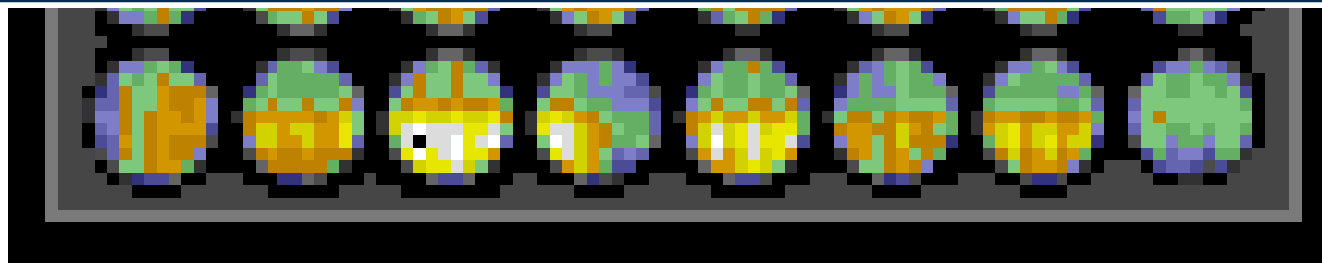


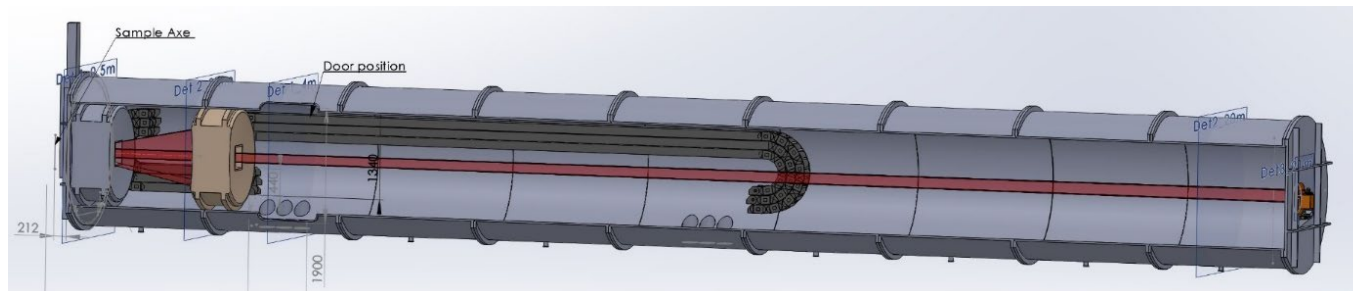
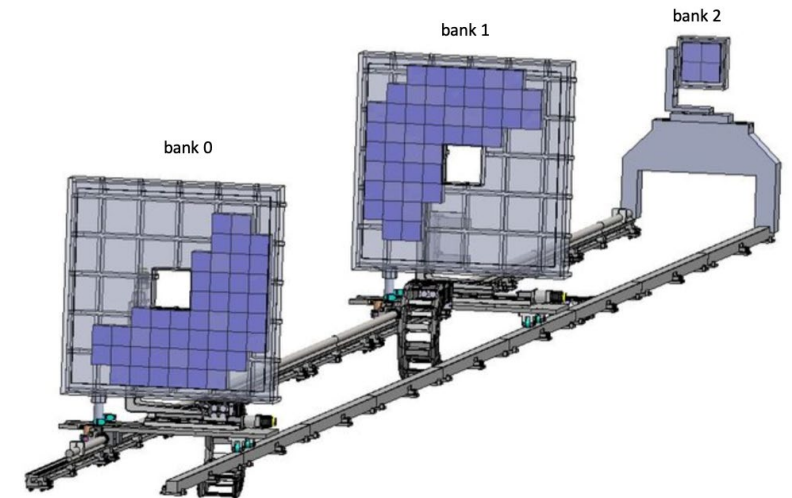
STATUS OF THE SKADI DETECTOR PROJECT

