AIDA/ AIDA-2020
(mini) Trigger/Timing Logic Unit
(mini TLU)

Synchronization for combined beam tests

Making life easier (?)

Request for Comments

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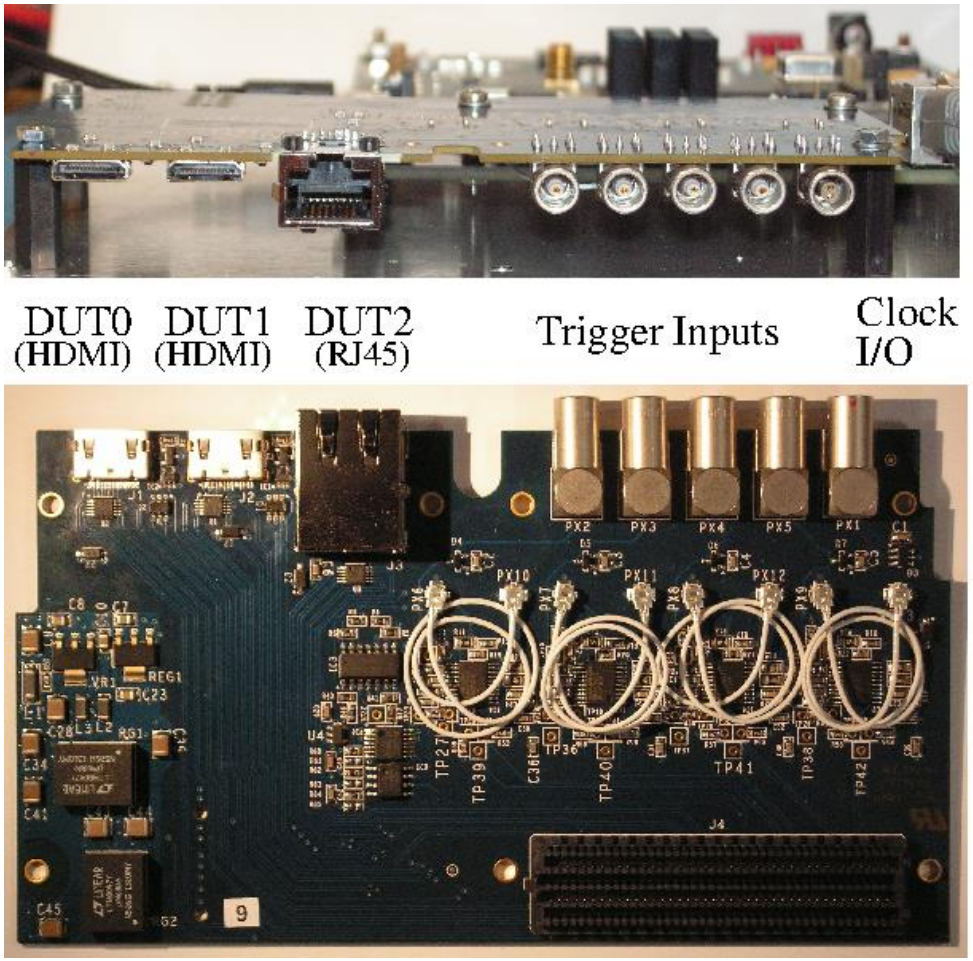
Introduction

- **Provide Simple Timing/Synchronisation Interface**
  - **Developed for AIDA**
  - **Will be developed and supported in AIDA-2020**
- **Two modes**
  - **Synchronous mode (common clock) sync/trigger/busy signals**
  - **Asynchronous mode (EUDET mode)**
  - **Modes can be mixed on different interfaces**
- **LVDS signals on HDMI cables. Compatible with CALICE CCC and DIF→ LDA links.**

Hardware

- Implemented as FPGA Mezzanine Card (FMC).
- Plugs into off-the-shelf FPGA carrier
- Four trigger inputs
  - Software adjustable threshold
  - Threshold and CFD
- Three Device Under Test interfaces
  - Can be fanned out to up to 30 DUT interfaces in synchronous mode with external fanout.
- Open Hardware, Open Firmware: http://www.ohwr.org/projects/fmc-mtlu/wiki



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Hardware

- Currently only as boards bolted to plate
- Design for box in progress

TLU Uses

- Like a NIM crate
  - Smaller
  - Trigger/busy logic
- Synchronize multiple DAQ systems
  - Mix triggered and “no trigger” (self triggering, continuously active)
  - Multiple ways of sychronizing data – count triggers, correlate timestamps.

What do *you* want?

- TLU intended to be of general use
  - AIDA-2020 aimed as building capability
- Direction of development steered by users
  - Can only be steered by users if you tell me what you want…