



MICE – Final Step Forward Look

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- **Final Step**
 - Schedule
 - Physics Requirements
 - Single or Double cavities
 - Block Diagram
 - Single cavities arrangement
 - Vacuum envelope
 - RF Cavities and Chambers
 - Vacuum
 - RF Power systems
 - Step IV to Final step re-configuration
 - Floor plate changes
 - South Mezzanine?
 - ??

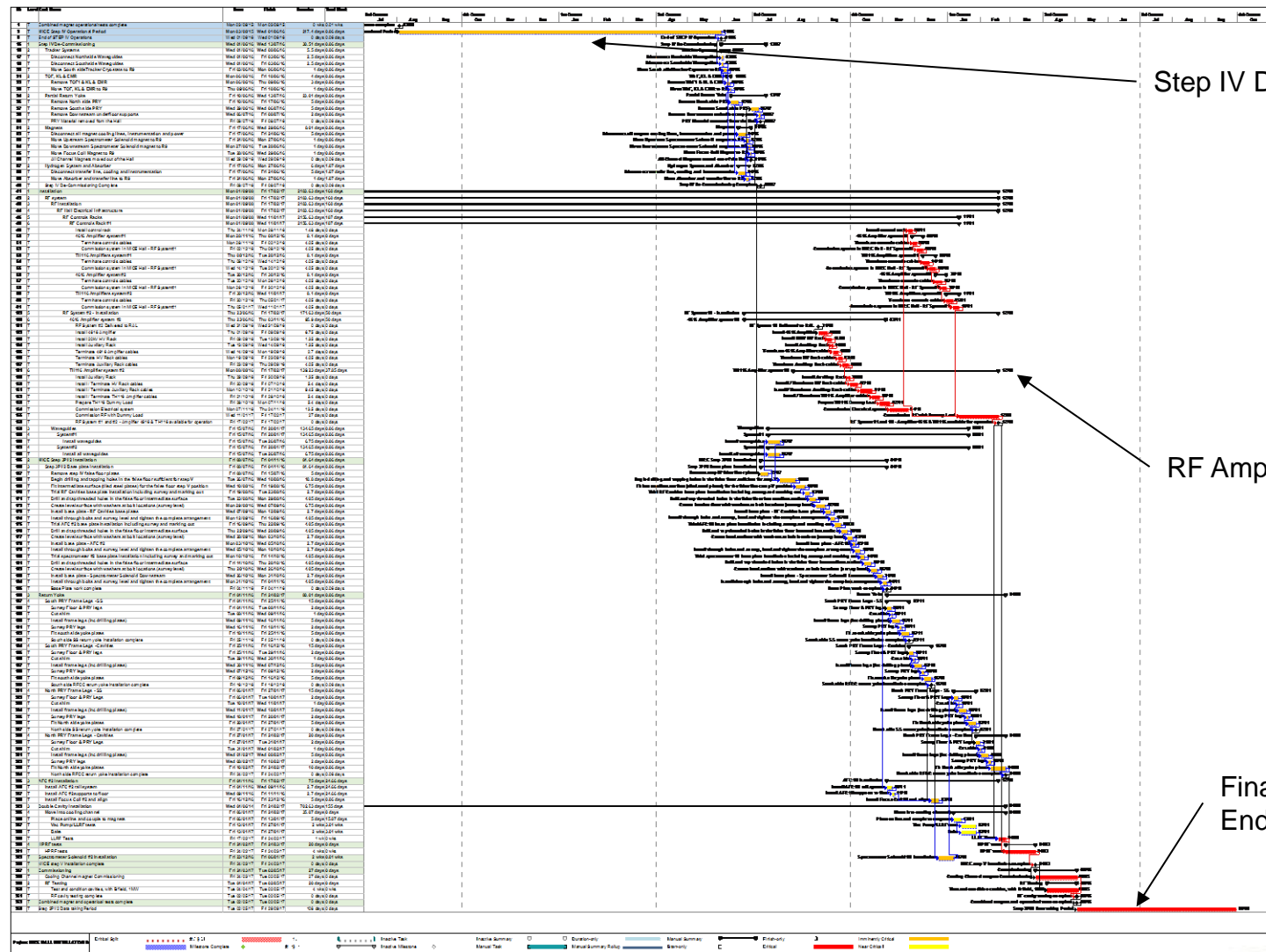


Schedule to completion – Critical and Near

Step IV Data Taking – June 2016

RF Amplifier installation in the hall

Final Step data taking period – End March 2018

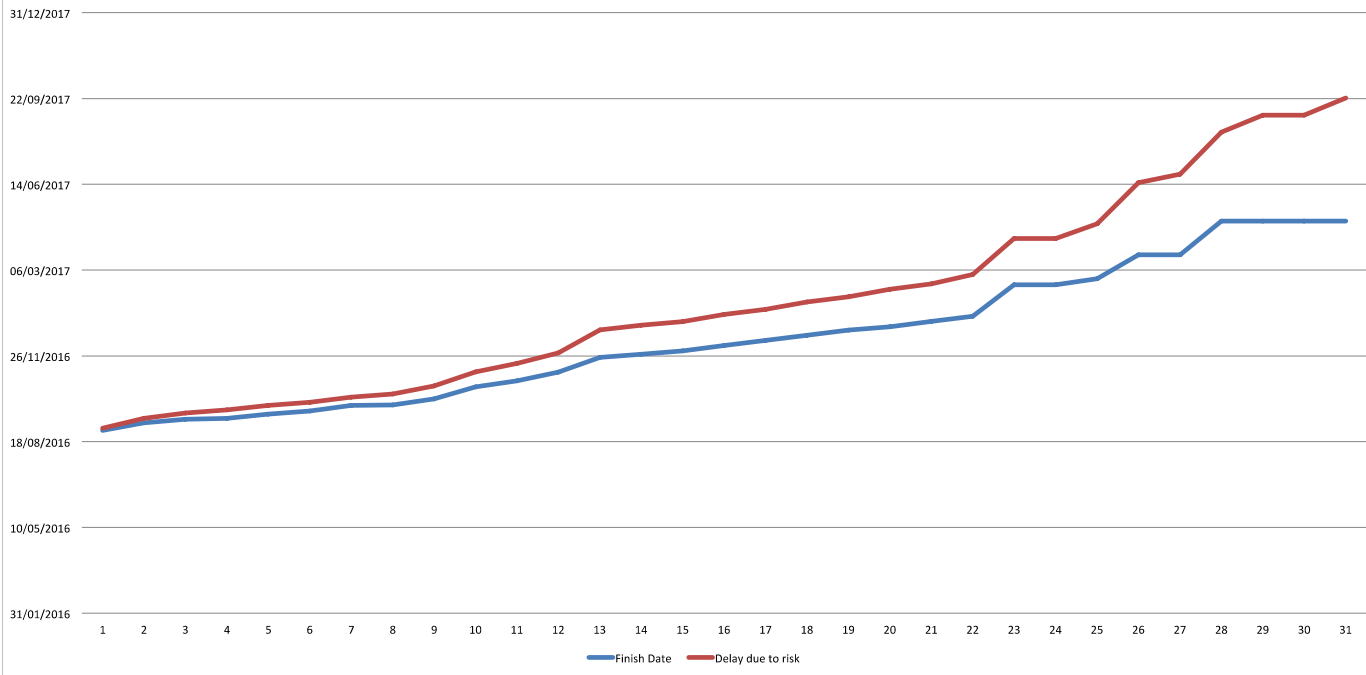


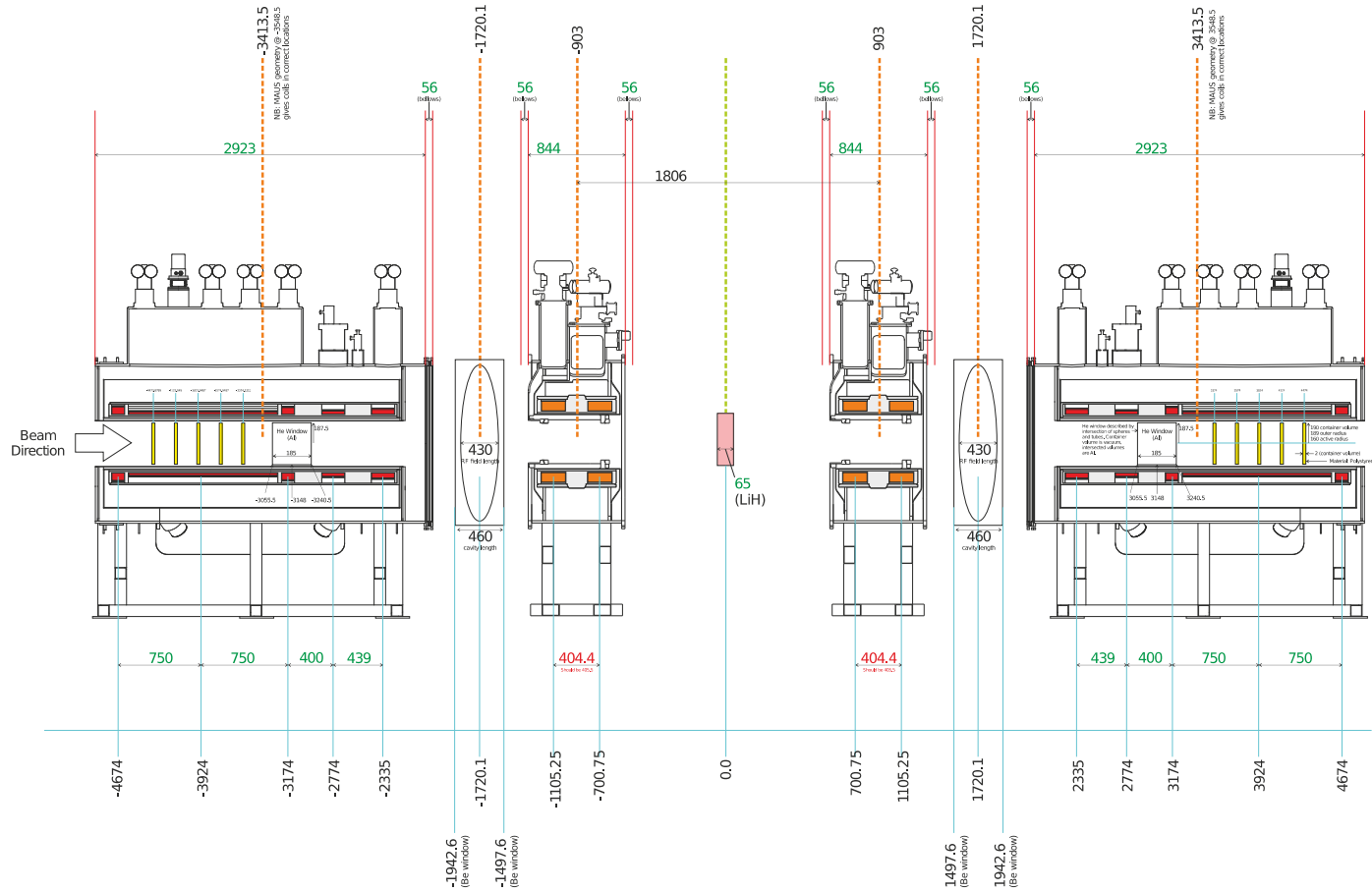
Schedule to completion

WBS	Name	Finish Date	Risks_Level	Risk_Impact	Risk Level Duration	Probability	Delay due to risk	Sequential Delay
6.1.1.1.3.1.8	RF System #2 Delivered to RAL	31/08/2016	(RISK)-(R5)	Late delivery	5	0.5	02/09/2016	2.5
6.1.1.1.3.1.9	Install 4616 Amplifier	09/09/2016	(RISK)-(R4)	Unable to access the hall or shipping area	10	0.25	14/09/2016	5
6.1.1.1.3.1.10	Install 20kV HV Rack	13/09/2016	(RISK)-(R4)	Unable to access the hall or shipping area	10	0.25	20/09/2016	7.5
