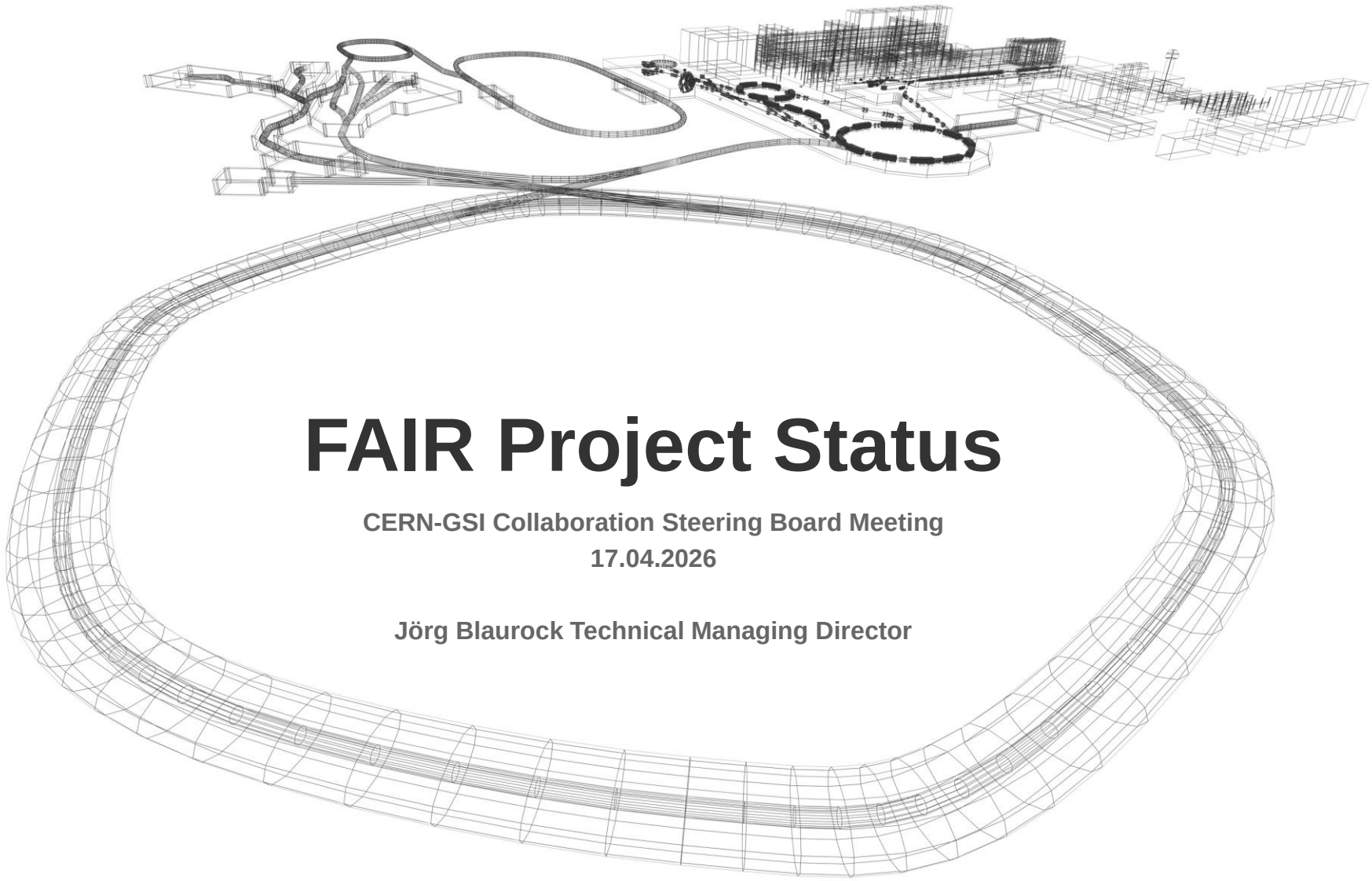
