



# DREAM

# Data visualization and reduction

DMSC-IDS contribution

Céline Durniak

IDS for DREAM and BEER



# Overview

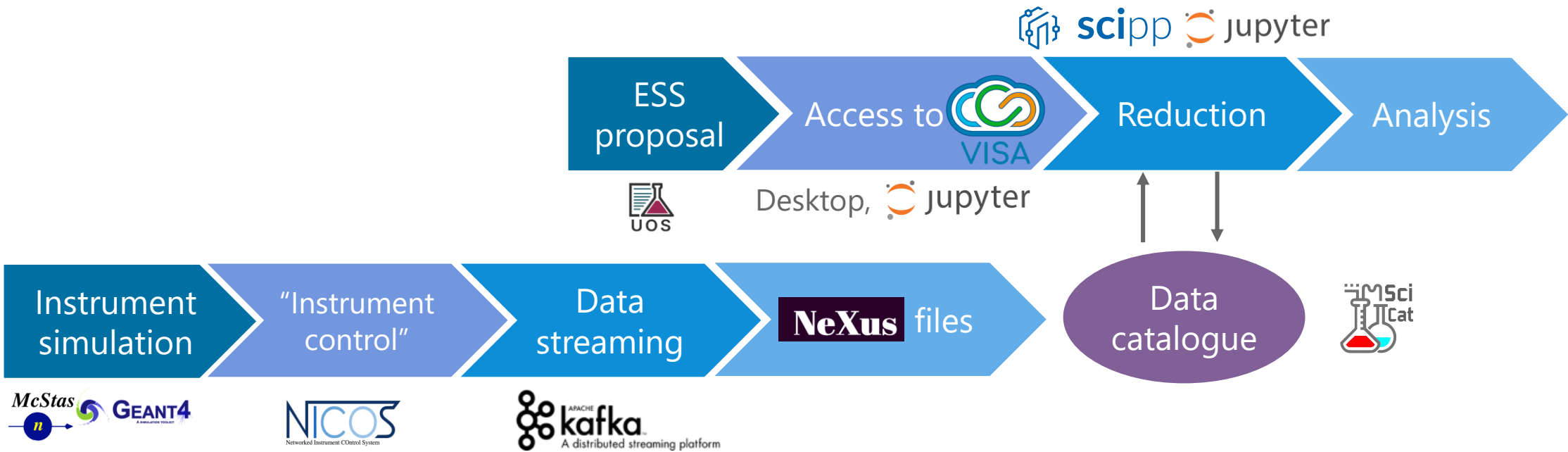
## General data processing pipeline





# Overview

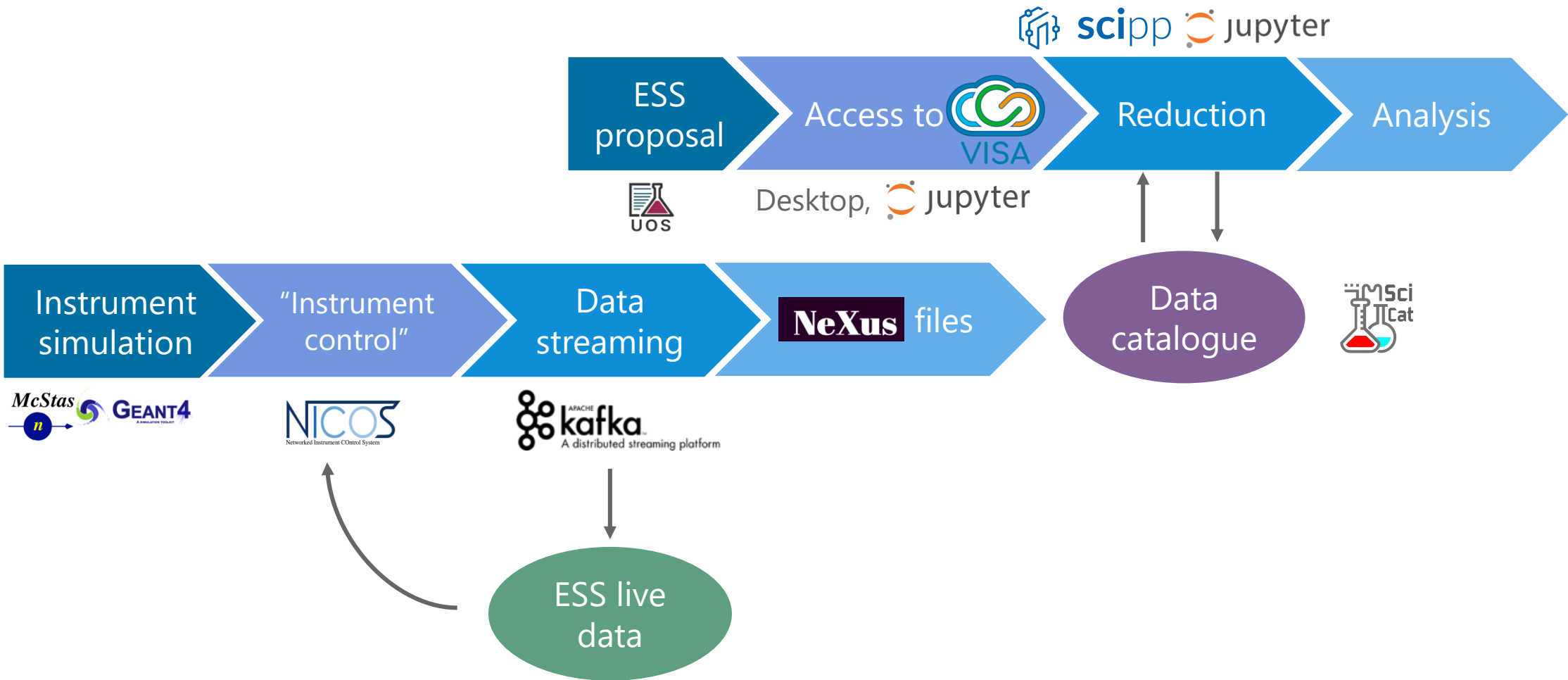
