



**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**

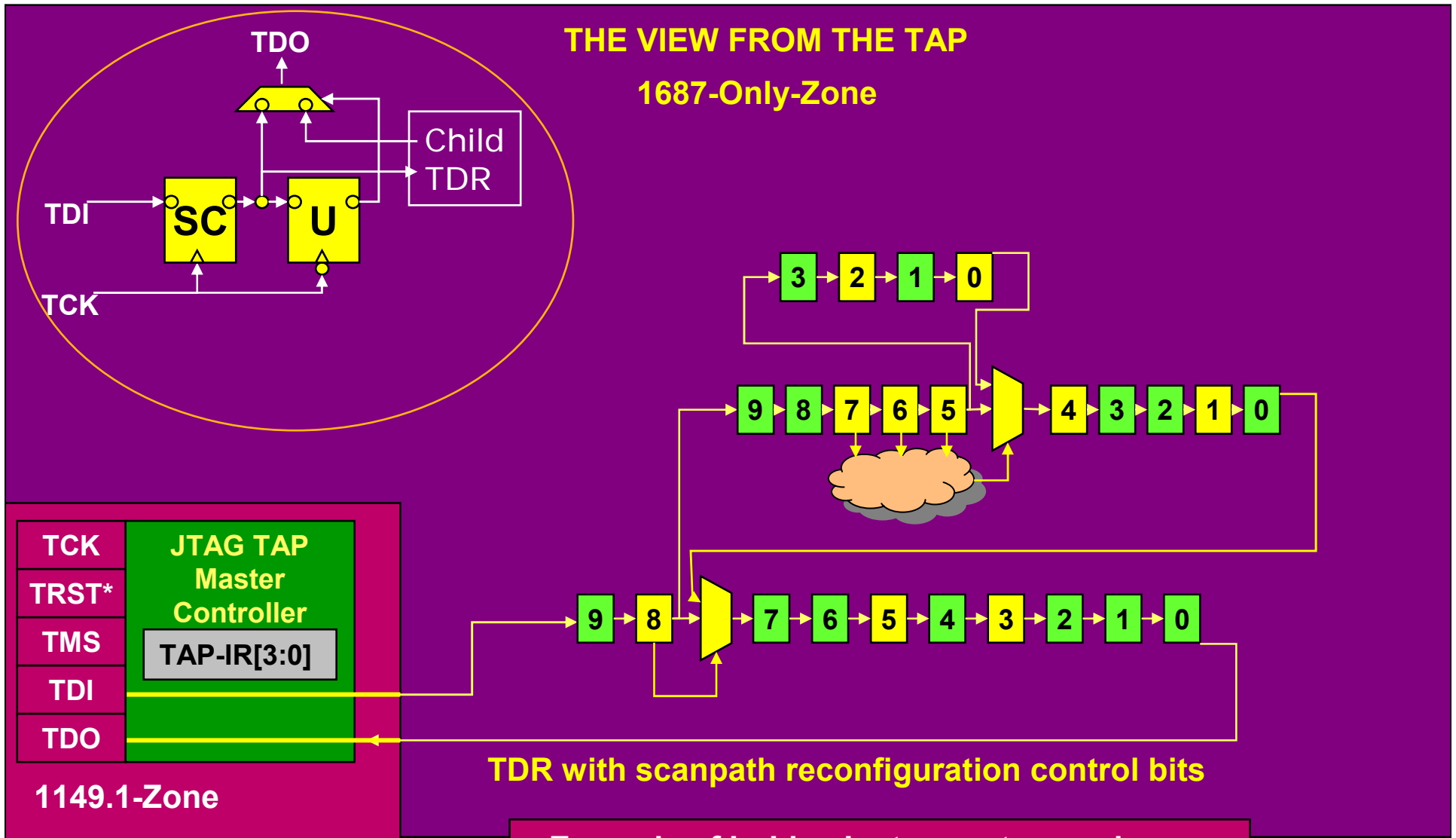
