Status at IHEP

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Major milestones for the EMC Barrel Mechanics

In progress

In progress:
Staged approach

Stage 1:
Components for modules

Stage 2:
Support structure and devices for Barrel assembling

Mile-stone	Work Description	Prerequisites to start work/ procurement	Validation Criteria	Date
Pre-Series Slice				
1.6 M8	Testing of Pre-Series Slice	1.5	SAT Ab for mechanics of Pre-Series Slice	~~Aug 2017~~
Full System				
2.1 M6	Finalise technical specifications for complete Barrel EMC Mechanics	1.6	Technical specifications	~~Sep 2017~~
2.2 M7	Develop design documentation for complete Barrel EMC Mechanics	0.0	Final Design Review allowing for series production	~~Oct 2017~~
2.3 MX1	Production and delivery of batch 1.1 of the Barrel EMC Mechanics (BEM-B1.1)	2.2	SAT Aa for BEM-B1.1	Nov 2017
2.4 MX1	Production and delivery of batch 1.2 of the Barrel EMC Mechanics (BEM-B1.2)	2.2	SAT Aa for BEM-B1.2	June 2019
2.5 MX1	Production and delivery of batch 2.1 of the Barrel EMC Mechanics (BEM-B2.1)	2.2	SAT Aa for BEM-B2.1	~~June 2019~~
2.6 M9	Production and delivery of all remaining (batch 2.2) Barrel EMC Mechanics (BEM-B2.2)	2.2	SAT Aa for BEM-B2.2	~~Nov 2019~~
2.7 M10	Participation in the assembly of the Barrel EMC Mechanics	2.3	SAT Ba for complete Barrel EMC Mechanics	~~Dec 2020~~

From Addendum 5 to the Collaboration Contract which was signed in May 2017

Major milestones for the EMC Barrel Mechanics

•**<u>BEM-B2.1</u>: two support rings, all support beams, support feet and module plates;**

It become clear after assembling of the Pre-Series Slice and development of "Outside PCBs" as well as a concept of thermal insulation, that few modifications in the design of the support beam are necessary. This work is in progress, technical drawings of the current version is in EDMS.

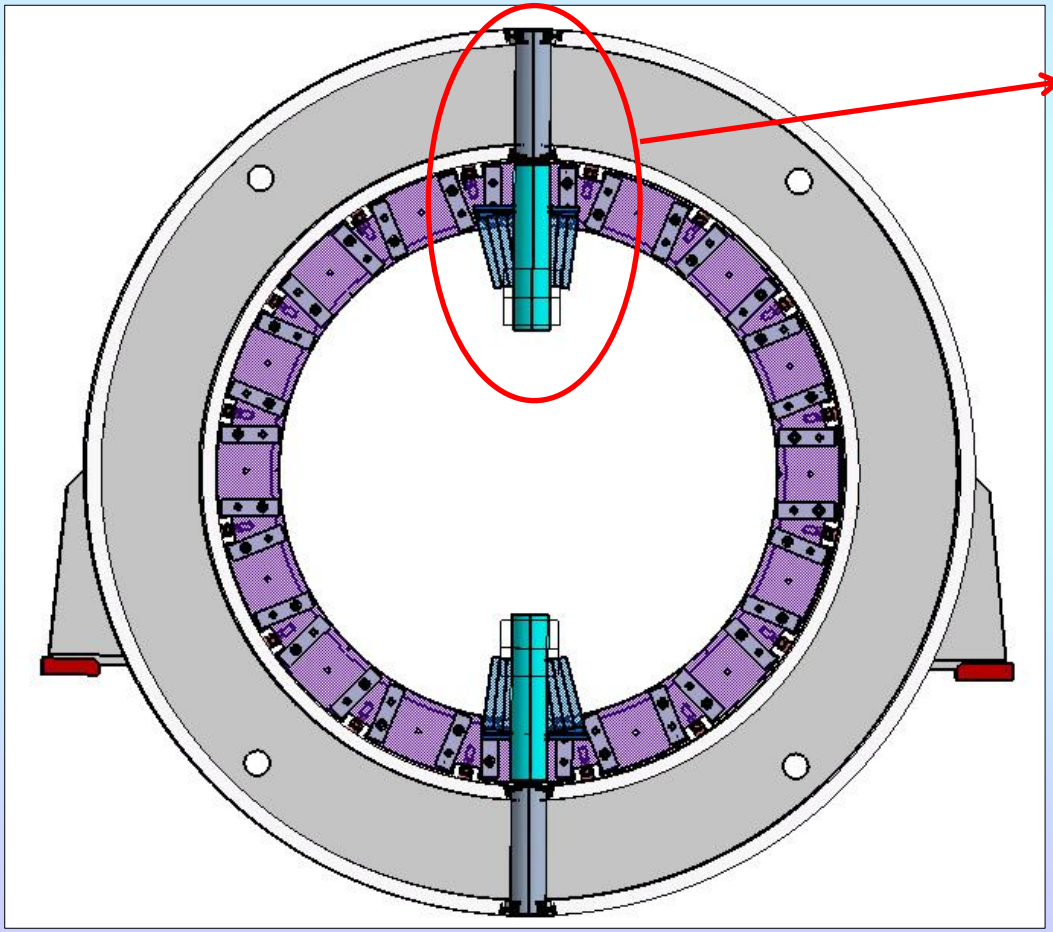
Waiting for the final decision - new date of delivery will be defined later.