## General data processing pipeline





# Overview

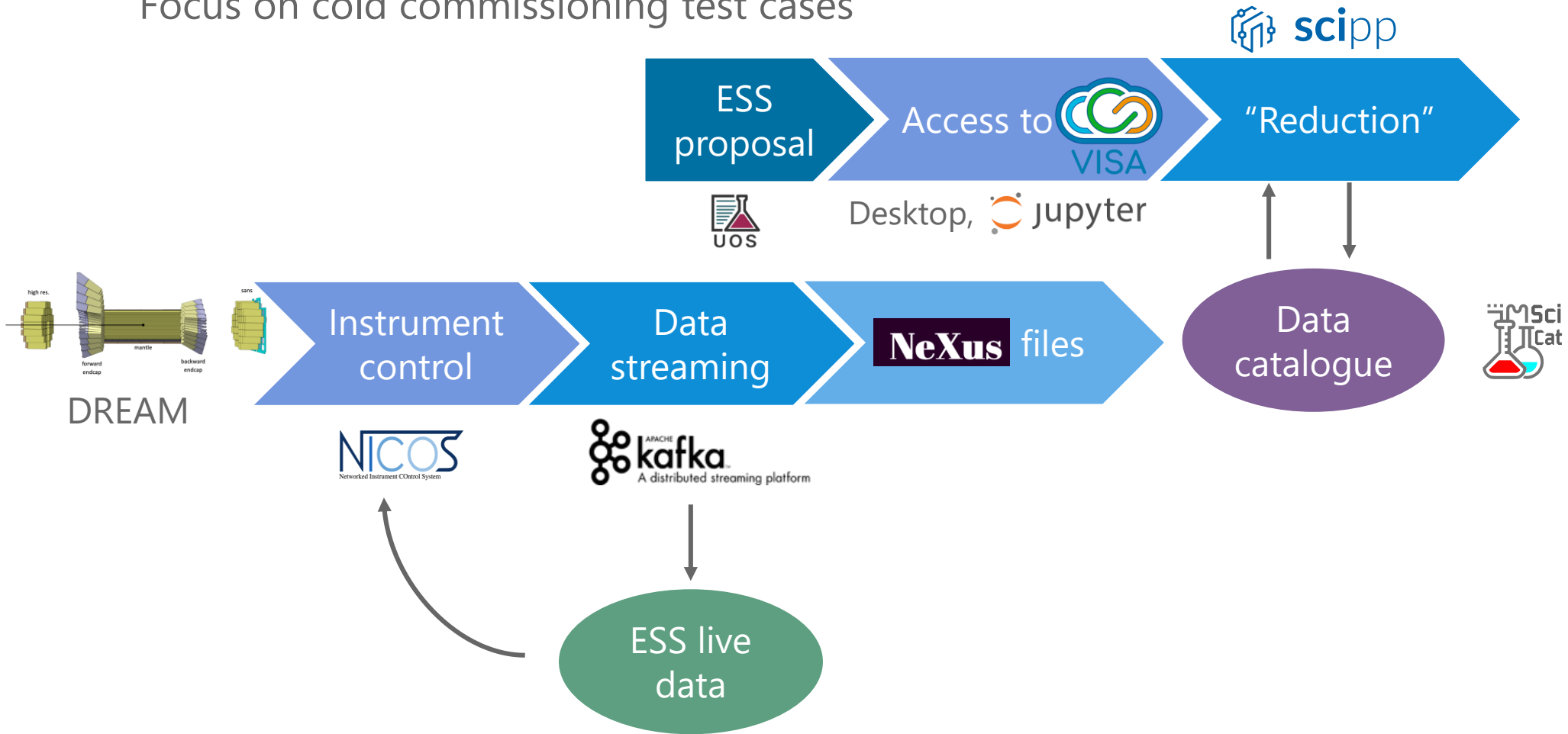
## General data processing pipeline



# Overview

## General data processing pipeline

Focus on cold commissioning test cases