Jeff Rearick  
October 27, 2008



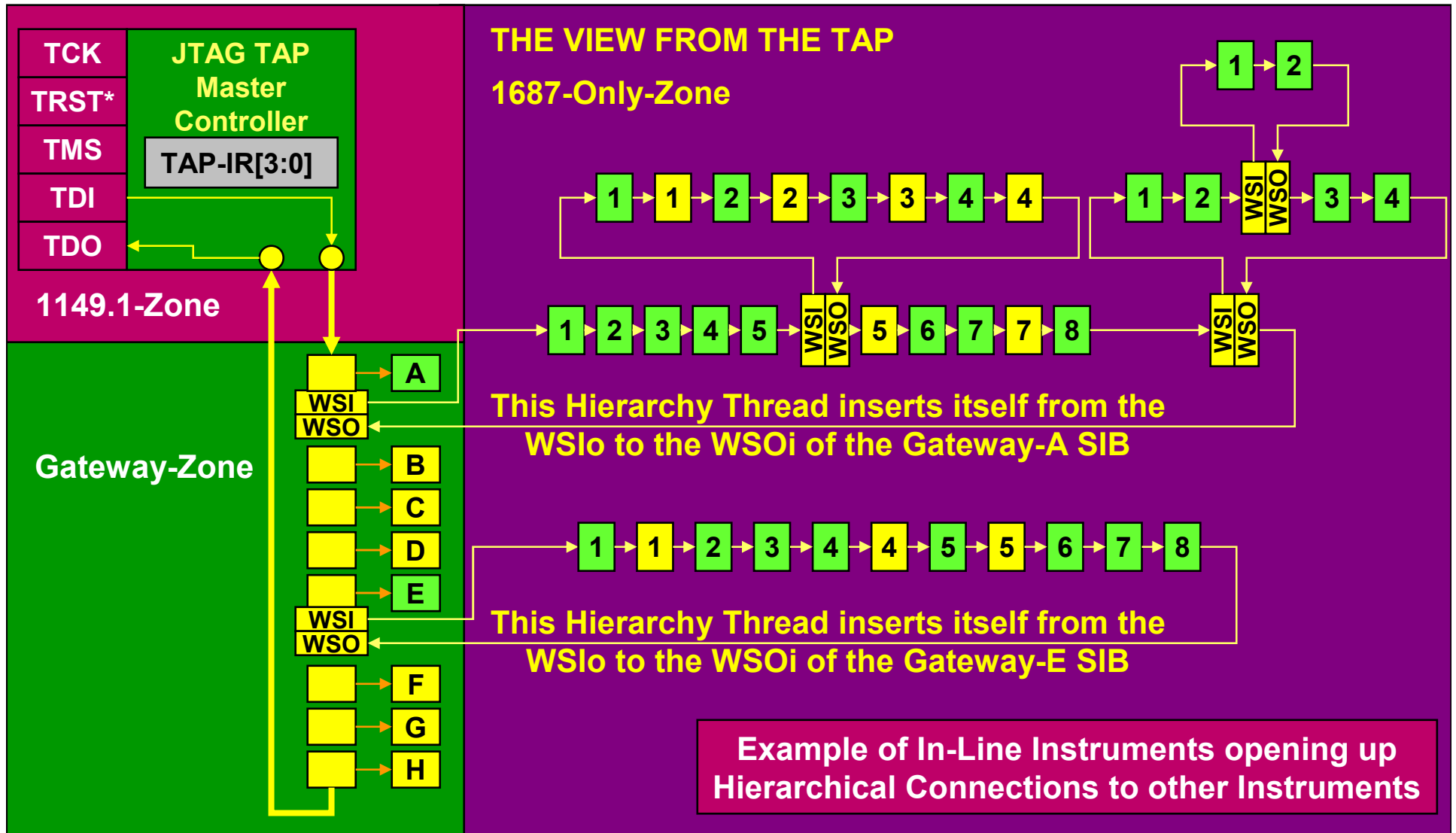
# What is IJTAG?

