



SKA Dish CoDR US SKA TDP & DRAO NRC

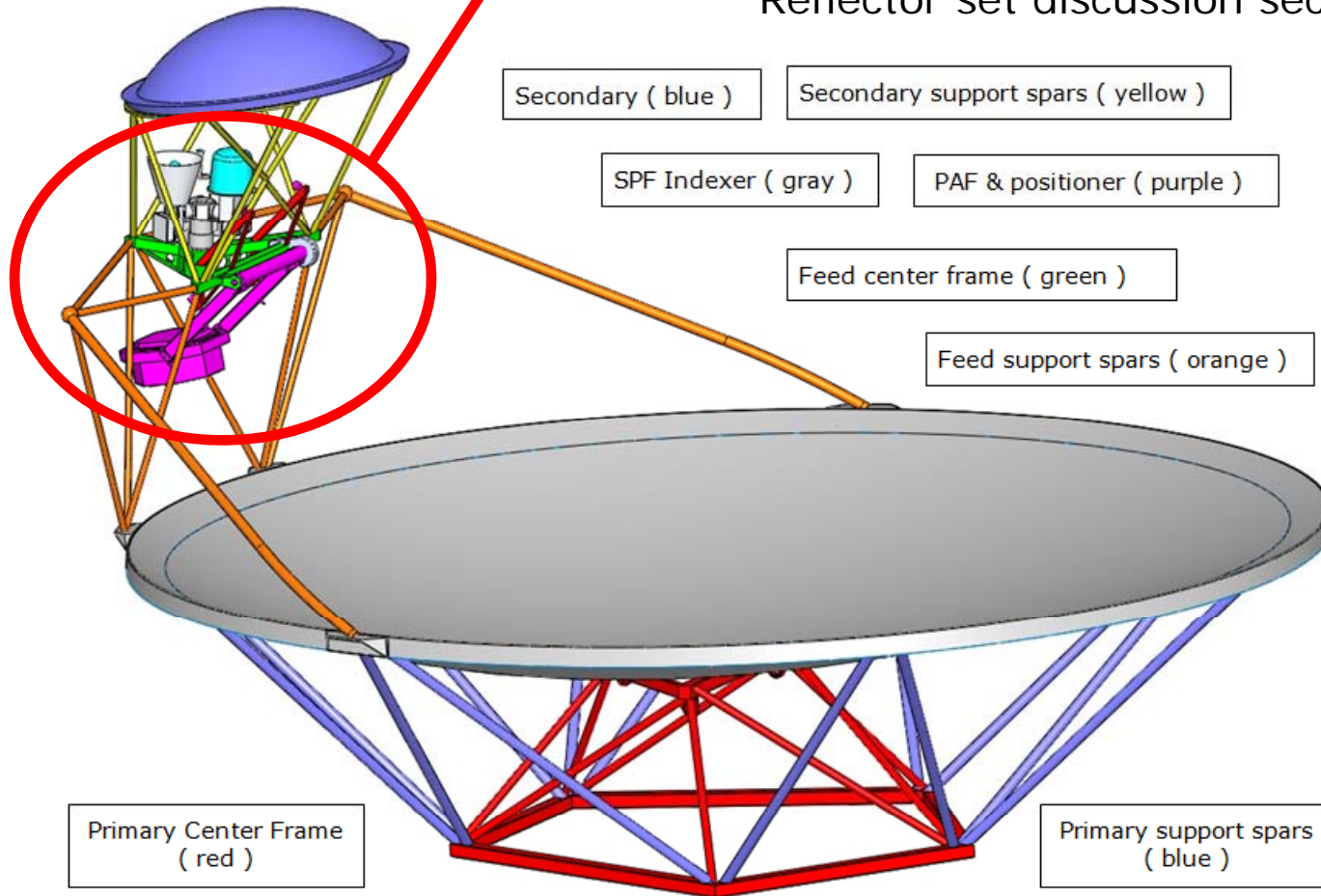
Feeds & Support Concepts (section 4.8)

