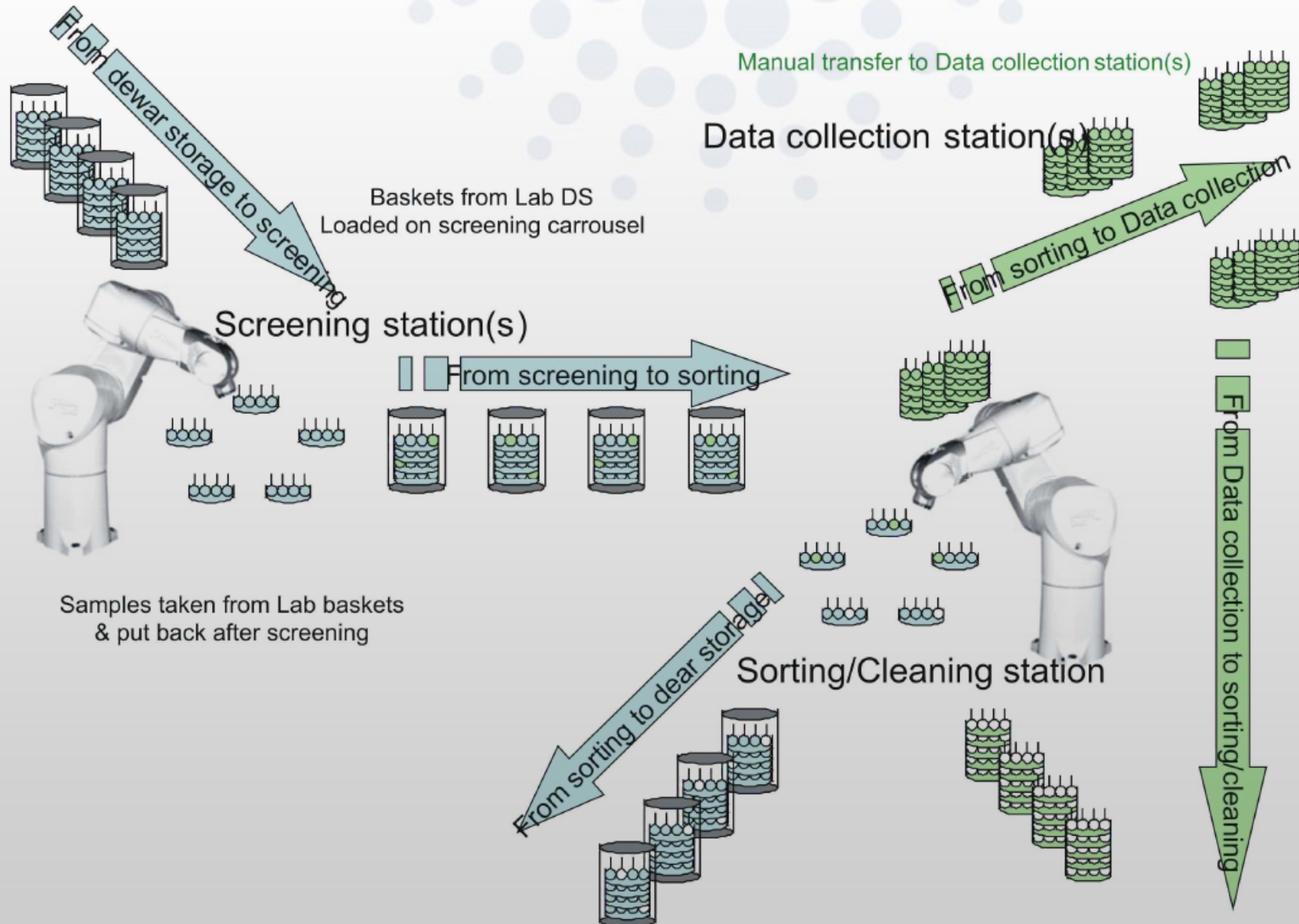


A decorative graphic consisting of numerous light blue circles of varying sizes, arranged in a pattern that resembles a light beam or a cluster of particles, positioned above the main title.

