Proposed Timeline for New Features Installation

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- We are still currently undergoing commissioning of AugerPhase2.
- A number of features have been added to the UUB FPGA firmware
  - Changes to reduce readout noise
  - New targeted triggers (as indicated in the AugerPrime proposals)
  - Trigger conditioning to reduce T2 rate spikes
- It makes sense to roll out the changes before we finish commissioning
  - The data taken during commissioning are less likely to be used in physics analysis
  - This is the time we can make changes with minimal negative impacts

Proposed Procedures for New WCD Triggers and Features DURING COMMISSIONING

I focus here on WCD/SSD triggers which can be considered additional "ToT" triggers and do not require structural changes to CDAS. RD triggers currently don't fall into that class and need additional considerations. However there is promising work going on at Radboud which might change that in the future.

1. Test on UUB in the lab using random traces take over the last few years to verify
   1. Noise trigger rates
   2. Agreement between Reference Code and FPGA code
2. Offline simulations to motivate the new triggers
   1. Validate Offline implementation vs Reference Code
   2. Check T3/T4/T5 efficiency improvements; proceed only if improvment
3. Test in TanquitoJr and Feche to verify features work and rates are acceptable (where appropriate) (in at least those 2 stations)
4. Test in Test Array
5. Review by Trigger Committee (if needed)
6. Install in one BSU and monitor stability (especially for triggers)
7. Roll out to the entire array
8. Merge new trigger simulations branch into Offline main

Proposed Timeline for Discussion

Before August 1 Iterate on steps 1-3 to optimize triggers & test features

August 1 to Sept. 1 Steps 4 and 5

Sept. 1 to Oct. 1 Steps 6 and 7

After Jan. 1, 2025 Merge code changes into Offline