# Cold commissioning

## Testing and reporting involvement

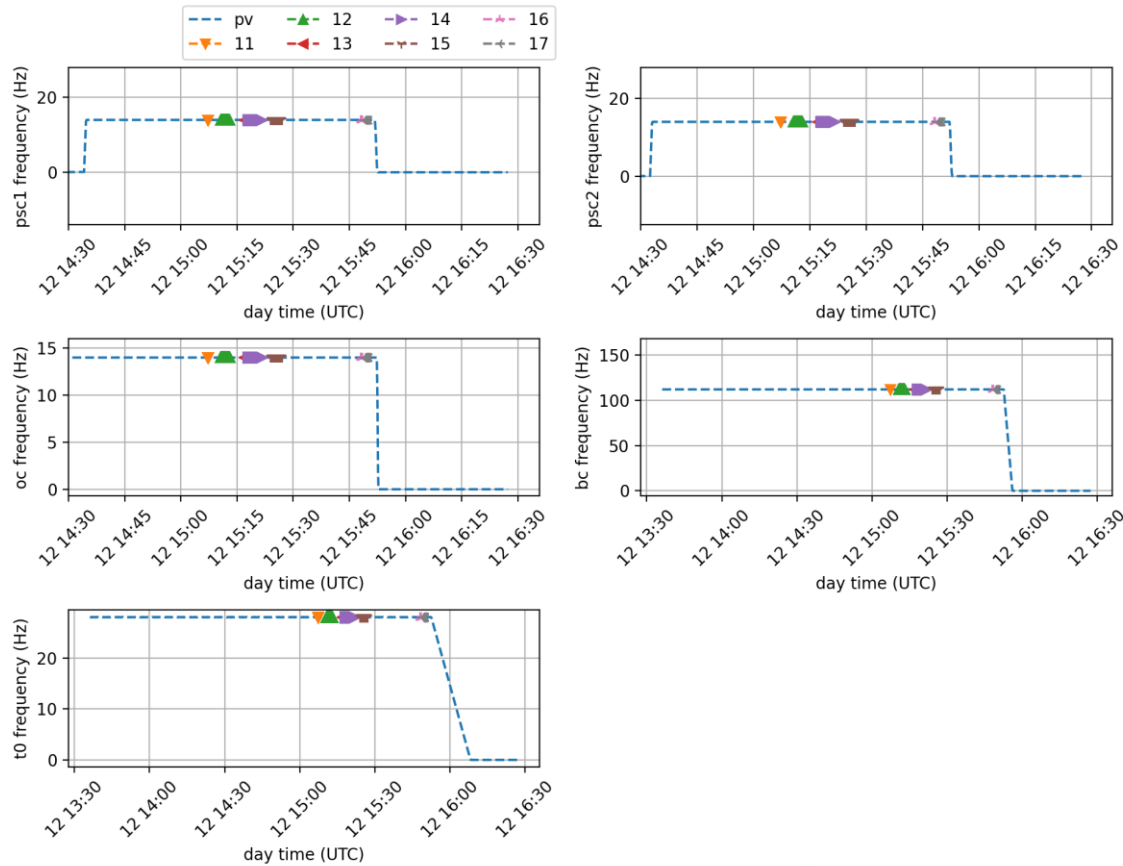
- Physically present at integrated tests of detectors, monitors, choppers
- Remotely participate to integrated tests of slits
  
