



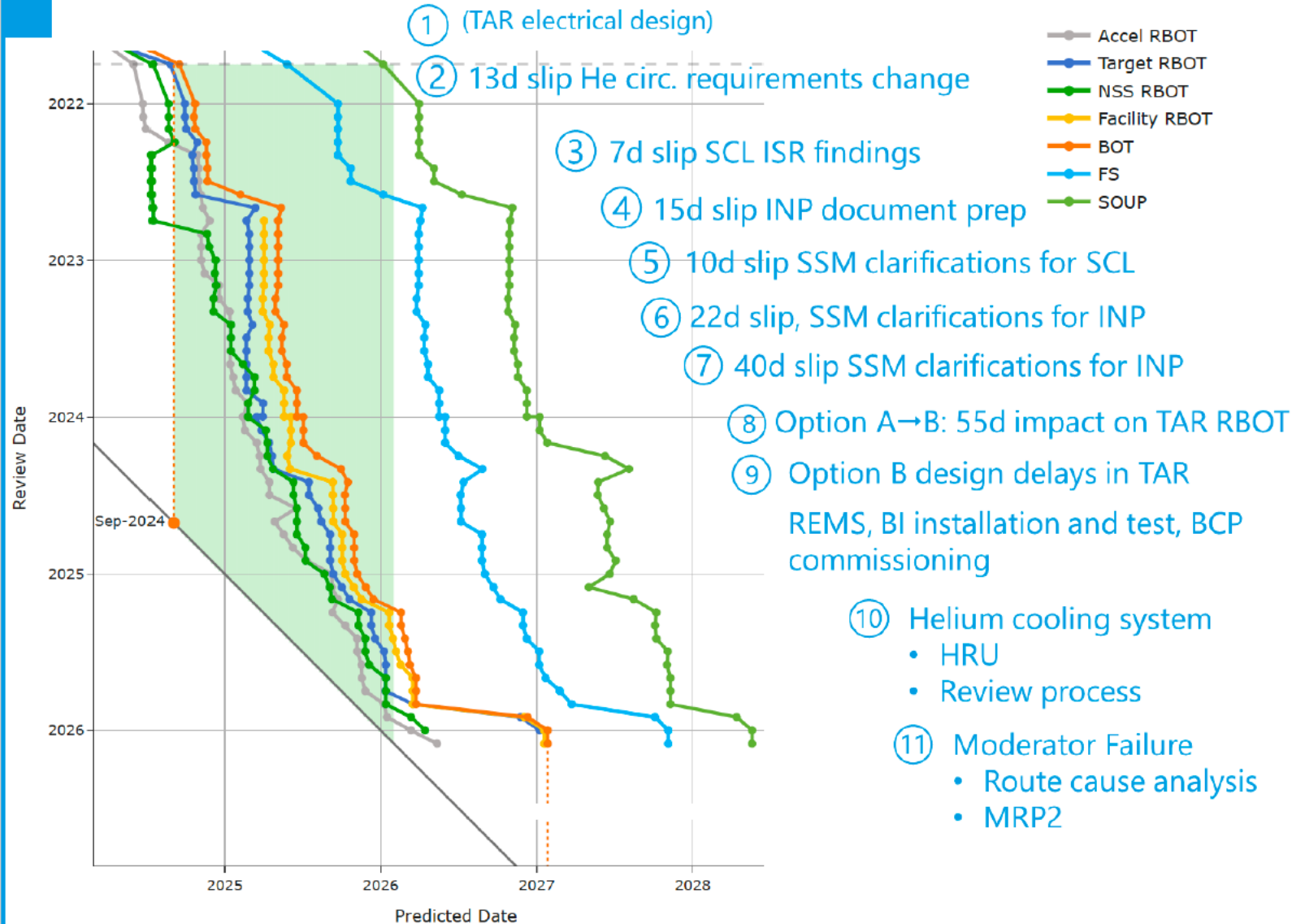
Diffraction STAP

1. Beam on Target / Commissioning update
2. Sample storage / Sample environment update
3. User office update
4. New proposals
5. See full talks: <https://indico.ess.eu/event/4007/>

