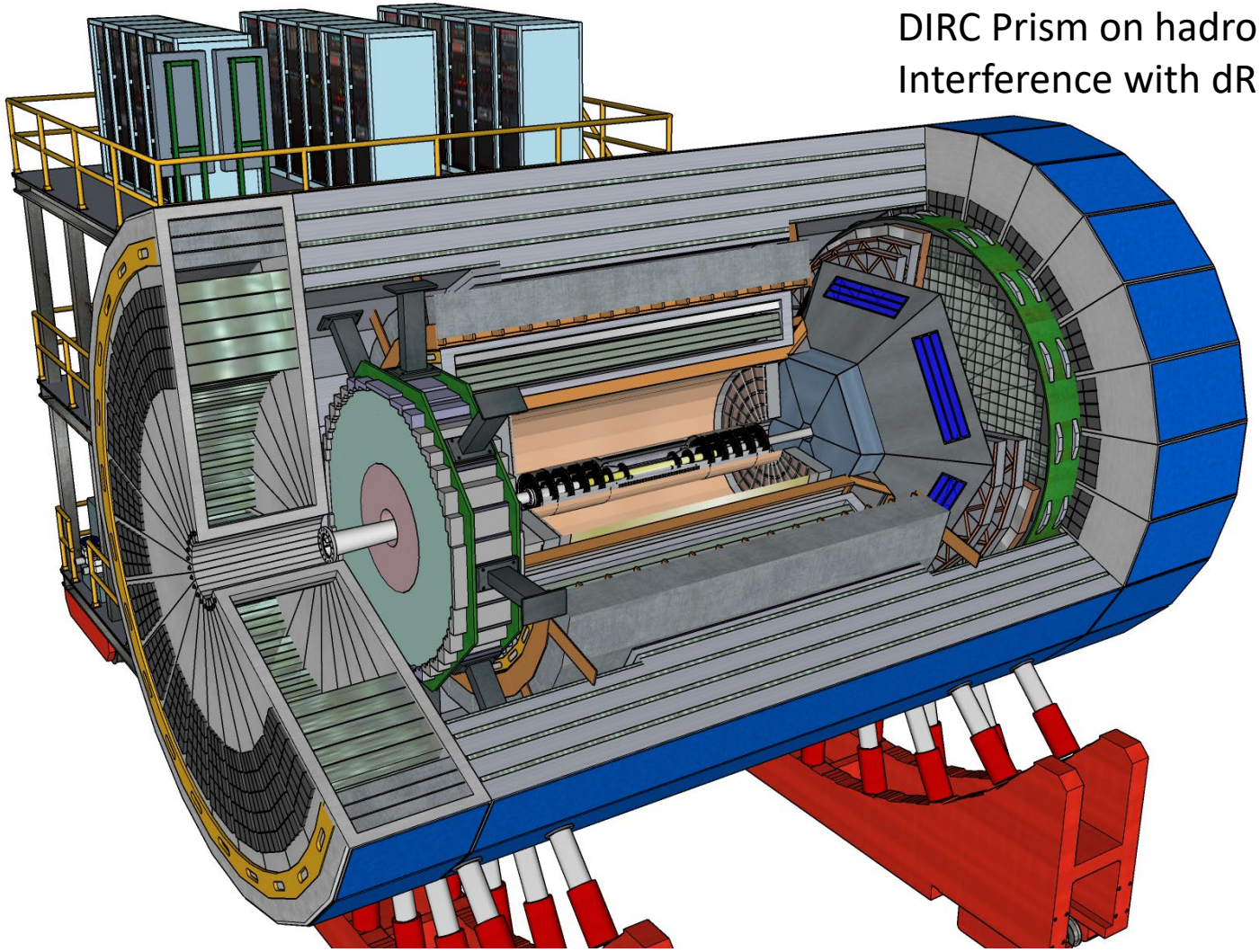
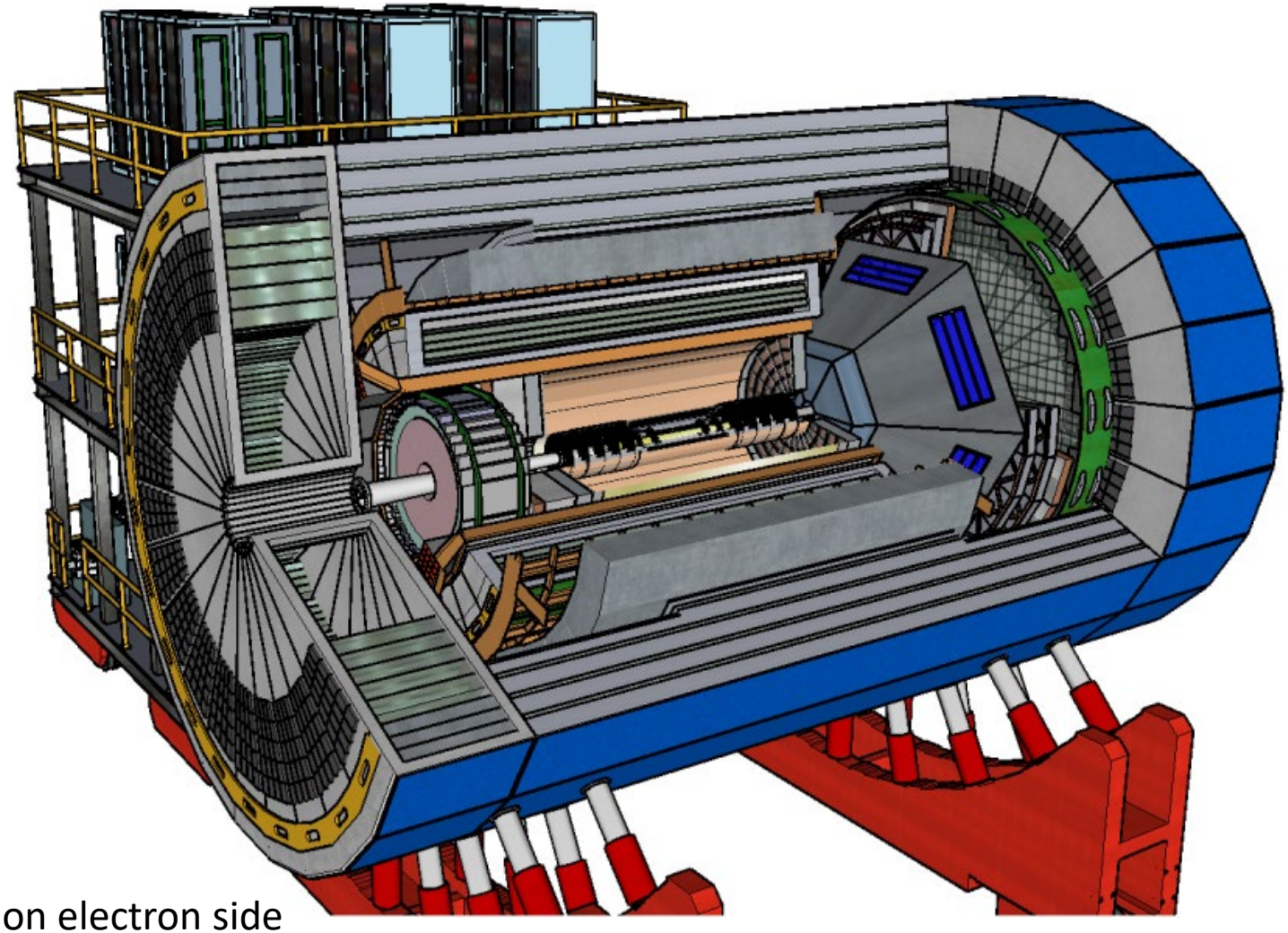
ECCE Central Detector – Original EEEMCal/DIRC Configuration

