UNIVERSITÀ DEGLI STUDI DI PADOVA

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MAG-S.01.04-T002-D002

Coordination of the mechanical analysis groups in WPMAG

Daniela P. Boso

WPMAG Final meeting 2025

January 14 – 16, 2026

This work has been carried out within the framework of the EUROfusion Consortium and has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 633053. The views and opinions expressed herein do not necessarily reflect those of the European Commission.

Coordination of the mechanical analysis groups in WPMAG

MAG-S.01.04-T002: The coordination of the mechanical analysis groups in WPMAG will be focused on the survey of the work carried out by the different teams, including the supervision of the activities developed under the related engineering grants.
The task will consist in reviewing the documentation produced by the analysts and cross-checking the obtained results whenever possible. **A direct interaction and coordination activity with the DCT are also foreseen**.

- **MAG-S.01.04-T002-D003:** 2025 Coordination of the mechanical analysis groups in WPMAG.
- **MAG-S.01.04-T002-D004:** 2025 Preliminary engineering design of the main structures of the magnet system.

REPORTS AUTHORED/REVIEWED IN 2025 - WPMAG

09 WPMAG- 03 WP S – Architecture (SD&I) - 01 Advanced design of the magnet system and of the mechanical structures – 04 – Mechanical analysis of coils and structures

T014-D001 Coordination of the mechanical analysis groups in WPMAG
Daniela Boso (Approved)

T014-D002 Mechanical material catalog
Daniela Boso (Approved)

T015-D002 Feeders static scheme and related supporting mechanical analyses
Corrado Groth (Approved)

T016-D001 EU-CN: Electromagnetic-Mechanical Modelling of CS ReBCO CORC-CICC
Arend Nijhuis (Approved)

T017-D001 CEA TF mechanical model
Alex Torre (Approved)

T017-D002 CS hybrid mechanical model
Alex Torre (Approved)

T014-D003 Coordination of the mechanical analysis groups in WPMAG
Daniela Boso (Approved)

REPORTS AUTHORED/REVIEWED IN 2025 - WPMAG

09 WPMAG- 03 WP S – Architecture (SD&I) - 01 Advanced design of the magnet system and of the mechanical structures – 04 – Mechanical analysis of coils and structures

T018-D001 Mechanical analysis of the 2024 SPC designs
Jack Greenwood (Approved)

T019-D002 Thermo-mechanical analyses of residual stresses due to welding in a conductor jacket *Rafal Ortwein (Approved)*

T021-D001 Mechanical analysis of the 2024 CS coil designs (SPC variant)
Jack Greenwood (Approved)

T021-D002 Mechanical analysis of the 2024 PF coil designs (SPC variant)
Thomas Nes (Recommended)

T014-D004 Preliminary engineering design of the main structures of the magnet system
Daniela Boso (Approved)

T002-D003 2025 Preliminary engineering design of the main structures of the magnet system *Daniela Boso (Approved)*

REPORTS AUTHORED/REVIEWED IN 2025 - WPMAG

09 WPMAG- 03 WP S – Architecture (SD&I) - 01 Advanced design of the magnet system and of the mechanical structures – 04 – Mechanical analysis of coils and structures

T018-D001 Mechanical analysis of the 2024 SPC designs
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Thomas Nes (Recommended)

T014-D004 Preliminary engineering design of the main structures of the magnet system
Daniela Boso (Approved)

T002-D003 2025 Preliminary engineering design of the main structures of the magnet system *Daniela Boso (Approved)*

MAG-S.01.01-T020-D002-EU-CN: Deliverable on 2024 CEA CS Conductor Design
Alex Torre (Approved)

REPORTS DUE WPMAG - 2025

09 WPMAG- 03 WP S – Architecture (SD&I) - 01 Advanced design of the magnet system and of the mechanical structures – 04 – Mechanical analysis of coils and structures

T016-D002 EU-CN: Electromagnetic-Mechanical Modelling of CS ReBCO CORC-CICC 2025
Arend Nijhuis (Signed)

T020-D001 Preliminary clamp design and submodeling for TF Busbars
Corrado Groth (Signed)

T002-D002 2025 Coordination of the mechanical analysis groups in WPMAG
Daniela Boso (In Work)

