

The logo for MAXIV, featuring the letters M, A, X, I, and V in a stylized, white, sans-serif font. The letters are interconnected, with the 'A' and 'X' sharing a common vertical stroke. A thin, white, curved line arches over the letters, resembling a stylized 'e' or a swoosh.

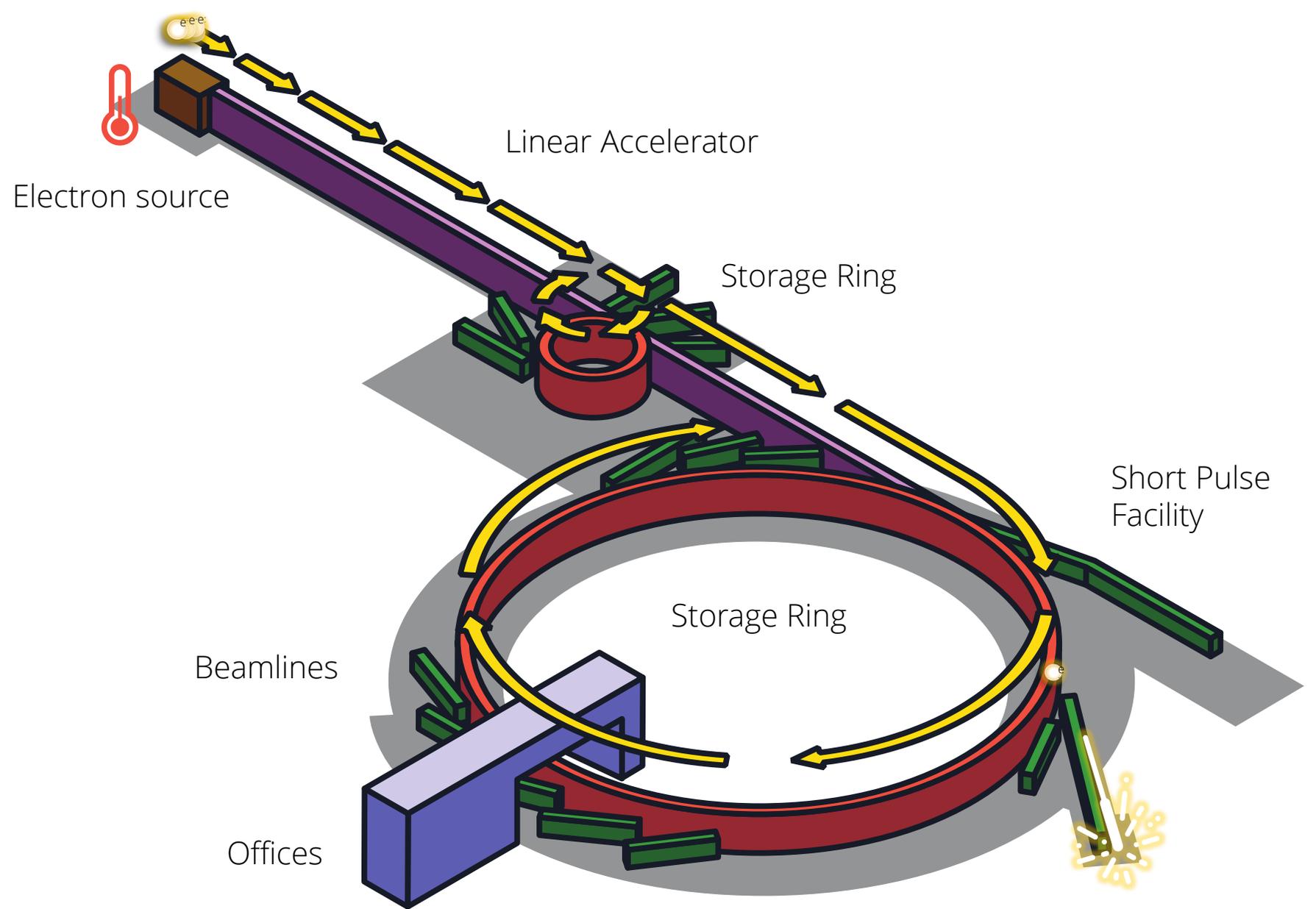
MAXIV

TomoWISE project

TomowISE project

- MAX IV – an overview
- Equipment needed at a beamline – suppliers TomowISE
 - Infrastructure
 - Insertion device - ID
 - Frontend - FE
 - Optics
 - Endstation
- MAX IV portfolio
- TomowISE project
 - Looking back
 - Current status and next steps
- Challenges in the project