6.1.1.1.3.1.11	Install Auxiliary Rack	14/09/2016	(RISK)-(R4)	Unable to access the hall or shipping area	10	0.25	24/09/2016	10
6.1.1.1.3.1.12	Terminate 4616 Amplifier cables	19/09/2016					29/09/2016	10
6.1.1.1.3.1.13	Terminate HV Rack cables	23/09/2016					03/10/2016	10
6.1.1.1.3.1.14	Terminate Auxiliary Rack cables	29/09/2016					09/10/2016	10
6.1.1.1.3.2.8	Install Auxiliary Rack	30/09/2016	(RISK)-(R4)	Unable to access the hall or shipping area	10	0.25	12/10/2016	12.5
6.1.1.1.3.2.9	Install / Terminate HV Rack cables	07/10/2016	(RISK)-(R4)	Unable to access the hall or shipping area	10	0.25	22/10/2016	15
6.1.1.1.3.2.10	Install / Terminate Auxiliary Rack cables	21/10/2016	(RISK)-(R4)	Unable to access the hall or shipping area	10	0.25	07/11/2016	17.5
6.1.1.1.3.2.11	Install / Terminate TH116 Amplifier cables	28/10/2016	(RISK)-(R4)	Unable to access the hall or shipping area	10	0.25	17/11/2016	20
6.1.1.1.3.2.12	Prepare TH116 Dummy Load	07/11/2016	(RISK)-(R4)	Unable to access the hall or shipping area	10	0.25	29/11/2016	22.5
6.1.1.1.3.2.13	Commission Electrical system	24/11/2016	(RISK)-(R3)	Expert Personnel not available	20	0.5	26/12/2016	32.5