DIRC Prism on hadron side
Interference with dRICH



ECCE Central Detector – PRESENT EEEMCal/DIRC Configuration

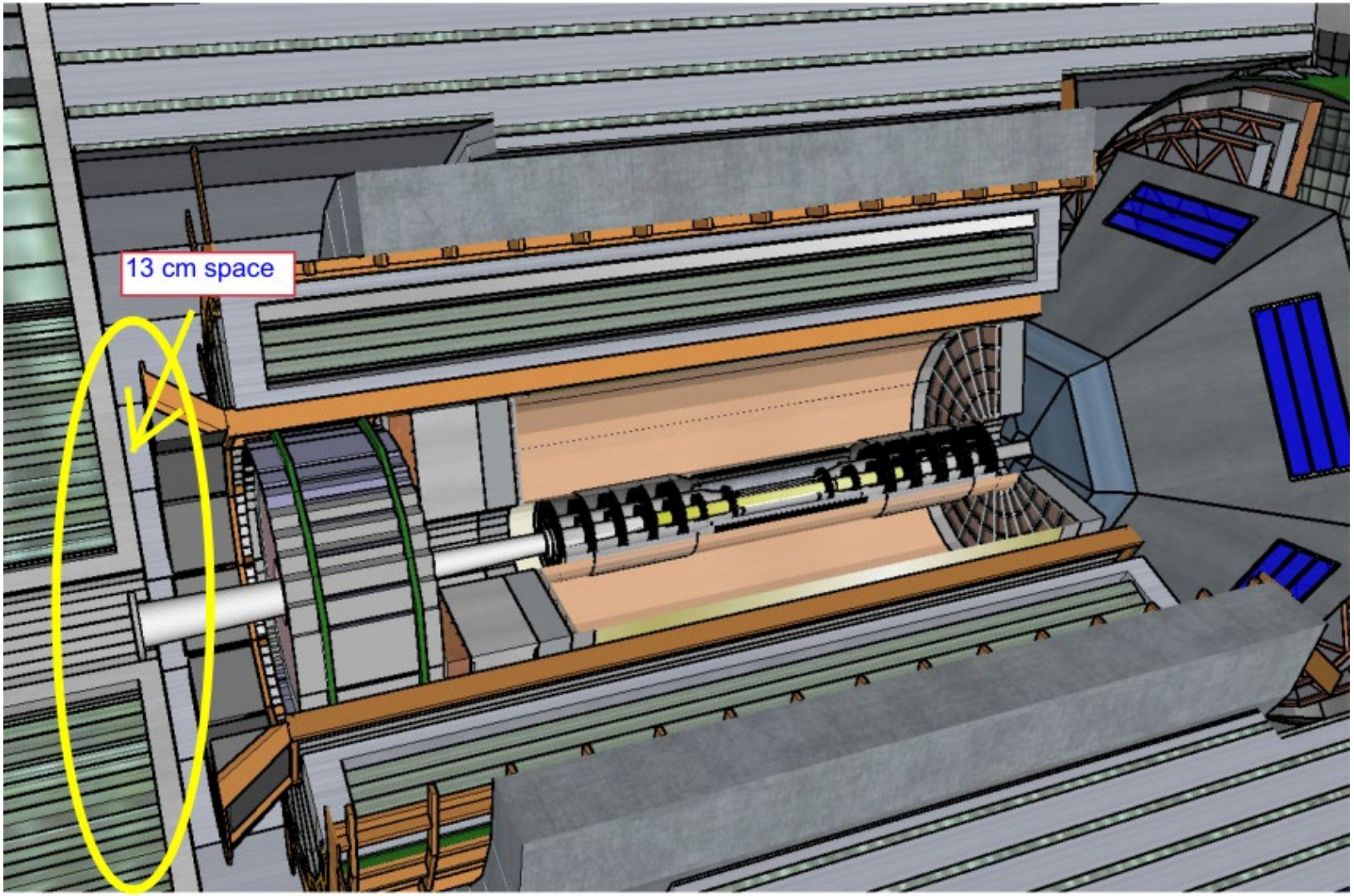