How the MAX IV facility works

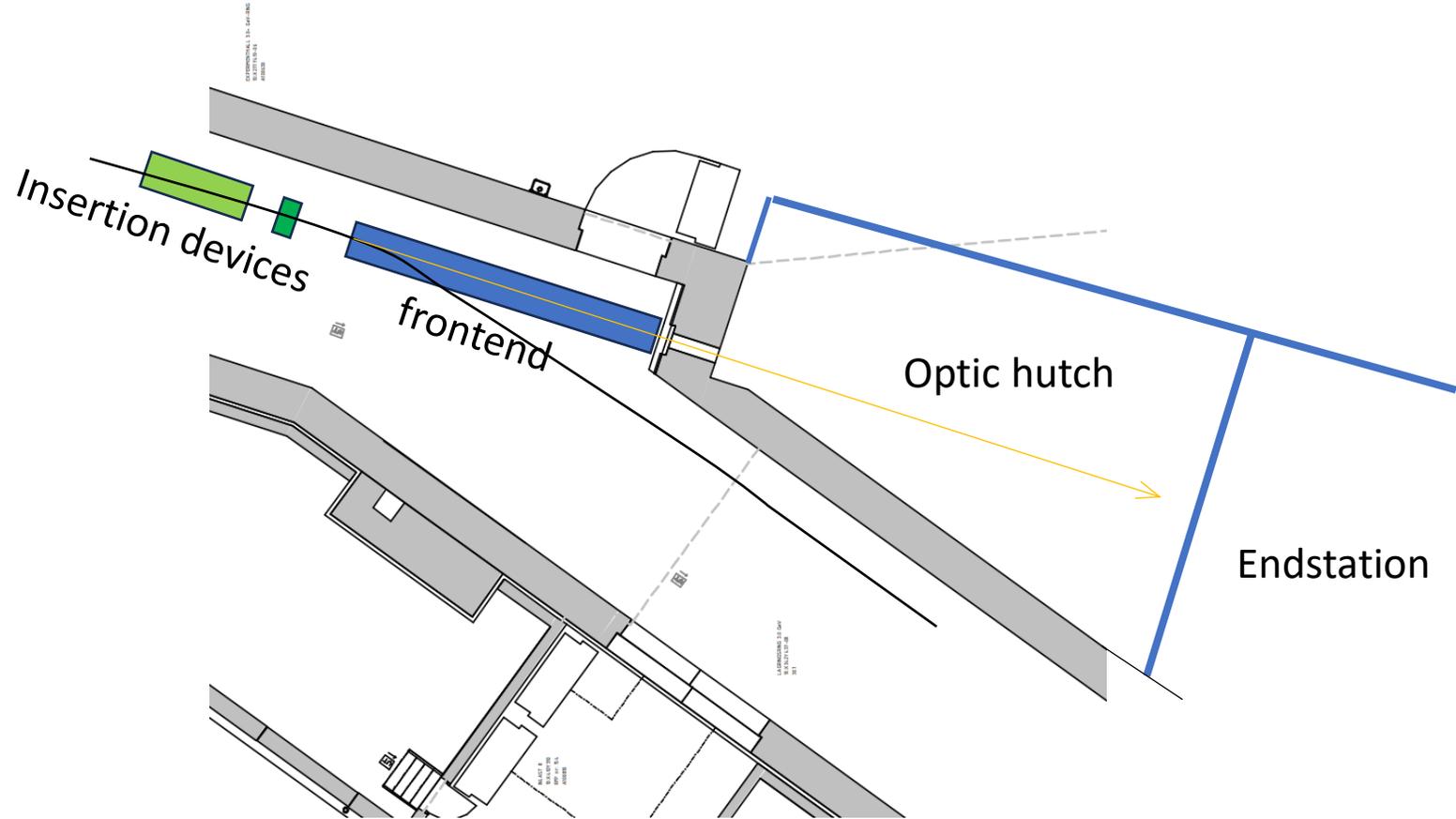
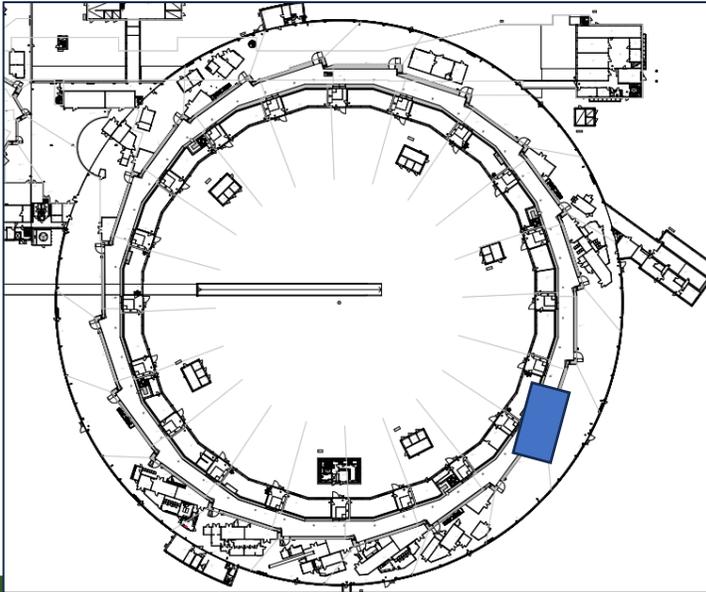


