



AWAKE Run 2 Schedule

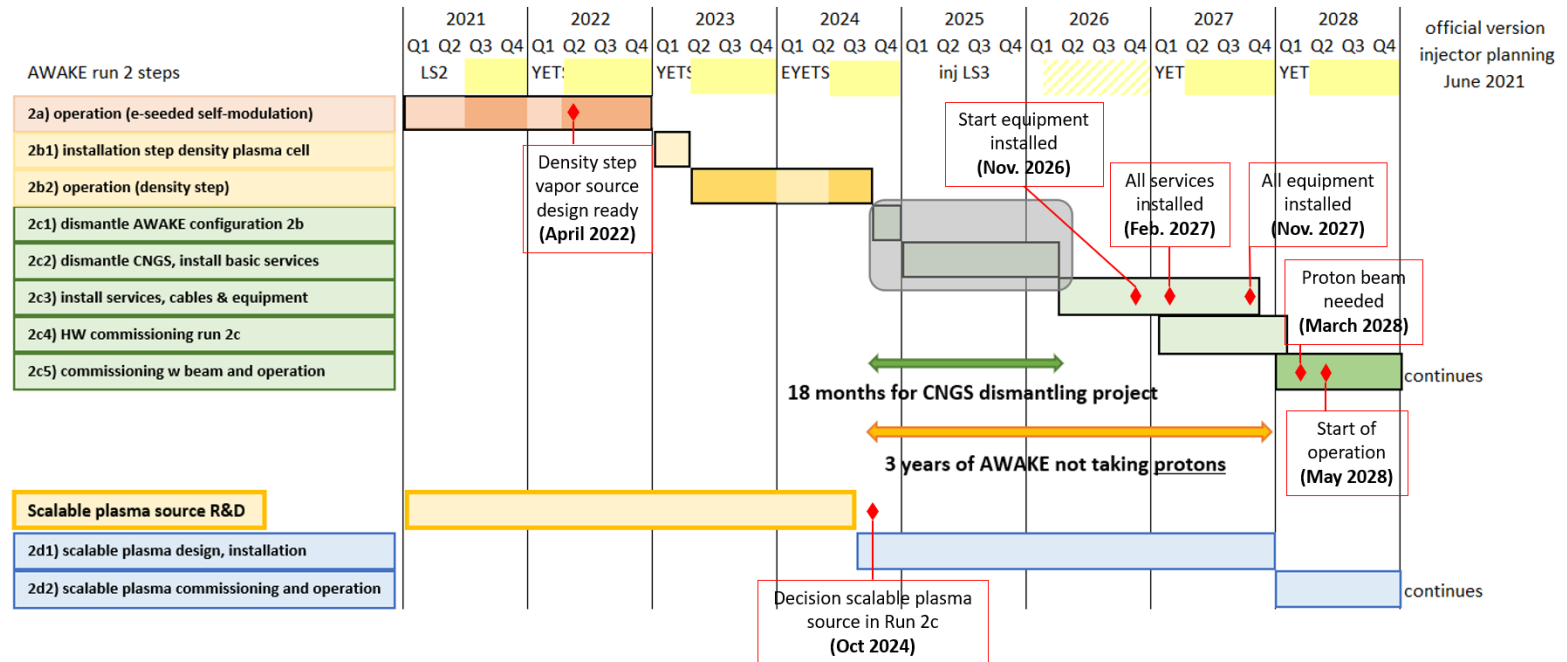
Eloïse Guran, CERN

CERN AWAKE Cost and Schedule Review

18 November 2021

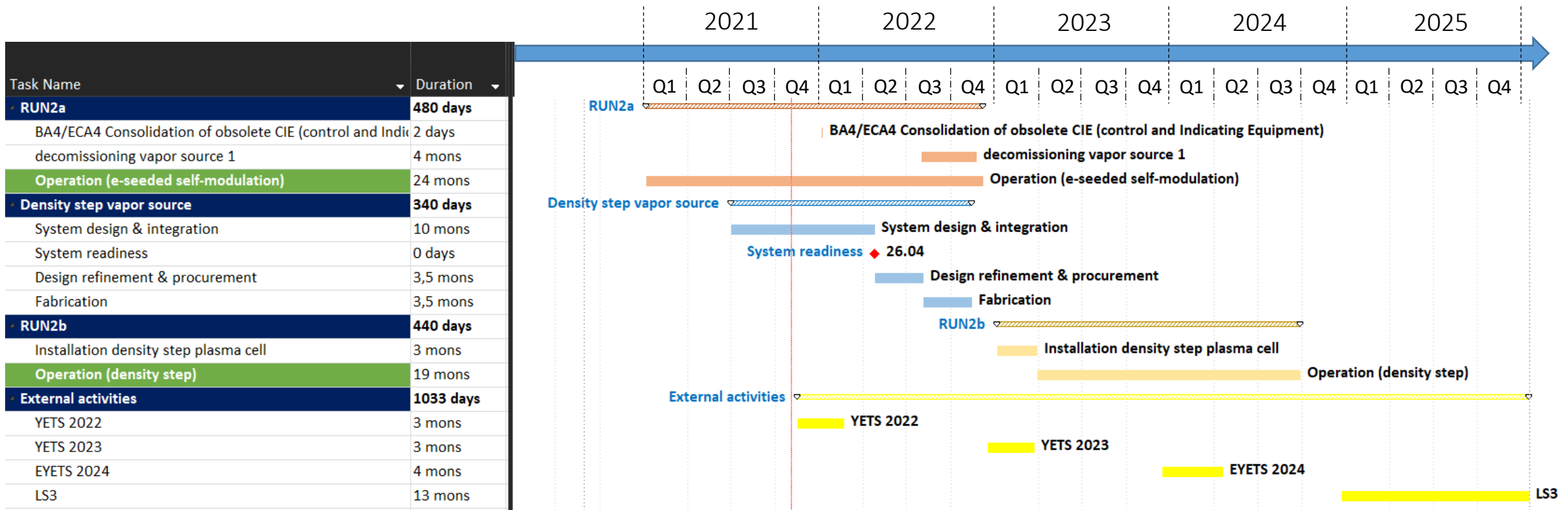
Outline

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- Run 2 – Global schedule with milestones
