Report on my activity in the framework of the RPC group in the CMS experiment

E. Voevodina

Upgrade Meeting of the RPC group, 06 December 2016

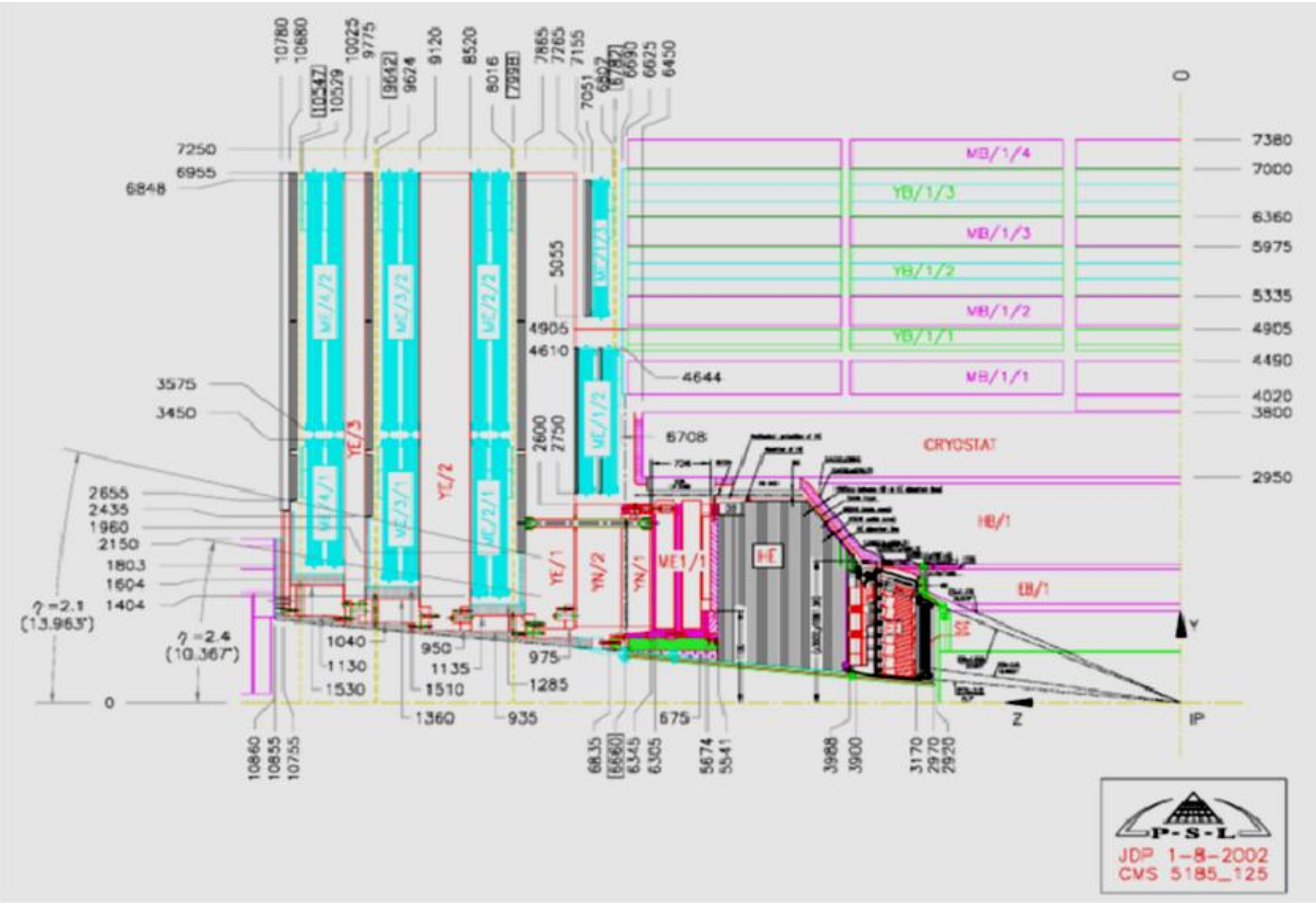
The main goal:

✓ **Checking on the consistency of the configuration of the RE3/1 and RE4/1 chambers with the surrounding elements**

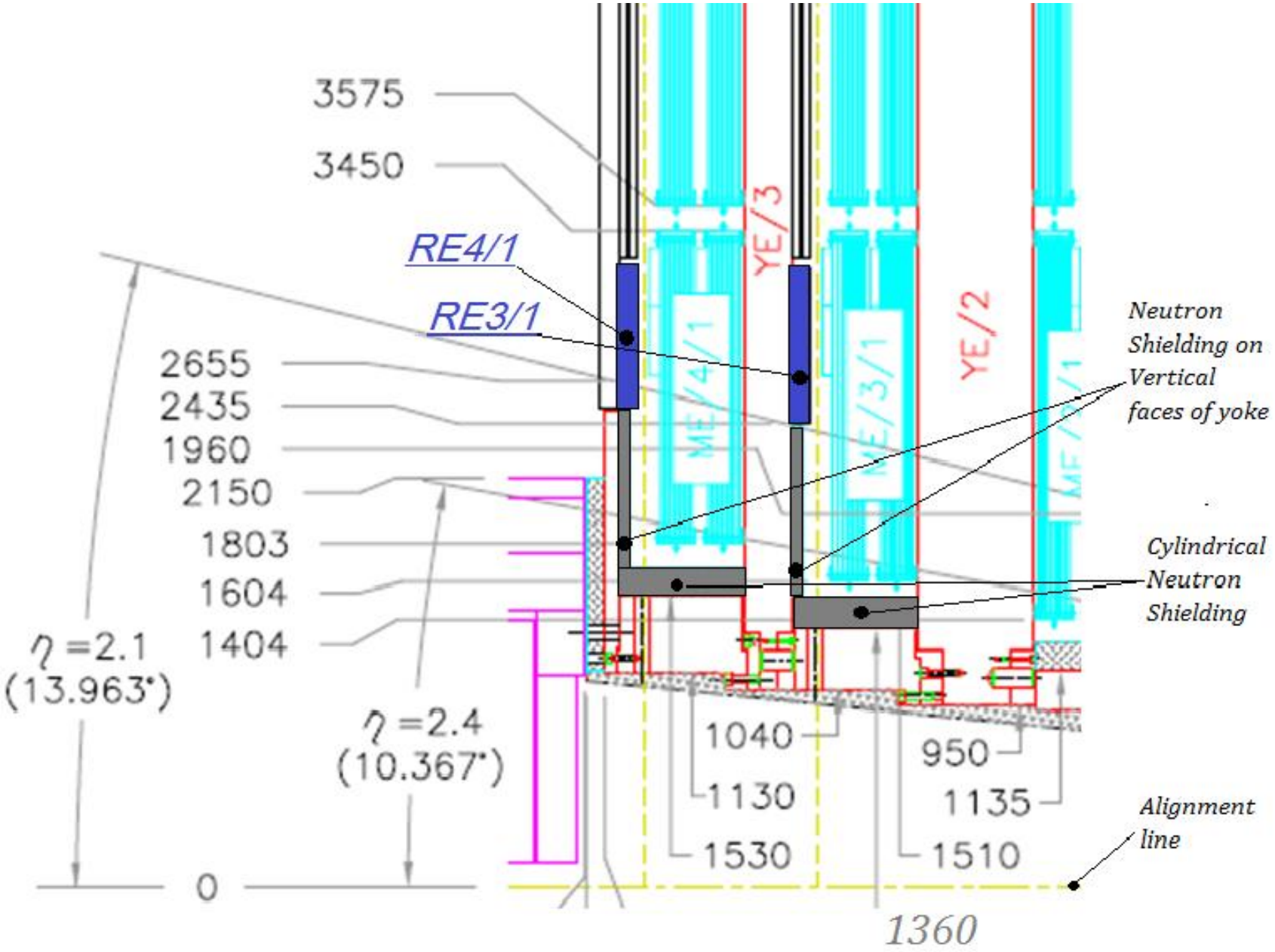
The main tasks:

- **Make the 3D model of the RE3/1 & 4/1 chambers;**
- **Make the 3D model of the assembly consisting with RE3/1 & 4/1 chambers;**
- **Placement of the RE3/1 & 4/1 in the assembly of the return yokes;**
- **Understand the possibility of the RE3/1 chambers mounting;**
- **Define the distance (free space for possibility of electronics board setting) between RE3 and ME3 , RE4 and ME4.**

CMS Parameter Drawing



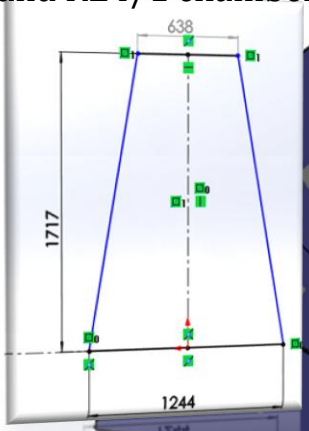
Location RE4/1 and RE3/1 in the CMS



RE3/1 & RE4/1 envelopes

***3D model of the complete RE3/1 assembly**

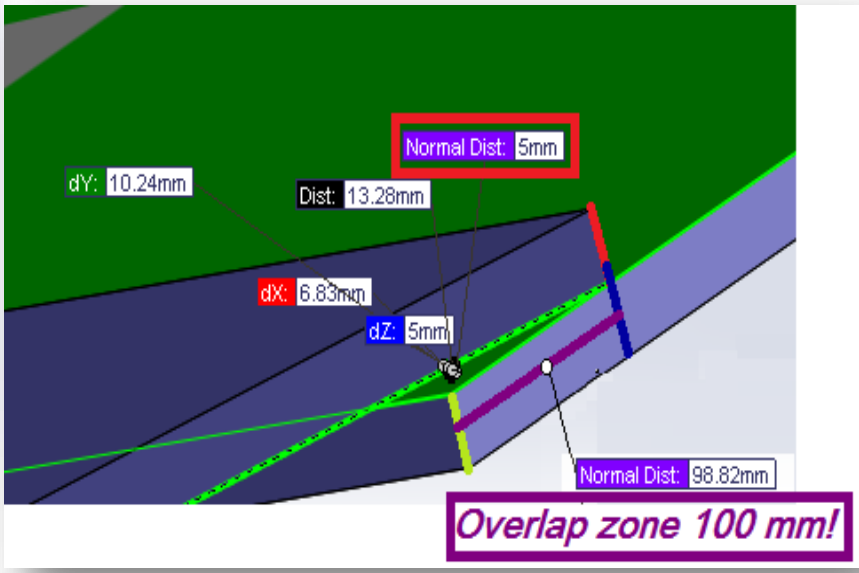
Sketch of the RE3/1 and RE4/1 chambers



18 chambers

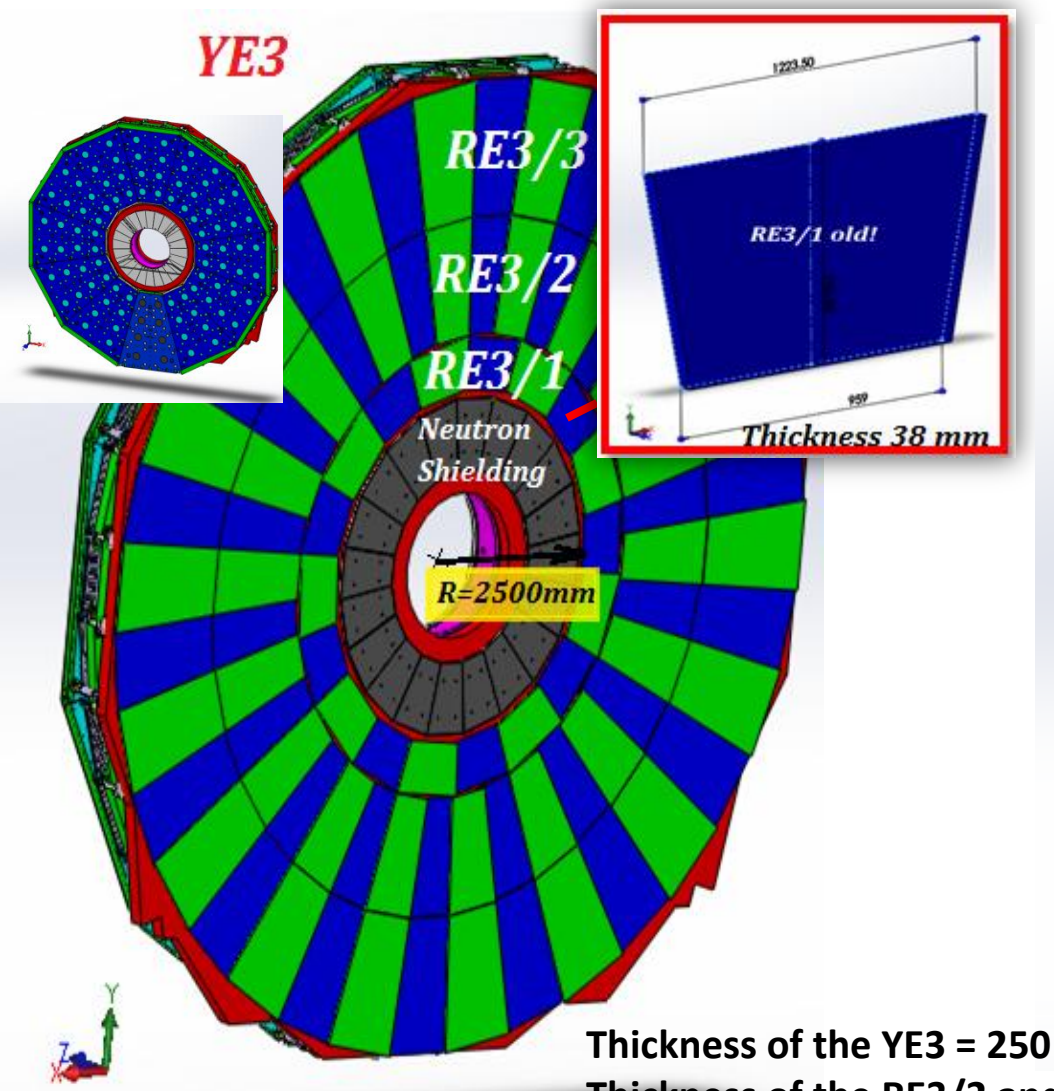
Distance between two chambers

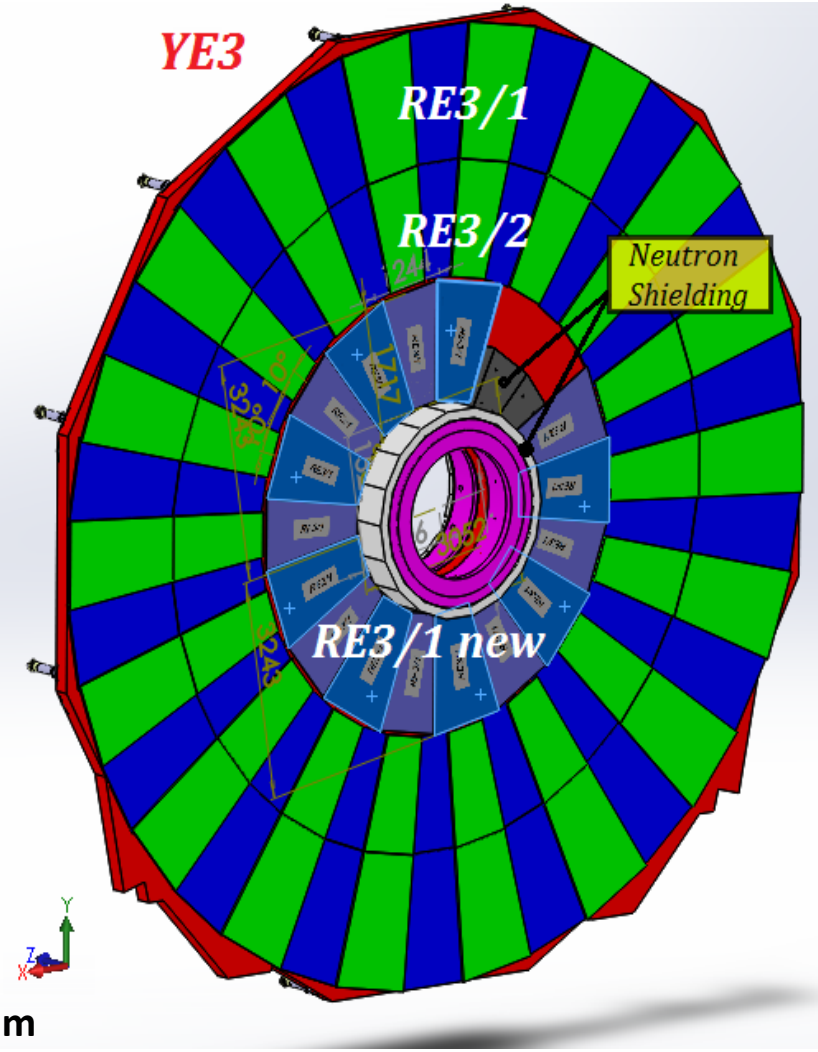
= 5 mm!



