



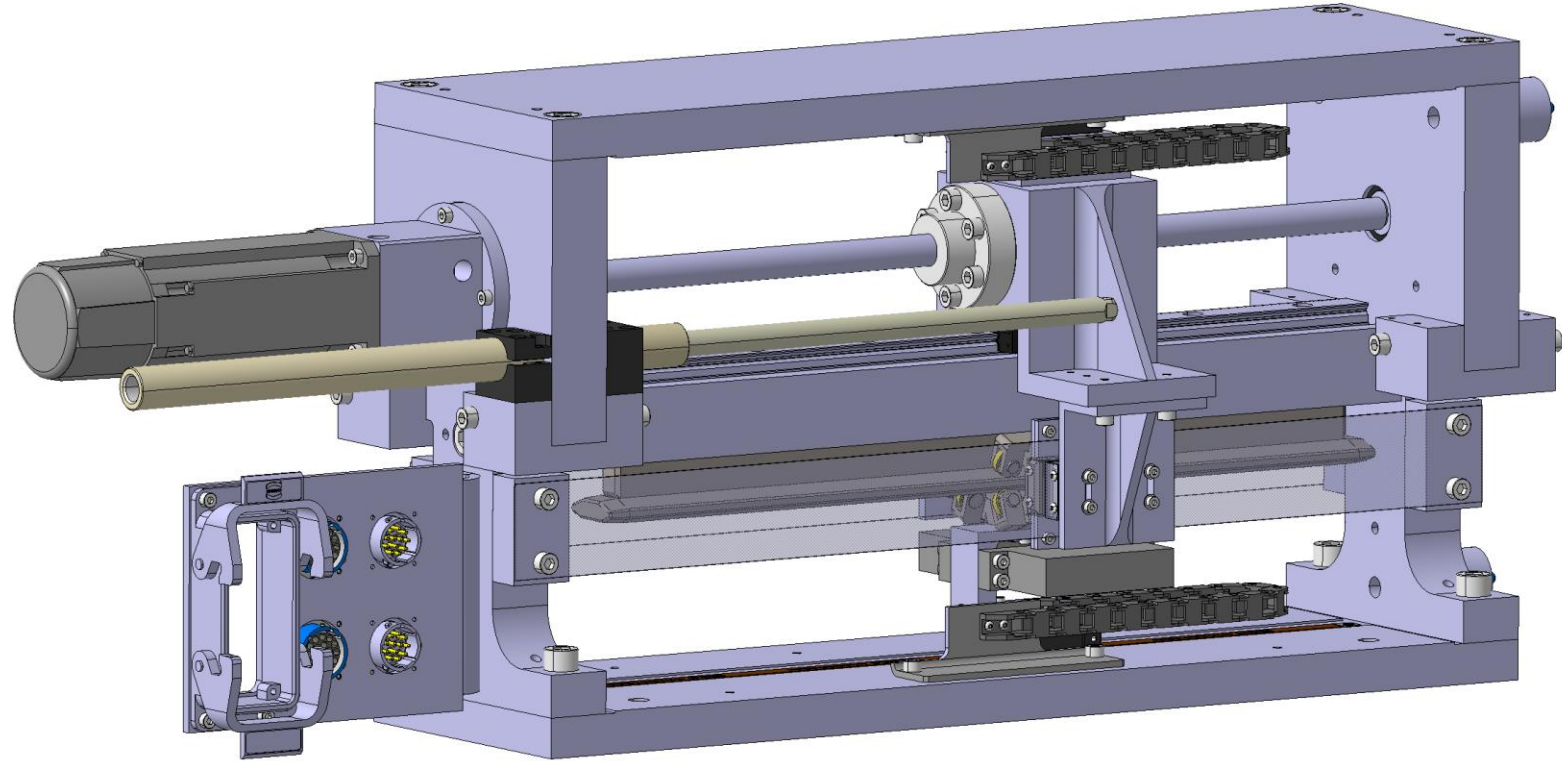
Linear wire scanner mechanics update

12th August

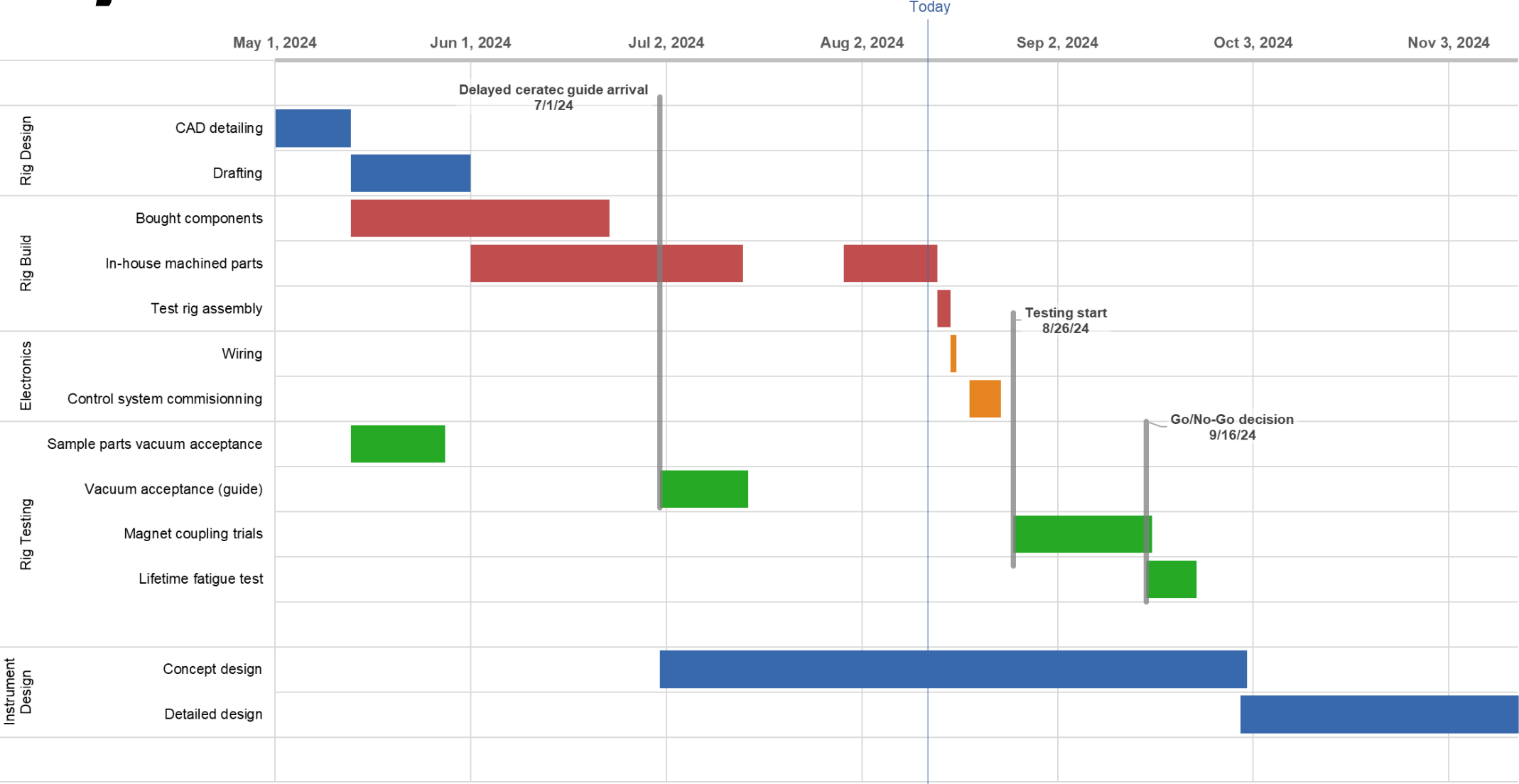
Project team meeting

Test rig update

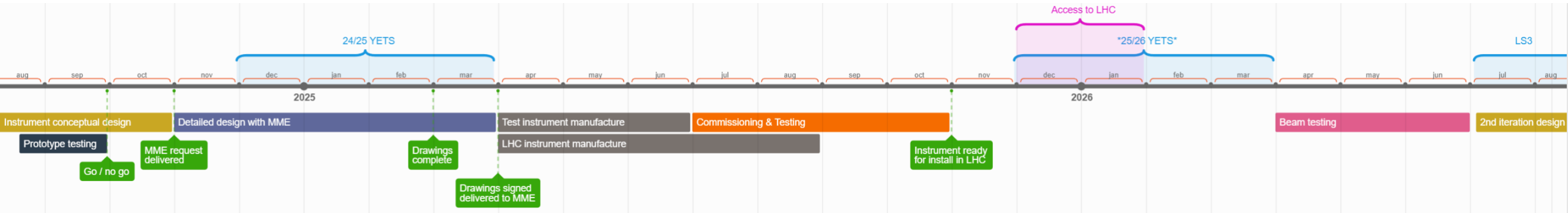
- **Designed parts**
 - Energy chain bracket **designed and ordered**
 - Additional mass blocks **designed**
- **Machined parts**
 - Solution identified for large component warping
 - **Frame parts** due for completion **COP Tuesday**
 - **Assembly** of frame **Wednesday/Thursday**
 - Assuming no issues **Wiring** can commence **Friday**
- **Ordered parts**
 - Magnets **arrived**
 - Energy chains **ordered**
 - Fasteners **arrived**
 - Non-magnetic callipers **reserved from magnet group**
 - **Strain gauge**