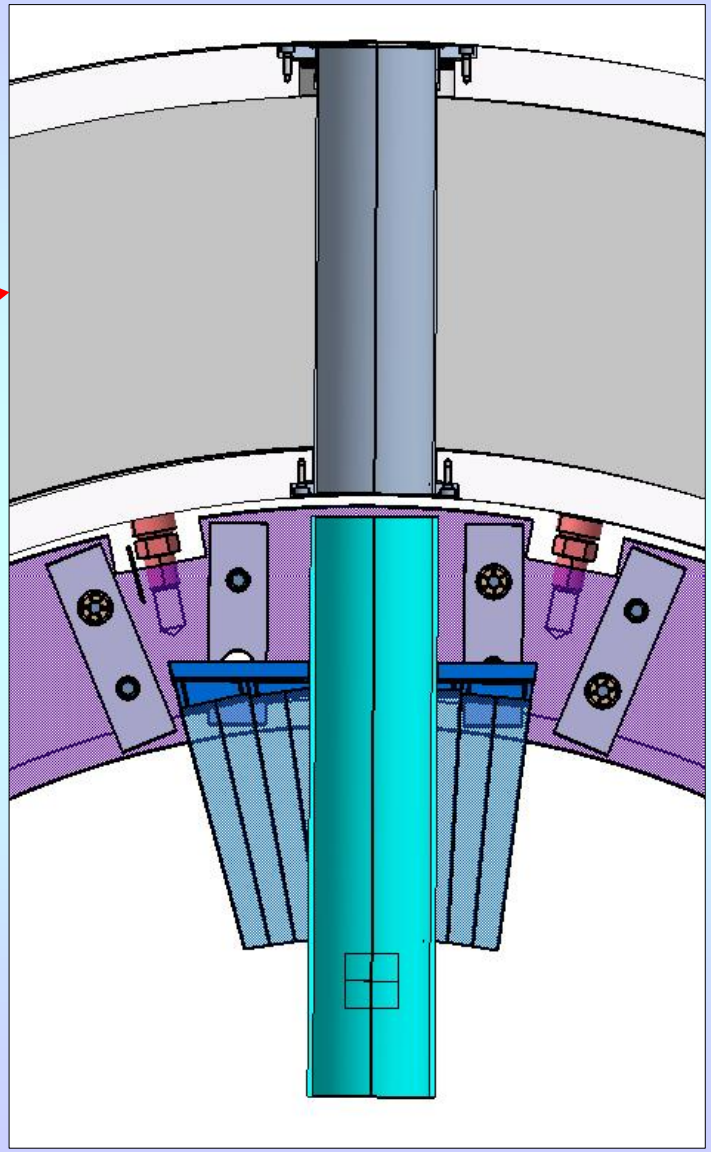
•**<u>BEM-B2.2</u>: all technological beams and various devices which are necessary for the barrel assembling.**

Main scenario of Barrel EMC assembly and integration was developed in general. Conceptual design of assembling devices is ready. These developments were presented at the CM 19/2 , MEC session.

