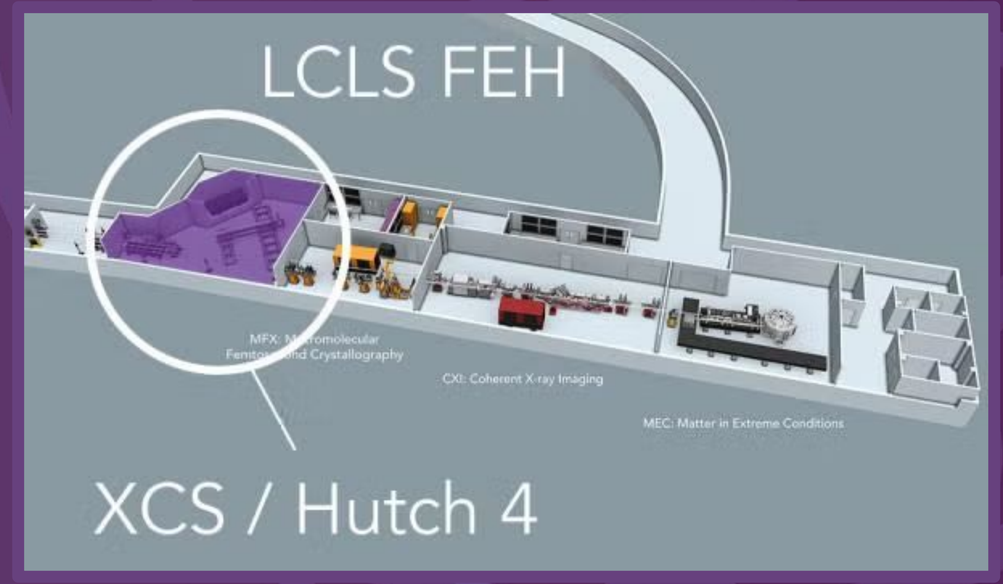
# Streamlining Engineering Documentation for the Low-Temperature Setup at LCLS Hutch 3 & 4

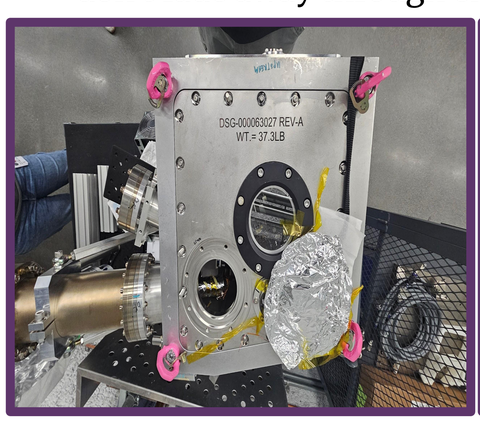
**T. Hardin (1) - titushardin@gmail.com**, C. Melendrez (2), A. Wilson (2),

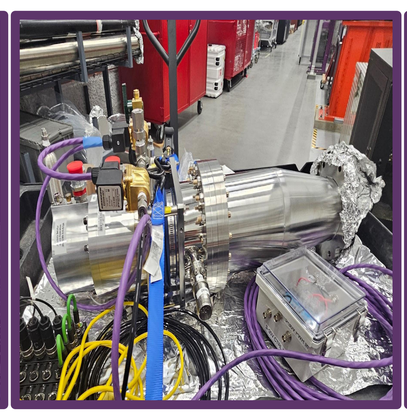
1. SLAC National Accelerator Laboratory, USA.