Project timeline



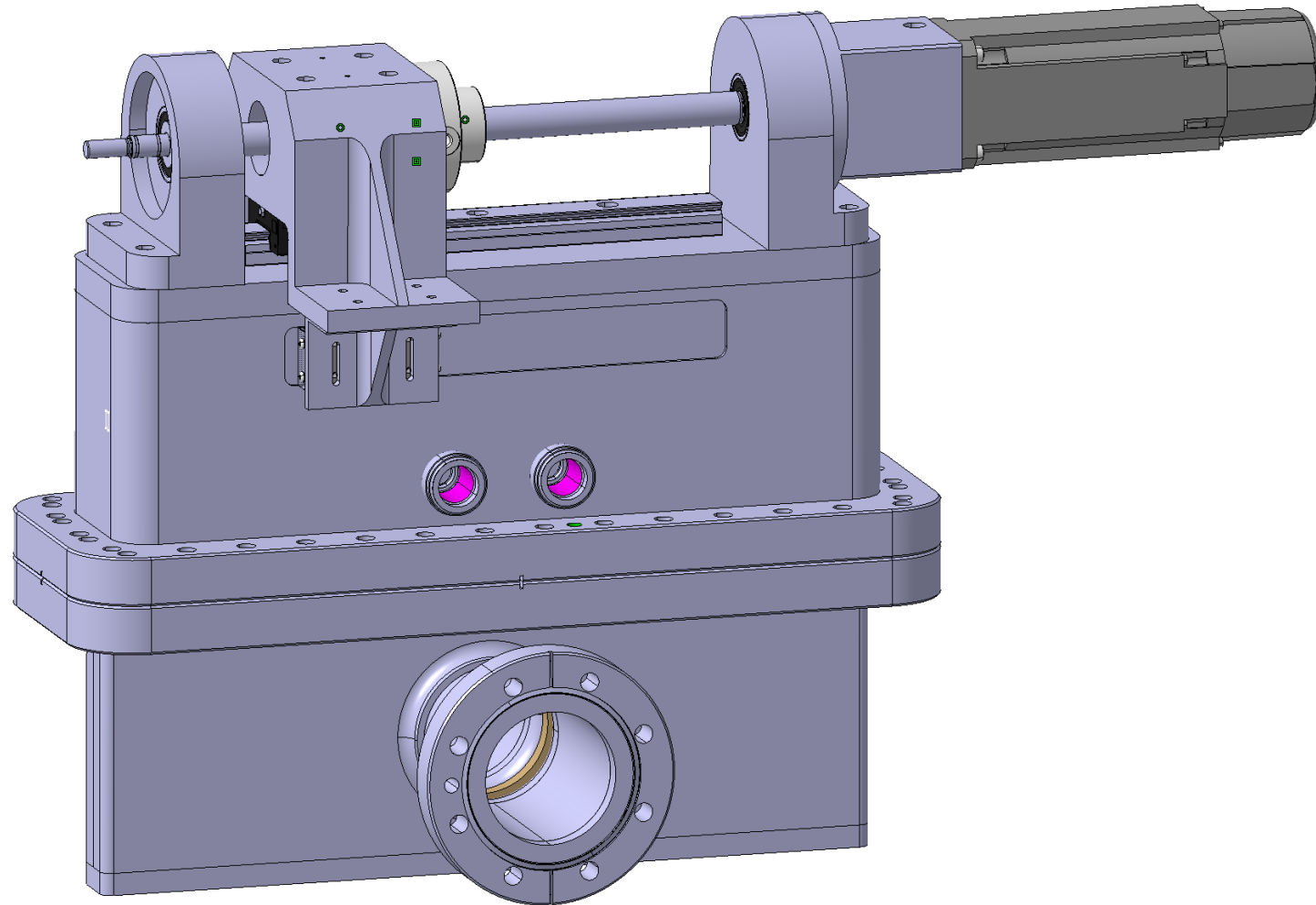
Long term planning



