

PySTXM

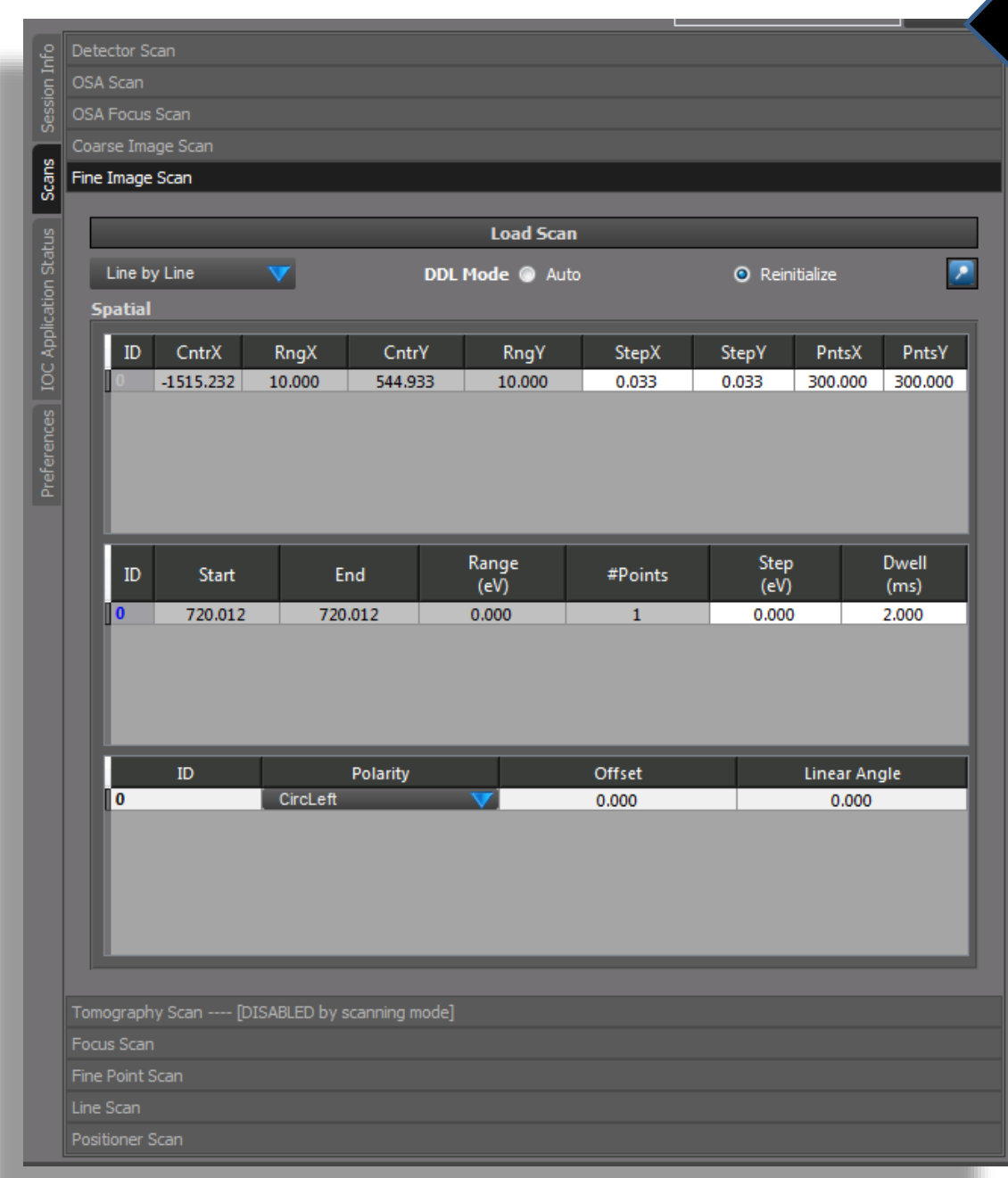
pySTXM is a Python application using Qt as the application framework and interacts with devices via Ophyd/EPICS with scanning being handled by BlueSky.

