CyMBaL:
Cylindrical Micromegas Barrel Layer

Thoughts on services: PRELIMINARY

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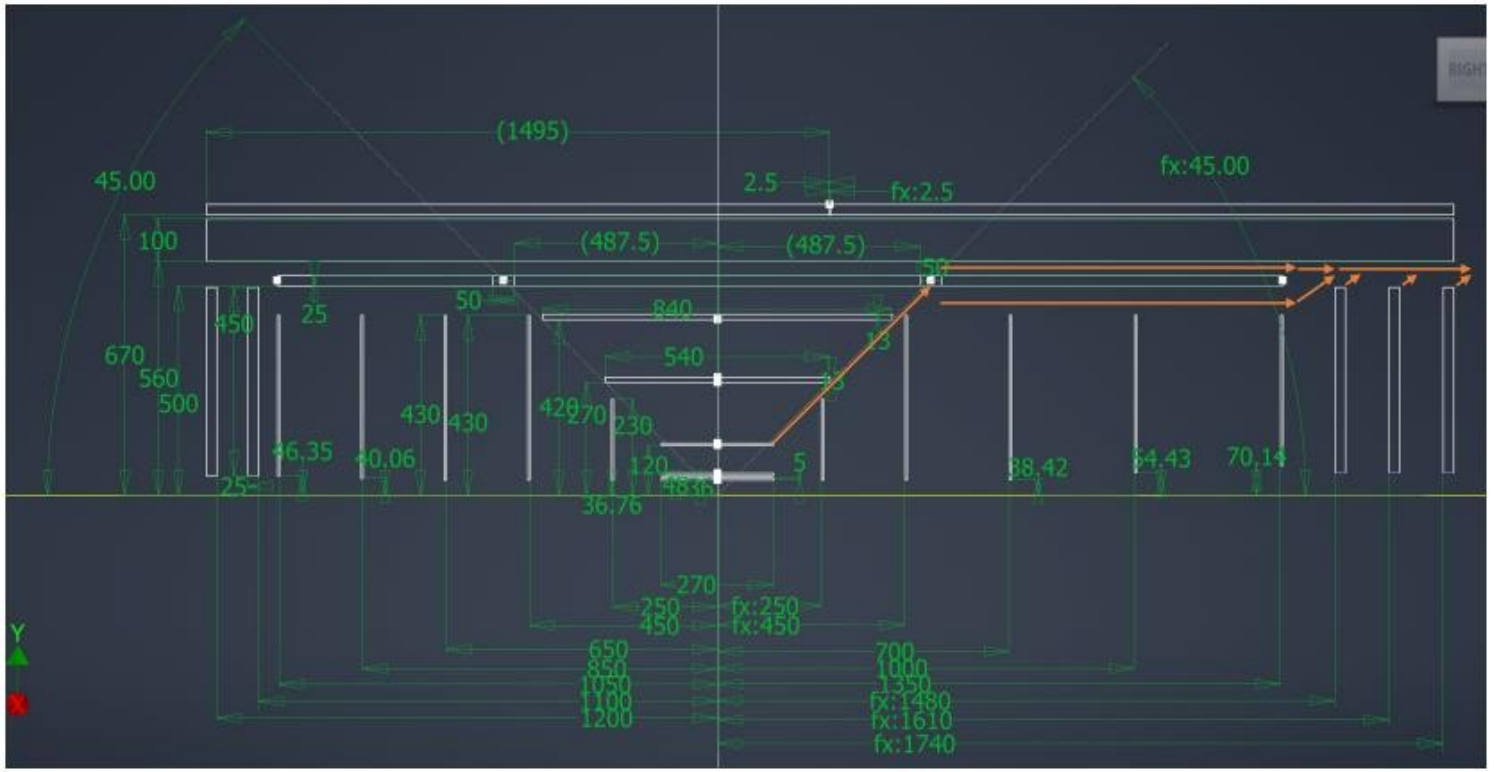
Keeping zones

- Three cylinders for different lengths at R=50cm
- Vertical keeping zone: 25mm
- Additional space?
  - 60mm to TOF
  - 70mm to the SVT
- Assumptions :
  - Hermetic in phi and z.
    - Is it needed ?

