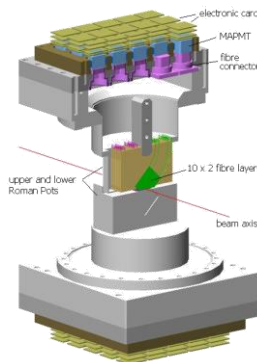
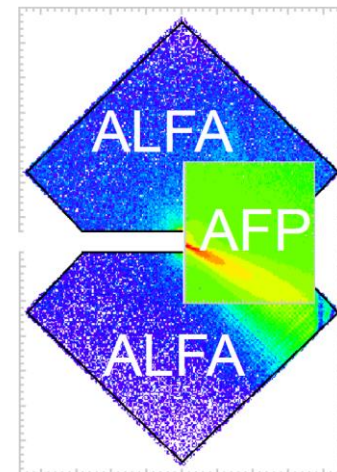
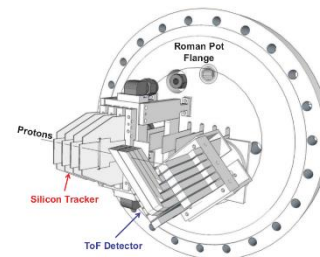
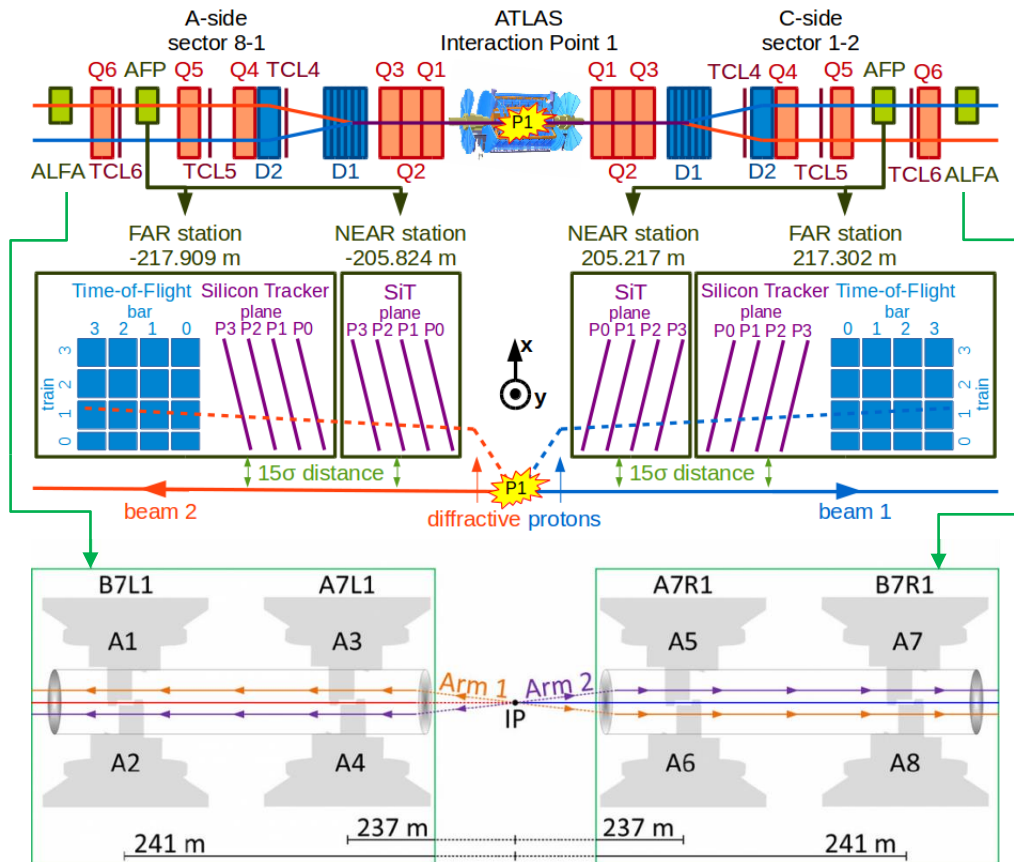


ARP YETS 2024 activities

LHC Tunnel Region Experiments Working Group (TRES)

Marko Milovanovic

06.12.2024.