## What Does the LOW-T Do?

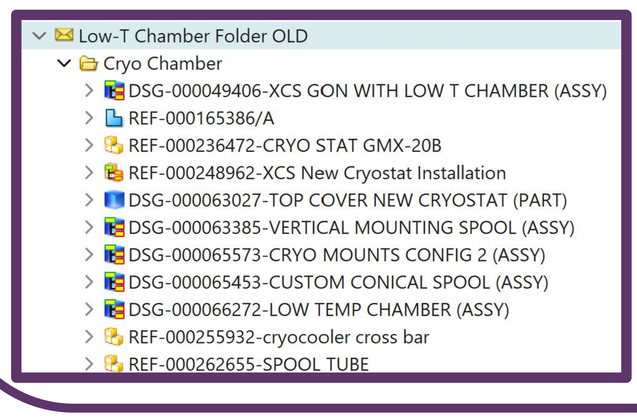
- Enables cryogenic experiments down to ~10–30 K
- Supports X-ray scattering and diffraction studies
- Used for quantum materials and condensed matter research
- Needs to be a very high vacuum to insure X-Rays from beam line don't fade away through environment

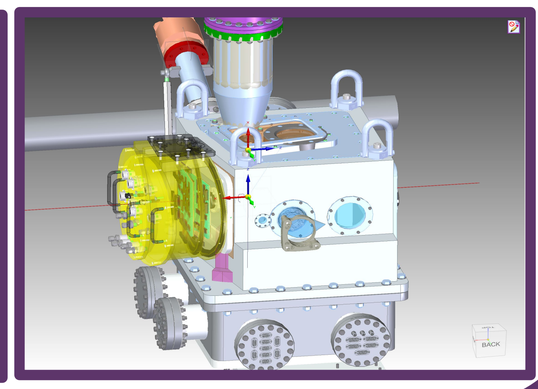


## Project Scope & Deliverables

- The CAD assemblies as well as the Teamcenter folders for the Low-T lacked organization
- Parts On top of Each other in Assemblies
- Missing or no longer used parts
- One Teamcenter file with all components
- One organized assembly
- Hope to bring down Low-T Installation time



## How This Will Be Addressed?

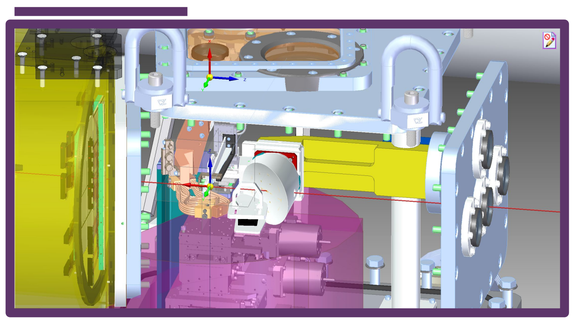
- Feature called configurations used to set a few base views
- Hundreds of setups brought to three with options
- Allowed to keep base parts and choose to see others
- A top down method of organizing files in teamcenter was devised.
- Allowed parts to be found quickly in relation to other parts

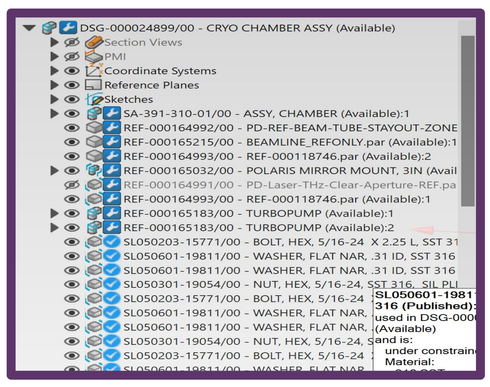
## Challenges

- Outdated parts
- Old drawings
- Mislabeled items or folders
- Unorganized folders
- Parts not installed correctly
- Missing components
- Improperly dimensions items

