International Review on the MCBXF Nested Orbit Correctors for the HL-LHC

Objectives of the Review:

HL-LHC is in the final stage of design and prototyping: all technologies for the hardware upgrade must be fully proven by 2019. This review covers the Orbit Corrector magnets that are built as nested dipoles and place in the Inner Triplet Region, called MCBXFA and MCBXFB (A being the longer type). These magnets, besides being a key element of the HL-LHC magnetic system, are assembled inside the Q2 cold mass and are needed for the IT String, with a strong interference with the general HL-LHC schedule. The MCBXF dipoles are of nested type and have been designed and prototyped by CIEMAT in the fame of the CERN-CIEMAT collaboration for HiLumi.

The scope of this review is to examine:

1. Magnet requirements and magnet design, including interfaces for cold mass assembly and cryostating;
2. Results of the prototyping phase with feedback to design and corrective actions, if any;
3. Technology maturity and soundness of the engineering design and of construction procedures and tooling;
4. Construction plan, test plan, QA/QC, and safety aspects;
5. Risk register and mitigation measures.

Members of the Review Panel:

Steve Gourlay (LBNL – Chair)
Akira Yamamoto (KEK-CERN)
Davide Tommasini (CERN)
Jean-Michel Rifflet (CEA)

Dates and Place:

11 September and 12 September 2019 in the morning, at CERN, room 180/1-N51.
Program (draft):

The program is organized as follows:

Day 1 - Morning: Talks
- Design
- Results
- Procurements, QA/QC, risk mitigation

Day 1 - Afternoon: Supplementary info, visit
- Extra-information
- Closed session

Day 2 - Morning
- Close out

Ezio Todesco, HL WP3 IR Magnets Leader, is the link person for finalizing the detailed program with the collaborating Institute.