45th Meeting of the HL-LHC Technical Coordination Committee – 25/01/2017

Participants: C. Adorisio, A. Apollonio, G. Arduini, V. Baglin, C. Bahamonde, A. Ballarino, F. Bertinelli, L. Bottura, R. Bruce, O. Brüning (chair), F. Cerutti, P. Chiggiato, S. Claudet, D. Delikaris, R. De Maria, B. Di Girolamo, S. Fartoukh, P. Fessia, E. Hatziangeli, G. Iadarola, S. Izquierdo Bermudez, A. Lechner, M. Martino, A. Mereghetti, E. Metral, M. Modena, T. Otto, V. Parma, Y. Papaphilippou, M. Pojer, S. Redaelli, L. Rossi, M. Sabate-Gilarte, F. Sanchez-Galan, J. Serrano, L. Tavian, E. Todesco, R. Tomas Garcia, A. Tsinganis, R. Van Weelderen, D. Wollmann, M. Zerlauth.

Excused: -

The slides of all presentations can be found on the website and Indico pages of the TCC.

V. Baglin announced that G. Riddone was nominated deputy WP leader of WP12.

Some actions to be followed-up in the TCC came out from the preparatory discussions for the Chamonix workshop.

ACTION: the different available options for remote alignment/compensation (baseline, fully remote alignment, warm correctors) and the required alignment tolerances and ranges should be discussed in the TCC highlighting the performance gain of each option and the implications on costs, safety, dose to personnel and interlocking strategy (WP2, WP3, WP7, WP12).

ACTION: after the C&S review, P. Fessia and S. Claudet should present the preliminary analysis of the integration for the simplification of the QRL is case Q4 and Q5 are left as they are, to decide if proceeding with the baseline or further study the alternative option.

Strength limits of Q5L6, G. Arduini- slides

G. Arduini reminded the TCC about the assumptions for the reference HL-LHC optics (v1.3). Q5 in Pt6 is a MQY magnet, with a gradient of 200 T/m at 1.9 K (HL baseline). The nominal/ultimate gradient at 4.5 K is respectively 160/172 T/m. Given the requirements for both round and flat optics at 7 and 7.5 TeV, the need for an upgrade to 1.9 K is confirmed unless higher gradients can be reached at 4.5 K. G. Arduini recommended re-evaluating the tests to approach 4 kA also in view of Run3 MDs at 7 TeV. This possibility was discussed in February 2016, but was discarded due to limitations of the present powering configuration.

O. Brüning stated that the project supports the tests for discovering the powering limits of Q5. L. Rossi asked to check if the missing gradient (order of 1-2 %) could be found from a combination of powering and optics adjustments.

ACTION: M. Pojer and G. Arduini should verify the feasibility of testing Q5 at ultimate gradient.

Mandate of WP18 - slides

J. Serrano presented the mandate of WP18: controls technologies. The focus of the WP will be 1) on developing an open radiation tolerant I/O platform for user applications 2) on developing a radiation tolerant field bus and 3) on implementing modern logging and analysis technologies, capable to face the challenge of a continuous increase in the amount of data required to be recorded and analyzed in the LHC/HL-LHC.

J. Serrano reported in slide 20 the organization of the WP and the names of the colleagues in BE-CO responsible for each of the sub-tasks.

O. Brüning suggested sending the mandate of WP18 to C. Noels to be included in the HL website.

S. Claudet reminded about his role of HL-LHC representative at the recent R2E review and asked if the activities of WP18 are also part of the R2E project. J. Serrano confirmed that this is the case.

S. Redaelli expressed the interest of WP5 to explore the possibility of collaboration with WP18.