	z min	max	length
backward	-105	-53.75	51.25
central	-48.75	48.75	97.5
forward	53.75	135	81.25



CyMBaL

- Technology: light cylindrical Micromegas tiles with 2D readout
- Evolution from the CLAS12 Barrel Micromegas Tracker
- Based on a modular design
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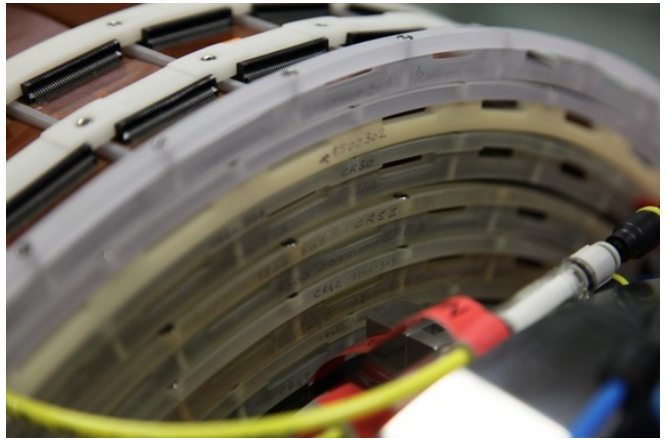
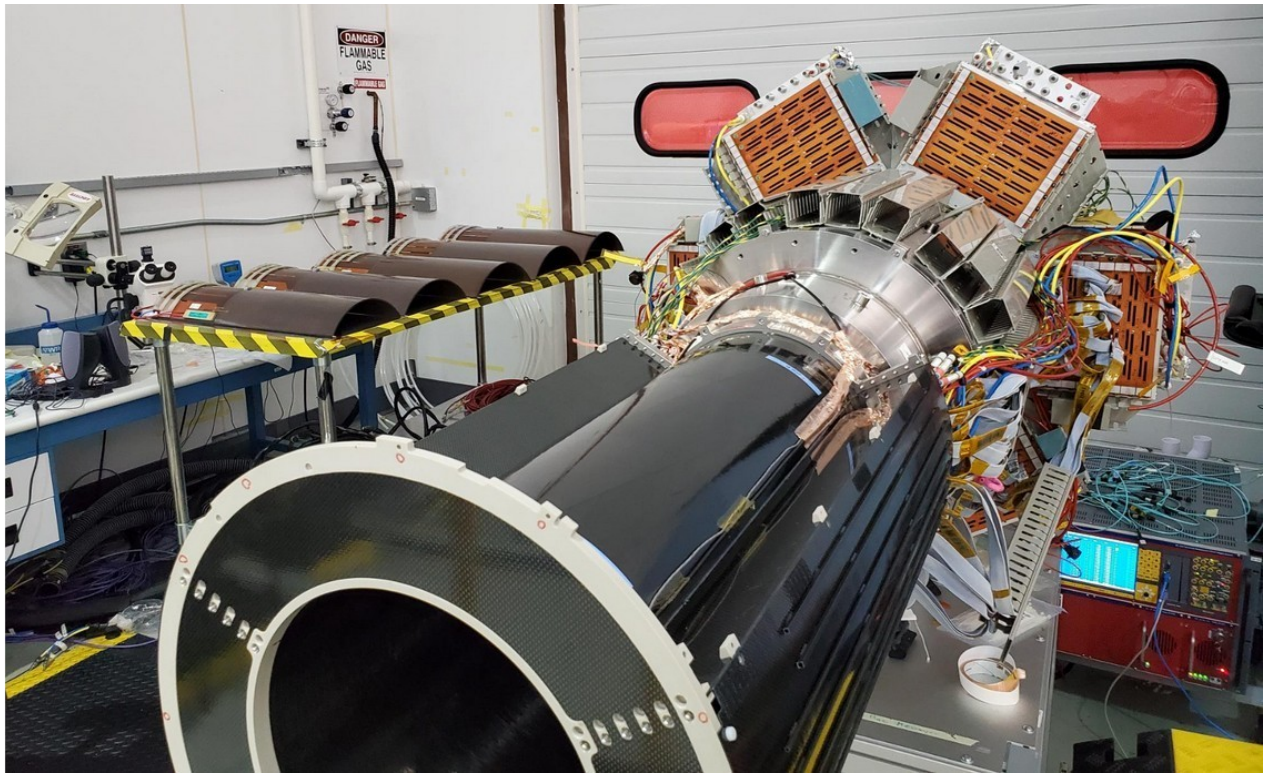
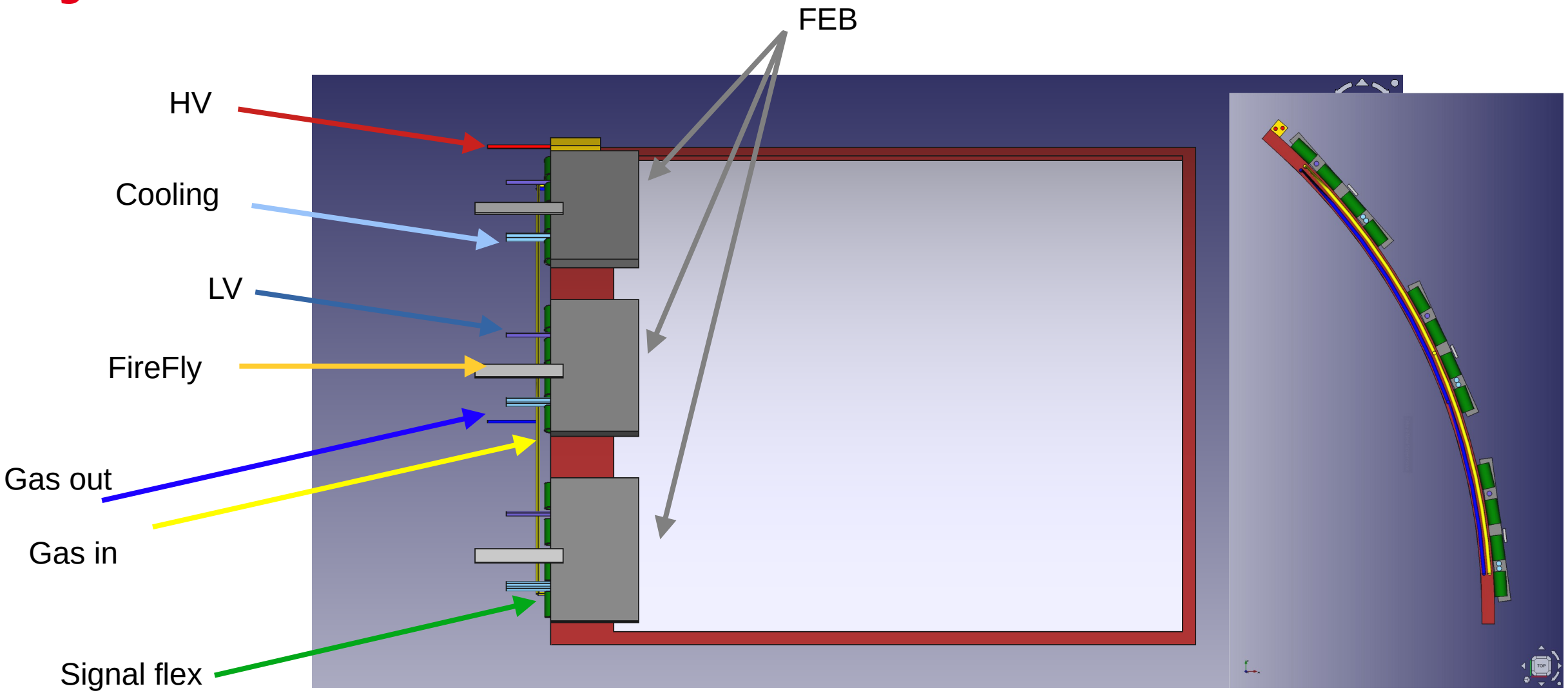
  - Pitch ~1mm