LHC Optics configuration for 2025/26

Configuration proposal

RP-V in IP5

seems to be mandatory to avoid major risks on the inner triplet region magnets

CONSEQUENCES:

- TOTEM pots rotation
- Modification of powering scheme (IT+Q4)

LHC-BOC final decision:

RP-H in IP1

best configuration for magnet protection

CONSEQUENCES:

- Increased background for FASER & SND
- AFP is lost

NOM-H in IP1

increased risk for D1 & IT toward the limit at the end of Run3

CONSEQUENCES:

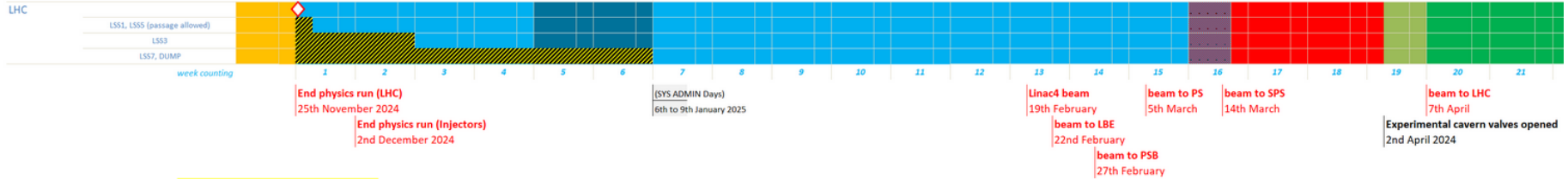
- Reduced background for FASER&SND
- Preserve AFP experiment



Swap magnet with spare possible:

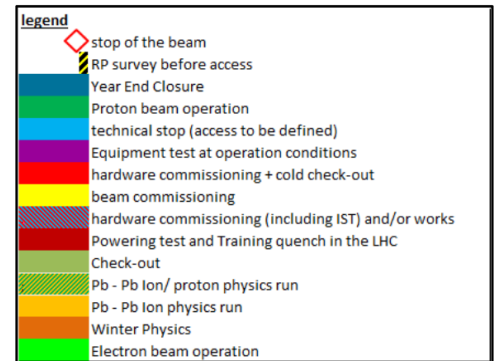
- Operation estimated to last 6-7 weeks – not optimized!
- Partial reconditioning to be done

EYETS 2024/25 - Constraints



21/05/2024 **DRAFT for AUG tests dates**
Maintenance of transformers under discussion
 EDHS No. REV. VALIDITY
 ELG-GENNET:TD-XXX
 Page: 1