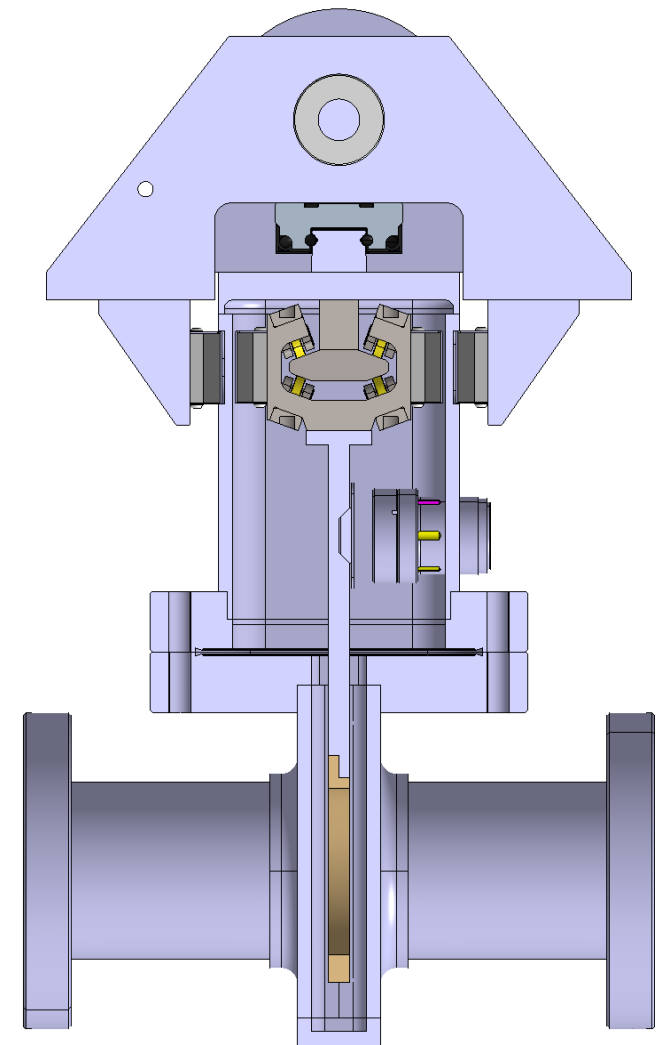
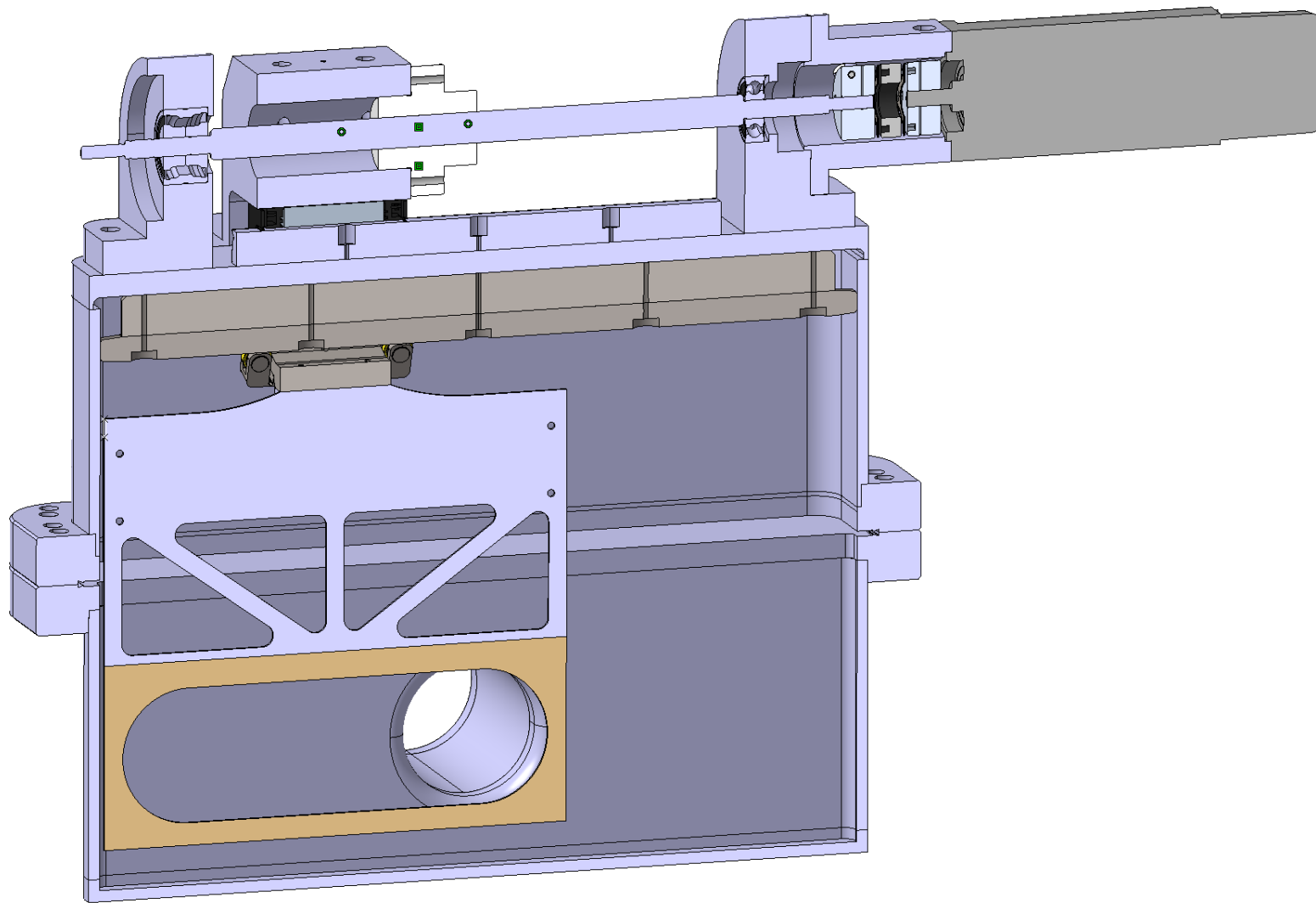
Instrument design update