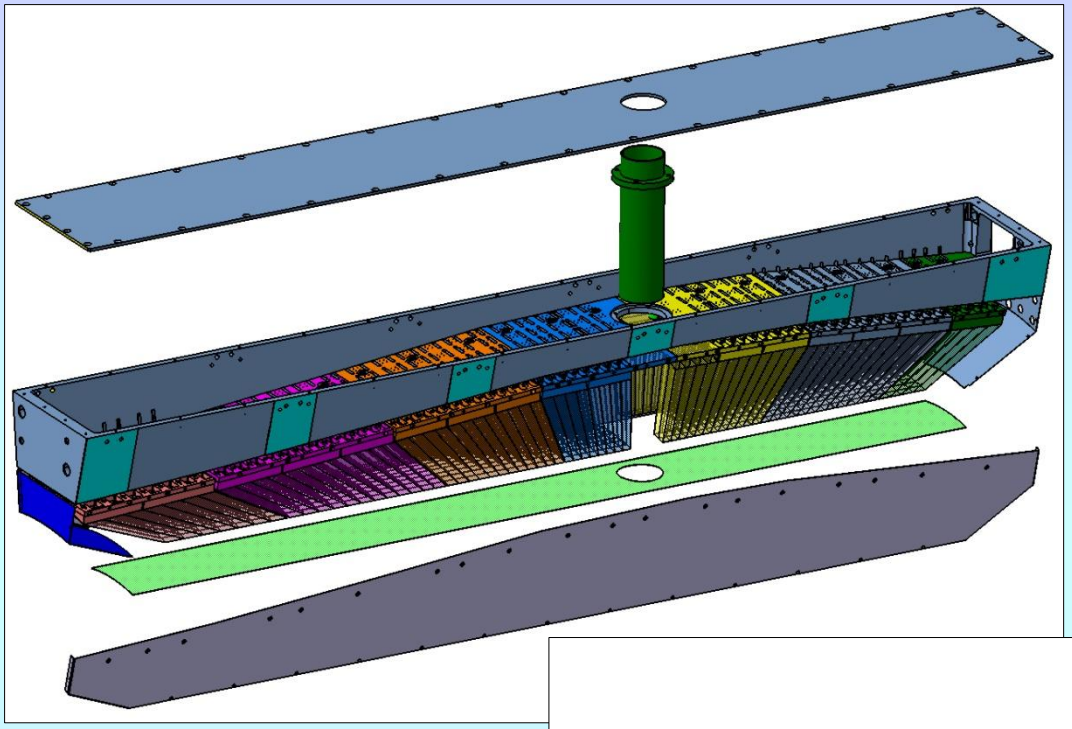
Design of slice with a hole for the target pipe