Matt Fleming U. C. Berkeley / Minex Engineering

Presentation Material covers this area



Gordon will cover support system as part of Reflector set discussion section 3.5

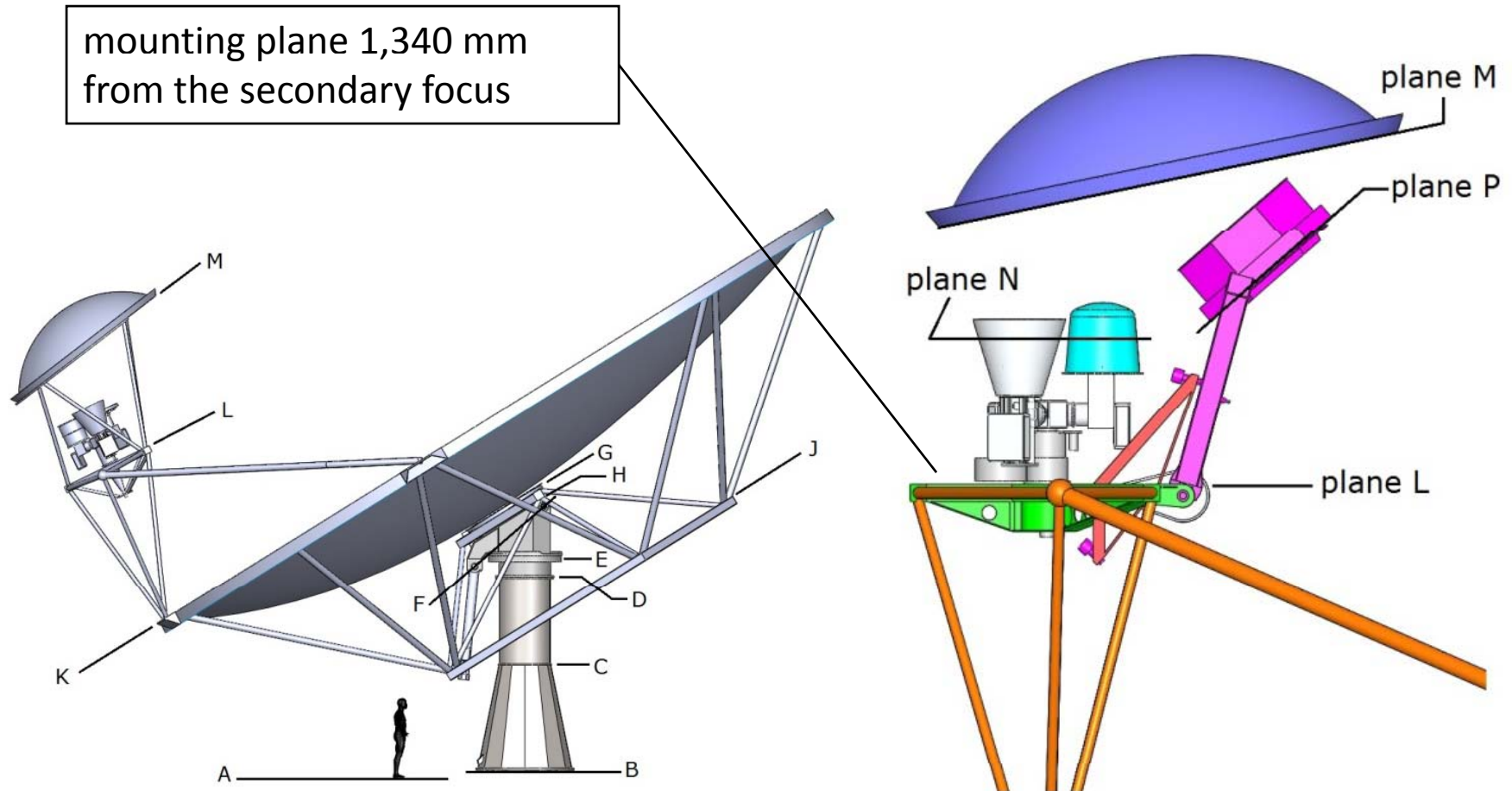


Labeling of Reference Planes

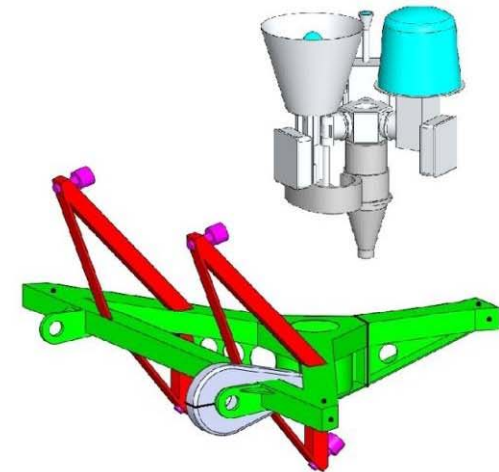
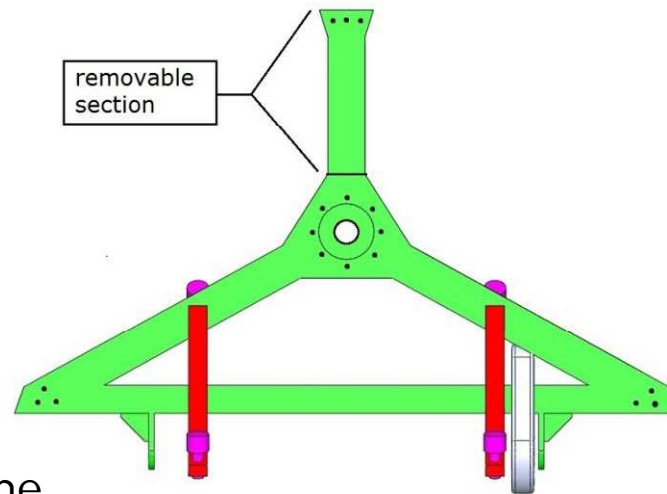