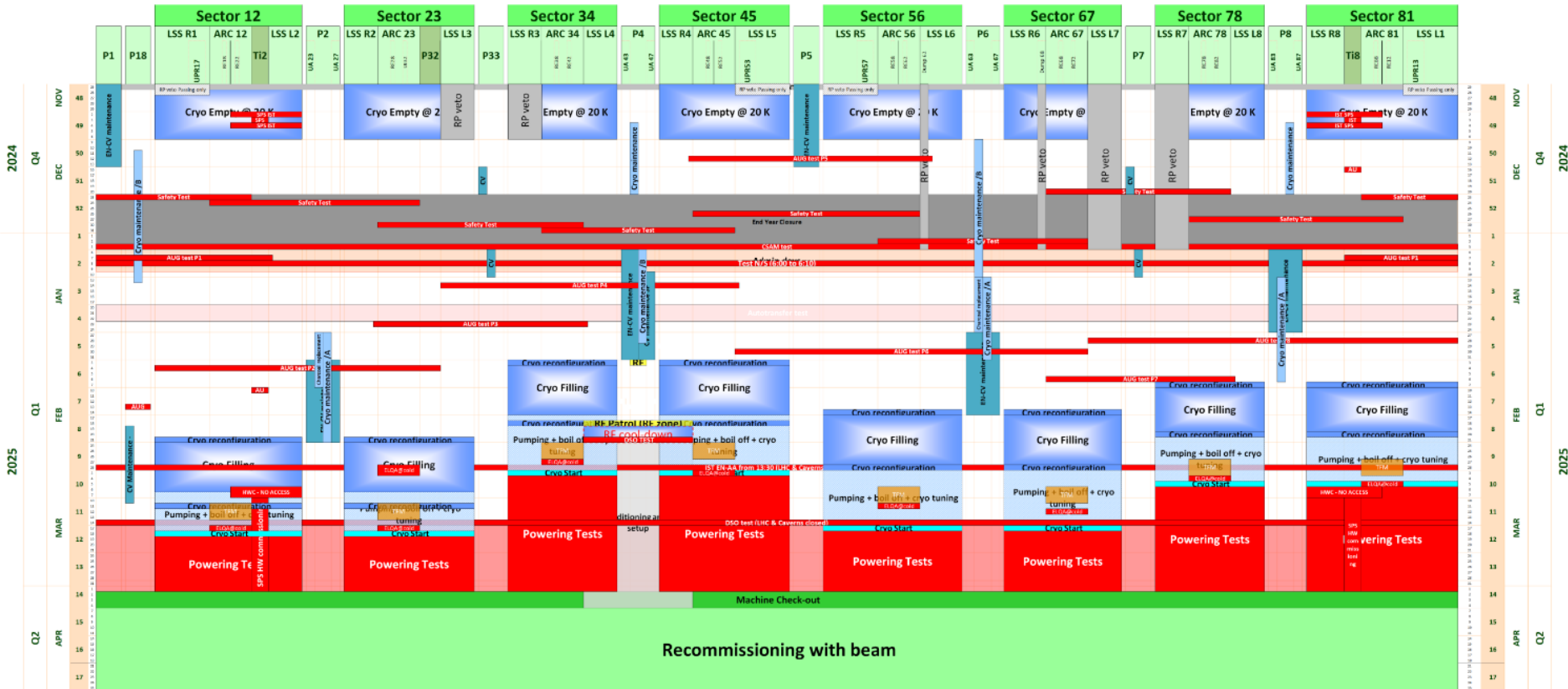
| Complex | Electrical test | Date |
|-----------------|------------------------------------|--|
| all CERN sites | Auto-transport | 21 st – 23 rd January 2025 (W4) |
| | Normal Secours (N/S) | 8 th January 2025 (W2) |
| Meyrin site | AUG Adm. Zone Meyrin | 4 th January 2025 (W1) |
| | AUG PS & PSB | 11 th & 12 th January 2025 (W2) |
| | AUG West area | 14 th December 2024 (W50) |
| Prévessin site | AUG Adm. Zone Preveessin | 15 th March (W11) |
| | AUG North area (BA80-BA81-BA82) | 17 th – 18 th February 2025 (W8) |
| SPS | AUG SPS1 | 17 th December 2024 (W51) |
| | AUG SPS2 | 13 th January 2025 (W3) |
| | AUG SPS3 | 10 th December 2024 (W50) |
| | AUG SPS4 + AWAKE | 16 th December 2024 (W51) |
| | AUG SPS5 | 27 th January 2025 (W5) |
| | AUG SPS6 | 3 rd February 2025 (W6) |
| | AUG SPS7 | 10 th February 2025 (W7) |
| LHC | AUG LHC1 (including HL) + ATLAS | 7 th January 2025 (W2) |
| | AUG LHC18 + SM18 | 13 th February 2025 (W7) |
| | AUG LHC2 + ALICE | 4 th February 2025 (W6) |
| | AUG LHC3 + LHC3Z | 16 th January 2025 (W3) |
| | AUG LHC4 | 14 th January 2025 (W3) |
| | AUG LHC5 (including HL) + CMS | 12 th December 2024 (W50) |
| | AUG LHC6 | 30 th January 2025 (W5) |
| | AUG LHC7 | 6 th February 2025 (W6) |
| AUG LHC8 + LHCb | 28 th January 2025 (W5) | |