Barrel inside Cryostat: transversal view

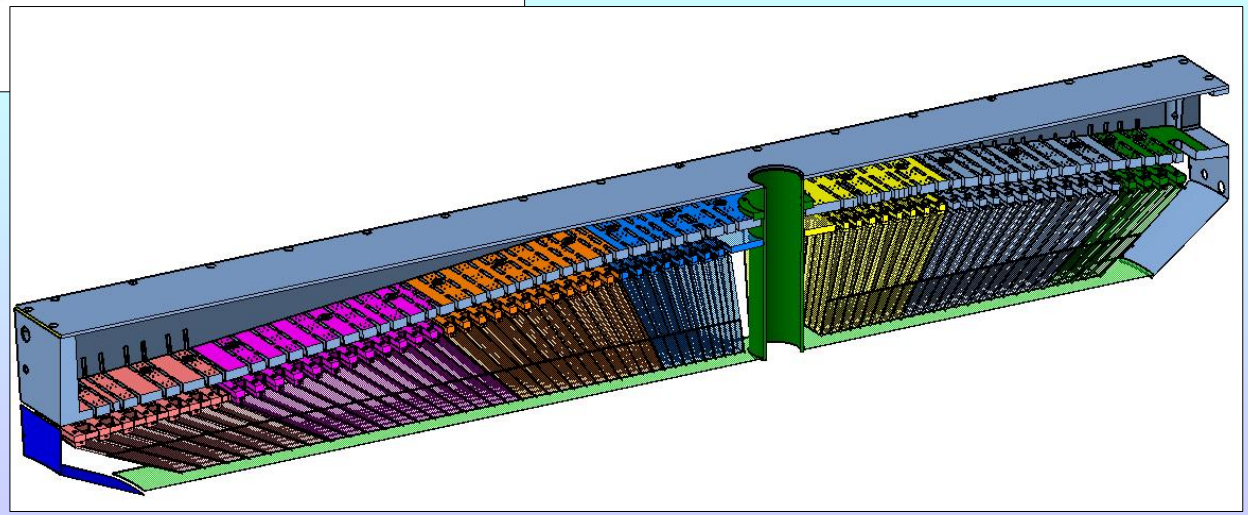




Design of slice with a hole for the target pipe



- Pipe made of material with low thermal conductivity is necessary (Fiberglass Dy100). Internal diameter is 100mm.
- Sealing of pipe in the bottom of the Support Beam and in the joint to the Front Thermal Screen is needed