- Responsible for data-orientated test cases and review for:
  - Chopper system ESS-5975057
  - Detector & Beam monitor system ESS-6017703
  - Monitors ESS-6018288
  - Slits ESS-6013997

# Choppers - integrated tests

ESS-5975057

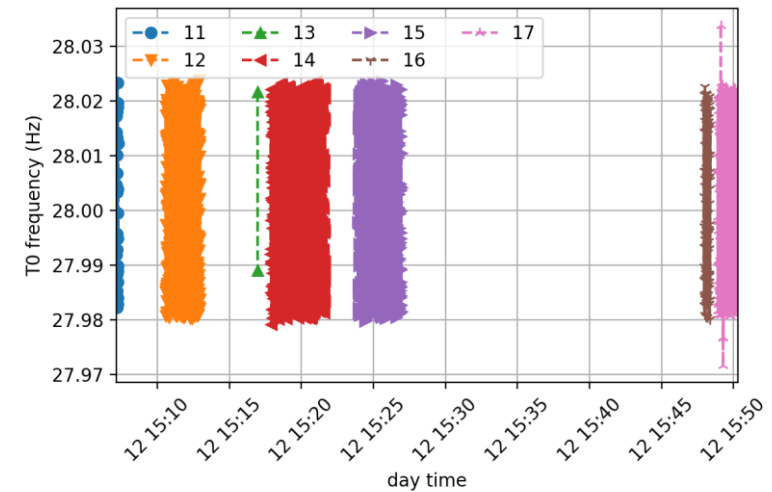


Rotation speeds from NeXus and archiver



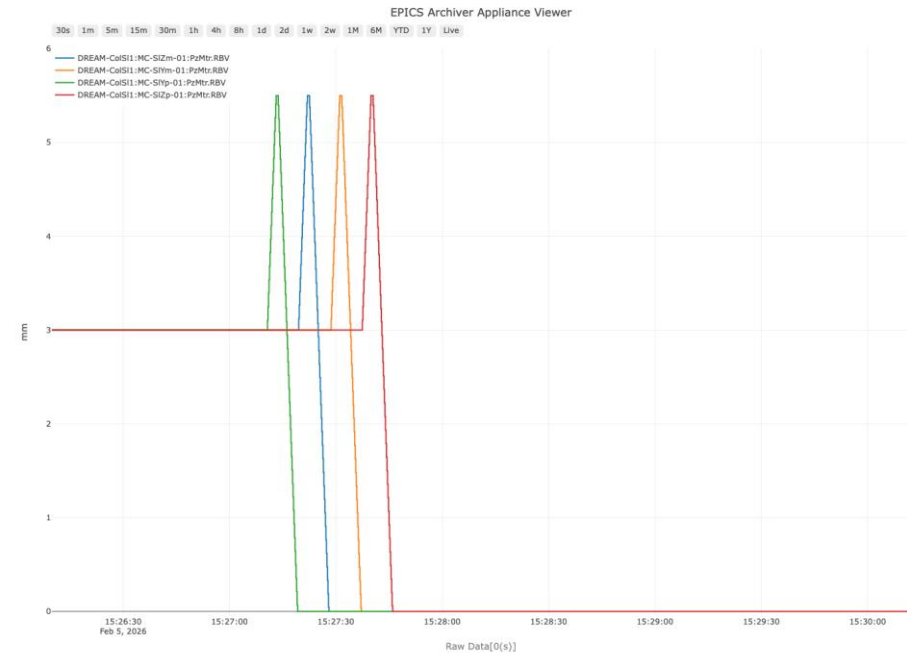
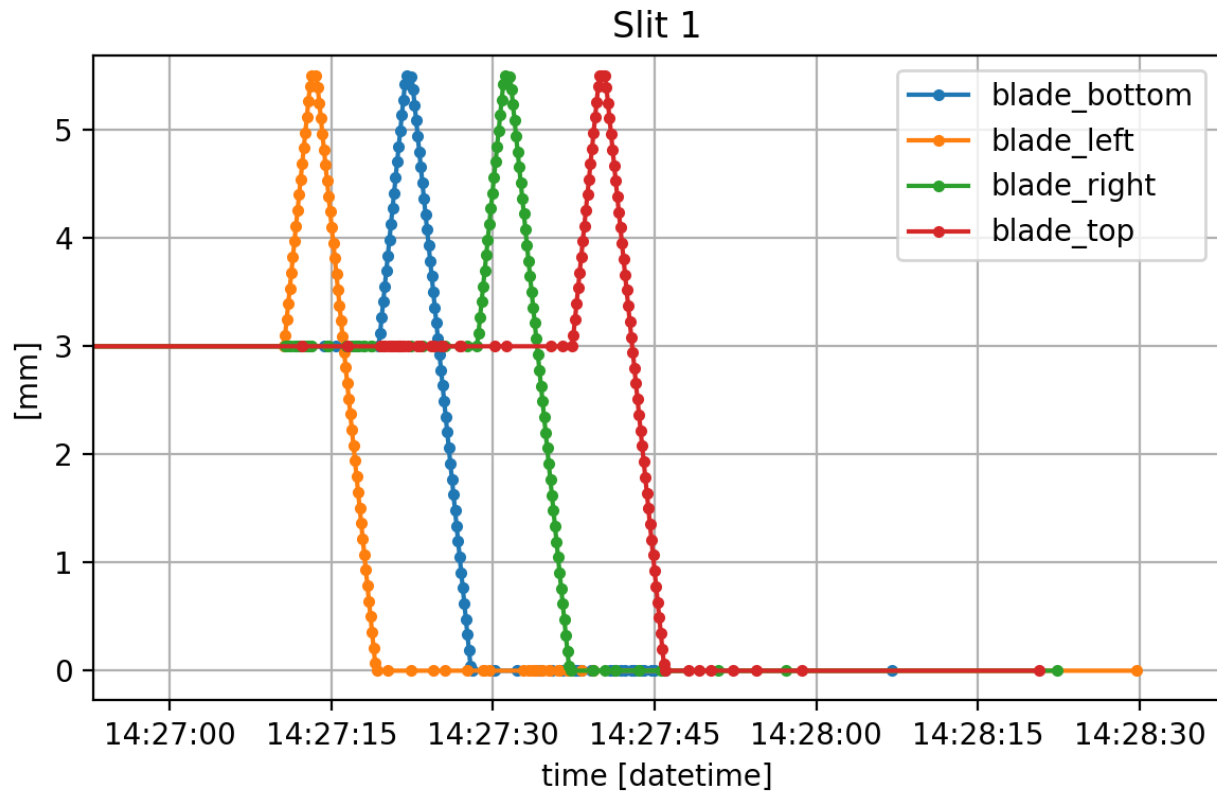
Comparison of rotation frequencies recorded in NeXus files with PV

