Beam monitors Mechanical integration

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BM locations – updated

		Bunker			Guides-Choppers		Sample	
1. ESTIA	Original config	10.7m	11.1m				23m – Pre sample	
	Current config	**10.7m**	**11.1m**				**23m – Pre sample**	
2. SKADI	Original config	6m					Sample incident	Transmission
	Current config	**9m**			**15.5m**		**Pre sample**	**Transmission**
3. VESPA	Original config	7.44m	10m		20m		Sample incident	
	Current config	**7.38m**	**10.02m**		**20.02m**		**58.37m – Pre sample**	**59.6m - Transmission**
4. ODIN	Original config	8.42m	13.2m		33m		Sample incident	
	Current config	**8.42m**	**23.7m**				**53m – Pre sample**	
5. DREAM	Original config	6.175m	9.78m				Sample incident	
	Current config	**6.6m**	**10.3m**				**Pre sample**	**Transmission**
6. NMX	Original config	BBG					Sample incident	
	Current config	**BBG**					**Sample incident**	
7. BEER	Original config	8.3m	9.875m				Pre sample	
	Current config	**6.44m**	**9.875m**				**Pre sample (by HZG)**	
8. CSPEC	Original config	Mod flux			105.6m		158.5m – Pre sample	Transmission
	Current config	**6m**			**28m**	**105.6m**	**160m – Pre sample**	**Transmission (TBD)**
9. BIFROST	Original config	8.25m					Pre sample	
	Current config	**6.9m**			**27.9m**	**80.1m**	**Pre sample + Braggs peak**	**Transmission**
10.MIRACLES	Original config	7.8m					162.2m – Pre sample	
	Current config	**8.3m**			**54.6m**		**162.2m – Pre sample**	**163m - Transmission**
11.MAGIC	Original config	6.7m					Sample incident	
	Current config	**6.8m**					**Pre sample**	
12.TREX	Original config	6m			108m		162m – Pre sample	Transmission
	Current config	**6m**			**108m**		**162m – Pre sample**	**Transmission**
13.HEIMDAL	Original config	8.1m	20m				Pre sample	
	Current config	**8.1m**	**20m**				**Pre sample**	
14.FREIA	Original config		8.3m	10.3m	16.25m		Sample incident	
	Current config	**6.8m**	**8.8m**		**14.9m**	**17.9m**	**22.4m – Pre sample**	
15.LOKI	Original config	6.5m					Sample incident	Transmission Transmission
	Current config	**6.5m**			**15.5m**		**Pre sample**	**Transmission (snout)** **Transmission (beam stop)**

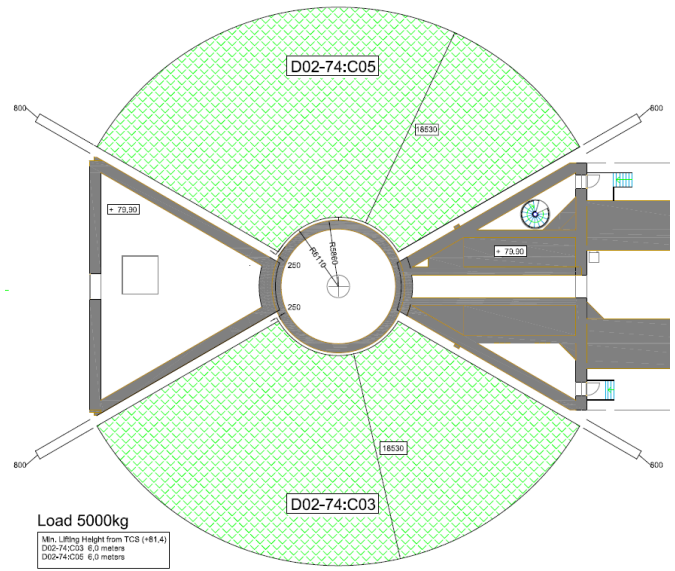
https://confluence.esss.lu.se/display/DG/Beam+monitors+common+project

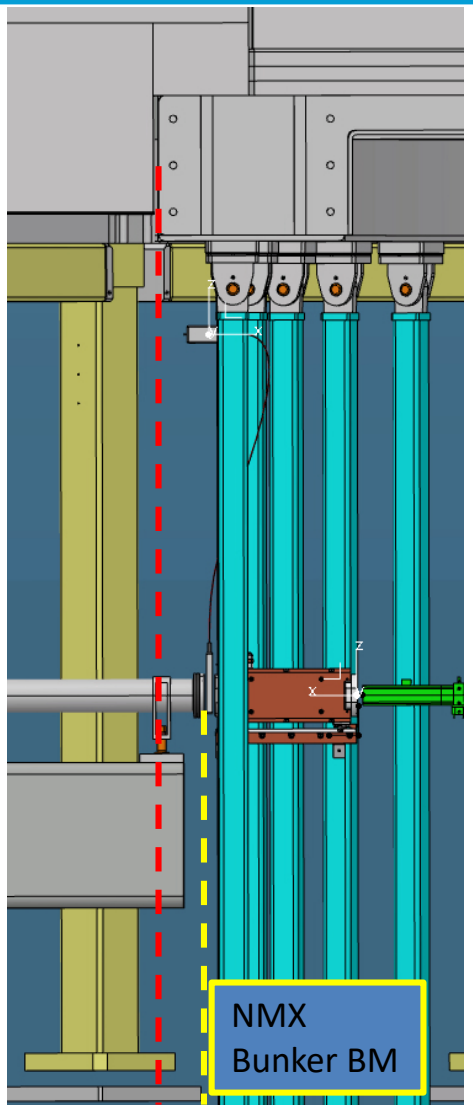
Bunker integration workshop

Issues discussed:

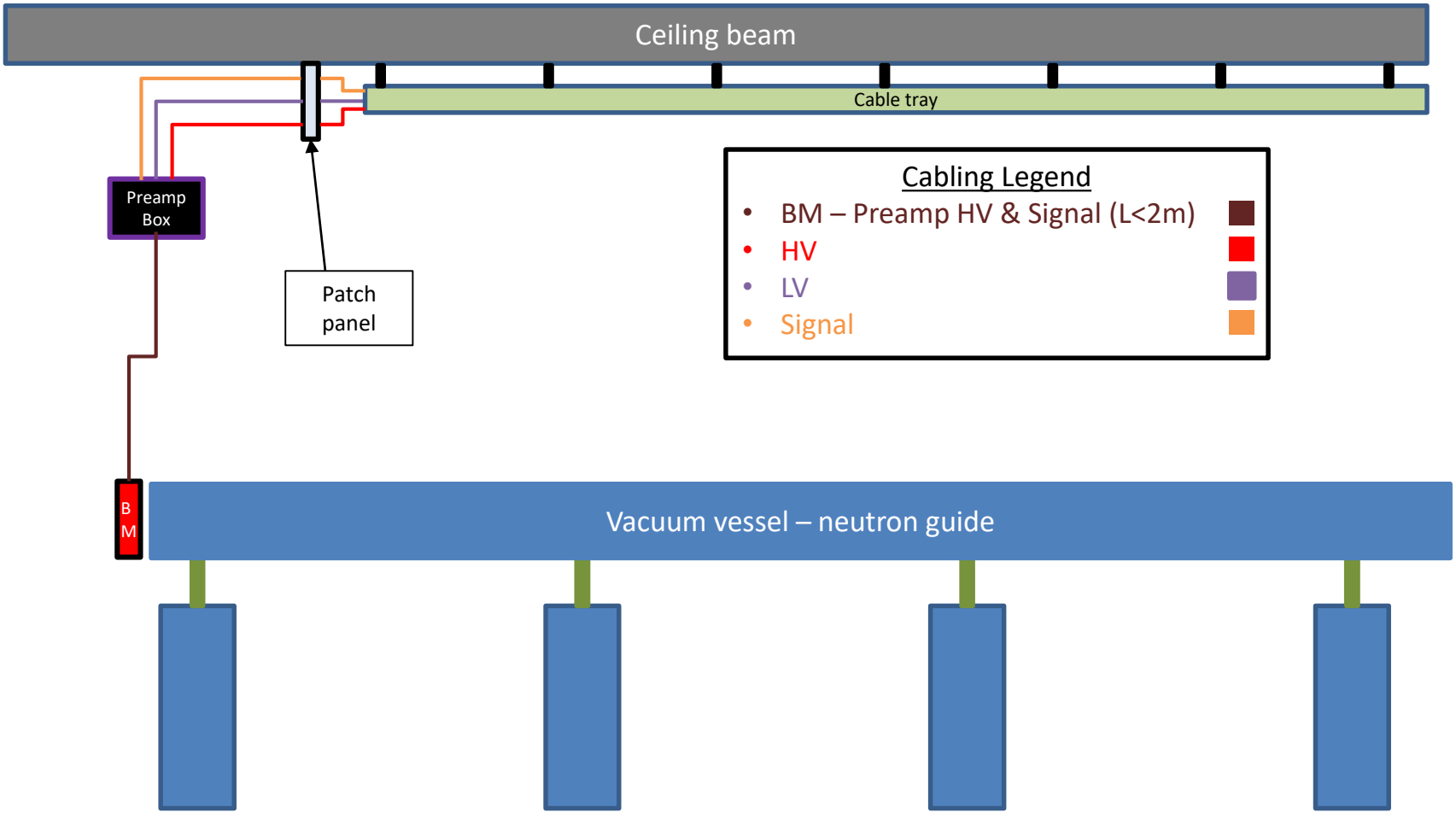
- Remote handling classification - Decide where BM is integrated on an existing RH module or creates its own
- Crane access
- Preamp box location
- Cable routing
- Ease of mounting/dismounting
- Use of standard RH components
- Keep maintenance to a minimum
- Thanks to Erik Nilsson!

Bunker Crane access

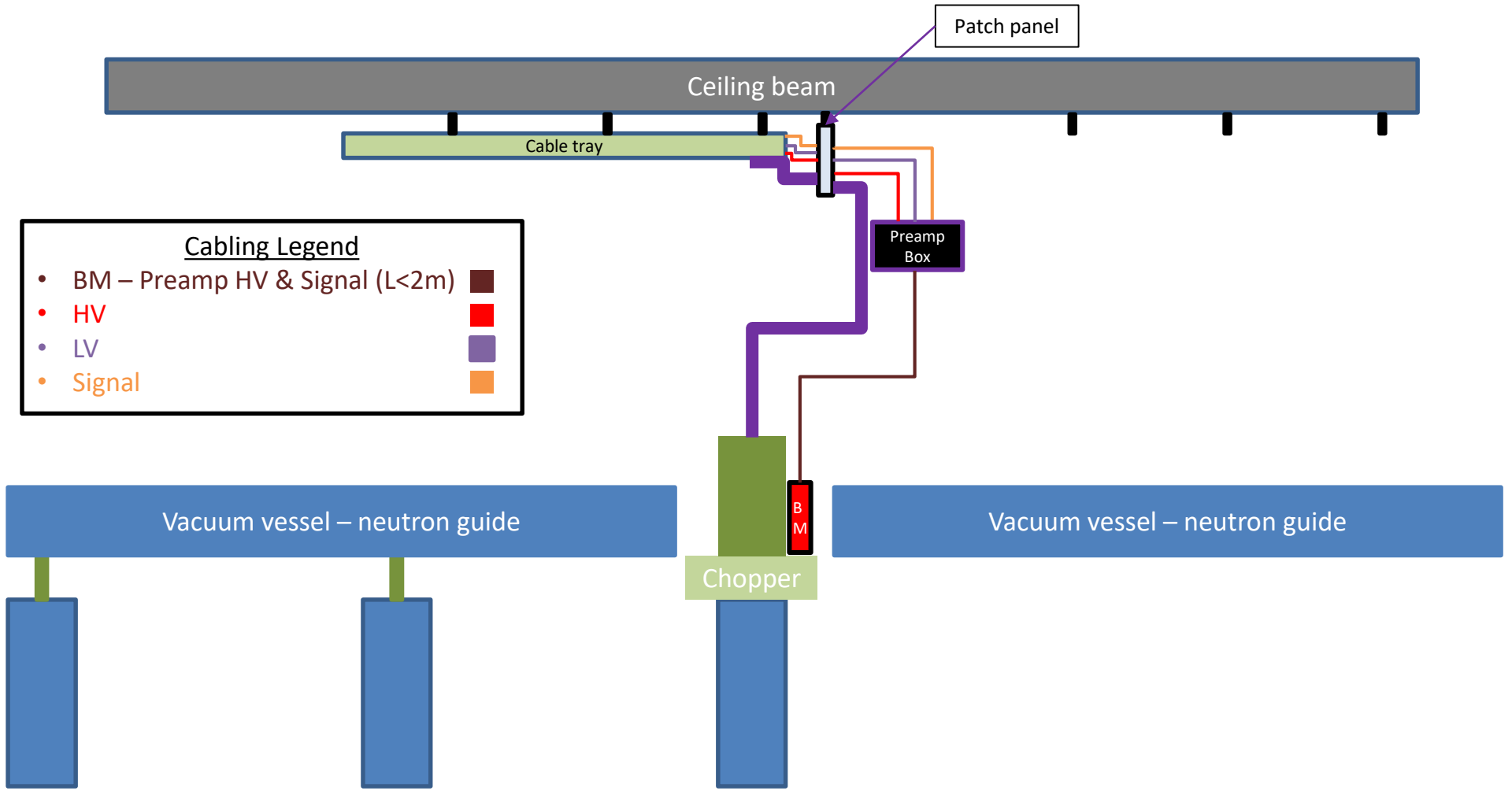




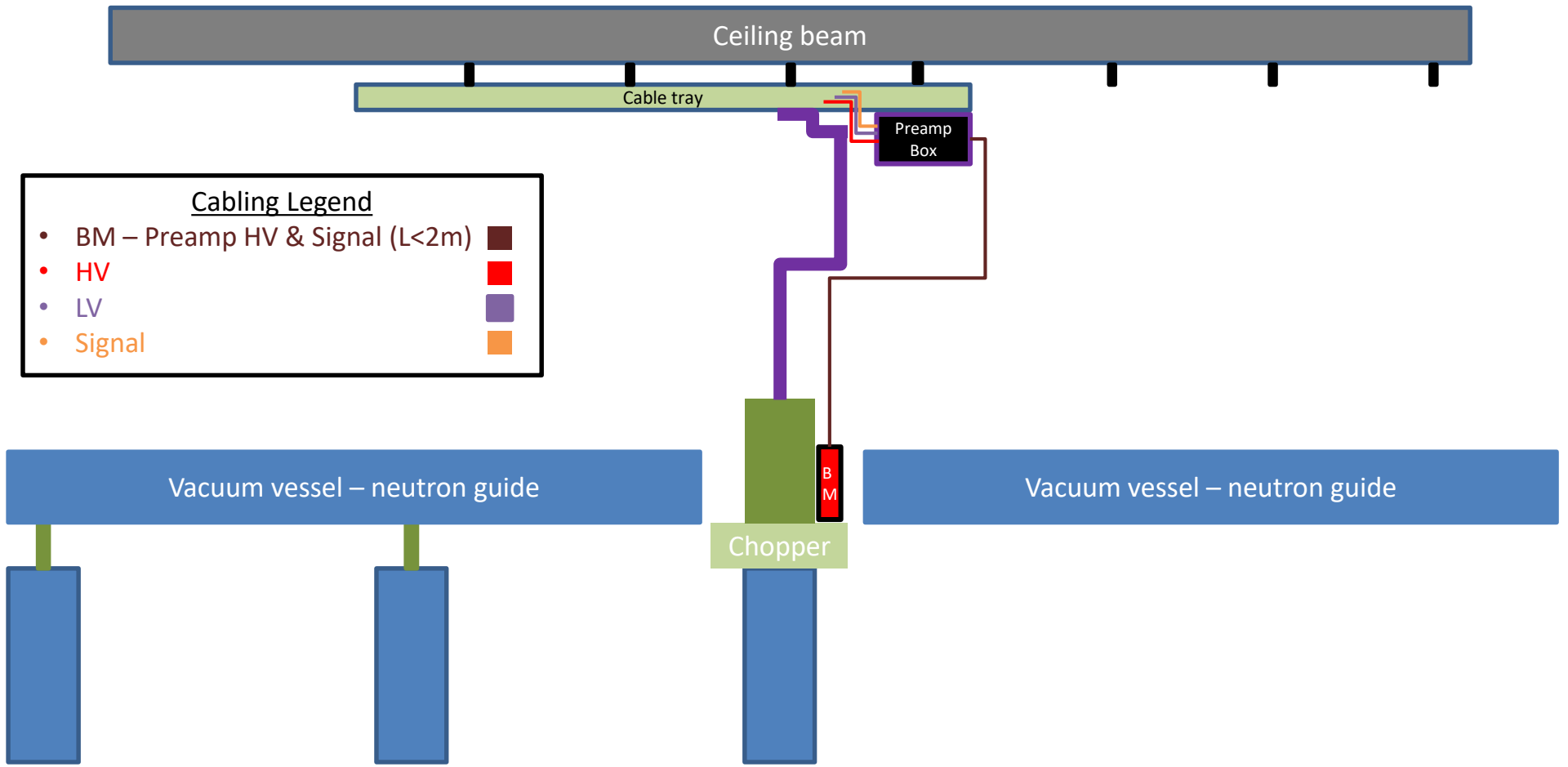
Generic cabling configuration - 1



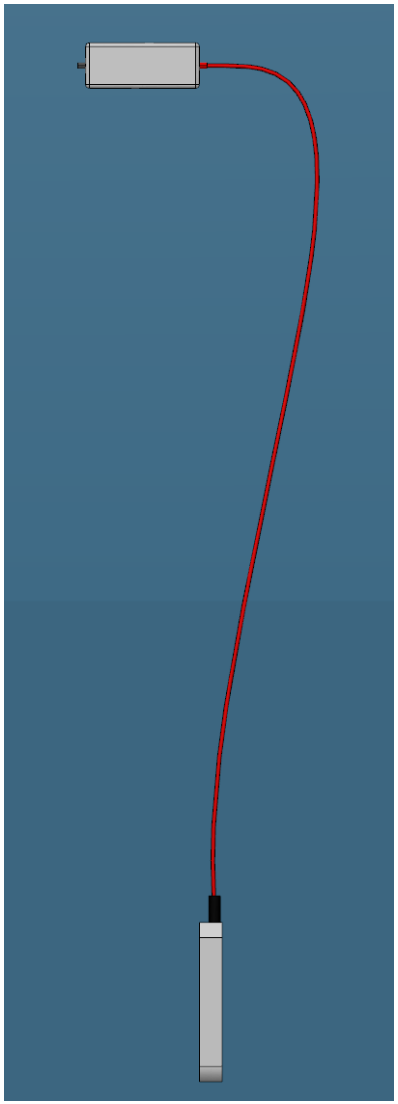
Generic cabling configuration - 2

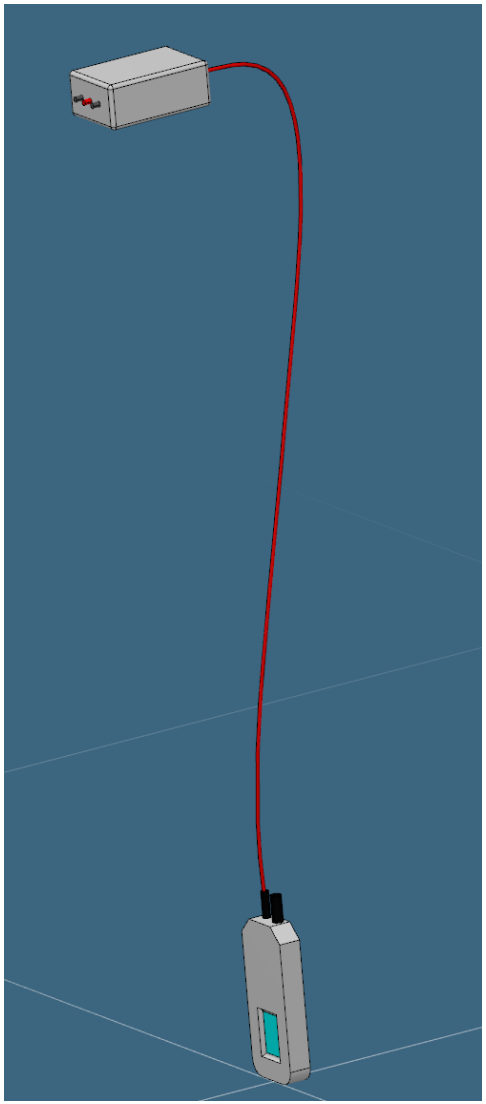


Generic cabling configuration – 2a

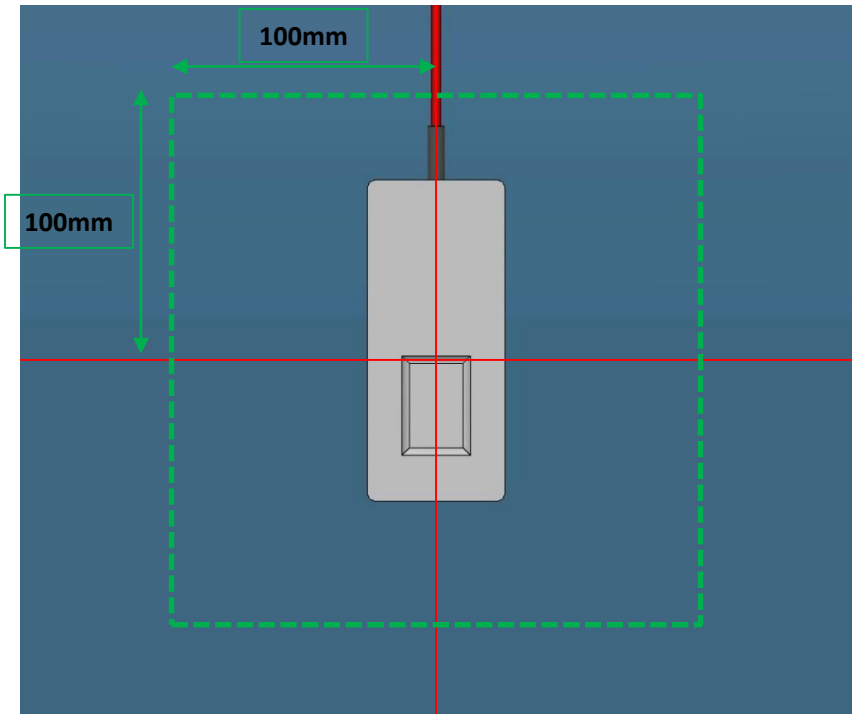


Generic configuration BM - preamp



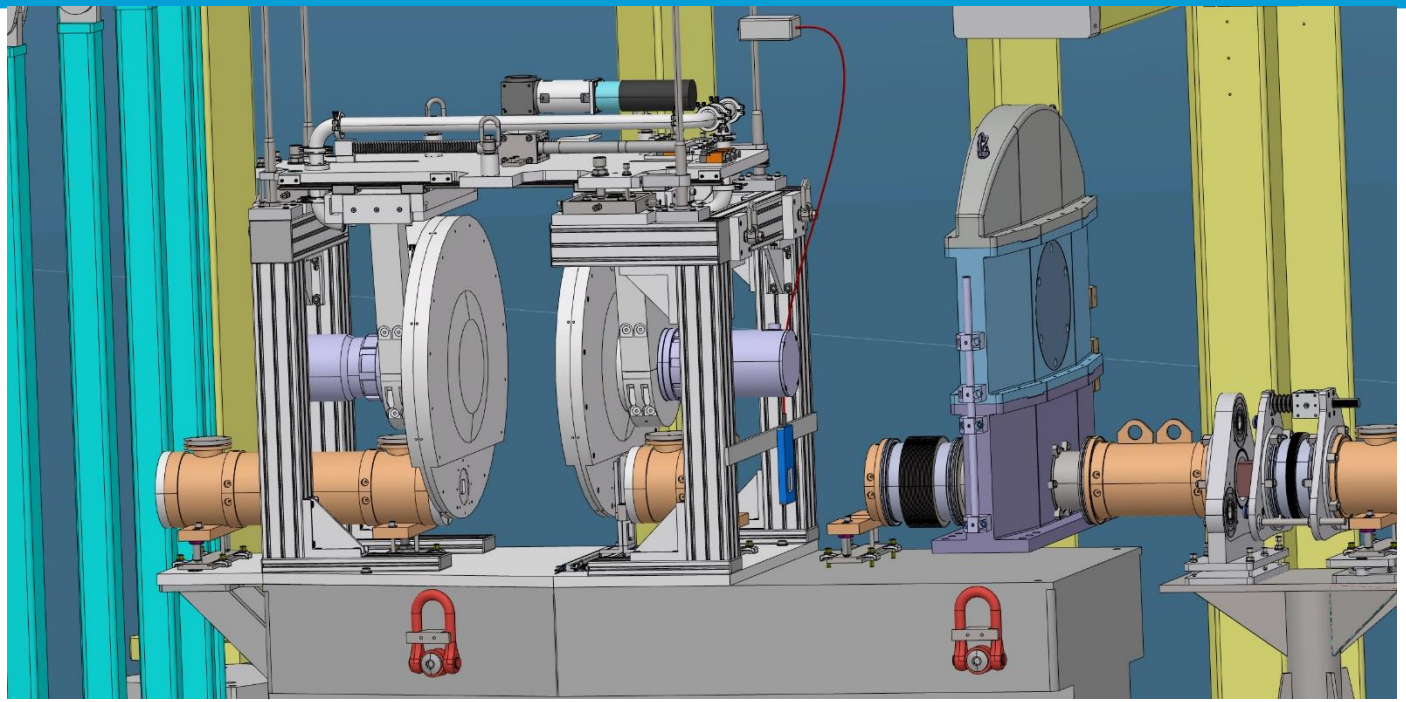


- BM to Preamp cable length: <2m
- Height of Preamp box similar to cable tray level



Spatial envelope in X-Y to be considered for shielding and mounting purposes

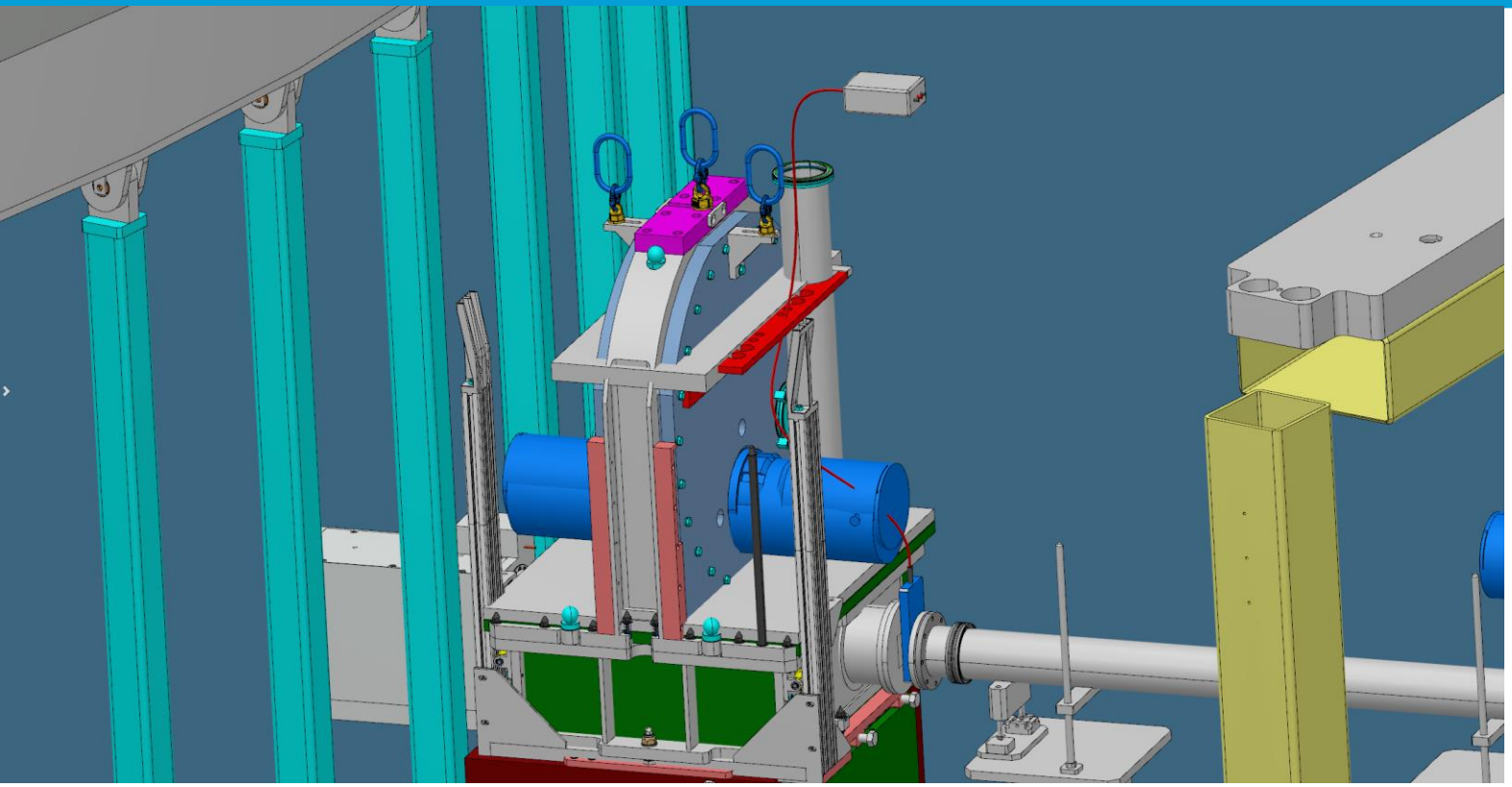
Specific examples – ODIN



ODIN CAD – Elbio Calzada

- Height level of preamp box similar to cable tray – mount on tray if possible
- Consider:
  - Routing the cable with chopper's
  - BM is mounted on Chopper RH module

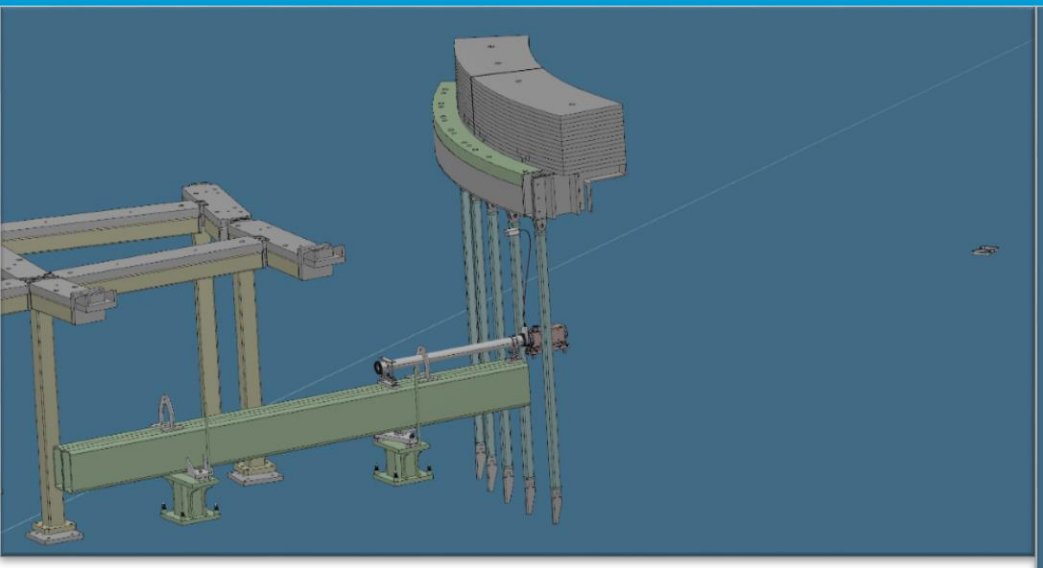
Specific examples – BIFROST

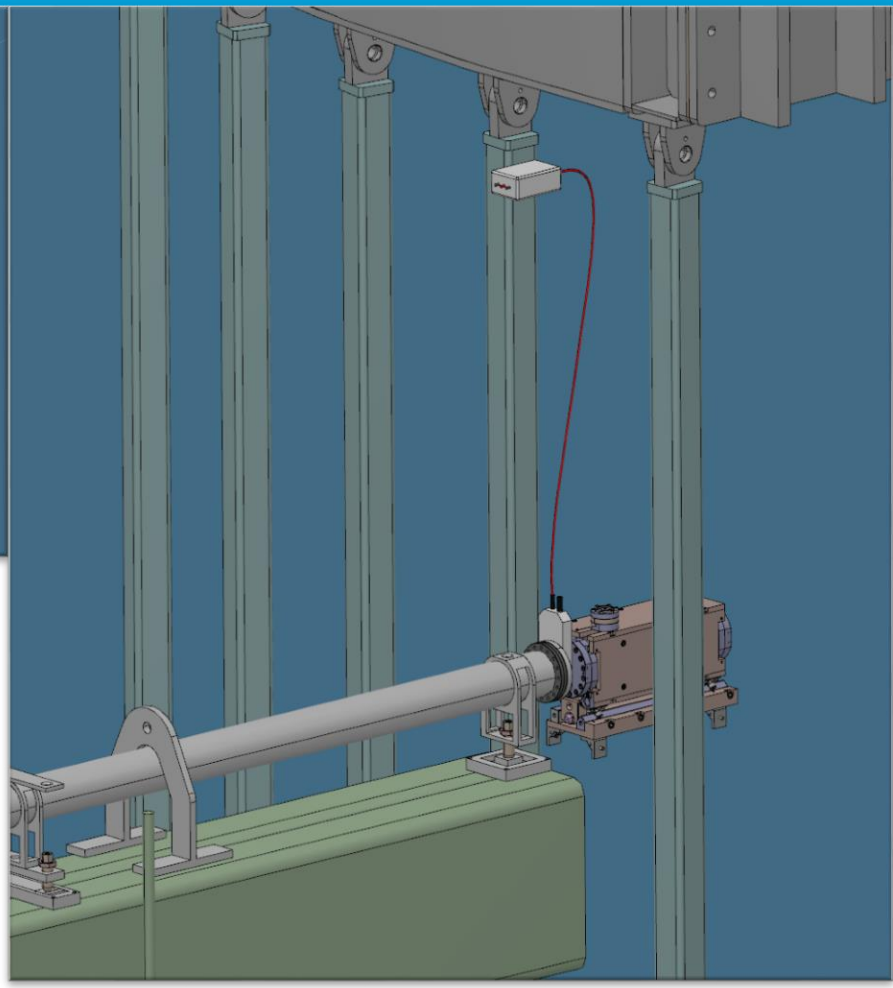


BIFROST CAD – Liam Whitelegg

- Height level of pre-amp similar to cable tray
- Want to mount on to cable tray if possible
- BM is mounted on Chopper RH module

Specific examples – NMX





- Height level of pre-amp similar to cable tray
- Want to mount on to cable tray if possible
- Challenges:
  - Crane access
  - Tool access
  - How to get everything in/out
  - Which is the RH module?

NMX CAD – Giuseppe Aprigliano

Moving forward

- Already in contact with companies for vacuum compatible BMs
- Receive further considerations from instruments
- Detailed design on case by case basis once an instrument is signed up to project

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Thank you!