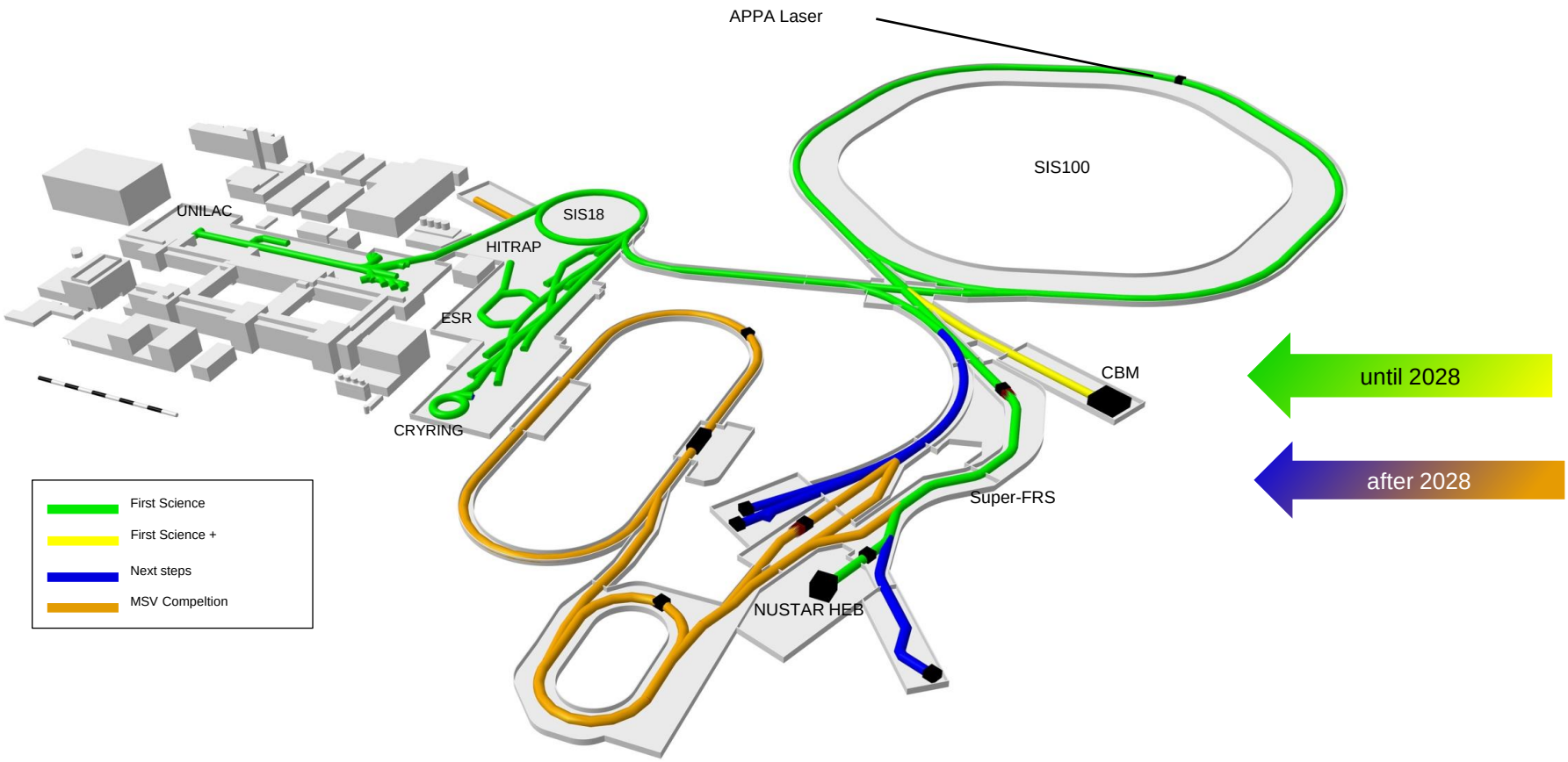