**Issue:** convention for rotation speed in NeXus file % NeXus standards [ECDC-5388](#)



# Slits – integrated tests

ESS-6013997

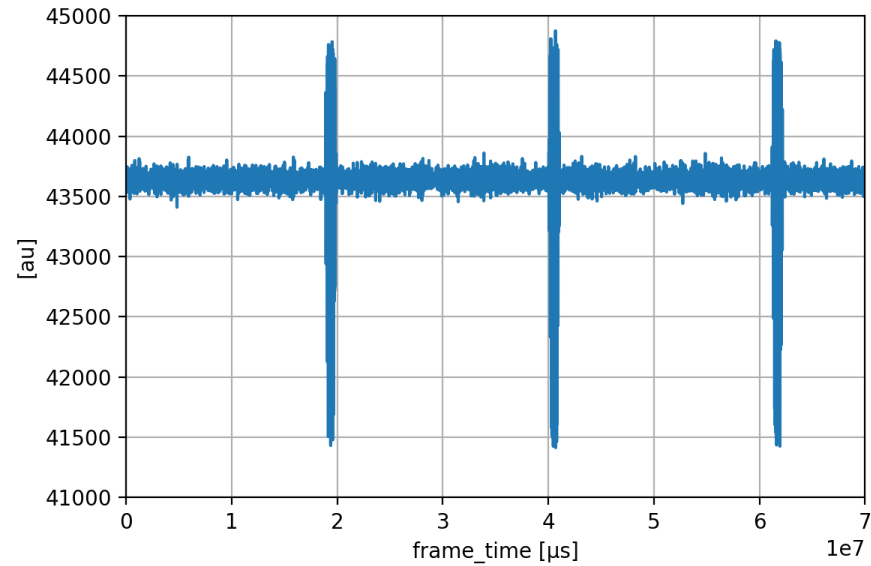
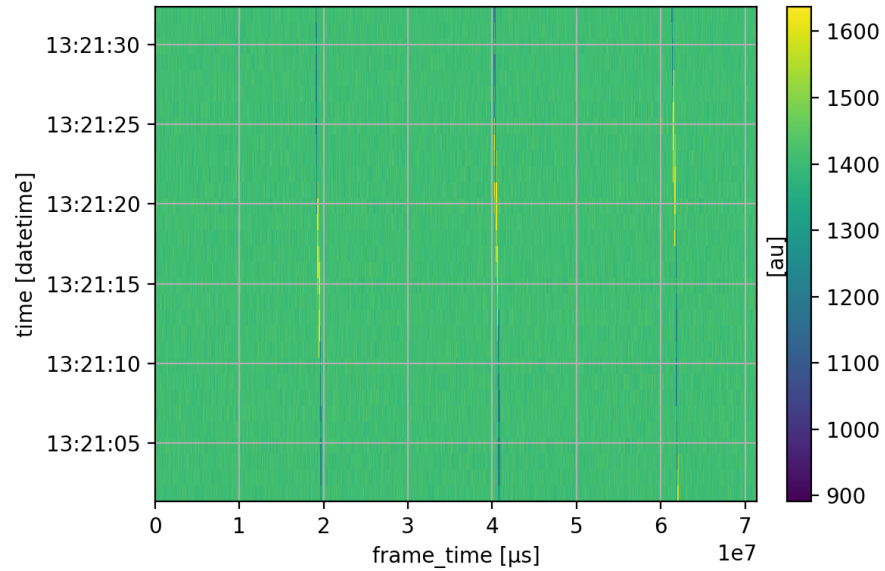