** Name of the file: Assembly_Trapezoids_labels_RE31.STEP*

Assembly of the YE3 and new RE3/1 chambers





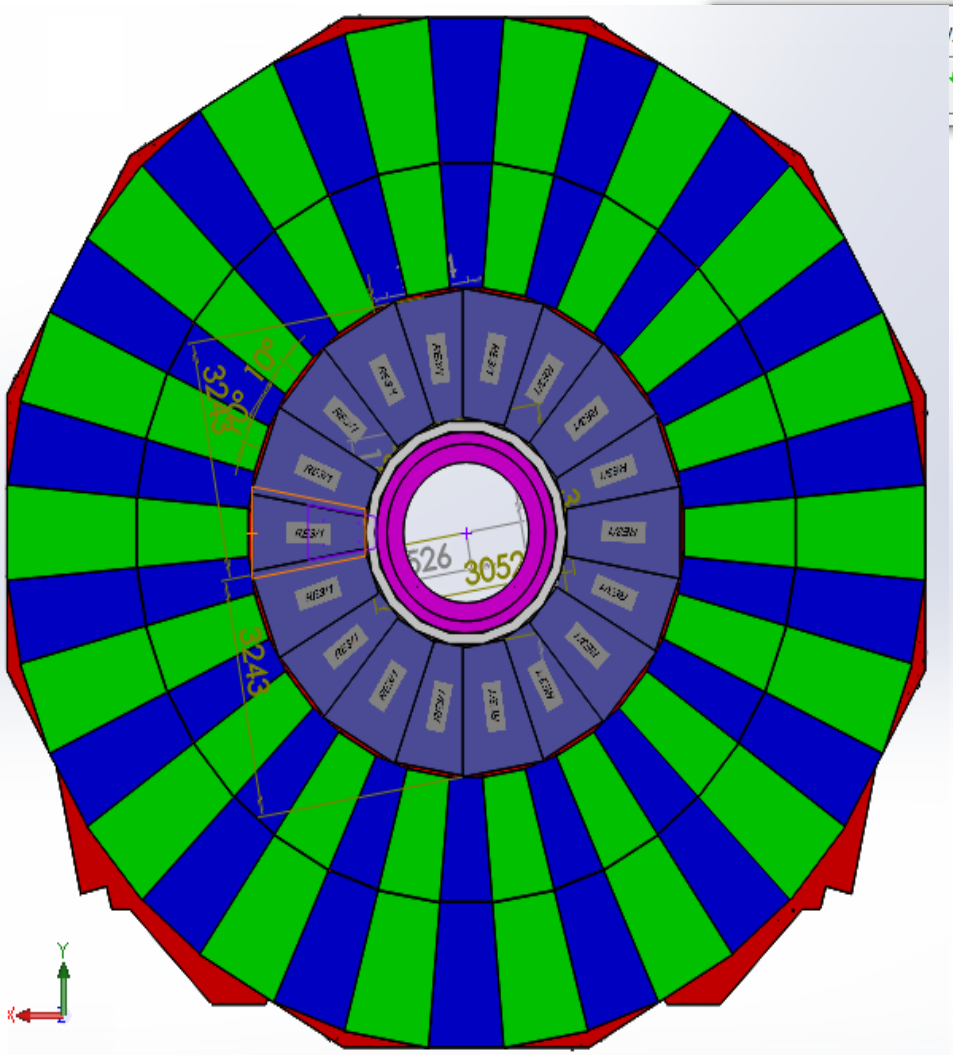
Thickness of the YE3 = 250 mm

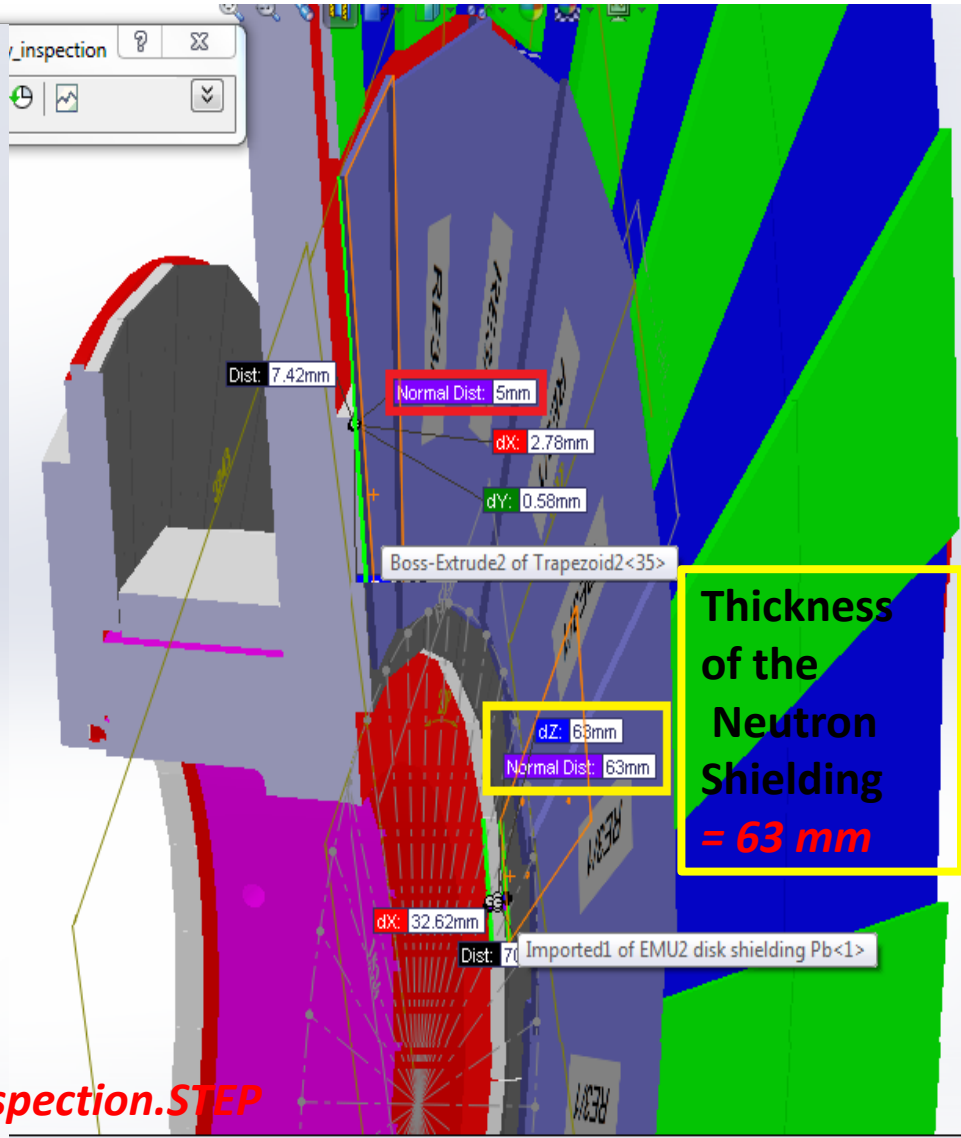
Thickness of the RE3/2 and RE3/3 = 38 mm

*Assembly of the YE3 and new RE3/1 chambers

Chamber №1 of the RE3/1 was centered of the "axis X"

