

Task 4.6 - Measurements on cryogenic beam vacuum system prototype

Miguel GIL COSTA



5th EuroCirCol meeting: FCC Test Line 4rd Update

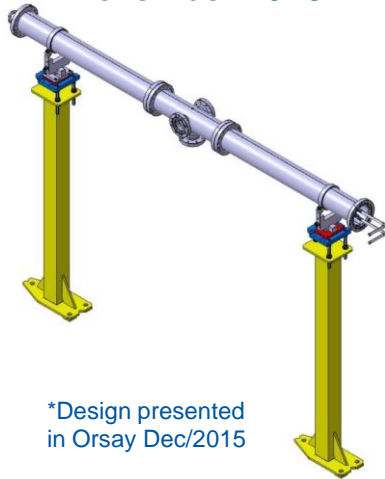
Outline:

1. Test bench evolution
2. Test-Line 4rd update
3. Design & Purchase progress
4. Mechanical analysis
5. Installation
6. Present & Future Steps



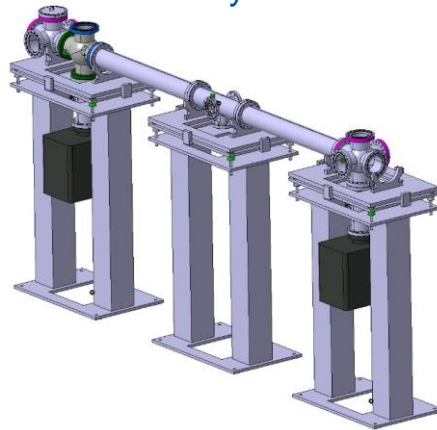
1 - Test bench evolution

November 2015

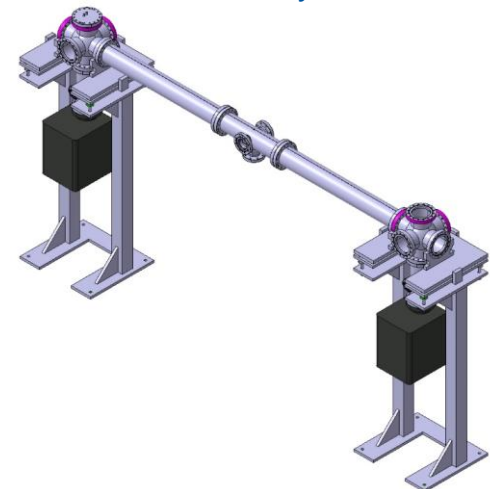


*Design presented in Orsay Dec/2015

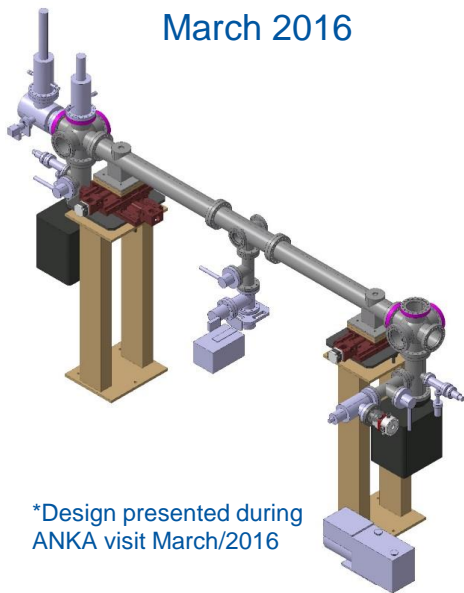
January 2015