UI Design philosophy: Not wanting to reinvent the wheel the user interface incorporates ideas inspired from successful well known existing commercial and open source software, Adobe Photoshop and the open source 3D animation software project, Blender. These two software applications were used as inspiration because of their ability to provide a user interface that was able to organize complex data that would scale with time into panels and areas of the screen that facilitated work flow as well as user learning. Not only do these two particular applications do a great job at organizing complex data they also allow for that complex data to scale with future feature enhancements. Along with user efficiency the goal was also standardization of the data file format that produces NEXUS files that conform to the NXstxm NEXUS application definition. pyStxm connects to the underlying motors and other devices via EPICS applications.

The BlueSky version of pyStxm is currently being commissioned and will be completed in December 2024, completion is delayed due to a planned 6 month outage to replace the Linac. Approximately 90% of commissioning was completed before the outage.

Scan plugins ordered to facilitating workflow

Top -> alignment scans
Down -> image and focus scans



Firewire camera for: Detector, OSA and Zoneplate Z calibration



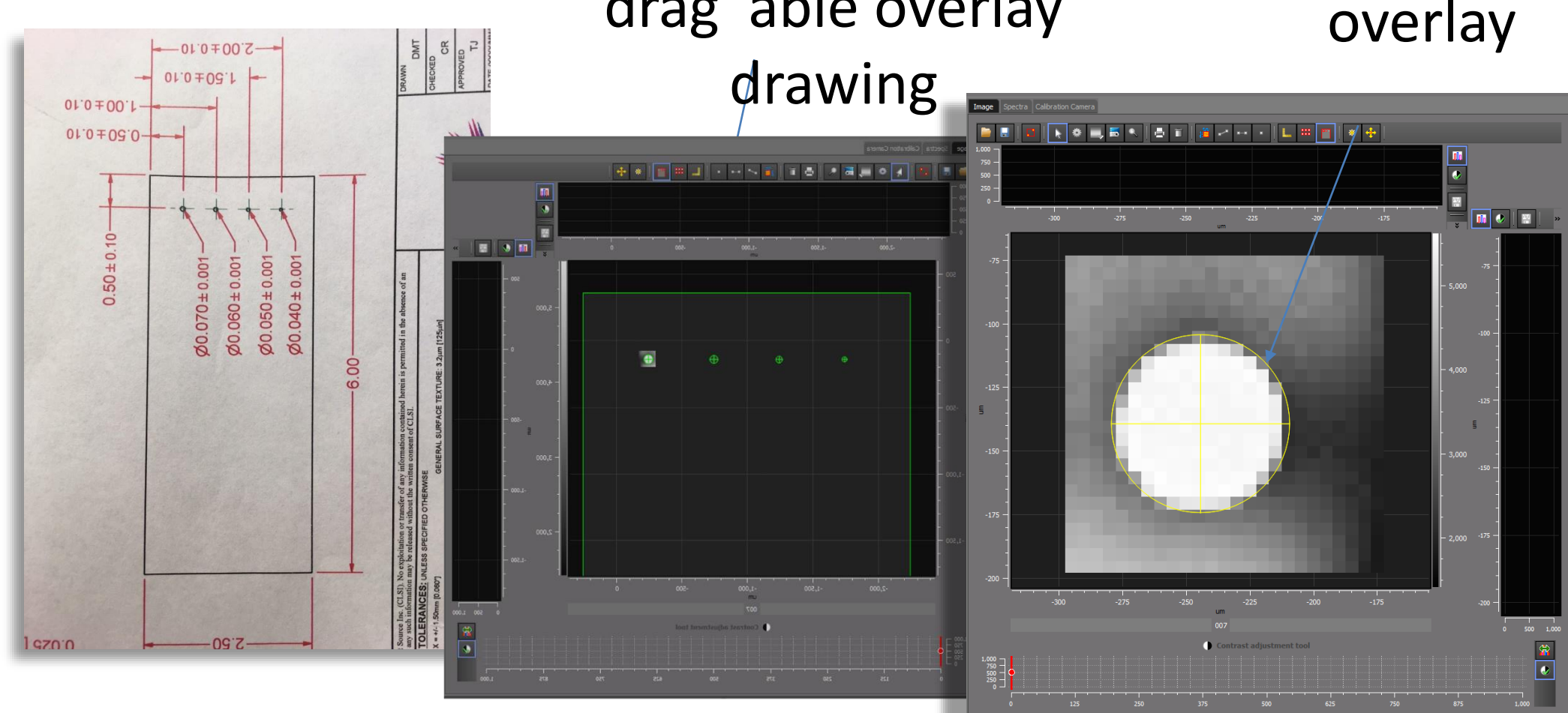
pyStxm's capabilities extend to the creation of plotting tools for representing various end station components. These tools enable precise representation of OSA's sample holders and other critical elements, enhancing the accuracy and efficiency of experimental planning.