This slide available for discussion sessions

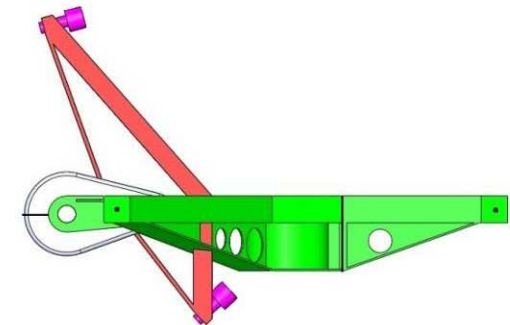
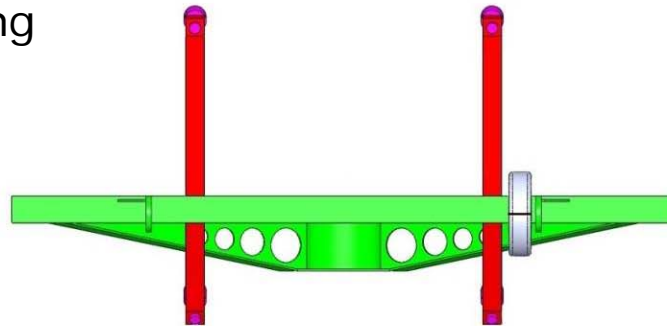
mounting plane 1,340 mm
from the secondary focus



Feed Support Platform

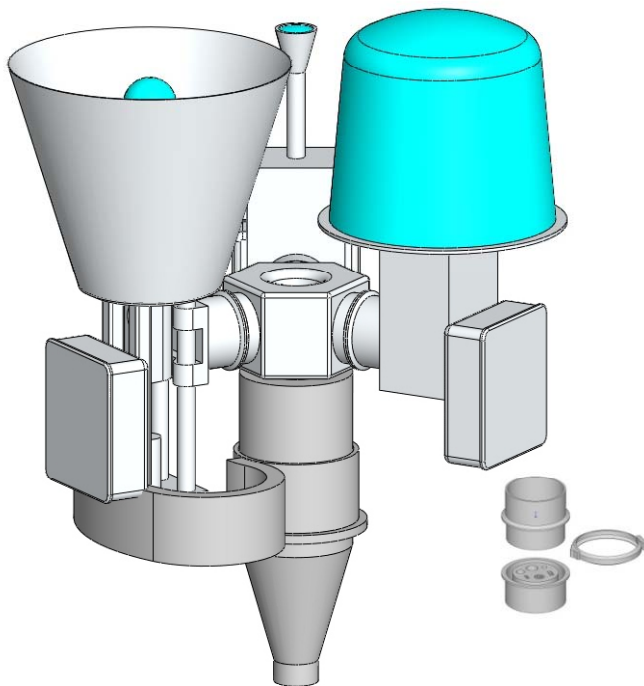


light weight steel frame
with precision mounting
flange for indexer

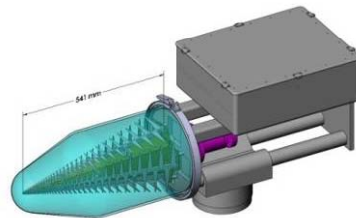


For more details see the TDP memo: [Concept for Secondary & Feed Support](#)

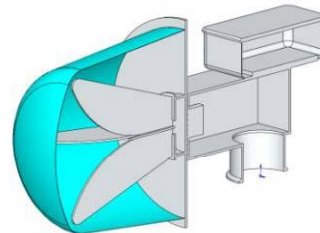
Single Pixel Feeds that might be on the indexer



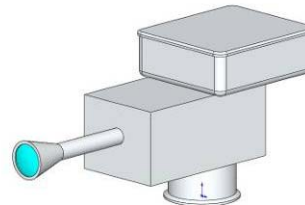
300 kg, feeds at 483 mm radius
1.340 m focus to mount flange