Distance between RE3/1 and Neutron Shielding *= 5 mm!*





Thickness of the Neutron Shielding *= 63 mm*

*Name of the file: *YE3 with RE31 assembly_inspection.STEP*

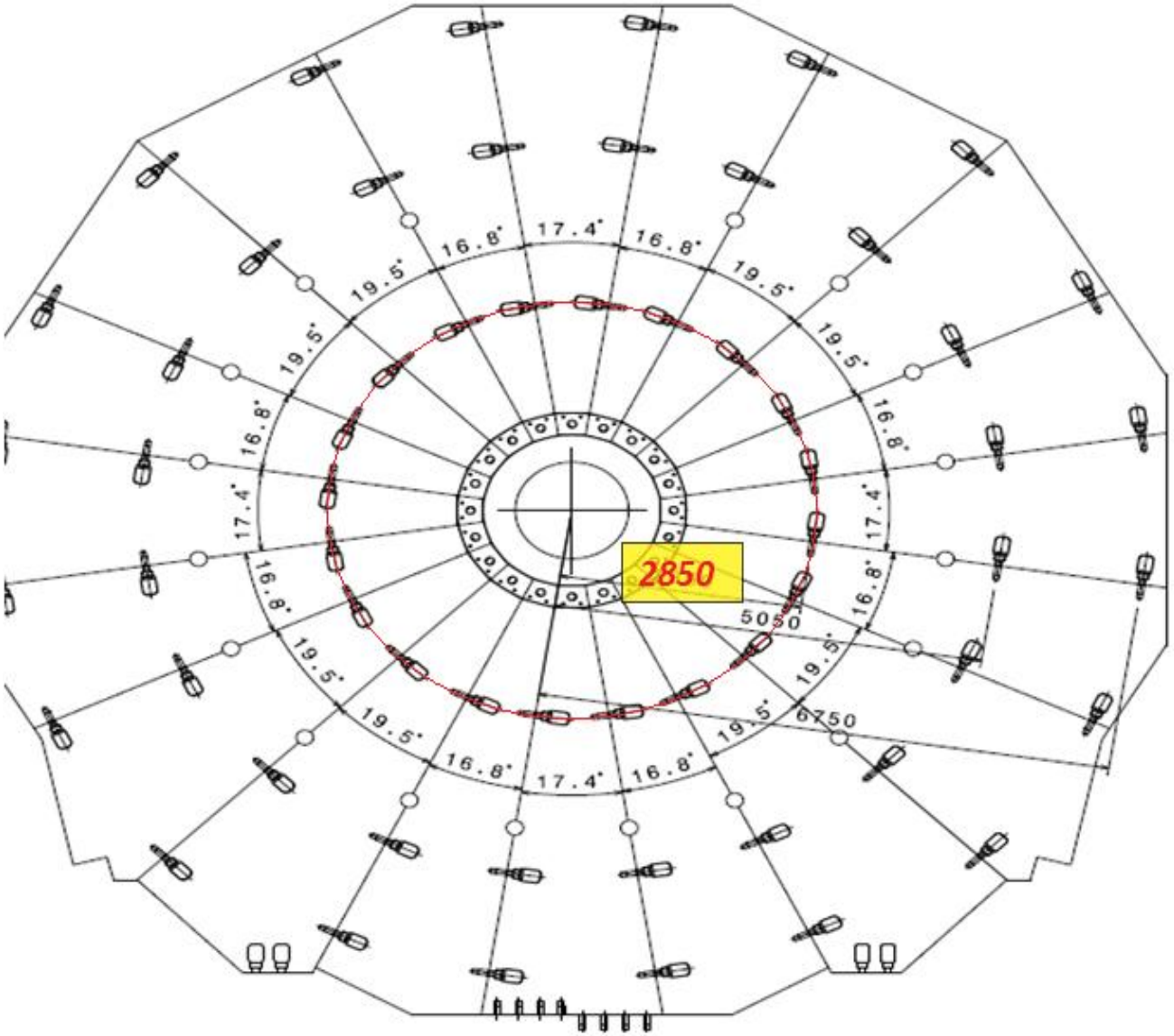
*Back

*Mounting posts for RE3/1

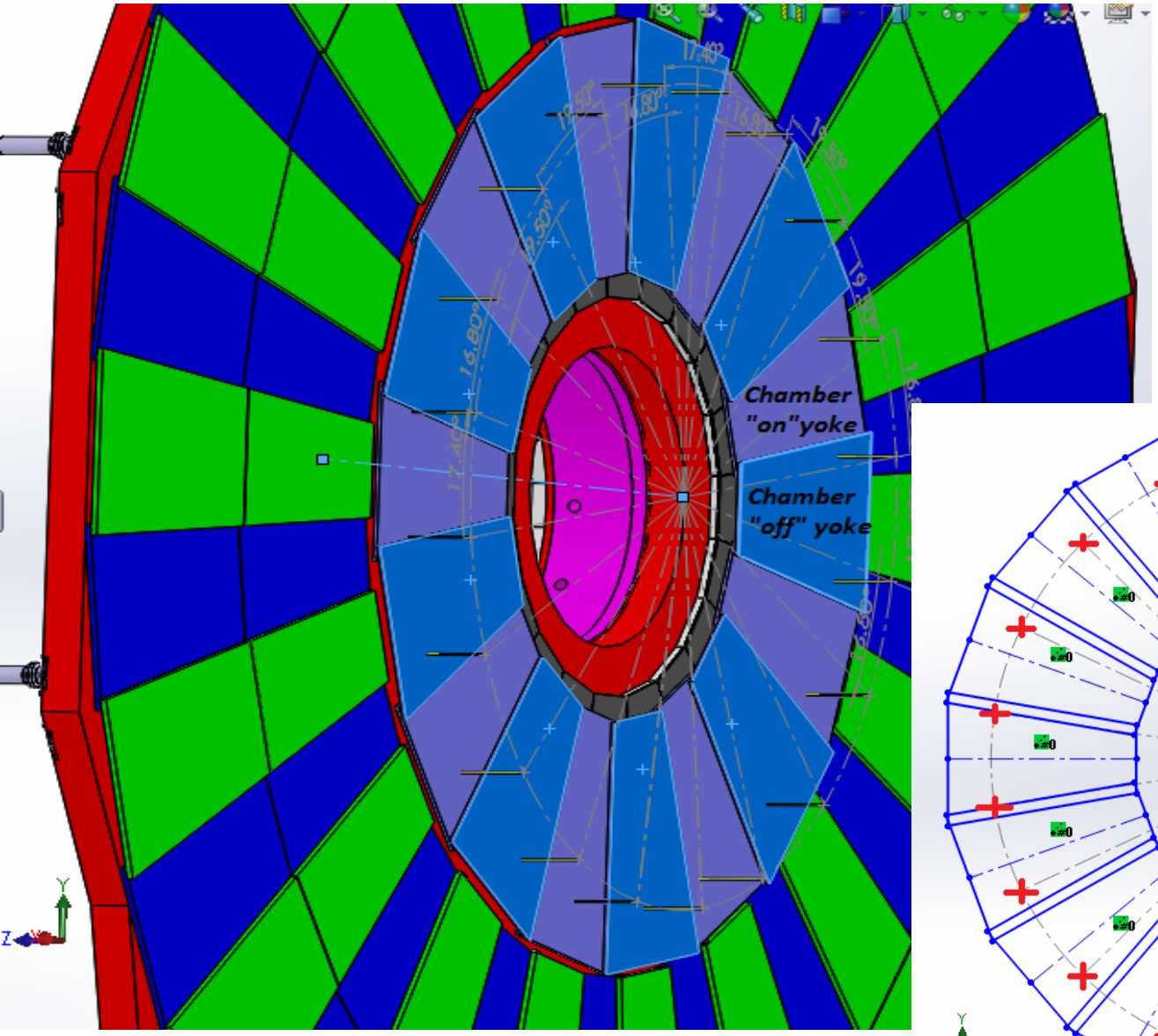
Ian Crotty

* *Name of the file: HighEtaParaSpaceRPCIanFeb2014V2.pptx*

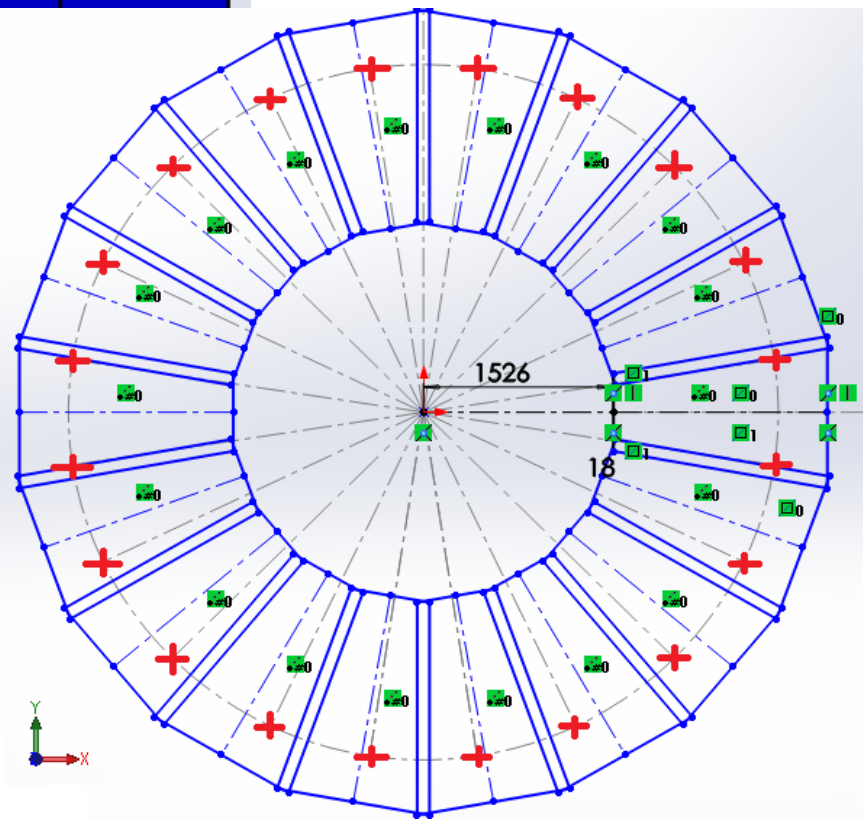
Drawing with mounting holes on the YE3