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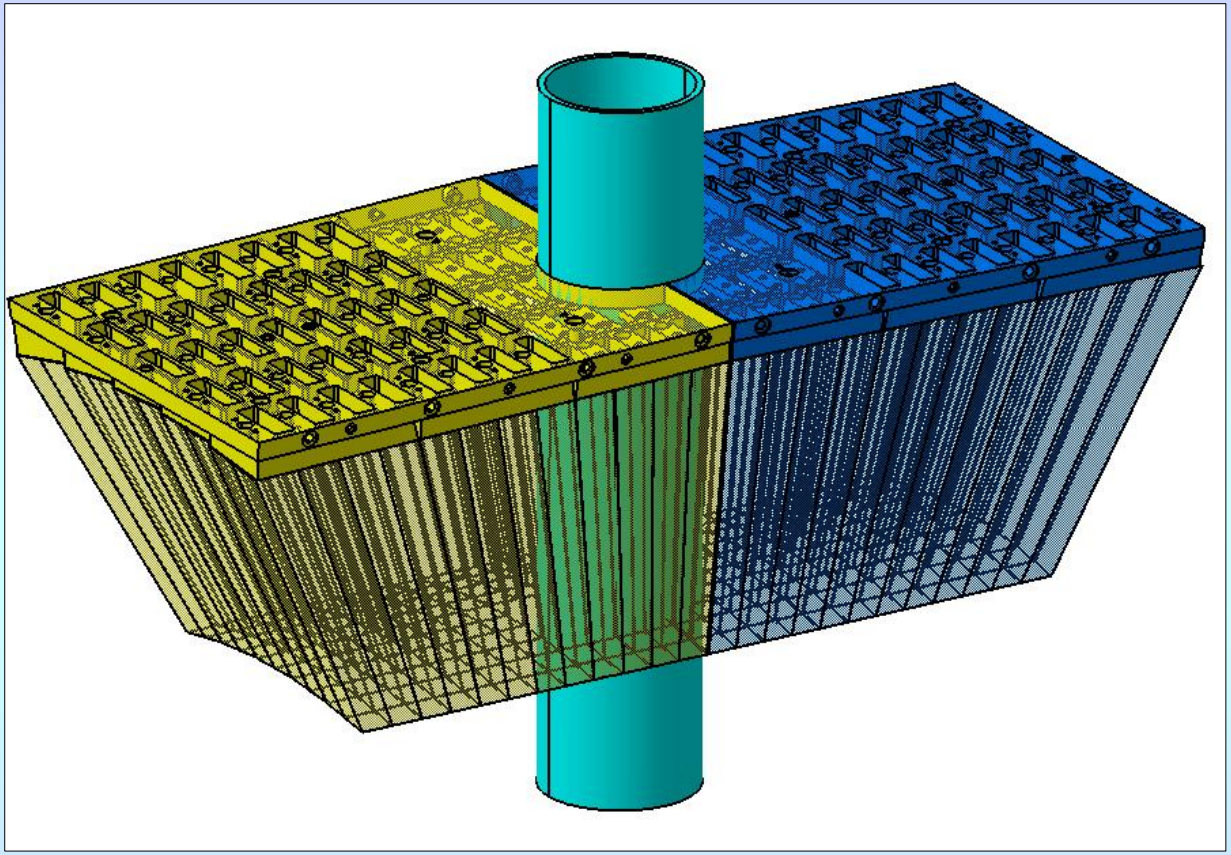
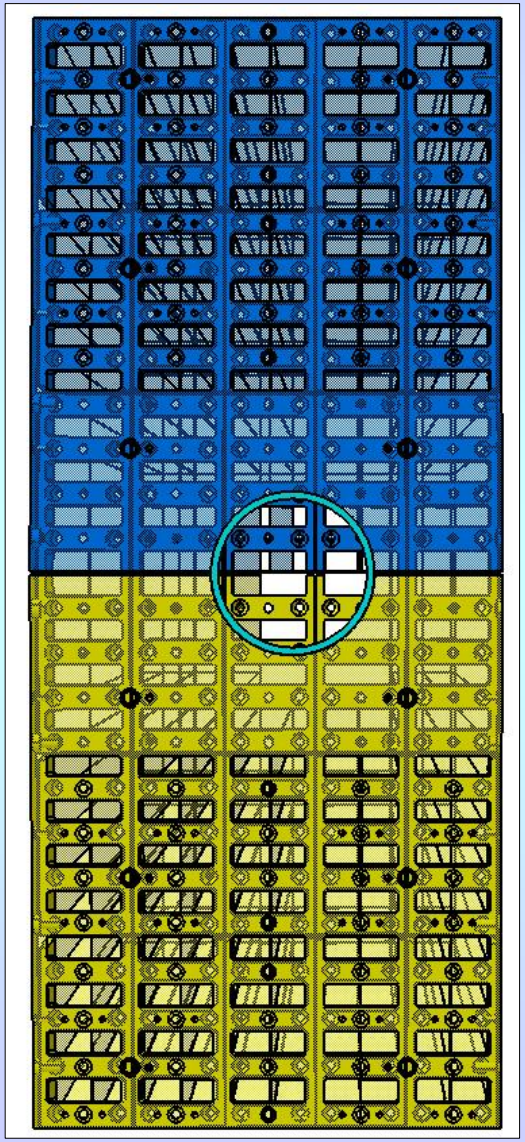
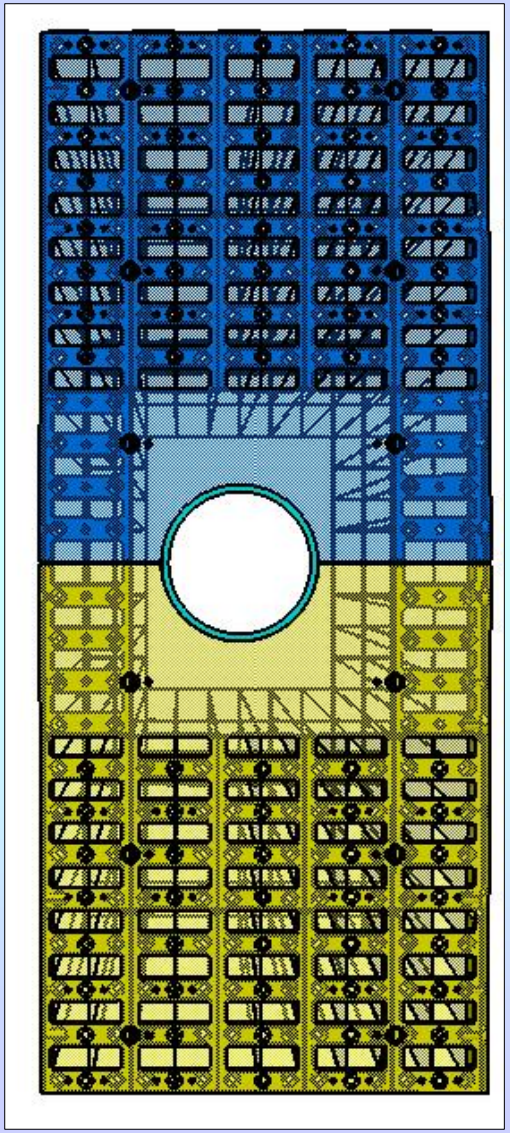
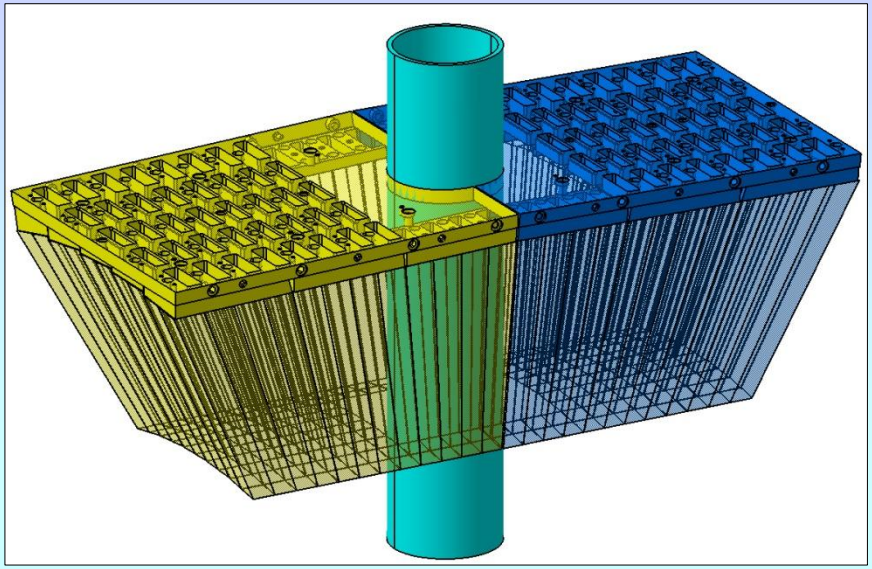