OCTOBER 23, 2023 | R. ENGELS



SKADI Detektor

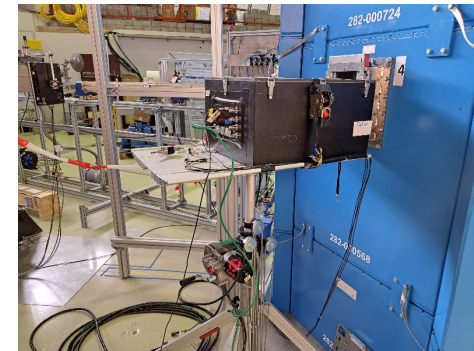
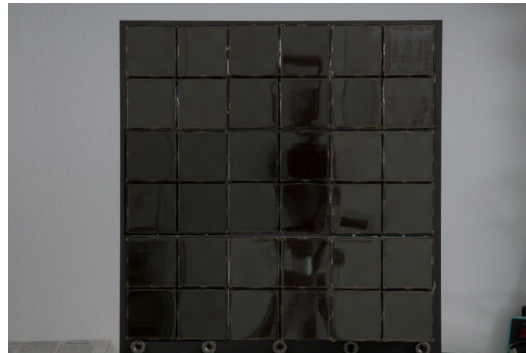
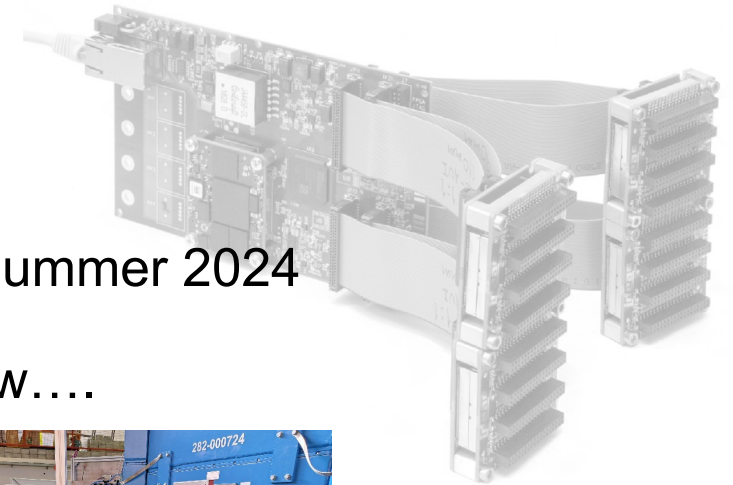
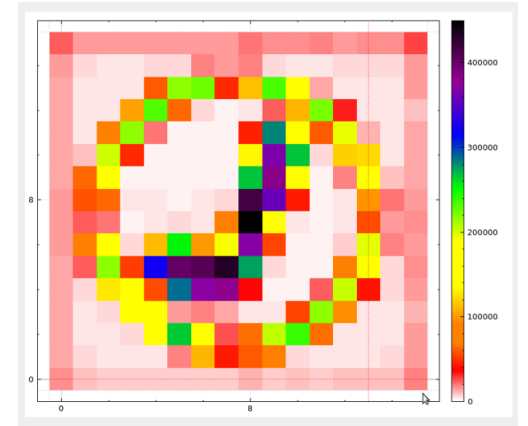
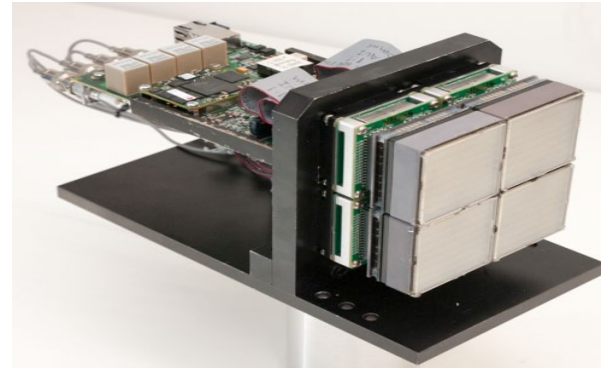
(SMALL-K ADVANCED DIFFRACTOMETER)