Comparison of data stored in NeXus file and PVs



# Monitors – integrated tests

ESS-6018288



Monitor data stored in NeXus files, displayed with Scipp

# Detectors – integrated tests

ESS-6017703

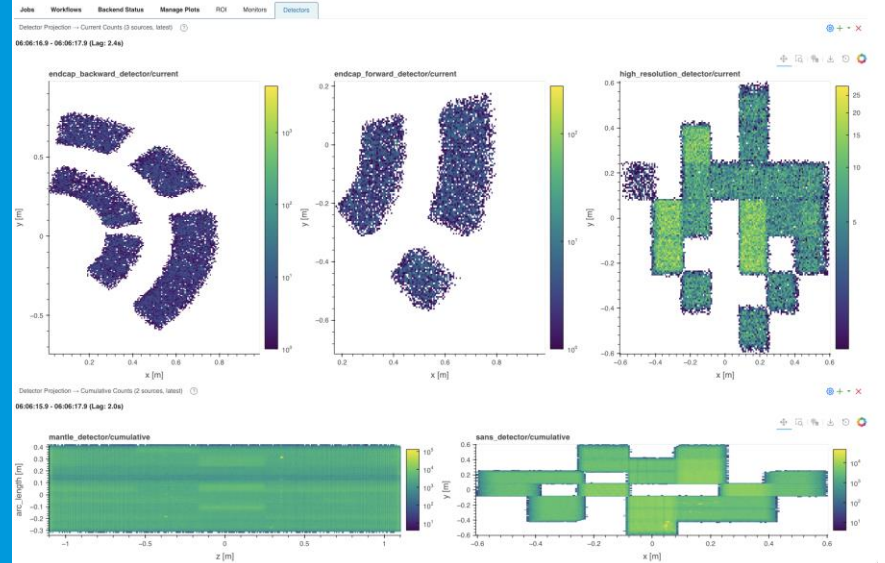
NIT-673: DREAM Live data display of HR and SANS detectors using **logical coordinates**

NIT-674: DREAM Live data display of detectors using **logical coordinates**

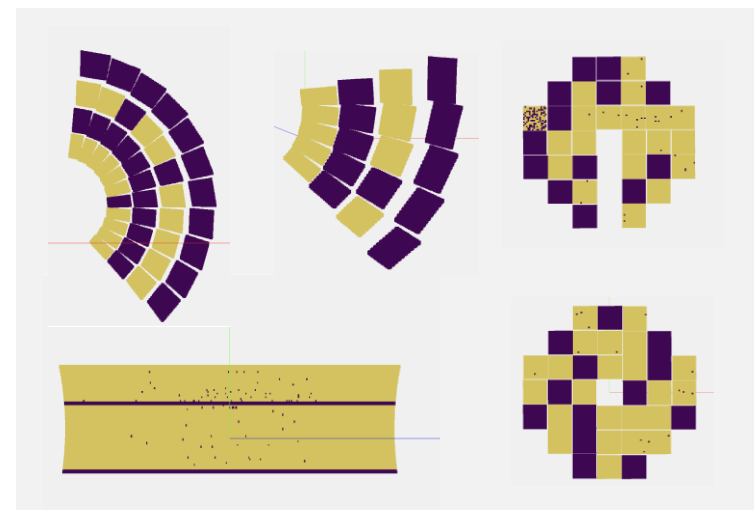
NIT-629: DREAM: detector data format is not according to the Interface Controlled Document (ICD)

NIT-679: DREAM Live data: Accumulated Detector counts rate

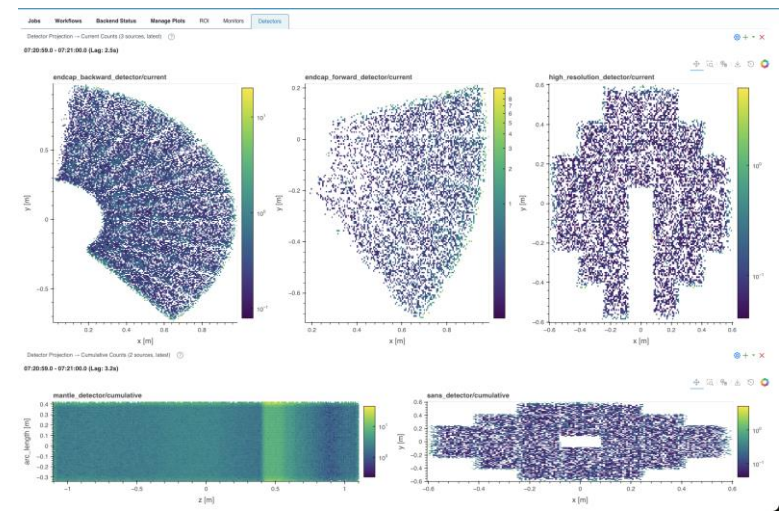
*ESS live data during integrated tests (spatial coordinates)*