DIRC Prism on electron side

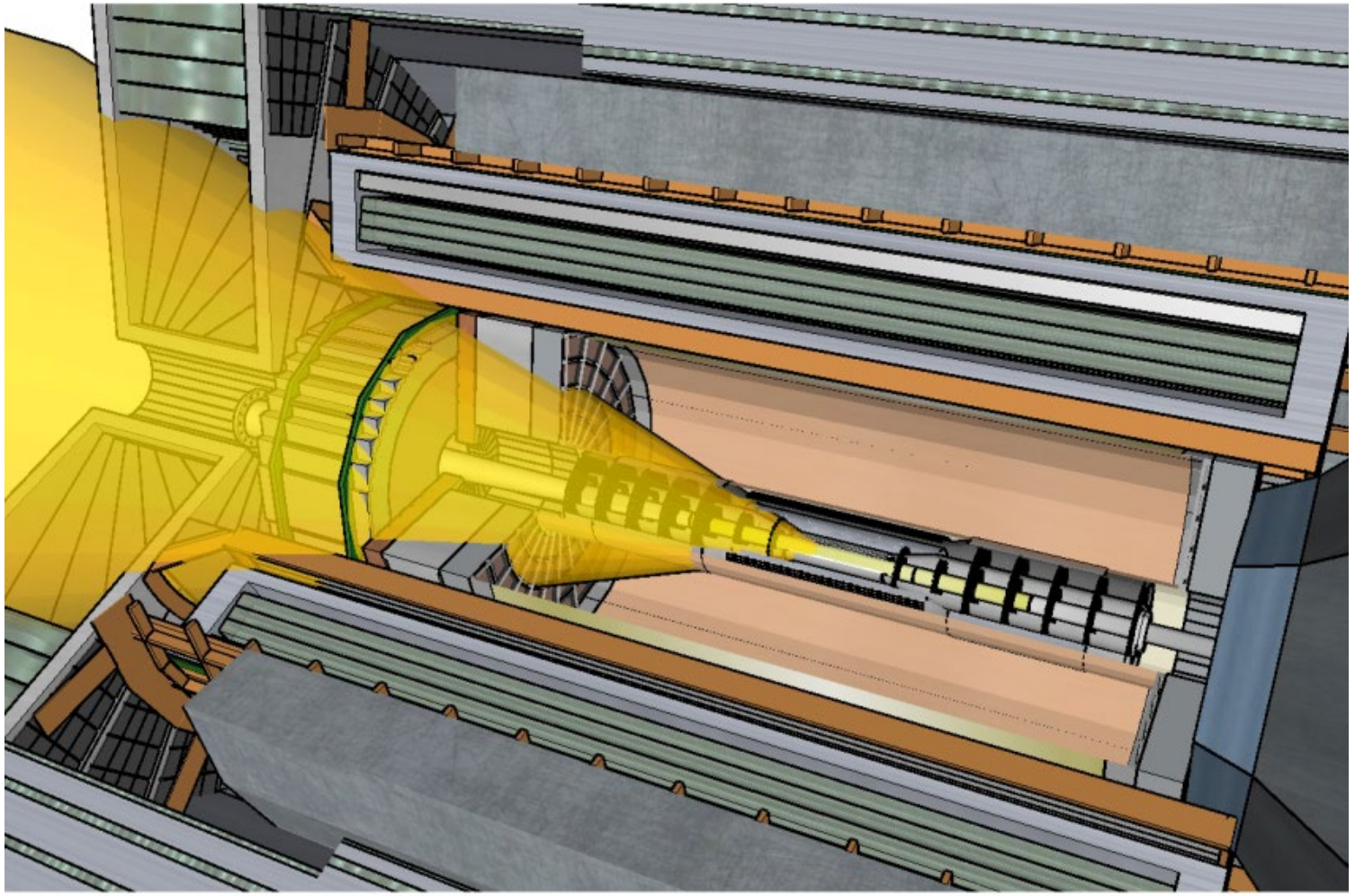
Move in EEEMCal – need new frame

Prism in “shadow” of EMCal