Slides by Giovanna, Hanna & Fredrick



Project Update (February data)



Key dates

Beam on Dump: ✓

SAR5: 30th June 2026

SRR5: 8th September 2026

Facility RBOT: 19th January 2027
following MRP2 Assembly and testing

Beam on Target: 27th January 2027

Date held from last month, driven by delivery date of MRP2, 15th October 2026

Current ambition: "launching a credible user programme"



Start of user operation beginning of 2028 with 7 to 10 instruments
Very large number of activities going on in the science directorate!



No more tranches!

One of the challenges: simultaneous cold commissioning of instruments (ex. BEER & MAGiC)

Process selection validated by SAC



Step 1: STAP Reviews (April 2026)

- STAPs review proposals based on four criteria (Impact, Feasibility, Capacity and Capability, Uniqueness).

Step 2a: Neutron Instrument Review (July 2026)

- An Instrument Review Committee is established to review neutron scattering and transmission proposals only (fundamental and particle physics proposal are reviewed through a separate parallel process).
- The committee applies four equally weighted criteria to assess the proposals:
 1. Impact (scientific/industrial/societal)
 2. Technical feasibility
 3. Capacity and capability
 4. Uniqueness and alignment with ESS source characteristics

Committee membership (*tbc* 😊):

- 4 SAC representatives
- 4 experts from the community
- Chairperson

Process selection validated by SAC



Step 2b: Fundamental *Nuclear* and Particle Physics Review (July 2026)

- A review process has already started by the STAP which SAC considers appropriate.

Step 3: ESS Management Assessment (Sep 2026)

- Combines prioritised lists from Instrument Review Committee and fundamental and particle physics reviews.
- Adds factors such as readiness and maturity, timeliness, risks, human resource needs, financial implications, implementation schedule, and strategic alignment.
- Produces revised priority list (with 1st and 2nd positions clearly defined).

Step 4: SAC and STAP Ratification (Oct 2026)

- ESS shares final list with SAC (and STAPs) for ratification.

Step 5: ESS Council Submission (Dec 2026)

- ESS management submits ratified proposal to Council.

Initial STAPs' evaluations (April meetings)

Specific feedback on each proposal in the following areas:

- **Impact** – *Potential for scientific, industrial, and societal impact*
- **Feasibility** – *Is the instrument feasible in technological terms? How much new technology needs to be developed?*
- **Capacity and Capability** – *Does the instrument provide new capabilities and/or additional capacity to the ESS suite? How does it fit in the European instrumentation landscape? What is the potential user base?*
- **Uniqueness** – *will the instrument provide new or unique capabilities that are needed by the European science community? Does the instrument make good use of the long-pulse?*

And..

Relative importance of new instruments against completion of scope of the existing instruments based on the list of completion scope in the table overleaf.

Advice on whether any of the new proposals could be combined or whether they could be executed as upgrades to existing instruments

New instrument proposals for DID

HUGIN & MUNIN: Single crystal diffraction

(ESS, PSI, ESS Bilbao, ISIS, Edinburgh University)

BRAGI : Total scattering diffractometer

(PSI, ESS, TUM, ISIS, Duisburg-Essen University, Uppsala University)

MAGNI : Microscopy, Advanced and Grating Neutron Imaging

(PSI, DTU, ESS)