*View in Scipp from recorded NeXus file*



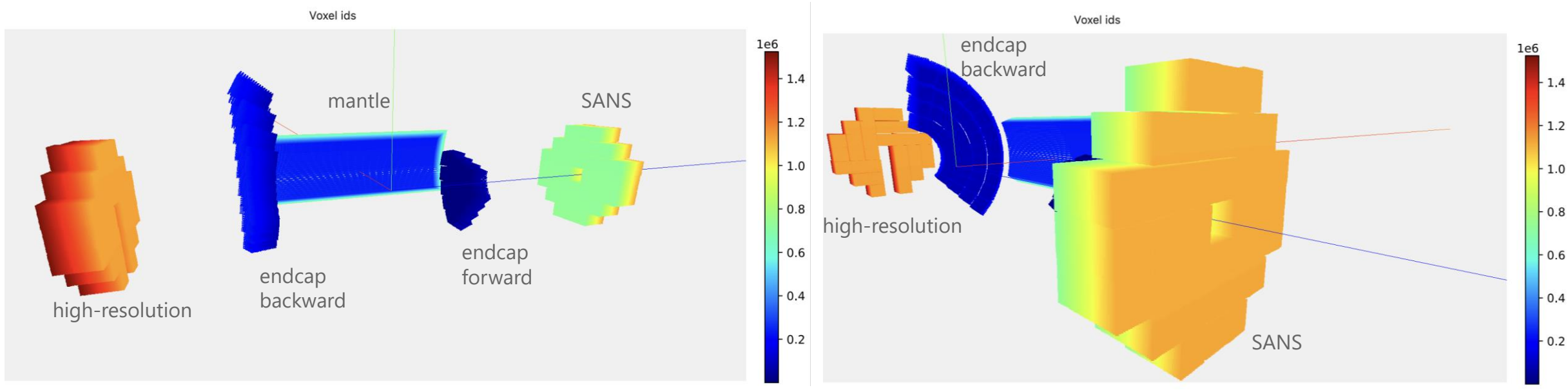
*ESS live data with simulated data*



# Detectors – integrated tests



ESS-6017703



Scipp instrument view highlighting detectors' voxel IDs

- ✓ In agreement with ICD
- ⊖ Different from installed detectors
- NIT-629: *DREAM: detector data format is not according to the ICD ECDC*



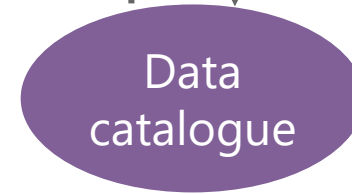
# Tools for hot commissioning...

in DMSC data processing pipeline

From ESS NeXus files: plots, data reduction, diagnostic tools (choppers, detectors) Code Shelf (catalogue of notebooks)



Analysis software available on VISA



Benchmark voxel IDs testing the pipeline



Monitor experiment in progress  
Plots of detector, monitor banks  
Data reduction



# Summary

## DREAM

- Data from slits, detectors, choppers and beam monitors were successfully tested and could be controlled from NICOS and relevant data and metadata recorded in NeXus files
  - Content of NeXus files checked with Scipp
  - Downloading data from SciCat worked
  - Detector banks displayed in physical coordinates with ESS live data
- DMSC systems post-ECDC in a good position and ready for HC
- Identified 3 NITs related to ESS live data



Thanks for your attention