# EDNA at the ESRF

**Olof Svensson**  
**EDNA Project Manager**  
**Data Analysis Unit**  
**Instrument Support and Development Division**  
**ESRF**

# Challenge for the ESRF Upgrade : Massively Automated Sample Selection Integrated Facility



# Challenge for the ESRF Upgrade : Nano-imaging / Nano-analysis

## Experimental setup @ ID22:

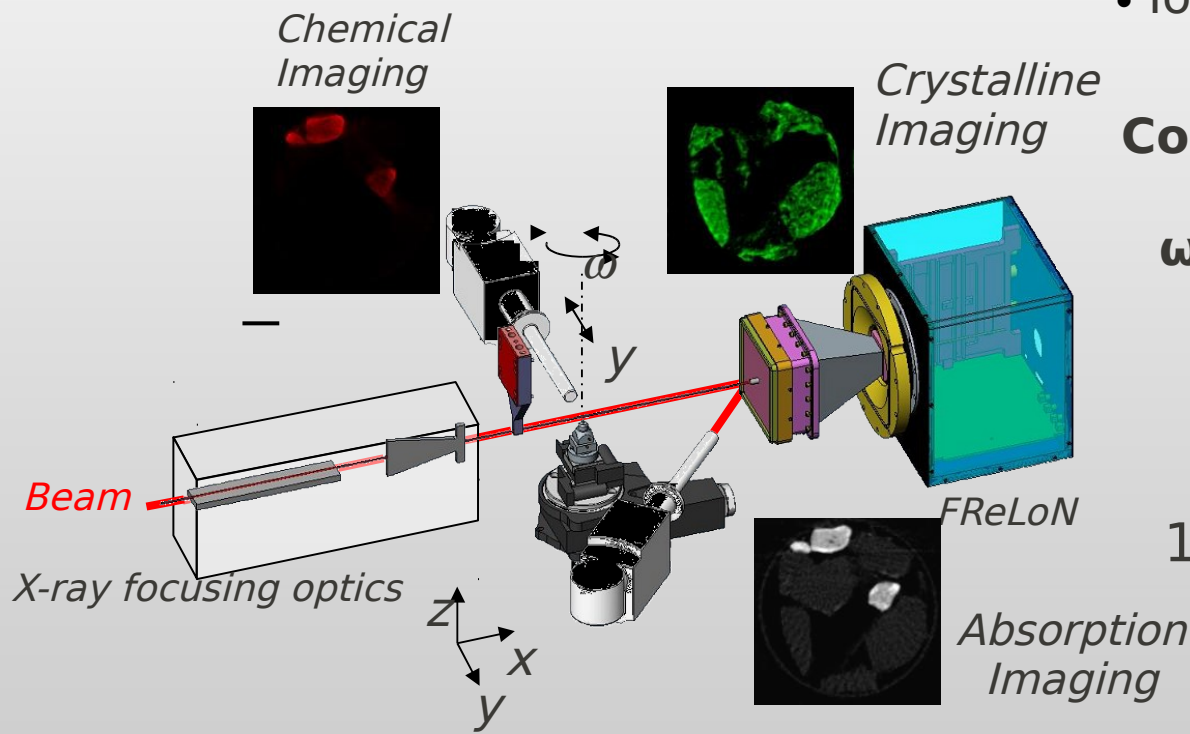
- KB optics with  $\mu$ -/nano-focused beam
- FReLoN 2k taper: diffraction data
- Fluorescence (single element) detector
- IonChamber ( $I_0$  and attenuated  $I$ )