FAIR Project Status

CERN-GSI Collaboration Steering Board Meeting
17.04.2026

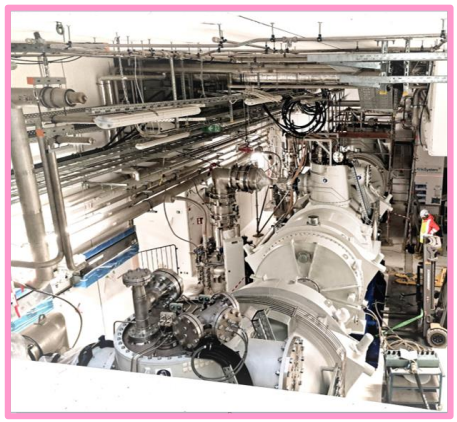
Jörg Blaurock Technical Managing Director

FAIR 2028 - current approved scope



FAIR Highlights – ACC

Super FRS



Pre-Target-Area

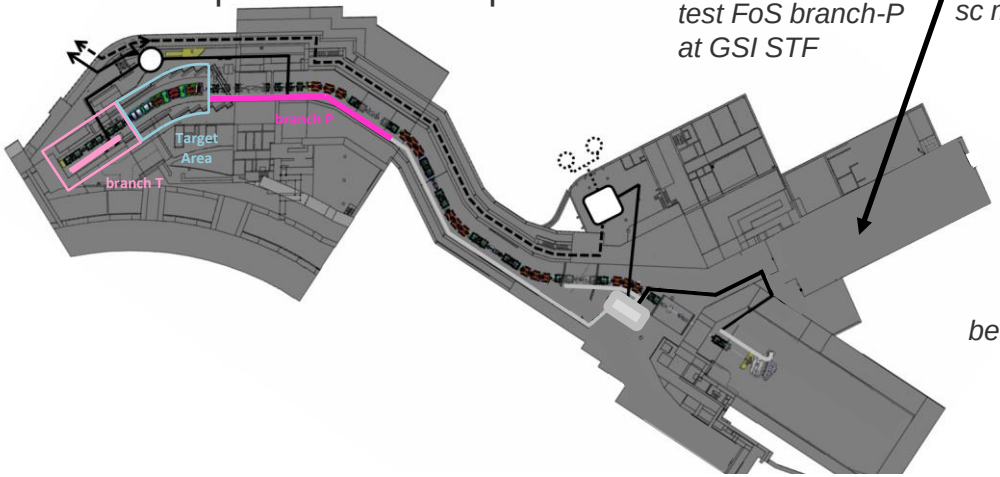
Installation completed for magnets and cryogenics, insulation vacuum tested

After Target Area

- all sc multiplets produced
- sc dipoles production ramping up
- branch-P delivered, FoS under test
- all D, Q power converters delivered
- all focal-plane chambers produced

test FoS branch-P at GSI STF

sc multiplets and nc dipoles at FAIR



beam catcher chambers at GSI's testing hall

Target Area

All components produced, mostly delivered.
Pre-assembly ongoing, installation starting

