



# **HL-LHC Update Masterplan WP7 Machine Protection & Availability**

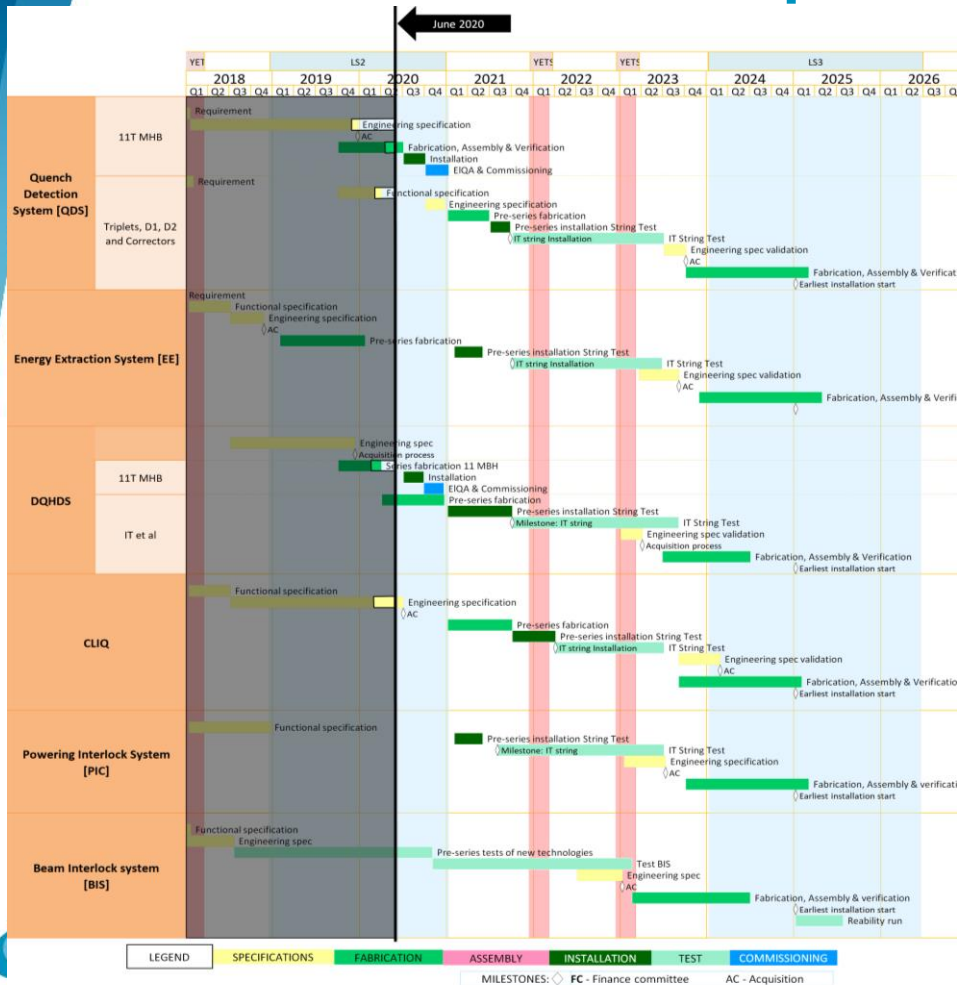
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# Motivation for updating the Masterplan

- Planning for String changed
- Delay of LS3 by 1 year (see TCC day)
- WP7 HW procurement planning well advanced
- Establish most up to date schedule for baseline 4.0

# Masterplan of WP7



## QDS 11T MBH:

- Engineering spec well advance
- Fabrication/Assembly: 6 weeks delay accumulated during lab closure – COVID-19
- Installation & IST (4 weeks) and ELQA (2 weeks) will shift according to update of MBH installation schedule

## QDS triplet, D1, D2, sc. link etc.:

- Functional specification ongoing
- IT string installation & IST 05.2022-09.2022 (tbc with WP16)

