



EDMS No. 1892005

## HL-LHC Production Readiness Review

### Scope

The HL-LHC project is progressing into construction phase. Prototypes of 11 T magnets, MQXF, Crab Cavity, low impedance collimators, SC links, etc. are under construction or under test.

The HL-LHC management deems it necessary to set up a series of reviews to assess the readiness for production of the main and most critical equipment in terms of cost, complexity of construction and performance impact. The committee, in agreement with HL-LHC management and GL/WP leaders is responsible for selecting the right time to review each component or equipment.

The main scope of production readiness reviews is to assess the production readiness and the ability to start the production phase. Consequently, the functionality and design of the components reviewed are outside the scope of this committee. The reviews is considered particularly useful for equipment not purchased “off the shell” or standard which although very complex like EPC or cryo-plants, can be considered industrial product. The preliminary list of items to be reviewed is detailed in the Annex 1. This list will be dynamically adjusted according to needs and experience acquired in these reviews.

### Mandate

The committee is invited to assess for each equipment:

1. Scope of work: is there a clear definition and clear interfaces?
2. Procedures, construction specifications, executive drawings: are all in approved status, verified by due authority, and well documented?
3. Quality Assurance is it correctly in place: procedures, documentation, check/holding points, etc.?
4. Components:
  - a. Availability and delivery schedule margin.
  - b. Logistics (flow and storage).
5. Assembly tools
  - a. Availability, qualifications
6. Production planning robustness.

This general mandate will be customized and adapted according to the different nature of the various equipment under assessment.

### Modus operandi

These series of reviews are organized by the chair of the committee in collaboration with the WP leaders, in agreement with the Group Leader(s) concerned. HL-LHC PL and DHs are informed well in advance to allow their participation or by their representatives. The reviews are intend also for equipment under in-kind contribution, when this is deemed appropriate by the collaborating Institute, the Project management and by the CERN equipment owner.



EDMS No. 1892005

Ideally, in order to be effective, the PRR is organized either right before or just after starting production. The review is intended to be an agile instrument and the review itself is target to last not more than one day. After each review, the committee must compile a report containing findings, comments and recommendations within one month.

The committee reports to the HL-LHC Project Leader, who distributes the review report to the Project Office, to the GLs/WPs, and to the concerned DH as well as to DAT.

### **Composition**

In view of the advantage in having a few recurrent people as members, for uniformization of format, procedures and parameters to be used for carrying on the assessment, Diego Perini of EN-MME is nominated as first chair. According to the equipment, the HL-LHC PL, in agreement with the DHs, may appoint other people.

The QA officer of the HL-LHC project and the chair of the ATS Technical Specification Committee are ex-officio members of the committee. Other members will be proposed by the chair(s) and composition will vary according to need and relevance for each equipment being reviewed. External experts may also be members.

The HL-LHC Project Office will bear the cost of these reviews.

*Mandate approved by HL-LHC Project management on 2 November 2017 (PMM 129) and by ATSMB members on 19 December 2017.*

**Annex 1: List of equipment to be reviewed (EDMS 1892029 will be updated dynamically).**