- Summary



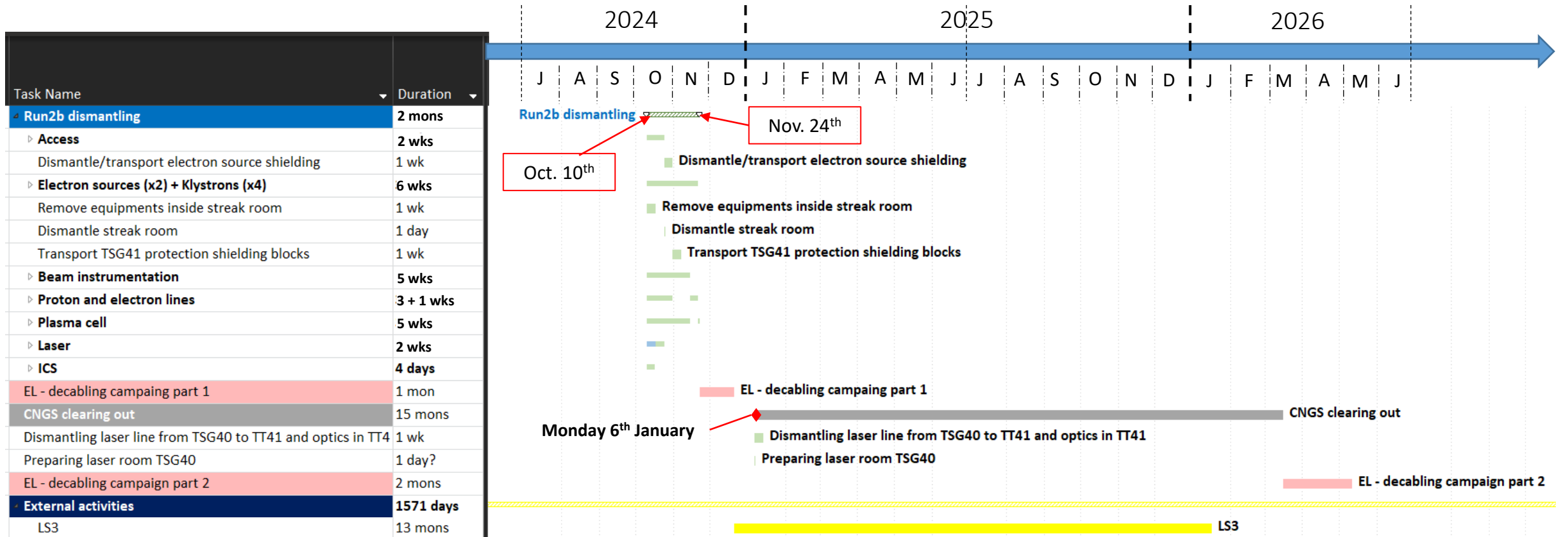
Run 2a/b

- Run 2a → 15 provisional weeks of operation in 2022 → a busy year
- Upgrade 2a to 2b → Density step vapor source design should be ready by April 2022 ♦
- Run 2b → installation of new density plasma cell during YETS 2022/23