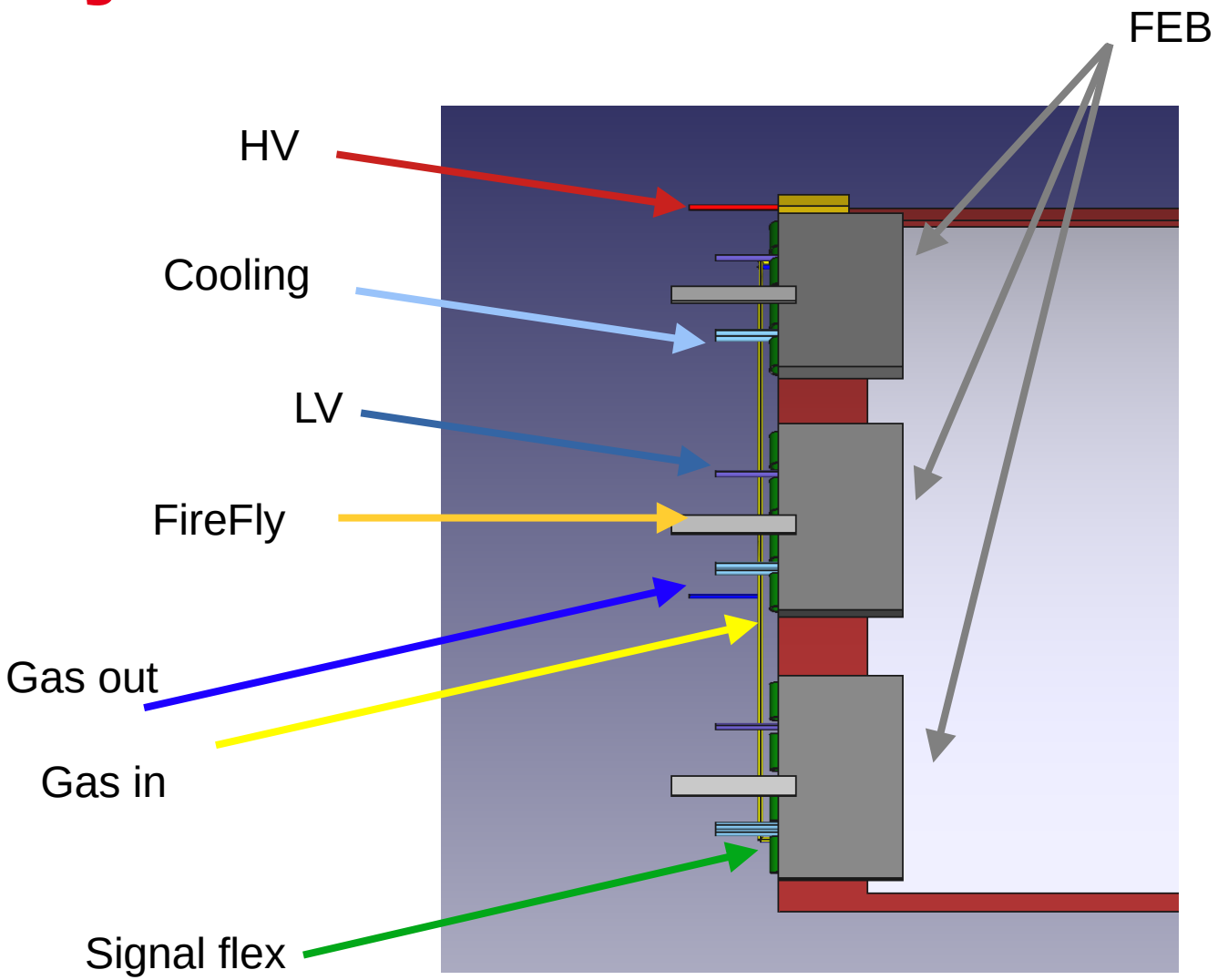




CyMBaL – a tile



CyMBaL – a tile



Assumptions:

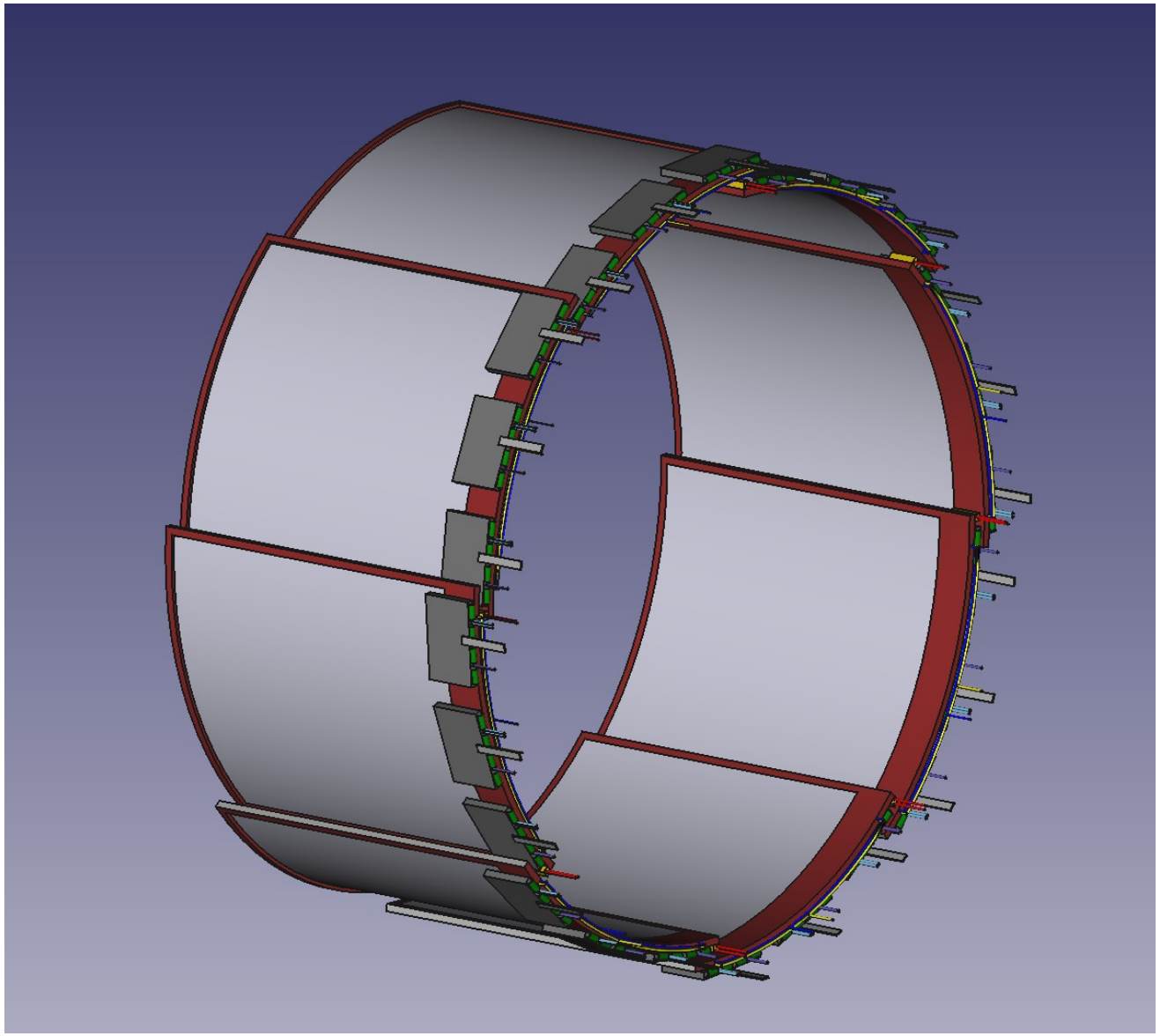
- Size: 51.25 x 44 cm^2
- Active area: 45x42 cm^2
- 1 mm pitch in both directions
- 768 strips per tile
- 32 channels per connector, 24 connectors

Services:

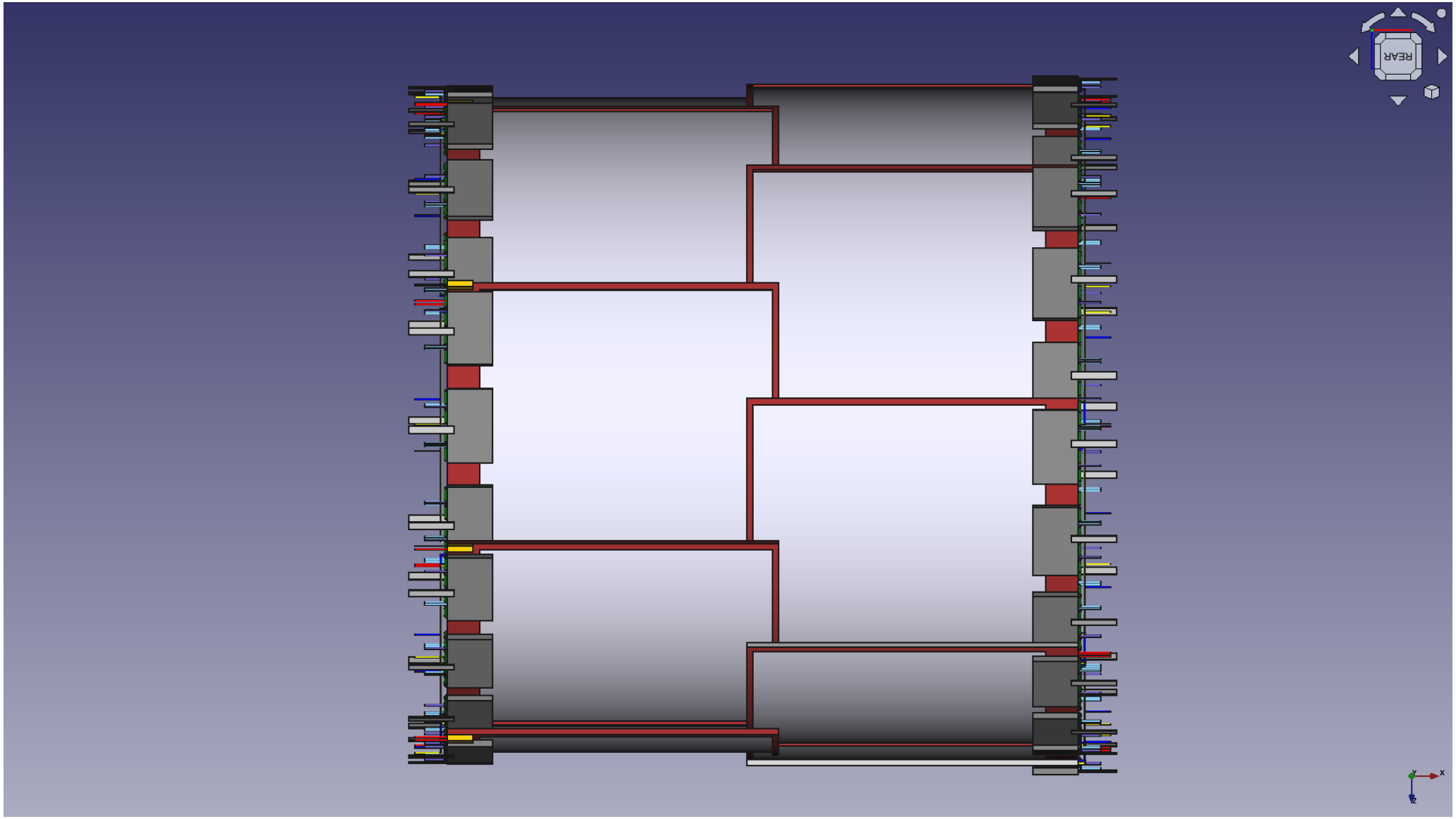
- HV: 2 channels (drift and resistive layer)
- Gas: 2 tubes (in and out)
  - Two or three tiles can be in series
- If 4 ASICs per FEB:
  - 1 8ch FireFly to the RDO
  - 2 short flex cables per ASIC, 24 flexes 10cm max
  - 1 LV
    - DCDC on the FEB?
  - Cooling in and out
    - TBD: FEB in series ?