Equipment needed at a beamline

TomoWISE – Location of equipment

Insertion devices and frontend equipment inside the ring

Optic hutch end station outside the ring



Infrastructure

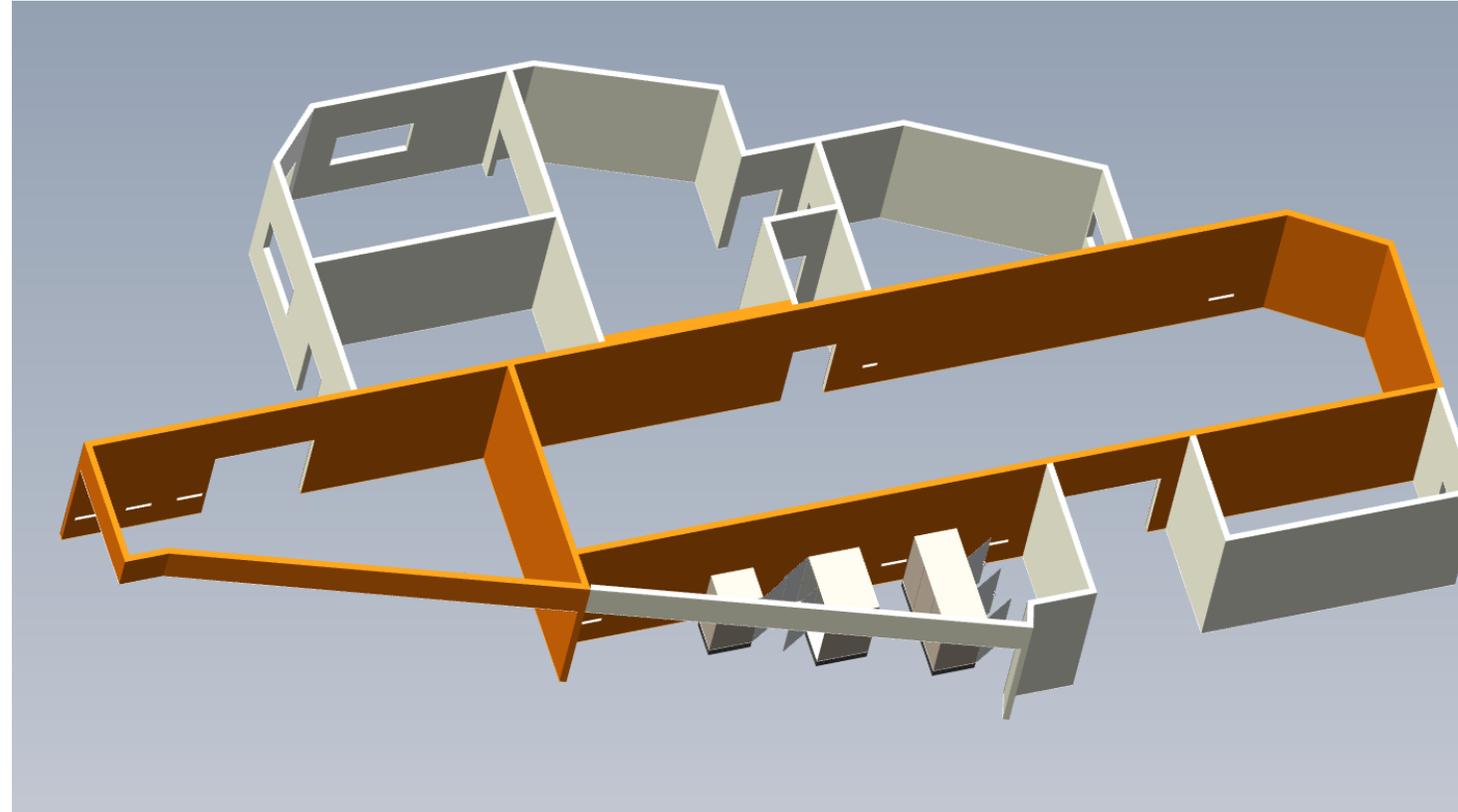
In connection to the lead hutches and end stations build control room, sample preparation room, and meeting room.

What is special?

Temperature stability

Need for compressed air, nitrogen/water cooling of optics components

Ventilation tailored for the equipment and gases used



-  Lead hutches
-  Control room/Sample prep room /Data analysis room

Infrastructure

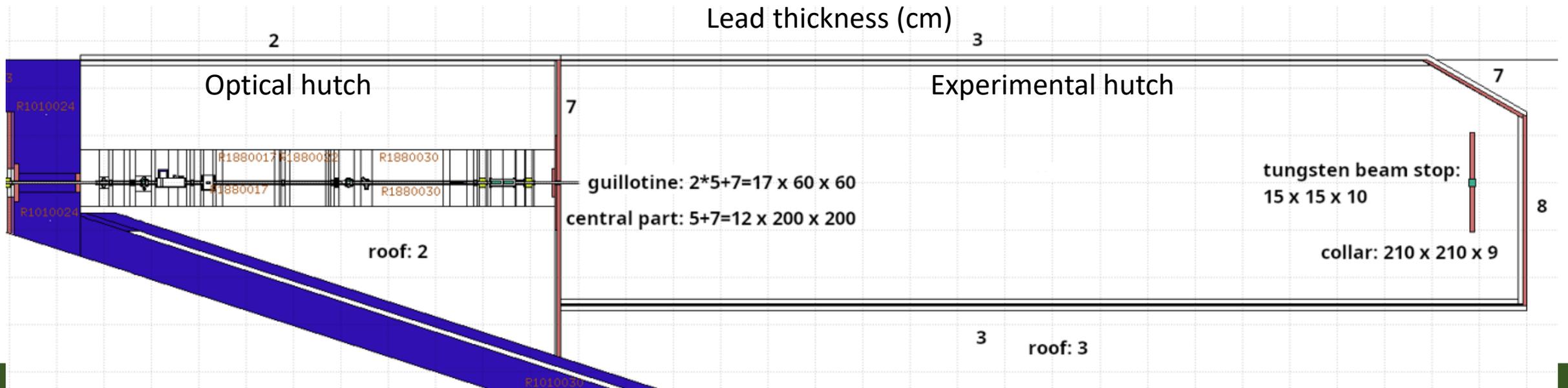
- Example of routing for cables, cooling water and ventilation on the infrastructure