6.1.1.1.1.3	Install control rack	28/11/2016	(RISK)-(R5)	Expert Personnel not available	5	0.25	31/12/2016	33.75
6.1.1.1.1.4.1	Terminate controls cables	02/12/2016					04/01/2017	33.75
6.1.1.1.1.4.2	Commission system in MICE Hall - RF System#1	08/12/2016	(RISK)-(R4)	Expert Personnel not available	10	0.25	13/01/2017	36.25
6.1.1.1.1.5.1	Terminate controls cables	14/12/2016					19/01/2017	36.25
6.1.1.1.1.5.2	Commission system in MICE Hall - RF System#1	20/12/2016	(RISK)-(R4)	Expert Personnel not available	10	0.25	27/01/2017	38.75
6.1.1.1.1.6.1	Terminate controls cables	26/12/2016					02/02/2017	38.75
6.1.1.1.1.6.2	Commission system in MICE Hall - RF System#1	30/12/2016	(RISK)-(R4)	Expert Personnel not available	10	0.5	11/02/2017	43.75
6.1.1.1.1.7.1	Terminate controls cables	05/01/2017					17/02/2017	43.75
6.1.1.1.1.7.2	Commission system in MICE Hall - RF System#1	11/01/2017	(RISK)-(R4)	Expert Personnel not available	10	0.5	28/02/2017	48.75
6.1.1.1.3.2.14	Commission RF with Dummy Load	17/02/2017	(RISK)-(R4)	Expert Personnel not available	10	0.5	11/04/2017	53.75