Updates from previous meeting:

- **Chamber**
 - Aperture changes
 - Wall thickness increase
 - Final dimensions depending on RF contact
 - Thin wall section dimensions
- **View ports added**
 - Need to be tested/modified to survive bakeout
- **Card**
 - Two options being considered
- **Ruler**
 - Concept designs in place - to discuss with Selba
- **Motion system added**
 - Requires modification for bakeout access



Instrument design update



Instrument boundary definition

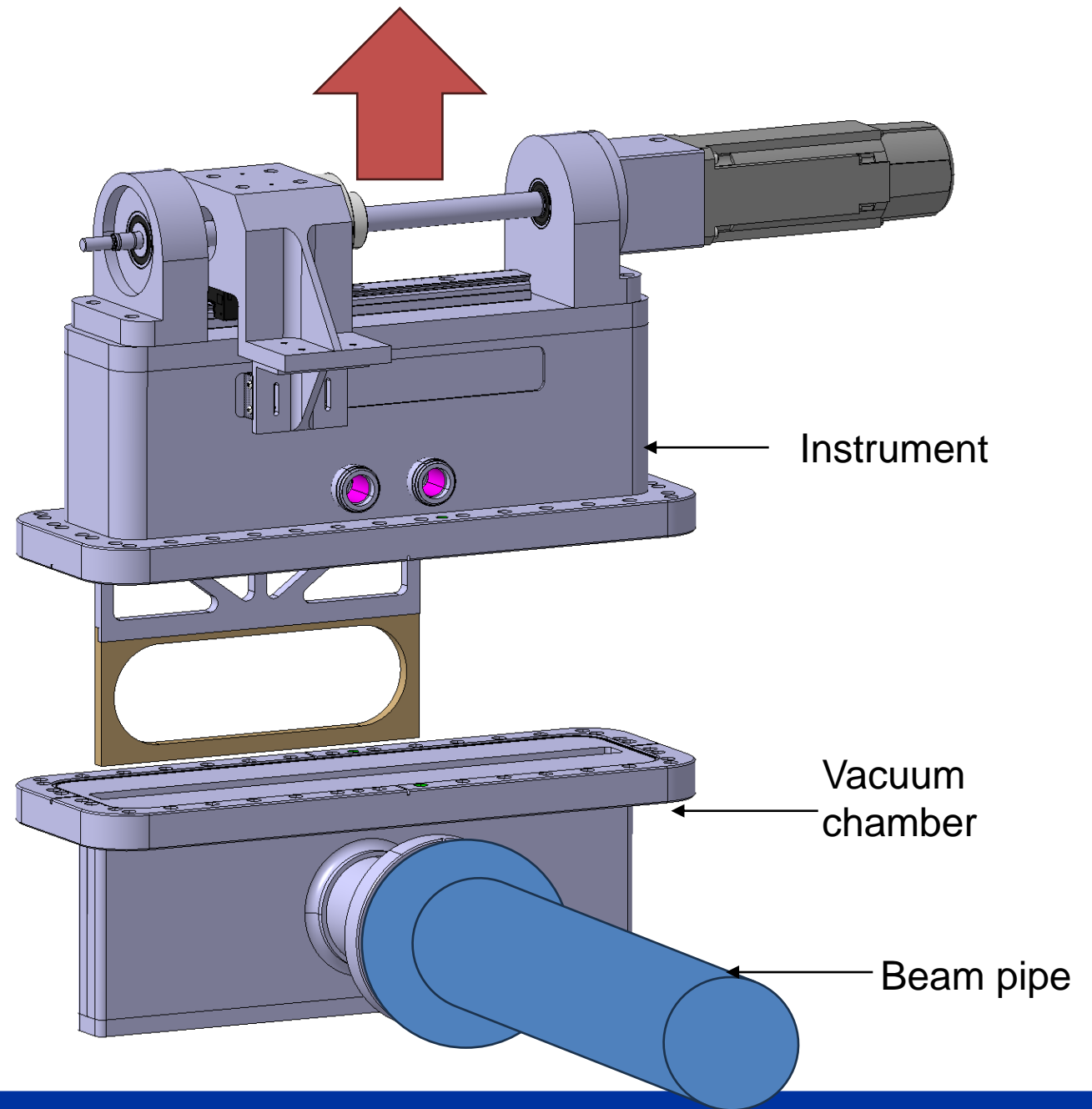
Option 1

Vacuum chamber remains installed in the beamline.