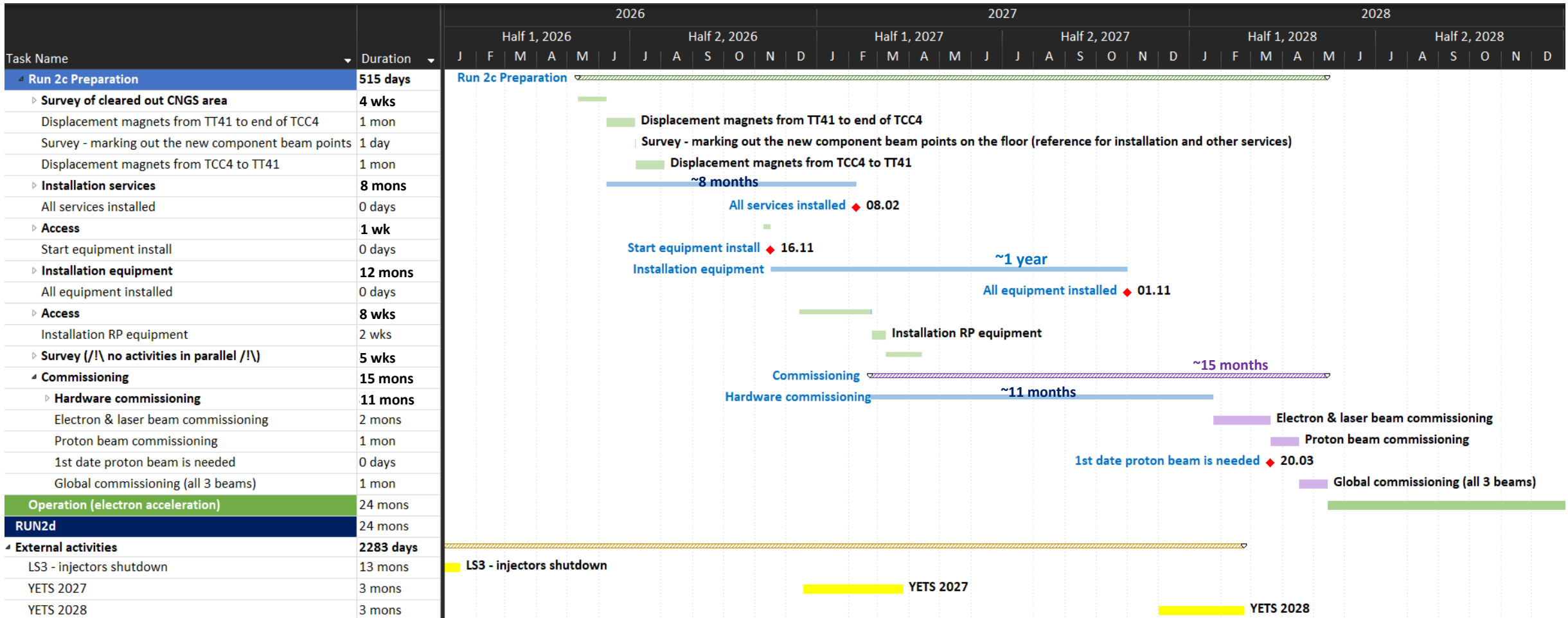
Run 2b & CNGS dismantling

- Run 2b ends in October 2024
- 3 months of dismantling and de-cabling Run 2b } part of the CNGS dismantling project
- 15 months of dismantling CNGS



