



HL-LHC

QXF Conductor/Cable Internal Review

Results and Directions

1. Concentrate on 0.85 mm strand with xxx/169 sub-elements. Consider the choice between 132 and 144 elements as an optimization on which we plan to work in the next few months.
2. Define and present at Daresbury a LARP/HL-LHC common document with functional specifications in terms of basic properties for the strand:
 - Jc, RRR, Magnetization, Mechanical Properties, Cu/non-Cu, Self-field correction (consistent treatment)
 - Stability and quench currents
 - Define uniform measurement standards and procedures for measurements
3. Same as Point #2 for QXF Cable, dimensioned to 18.15 mm x 1.525 mm (KS 0.55 deg) before reaction and isolation. Define list of expected dimensions after reaction.

4. If necessary, allow for further cable optimization within the existing QXF cable envelope. Any optimization must avoid any impact on tooling and minimize changes needed in isolation thickness or other coil hardware.
5. Describe plans of strand and cable measurements within LARP and HL-LHC CERN as soon as appropriate xxx/169 conductor becomes available in the various labs.

Expected Deliverables:

- a) Common Strand/Cable functional specification by Daresbury HiLumi/LARP Meeting
- b) Test plans on xxx/169 Strands and Cables by Daresbury
- c) Uniformized measurements standards and procedures by CM22 (May 2014)

Next Step:

Formal Review and baseline adoption by Summer 2014.