Cooled ATA Feed-5
with focus device



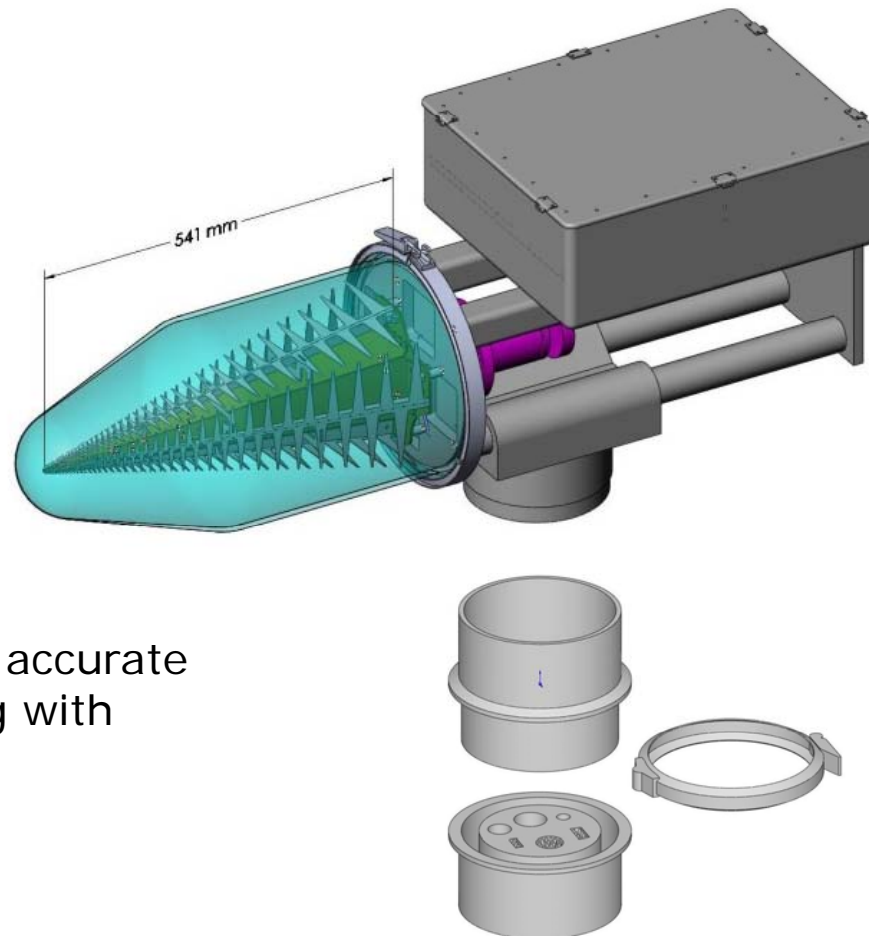
Quad-ridge Horn
possibly cooled



High gain
corrugated horn type

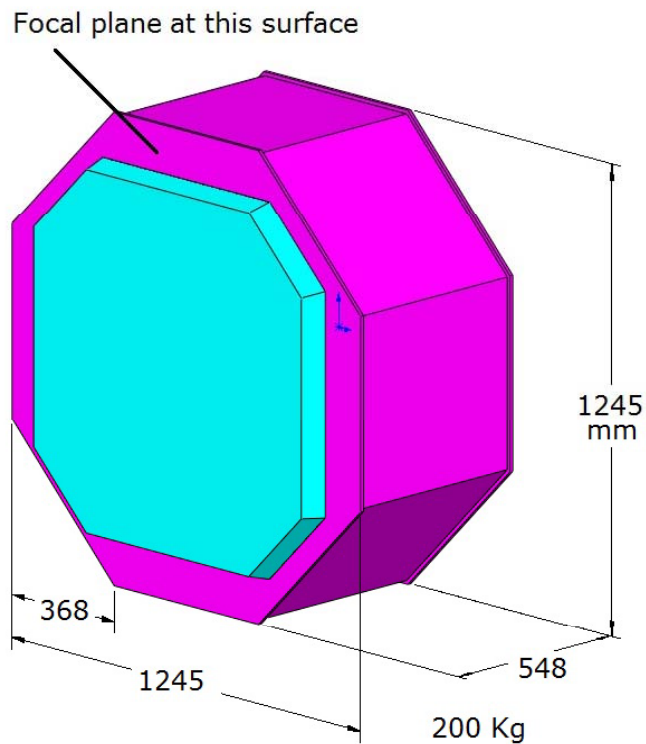
For more details see the TDP memo: [Indexer for SP Feeds Proposal](#)

