



Date: 03/06/2015

Q5 replacement at point 6 left

Integration proposition for new Q5L6

DOCUMENT PREPARED BY:

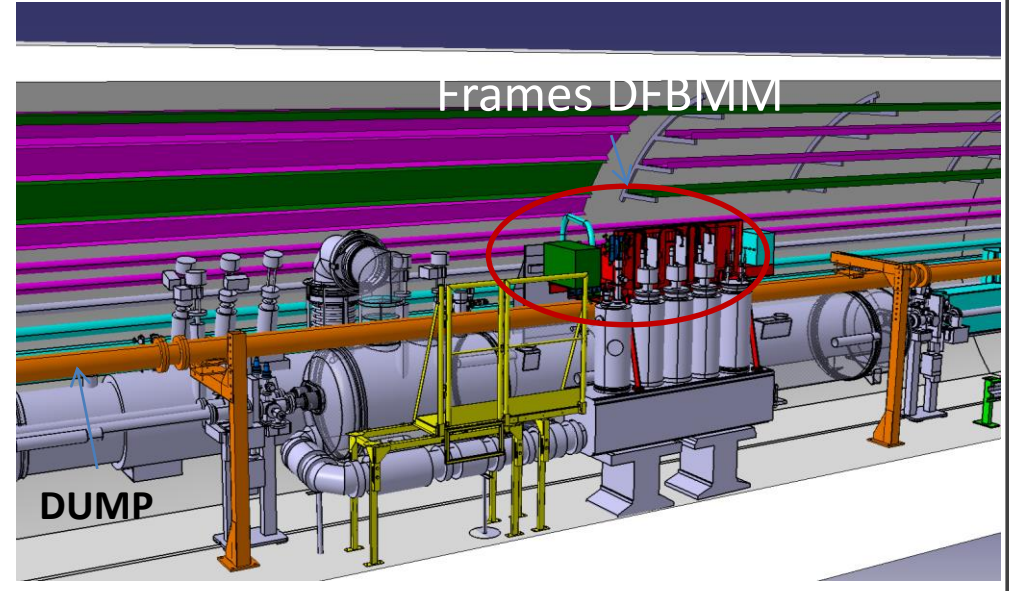
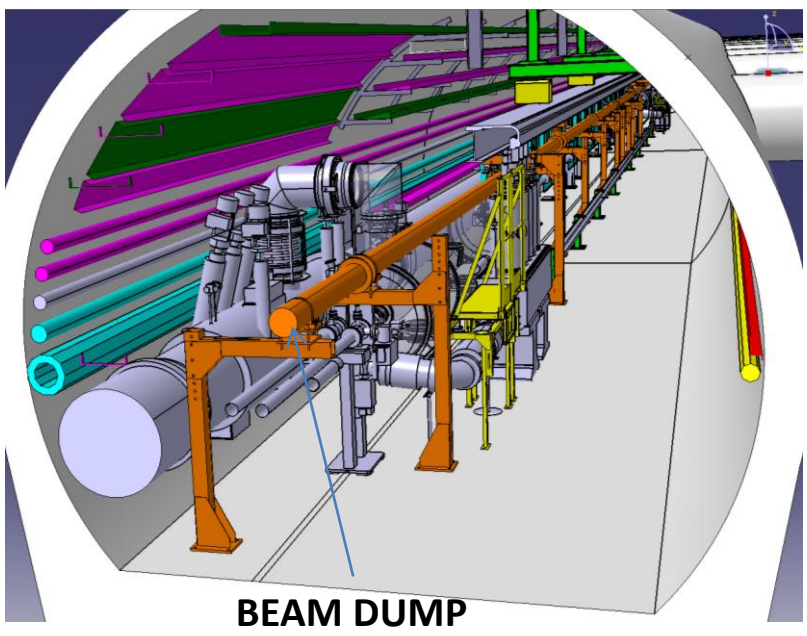
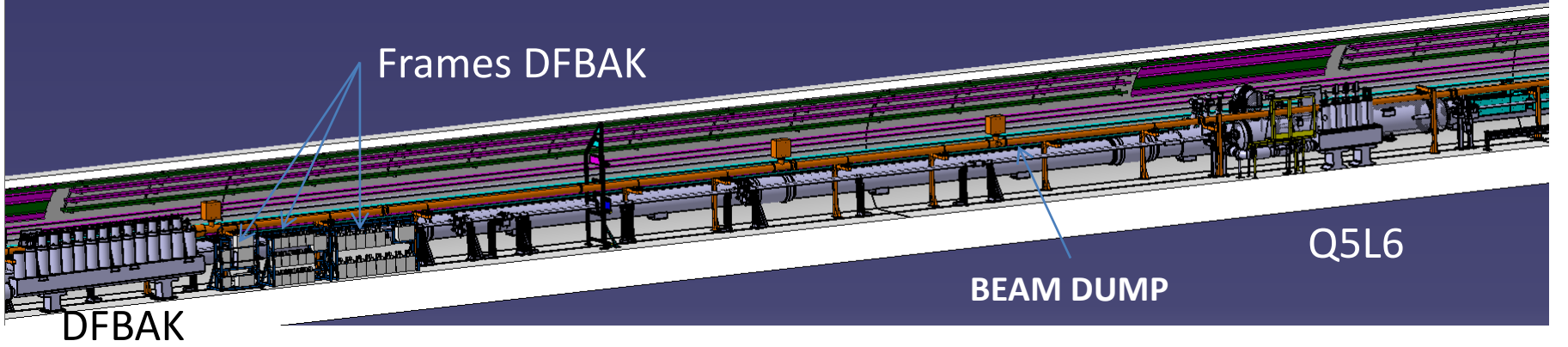
C. Magnier

DOCUMENT **TO BE** CHECKED BY:

DOCUMENT **TO BE** APPROVED BY:

DOCUMENT SENT FOR INFORMATION TO:

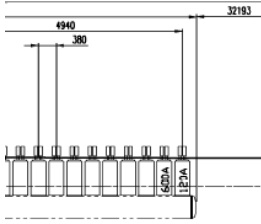
- Actual situation



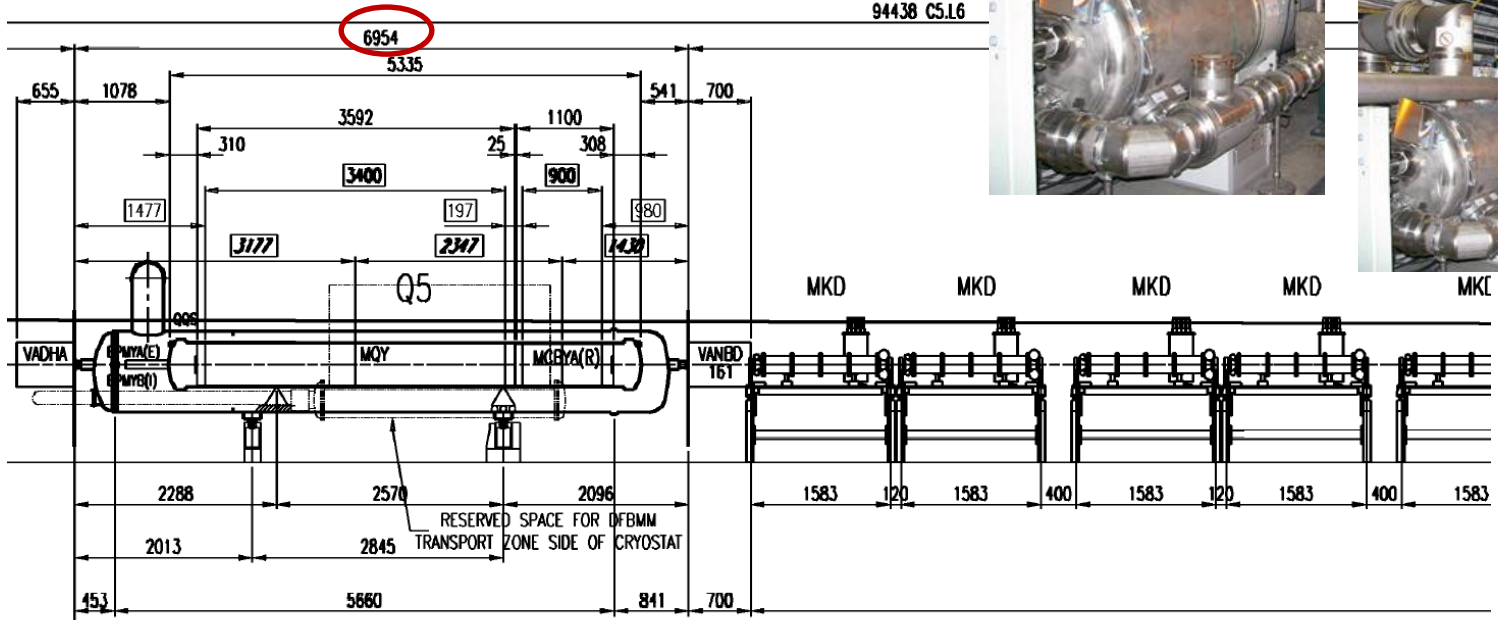
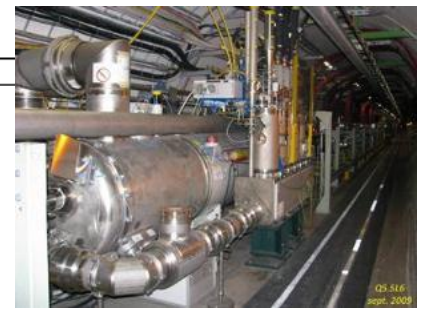
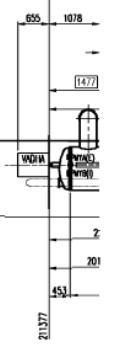
- 3D pictures



• Q5L6 actual layout



94438 C5.L6



6954

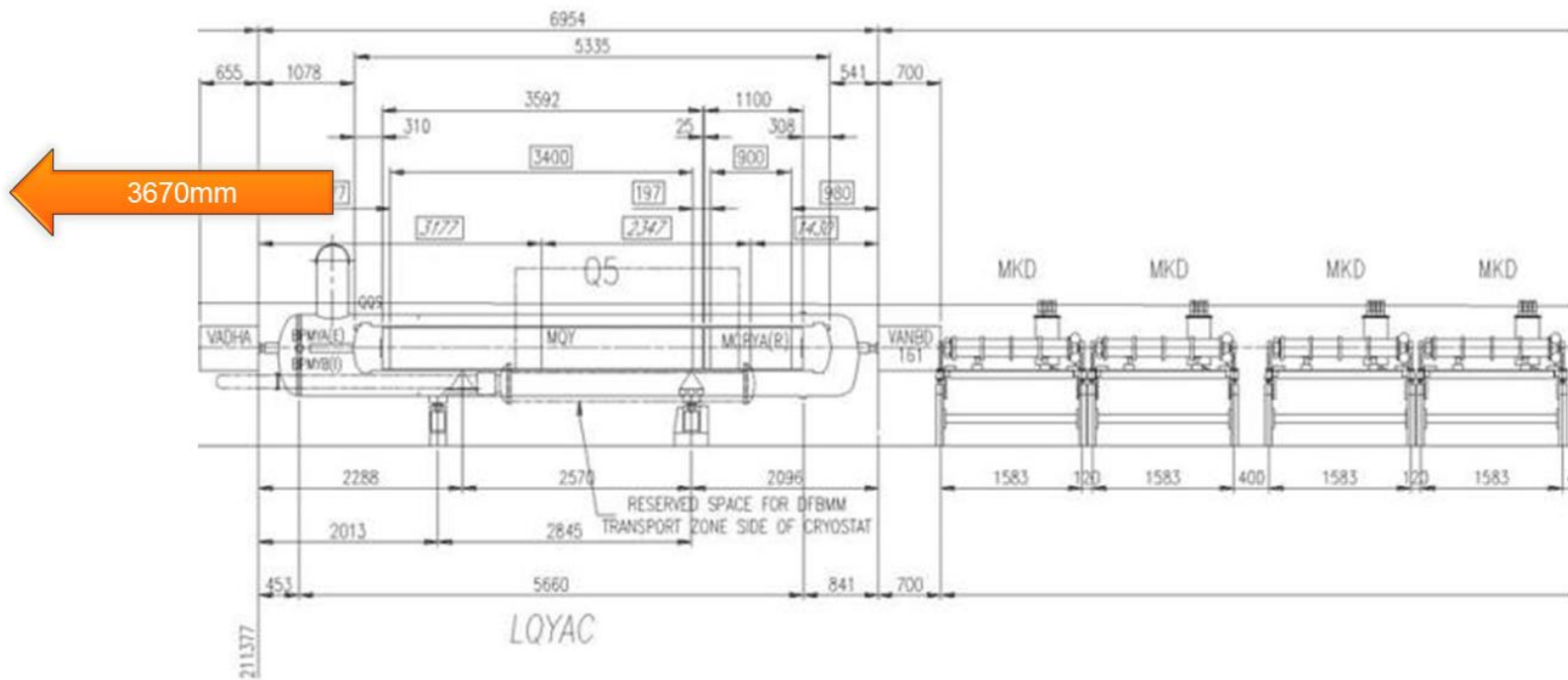
LQYAC

211377

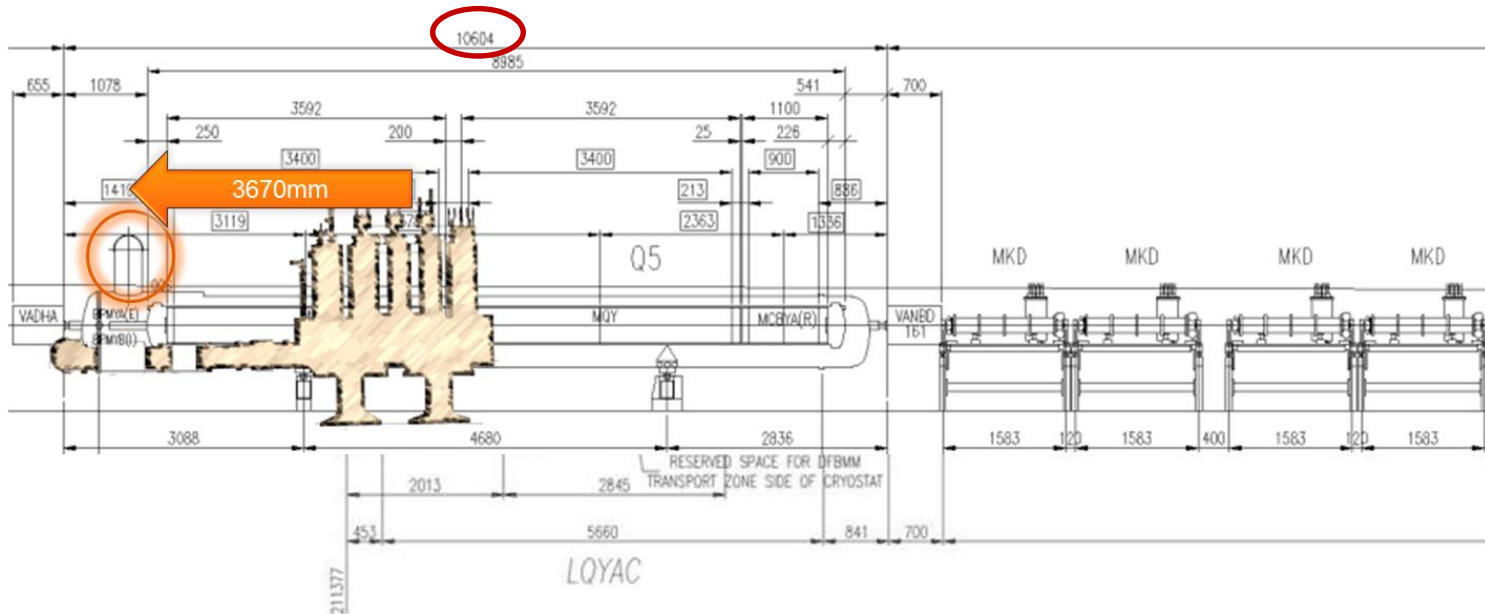
211377mm/IP6

- Q5L6, new magnet

Layout proposal – L6



Layout proposal – L6



Issues:

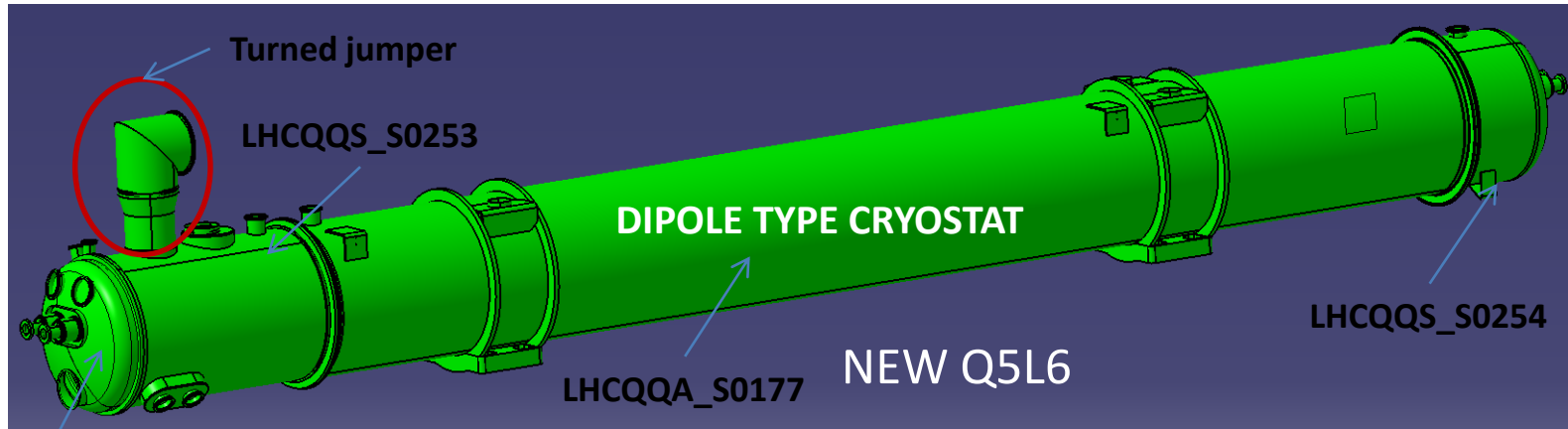
- Connection to the QRL
- DFBM position and warm cables extensions

Both are shifted by 3670mm toward the DS

BPMY.5L6 = ~ -214.588 from=IP6
 MQY.B5L6 = -211.928 from IP6
 MQY.A5L6 = -208.142 from IP6
 MCBY.5L6 = -205.779 from IP6

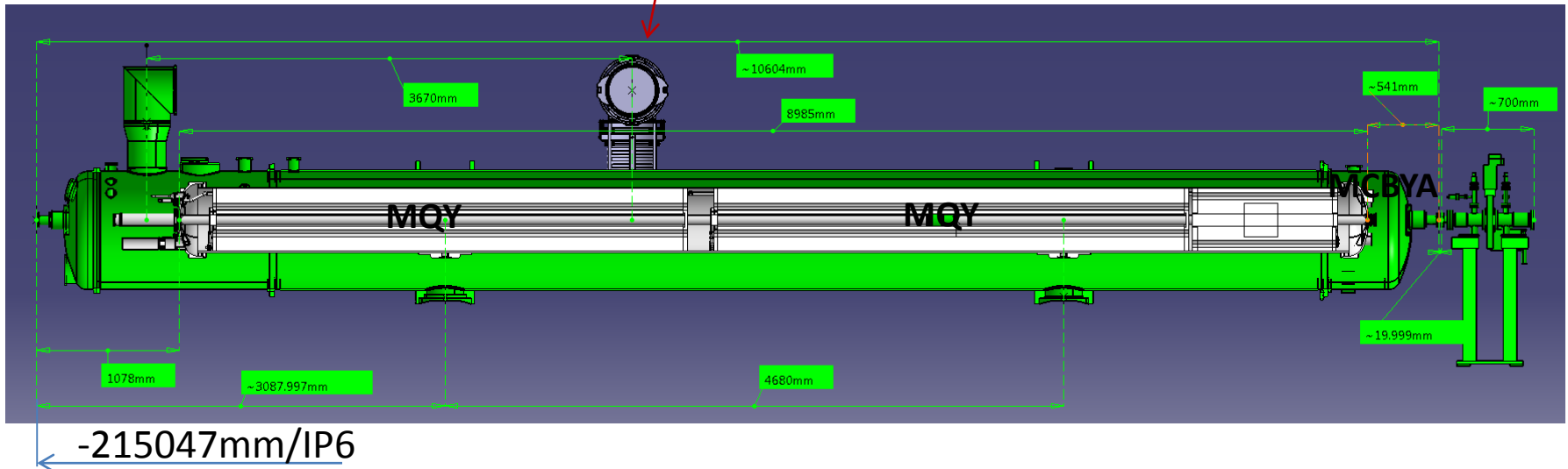
MQY.A and B are symmetrical Left and Right

- New integration proposition

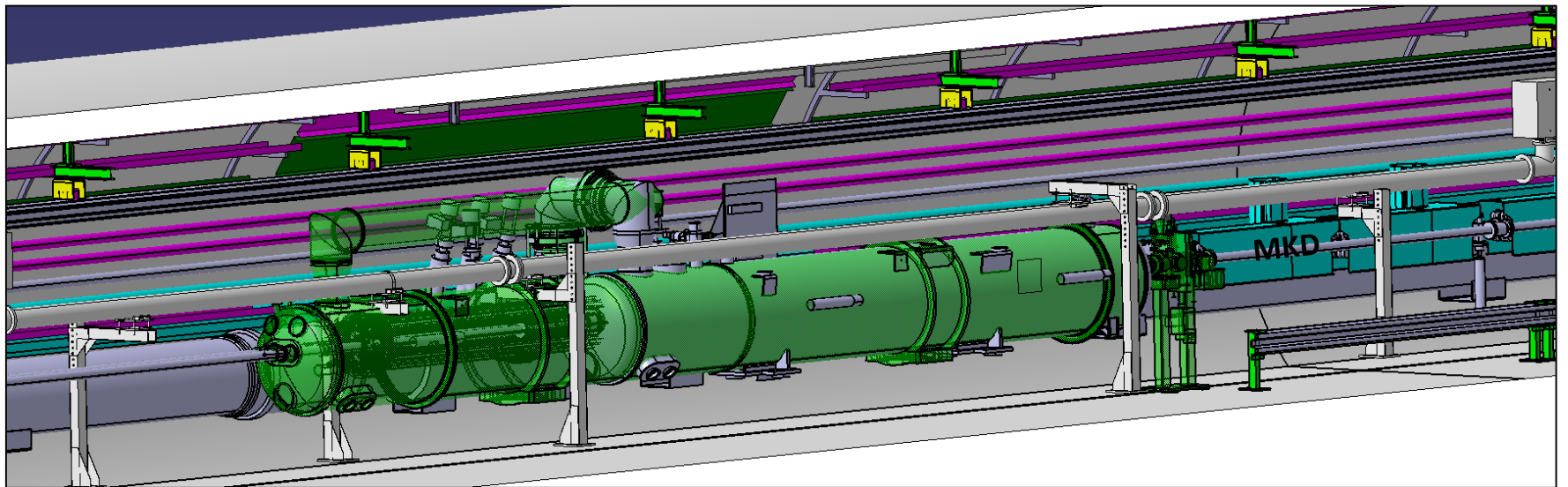
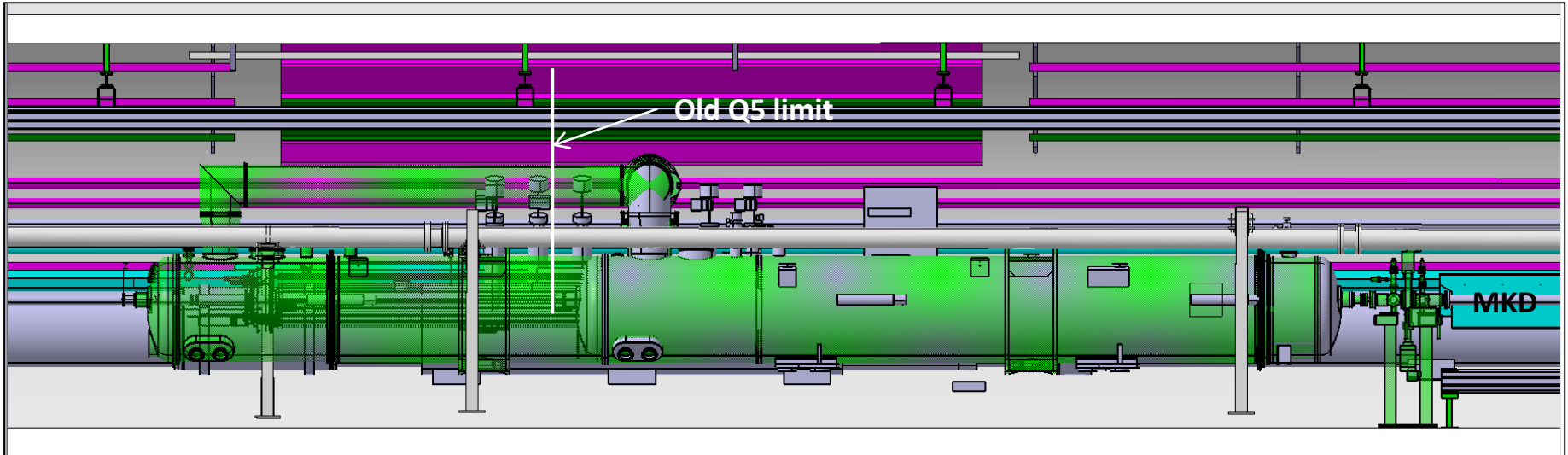


LHCQQS_S0255

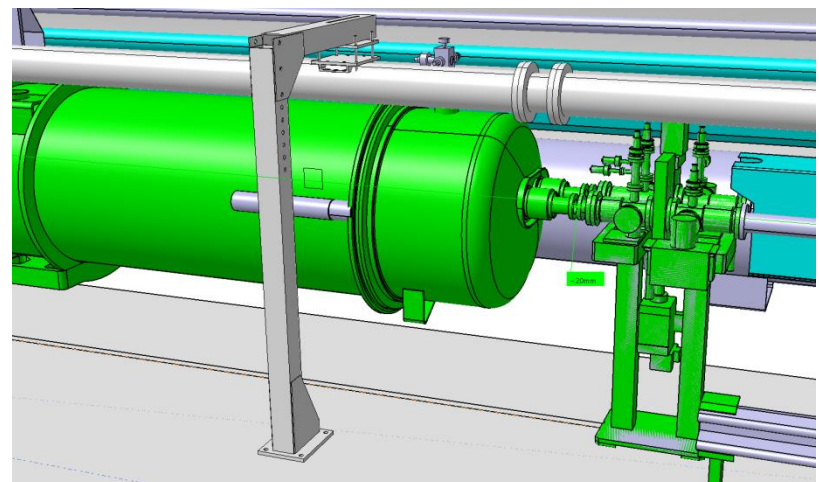
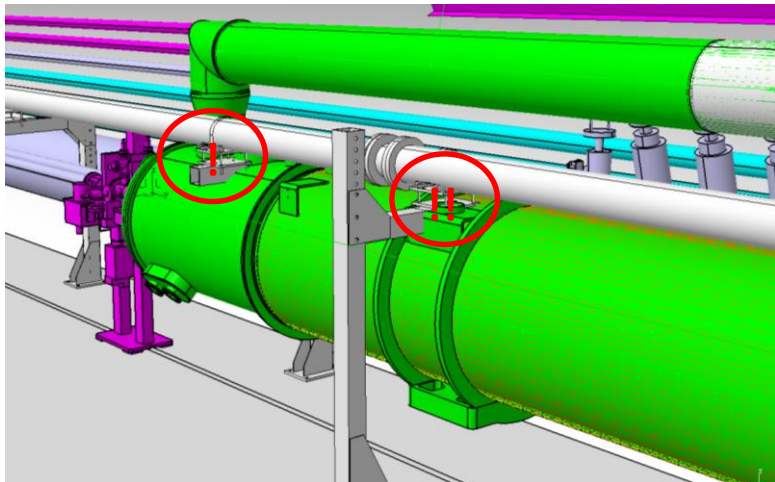
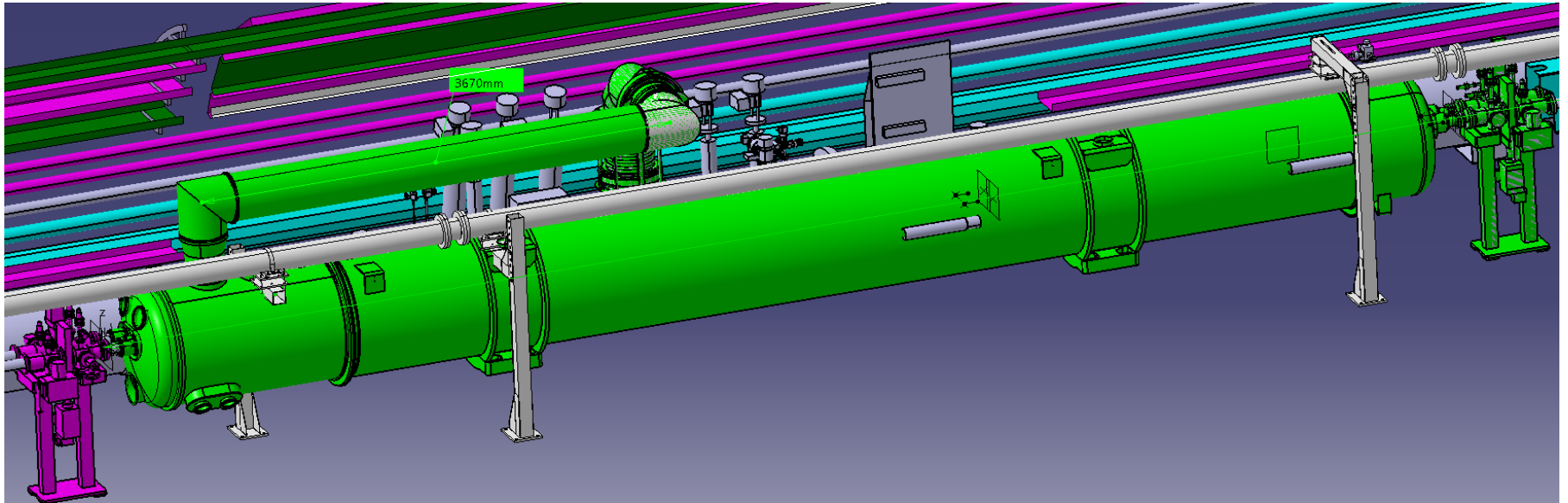
Existing service module



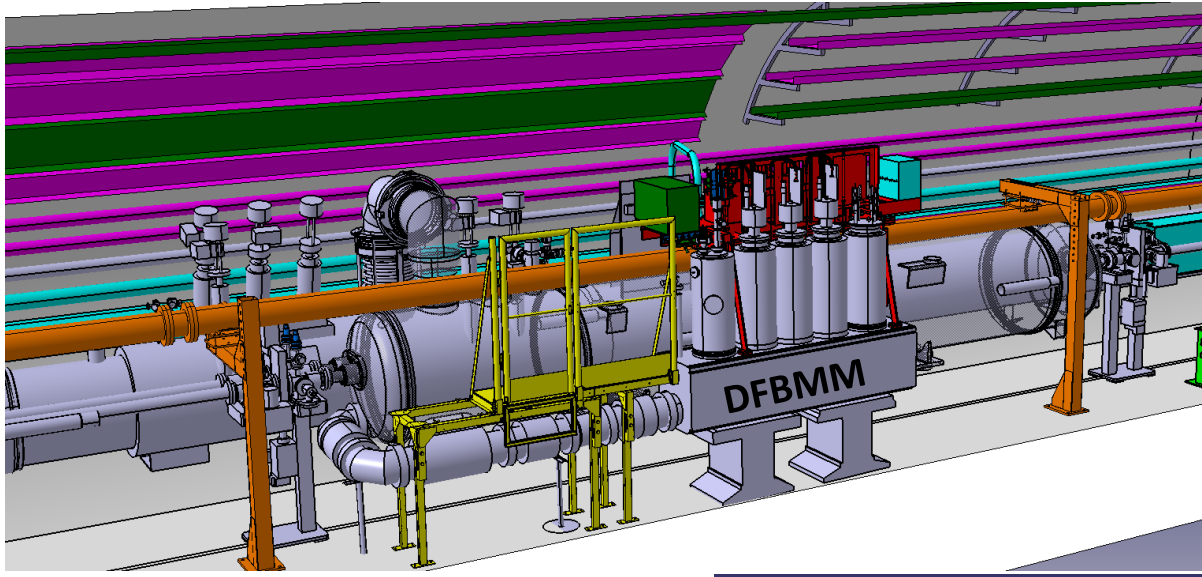
- New Q5L6 in place



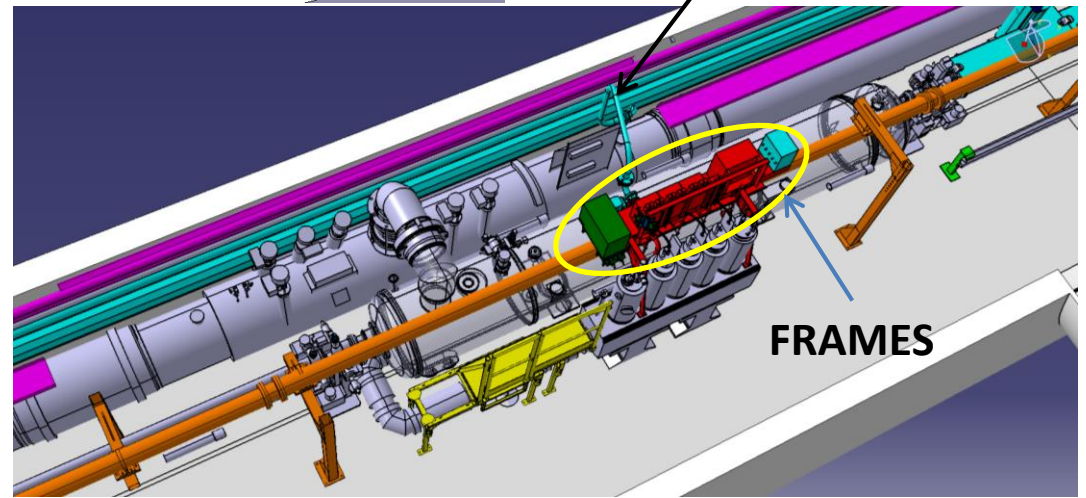
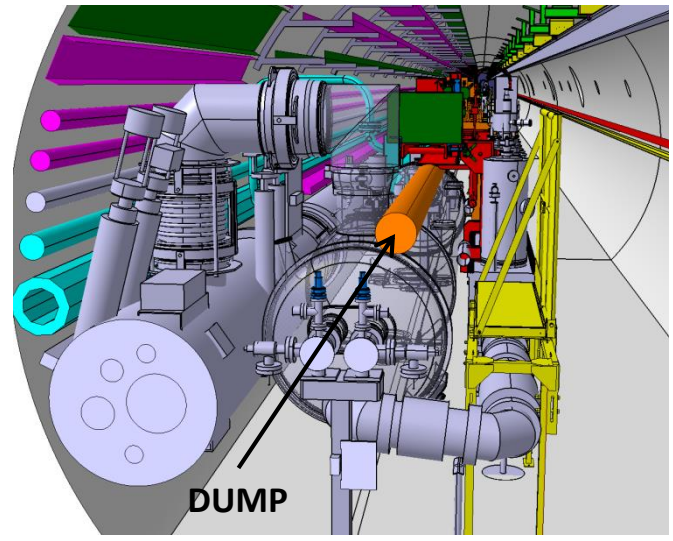
- Q5L6 integration



DFBMM CONNECTION : actual situation

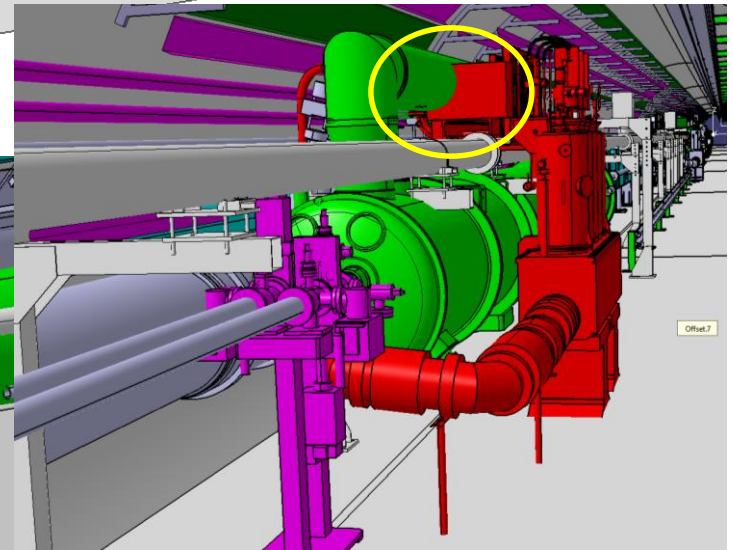
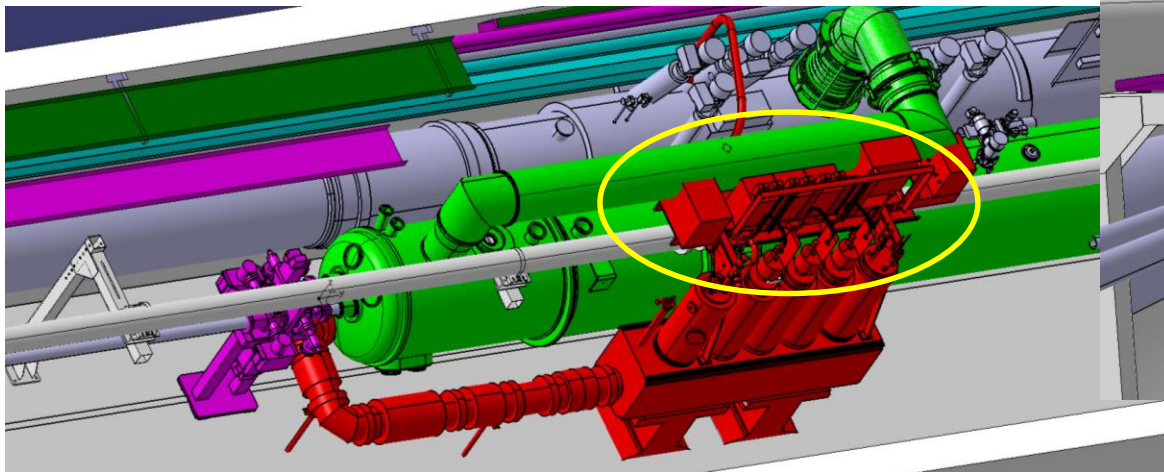
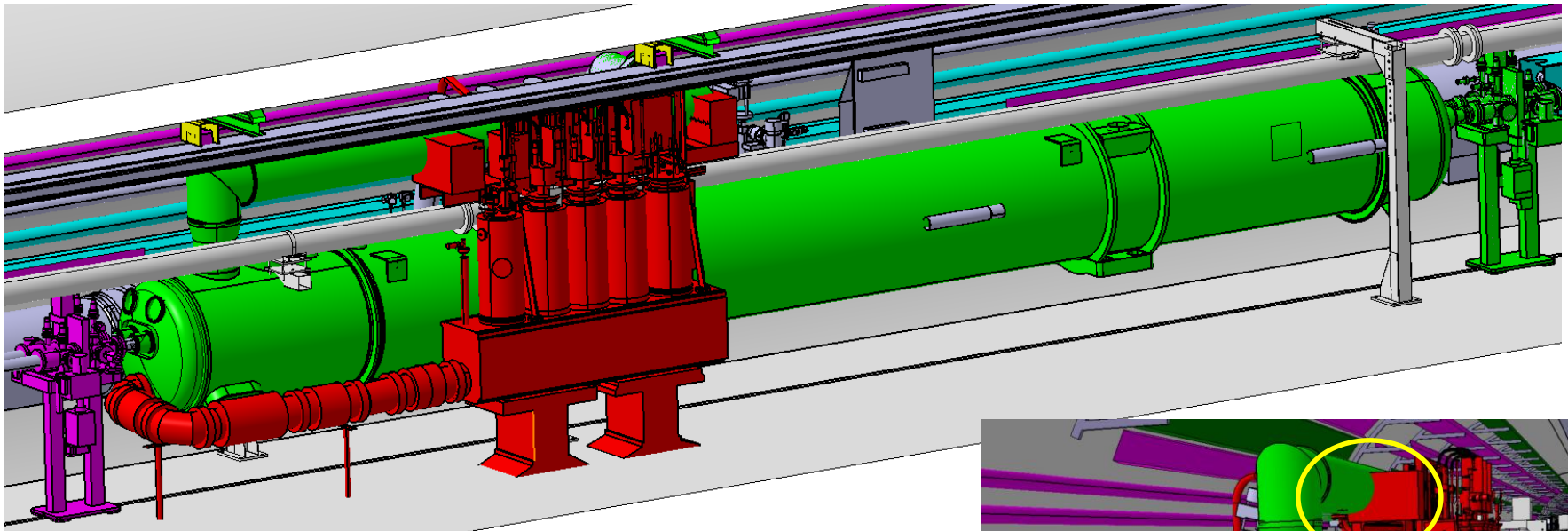


WRL connection



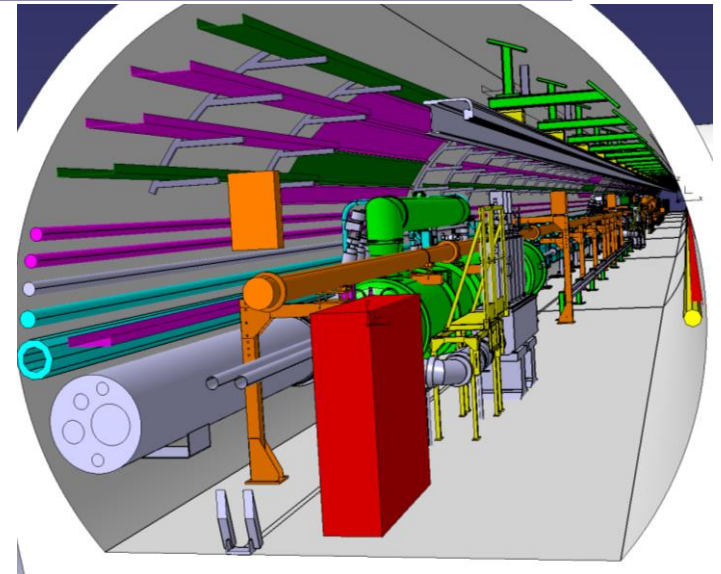
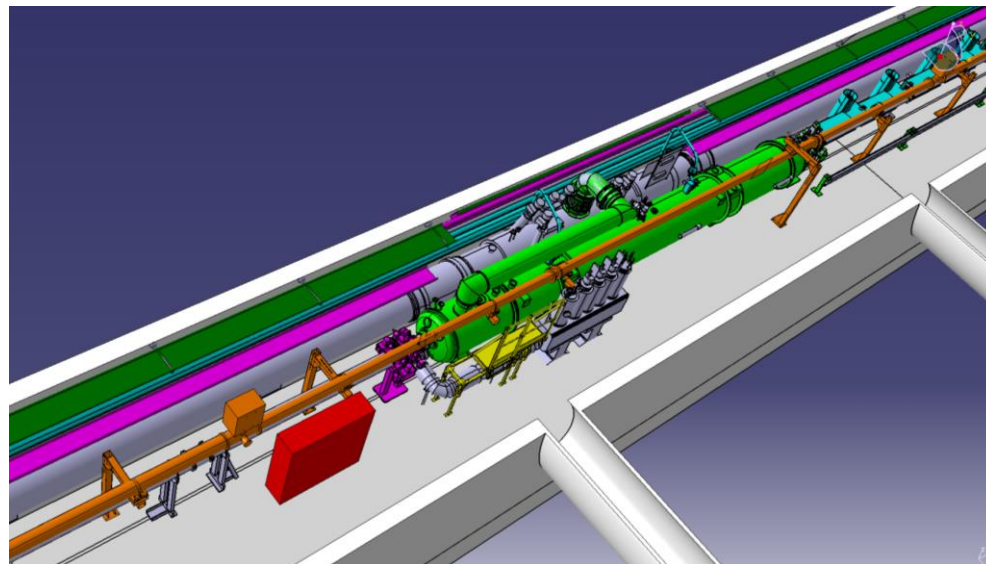
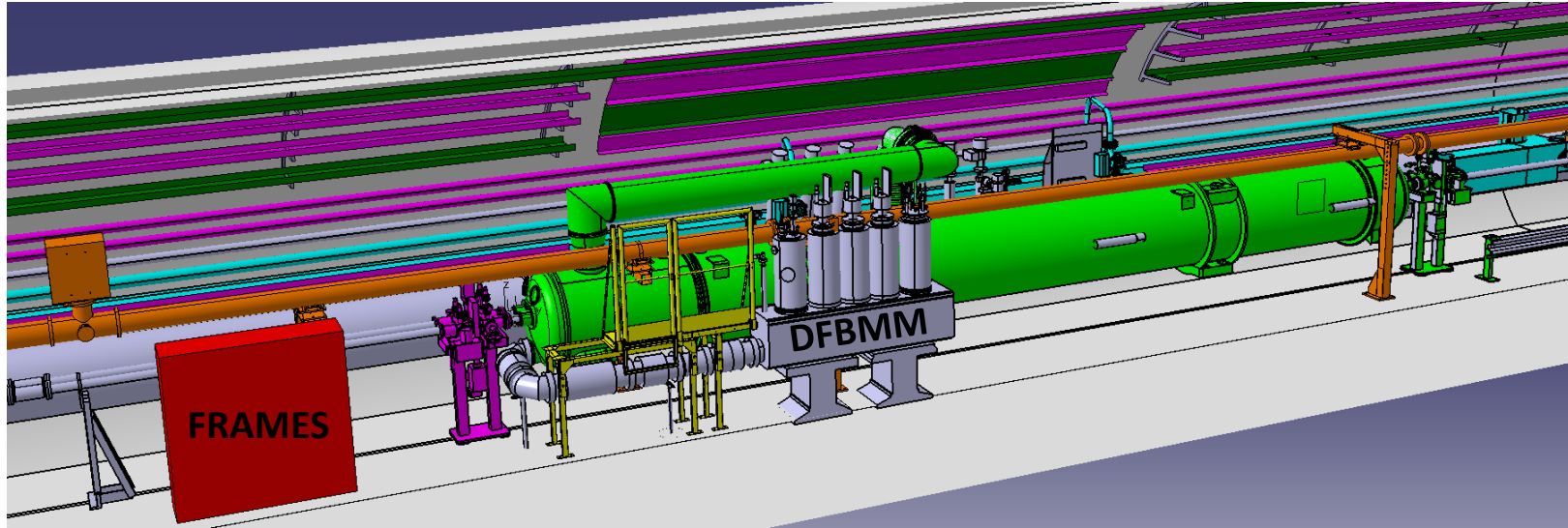
FRAMES

- Position of the DFBMM

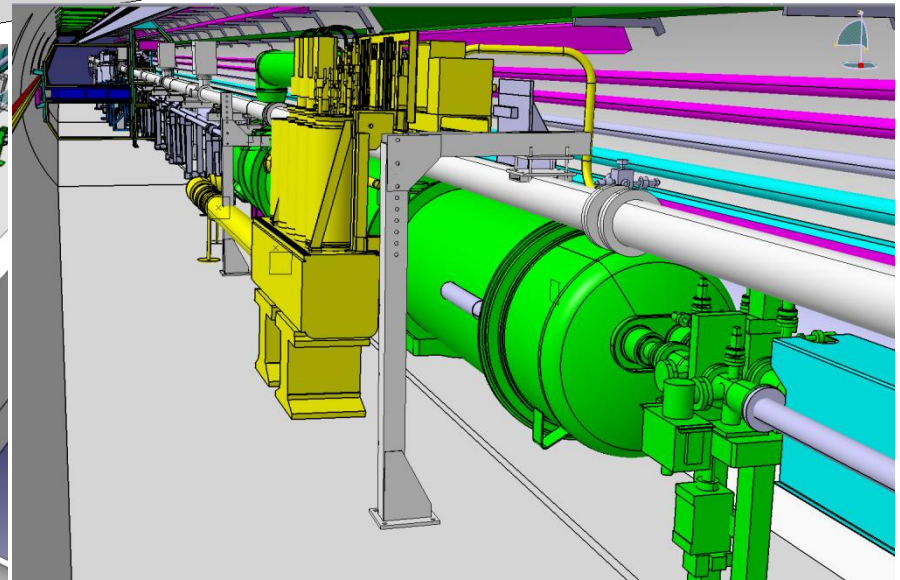
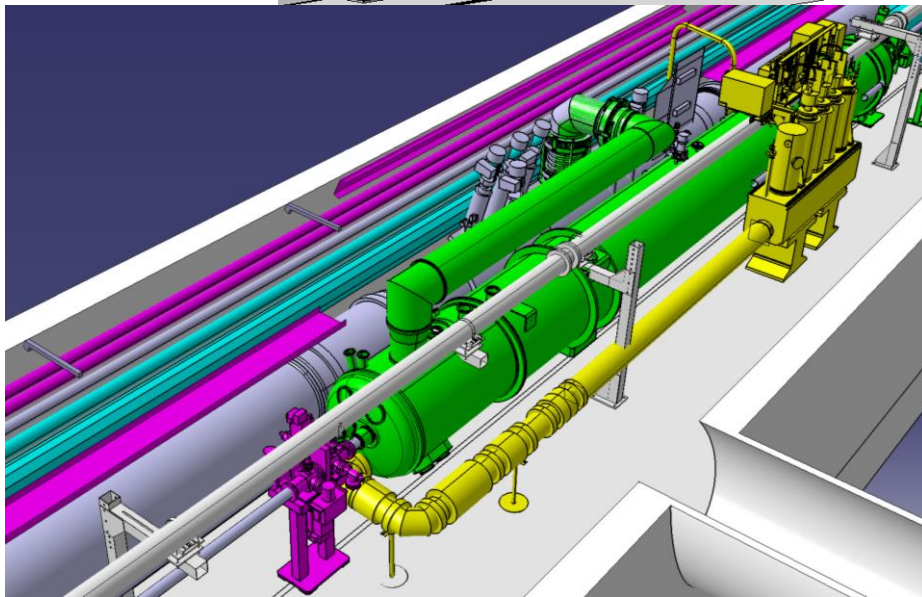
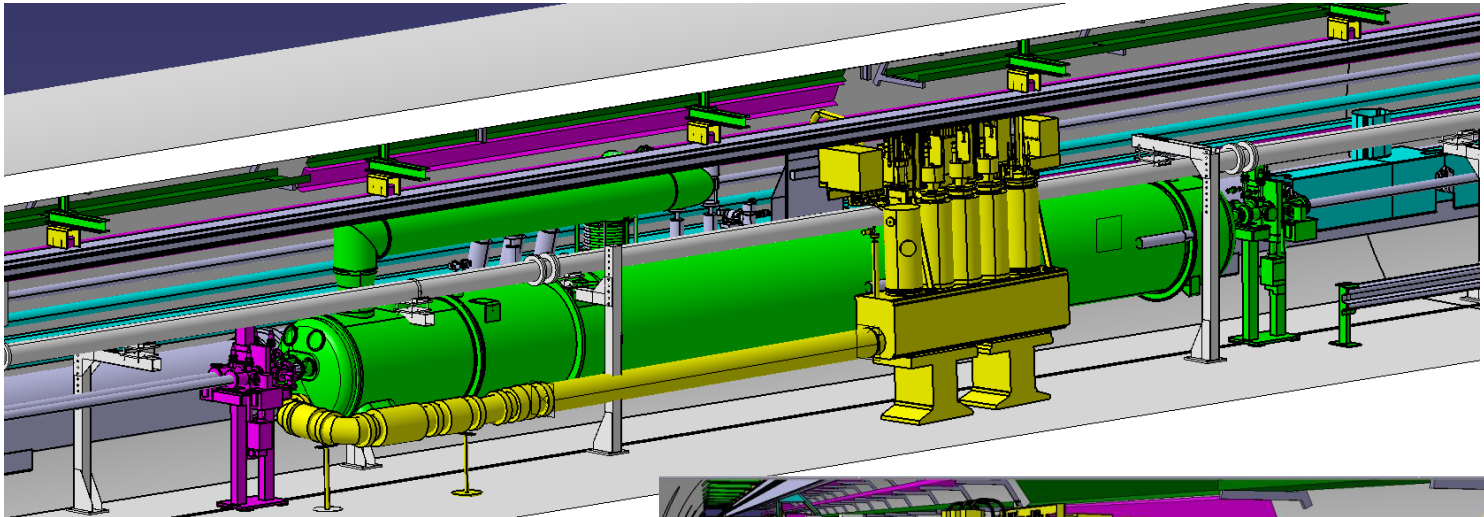


Conflict between frames and cryogenic extension

- Possibility 1 : moving DFBMM and put frame along the VC (like DFBAK)

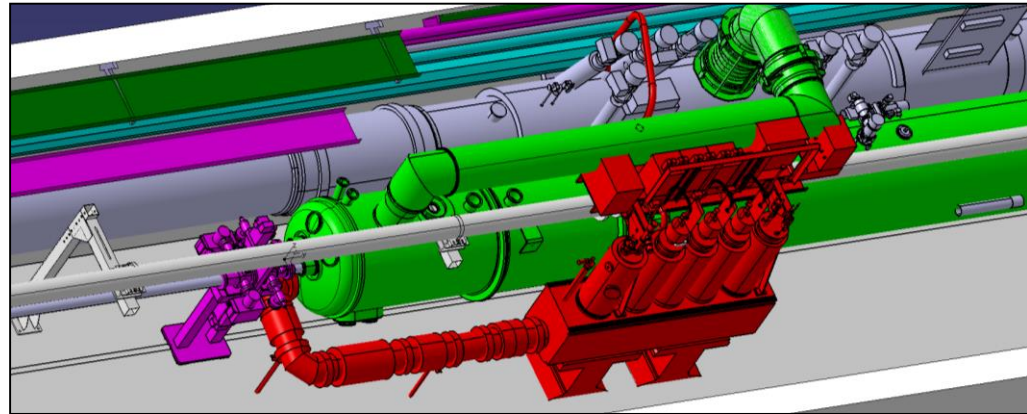


- Possibility 2 : Not moving DFBMM but modification of the link (+3570mm)

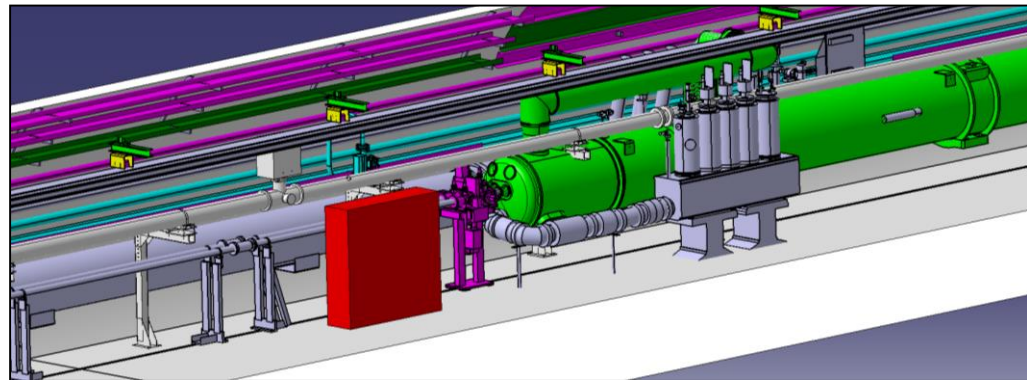


- ABSTRACT

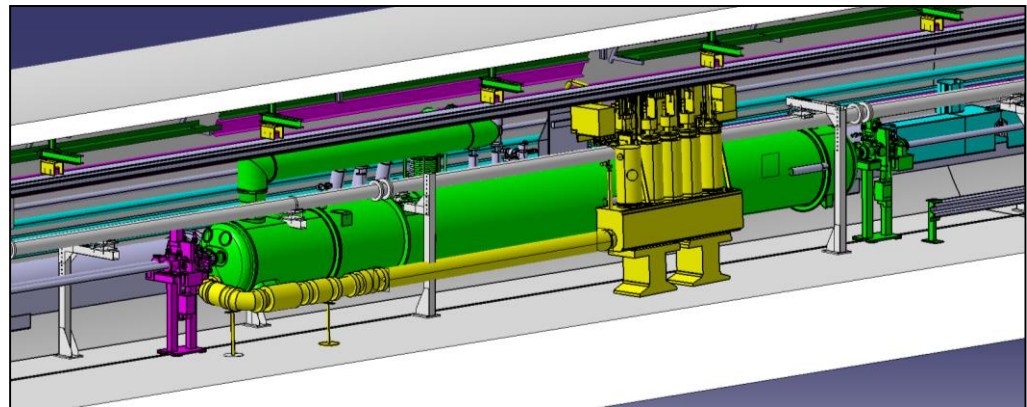
Impossible to keep frames on the DFBMM



Prop 1 : Moving frames toward DFBAK and modifications between frames and DFBM



Prop 2 : Keep DFBMM and frames at the actual place.
Modification of the link between Q5 and the DFBMM



- Conclusions

- Vacuum supports and vacuum chambers to be modified in the new Q5 sector
- At least 2 beam dump support to replace
- Survey space reservation to be change according to the new Q5 cryostat
- BLM position to be check (beam dump and LHC beam lines)
- Modifications for DFBMM and/or it's frames (see prop 1&2)
- In all cases modification of electrical connexions for DFBMM
- Modification of the connection of the DFBMM WRL
- In Prop 2 the work stand have to be change, DFBMM link need to be redone.
- Modification of the connexion to the QRL (extension)