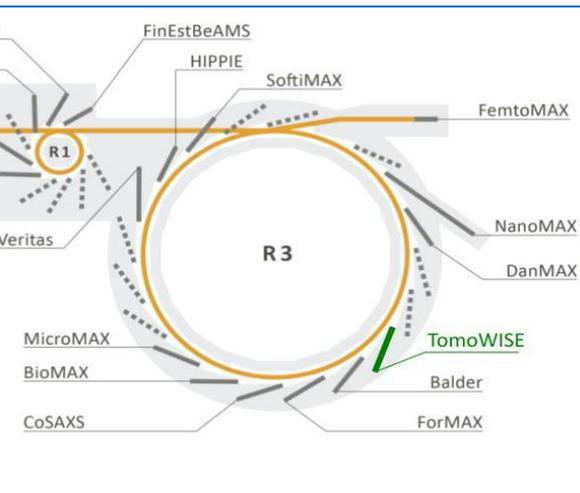
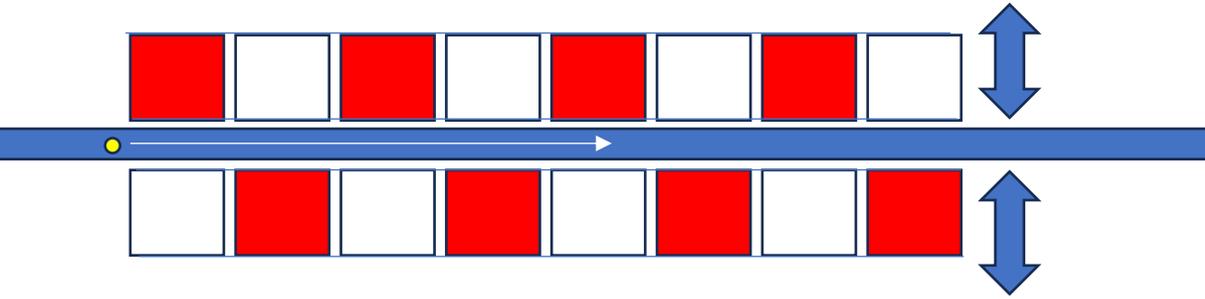
Infrastructure Lead hutches

Why do we need lead hutch?

Protects against harmful radiation
Lead effectively blocks X-rays
Ensures a safe work environment



Insertion device



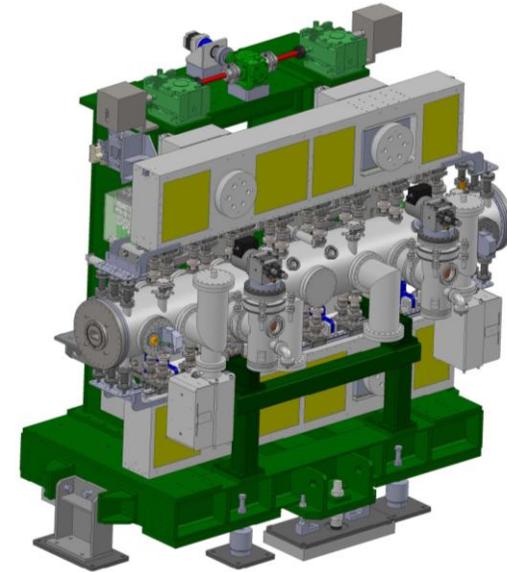
MicroMAX



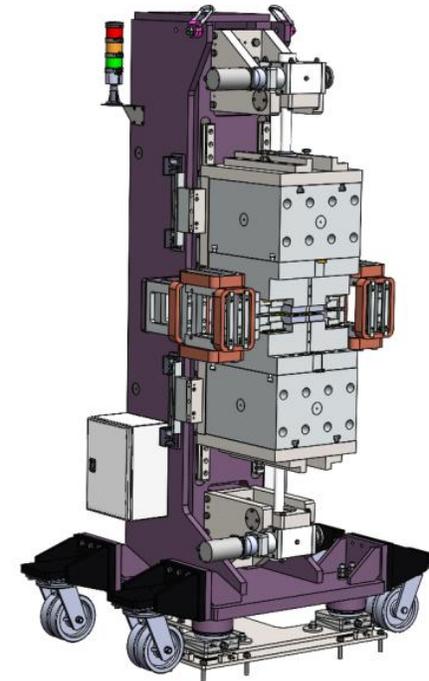
Tomowise IDs Project

- Two IDs for Tomowise beamline:
 1. *Cryogenic Permanent Magnet Undulator (CPMU)*
 2. *Out-of-vacuum 3 Tesla 3-pole Wiggler*

