

Minutes

EN Meeting for HL-LHC CRAB CAVITIES

Monday, 18th July 2016

Room 376/1-020

Scope: regular meeting for the Crab cavities development in the scope of HiLumi LHC (WP4)

Attendees: Kurt Artoos, Teddy Capelli, Paula Freijedo Menendez, Carlo Zanoni, Laurene Giordanino, Alexandre Amorim Carvalho, Konrad Eiler, Raphael Leuxe, Joanna Sylwia Swieszek, Eugenie Gallay, Rama Calaga, Manuele Narduzzi, Luca Dassa, Norbert Kuder, Federico Carra

Cavity:

Paula showed the results of the tests on weld shrinkage. The diablo is expected to have a 0.45 mm, the bowl-to-lunette a 0.5 mm and the final one a 0.5-0.6 mm. Radiographic examination didn't show any issue and sagging depth will be estimated with a metallographic examination.

The last test on the diablo shows that its dimensions are out of tolerance more than anticipated. The workshop will investigate the issue both with a metrological campaign and with simulations in order to plan the correct countermeasures.

Carlo quickly reported the issue with the Nb material properties, which seems to be lower than what used so far in the assessment. Nb has a huge ductility, therefore this point is not expected to be a substantial issue, but it may require to approach the cavity assessment as a pressure vessel in a different way.

Carlo and Raph also updated on the design of the frame(s) for BCP handling and cold-testing. The design has just started and Tommi Petteri Mikkola will work on it.

He Tank:

Konrad updated on the investigation for performing an explosion bonding between Ti and SS. The first iteration has been with a 3 mm Ni interlayer. Results were not satisfactory. Cu and Ta interlayers will be analysed.

Rama asked if there were parts in NbTi in the tank prototype. The answer is no and he suggests to perform some tests to make sure that's not a problematic point.

Tuner:

The system will be ready for cool-down at the end of this week. Further delays may happen for a schedule conflict. The interface was glued in order to perform the test also in pull conditions, but the glue failed.

Open Actions:

	<i>Reference person(s)</i>
Cavity	
Clarify DQW trimming procedure	Raph, Marco, Carlo
Provide DQW 3D model for calculations	Raph, Laurene
Shrinkage tests	Paula
RFD tuning interface (follow up)	Kurt
Investigate diablo issue with dimensions	Manuele, Raph, Alex
Frame(s) for BCP handling and cold testing	Tommy, Raph, Carlo
2K Magnetic Shield	
Integrate new screws	Raph
Fix the issue with few holes for extremities	Raph
Mounting sequence and follow up at CERN	Nik (STFC) + Raph, Carlo, Marco
Tank	
Pre-tuning system	Kurt, Raph, Joanna
Organize cutting of the proto	Paula
Tuner	
Pressure test of cryostat + insert (follow up)	Giovanna
Adjust design for SPS	Kurt, Joanna
Alternative tuning	
Define concept (organize discussion , follow-up)	Carlo
Design tool	Raph, Laurene
RF lines	
Mechanical test (follow up)	Teddy
Thermal Shield	
Redesign stiffeners	Nik (STFC)
Finalize thermalizations	Nik (STFC)
Follow up design and calculations	Teddy, Carlo, Fede
Warm Magnetic shield	
Detailed design and follow up	Nik (STFC) + Teddy
Calculations	Carlo
Vacuum vessel	
Finalize design	Teddy
Launch procurement	Marco
Stress assessment	Norbert, Carlo
Acquirement of alignment jacks from PSI and design of interface point	Teddy, Kurt, Joanna
Movable table	
Write spec and follow up procurement	Joanna, Kurt

This list doesn't include details of fabrication which are managed at the workshop (Marco).

Next meeting: Monday the 25th of July 2016 in room 376/1-020 **at 10:30.**

Minutes taken by Carlo