

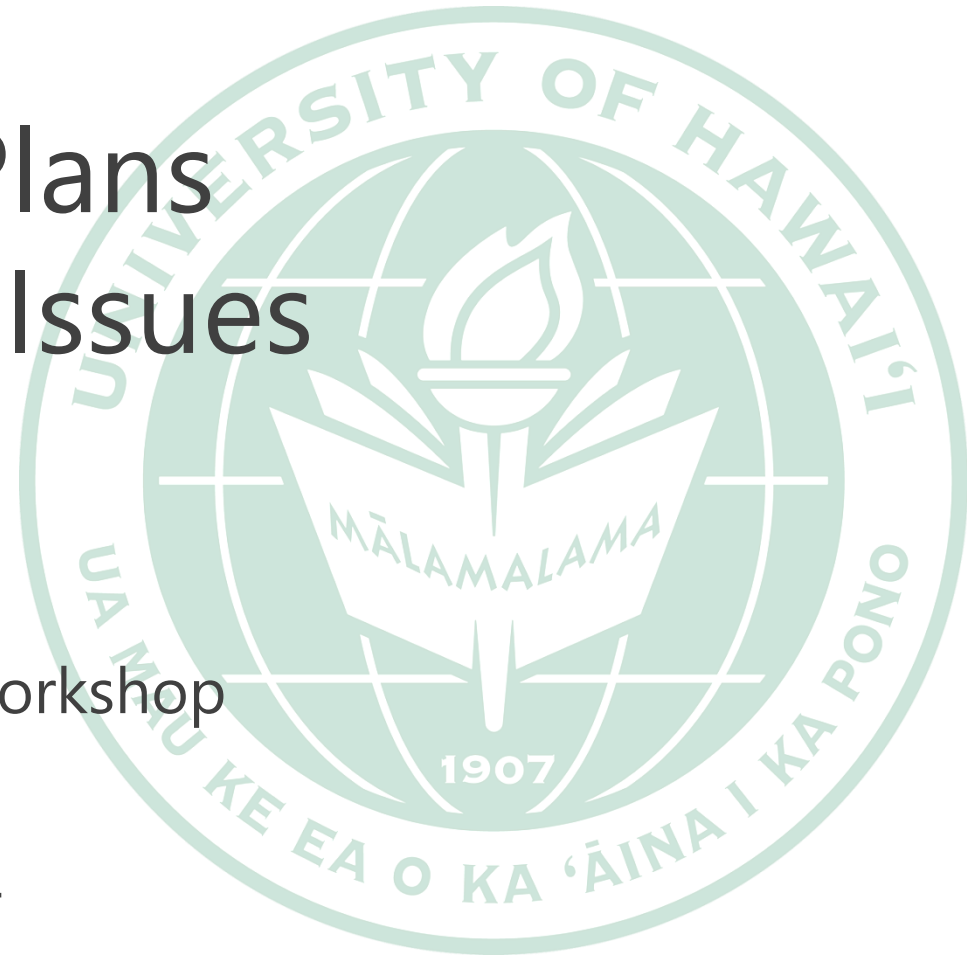
KLM Trigger Plans & Manpower Issues

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Belle II TRG DAQ Workshop


KLM Session


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KLM Hardware w/ FPGA Interactions

- Scintillator System:
 - Daughter Cards
 - Motherboards

U. of Hawaii was responsible for design
- RPC System:
 - RPC Readout Cards

Indiana University was responsible for design
- Common Boards:
 - Data Concentrators
 - UT3

Common Belle II Design

Current KLM FPGA Expertise

- Scintillator System:

- Daughter Cards
- Motherboards



UH (C. Ketter, V. Shebalin)

- RPC System:

- RPC Readout Cards



No current expertise.

- Common Boards:

- Data Concentrators
- UT3



Some knowledge @ UH (V. Shebalin) from studying code.

UH (R. Peschke, V. Shebalin)

Many prior contributions from others [IU, PNNL]

Manpower Status & Changes

Personnel	System(s)	Current Role	Status	Term?
C. Ketter	Scintillator	Deploying Waveform Readout	~50% FTE	Ramping to ~5% FTE in Q1 2023.
K. Nishimura	All	Coordination & Advising	<10% FTE	Current position ends 3/2023 – some (limited) availability beyond
R. Peschke	KLM TSIM KLM TRG FW	Deploying KLM TRG Straight Line Fits, Maintaining/updating KLM TSIM	~50% FTE	Position ends May 2023.
V. Shebalin	Scintillator KLM TRG FW	Mainly Maintenance, Debug	<10% FTE	TBD, potentially available through 2023.
G. Varner	All	Coordination & Advising	TBD	

- FTE values are unofficial, just rough estimates.
- Some additional contributions to TSIM from Iowa in past ~year+, significant guidance from S. Prell.
- Significant losses in manpower/knowledge already have occurred or are expected to occur soon.
- ***Most important to find new coordinators/contributors in next months while availability of existing participants is still good.***

Queued Work

- Some changes already planned:
 - TSIM improvements – updates to reflect current logic.
 - Studies to simulate performance at high luminosity / high BG.
 - Deployment of new straight line fit trigger.
- Some minor changes have been pending, awaiting manpower availability:
 - Modification of b2b flag.
 - Merging of “inter-sector” trigger, originally developed by PNNL.
 - Adjusting delays to synchronize RPC and scintillator trigger hits.
- Other modifications proposed, but presently on hold:
 - Further push beyond current trigger capabilities may require re-allocating logic from UT3 to Data Concentrators – this could be involved and expertise is already limited.

Summary

- Manpower situation in KLM DAQ and TRG is diminishing over coming ~6 months.
 - Some notable unexpected losses/issues in addition to those that were being planned for.
- Need to be very selective about how to deploy resources during LS1.
 - It is unclear how soon any further upgrades will be required, can prioritize these simulations, as well as work already nearly completed features (scintillator updates, straight line fits).
 - No very strong push from any physics groups for new trigger features so far.
- New contributions are highly encouraged so that some overlap is available to train new participants.