Three Detectors will be installed at the SKADI Instrument

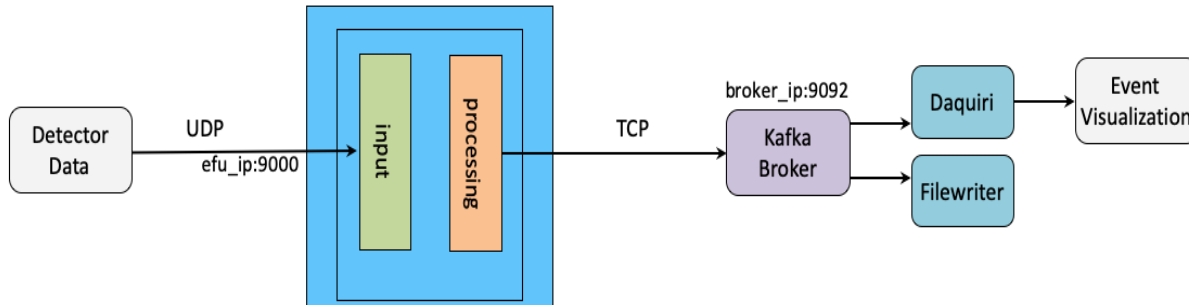
GENERAL UPDATES

- Detectors' testing has been performed at ORNL
 - results are not bad, but some minor rectifying of the design is needed.
 - Thanks to the ORNL team for their help!!!
- DAQ to be manufactured by ESS is not ready yet
- CB updates based adaptations / modifications need to be done – late summer 2024
- Test Measurements at BigKarl went well as a first test. More will follow....
- 3x3 Demonstrator

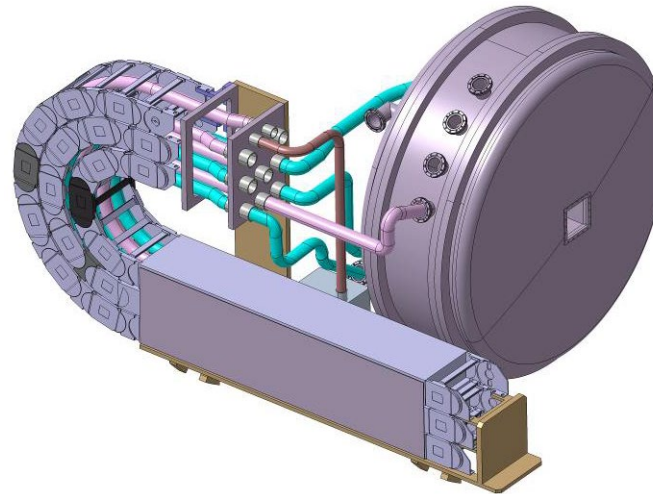
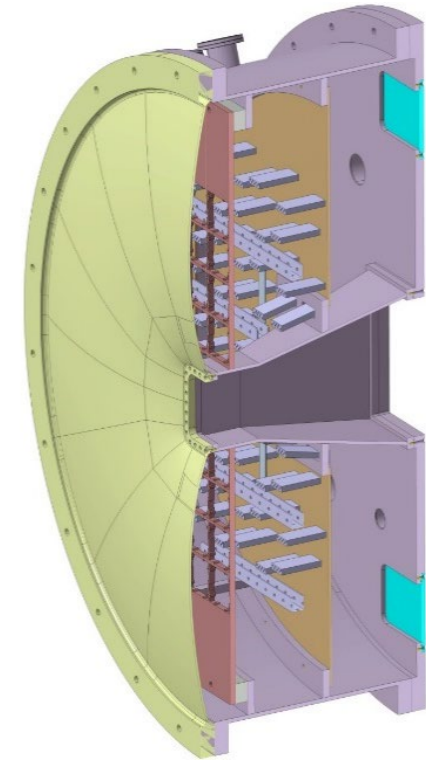
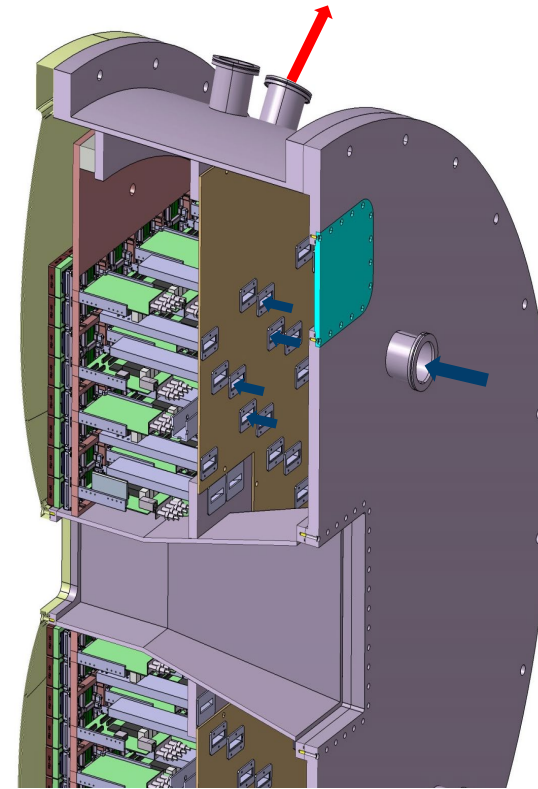
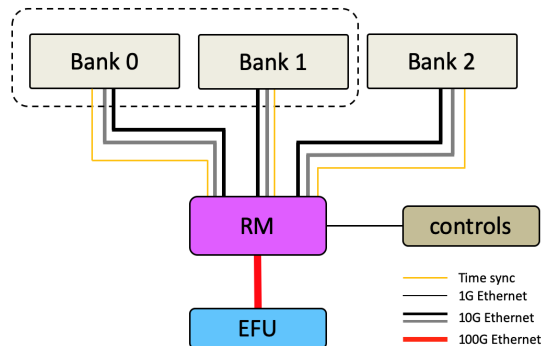


