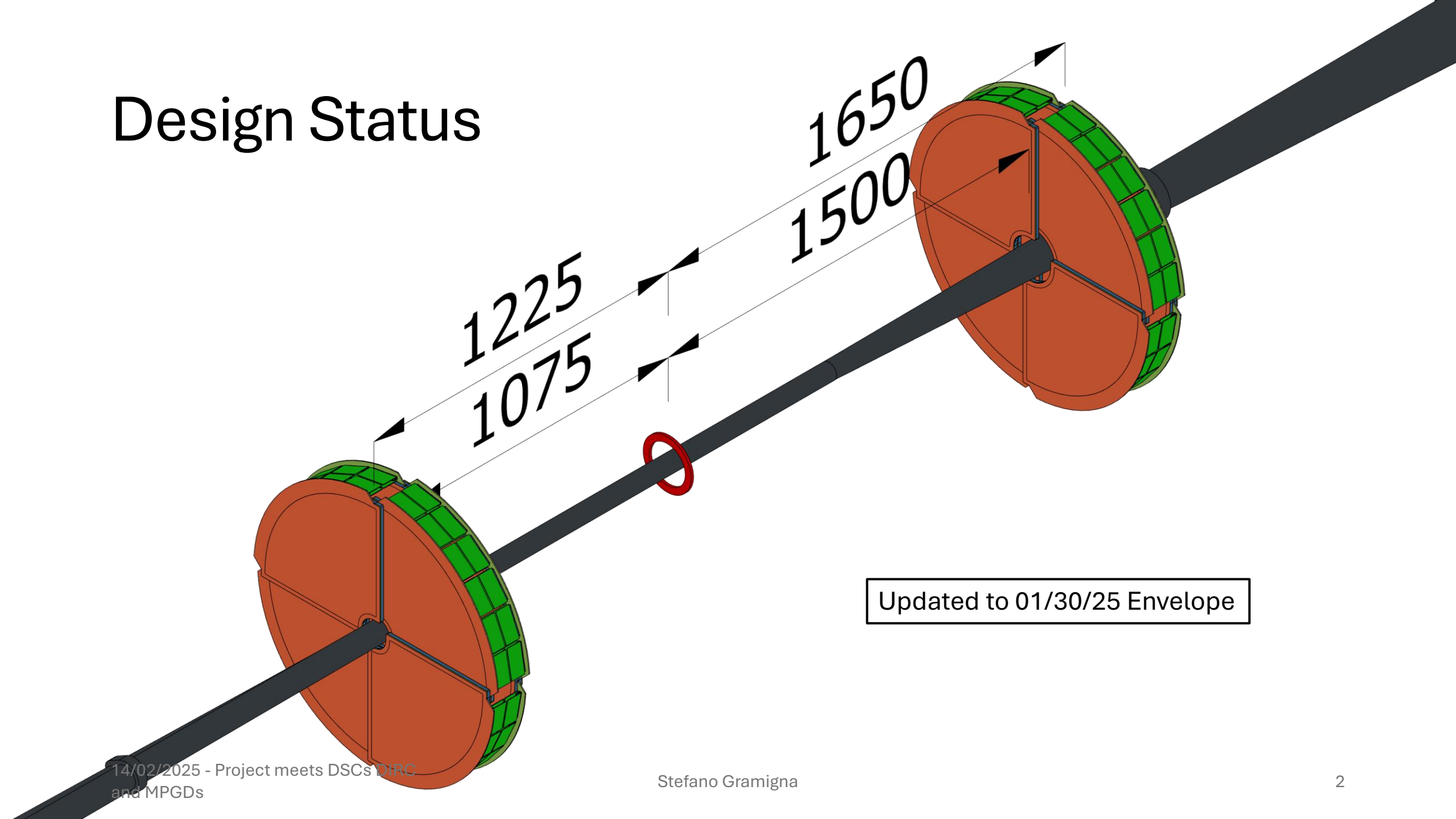
ECT Status and Open Questions

Project meets DSCs DIRC and MPGDs

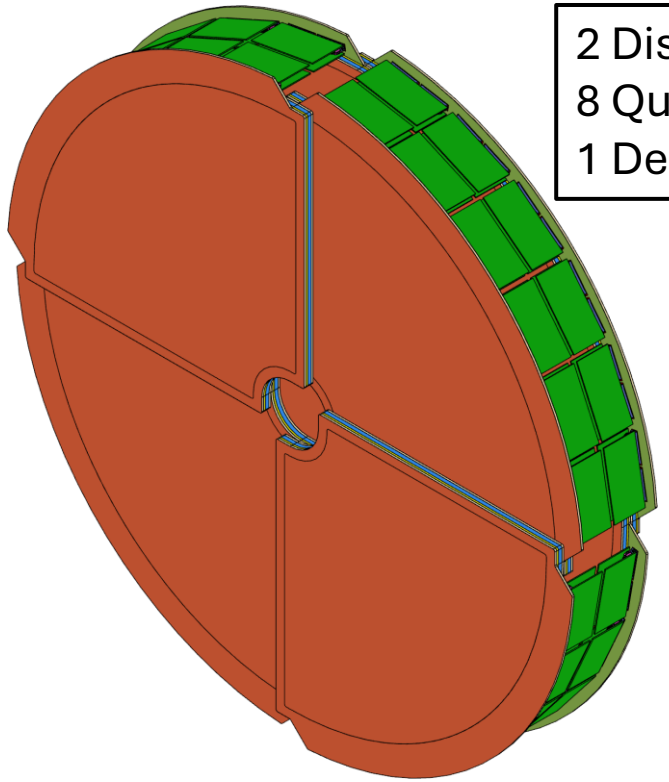
Design Status