February 2016

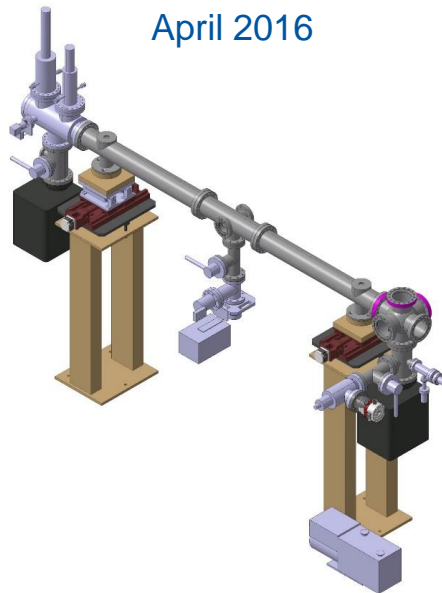


March 2016

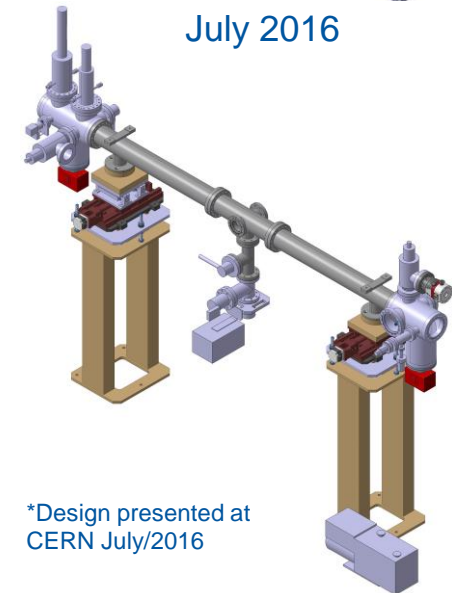


*Design presented during ANKA visit March/2016

April 2016

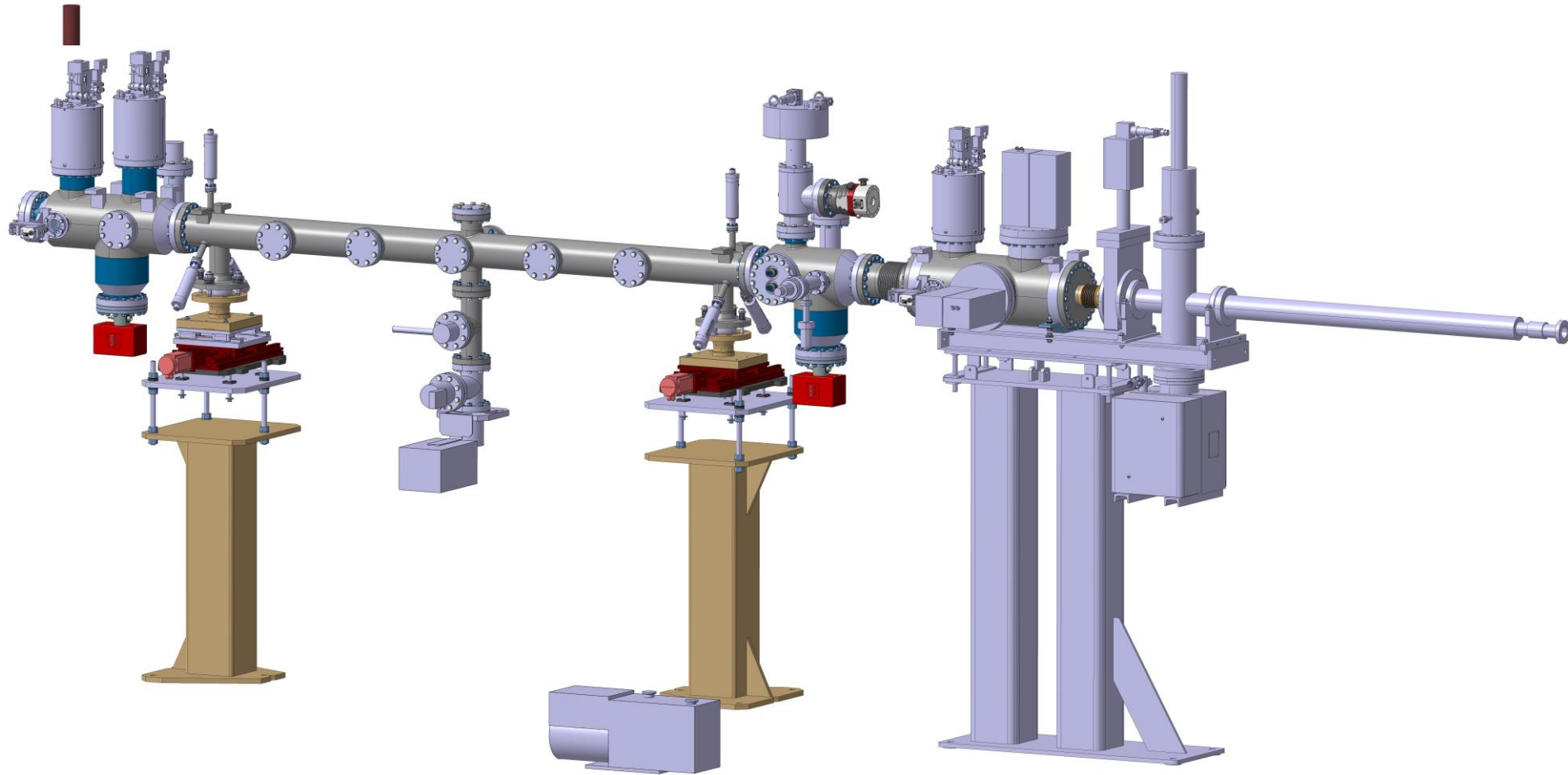


July 2016

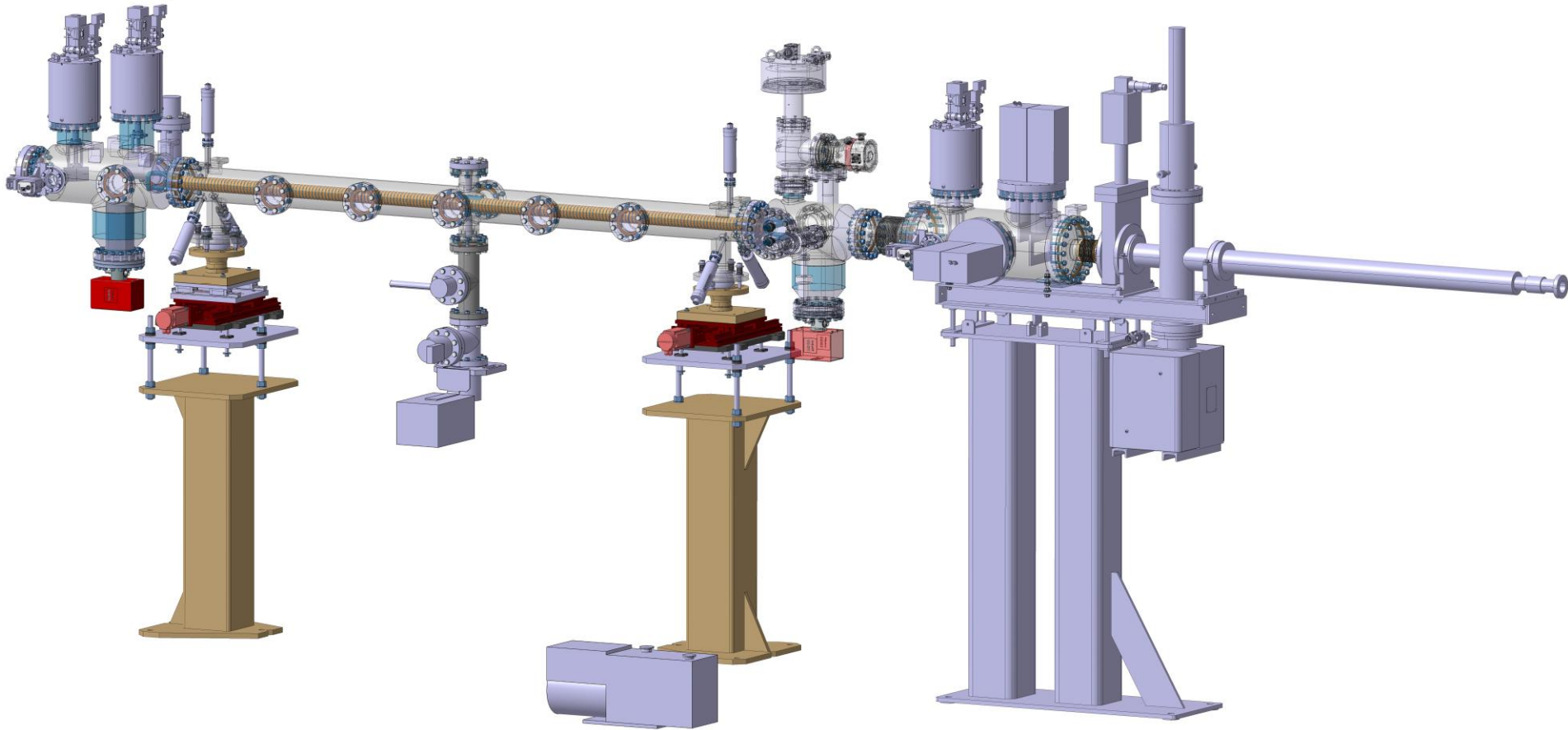