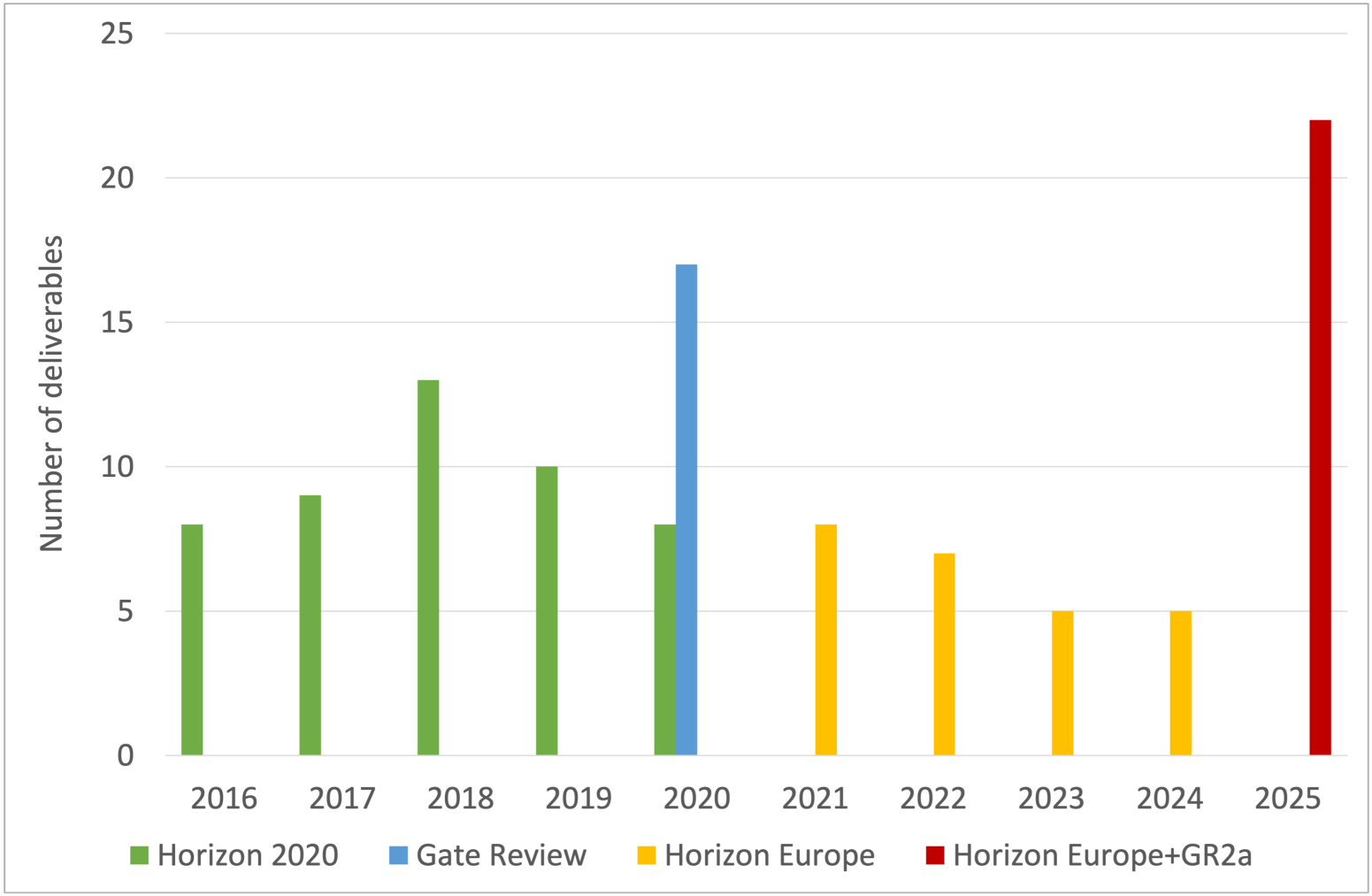
T022-D001 Thermo-mechanical analyses and tests on laser welding process
Rafal Ortwein (In Work)

T023-D001 Advanced finite element modeling to support the experimental test
Francesco Giorgetti (In Work)

MAG-S.01.01-T026-D001 3D Mechanical Modelling of the DEMO Low Aspect Ratio TF coil
Silvia Garitta (In Work)

***MAG-S.01.06-T009-D003 EU-CN: Model and analysis of HTS performance degradation after quench Andrea** Zappatore (In Work)*

WPMAG MECHANICAL REPORTS (Reviewed/Authored)



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Thank you for your attention

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