nc quadrupole-quadrupole

nc quadrupole-sextupole

target chamber transported to tunnel

nc dipole

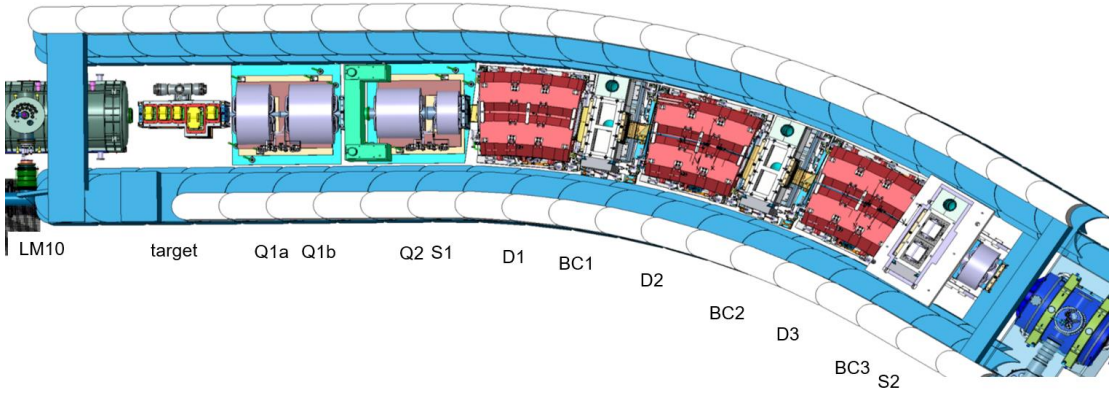
power converters

FAIR Highlights – ACC

Super FRS - Installation of Target Area

Target Area

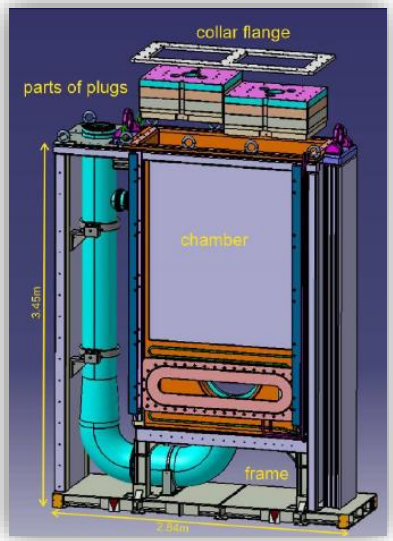
- **Installation** started in Dec. 2025, complete installation planned in 2026.
- **Critical: BC3** (Trident, IN)



target chamber
(Fantini, IT)

Sextupoles/Quadrupoles nc
(Buckley, NZ)

3 pc nc dipoles
(Sigmaphi, FR)



beam catchers
(Trident, IN)

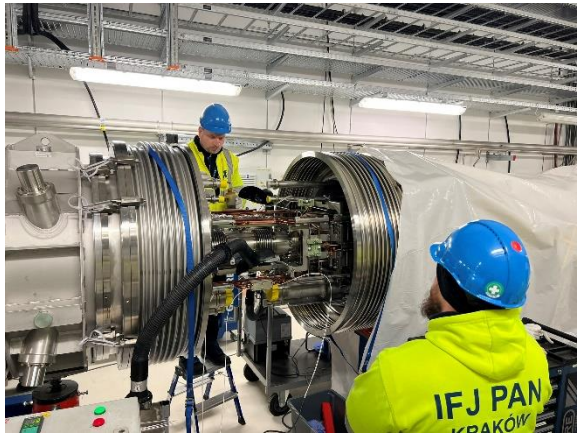
Installation Super-FRS

FAIR Highlights – ACC

First Science with SIS100

SIS100- cavities

Vacuum pump chambers



IFJ PAN brazes the busbars to the SIS100 module interconnections

Positioning of a Sextupole module in line 2

Installation of Racks for the SIS100 Main power supply at level U20

Accelerator Installation in SIS100-Tunnel

FAIR Project Progress – ACC

Commons and Installation

HEBT Magnets:

- FAT of first dipole 19_0 for HEBT at SigmaPhi
- Successful FAT of last series quadrupole 2 magnet

Cables:

- More then 11.000 cables have been laid (HEBT, SIS100 & SFRS)
- Electrical installation in G0704A and G0702 (connecting of cables) is in progress

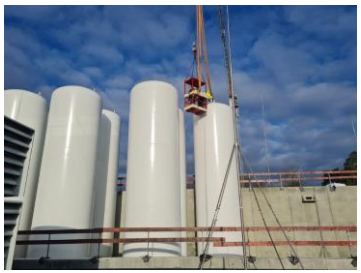
Cryogenics:

- First of Series testing of SIS100 and SFRS local cryogenic components at the STF
- Eight 100m^3 warm gas helium storage tanks installed, 10 more until May 2026, for CRYO2 and ES
- Commissioning of CRYO2 started in December 2025, ongoing until October 2026

First Dipole 19_0 for First Science is produced at Sigmaphi

Machine trays and cable end laying

First of series testing of Super FRS local cryogenic components at STF: first P-Branch feed box plus transfer line, end box and triple arc jumper.



100m3 warm gas helium storage tanks

FAIR Project Progress – Commissioning

Cryo2, FAIR Main Control Room (FCC) and HEBT

Commissioning activities are increasing across the FAIR campus

- **Cryo2** – commissioning is progressing well
  - The first helium liquefaction and a 100-hour endurance test of Cryo2 are scheduled for June 2026
  - Cryo2 commissioning is expected to be completed by October
- **FAIR Main Control Room** - commissioning finished
  - The FAIR control room is ready for operation
- **HEBT** - Commissioning (start in Q2/2026)
  - Installation of the first section (beam line from GSI towards FAIR) is almost finished
  - The start of T1S1 hardware commissioning is scheduled for June 2026