GENERAL UPDATES

- Cooling system (water/air heat exchanger for approx. 1.5 kW may be required)
- Optical fibers for data transfer and settings

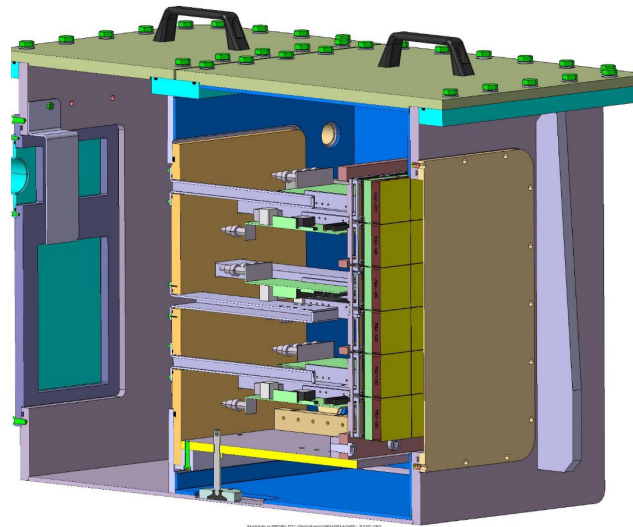
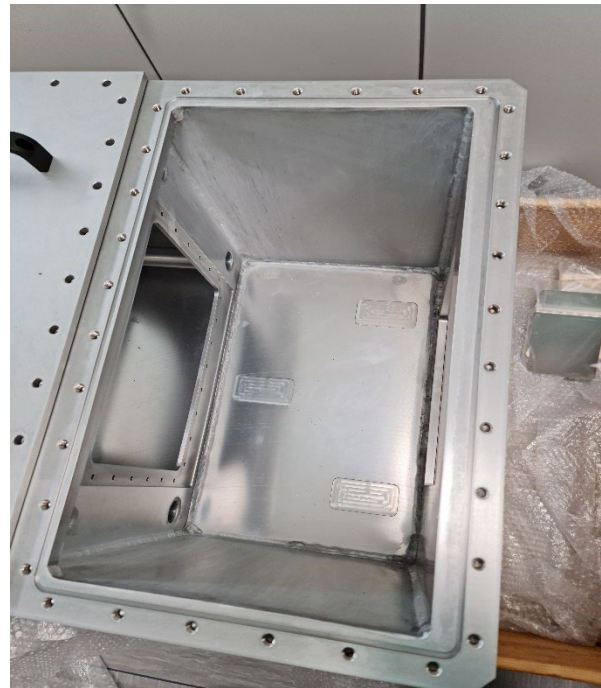
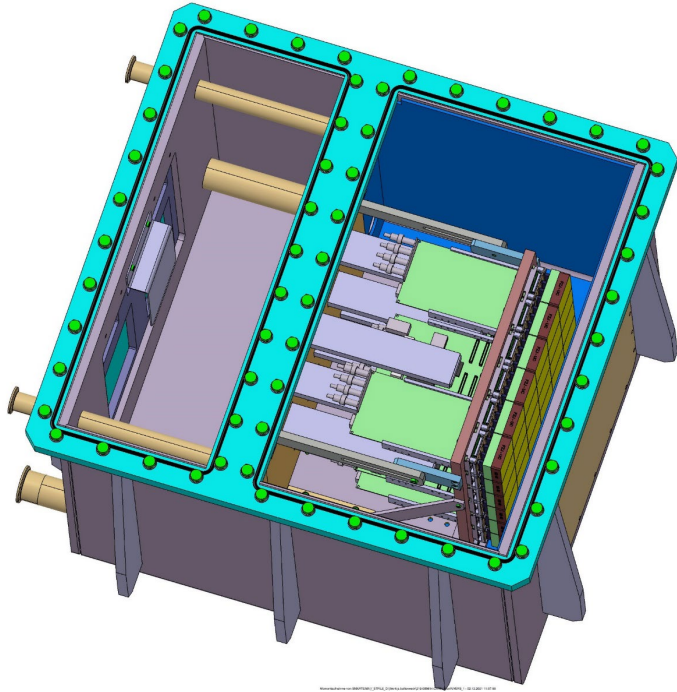