See e.g. Bleuet et al., Nature Mater. 2008

**Commonly  $N \approx 160$  scanning steps/y-line,**  
 **$\omega \approx 60$  angular steps/tomographic scan**

10-15h beamtime required/tomo scan

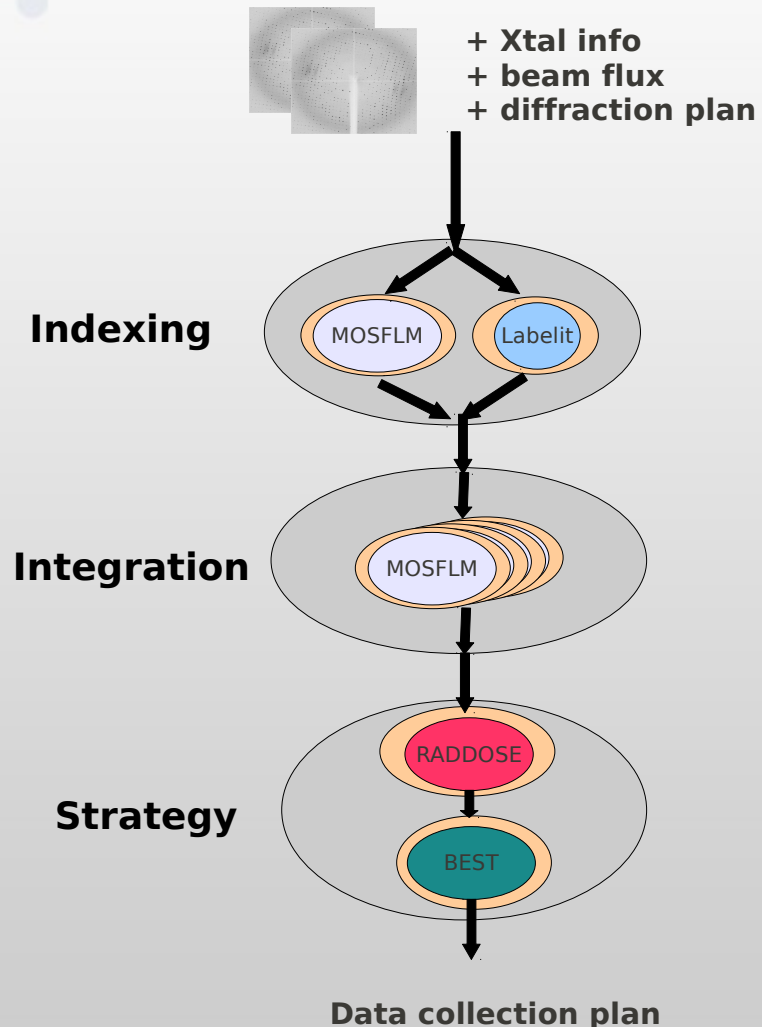
100 Go data generated/tomo scan



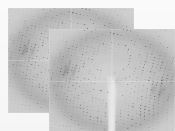
Slide from Pierre Bleuet

# MXv1 Characterisation v1.1

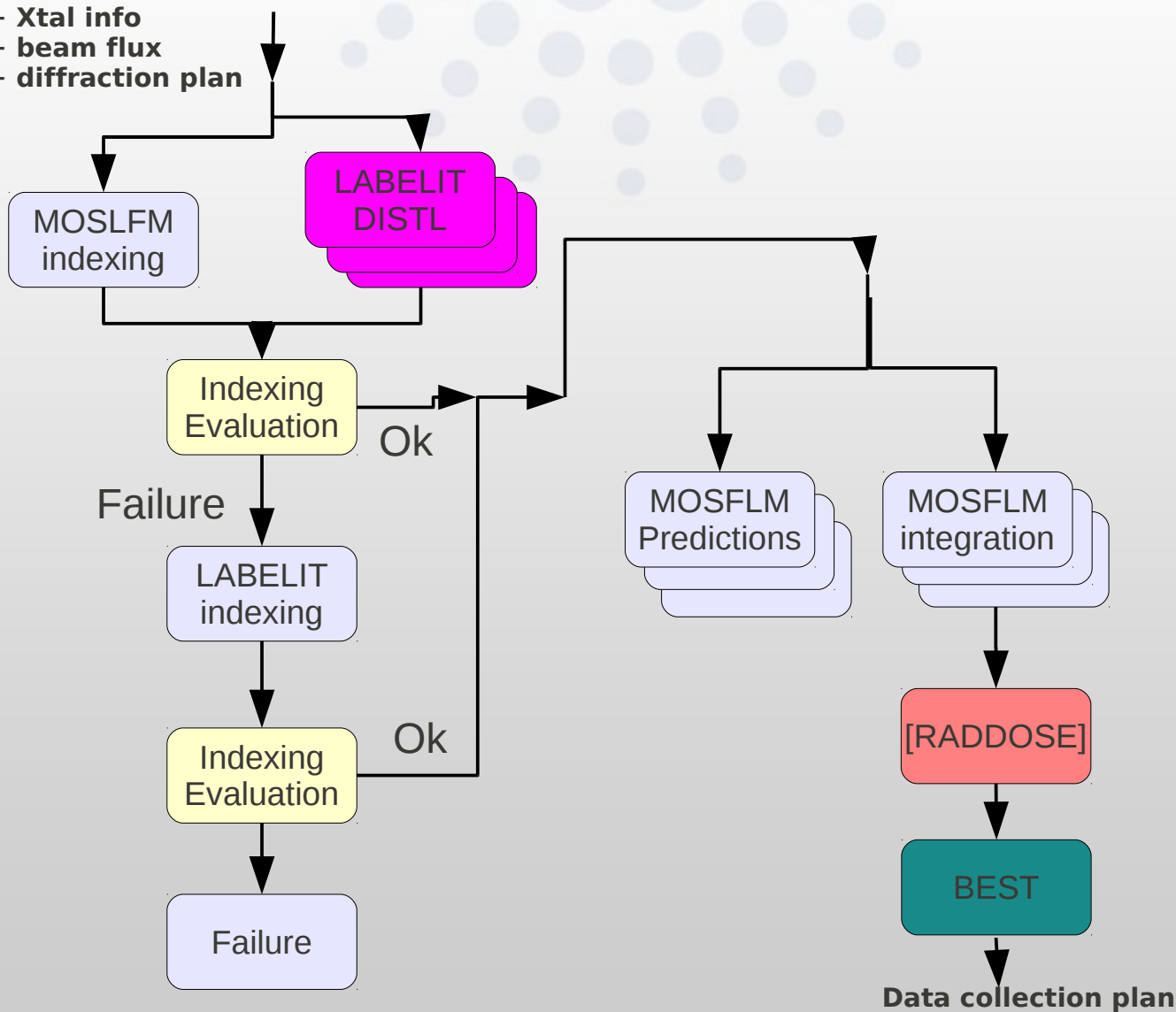
- MX sample characterisation taking into account radiation damage
- Indexing using MOSFLM or Labelit
- Parallel integration of reference images
- If flux + beamsize:
  - RADDOSE for estimating radiation damage
- BEST strategy calculation
  - taking into account radiation damage
  - multi-subwedge data collection strategies



