



# Instrument Data Scientist for Imaging and Engineering Diffraction

ODIN and BEER

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# ODIN

## Towards first science



### DMSC deliverables

#### CC:

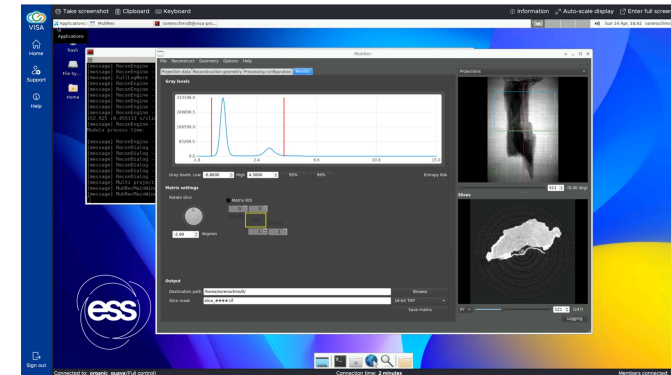
- NICOS, archiving in Nexus files (ECDC), SciCat (SIMS)
- For TPX3cam second route through LoskoVision event formation is needed (ECDC)

#### HC:

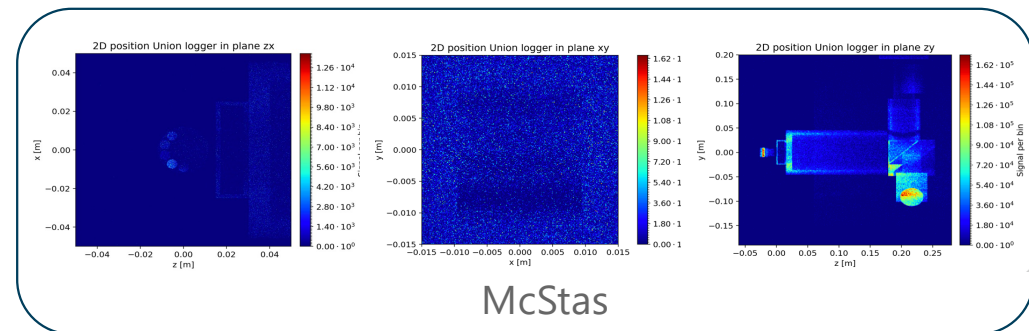
- Data reduction pipelines for att. tomography and Bragg edge analysis, Visualization, archiving derived data in SciCat
- HC package

#### First science:

- Ability to carry out full tomography and bragg edge analysis – specific science cases & collaborators TBD



Muhrec on VISA platform



# Progress for ODIN



## Successes / achievements

- Constructive discussions with ODIN and ECDC through weekly meetings
- Muhrec is running on VISA
- pymuhrec tested on Ubuntu

## Failures / setbacks

- Potential setback since the IS of ODIN, Manuel Morgano, is leaving ESS

- New SSD Christian Vedel in DRAM data analysis team - development of imaging analysis programs
- X-ray source for ODIN is ready to be delivered – integration before HC?