Instrument can be removed/replaced separately.

Considerations

- Impedance issues if instrument not in place
- Square CF flange blanks required
- Optical port design more complex and further from wire



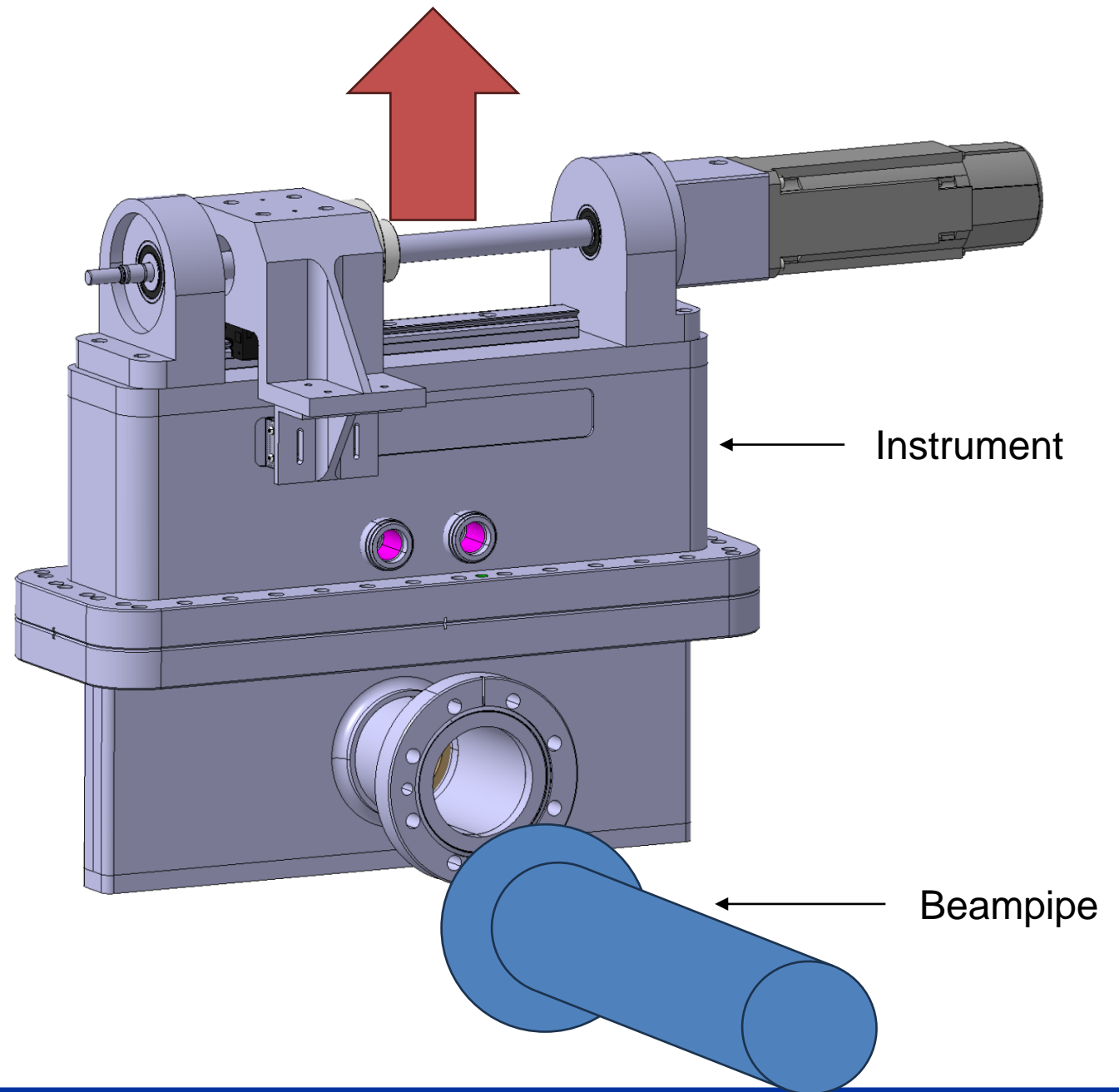
Instrument boundary definition

Option 2

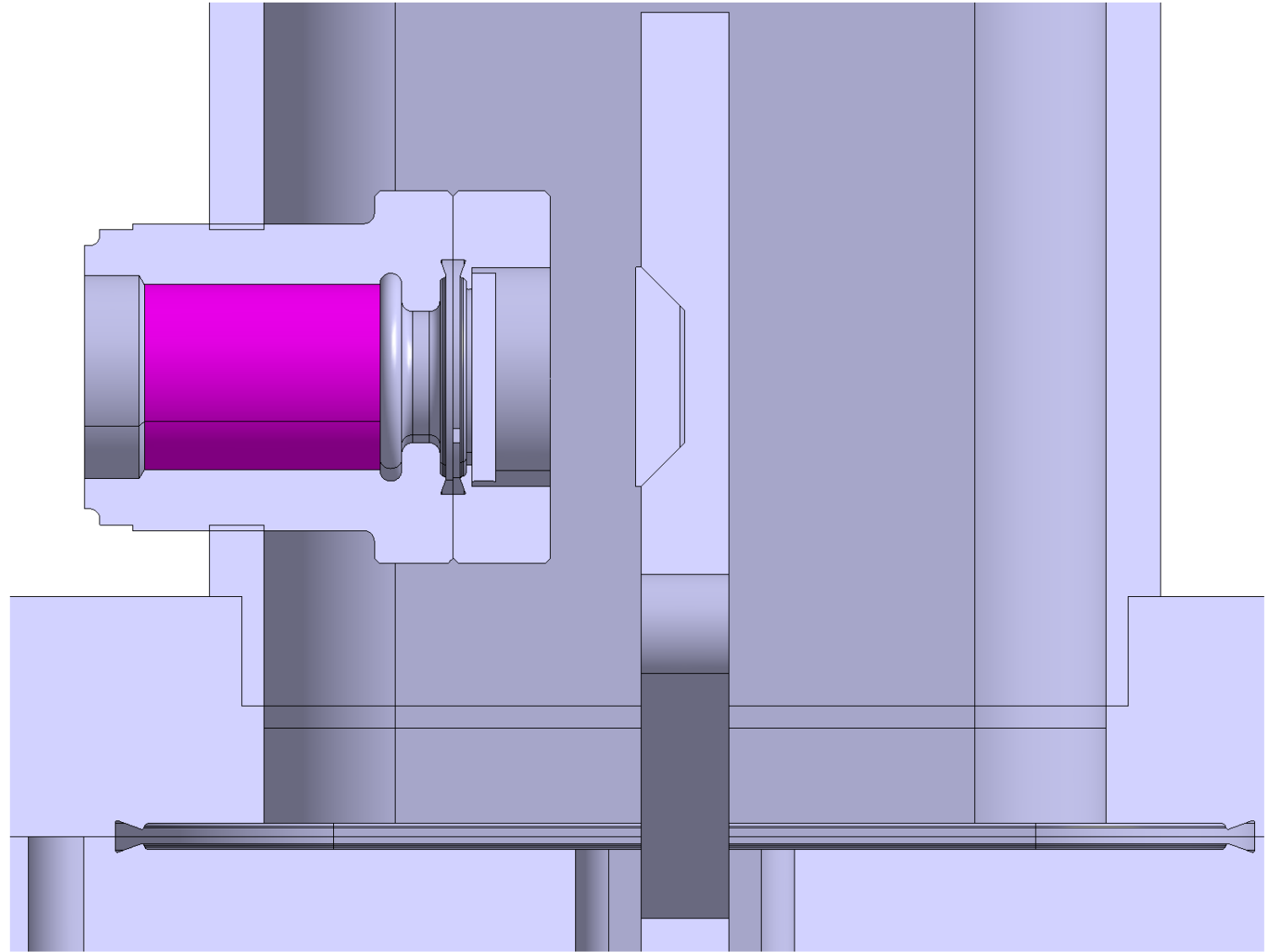