6.1.1.1.3.2.15	RF System #1 and #2 - Amplifier 4616 & TH116 available for operation	17/02/2017					11/04/2017	53.75
10.3.4	LLRF Tests	24/02/2017	(RISK)-(R3)	Additional testing time required	20	0.5	28/04/2017	63.75
16	MICE step V installation complete	24/03/2017	(RISK)-(R2)	Delay due to currently non-critical items reaching critical path	40	0.5	15/06/2017	83.75
11.1	HPRF tests	24/03/2017	(RISK)-(R3)	Additional testing time required	20	0.5	25/06/2017	93.75
17.1	Cooling Channel magnet Commissioning	02/05/2017	(RISK)-(R2)	Commissioning of the channel is an unknown	40	0.25	13/08/2017	103.75
17.2.1	Test and condition cavities, with B field, 1MW	02/05/2017	(RISK)-(R2)	Additional testing time required - testing in the MTA	40	0.5	02/09/2017	123.75
17.2.2	RF cavity testing complete	02/05/2017					02/09/2017	123.75
18	Combined magnet and operational tests complete	02/05/2017	(RISK)-(R2)	Delay due to currently non-critical items reaching critical path	40	0.5	22/09/2017	143.75

- Step IV end of data taking – June 2016
- RF System #2 Delivered to RAL – end August 2016
- Final Step Construction Complete – end March 2017
- Final Step ready for data taking May 2017

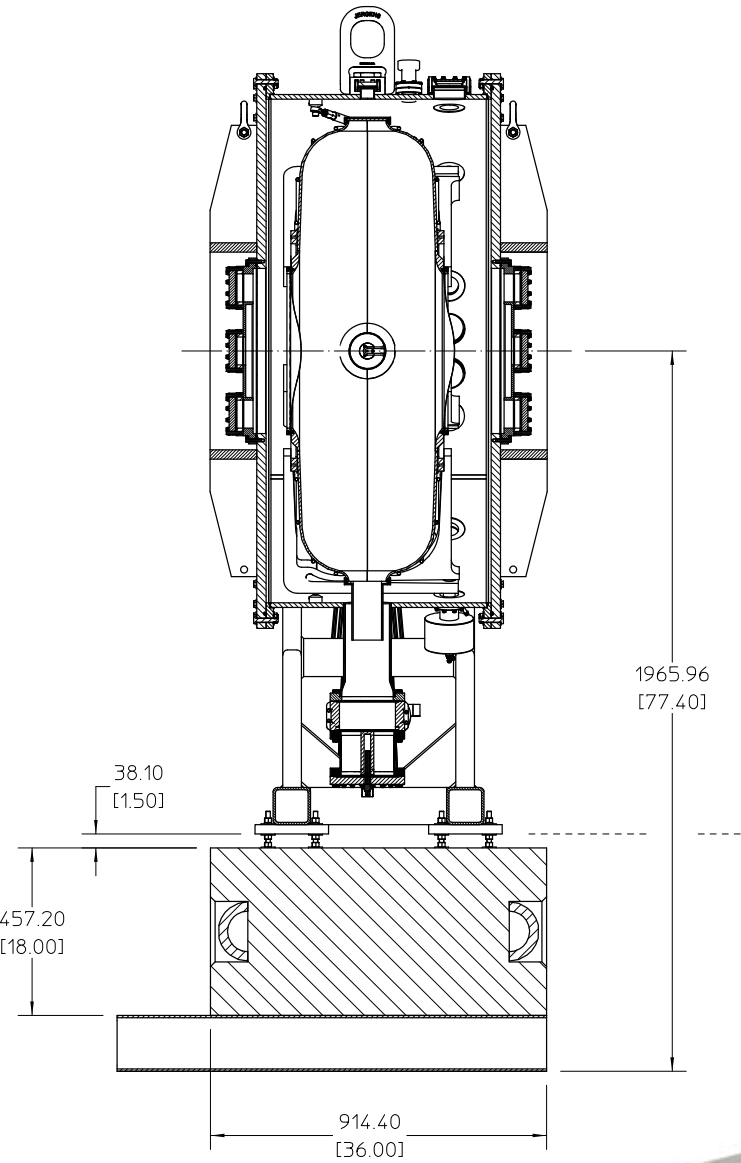
Step 3PI/2 Critical Path



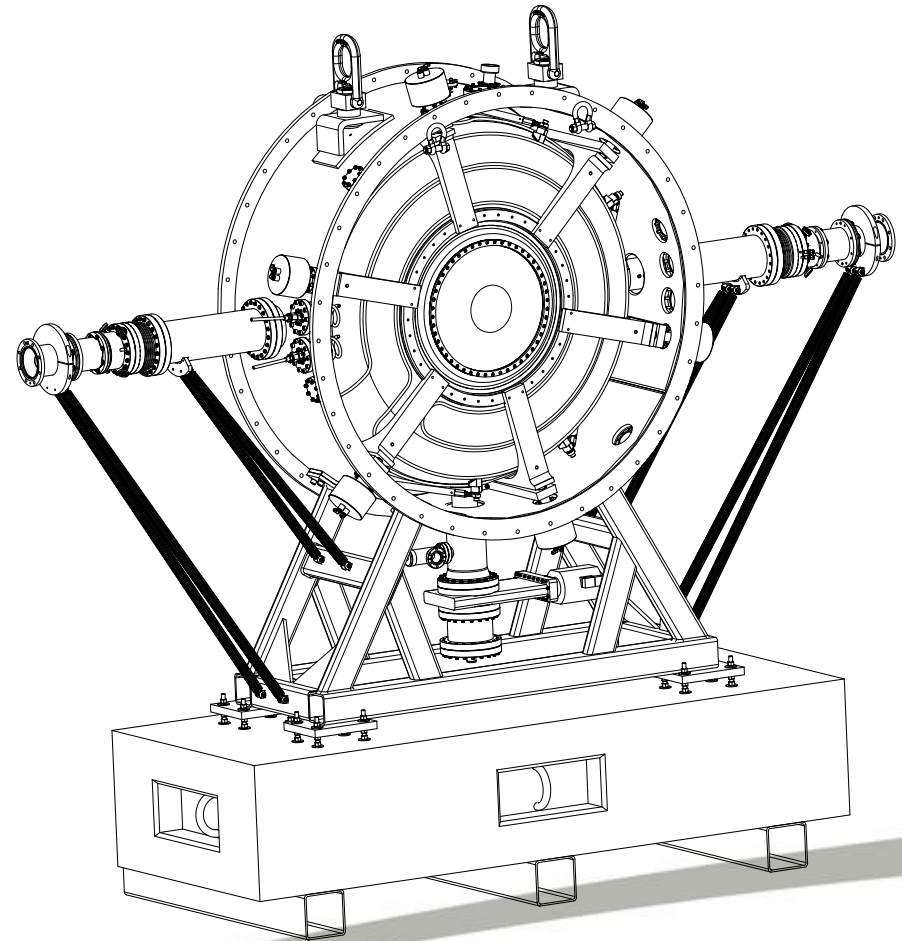


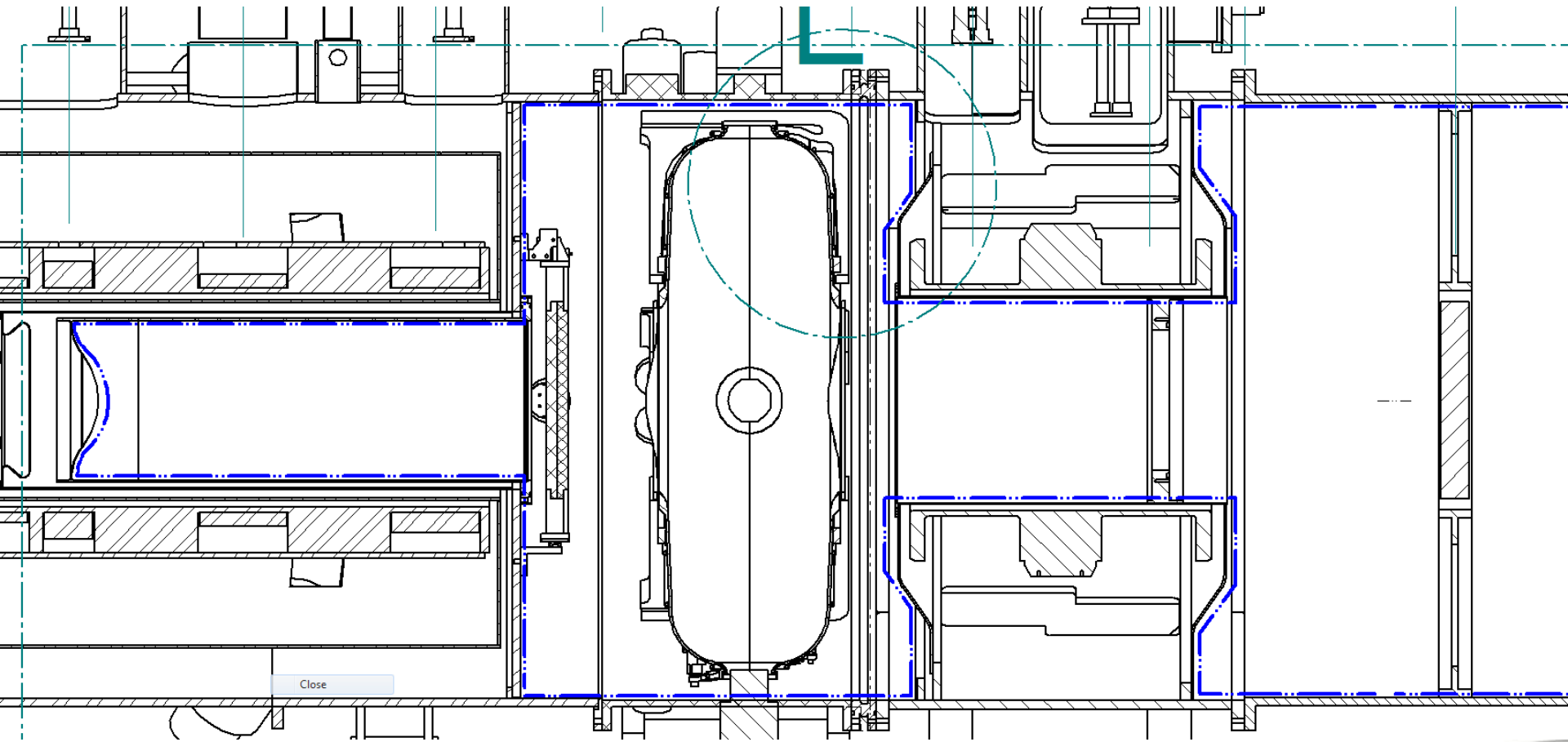
- Tracker must be protected from possible damage during cavity operations
- Central Volume holding main absorber dependant on the physics and magnetic analysis
- Central volume reasonably simple engineering

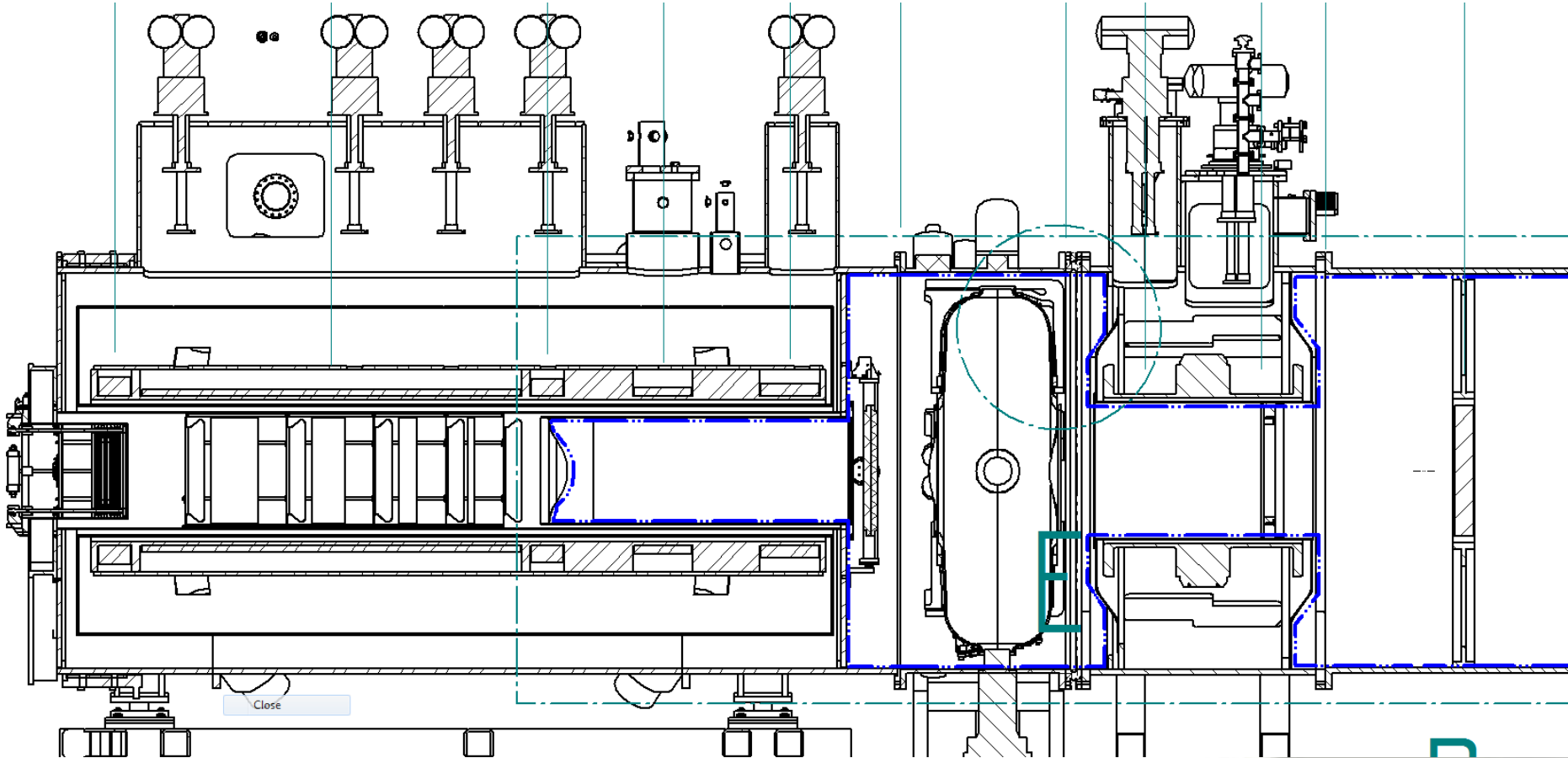




Section A-A







- Additional engineering work
 - Rolling platforms / Floor mounting positions for the Focus Coils, central Absorber volume and RF Cavity volumes
 - Floor drilling / changes to accommodate the additional Partial Return Yoke materials
 - Waveguides to the new positions
 - Physical layout can be done in the R9 lab area
 - According to the design routing some adjustments to false floor, cable tray, water line