CyMBaL – a sector

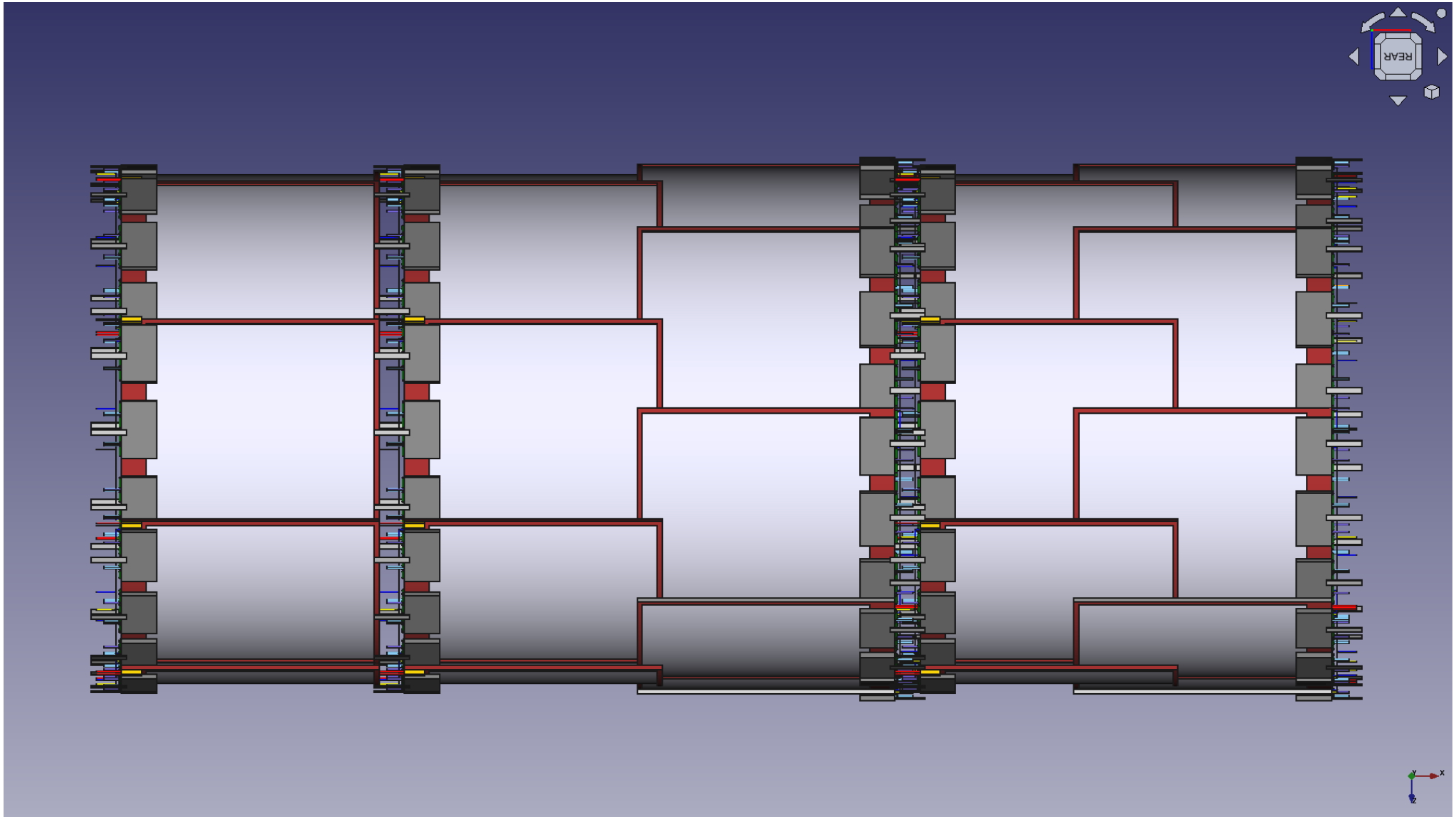
- 8 tiles to cover the circumference
- Questions:
  - Mounting procedure : will it be in two halves or a barrel that slides on the SVT?
  - Support structure to be studied