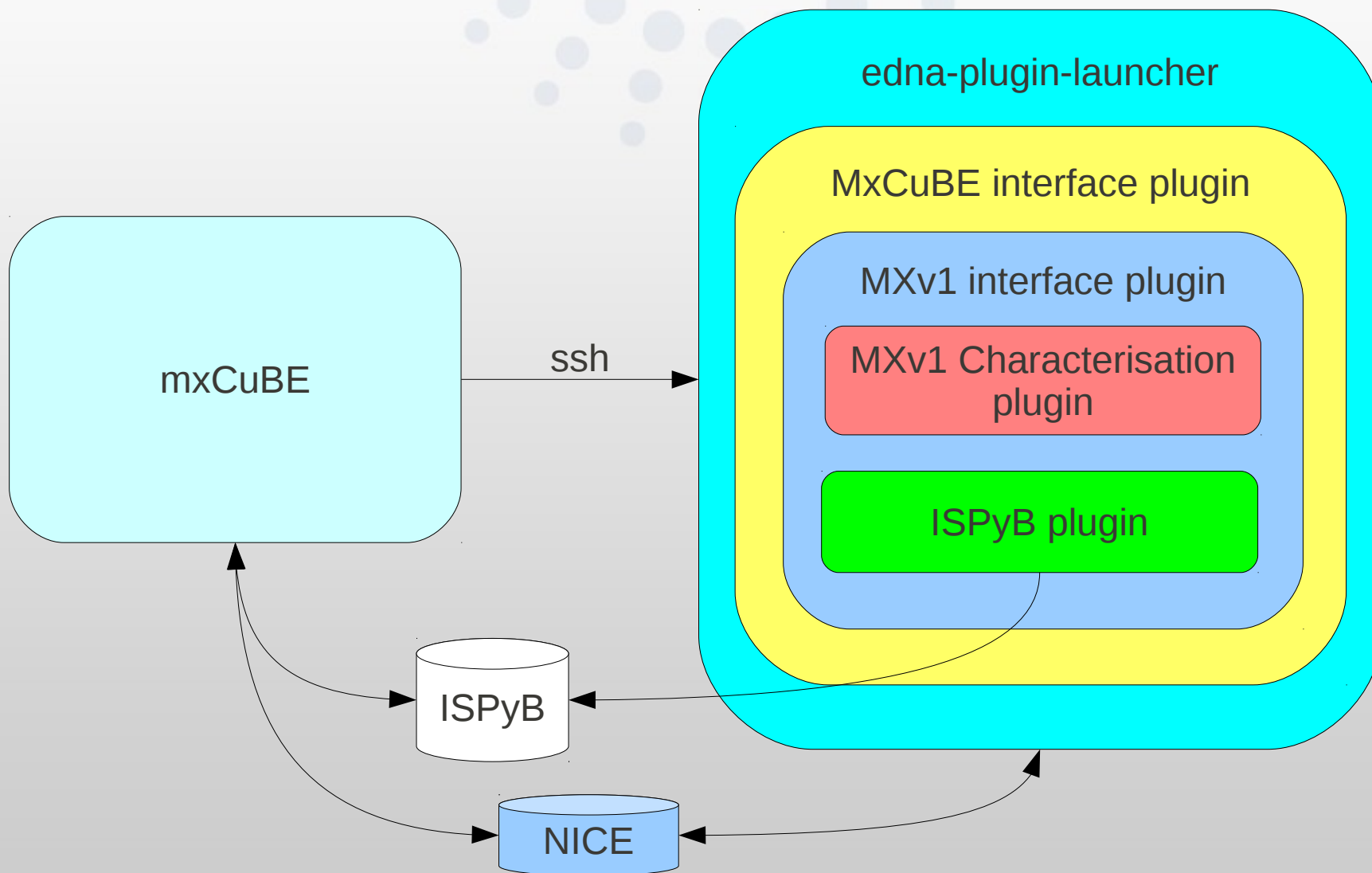
# MXv1 Characterisation v1.2



+ Xtal info  
+ beam flux  
+ diffraction plan

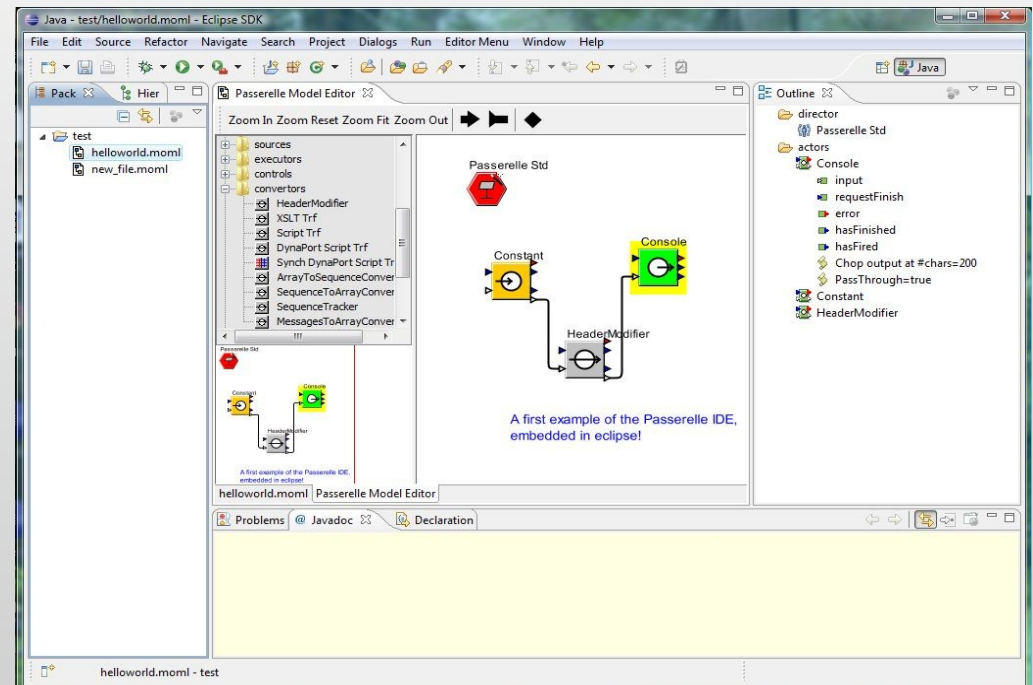


# MxCuBE ↔ EDNA MXv1 Characterisation



# Future challenges for the EDNA framework

- Replacement of Enterprise Architect with an Eclipse based modelling tool
- Replacement of generateDS for data binding code generation
- Workflow editor:
  - Implicit documentation of workflow
  - Implicit parallel workflows
  - Possibility to “easily” modify / construct new workflows
  - Possibility to debug workflows
  - Possibility to restart a stopped workflow
- Improved logging



# What is EDNA?



- EDNA is about collaboration:

- Code sharing (SVN)
- Coding conventions
- Code reviews
- Open source (LGPL, GPL)
- Bug tracker
- Wiki : <http://www.edna-site.org>
- Memorandum of Understanding
- Executive committee
- Project manager / coordinator
- Regular meetings / video conferences

- EDNA is a framework:

- “Generic” kernel
  - Data modelling framework
  - Support for multi-threaded modules (plugins) development
  - Support for workflow development
  - Testing framework
- “Specific” applications (MXv1, bioSaxs etc.)
- Automatic testing and nightly builds
- Automatic API doc generation
- No GUI