Updated to 01/30/25 Envelope

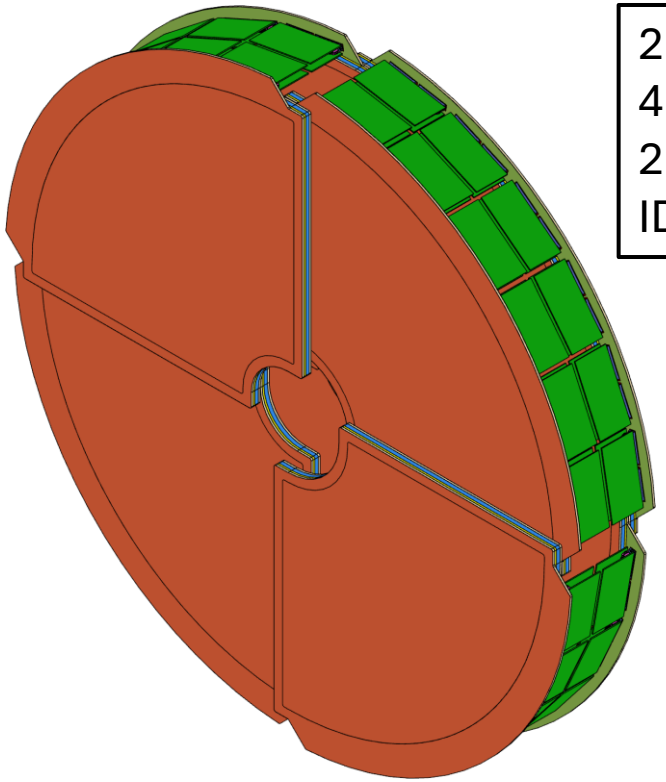
Design Status

West/Electron/Backward Side



2 Disks
8 Quadrants
1 Design (ID 100)