- Closure of LHC Experiments and start of LHC machine check-out on 02/04/2025; LHC beam operation starting on 07/04/2025.
- LHC EYETS beam to beam: 19 weeks.
- Controls maintenance “SYS ADMIN DAYS” from 6th to 9th January 2025.

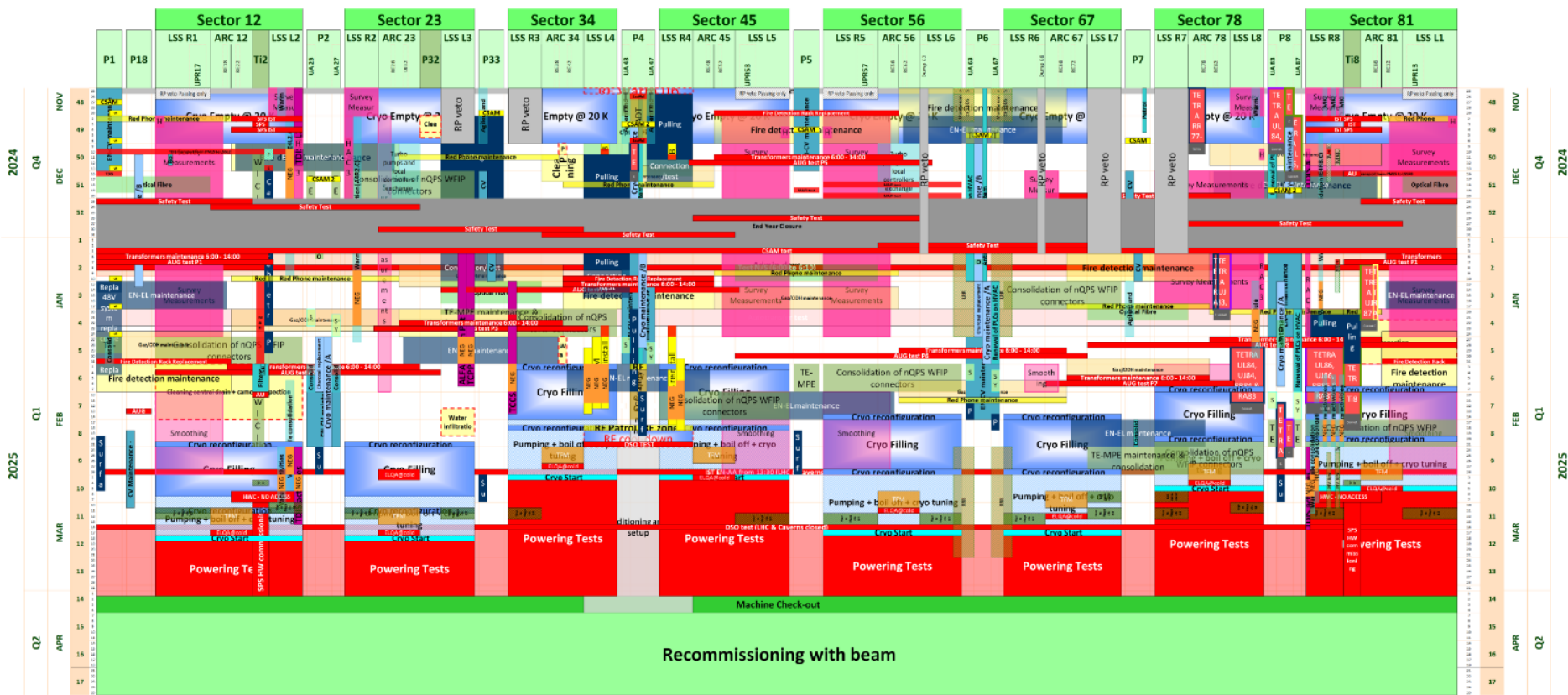
EYETS 2024/25 - Constraints

EYETS 2024-25 Frame