*Design presented at CERN July/2016

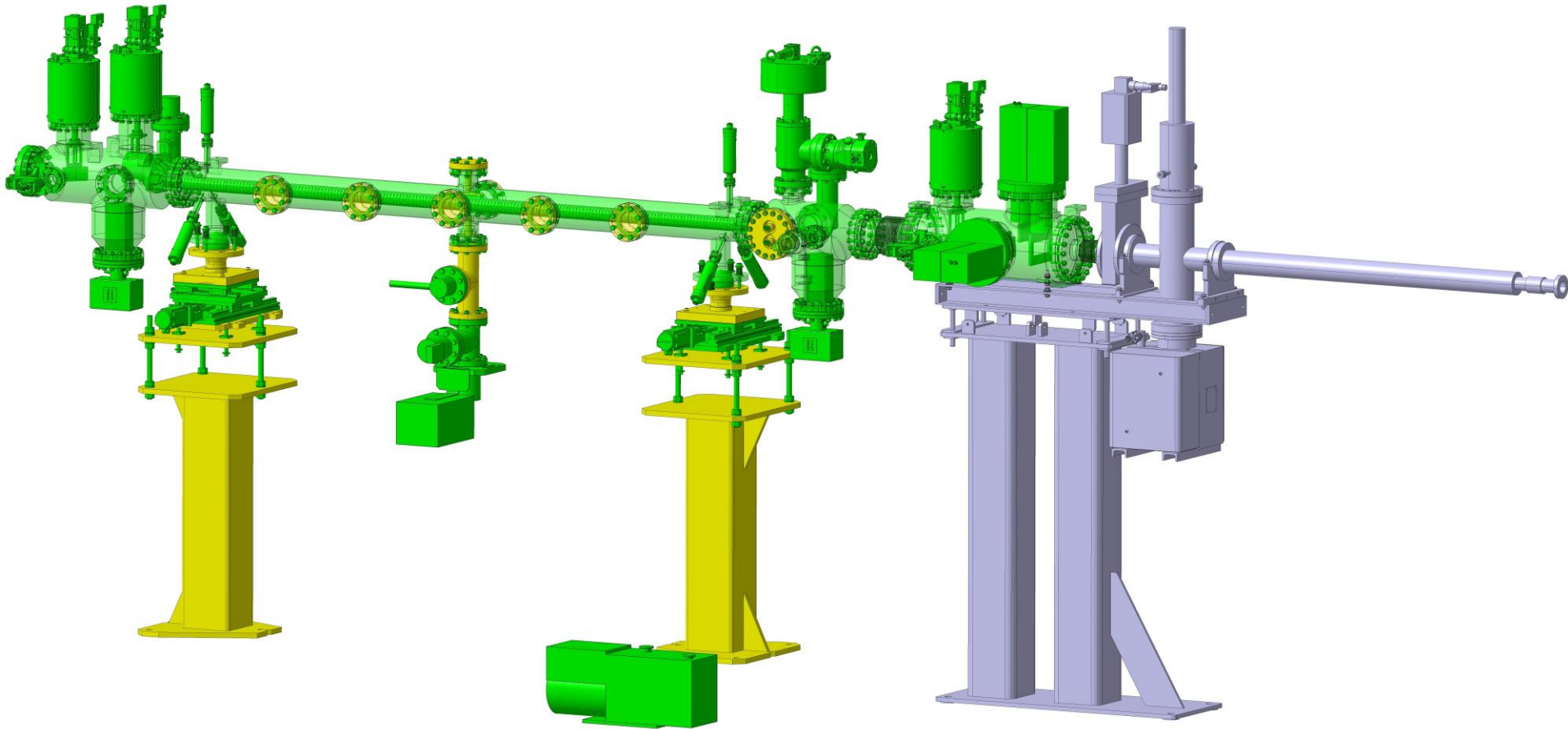
2 - FCC Test Line 4rd Update



2 - FCC Test Line 4rd Update



3 - Design & Purchase progress



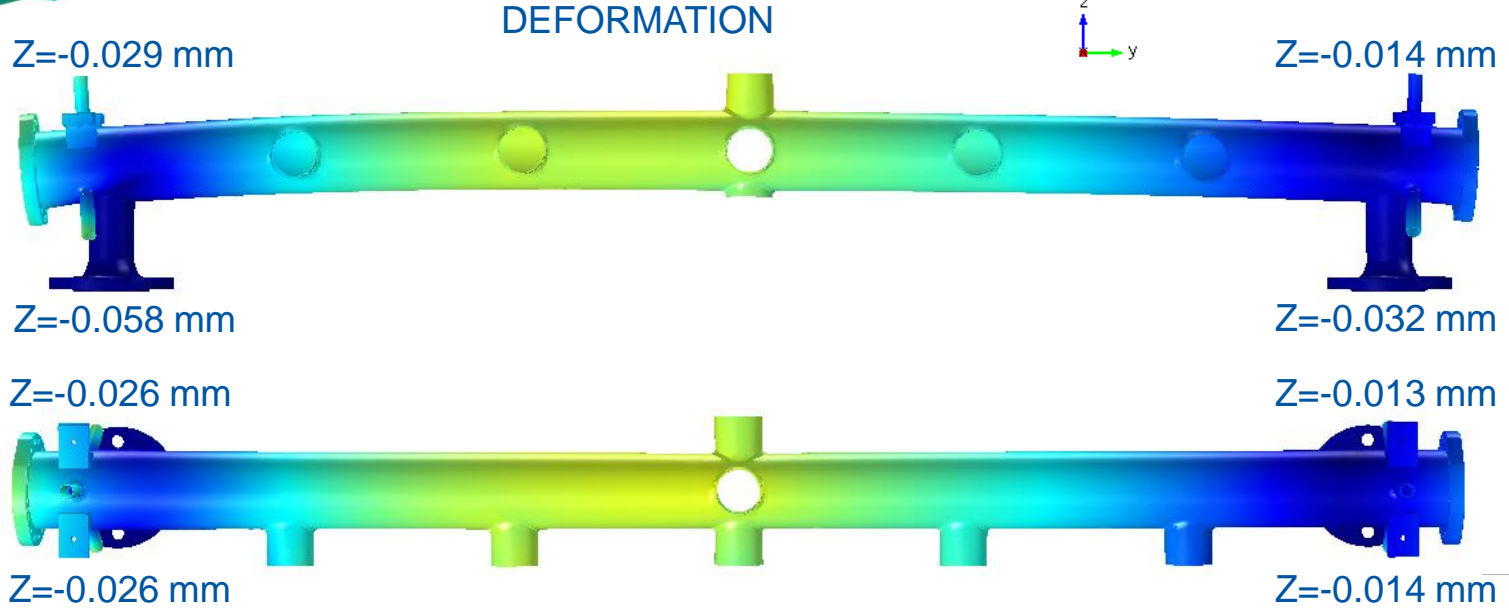
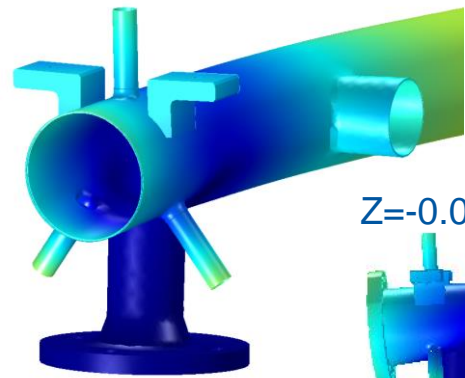
3 - Design & Purchase progress