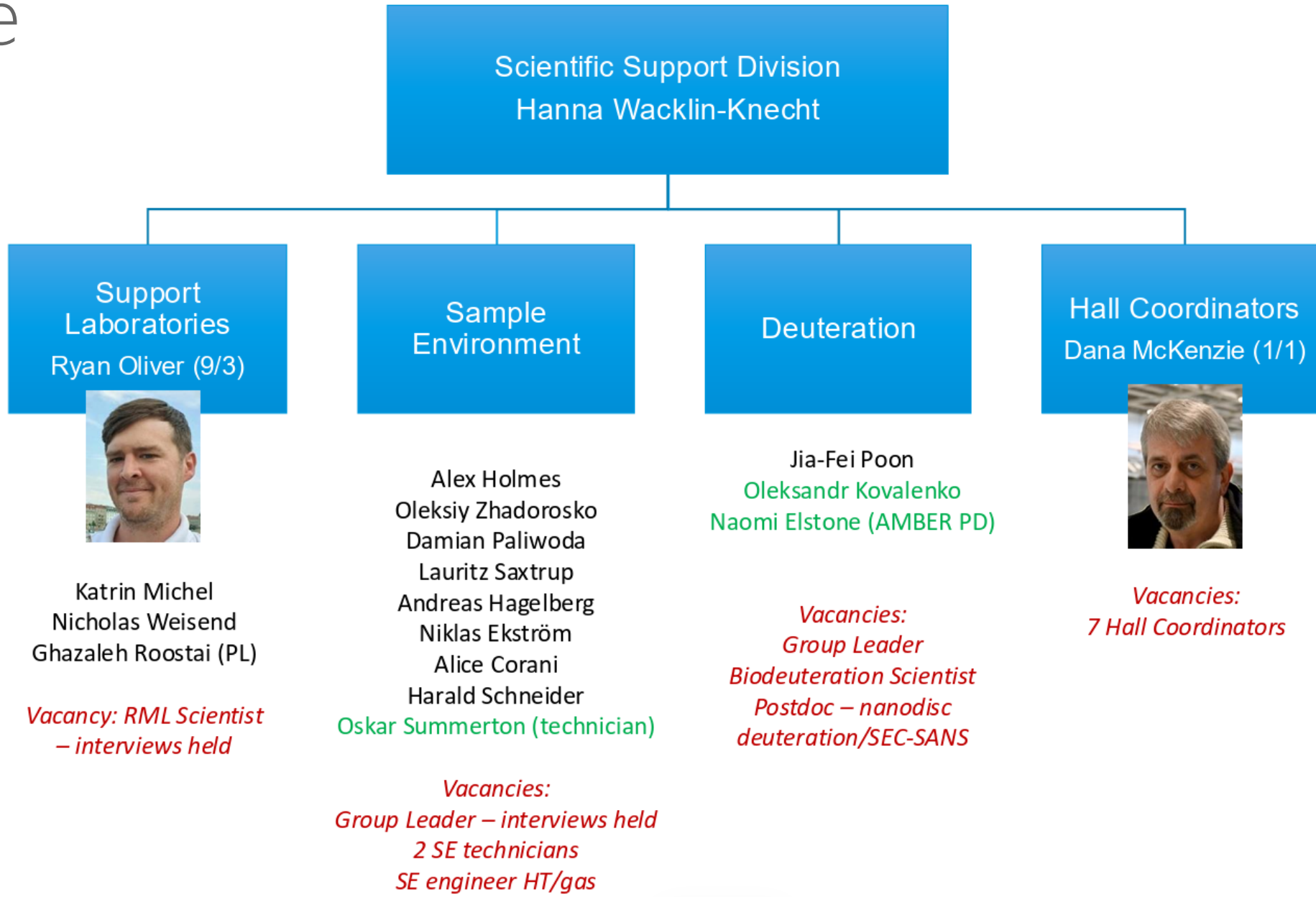
SLEIPNIR: A high-capacity instrument cluster for ESS

(DTU, ESS)

IDUN - Industrial & utilitarian neutron instruments

(DTI, ESS)