Visual Tools: Overlay shapes of OSA, Sample holder

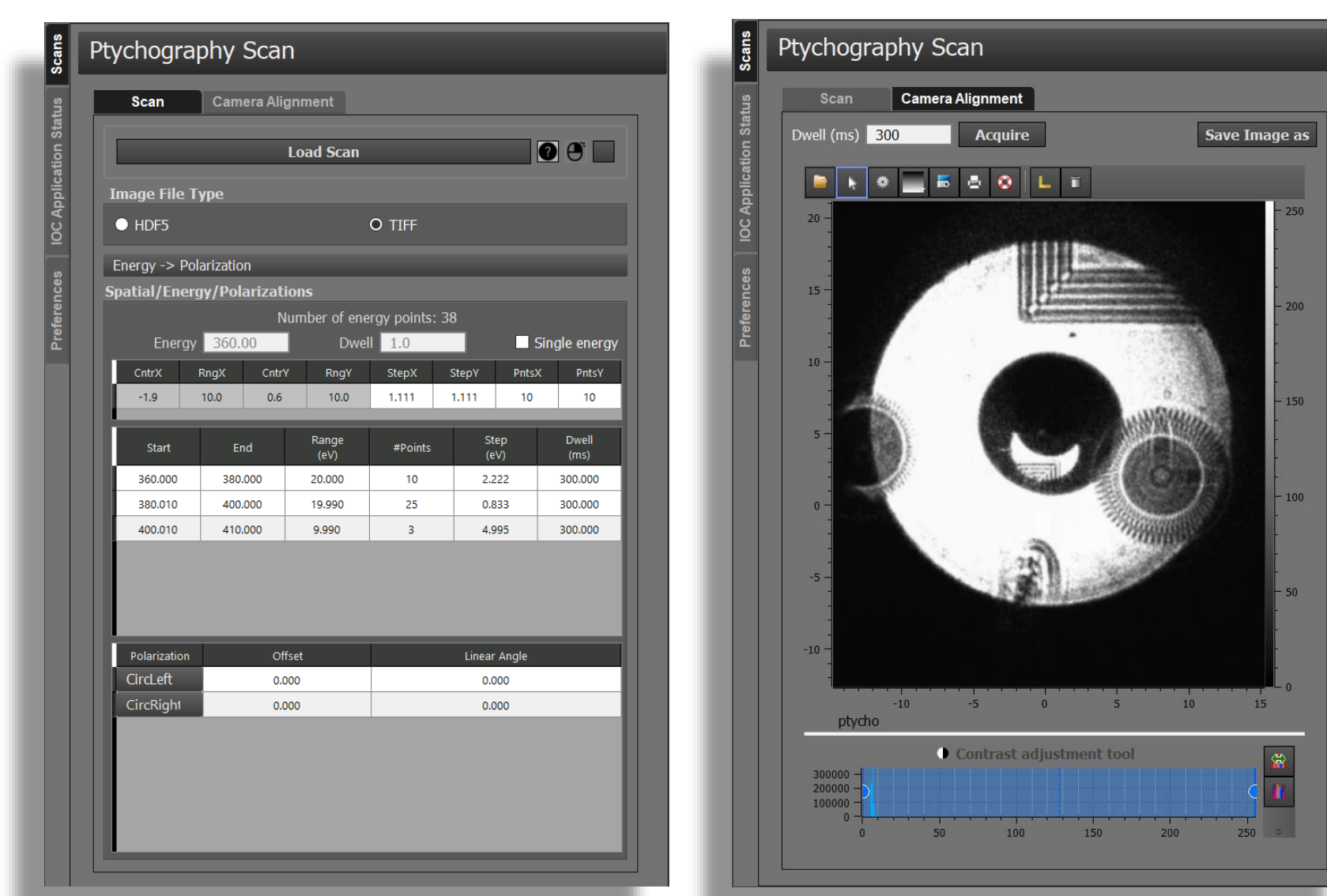
CAD drawing of 4 hole OSA