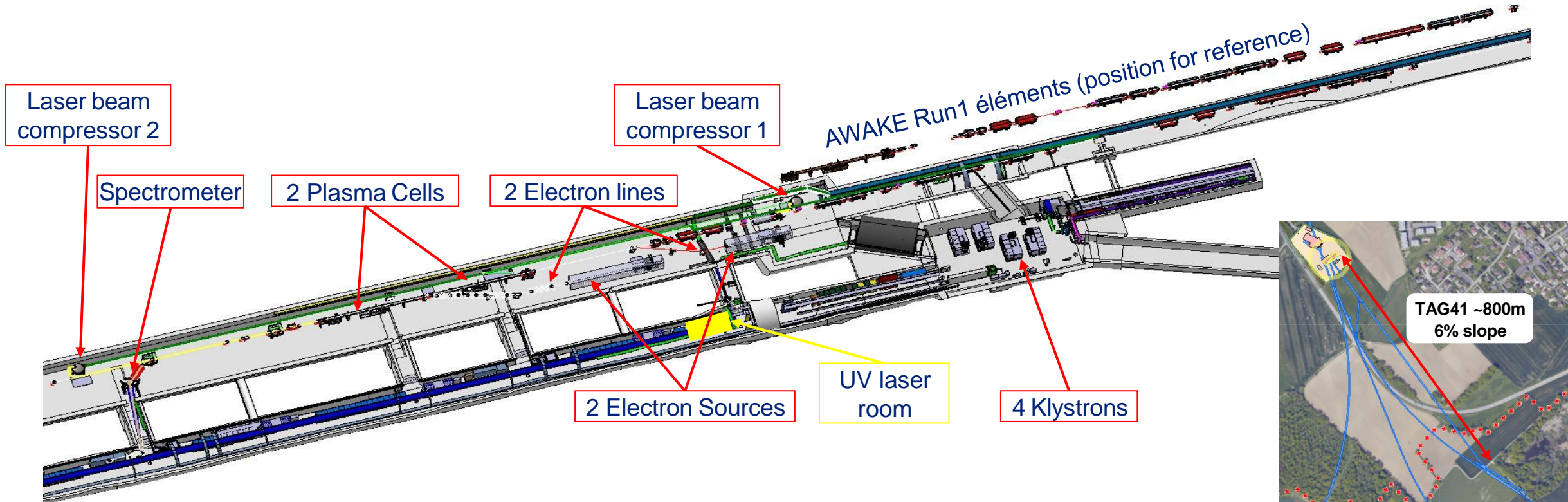
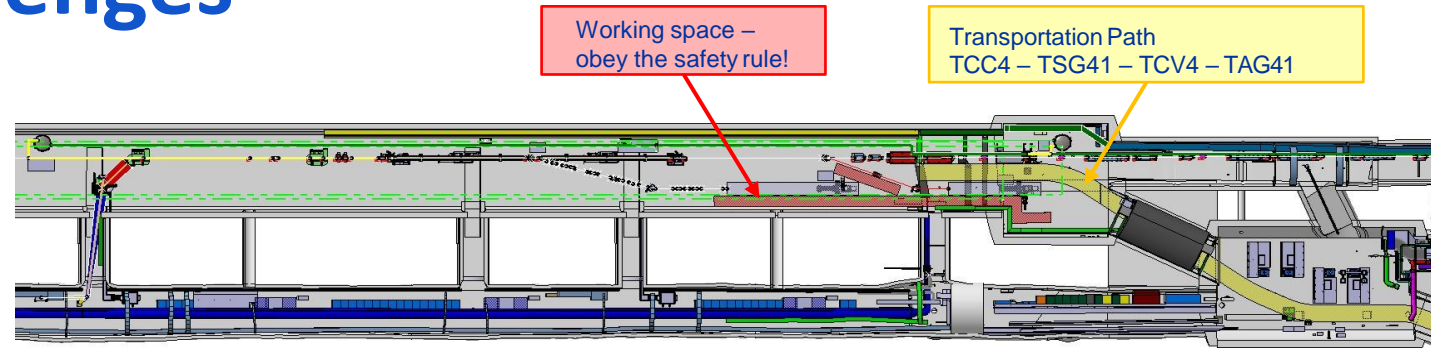
Run 2c - Overview

- 22 months of installation and commissioning
- Request protons from March 2028 ◆