Universal Quick Change Flange for Feeds and Other Devices

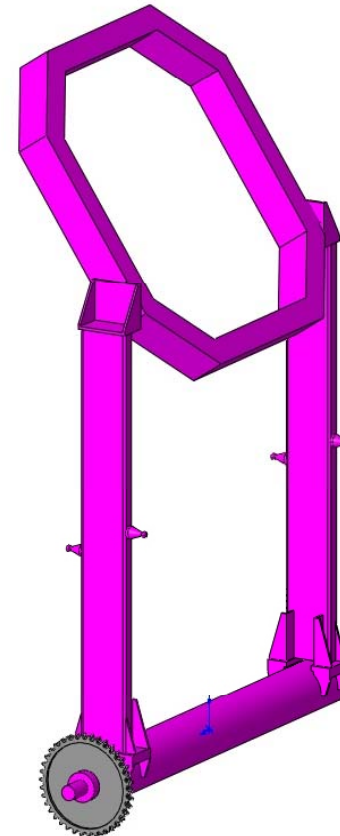


This concept requires accurate
repeatable positioning with
quick connections

Current PAF and Positioner based on ASKAP



ASKAP PAF



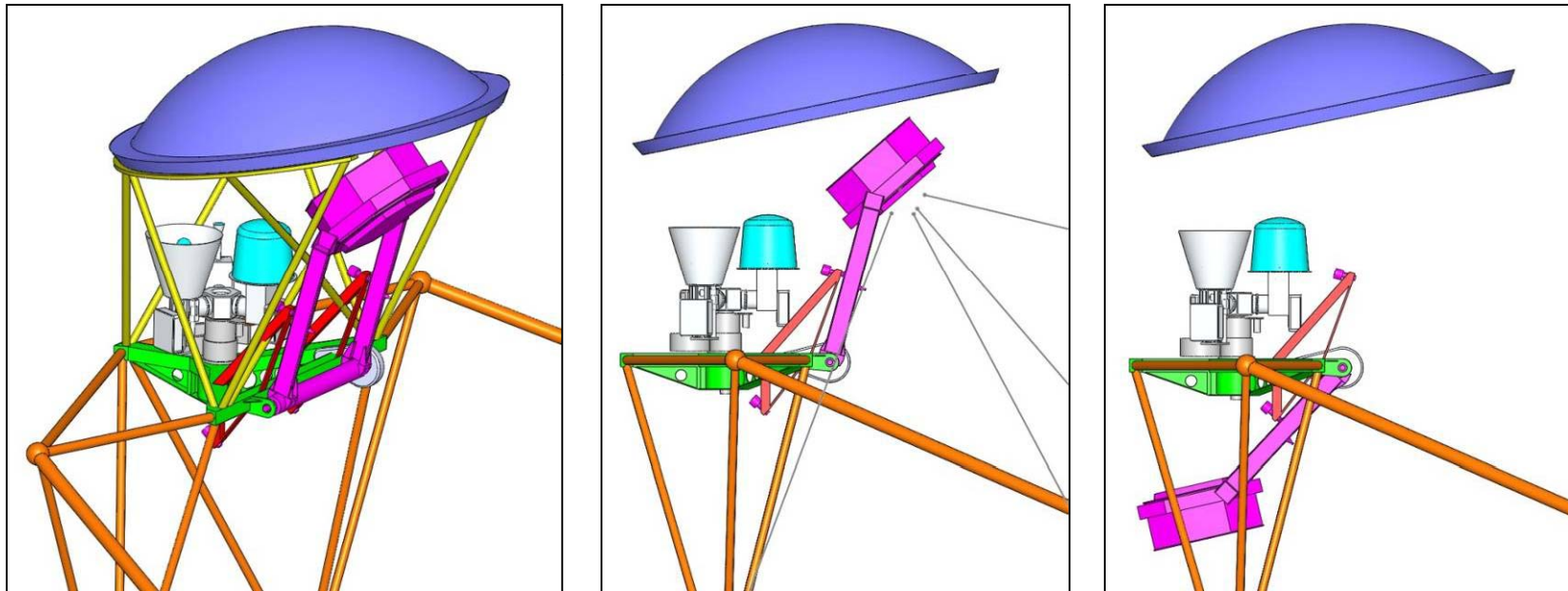
PAF positioner

PAF Positioner Movements for prime focus location