CyMBaL – the central region



CyMBaL – the whole system



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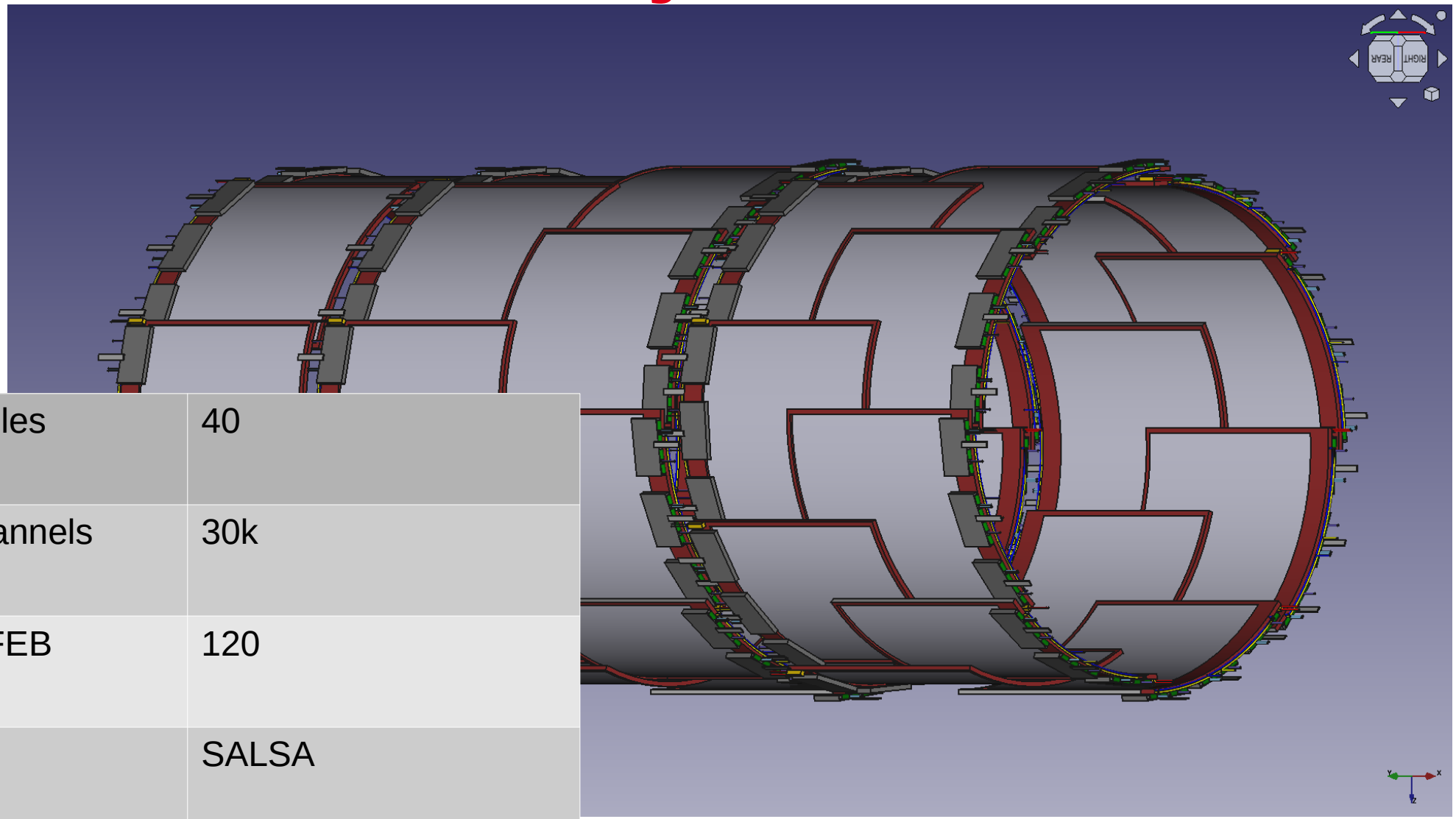

Number of tiles	40
Readout channels	30k
Number of FEB	120
ASIC	SALSA

CyMBaL – Open questions

- Cooling: is there a ePIC common initiative?
- Patch panels: where can they be located? Are patch panels foreseen? Inside or outside the detector?
- Low voltage DCDC. Is there a common effort?