Status LIU WS SW 15/09/2020

- BWSLIU: Now 3 devices in simulation, one per accelerator
- BWSLIUEXP:
  - IPBus -> It does not compile with FESA (boost library incompatibility)
    - Compiled with a modified version of the UHAL code before holidays (not the way to go to avoid having to maintain the UHAL library continuously)
    - Create a middle layer library (as in BGI) to be used dynamically: About to start
    - HW proto ready since 7th Sep
  - Prepared an interface for GUI development with FESA Web
- BWSLIUACQ:
  - Fesa design proto done
  - HW access to be done

BWSLIU class

You can find the design here:
http://bdidev1.cern.ch/bdisoft/development/BDI-Domains/bdeyelids/fesa/graph.php?file=&currentLetter=B&currentClass=BWSLIU&currentVersion=1.3.0&vtab=2&vgraph=2&vdiag=2&f1=all

- Handles movement, trigger and acquisition
- Trigger: setting up N LTIMS for N acquisitions per cycle (defined as max 5)
- After each trigger an acquisition is performed for the movement
  - Relies on reading only transition timestamps and filling “holes” if any.
  - Positions computed from a reference supposed to be fix wrt center of the vacuum chamber
- Profile data on subscription to BOWSACQ, max 4 channels
  - Relies on data available after a certain time
- Timestamps are used to match the positions to the profile data

BOWSACQ class

- Handles VFC profile acquisition whatever the source, PMT or whatever attached to the channels
- HW Triggers not handled by the BWSLIU class
  - The sw does not mind what is attached to the channels and how it triggers.
  - Arming required? Immediate trigger available?
  - For the moment it is the WS with angles that will trigger the acq (how distinguish between WS?)
- SW trigger for acquisition task on demand in any case, not timing.
  - BWSLIU or other
- Foresee to mask channels? Or full read each time of the the 4 channels?
- How do you want to recuperate the data? (what is your priority, trigger or readings?)
  - Device per VFC
  - Device per channel
  - Device per semantics (mix of cards and channels making a meaningful compound?

BWSEXP

- Expert variables monitoring such as temperature
- 3.5M of data read out on demand (BWSLIU or expert gui)
- Setting of init and asynchronous (not op scan dependent) expert registers
- On demand acq and settings blocked while scan on going
- Provides status ok to scan
- Access to write registers only on BWSLIU (~10) or BWSEXP (~50)

Expert GUI(s)

- Based on FesaWeb (see proto example here) http://fesaweb/fesawebconnector/connector?setting=1583916028660

- Made up of as many viewers as requested
- graphs and/or tables in the web organised according to the information you want to see together in one page.
- Sw team under Stephane:
  - New configurator available soon compatible with CO standards
  - Next step is the authentication to be able to handle settings
  - Timing component to be able to build full GUIs out of basic graphical components