CPMU

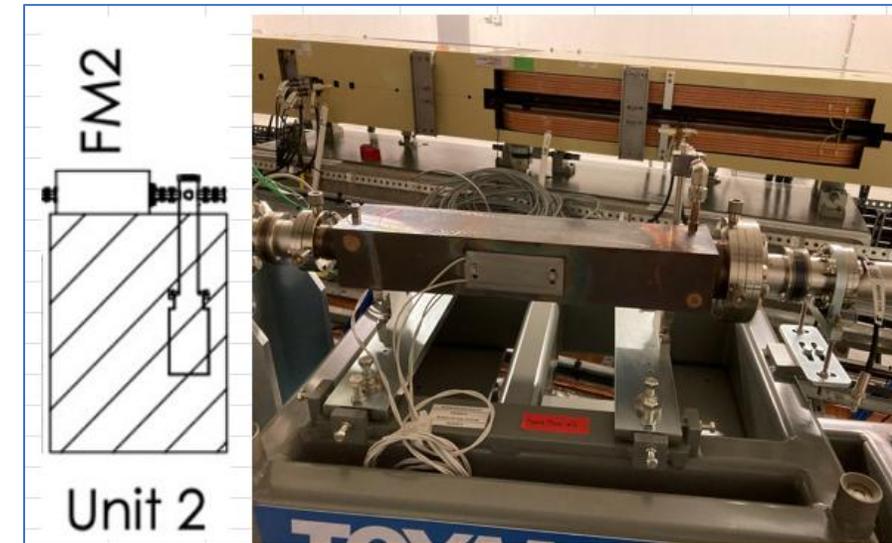
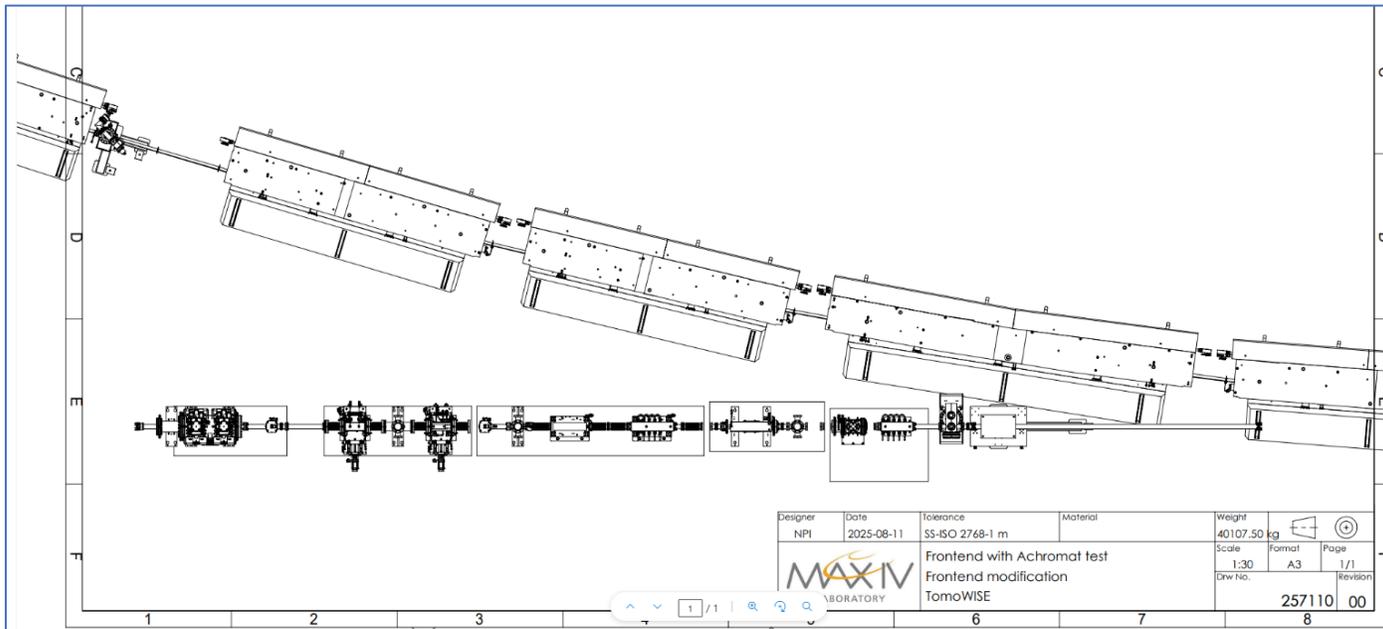