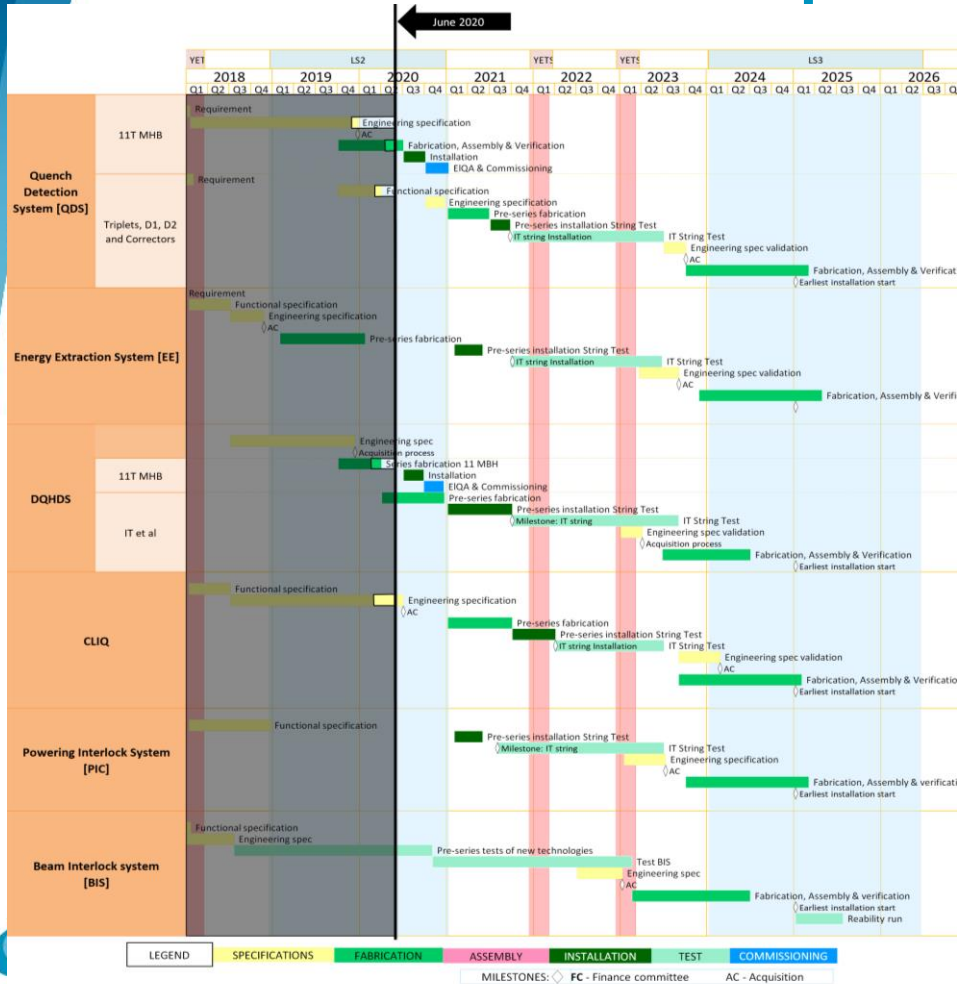
## Energy Extraction Systems:

- The first prototype fabrication is done, but we will have a final prototype production & pre-series for the String (2021/22)
- Market survey Q3 2020 and Call for tender by 12.2020
- Fabrication & testing of final prototypes & pre-series 02.2021 – 05.2022
- IT String installation: 06.2022-09.2022 (tbc with WP16)

## DQHDS 11T MBH:

- The series fabrication is basically completed
- Delay of 8 weeks accumulated – COVID-19
- Installation & IST (4 weeks) and ELQA (2 weeks)

# Masterplan of WP7



## DQHDS IT & D1:

- Engineering specs by 12.2020 (to be delivered to KEK/Nichicon)
- Pre-series fabrication 01.2021 - 10.2021
- Reception pre-series 11.2021
- IT String installation: 06.2022 - 09.2022 (tbc with WP16)
- Series fabrication 01.2022 – 12.2022

## CLIQ:

- Specification ongoing the FC point will shift to 03.2021 (finance committee)
- Three months delay – COVID-19 shift of finance committee from 12.2020 – 03.2021
- Fabrication of pre-series (String) 04.2021- 05.2022
- IT String installation: 06.2022-09.2022 (tbc with WP16)
- Series production 11.2022 – 12.2023

## PIC:

- IT String installation: 06.2022-09.2022 (tbc with WP16)

## String (for QDS, EE, DQHDS, CLIQ and PIC):

- IT String test 01.2023 – Q2 2024 (incl. second thermal cycle)

