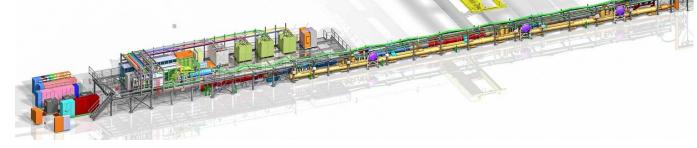


HL-LHC IT String: From Design Concept to Construction Reality — Facing Challenges and Building on Opportunities

N. Heredia Garcia On behalf of TE-MPE-SF (M. Bajko, S. Blanchard, D. Bozzini, L. Herrero and S. Yammine)

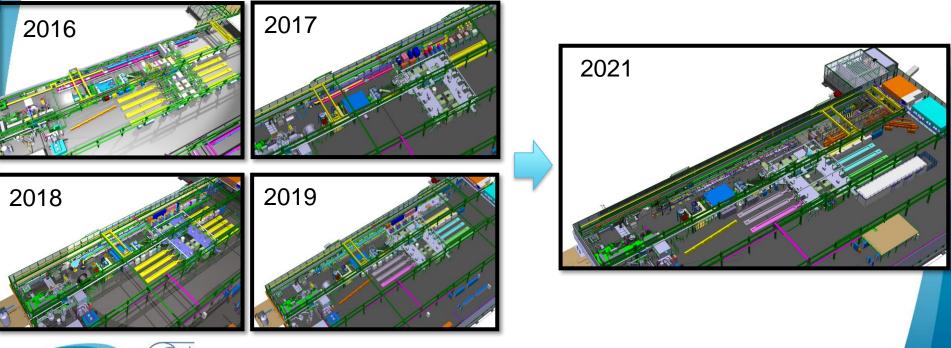




TE-MPE Annual Meeting – 21st of January 2025

HL-LHC IT String Integration

Complex integration phase to accommodate the components to the allocated space in SM18.





HL-LHC IT String Construction Site





December 2020

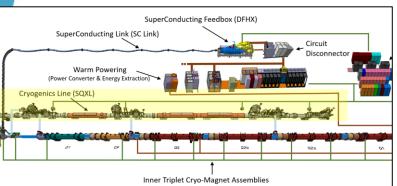
January 2025

Many lessons learned from onsite coordination and unplanned situations.



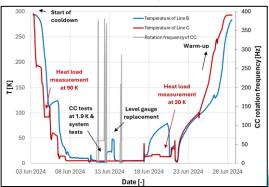
Cryogenic system for the HL-LHC IT String

Integration

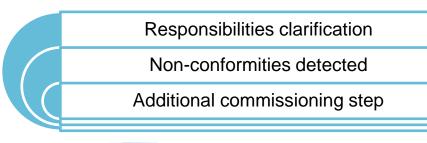




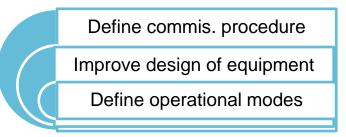
Commissioning



Challenges:

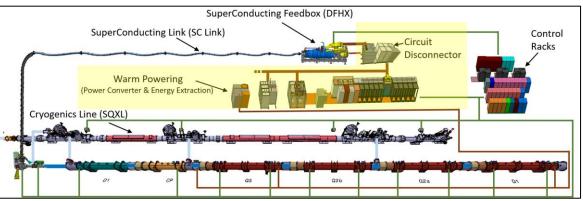


Opportunities :



Circuits in the HL-LHC IT String

Integration:



Installation:



N. Heredia Garcia, TE-MPE Annual Meeting, 2025-01-21

Circuits in the HL-LHC IT String

Commissioning: IST & SCT

Challenges:



Debugging of low-tech equipment (water system, cabling...)

Configuration for executing short circuits

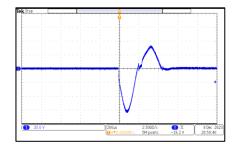
Strategy for electrical safety (work permit + access control)

• Opportunities:

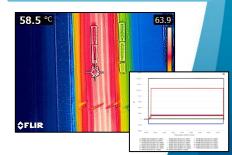
Apply procedures					
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Execute EEs discharges



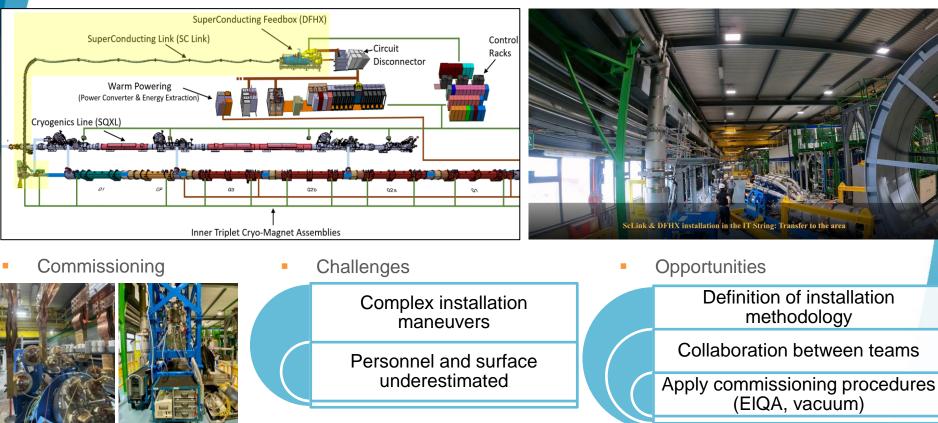
Monitor heat loads



Cold powering system for the HL-LHC IT String

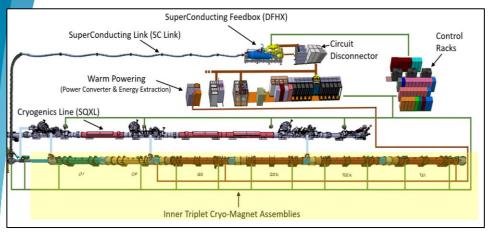
Integration

Installation



HL-LHC IT String Magnets

Integration

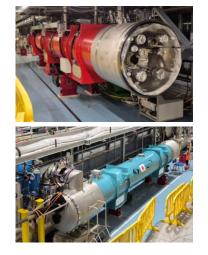


• Challenges :

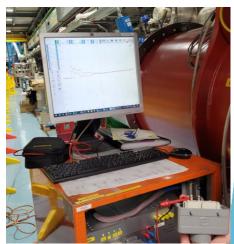
Last minute adaptations

Interfaces (cryogenic line, floor)





Commissioning



Opportunities :

Apply HL-LHC installation sequence

Check commis. HL-LHC procedures (EIQA)

Communication (videos + article)

Closing remarks















- Motivated and reactive team
- Adaptability and creativity to solve unforeseen issues
- Committed stakeholders thanks to win-win situations





Stay tuned to the IT String publications!



Installation of the D1 magnet into the IT String at CERN





Home | High Luminosity LHC Project



Installation of the Cold Powering System into the HL-LHC IT String



First magnet installation (Q2a) into the IT String at CERN





Many thanks to TE-MPE colleagues for their collaboration on the HL-LHC IT String