Recreated as a drag 'able overlay drawing

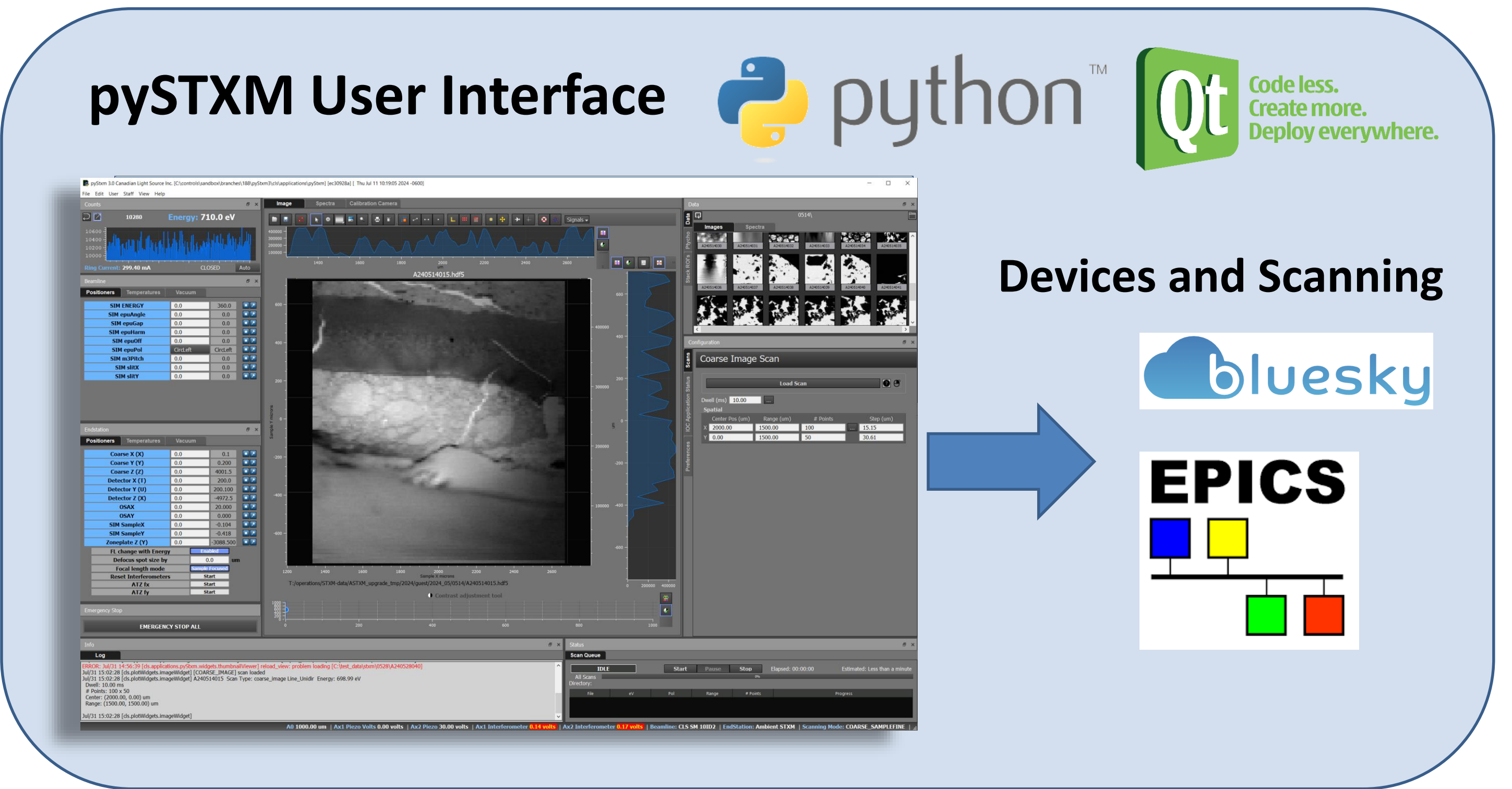
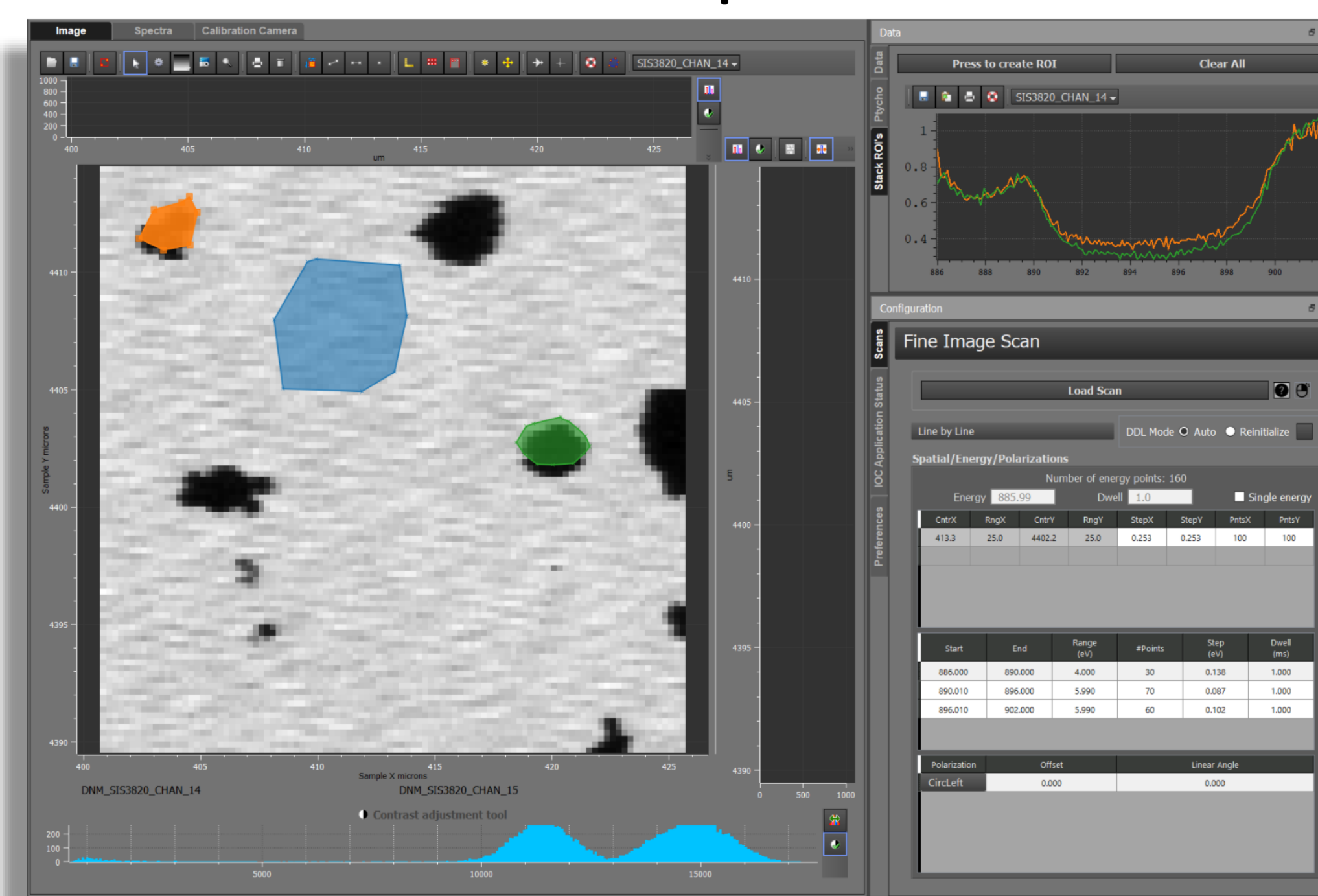
OSA scan image with overlay



New features include Ptychography scans and user selectable multi point polygon ROI's for instant feedback during energy stack acquisitions.