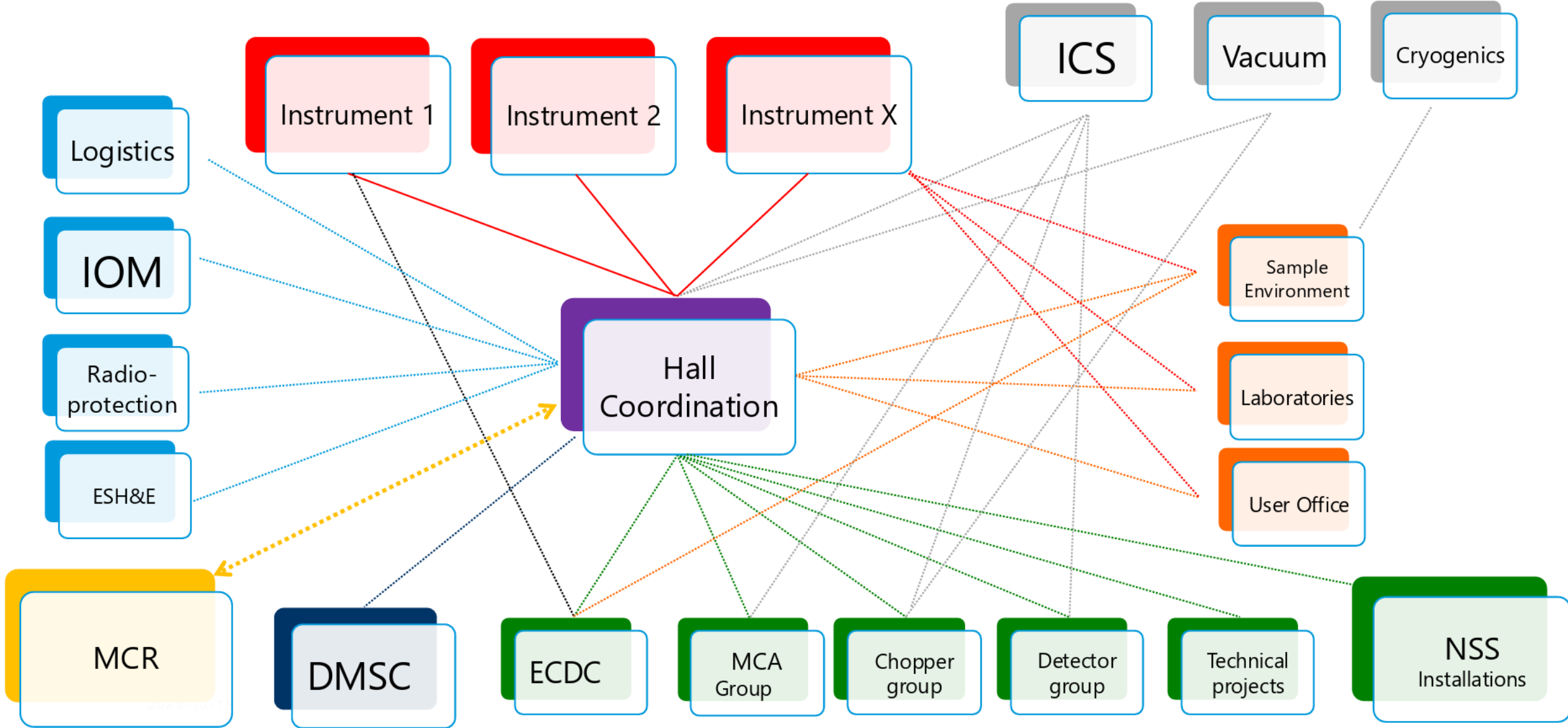
Sample storage / Sample environment update



Hall Coordination



Overview of stakeholders and interfaces



Storage of active samples

Proposal for RP



Update – preliminary process and RP guidelines

ESS staff (IOE/IS or RP depending on activity level) is responsible for user samples at ESS

Before removing a sample from sample position, its activity must be checked every time:

- Experiment Risk Assessment ERA will contain who should do this (user, LC, HC, RP)
- Depending on the result, the sample can be stored at:

1. Instruments

- Each instrument will have active sample storage cupboard(s) appropriate for their samples.
- RP provides advice and instructions on storage solutions and shielding of stored samples to $<3 \mu\text{Sv/h}$
- RP checks samples prior to removal from storage and gives instructions for transport if required.