Run 2c – Planning challenges

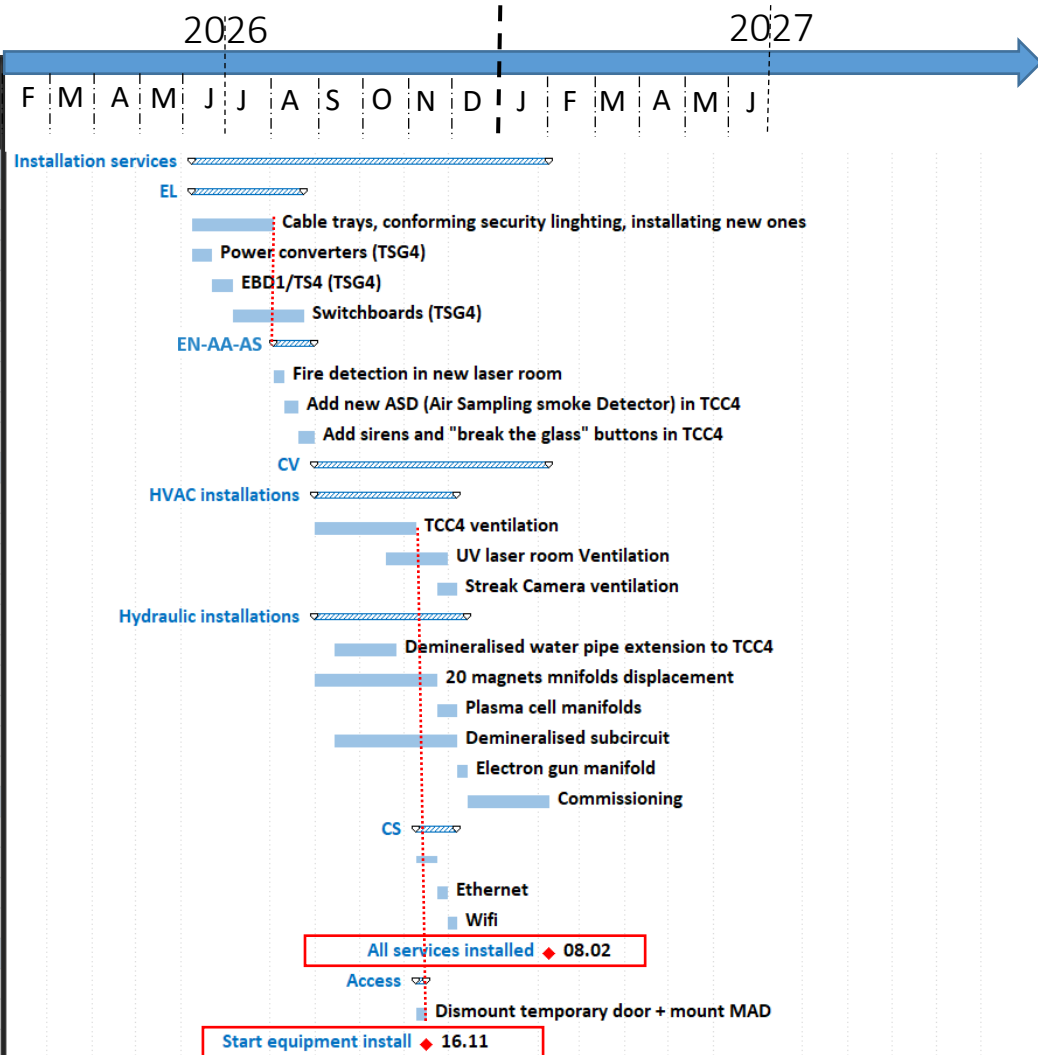
- Most equipment is in TCC4 → co-activities management defines planning
- Transport over a 1km long, narrow tunnel → drives installation schedule



Run 2c – Installation services

- All services installed in February 2027 ♦
- Equipment installation starts in November 2026 ♦

Task Name	Duration	Start	Finish
Installation services	165 days	Mon 08.06.26	Mon 08.02.27
EL	55 days	Mon 08.06.26	Mon 24.08.26
Cable trays, conforming security lighting, installing new ones	8 wks	Mon 08.06.26	Mon 03.08.26
Power converters (TSG4)	2 wks	Mon 08.06.26	Mon 22.06.26
EBD1/TS4 (TSG4)	2 wks	Mon 22.06.26	Mon 06.07.26
Switchboards (TSG4)	7 wks	Mon 06.07.26	Mon 24.08.26
EN-AA-AS	20 days	Mon 03.08.26	Mon 31.08.26
Fire detection in new laser room	1 wk	Mon 03.08.26	Mon 10.08.26
Add new ASD (Air Sampling smoke Detector) in TCC4	1,5 wks	Mon 10.08.26	Wed 19.08.26
Add sirens and "break the glass" buttons in TCC4	1,5 wks	Wed 19.08.26	Mon 31.08.26
CV	105 days	Mon 31.08.26	Mon 08.02.27
HVAC installations	70 days	Mon 31.08.26	Mon 07.12.26
TCC4 ventilation	2,5 mons	Mon 31.08.26	Mon 09.11.26
UV laser room Ventilation	6 wks	Mon 19.10.26	Mon 30.11.26
Streak Camera ventilation	2 wks	Mon 23.11.26	Mon 07.12.26
Hydraulic installations	75 days	Mon 31.08.26	Mon 14.12.26
Demineralised water pipe extension to TCC4	6 wks	Mon 14.09.26	Mon 26.10.26
20 magnets manifolds displacement	3 mons	Mon 31.08.26	Mon 23.11.26
Plasma cell manifolds	2 wks	Mon 23.11.26	Mon 07.12.26
Demineralised subcircuit	3 mons	Mon 14.09.26	Mon 07.12.26
Electron gun manifold	1 wk	Mon 07.12.26	Mon 14.12.26
Commissioning	1,5 mons	Mon 14.12.26	Mon 08.02.27
CS	20 days	Mon 09.11.26	Mon 07.12.26
GSM and Téra	10 days	Mon 09.11.26	Mon 23.11.26
Ethernet	1 wk	Mon 23.11.26	Mon 30.11.26
Wifi	1 wk	Mon 30.11.26	Mon 07.12.26
All services installed	0 days	Mon 08.02.27	Mon 08.02.27
Access	5 days	Mon 09.11.26	Mon 16.11.26
Dismount temporary door + mount MAD	1 wk	Mon 09.11.26	Mon 16.11.26
Start equipment install	0 days	Mon 16.11.26	Mon 16.11.26