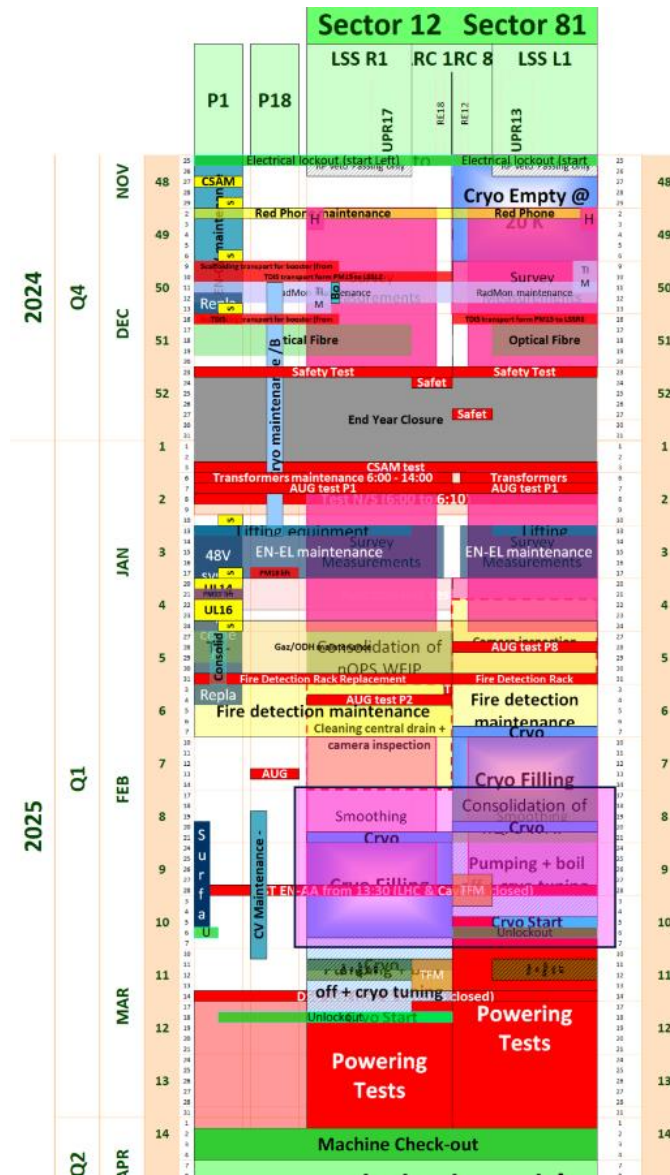


EYETS 2024/25 – Schedule in work

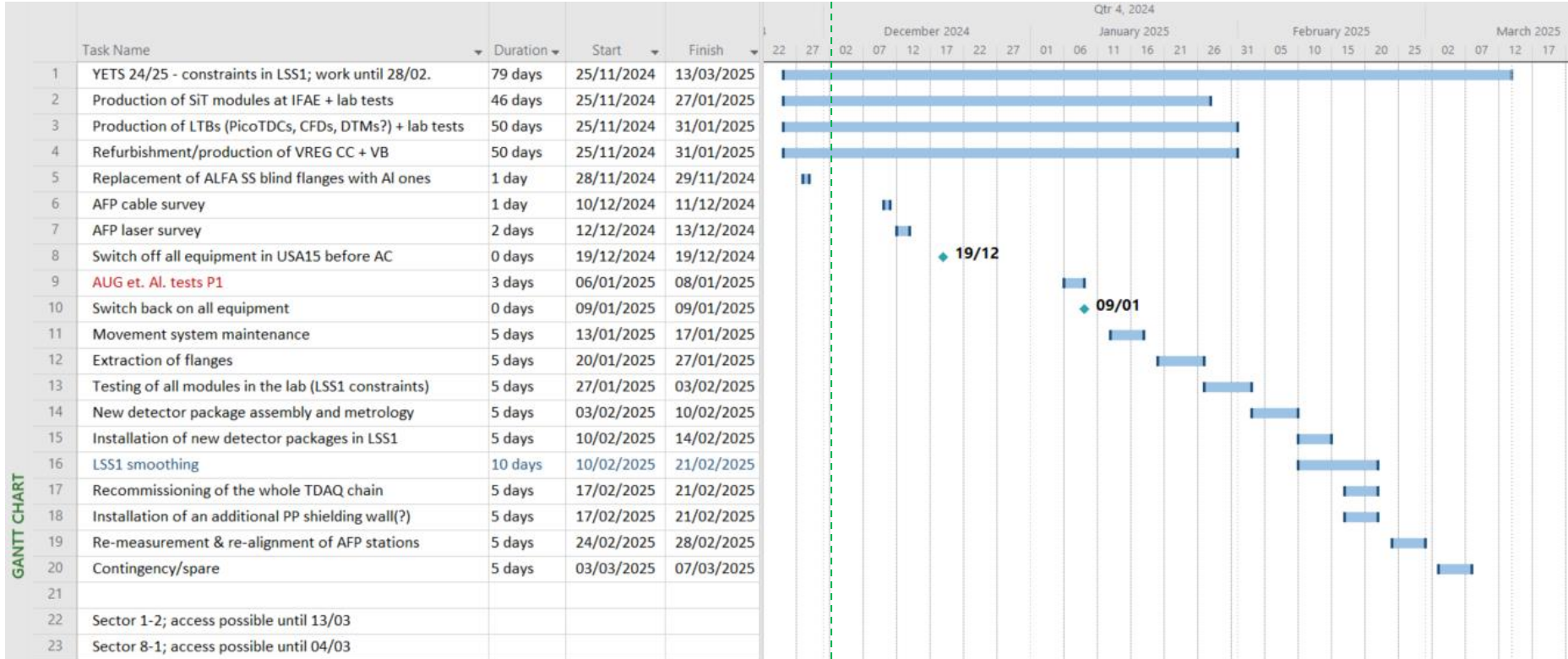
EYETS 2024-25 Schedule in work



EYETS 2024/25 – focus on LSS1



YETS 2024/25 plan



- YETS impact approved: <https://impact.cern.ch/impact/secure/?place=editActivity:240327>
- Support needed from BE-GM-ASG for survey (2x) and already arranged (W50+W9).
- Will probably also need support from HSE-RP-AS to expedite radioactive transport.
- Will ask EP-DT support (as every year) for metrology (CMM).
- Ongoing discussion with SY-STI-BMI/R2E about improving/upgrading shielding to cope with increased radiation damage.

Backup slides.

