National Center for CryoEM Access and Training

Purpose: Basic checklist for Krios operators to set up sessions for users
Authors:
Approved: **Date**:   2020/07/08

---

1. **Purpose:**
    1.1. To setup the Krios system and Leginon ahead of users starting Leginon Remote.

2. **Scope:**
    2.1. Checklist that should be reviewed by microscope operator ahead of giving control of data collection to a Leginon Remote users.

3. **Definitions**
    3.1. Leginon is a system designed for automated collection of images from a transmission electron microscope; it includes the python-side programs written in python and c, the MySQL database and server, and the mainly php-based image and data viewers on a web server.
    3.2. Leginon Remote is an infallible web interface that allows center staff operators to hand over control of the requested transmission electron microscope to users for their own data acquisition.

4. **Responsibilities:**
    4.1. Start of Day:
        4.1.1. Setup a Leginon session
        4.1.2. Determine eucentric height/focus
        4.1.3. Find vacuum and tune energy filter
        4.1.4. After an annealing cycle: GMS gains
        4.1.5. Hardware dark & Leginon gain reference
        4.1.6. New dose for exposure
        4.1.7. Set up ice thickness node
        4.1.8. Beam tilt pivot point and rotation centering
        4.1.9. Objective aperture centering and astigmatism correction
        4.1.10. Coma correction
        4.1.11. Preset alignment
        4.1.12. Correct image shift coma effect=true
        4.1.13. Test images
        4.1.14. Repeat if necessary
        4.1.15. Switch to user's grid and collect an atlas
    4.2. End of Day:
        4.2.1. Toggle error notification ON
        4.2.2. Check enn/esn/fa/fc beam centered over camera
        4.2.3. Objective aperture is inserted (unless no requested)
        4.2.4. Random defocus range is set
        4.2.5. Final queue is submitted
        4.2.6. Frame alignment and CTF estimation running -a/-a-DW
        4.2.7. Screensaver and screen lock is off
        4.2.8. Leginon station is VNC capable
        4.2.9. Previous user has signed off, i.e. no "switch user"
        4.2.10. Can remote desktop to microscope, camera and Leginon workstation
        4.2.11. Data transfer started Globus/external drive
        4.2.12. Remind user of grid storage/pick up