FAIR Cryogenic plant “Cryo2” and Distribution box 3

First Section of Early-Science HEBT (T1S1-I)

FAIR Project Progress – Commissioning

Super FRS and SIS100

Major commissioning milestones in 2026

- **Super FRS** – commissioning in preparation
  - Commissioning Gate Review planned for Q3/2026
  - Commissioning start scheduled for Q4/2026
  - First cooldown planned for first half of 2027

- **SIS100** – first commissioning activities
  - Commissioning of SIS100 main power supply is prepared to start by mid-2026
  - Main dipole power converters, main quadrupole power converters, Switchgear Systems, Transformers, mechanical Switches, ...
    ... to be finished by Q1/2027

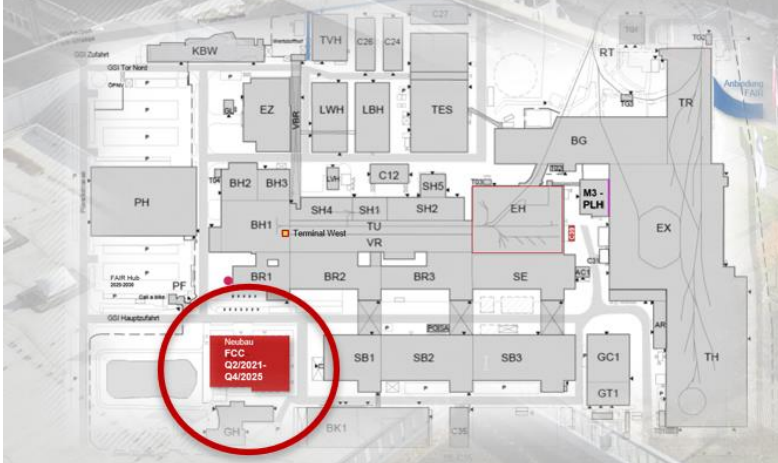
Super FRS – pre-target area

SIS100 Main Power Converters

FAIR Project Progress – Commissioning

FAIR Control Center (FCC)

- Main control room for GSI and FAIR accelerators
- 5 levels
- 206 offices
- Conference rooms
- Completion mid 2026