ECCE Central Detector – PRESENT EEEMCal/DIRC Configuration

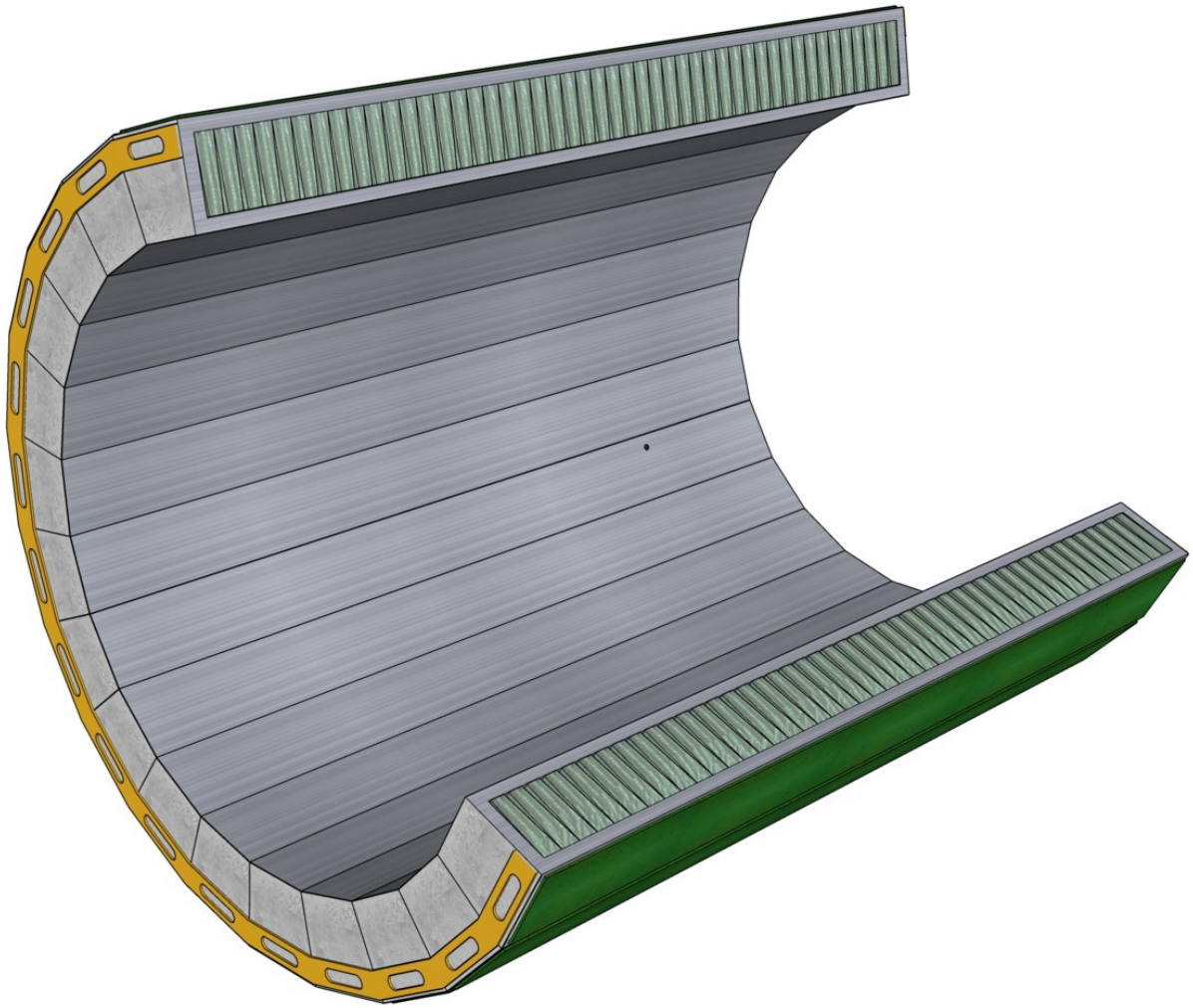


ECCE Central Detector – Particle cone