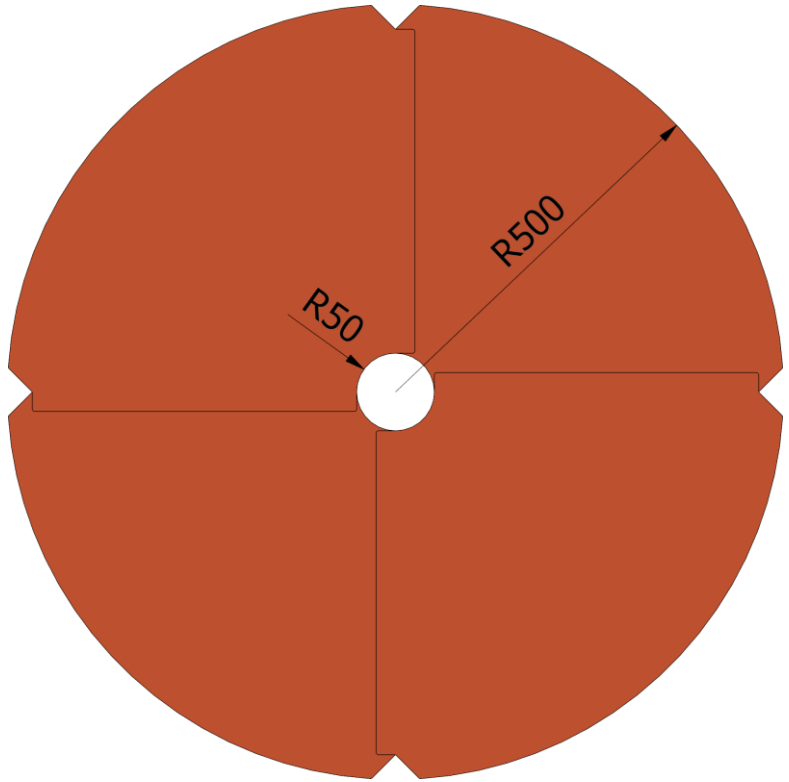
East/Hadron/Forward Side



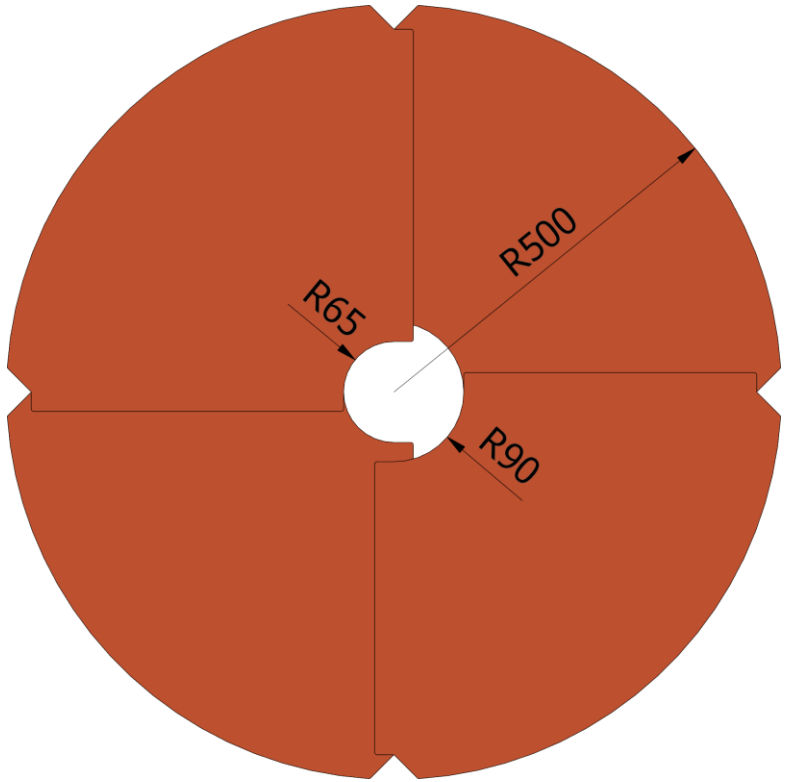
2 Disks
4 + 4 Quadrants
2 Designs (ID 130, ID180)