Back Instrumentation Assembly		Test Bench Vessel		Test Bench Supports			Front Instrumentation Assembly		Slits Assembly	
Chamber	Ordered	Chamber	Ordered	Rotating stages	Rotative flange	Design phase	Chamber	Ordered	Chamber	Ordered
Bayard Alpert	Existent	Actuators	Received		Rolling bearing	Received	Valve	Ordered	Slits	Existent
Fluorescent screen	Ordered	Thermocouple feedthroughs	To be ordered		Base	Design phase	Turbo-Pump	Ordered	Fluorescent screen	Ordered
Photon collector	Ordered	Alignment pin-flange	Design phase	Free linear stage	Linear guides	Ordered	Penning-piranni	Ordered	Rupture disc	To be ordered
NEX-Torr pump	Ordered	Chimney	Design phase		Base	Design phase	NEX-Torr pump	Ordered		
		Interconnection Tee piece	To be ordered	Motorized linear stages	Linear stage	Ordered	Water feedthrough	Design phase		
		Bayard Alpert	Existent		Motor + coupling	Ordered				
		RGA	Existent		Fiducial base	Design phase				
				Planar alignment stages	Guiding shafts	Ordered				
					Bushings	Ordered				
					Height tuning screw	Design phase				
					Base	Design phase				
				Fixed support	Base	Design phase				

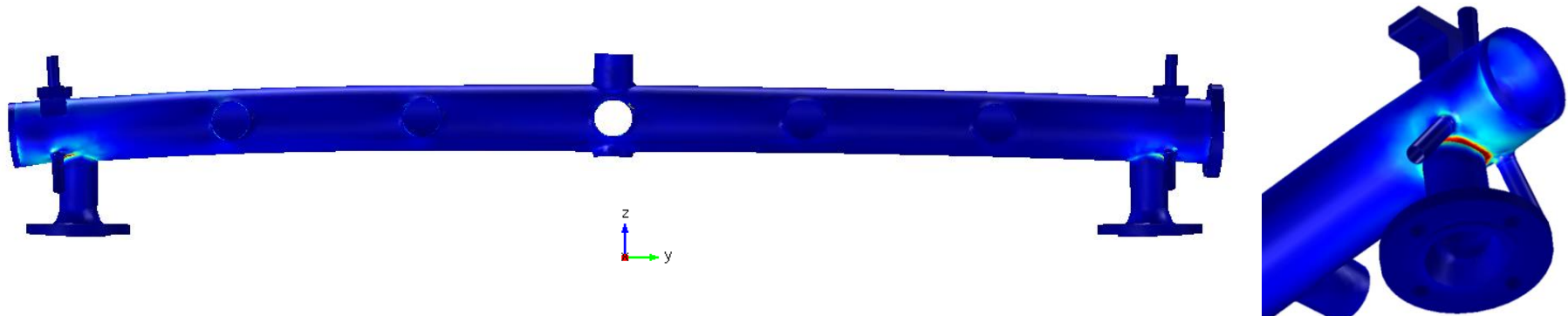
*Standard elements from CERN store have not been included (screws, metal sheets, etc)