8 months installation with **co-activities**

EL works: 2,5 months
→ Co-activity possible once lighting is done

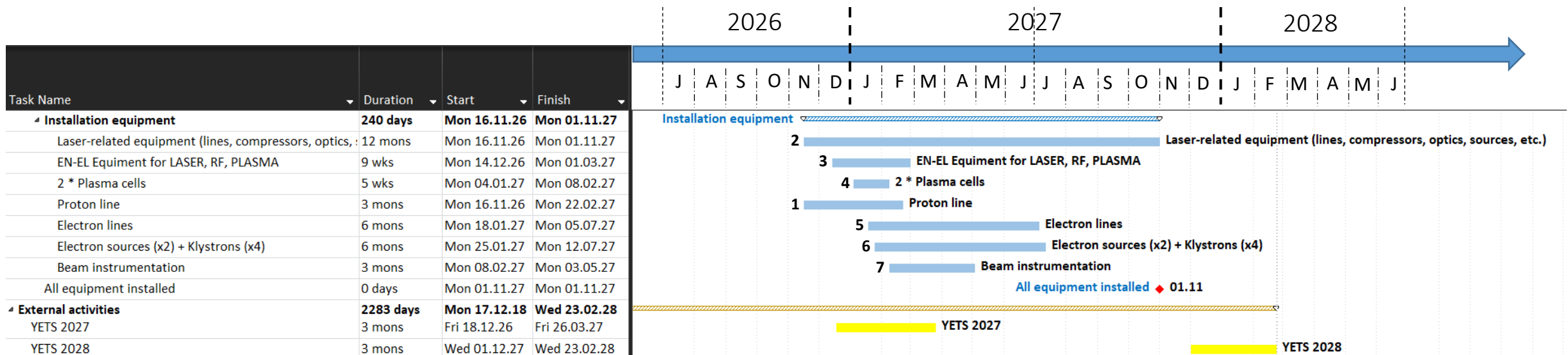
EN-AA-AS works: 1 month
→ Some co-activity possible