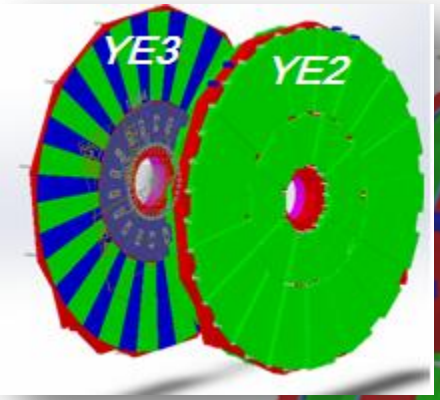
Mounting of the RE3/1 chambers



Location the M12



* Determination free space between ME3 and RE3/1

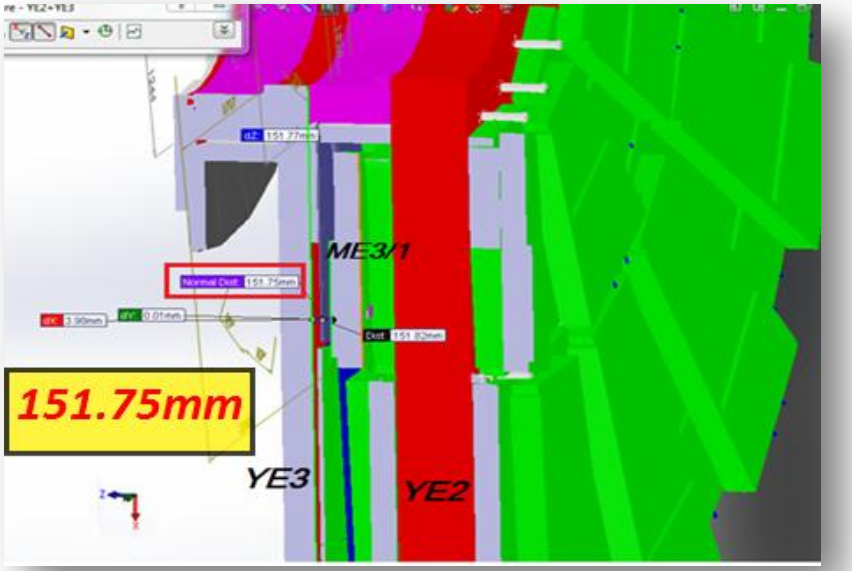


Present system

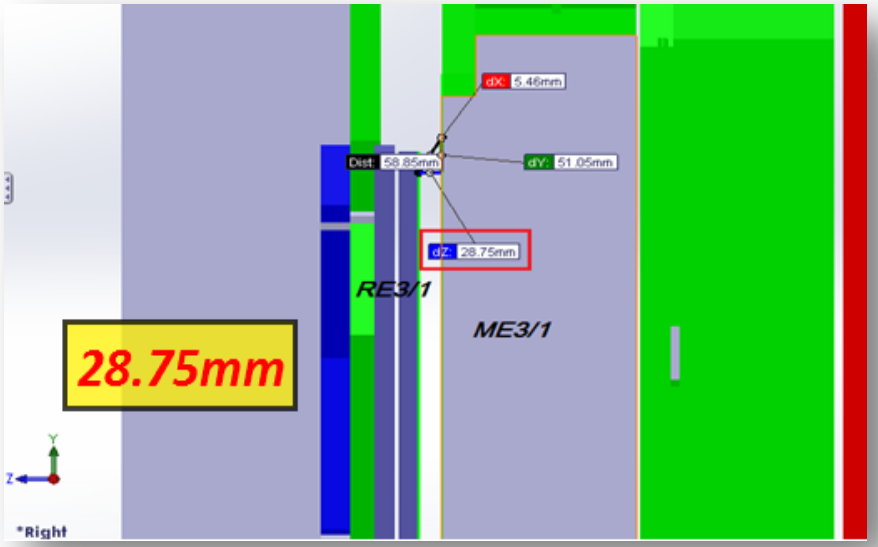
Distance between of the YE3 and YE2 = 9775 mm-9120 mm = 655 mm

Thickness of the YE2 = 600 mm;
Thickness of the ME = 244 mm;
Gap between the two chambers of the ME = 4mm

