



LARP Review of the HOM Coupler Assemblies

JLAB, USA – February 26th, 2015

Charges

The High Luminosity LHC (HL-LHC) project has been approved as first priority by the special CERN Council held in Brussels on 30 May 2013. In May 2014 HL-LHC has been rated among the top priority for US HEP in the next decade by the P5 committee and in June 2014 the CERN Council has approved its financing in the year 2015-2025.

HL-LHC is entering in the final stage of design and prototyping: all technologies for the hardware upgrade must be fully proven. One of the technologies is the Crab Cavities System that needs to be installed and proved in an operating accelerator: for this goal the SPS has been selected as the ideal ring to validate the crab deflecting systems. Installation in the SPS is planned by the end of CY16. Dressed cavities complete with Higher Order Mode couplers, a present LARP deliverable, need to be provided by LARP by the end of 2015.

The LARP Director calls an Internal LARP Review on HOM Couplers with the following goals:

1. Are the Specifications for the HOM Couplers of the two design of Crab cavities (DQW and RFD) properly developed and reasonably finalized?
2. Does the proposed design of the HOM Couplers in terms of the RF fields, mechanical structure and thermal operative conditions meet the Specifications with sufficient margin?
3. Is the engineering design (including the 3D modeling and the interfaces with the cryostat) sufficiently developed to assess that there are no show-stoppers in the construction of HOMs in CY15 ?
4. Is the plan for construction well thought, including assembly, alignment and measurements?
5. Is any area or particular field where important technical or risks are under evaluated or ignored in the plan for HOMs? Can the proposed design be improved, either to reduce risk, increase simplicity or minimize cost?
6. Are the designs presented ready to manufacture? If not, what is recommended before start of construction?

The review is scheduled for February 26th with oral close-out on the same day.