Test plan overview

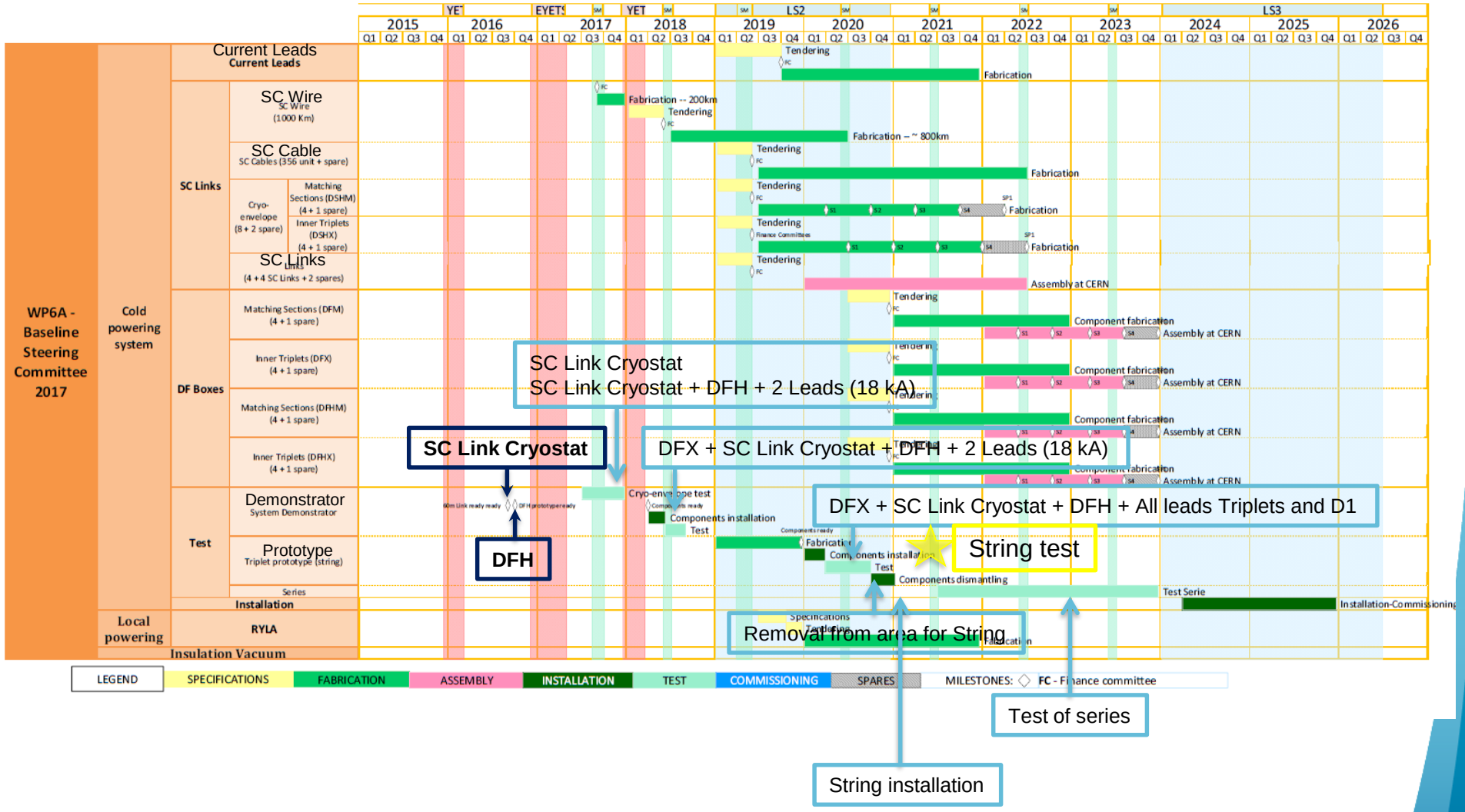
A. Ballarino,……

Acknowledgements:
.-------

Outline

- Past tests
  - SC Link Test Station (SM-18, 20 m, GHe). Constructed in ….and operation till end 2016. Main test results pertinent to the project
  - MgB_2 cables in Fresca (4.2 K, see presentation of K. Konstantopoulou)
  - Splices measured at CERN. Established collaboration with Un. of Southampton for qualification and measurements
- On going work
  - Test of 60 m long cryostat in the SM-18. Validation of thermal and hydraulic performance (4-walls and 2-walls)
- Future tests
  - Demonstrator with a pair of leads (reduced size DFH available)
  - Prototype (demonstrator with DFX)
  - Full system (full size DFH and complete set of current leads)
  - String test – full size for Triplets (see presentation of M. Bajko)
- Test of each system (SC Link and SC Current leads) before integration in the tunnel

Test plan


2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
LS2
LS3
WP6A - Baseline Steering Committee 2017
Cold powering system
Local powering
Current Leads
Current Leads
SC Links
SC Wire
SC Wire (1000 Km)
SC Cable
SC Cables (356 unit + spare)
Cryo-envelope (8 + 2 spare)
Matching Sections (DSHM) (4 + 1 spare)
Inner Triplets (DSHX) (4 + 1 spare)
SC Links
(4 + 4 SC Links + 2 spares)
DF Boxes
Matching Sections (DFM) (4 + 1 spare)
Inner Triplets (DFX) (4 + 1 spare)
Matching Sections (DFHM) (4 + 1 spare)
Inner Triplets (DFHX) (4 + 1 spare)
Test
Demonstrator
System Demonstrator
Prototype
Triplet prototype (string)
Series
Installation
RYLA
Insulation Vacuum
Tendering
Fabrication
Fabrication -- 200km
Fabrication – ~ 800km
Assembly at CERN
Component fabrication
Cryo-envelope test
Components installation
Test
Components dismantling
Test Serie
Installation-Commissioning
SC Link Cryostat
SC Link Cryostat + DFH + 2 Leads (18 kA)
DFX + SC Link Cryostat + DFH + 2 Leads (18 kA)
DFX + SC Link Cryostat + DFH + All leads Triplets and D1
DFH
String test
Removal from area for String
Test of series
String installation
LEGEND
SPECIFICATIONS
FABRICATION
ASSEMBLY
INSTALLATION
TEST
COMMISSIONING
SPARES
MILESTONES:
FC - Finance committee

Conclusions

- Significant test activity performed
- Plan for future test program established. It consists of intermediate steps for enabling validation of demonstrators, prototypes, sub-components, QPS and cryogenic control.
- Full system tested before integration in the String