3PW

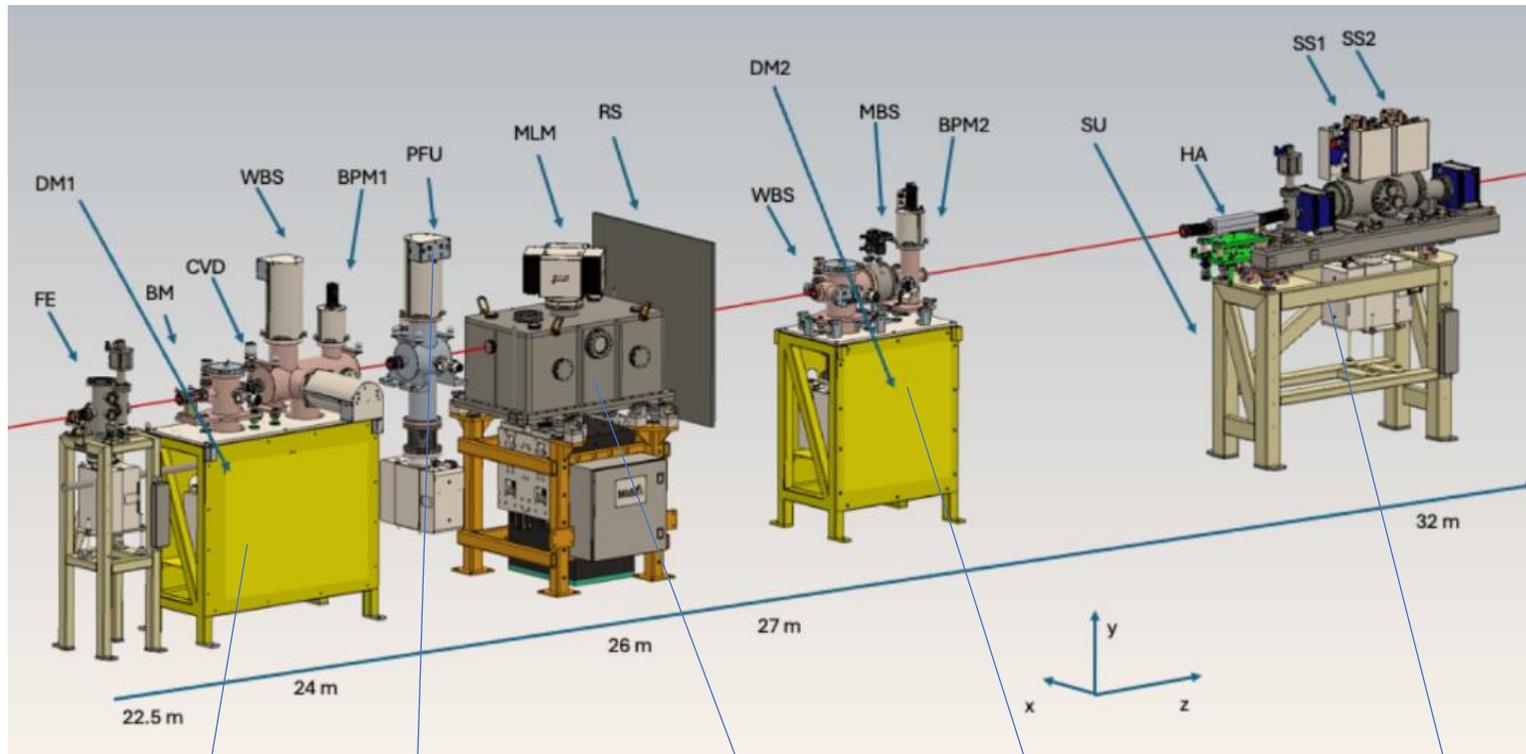


Frontend

Enable safe extraction of synchrotron light from the storage ring. Protect people and equipment from radiation and heat. Maintain vacuum integrity and machine reliability.



Optics hutch



Diagnostic Module

Filters

Monochromator

Diagnostic Module

Safety unit

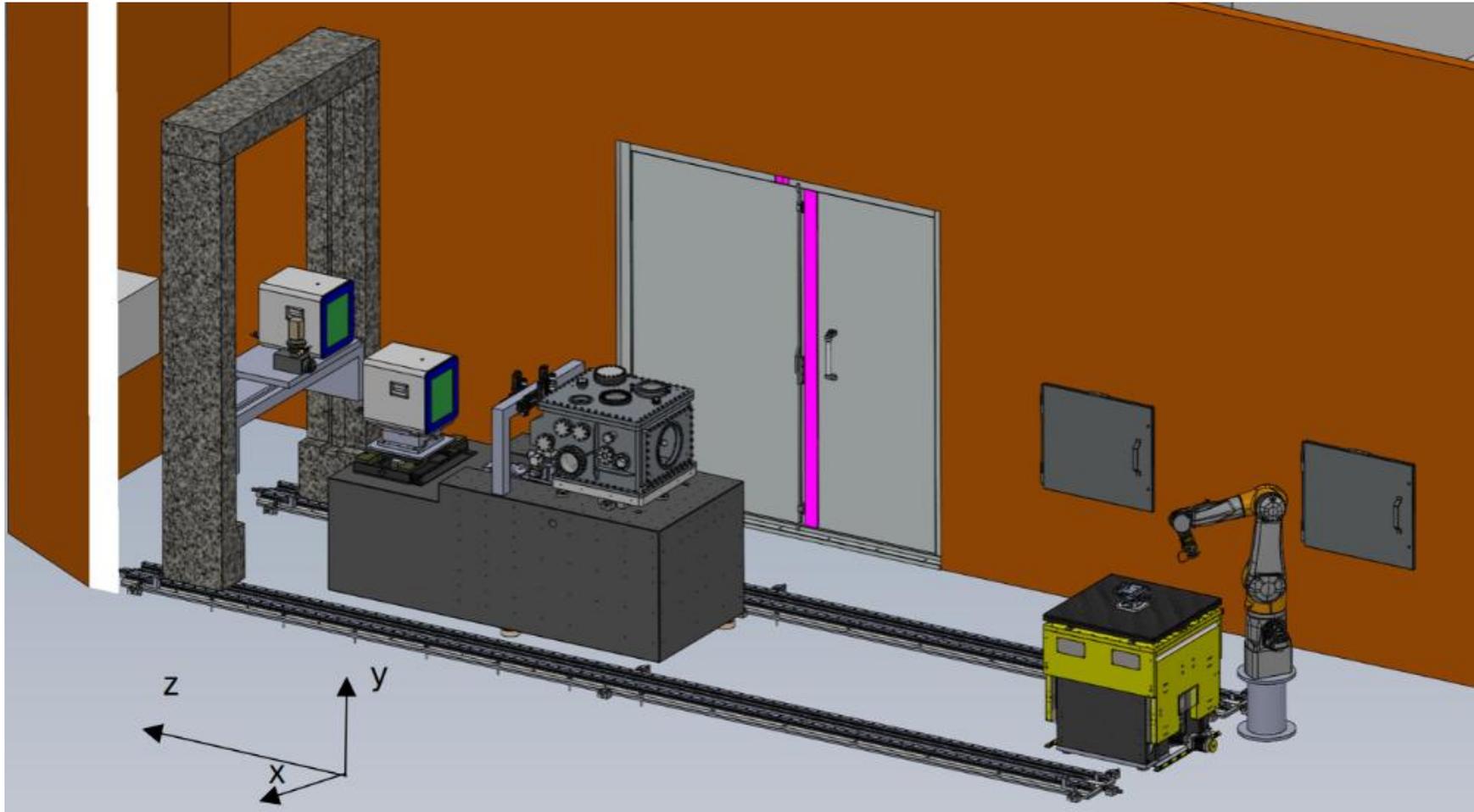
Filters –Reduce heat load, shape the spectrum