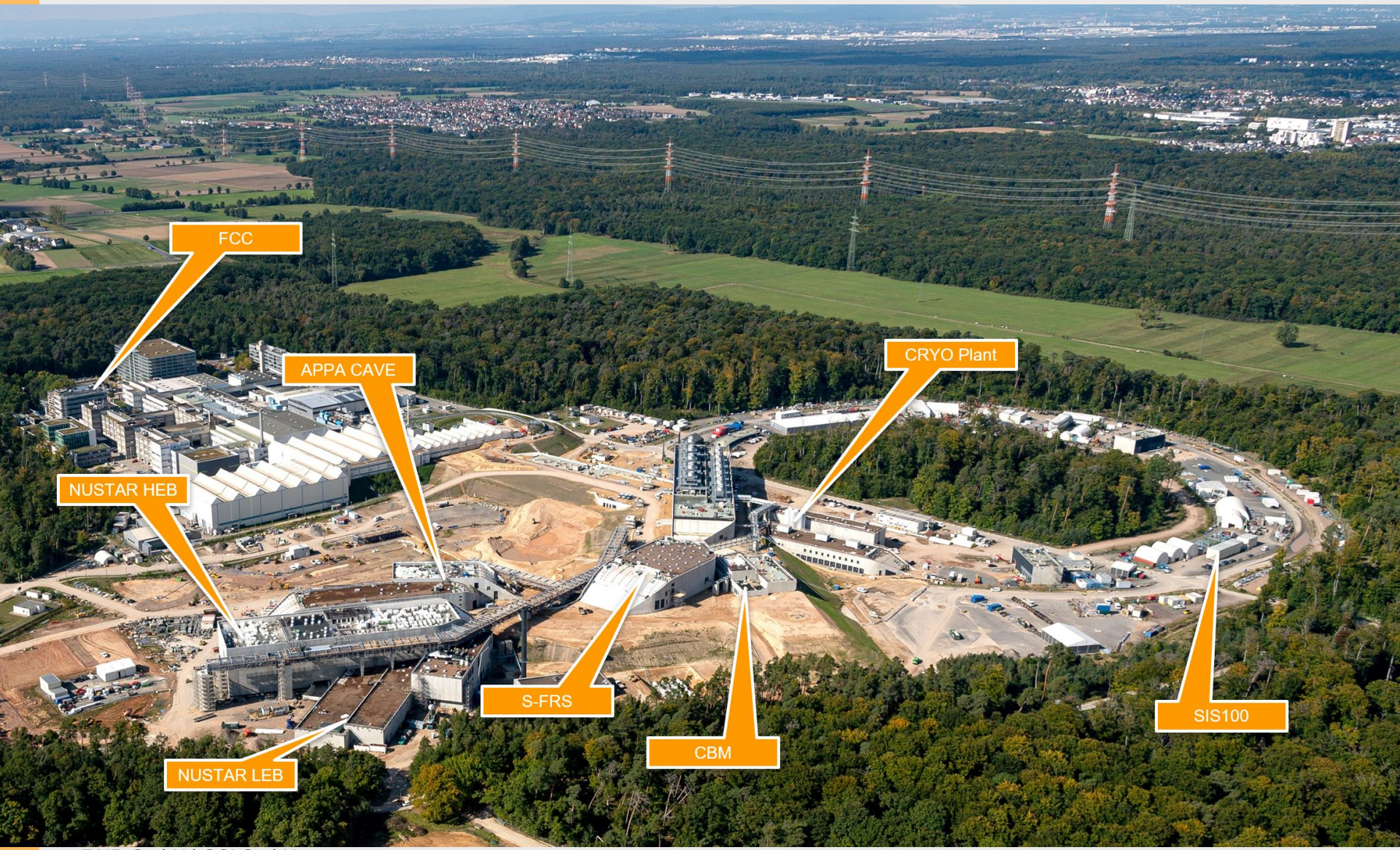
FAIR Project Progress – Commissioning

FAIR Control Centre - Main control Room

FAIR Project Progress – Commissioning

Testrun Cryring beam operation from the FAIR Control Center (FCC) - 05th March

FAIR Construction Site



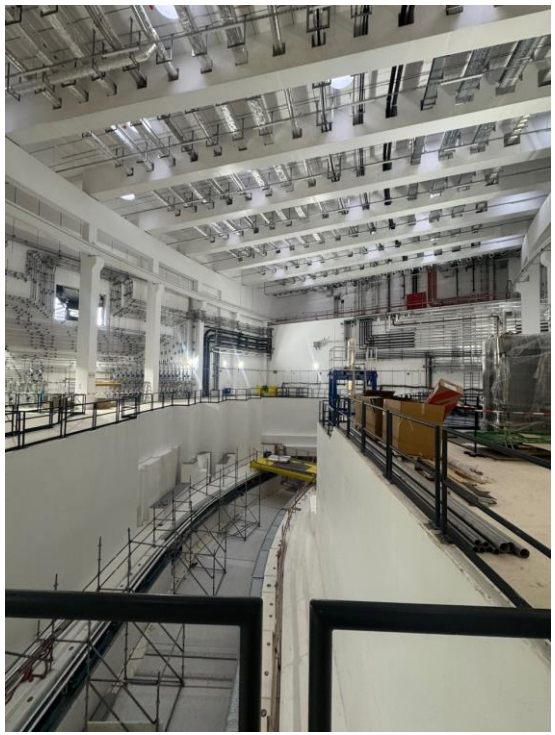
FAIR Project Progress – Civil Construction

- H0719A Main Supply Building North

- View of south area with all buildings completed and soil modelling progress

FAIR Project Progress – Civil Construction
- Central Transfer building

FAIR Project Progress – Civil Construction



- L0516A, target hall

- H0719A, water treatment

- H0719A, cooling water distribution

FAIR & GSI – Summary of next steps

- **GSI**
  - Start repair of UNILAC area and implementation of intermediate injector solutions

- **FAIR Project Execution in 2026**
  - Independent from the fire incident at GSI on 5th of February 2026:

    → **FAIR Project realization continues as per plan**
  - Substantial completion of TBI Installation and commissioning
  - Substantial completion of ES installation
  - Completion of Cryo Plant commissioning (Linde)
  - Start of hardware commissioning activities for HEBT


Thank you for your attention!