

Reflectometry and SANS STAP Oct24 (Daniel Clemens, Yuri Gerelli, Andreas Michels, Max Wolff and Robert Jacobs [chair])

We note we are not yet trusted enough to be allowed onto the site without a guide, and hope you trust our advice on science and technical matters to a greater extent.

From the combined session our concerns and suggestions are:

- 1) 24/7 working is essential, so 24hour support is required (including lab access for users arriving out of hours).
- 2) CUP, CEP, MCA man-power capacities are problematic and are causing major issues. This is a major risk for delaying instruments and the facility as a whole. This must be resolved soon both by improving communication with the scientists and with actually completing the work.
- 3) As there is not enough capacity in the canteen, or Guest House yet users will need to eat and stay off site this will not endear the ESS to the users and will be detrimental to aim of a positive user experience. If the first users can eat on site that would be very advantageous.
- 4) D2O recovery was mentioned, would a combined project between ESS, ILL, ISIS etc... be possible?
- 5) 160 days per annum is planned, will this be used as a metric of success? If this is not achieved in a full user program year will additional days be planned in the following year?
- 6) Safety shutters in some cases installed but not compliant, but apparently this is not a showstopper.
- 7) Sample environment seems to be in hand and is clearly on an upward trajectory towards the targets expected. Priorities and essential design guidelines must be led by the instrument scientists.
- 8) Clarity is needed on the process to integrate sample environments from users onto instruments?
- 9) Will there be the equivalent of LTP at the ILL?

Instrument Specific concerns and suggestions:

LoKI:

- The largest concern is keeping to the schedule as this is now looking challenging.
- Still awaiting energisation.
- Minor issues with Collimation vessel
- Detector Qgate has been taking a long time but is no longer viewed as a major issue.
- Qgate retrospectively being completed which is adversely affecting the progress. This could be mitigated by increasing manpower.
- 3 monitors from ISIS are still awaiting final assembly, this is a risk to TG5 but is under constant monitoring.
- Motion testing on rear carriage motion is also a risk, but energisation is required for testing.
- Additional detectors all to be delivered in March 2025.

SKADI

- Significant progress has been made.
- Risks: Detector data pipeline hiring, Manufacturer overload and material shortages
- Detector integration is essential to keep the planned schedule, so hiring the personnel for this now is essential. The Software and firmware are crucial for data from detector to ESS format, ECDC has not got the manpower to do this currently. [As 5FTEs for a year is the estimated need] a plan B is needed for the detector, including investigation of alternative detector technologies.
- Quotes for CUP/CEP and MCA are now pressing, and work must start very soon as these are on the critical path.
- Excessive documentation is slowing progress
- 7T asymmetric self-shielded magnet is needed for full polarization analysis so that would be essential and is currently too low on the priority list of the sample environment team.
- Lack of Instrument control software is a big risk for cold commissioning.
- Project on track for complete installation late 25/early 26 as long as the software and firmware for the detector is completed and the Utilities don't cause delays.

NMX

- Almost all components are installed, and so almost ready for Neutrons.
- Working on utility installations, delays are being incurred due to CUP, CEP and MCA. Energisation is now the biggest risk.

FREIA

- A lot of progress has been made with most parts under test and construction at STFC in Oxfordshire.
- Chopper issues are less concerning but have not yet been fully resolved and so should still be considered a significant risk.
- Beam monitors (and hence Collimation system) are now the critical path and so need to be prioritized.
- Commissioning of Hexapod has not yet started despite being at ESS for a considerable time.
- In the queue for the CUP/CEP and MCA services.
- Quality Gate may provide a bottle neck and so is a possible issue on the horizon.

ESTIA

- Amazing amount of progress
- New team (6 out of 9 in the last 14 months)
- Instrument Tranches are really unhelpful for ESTIA (until recently a Tranche one instrument, but has been demoted to Tranche two), for instance, PSS will not be involved yet with ESTIA, as it classified as a Tranche two instrument [albeit very early in that tranche2], this will cause delays and prohibit ESTIA from regaining Tranche one status.

RMJJ, DC, YG and MW November 2024