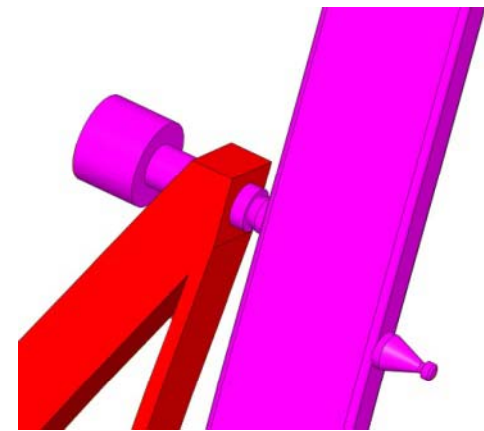
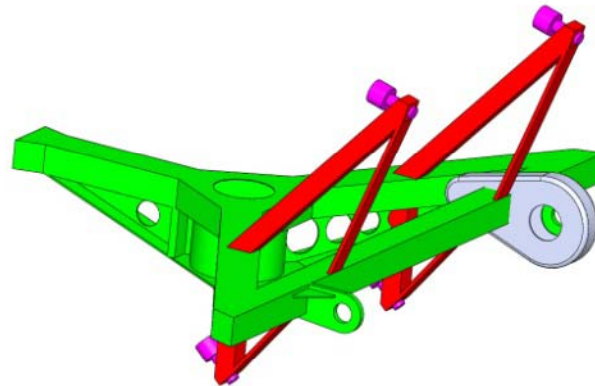
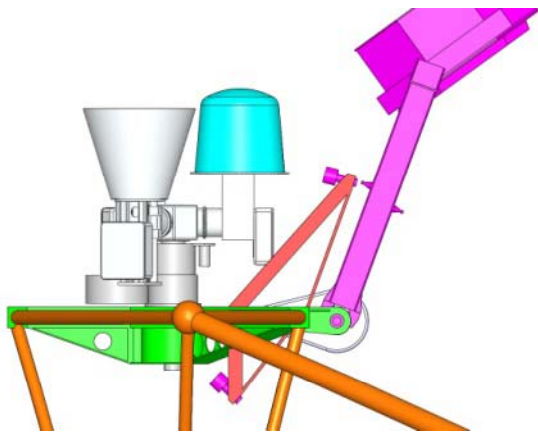
It is very likely PAF & positioner mass will be reduced,
however we assumed the following:

PAF mass 200kg, positioner 350kg, movement requires 7,708 Nm



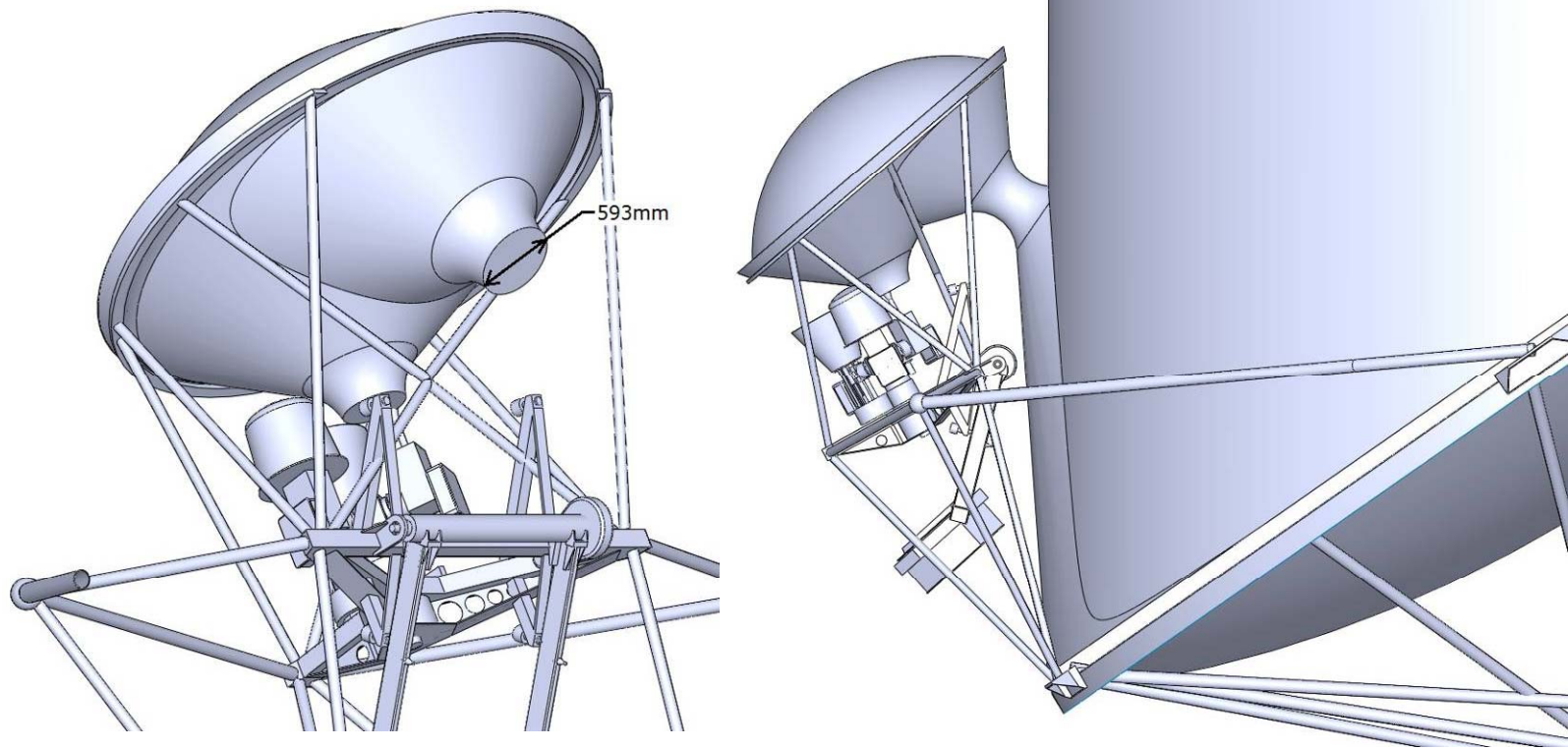
For more details see the TDP memo: PAF at Prime Positioner