CV works: 3 months
→ Co-activity possible once TCC4 ventilation is done

CS works: 1 month
→ Some co-activity possible

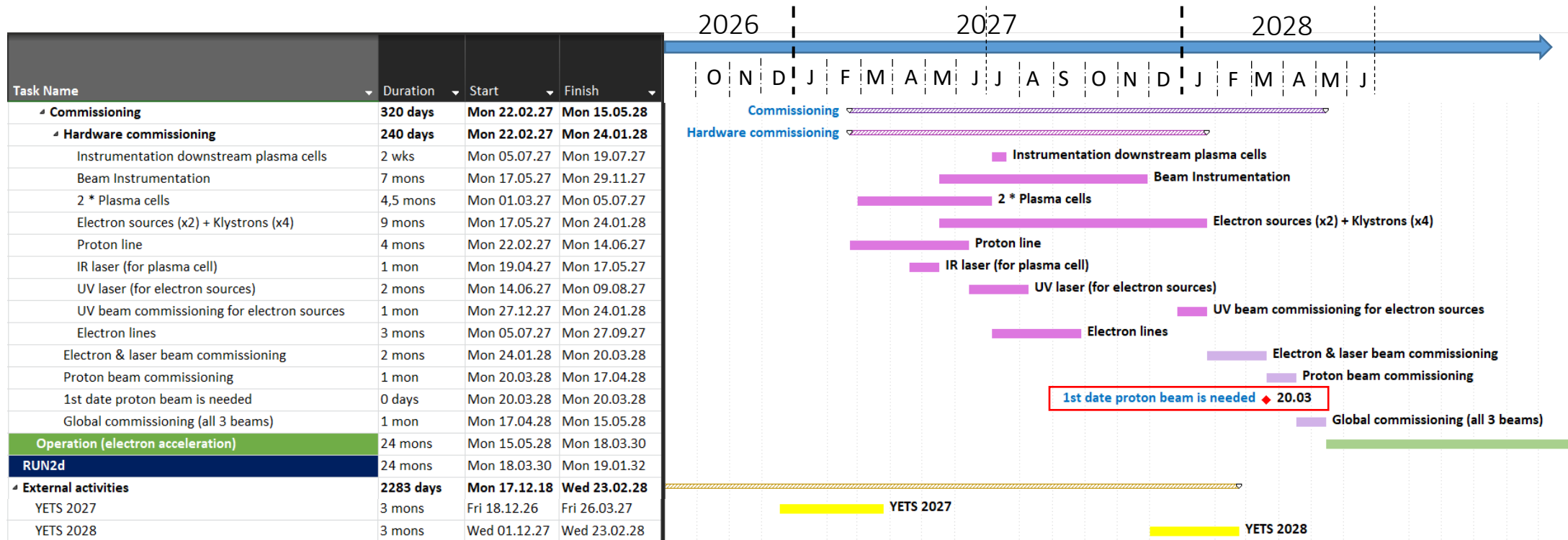
Run 2c – Equipment installation

- Installation total duration: 1 year (Nov. 2026 to Nov. 2027)
- Most of the transport will happen end of 2026.
- Start with proton line, then laser, EN-EL, plasma cells, electron lines, electron sources, beam instrumentation.
- All equipment installed by November 2027 ♦



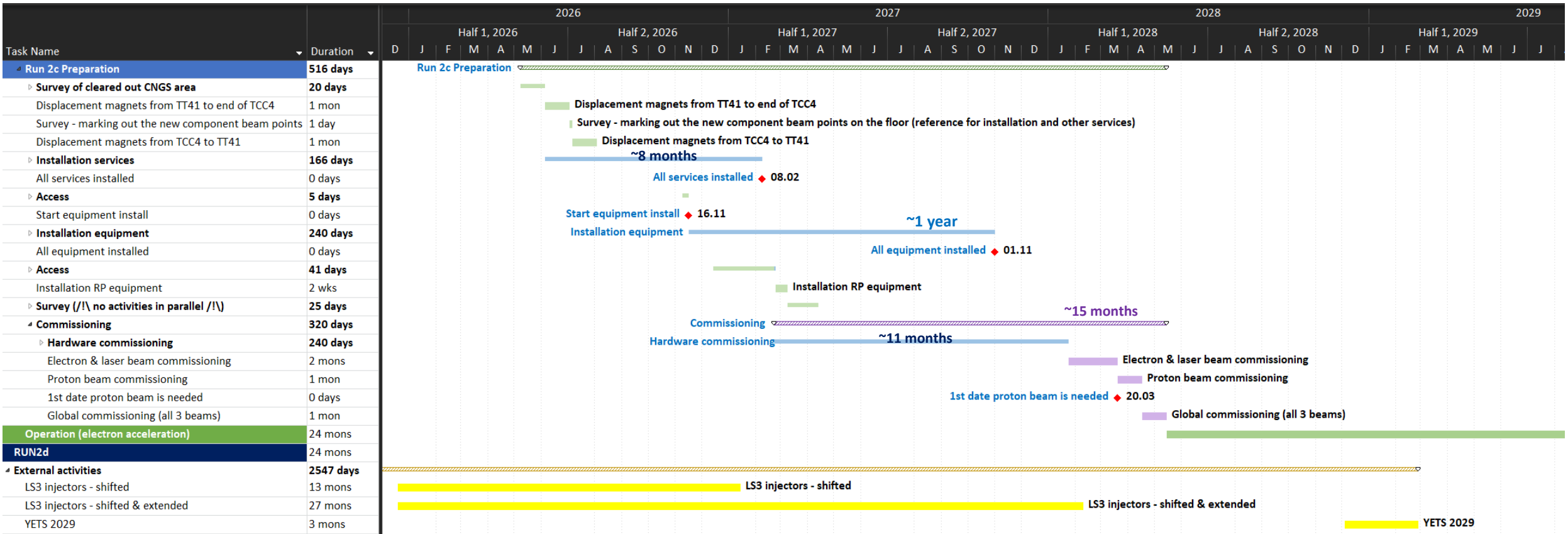
Run 2c - Commissioning

- Hardware commissioning : 11 months (Feb. 2027 to Jan. 2028)
- Beams (electrons/laser/protons) commissioning : 4 months (Feb.2028 to May 2028)
- Protons from March 2028 ♦

