

Mandate of the coordinator to the HL-LHC Inner Triplet String test

(Mr/Ms IT string)

In the HL-LHC configuration, the Inner Triplet (IT) region of IR1 and IR5 will be heavily modified. In particular the Q1-Q2-Q3-D1 magnets will be completely different from the present LHC magnets, all based on new technology:

- Superconductor for D1 (present D1 is normal conducting)
- Nb₃Sn technology for the IT quadrupoles (present triplet is based in Nb-Ti)
- New powering and protection scheme

In addition, the aperture will be much larger, the cold mass configuration will be completely different and the corrector package will be substantially modified as configuration and technology, too.

For the above-mentioned reasons, a full integral test of the HL-LHC equipment from Q1 till D1 including the DFX (called IT string) is foreseen in the project, in condition as similar as possible to the operational ones. This IT string will be assembled in SM18 test facility, using prototypes or first-of-series equipment and is intended to be both a technical and an integration test. Not only the magnets, but also the entire electric circuit, the cryogenic equipment, the vacuum elements and alignment system must be under test in a configuration as near as possible to the final one.

The HL-LHC IT String Coordinator (Mr/Ms IT String) is in charge to coordinate the activity related to the IT string: procurement of the main equipment, their installation, the readiness of the facility and of the necessary auxiliary systems and services. He/she is mandated of preparing a test plan and to coordinate its execution, too. He/she will decide the most suitable way to carry out the work, favouring the largest collaboration among WPs, Groups and services: weather a Task Force or a permanent Working Group or any other appropriate body. Of course, the major WPs shall be represented in the body and consulted before any important decisions.

Mr/Ms IT String reports directly to the Project Leader. Final validation of main choices and test program will be discussed with the Project Management and validated by the HL-LHC Technical Committee or the Parameter & Lay-out Committee.