PAF Positioning and Locks Concept

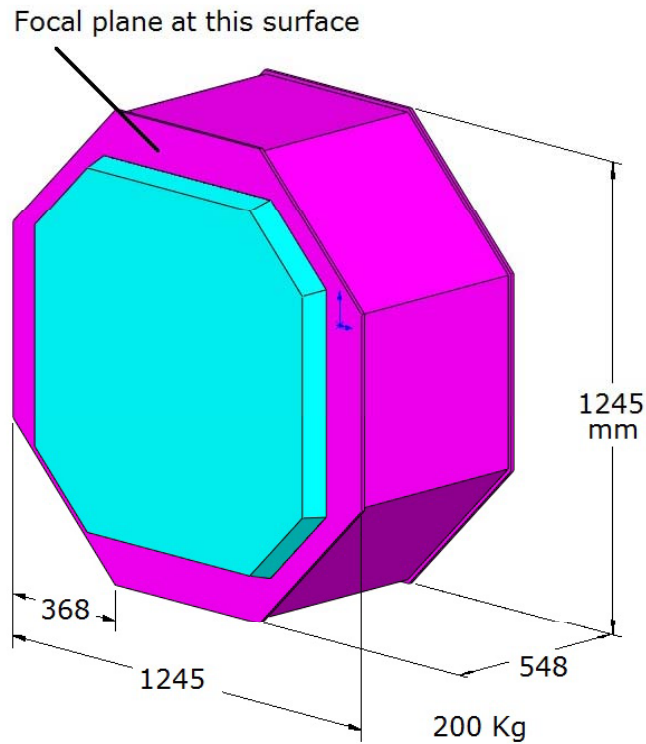


There are several possibilities for adjusting platform and indexer orientation.