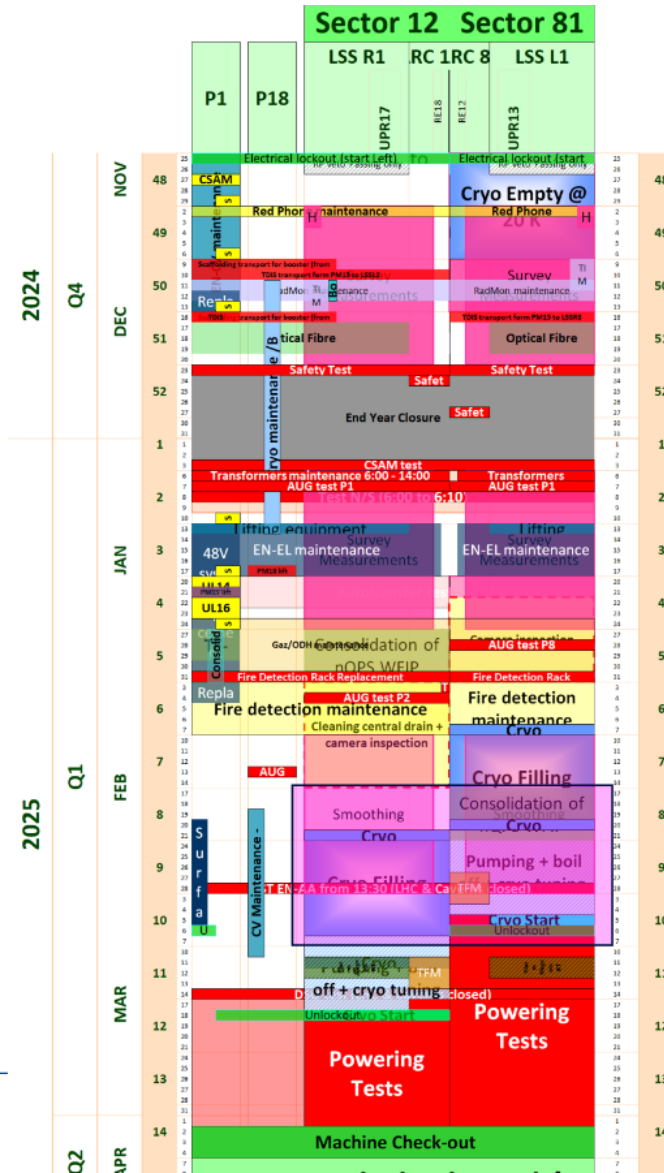
Reminders, updates & constraints

- > Replacing Stainless Steel ALFA blind flanges in S81 with Al ones:
 - Scheduled for 28-29/11. Sune will use his own impact.
- > ARP cable survey
 - Scheduled for 10/12 – Giulio, Elzbieta, Luis, Maciej, Marko.
- > 1st AFP laser survey
 - Scheduled for W50 (ca.12-13/12).
- > 2nd AFP laser survey
 - New fiducialisation (if necessary) and new LVDT calibration (~2 days): for these. Precise slot tbd; aiming for W9. A short slot can be locked in order to optimize our presence
 - Smoothing alignment: the regular LSS1 smoothing will be done between 2025-02-10 and 2025-02-21 (no help required).
- > New SiT modules production at IFAE:
 - Bump-bonding machine broken at IFAE & wire-bonding technician over-committed. Might send the modules to CERN for wire-bonding.
 - Ideally to be ready for pick up by 12/01 (W2) or deliver by 27/01 (W5) to CERN for wire-bonding and testing.
- > Extraction and re-insertion of flanges w/refurbished detector packages:
 - Aiming for removal of flanges in W4 (+1 week)
 - Assembly and metrology of detector packages in W6-7
 - Re-installation of flanges w/refurbished packages: W7-8.
 - Recommissioning, 2nd survey & smoothing alignment: W9
- > Sector 8-1 access possible only until 04/03!
 - Sector 1-2: access possible until 13/03.