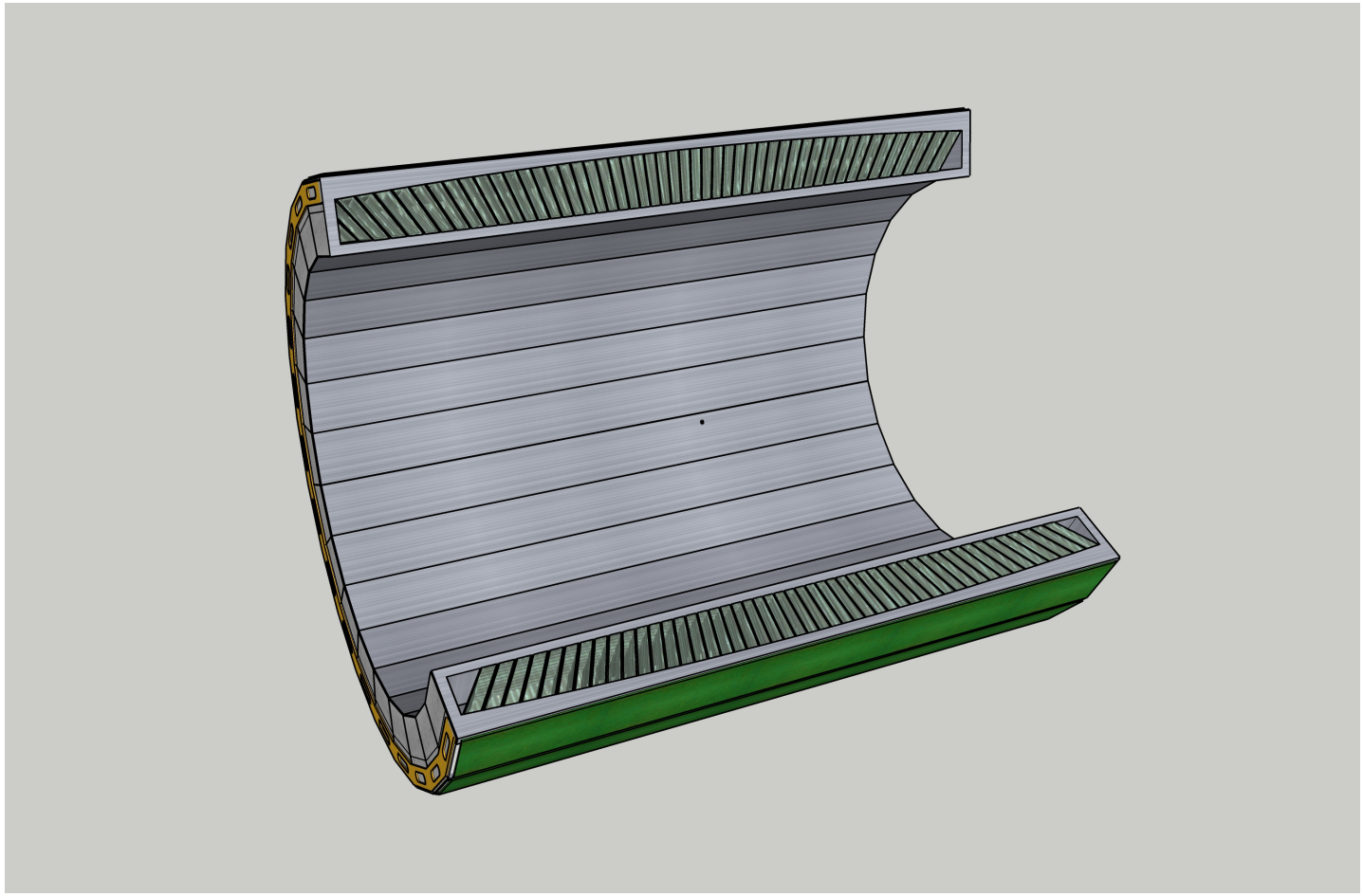
EEEMCal coverage to eta~-1.8
Barrel EMCal coverage starts eta~-1.6 – address gap
by making blocks projective in this region

