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Superconducting Links for the LHC machine

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In the framework of the upgrade of the LHC machine, new Superconducting Links are being developed for the feeding of the LHC superconducting magnets. The electrical lines, which are made from High Temperature Superconductors, contain tens of cables feeding different electrical circuits and transfer all together DC currents of more than 150 kA. The required length of the cables and the current ratings would make electrical transmission via conventional cables unaffordable.

An overview of the R&D activity that is being performed CERN is presented, with a special attention to the advantages that the use of Superconducting Links brings to accelerator technology. The results of the tests performed on prototype links are discussed. Plans for future activities are presented, together with a timeline for a potential future integration in the LHC machine.

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