Survey requests

To optimize the availability of BE-GM:

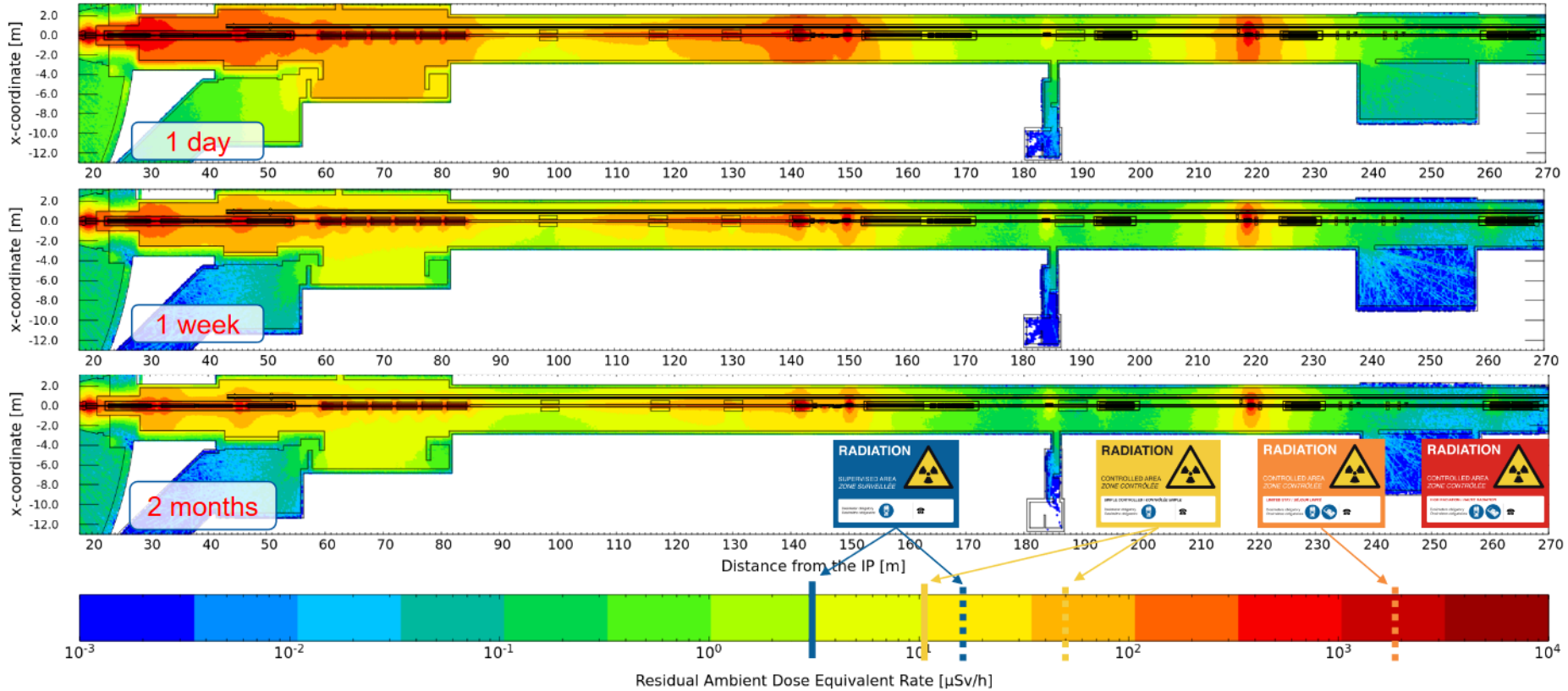
- LSS1 Smoothing shift from W7-8-9 to W8-9-10?
 - LSSL1 it means only 3 days of work in W10, but LSSR1 seems free at that time.
- S78 – BE-GM would like to add one more activity in W8-9-10. It would be a 3D measurement.
 - in this case could they merge it to a single block W6-W10 and micromanage it Fortunately, physically it should not block completely anybody with those activities.



Projected radiation levels in LSS1

LS3: LSS1 Residual $H^*(10)$

— Permanent workplace
- - - Low-occupancy area (<20 % of working time)



P. Dyrz, A. Infantino
HL-LHC Integration meeting #210
21.10.2022
EDMS 2790070

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Projected radiation levels in LSS1

Projected radiation levels at the end of Run 3 proton-proton physics (working distance, ~40 cm) for LSS1.
Limits for low-occupancy area (<20 % of working time)