Design Status

West/Electron/Backward Side



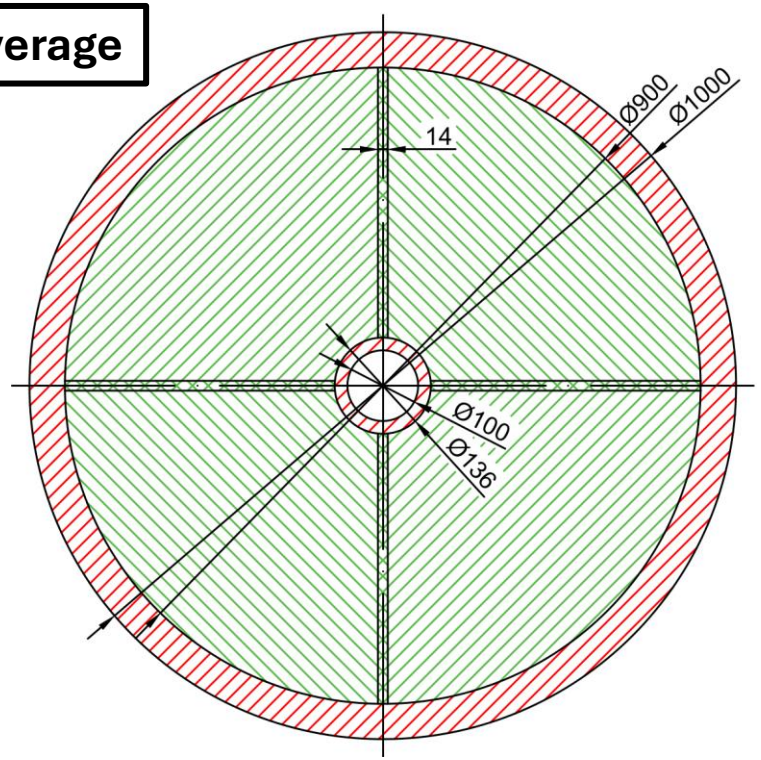
East/Hadron/Forward Side



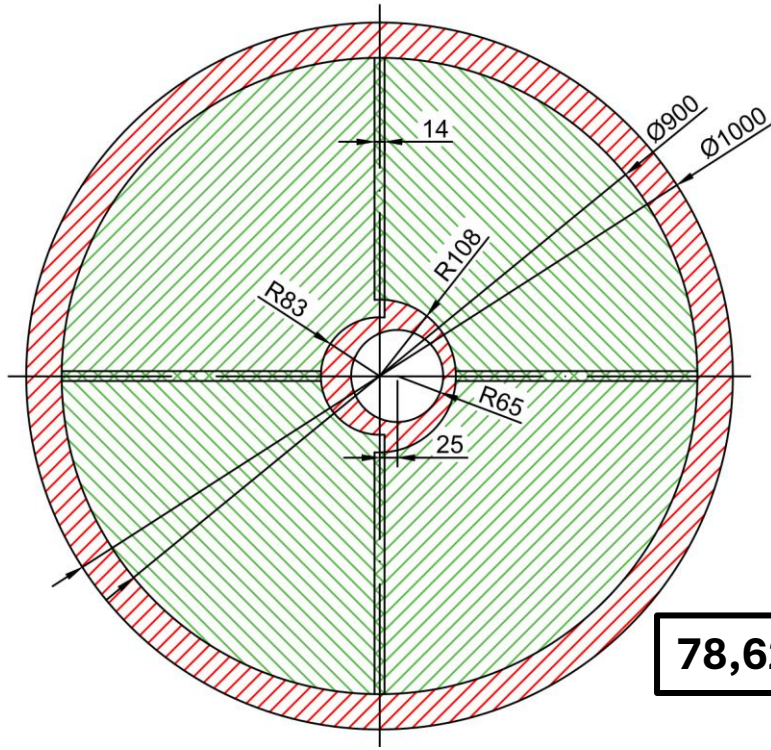
AA Coverage

WEST/ELECTRON/BACKWARD SIDE

79,95% Coverage



EAST/HADRON/FORWARD SIDE



78,62% Coverage

Services Estimate

Service	# lines	Flow	Material	Dimensions	Comment
Gas	4	IN	SS316/Cu	Ø8	1 per disk, **manifold for distribution near the disks**
	4	OUT	SS316/Cu	Ø8	1 per disk, **manifold for distribution near the disks**
Cooling	4	IN	PU	Ø12	1 per disk, **manifold for distribution near the disks**
	4	OUT	PU	Ø12	1 per disk, **manifold for distribution near the disks**
Dry air	4	IN	PU	Ø8	1 per disk, **manifold for distribution near the disks** (if humidity not controlled otherwise)
Data	96		Fiber optics	Ø2(?)	1 per FEB, 24 FEBs per disk
LV	96		Cable	Ø8(?)	1 per FEB, 24 FEBs per disk
HV	16		Multi-channel Cable	Ø10(?)	1 per quadrant (4 HV channels per quadrant, 16 per disk)
GND	2		Copper braid	70 mm2	1 per side, if not provided otherwise
ENV	8		Cable + sensor	Ø4	4 per side, 2 temperature + 2 humidity

Water cooling is assumed for FEBs

A **patch panel** may reduce DATA, LV and HV lines' occupancy near the detectors

Open Questions

- **Nature and location** of the **mounting points** (rails, holes, studs, …)
- Space available for **support mechanics outside the envelope**
- **Constraints** on mechanical support structures (materials, magnetism, grounding, fire resistance, …)
- **Integration** procedure (beam pipe fully mounted or not, access to mounting points, interference with other subdetectors, …)
- **Service** passageways **location** and occupancy