## Opportunities / accelerating measures

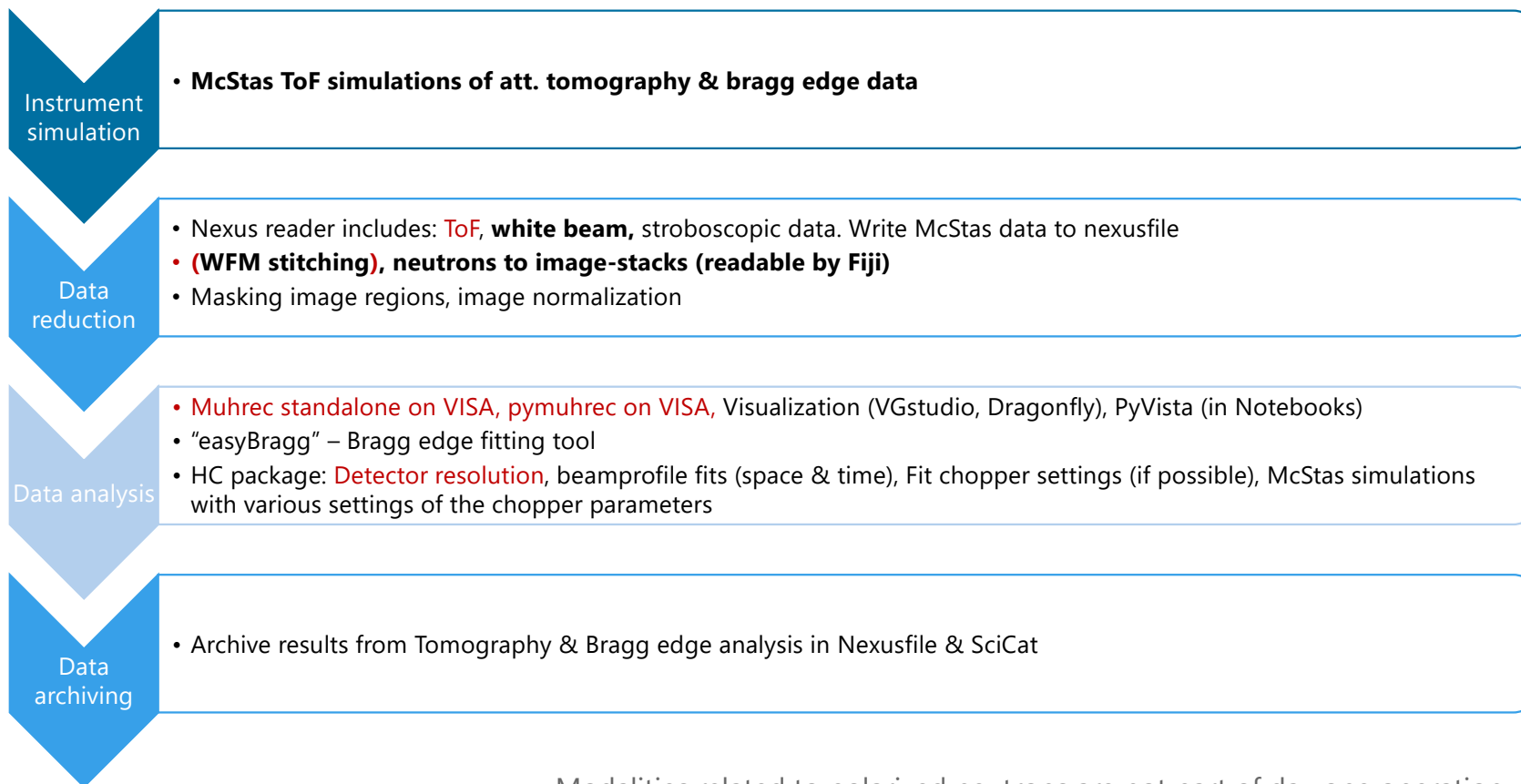
- Finding replacement for IS

## Threats / risks

# Data pipeline status



## ODIN



**Done**  
**In progress**  
**ToDo**

Modalities related to polarized neutrons are not part of day one operation

# Plans & schedule for ODIN

## From now to Hot Commissioning

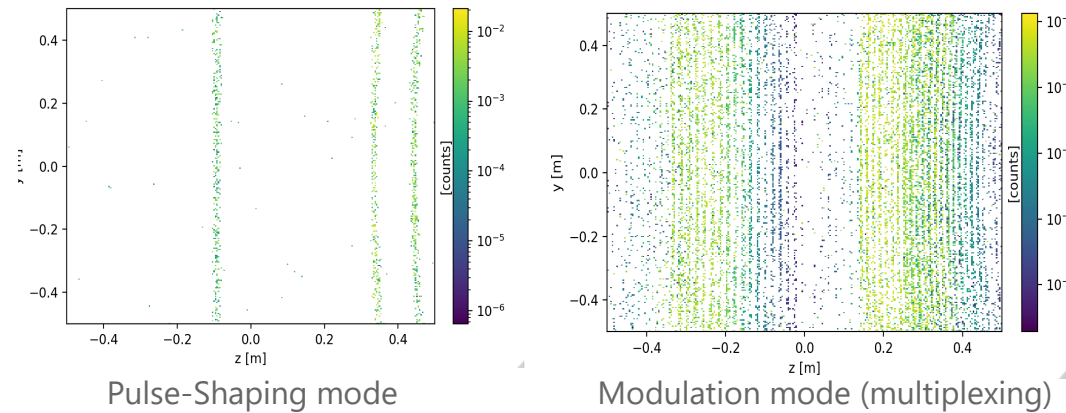


- M1: Nexus format & meta-data definitions in SciCat completed (ECDC+SIMS) – June 1<sup>st</sup> 2024
- M2: Data formats for derived data (Tomography and Bragg edge) defined – July 1<sup>st</sup> 2024
- M3: Acquisition of YMIR tomography data through NICOS. Reduction, reconstruction and visualization on the VISA platform, archiving in SciCat - October 1st 2024
- M4: Notebook for Bragg edge fitting, tested on McStas ODIN data and real (non WFM) Bragg edge data, archiving in SciCat – Dec 1st 2024
- M5: Hot Commissioning package – Feb 1st 2025.

# Status for BEER



## McStas simulations



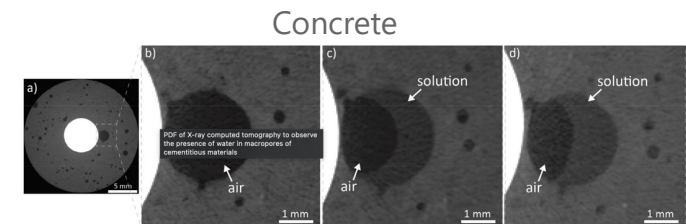
- McStas simulations with detectors in  $\pm 90$  degree positions
- Main objective for BEER is a functioning data reduction method for modulation mode
  - Work is ongoing
- Next, meeting with the BEER Team on DMSC deliverables
- Completion date for DMSC deliverables is currently end of 2025
- TG5 for BEER is Oct 2026

# Concluding remarks

## Necessities and Opportunities



- New IS for ODIN is needed
- Very important that Christian Vedel joined DRAM analysis team
- A second route for event formation from Tpx3cam using LoskoVision data reduction software is important as reference to EFU by ESS
- X-ray source for ODIN is ready to be delivered
  - Opportunity to get started on cone beam X-ray measurements
  - Muhrec can reconstruct cone beam x-ray data (ICON @ PSI)
  - Test ODIN setup before neutrons
  - Extra scope for ODIN - extra resources for integration are needed



<https://doi.org/10.21809/rilemtechlett.2023.190>