2. RML

- For handling samples with contamination hazard or exceeding $25\mu\text{Sv/h}$
- 4 fumehoods + 2 gloveboxes (wet/dry)
- 90 min. fire cabinets
- Access only during normal hours/weekdays
- Trained users supervised by RML scientist

2. Sample storage room

- Storage of active samples that can be shielded to $<3 \mu\text{Sv/h}$
- Storage for active samples requiring fridge/freezer/inert atmosphere
- Waste hood for emptying sample containers
- Managed/supervised by RML scientist
- Access for trained ESS staff

Sample Management and Tracking



Update

- All samples will be barcoded with labels produced by the User Office software from user proposal
- Samples shipped to ESS will be registered and delivered by Logistics to recipient (user laboratory or IOE) for barcoding/storage.
- Samples brought to ESS by user will be taken by the user/IOE to the support laboratories (day time), or Hall Coordination office (out-of-hours) for barcoding.
- Samples will be registered in/out of storage and supervised/controlled areas after appropriate RP checks
- IOE is responsible for arranging RP checks as well as sample return shipping

User office update

- Capture and validate safety-critical experiment information
- Users provide detailed:
 - samples
 - sample environments
 - experiment design
- Reviewed for safety before experiment
- Developed by SIMS group, with process requirements from:
 - Instrument Scientists
 - Safety
- Aligned with UOS collaboration (ERA adoption)

Office ref: 14700

Experiment Risk Assessment

MUSR 15 December 2023 2023/04 RB 2310286 (1)


μ SR study on Anisotropic Multigap Superconductor TaSe5

Approved - ISIS Sample Safety Team

Local Contact Rhea Stewart rhea.stewart@stfc.ac.uk +447821344091
Experimenter Ravi P Singh
Principal Investigator Ravi P Singh

SAMPLE NAME: TaSe5
TaSe5 Mass: 2 g
Single crystal

Hazards *Handling Before Beamline Experiment*

 Toxic

- . Wear safety specs
- . Wear gloves
- . Wash hands after handling samples
- . Use a fumehood

Disposal/Removal:
Returned to user by ISIS - Hazardous: via ISIS Logistics - see Local Contact

Transport Information:
UN: 3283 Class: 6.1 Toxic substance Subsidiary Hazard:
PG II - Substances presenting medium danger
Proper Shipping Name: SELENIUM COMPOUND, SOLID N.O.S.

Induced Activity	Activity	Decay	Handling After Beamline Experiment
MUSR	None	-	With gloves

Sample Containment

Type	Material	Seal	Adhesive	Additional Info
Silver Foil	None	None	GE Varnish	Sample will be affixed to a silver sample

Re-scoping



- **DREAM:** Framework agreement updated. Procurement of raw materials started
- **HEIMDAL:** Updated quote received for full scope of diffraction detectors
ESS Contingency money and VR funds are being pursued
Highest priority for Diffraction & Imaging
- **MAGiC :** Draft of change request for spectroscopy chopper + full detector coverage
Detector quote is pending
- **Schedule:** one company, three ESS projects, core scope, rescope, troubleshooting



Summary

- Recruitments for ODIN, MAGiC, HEIMDAL completed, for TBL in the final stage (safety clearance)
- Overall good progress with the instrument projects, but some issues remain
- First three instruments (TBL, ODIN, DREAM) went through TG5/iSRR meeting
- No major roadblocks: those instruments will be ready for hot commissioning
- Readiness for hot commissioning is not the same as readiness for user operations
- There are technical and operational tasks remaining for the instrument teams, even after TG5/SAR
- Post TG5 instruments challenge: engineering resources from partners reassigned, NSS moved resources to the next instruments, but some of the tasks require engineering support
- Robustness of the data visualization & reduction tools have to be improved
- More stability and endurance tests unveil new issues even after passing TG5