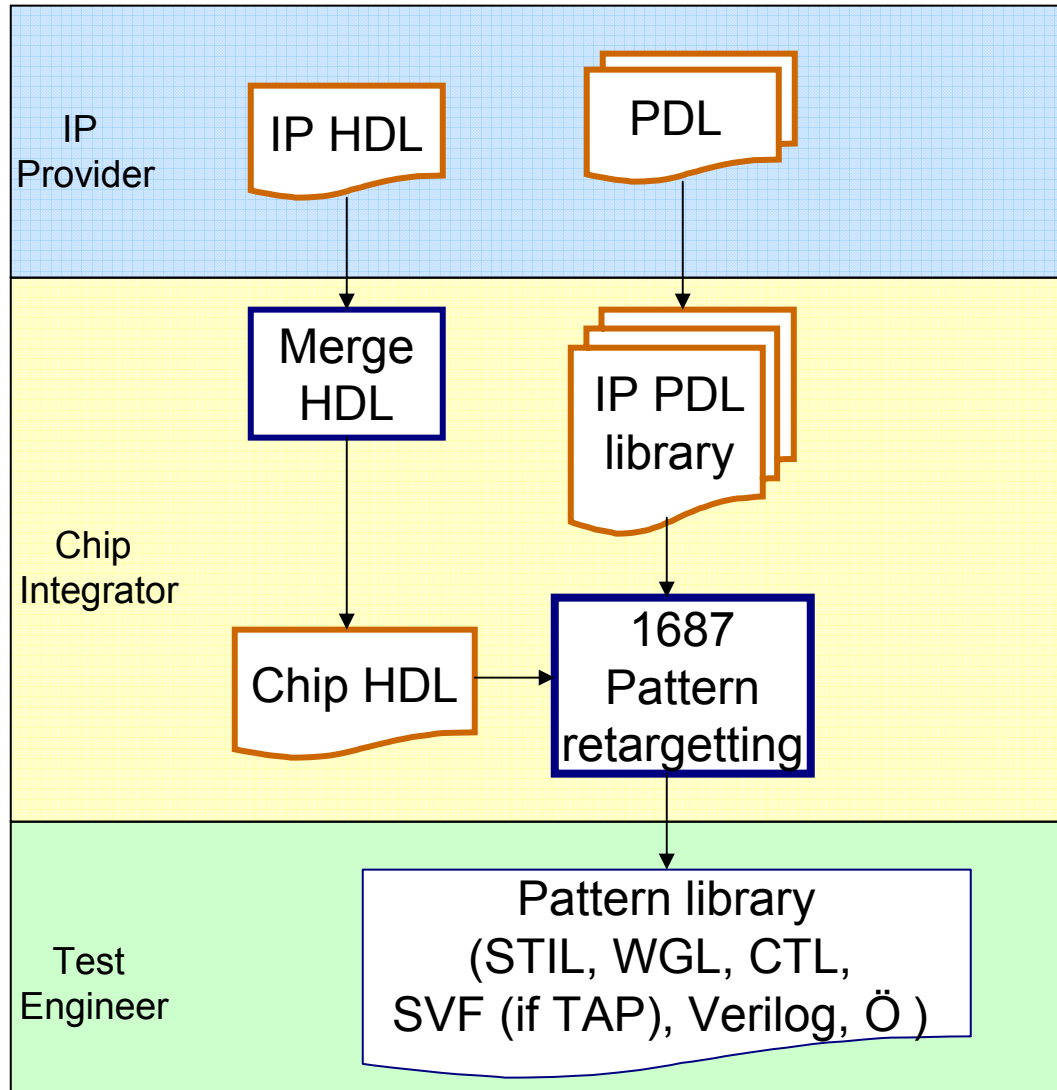
P1687 Hardware Principle: reconfigurable chains



Recommended 1687 Hardware Implementation



IJTAG Language Overview



**HDL =
Hardware
Description
Language
(P1687 network)**

**PDL =
Pattern
Description
Language
(instrument
procedures)**

P1687 Status

- ❑ Hardware spec is pretty solid
- ❑ Software spec isn't quite closed yet:
- ❑ Two candidates for procedural language
- ❑ We are pushing to decide (and write draft) by year end
- ❑ Several companies already implementing concepts

P1687 at AMD

- ❑ We are pushing to create the IJTAG “ecosystem”
 - ❑ Standardized instrument descriptions
 - ❑ Sufficiently flexible HDL to support legacy HW architecture
 - ❑ 3rd-party EDA tool support
- ❑ We have a prototype retargeter up and working
- ❑ We are benefitting internally by enabling re-use of instruments across chips