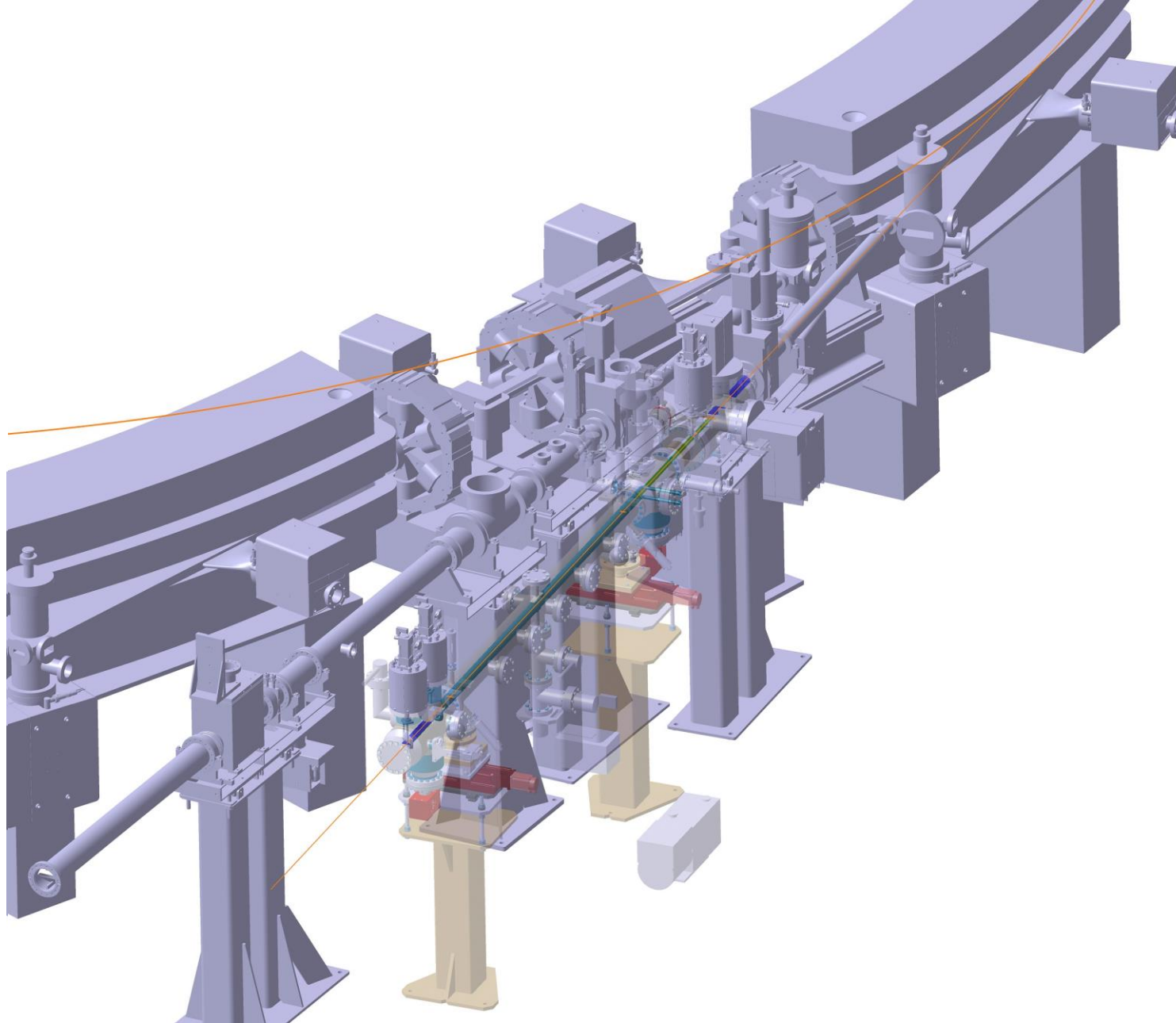


4 - Mechanical analysis

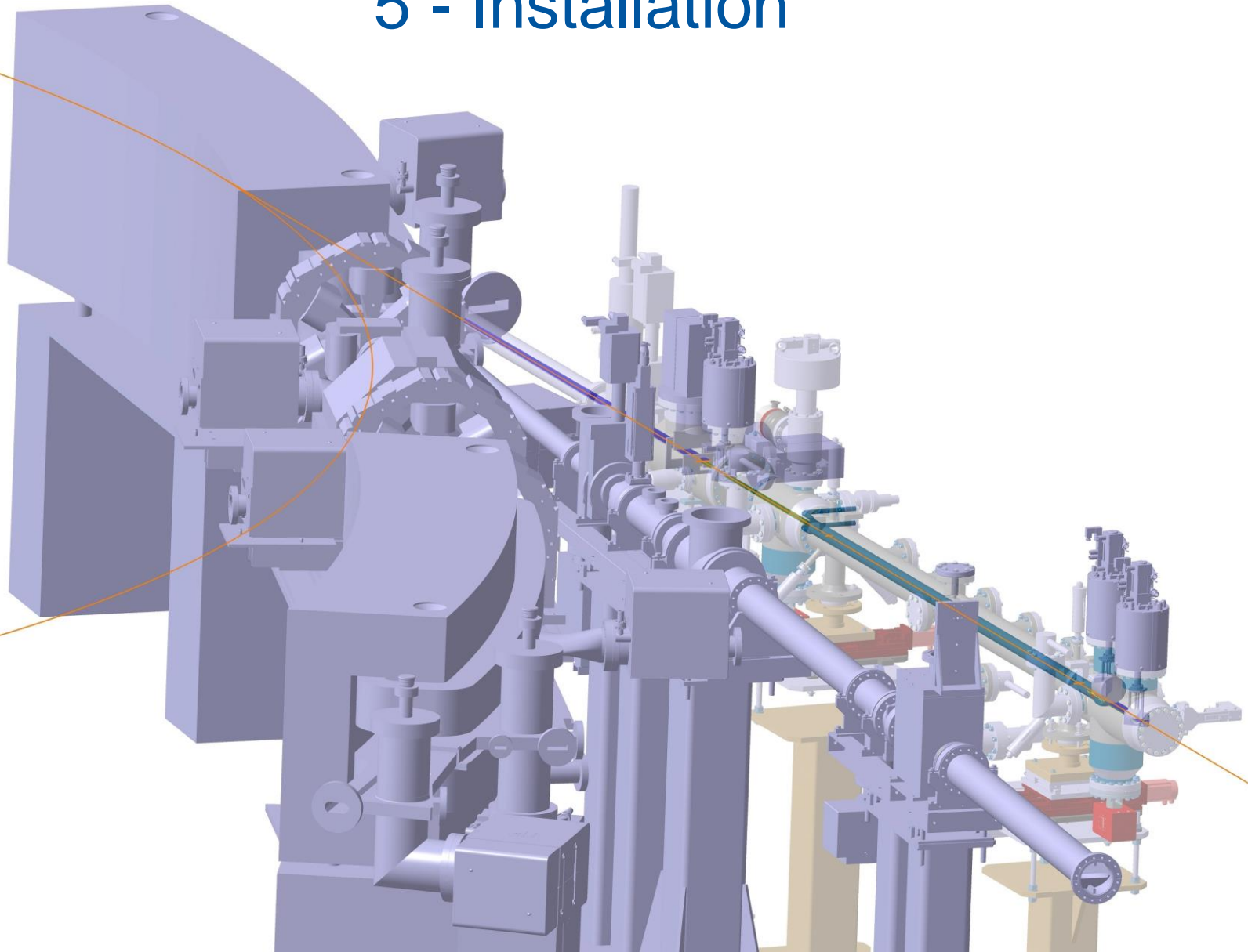


STRESS





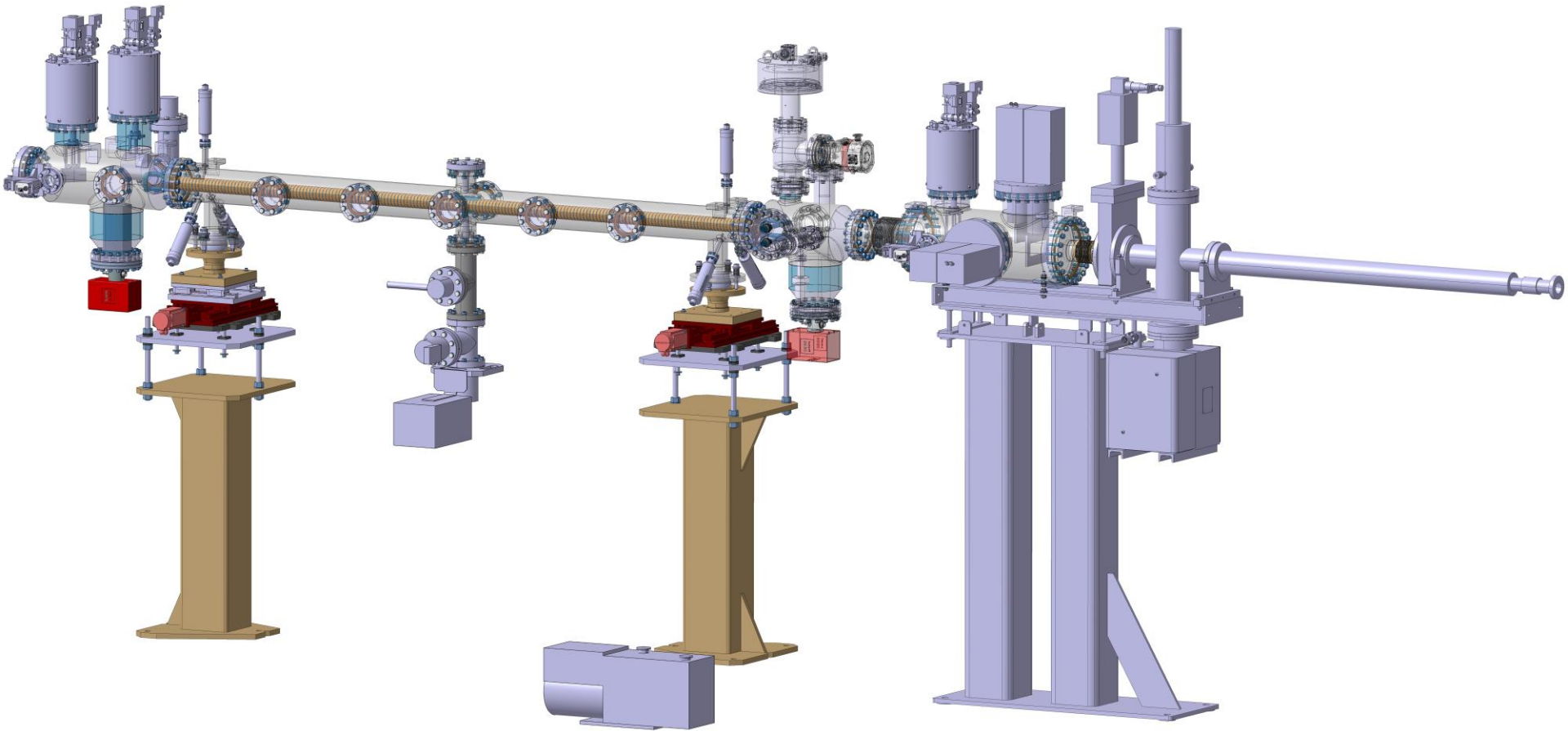
5 - Installation



6 – Present & Future Steps

- **Finished:**
 - Detailed 2D of chambers + purchase order
 - Purchase order of fluorescent screens and photon collector