Instrument is calibrated / commissioned / installed / removed as an entire assembly.

Considerations

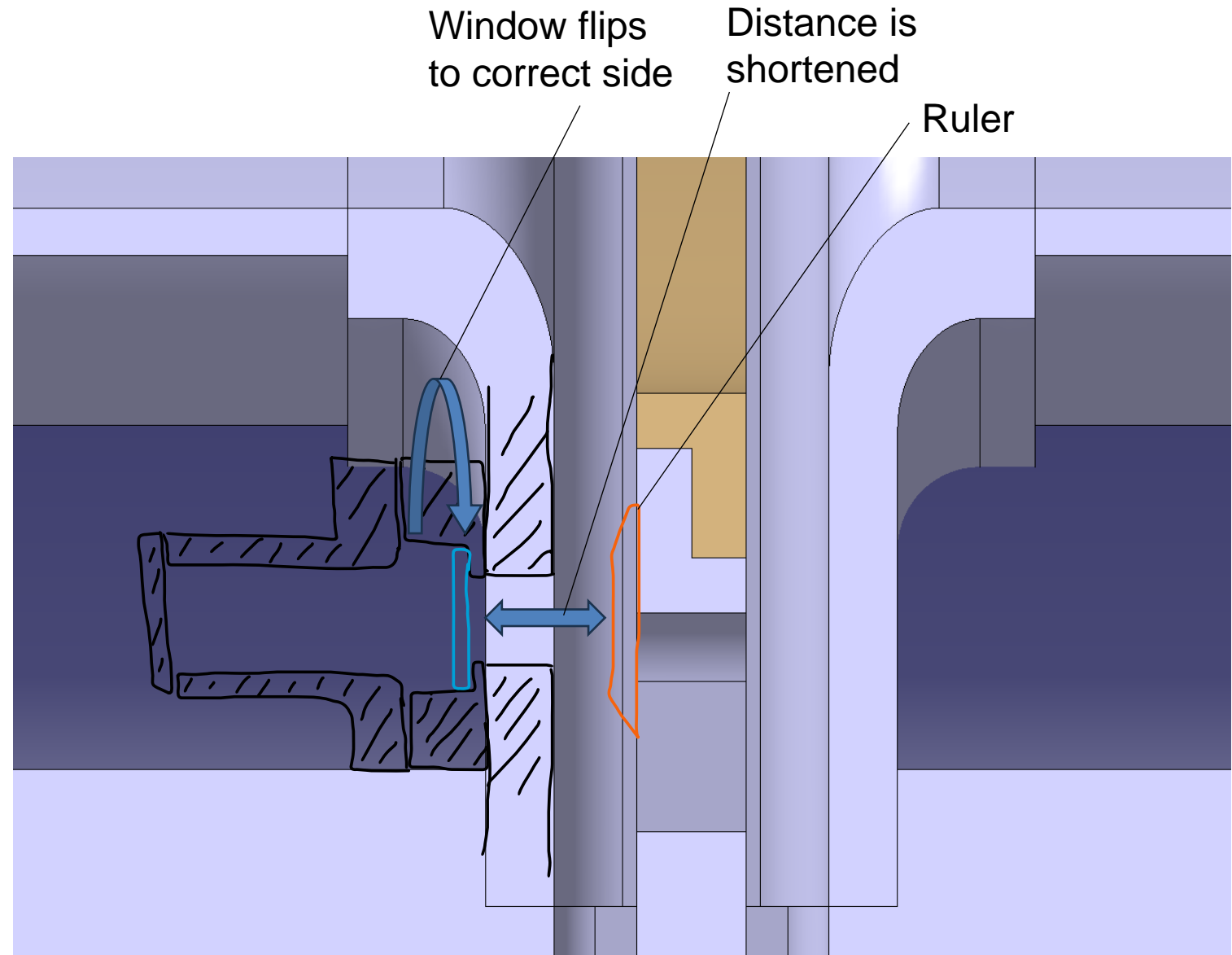
- Large expense for additional vacuum chambers required
- Drift tube replacement parts required (cheap and no issue for impedance)
- Optical ports can be lowered closer to wire
- Faster intervention time?