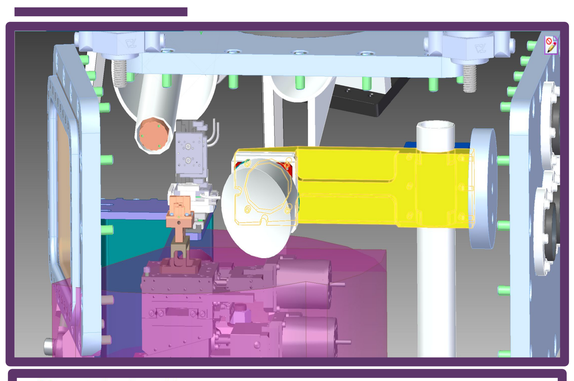
## Results

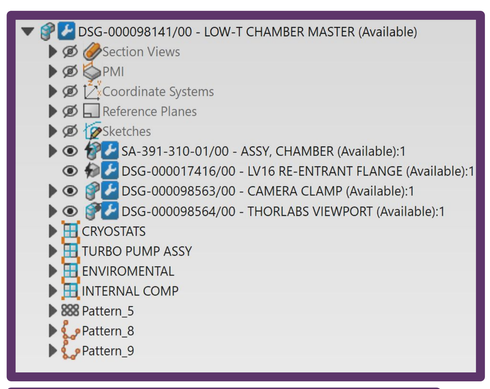
### Before

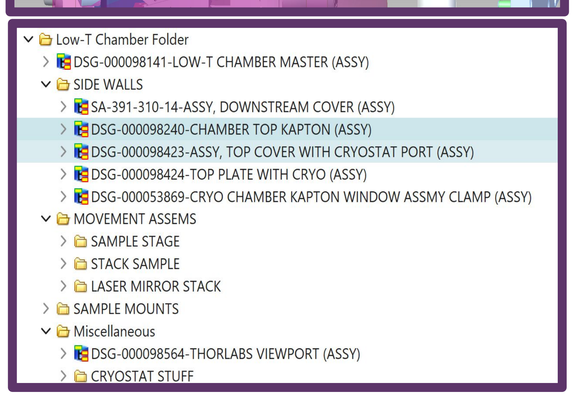


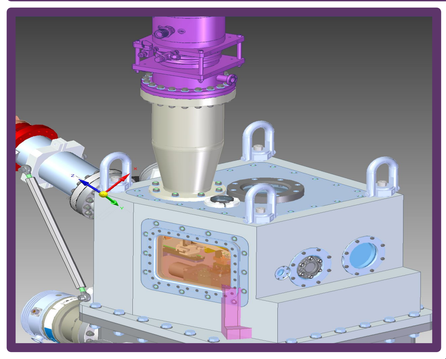



### After



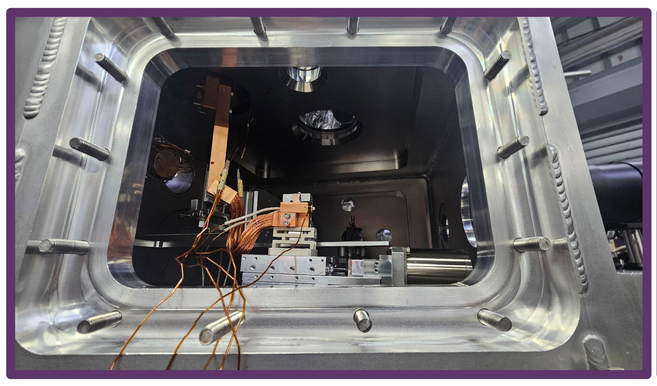


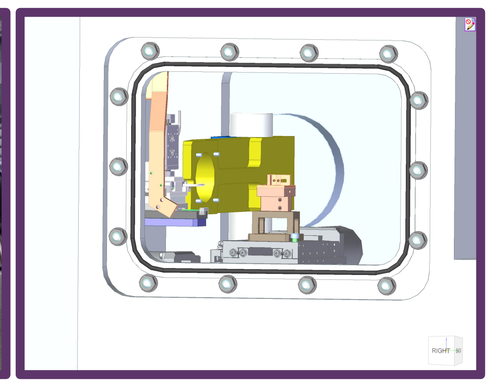



## Benefits and Value

- Low-T setup decreased by up to half original time(1 day -> ½ day)
- Design of new parts and setups made easier
- Finding of parts and setups made quicker





## Beyond Scope

- Part design
- Drawing practice
- Confluence