Monochromator - A monochromator is an optical device that isolates and transmits a narrow band of wavelengths

Slits – Define beam size and shape; suppress stray and scattered radiation

Diagnostic tools-verify beam

Endstation



Sample

Detector

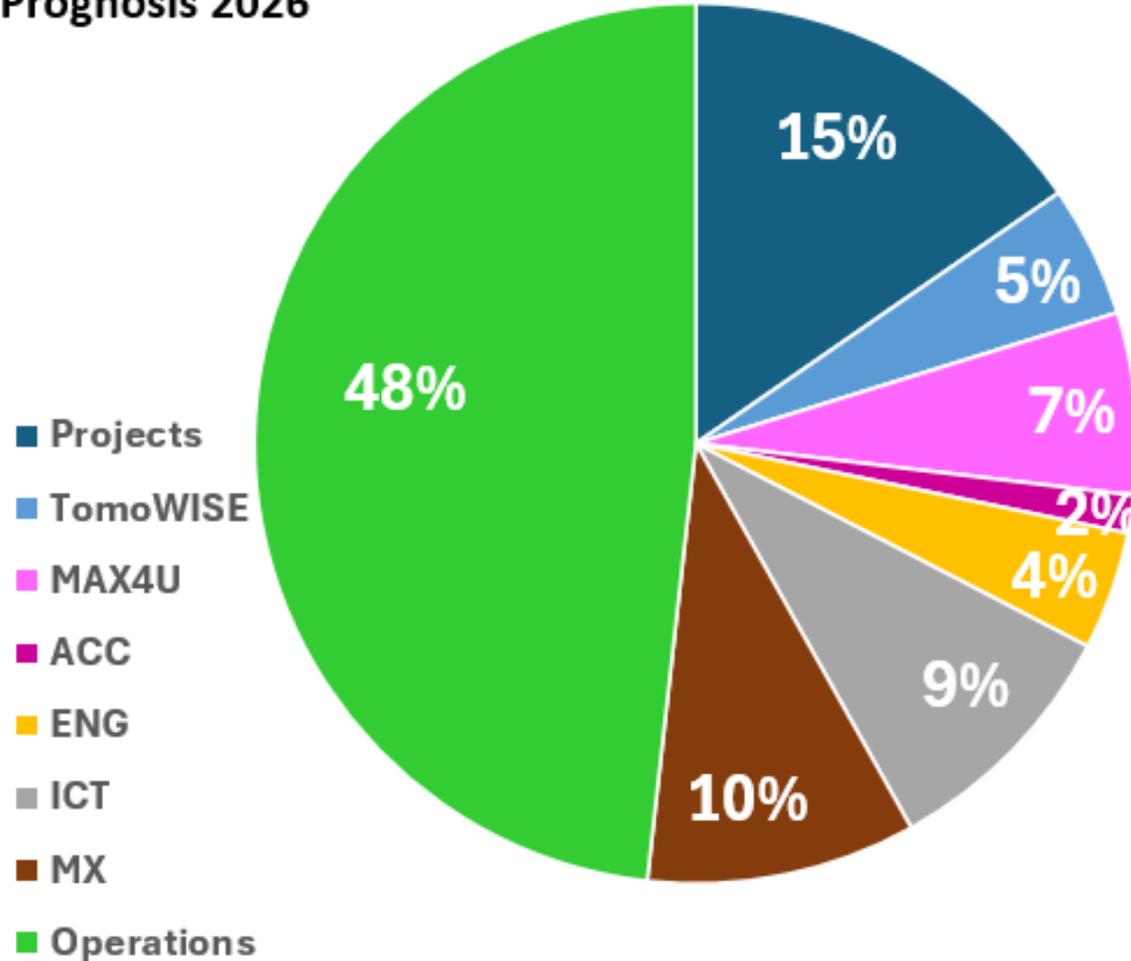
Gantry- carry and moves the detector

Manipulator to move sample

MAX IV portfolio

Technical resources at MAX IV

Prognosis 2026



- Technical division has approximately 100 employees
- Ca 20 projects are ongoing outside of programs