- Ongoing discussion with ESS



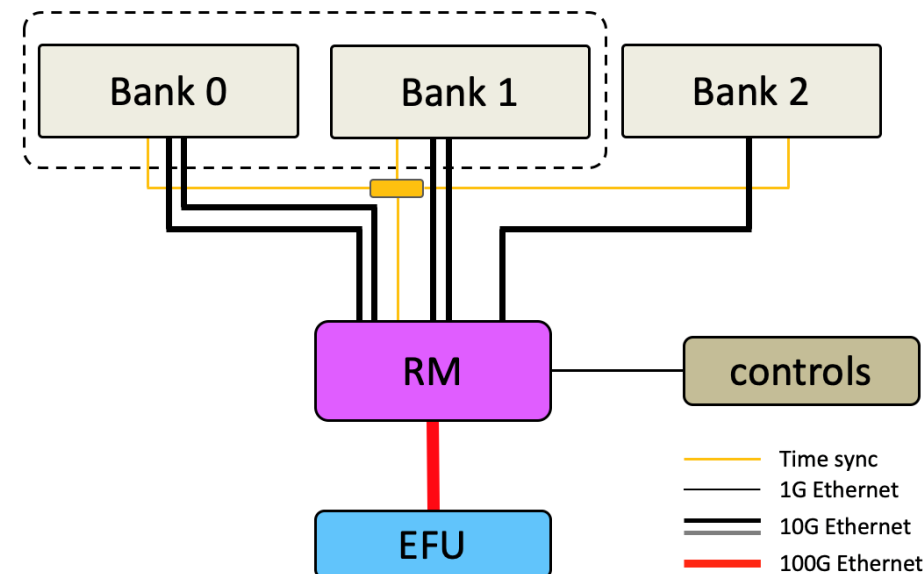
3X3 TESTSYSTEM

First tests in the lab



TIMELINE PLANNING

Task Name	Duration	Start	Finish
Documentation	60d	09.04.23	11.24.23
Contract with ideas	60d	09.04.23	11.24.23
Concentrator Board Upgrade	190d	09.04.23	05.24.24
Data Package	10d	09.04.23	09.15.23
Timestamping			
Synchronisation			
RMM OR a switch order	150d	09.04.23	03.29.24
First tests with new firmware	190d	09.04.23	05.24.24
General Needs			
Switch Decision			
ESS Integration	280d	09.04.23	09.27.24
Tests at ESS EC/DC	280d	09.04.23	09.27.24
ICS Intergration (?)			
Detector Test (2 large)	300d	09.04.23	10.25.24
Preliminary tests with the 3x3 demonstrator			
Heat Tests with differen Airflow			
Prepare Computer with needed ESS Software - External Access			
ESS mock up @JCNS	300d	09.04.23	10.25.24
Beam Detector			
Mechanical Design			
Build and Electronic Tests			
Neutron Tests @JCNS			
Installation @Instrument			
FAT			
Shipping to Lund			
Start Installation @SKADI			



SKADI main system components and their data and control interfaces.

We do have frequent meetings to develop the timeline

The time can shift depending on the signage of the contract with ideas.

SUMMARY

- Successful WS during summer
- Contract has to be made with ideas soon to proceed
- Firmware updates due to the Master Box interface need to be done asap
- New test's are foreseen next summer/autumn 2024 based on the new firmware supported by ESS groups
- Building all tiles after successful test's