ECCE Central Detector – Barrel EMCal model



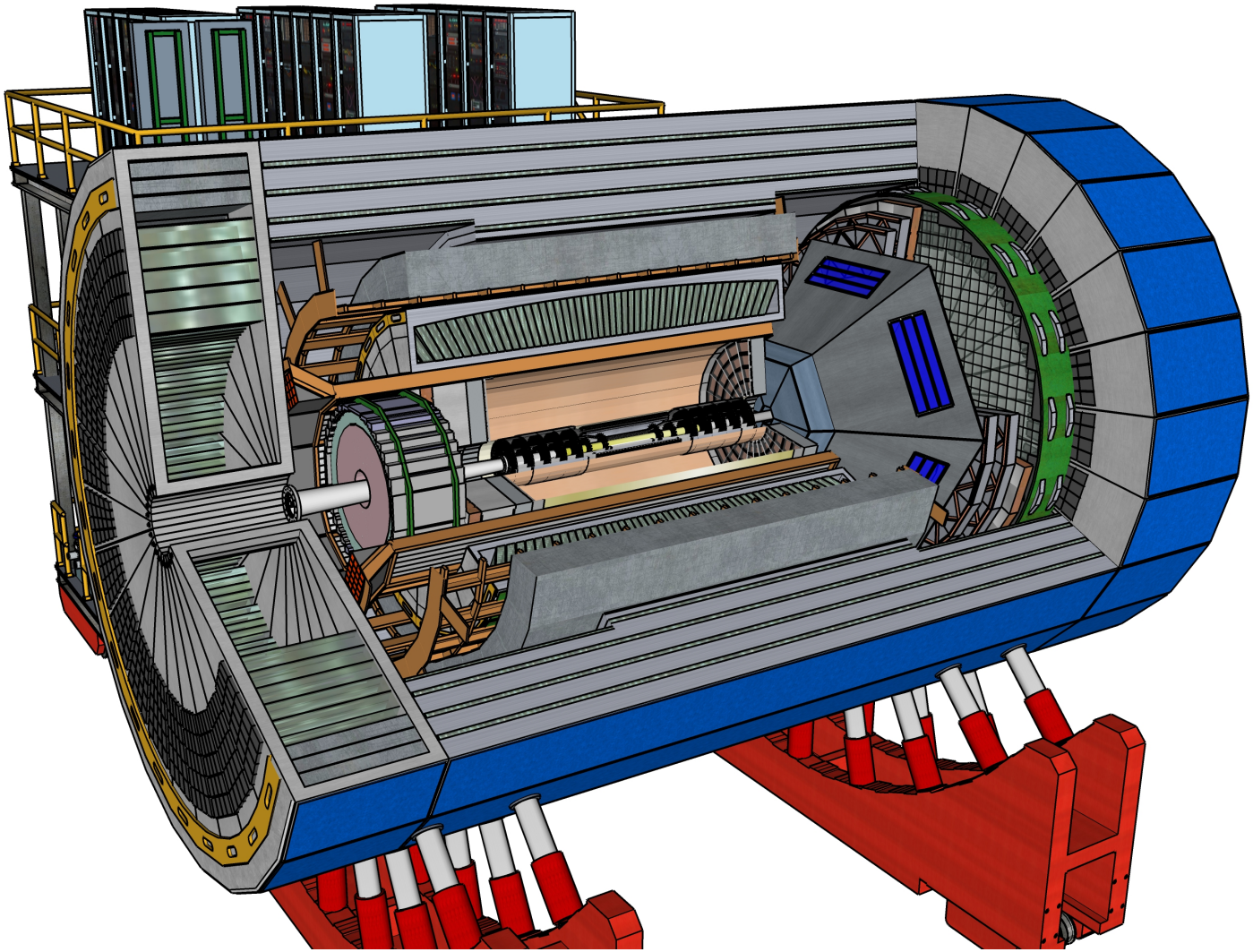
Consider adding projectivity eta (-1,-2)