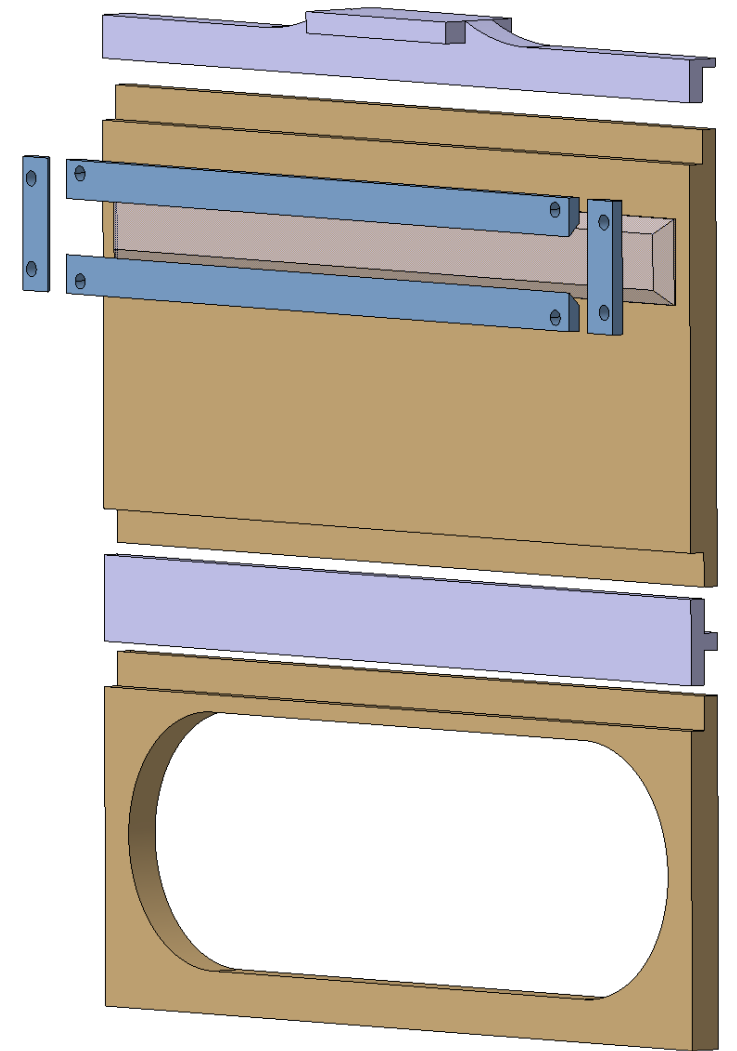
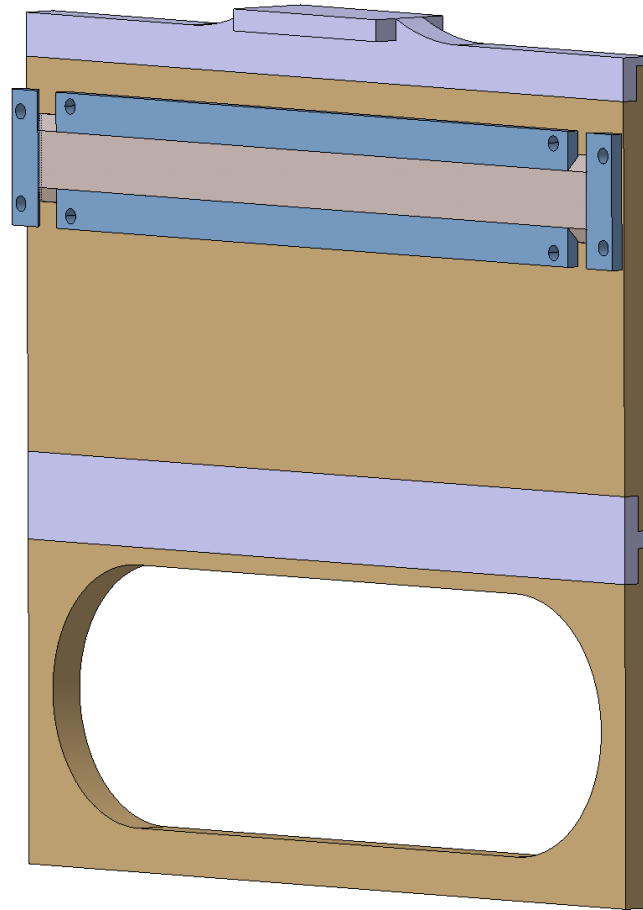
Viewport: current design