 - Most part of standard elements and material ordering
- **Ongoing:**
 - Re-design of
 - Support legs
 - Water feedthrough
 - Alignment flange
 - Chimney
 - Bases
- **Future:**
 - Finish re-design / orders
 - Production of supports elements, assembly and testing
 - Follow-up of chambers (Trinos) and Fluorescent Screens+Photon Collector (FMB Oxford)
 - Pre-assembly and qualification test at CERN

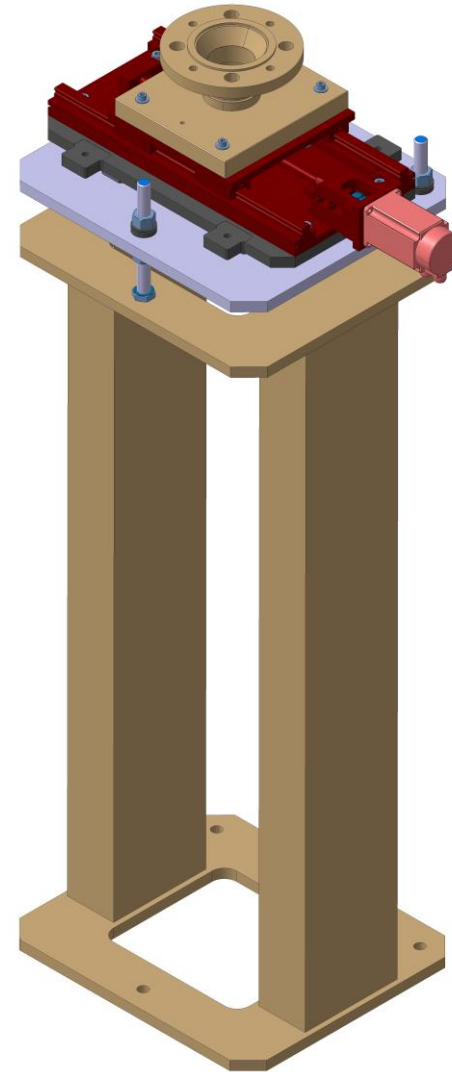
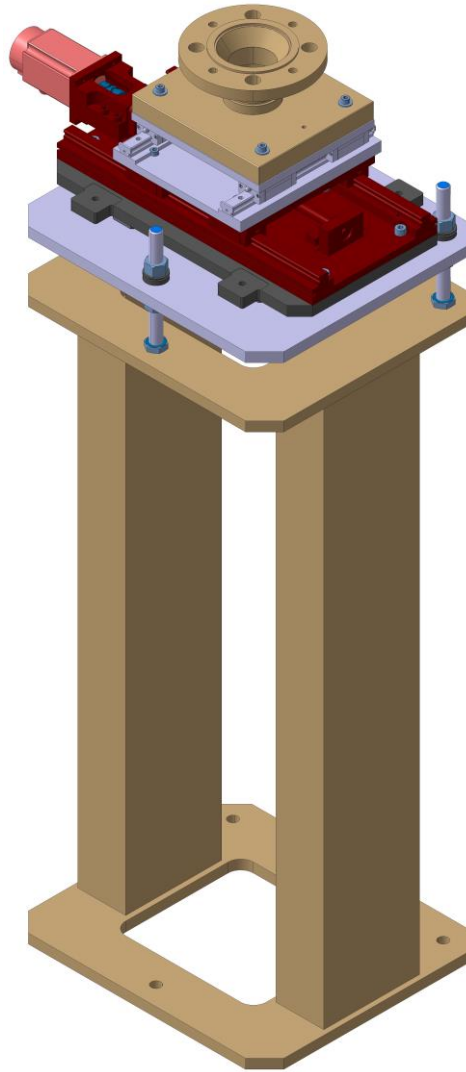
Thanks for your attention



EXTRA SLIDES



Extra Slide – Supports



Extra Slide – Supports