ECCE Central Detector – Barrel EMCal model

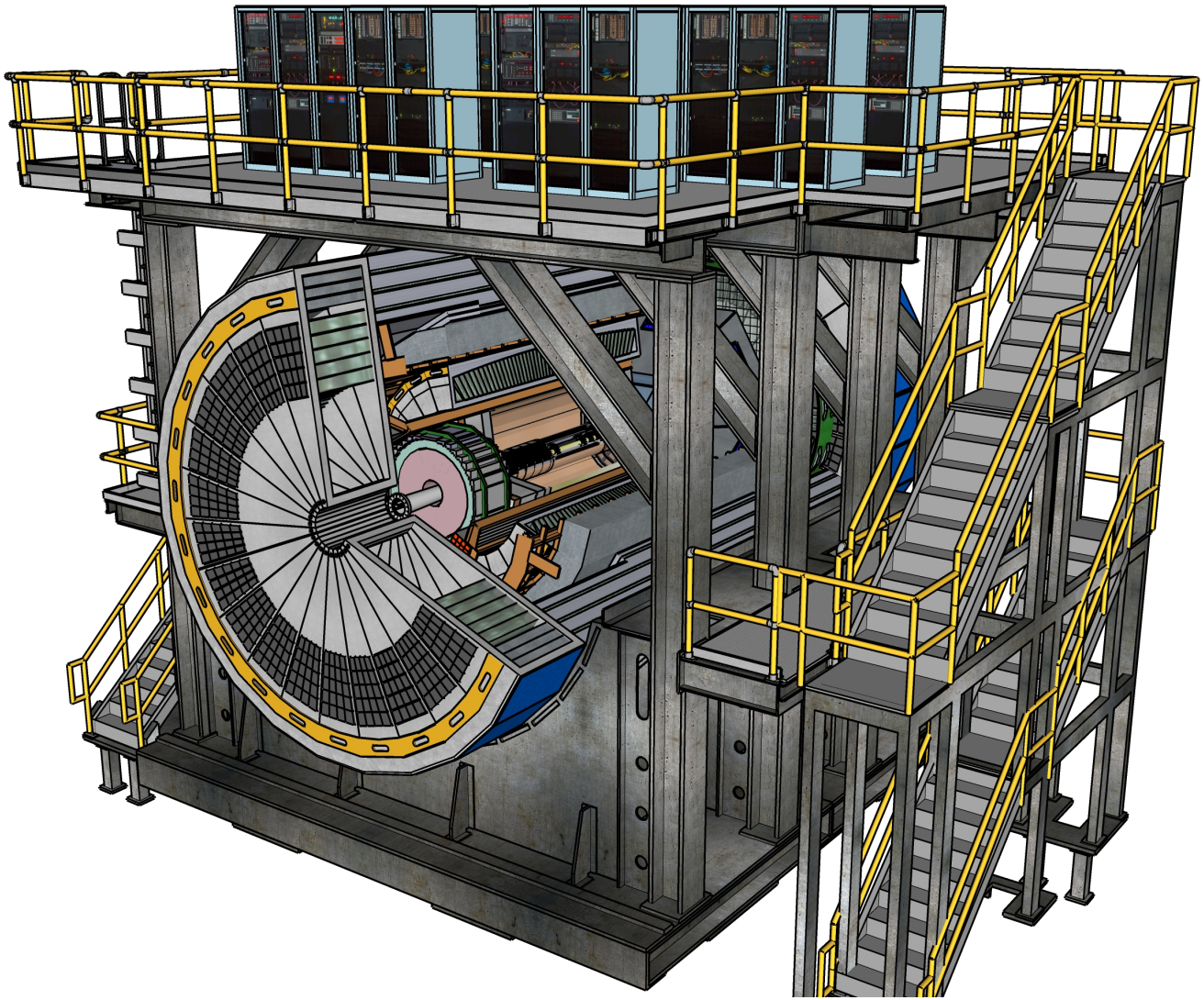


projective

ECCE Central Detector – latest IP6

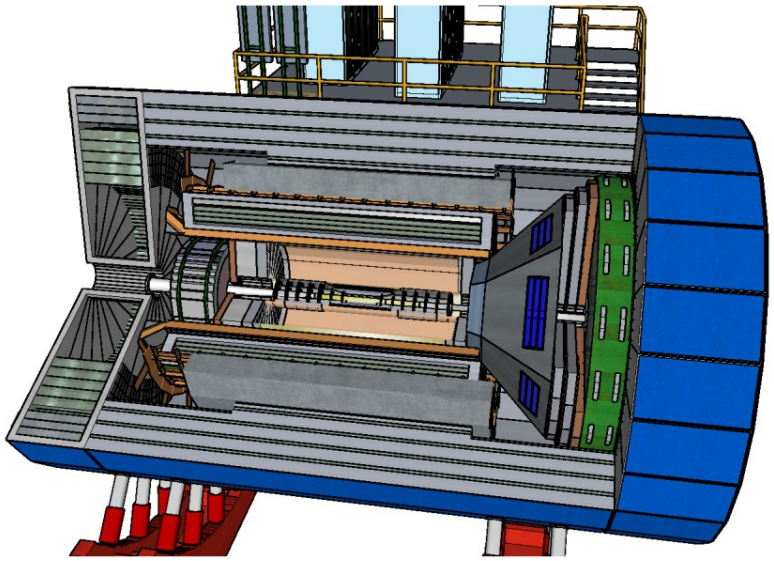


ECCE Central Detector – latest IP8



Major items for the ECCE Detector Concept

- **Optimization EEEMCal and DIRC**
  - DIRC prism on electron side has advantages for EMCal, DIRC and dRICH
- **Barrel detector configuration**
  - Global optimization to address physics requirement on both e/π and π/K/p; Tracking: best use of space for all Si option
- **Hadron endcap HCAL**
  - Alternative for improved resolution



Potential barrel option that may fulfil requirements and has some flexibility

System	Function	Thickness	Inner Radius	Outer Radius
All Silicon	Vertex/Tracking	47		51
AC-LGAD	Tracking/timing	8	51	59
Inner support for DIRC, EEEMCal		10	59	69
DIRC	PID	3.5	69	72.7
Outer support DIRC, EEEMCal		3.5	72.5	76
TOF/AC-LGAD	Timing/tracking	8	76	84
Barrel EMCal	EMCal, e/π separation	50	84	134
Support for barrel EMCal		6	134	140