✓Distance between YE3 and ME3



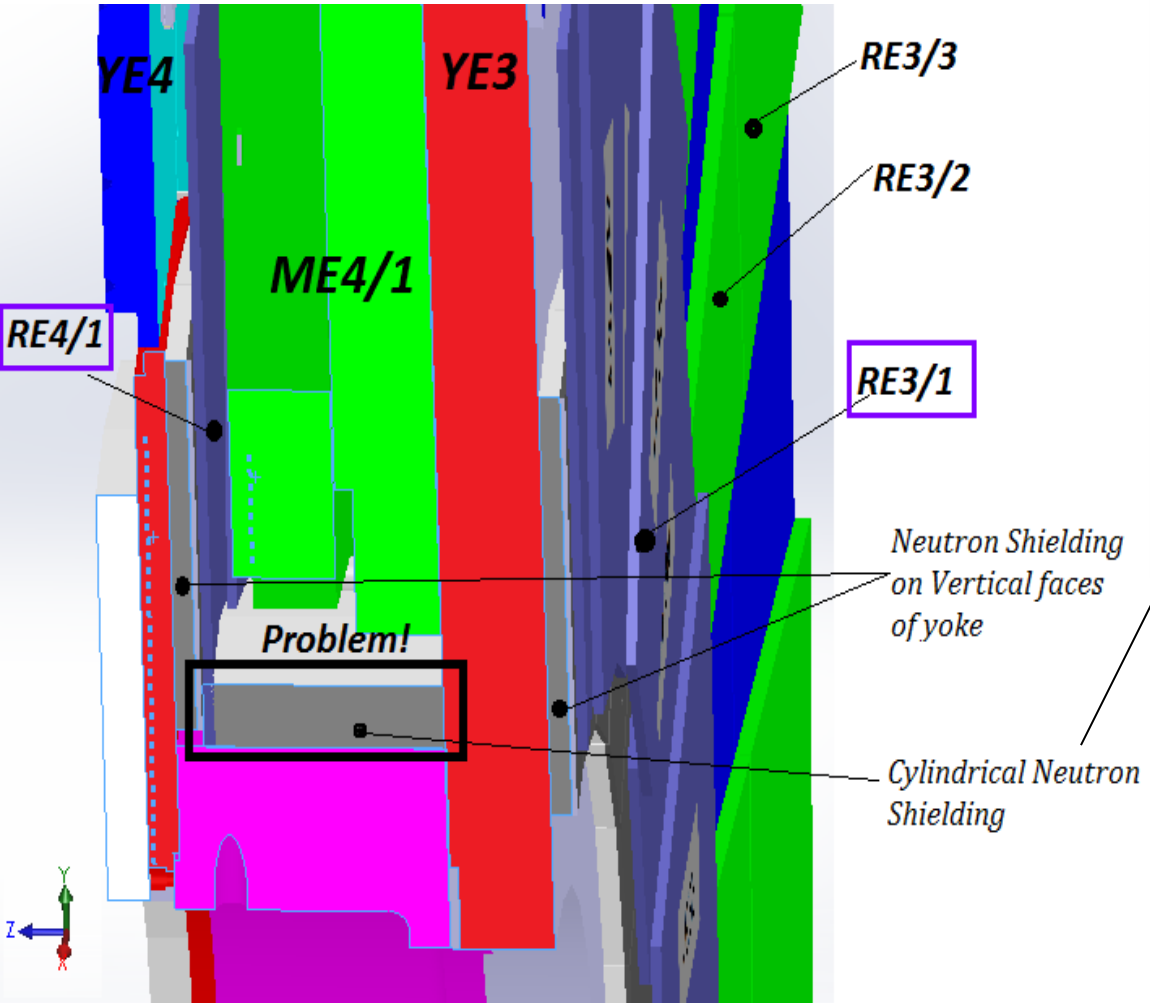
✓Distance between ME3 and RE3/1



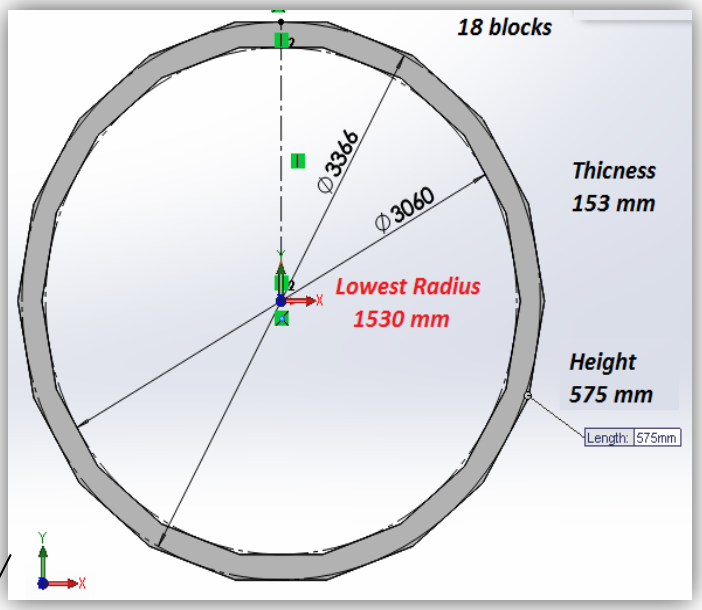
* Name of the file: Integration of the YE2 and YE3 with RE31.STEP

Reducing volume of the Cylindrical shielding

Cross section of the YE3 and YE4