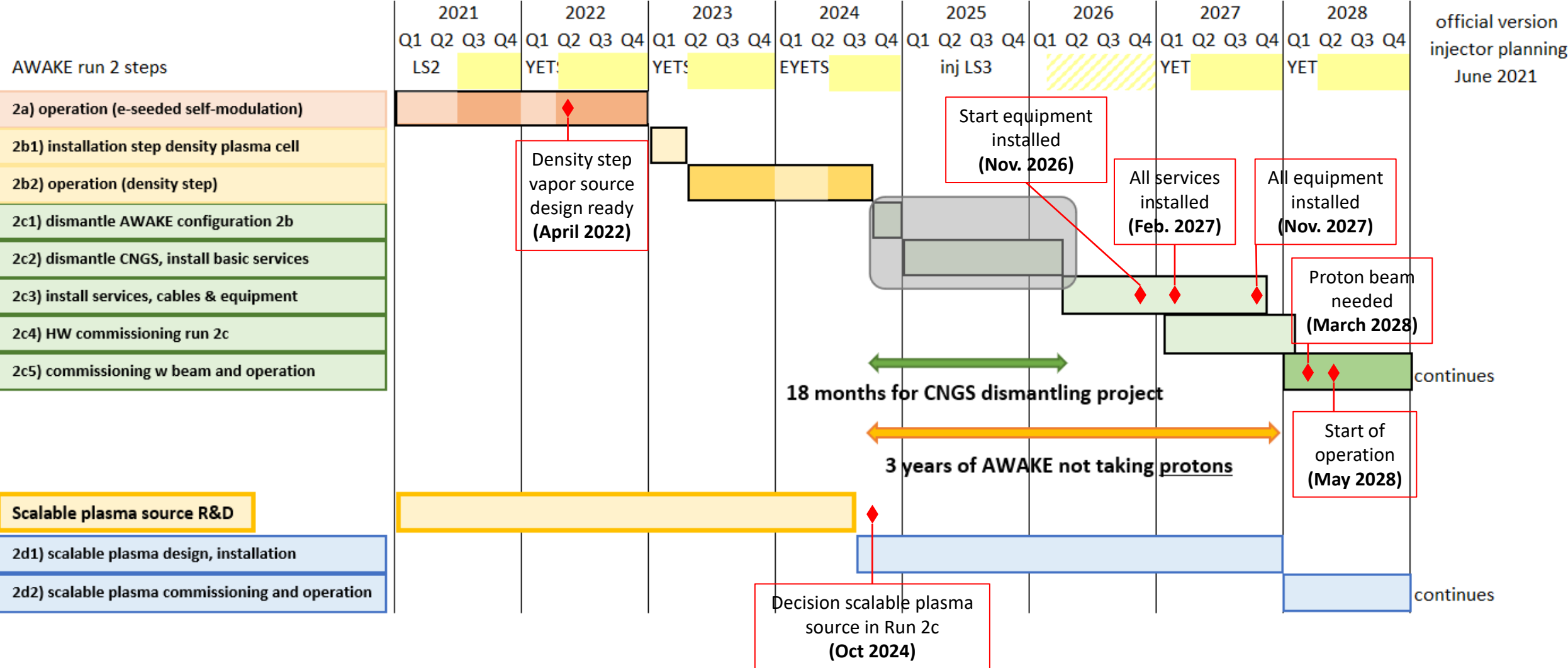


What if LS3 injectors is shifted/extended ?

- No impact on 1st date with proton (March 2028) ♦
- No impact on CNGS dismantling planning since run 2b lasts until 2024



Run 2 – Global schedule with milestones



Summary

- Planning was established with inputs from all the groups and work package, combined with experience from Run 1.
- The milestones are well defined:
 - ◆ All services installed by February 2027.
 - ◆ All equipment installed by November 2027.
 - ◆ 1st date with protons March 2028.
 - ◆ Operation from May 2028.
- The schedule is realistic assuming the resources requested are allocated to AWAKE.