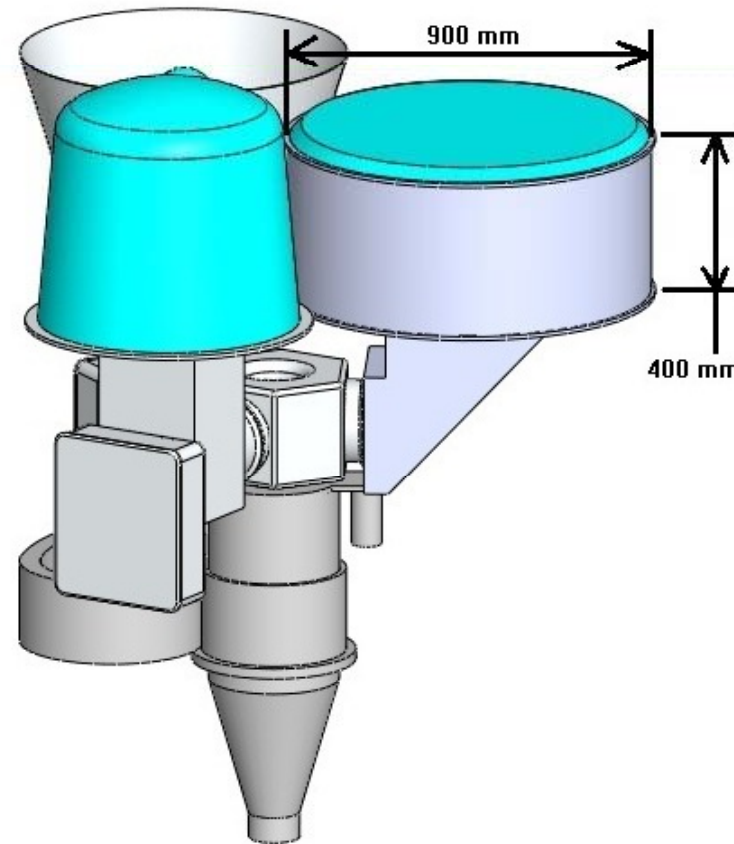
Beam Path Outline



Possibilities with Reduced PAF Size at Secondary Location

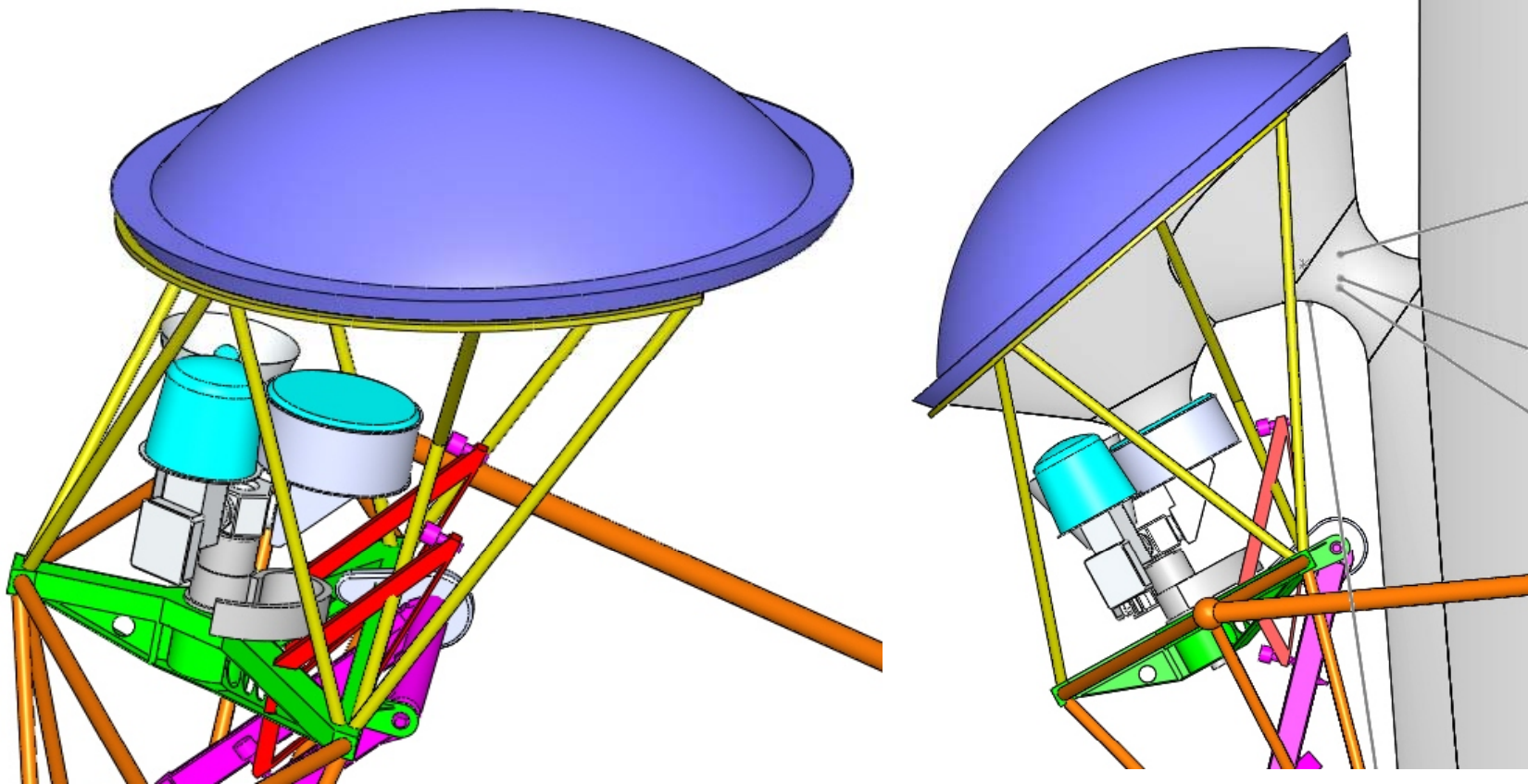


ASKAP PAF



Smaller PAF on indexer

Beam Path with PAF at Secondary Location



Additional Issues Related to Feeds & Supports



- Some feeds will benefit from shrouds.
- These shrouds might need to index with the feed or stay fixed.
- A radome will be needed to prevent dirt and critters.
- Various feeds could share power supplies & vacuum fore-pump.
- Access for humans and equipment needs consideration.
- A specialized vehicle tooled for feed replacements will be of interest.