Create multipoint ROI's



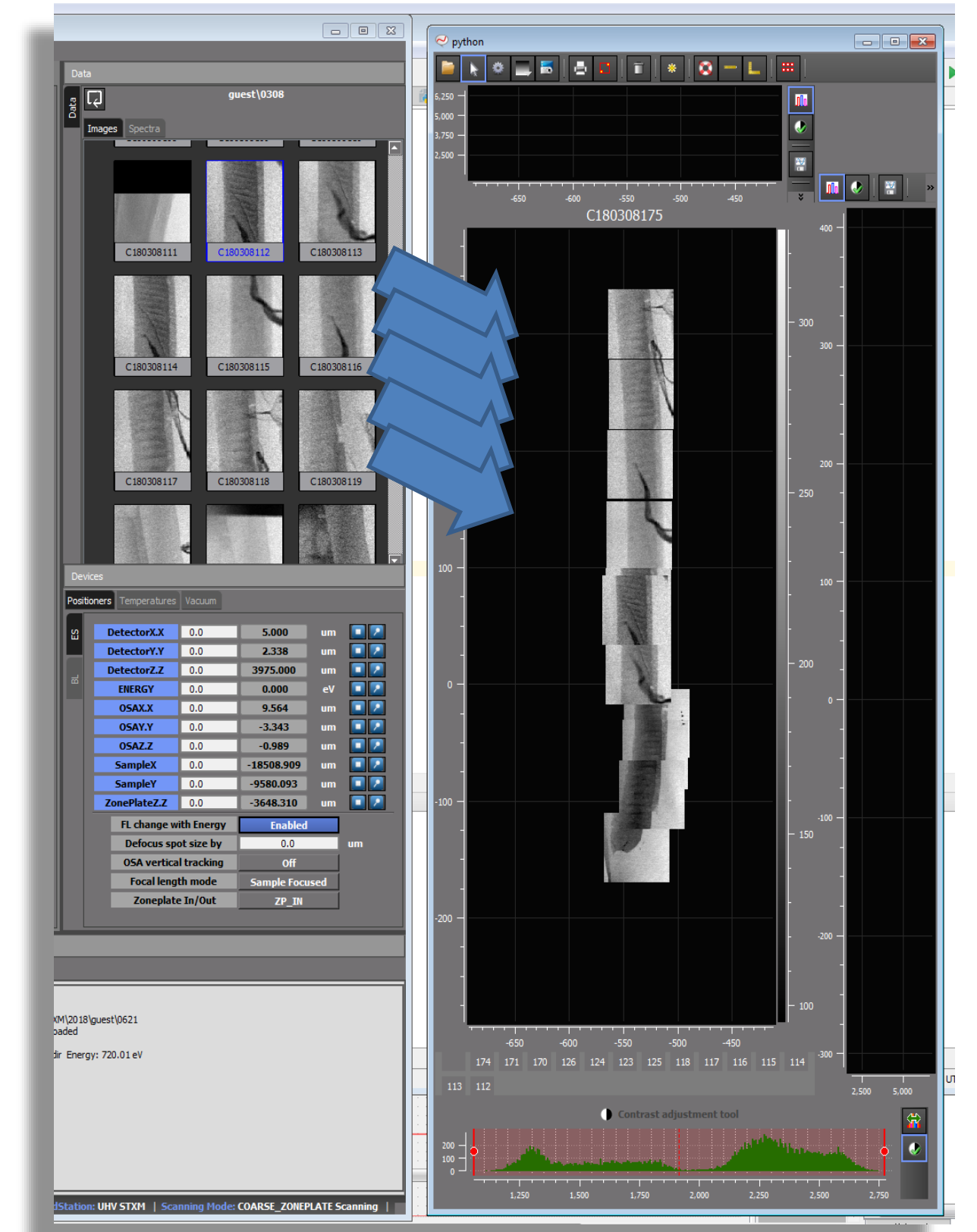
Easy Access to Data and Metadata

Mouse over brings up tooltip of metadata mined from the hdf5 file(s)