- ❑ 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

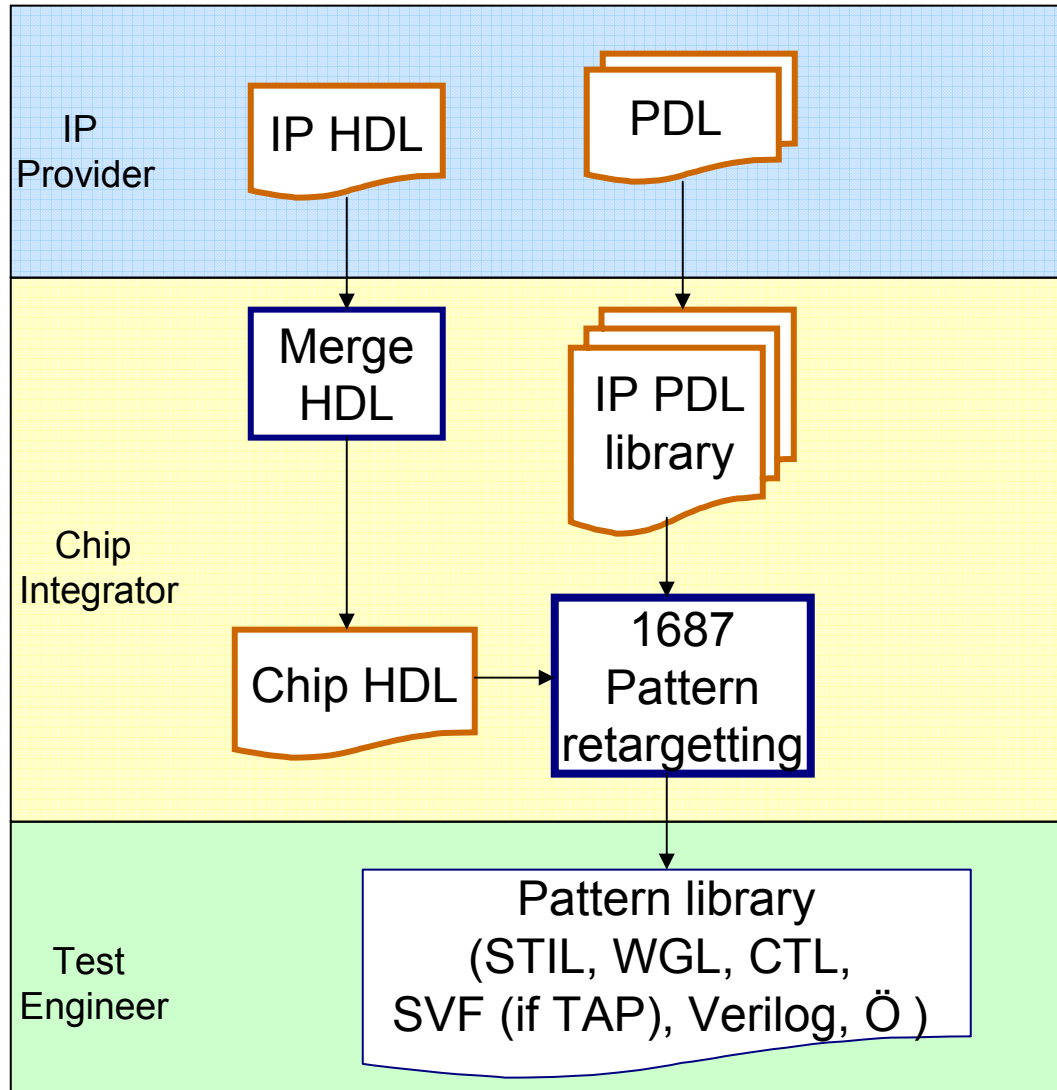
# P1687 Hardware Principle: reconfigurable chains



# 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
  - ❑ 3<sup>rd</sup>-party EDA tool support
- ❑ We have a prototype retargeter up and working
- ❑ We are benefitting internally by enabling re-use of instruments across chips