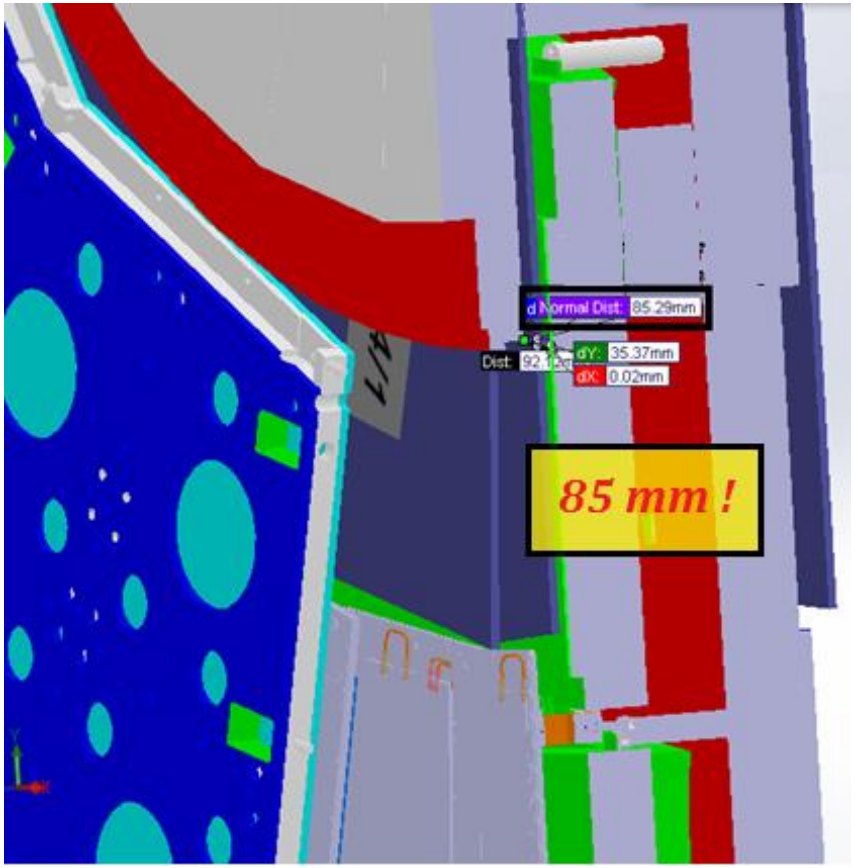


Sizes of the cylindrical shielding

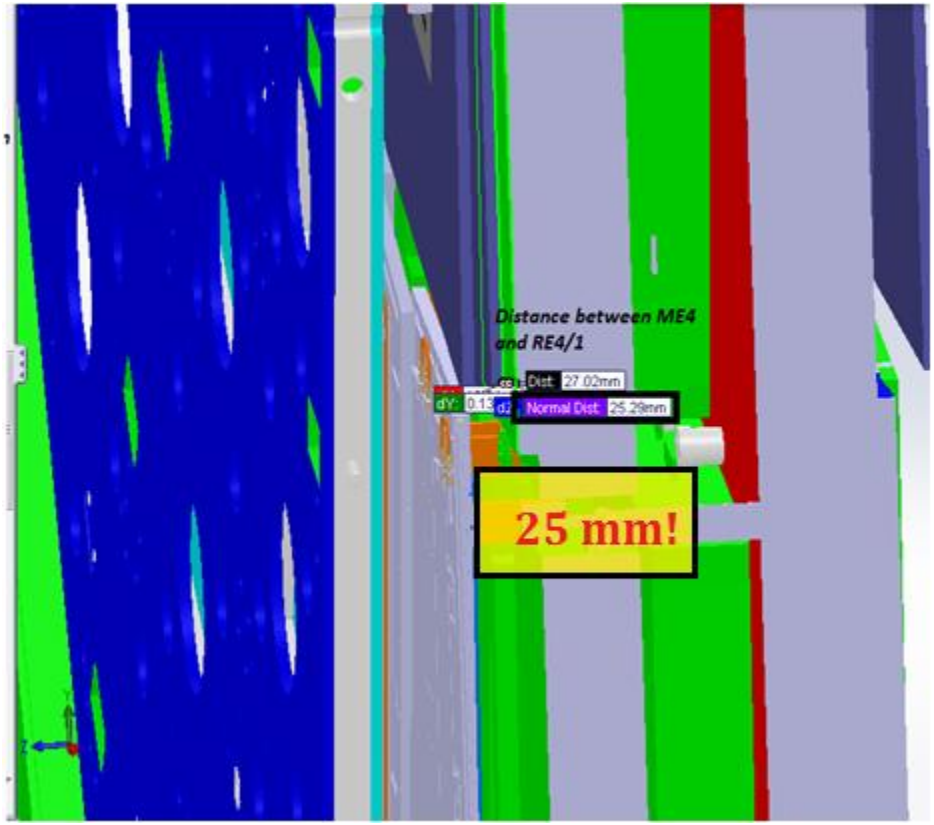


Determination free space between ME4 and RE4/1

✓**Distance between Neutron Shielding of YE4 and ME4**



✓**Distance between RE4/1 and ME4**



Thank you for your attention!

Pseudorapidity