Drag and Drop

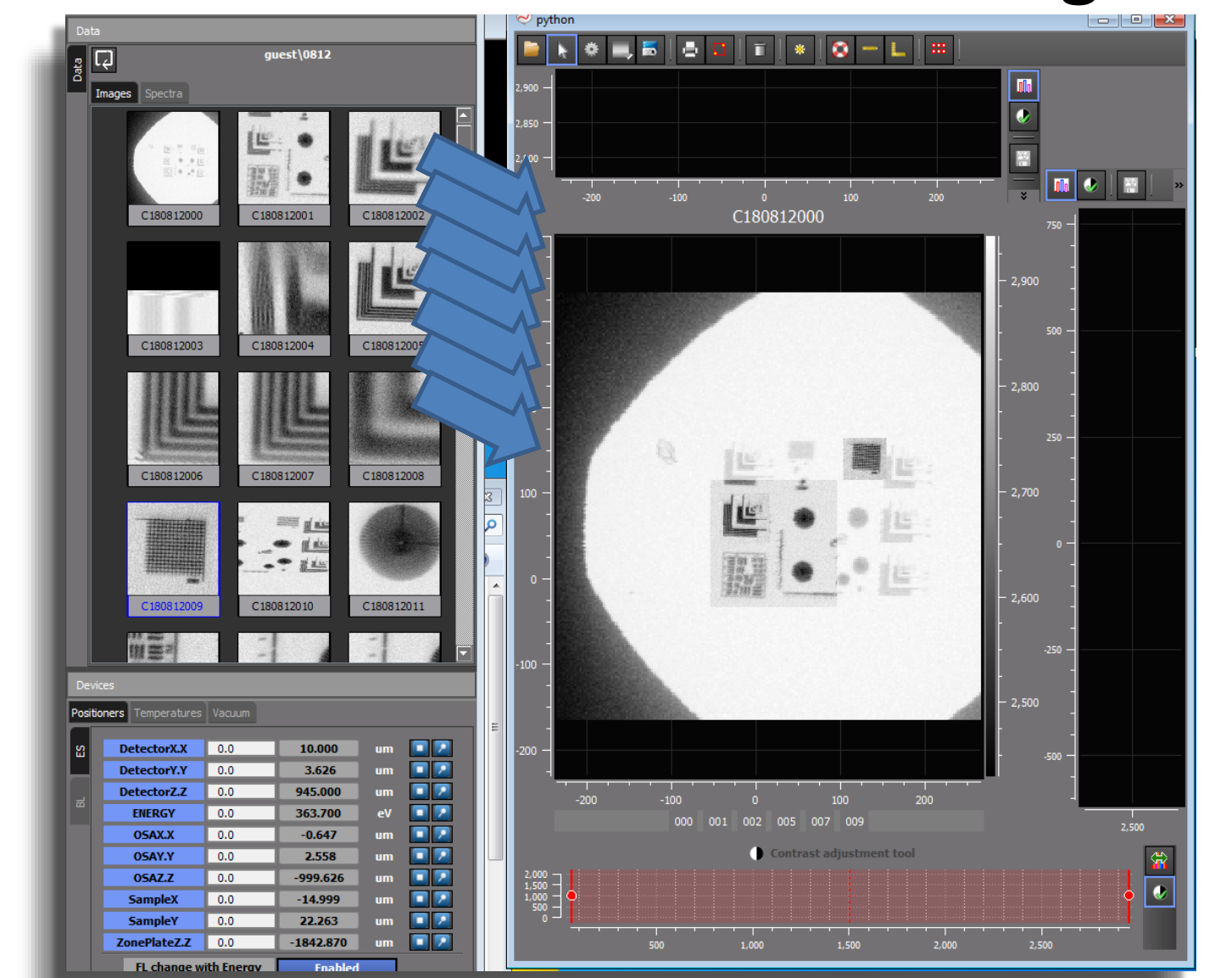
Build a mosaic view of data



Repeated Drag and Drop

From the data viewer, users can compile a vast, intricate landscape by layering smaller images of varying resolutions into a cohesive whole. The software layers the images based on size and resolution so that the images blend smoothly, creating a continuous and realistic panorama.

Combine coarse and fine images



Our Operating Funding Partners