# Update of planning due to shift of LS3 re-cap from TCC day (12.03.)

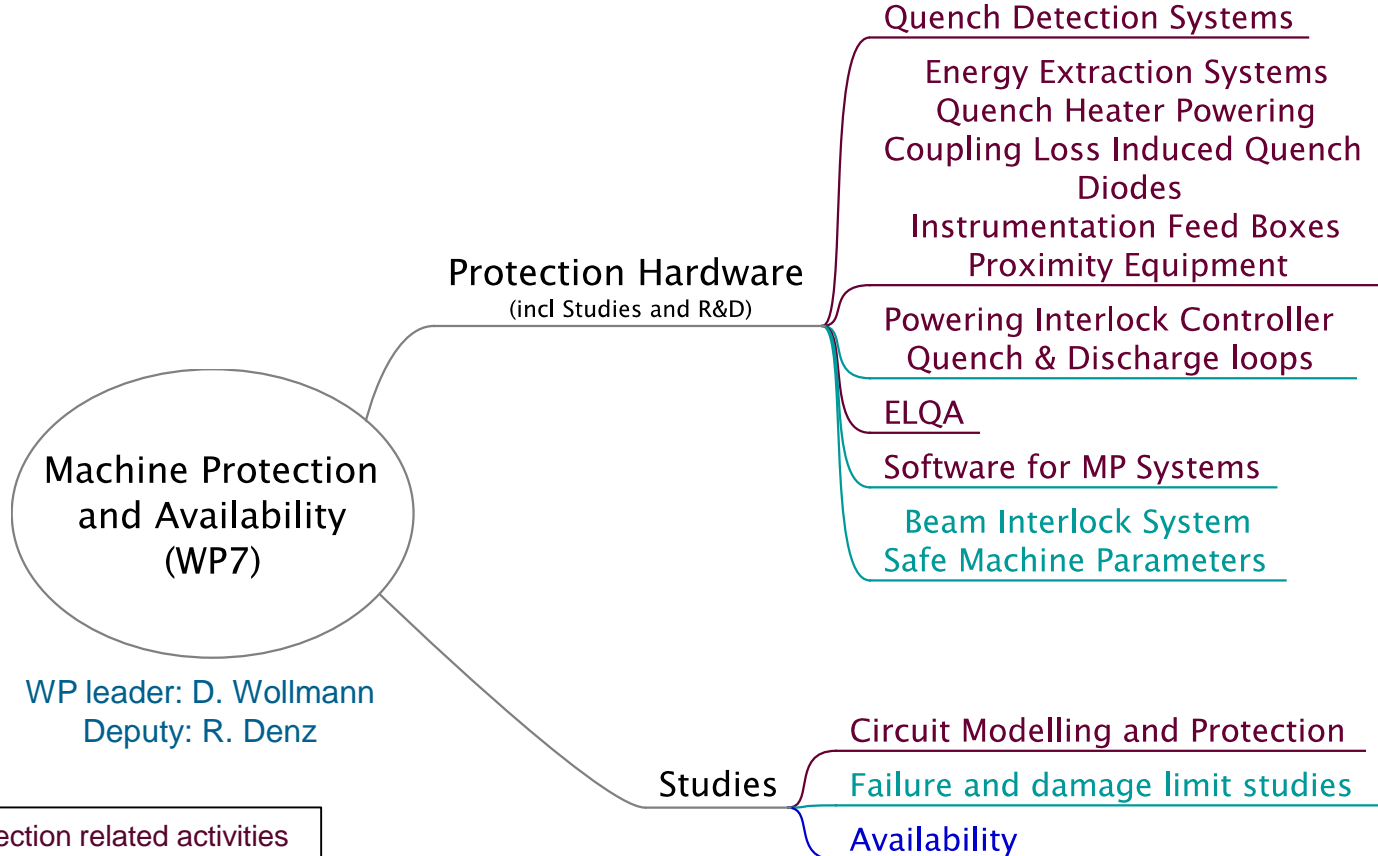
- Quench Detection Systems (triplet, D1, D2, and correctors):
  - Milestone: earliest installation date: end 2025
  - Commissioning: mid 2026 until mid 2027
- Energy Extraction Systems:
  - Milestone: earliest installation date: end 2025
  - Commissioning: mid 2026 until mid 2027
- DQHDS (IT, D1):
  - Milestone: earliest installation date: end 2025
  - Commissioning: mid 2026 until mid 2027
- CLIQ:
  - Milestone: earliest installation date: end 2025
  - Commissioning: mid 2026 until mid 2027
- PIC:
  - Pre-series production 1<sup>st</sup> half of 2022
  - Engineering specification 1<sup>st</sup> half of 2022
  - IT string installation: 06. - 09.2022
  - IT String Test during 2023
  - Milestone launch Acquisition: Q4 2023
  - Fabrication from beginning 2024 for 18 months
  - Milestone: earliest installation date: end 2025
  - Commissioning: mid 2026 until mid 2027
- BIS:
  - Milestone launch acquisition Q2 2024
  - Fabrication, assembly and verification: Q3 2024 until end 2025
  - Milestone earliest installation date: 01.2026
  - Reliability run Q1 & Q2 2026

# Outlook

- How & when establishing the new Masterplan?
- Further questions/ open points



# WP7 re-cape of scope



Magnet / circuit protection related activities  
Beam protection related activities  
Machine availability related activities