Screening with Leginon Independence Test Evaluator Checklist – CryoEM Merit Badges

Supervising Staff: ______________________  Date: ______________________
Trainee: ______________________

Start Leginon software
- Verify NCCAT Leginon client is open on microscope computer. If not, start client.
- Start Leginon session on Leginon computer.
  - Correct holder selected
  - Proper session naming: microscope - proposal ID - misc (optional)
  - Correct project selected:
  - Proper clients selected
  - Correct C2 size set:
- Start appropriate Leginon app
- Presets from most recent session loaded, and verified they look reasonable.

Load grid and find eucentric height
- Load grid using TEM user interface.
  - Checked that column valves are closed
  - Checked that objective is out
  - Checked that screen is inserted
- Open column valves after new grid is loaded onto the stage
- Find a grid square to do eucentric height
  - Grid preset sent to microscope
  - Screen inserted
  - Move to visible square with support film using hand panel stage movement joystick or TUI navigation

Evaluator Notes:

Imaging
- Eucentric height is found using the Z_Focus node in Leginon
- Atlas acquired: opened settings to give sensible label and radius, clicked calculate, then acquire.
- Square targets selected in the square targeting node and submitted.
- In Hole Targeting node: Settings are checked to queue at this step (if desired), allow for user verification of targets, and automated hold finder is skipped (if desired).
- Acquisition and focus targets set and submitted in Hole targeting node.
- Verify that user can “unselect” targets.
- Queue is submitted AFTER all hole image targets are selected (if queueing at this step).
- Exposure_Targeting node settings are checked and set to “Allow user verification”, “skip automated hole finder” and uncheck “queue up targets” (if desired)
Acquisition and focus targets set and submitted in Exposure targeting node (optional: if queueing, queue is submitted AFTER all exposure image targets are set.

Once all selected square targets are finished, select additional targets in the Square Targeting node and repeat, or load new grid.

Verify that user can pause a node and abort a queue.

Repeat for all grids.

Evaluator Notes:

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### Changing grids

- Verify Leginon is not actively imaging.
- Close column valves.
- Insert screen.
- Ensure objective aperture is out.
- On TEM User Interface “Autoloader” panel, click on grid and then click “load” button.
- Wait for autoloader to finish changing grids before proceeding.

Evaluator Notes:

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### Ending session

- Alert staff when they are finished screening for proper shut down.

Overall Evaluator Notes: