

Crab Cavities Technical Coordination XXXIII



Location: 376/1-020

Date: 14th August 2017, week 33

Time: 10h30

Scope: coordination and alignment of tasks involved in the preparation of SPS tests, follow up of master plan.

Attendees: Aurelio Berjillos Barranco; Giovanna Vandoni; Mathieu Therasse; Kurt Artoos; Carlo Zanoni; Frank Gerigk; Ilan Ben-Zvi; Vivian Rude; Alick MacPherson; Marco Garlasche; Karl Schirm; Rama Calaga; Mateusz Sosin; Olivier Pirotte

Master schedule: EDMS 1747466

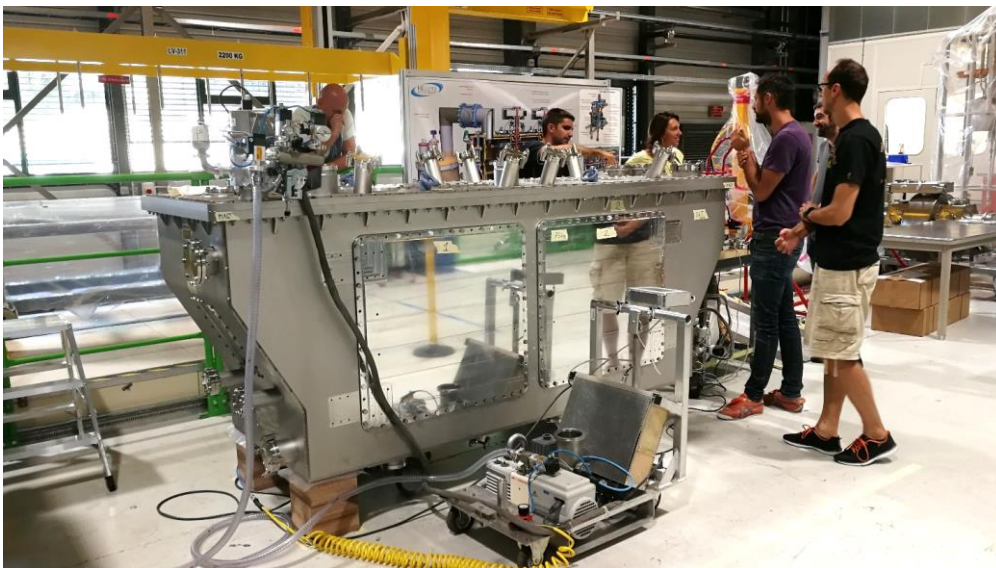
Logbook: <http://elogbook.cern.ch/eLogbook/eLogbook.jsp?lgbk=387>

Status of string assembly in clean room

The status sketched at the previous meeting still holds without delays. The FPC of one of the cavities is bended by 1.2 mm (on top). No further action foreseen, though.

Status of Cryomodule activities

The vacuum vessel is being leak checked:



Marco presented an overview of the cryostating sequence that has been developed in the last months.

- The procedure will span approximately 74 days, 90 steps organized in 15 macro steps (see the slides for the list).
- There is no or very little contingency on the planning.
- Five persons (MME) are continuously involved in the assembly and logistics activities. Many other actors from different groups are indeed needed.
- Detailed tasks will be circulated for week i , during week $i-1$ (i.e. one week in advance).

- The preparation (machining, assembling of subcomponents...) of everything that concerns the macro-steps after number 3 is on-going.

Marco will circulate the info and the updated status will be indicated on the logbook.

Status of Cryo-infrastructure in SM18

O. Pirotte reported the status of the cryo infrastructure for SM18. He confirmed that the infrastructure in SM18 will be prepared, even if the cryomodule is going directly into SPS without testing in SM18. The infrastructure will be needed in case the module has to be taken out of the SPS, or in case it cannot be installed because of technical issues. Furthermore the infrastructure will be needed for the RFD and further tests of DQW after SPS run. The detailed status is included in the slides. The installation of valve-box and service module cannot be done during the cryo-shutdown because of 2-3 weeks of delay in the procurement of the valve box. The delivery of the service box is planned for 15 October. The cryo-group will ask for a dedicated installation slot later in October.

If the cryomodule is not tested in SM18, the only drawback is the lack of a performance test of the service module, which cannot be tested without CM at CERN. However, the service box will be tested at the manufacturer's site.

Operational scenarios in SPS

Giovanna presented a first draft of the test operations in SPS, as discussed with Rama. This first draft will be presented at the IEFC (1.9.2017 by Giovanna) and at the TCC (31.8.2017, speaker to be defined).

The sequence of RF tests is the following:

- i) RF commissioning and conditioning (out-of-beam);
- ii) RF synchronization to beam;
- iii) Study of transparency to beam (counter phasing cavities and see effects);
- iv) High intensity RF and machine protection issues related to that;
- v) Performance including heat loads, effective voltage etc...

Rama will be the responsible person for SPS tests. He will gather a small team of experts around him, which will reflect the particular test phase as sketched above. An experienced machine operator should be assigned to the Crab cavity MDs. Other CERN and external actors are interested in being involved in the tests.

Answering a question from Kurt, Giovanna said that indeed shifts seem to be needed to work during MDs. Details will be worked out by Rama and BE/OP as well as SPS MD managers.

AOB

- There is a discussion within the accelerator's complex operation team, concerning the suppression of 1 LHC and injector's technical stop, while compensating with a week more in YETS: the decision is still pending.
- Alejandro provided a brief report of the LLRF tests on the PoP cavity which have been very successful (i.e. the feedback loop has been closed without issues). The test also provided a very useful debugging. More to come directly from Philippe.
- The test on the V-cryostat pumping line has been inconclusive (i.e. no cold leak found).

Action list:

General and Planning:

ID	Action	Responsible	Opened	Closed	Result, Comment
49	Define detailed test sequence of Cryomodule in SM18	Alick (inputs needed)	27.2.2017		Inputs needed (RF, cryo, vacuum...)
56	Bottom-up planning of SPS activities for YETS	Giovanna	8.5.2017		Deadline: 13.9.2017
57	Draft initial operational scenario for SPS tests	Rama	22.5.2017		

Documentation:

ID	Action	Responsible	Opened	Closed	Result, Comment
44	MTF to be updated with actions on RF conditioning. RF test reports to be placed in correct node.	Carlo	30.1.2017		Input needed by Alick. Karl will follow this up too. Reminder sent by Carlo.

Design:

ID	Action	Responsible	Opened	Closed	Result, Comment
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SM18:

ID	Action	Responsible	Opened	Closed	Result, Comment
54	List of tests in SM18	Alick (inputs from all)	8.5.2017		
58	Provide feedback on activities in front of clean room	Marco, Ofelia	8.5.2017		
63	Inventory of all the connections on the cryomodule	Alick, Giovanna	7.8.2017	14.8.2017	

Tools & Ancillaries:

ID	Action	Responsible	Opened	Closed	Result, Comment
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Space:

ID	Action	Responsible	Opened	Closed	Result, Comment
14	Follow up reservation of assembly and storage areas in SM18	Karl, Rama	1.8.2016		Space request in SMA18, 200 m2. Space between bunkers in SM18 can be used, but it's not a working area and it cannot be accessed while tests in cryostats are running (radiation). Alick to provide test plan to Marco

57	Follow-up of space in bldg. 2002	Frank	8.5.2017		
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Minutes taken by Carlo

Next meeting: Monday 28th of August 2017