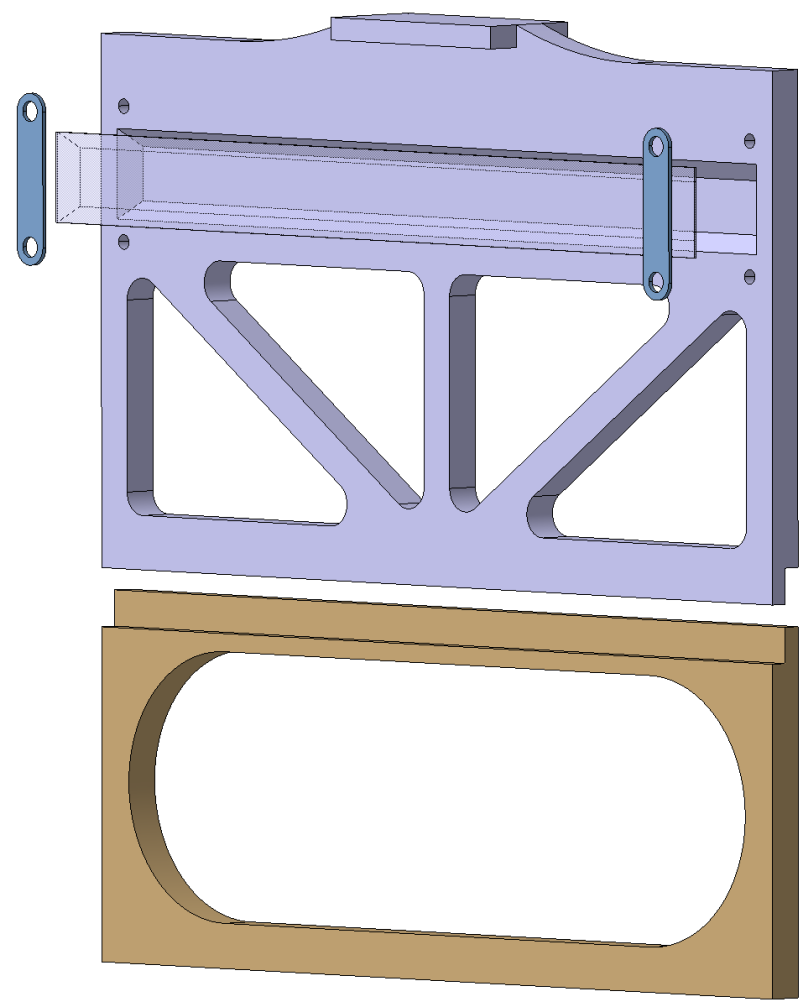
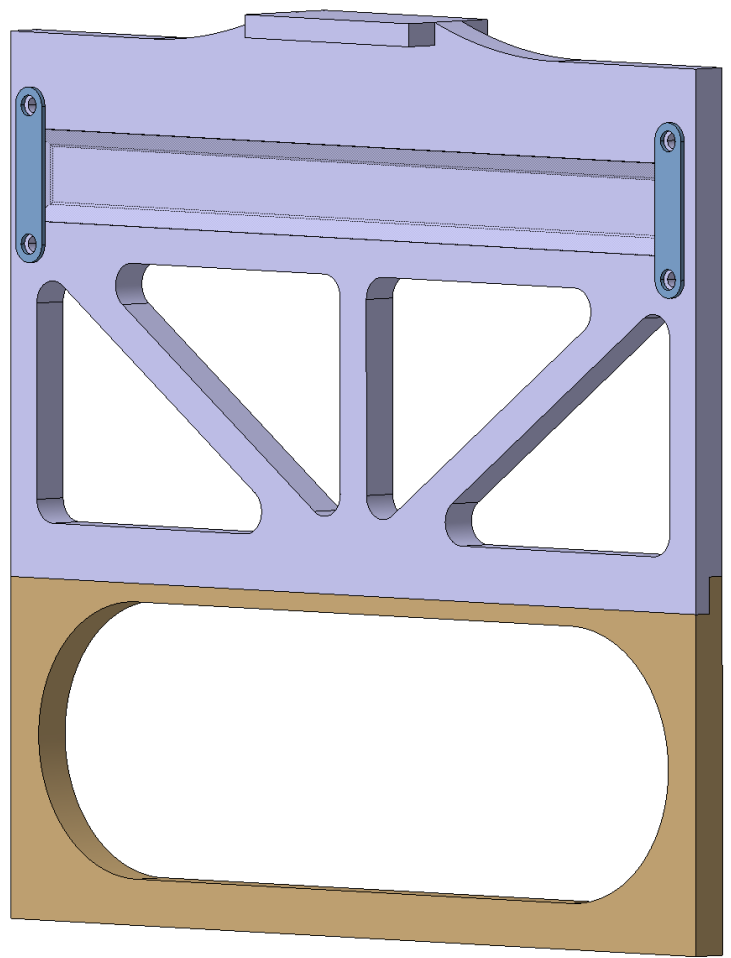


Viewport: thin section



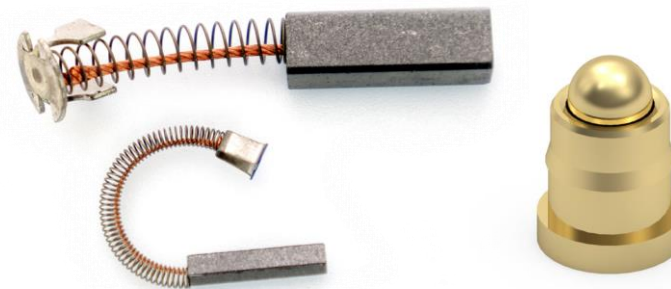
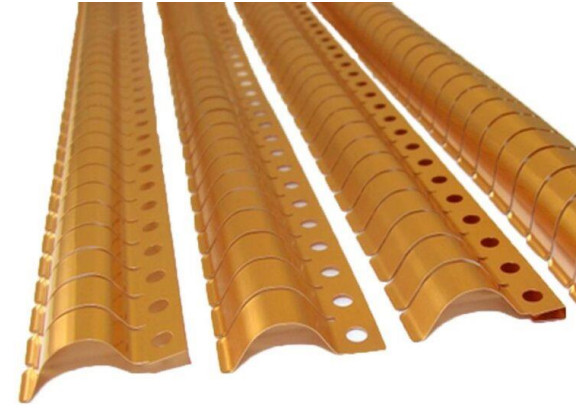
Card options





RF study

- **Still exploring sliding contact**
 - Brush style contact
 - Carbon fiber
 - Measured conductance lower than expected
 - RF simulations with real conductance ongoing
 - Metal
 - Copper/brass too ductile – elastically deforming material required
 - Very thin (25 micron) titanium sheet could work
 - Point contacts
 - Ball contacts
 - Maximum contact point distance study
 - Flat springs



Current ideal RF contact geometry