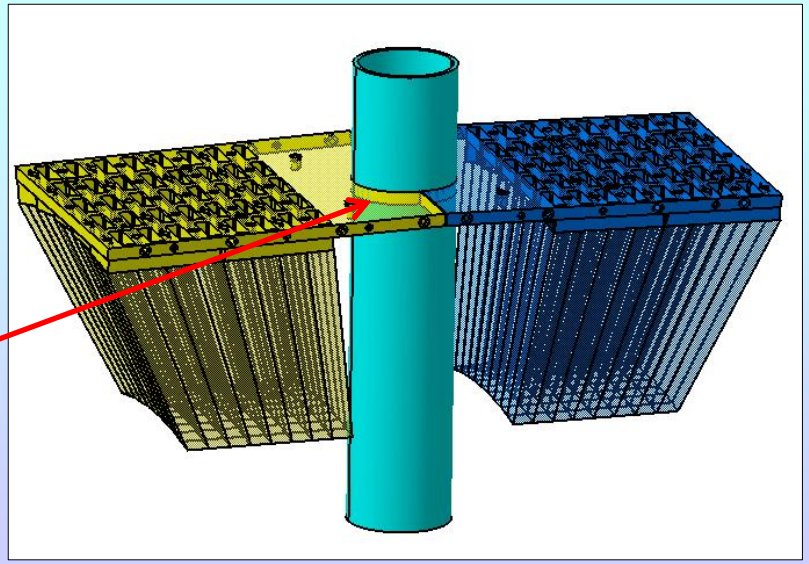
Only 4 of 10 alveoli units in modules
1(+) and 1(-) are not touched
Different design of the module plates!

Design of slice with a hole for the target pipe





Easy assembling,
more space
for cables



Visiting of companies in Germany

Engineers from IHEP recently visited a potential subcontracting companies in Germany that have good facilities to manufacture the Support Beams and Support Rings.

Summary

- **Delivery of all the components and devices that are necessary to assemble modules of 18 types for the whole barrel was completed. Site Acceptance Protocol was issued.**

- **Technical drawings of an updated but not yet final design of the Support Beam and Support rings are in EDMS.**

- **Waiting for the finalization of technical specifications for complete Barrel EMC Mechanics to begin production of the components for the Barrel support structure and devices for the Barrel assembling…**