TomowISE project

TomowISE Background

- CDRs completed 2023
- TDR TomowISE completed March 2025
- June 2025 WISE took the decision to fund TomowISE
- The project kicked off June 2025
- Tomography beamline – fills a gap at MAXIV
- Dual source – undulator and wiggler

Project Budget

Work package	Estimated cost (kSEK)
WP 0 – Beamline and PM	18 863
WP 1 - Infrastructure	68 164
WP 2 - Insertion device	48 560
WP 3 - Frontend	7 885
WP 4 - Optics	23 155
WP 5 - Endstation	38 728
TomowISE Grand total	205 353

TomowISE

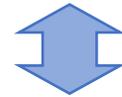
Steering group
Joachim Schnadt, Sci Dir
Mirjam Lindberg, Techn Dir



Project management team
Project manager (Fredrik) & Science lead (Dina)



Scientific advisory group



WP0 – PM
WP-lead: Fredrik

WP0.1 – Comms
Jenny S

WP1 – Infrastructure
WP-lead: Fredrik

WP1.1 – Rad Safety
Anders R

WP1.2 – Lead hutches
Andreas

WP1.3 – ML 4
Matias K/Johan T

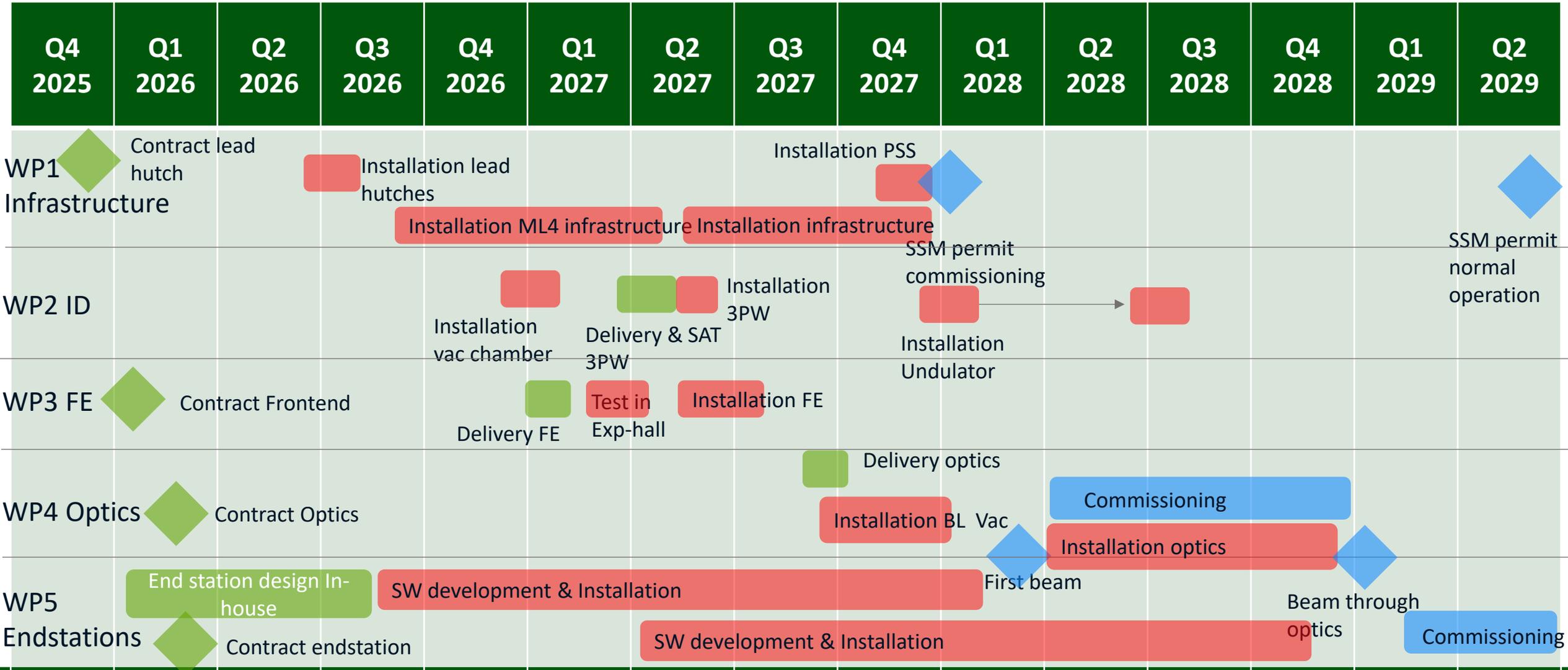
WP2 – ID
WP-lead: Hamed

WP3 – Front End
WP-lead: Petr

WP4 – Optics
WP-lead: Dina

WP5 – Endstation
WP-lead: Dina

High-level timeline - TomoWISE



Current state

- Radiation safety simulations completed
- Procurement of lead hatches, insertion devices, and frontend completed
- Design of lead hatches, frontend, insertion devices ongoing
- Requirements on the rooms (RFP) have been prepared for ML4
- Planning upcoming installations with teams involved

What happens in 2026

- Detailed design work in all work packages
 - Design reviews for frontend and lead hutches
 - AUT preparation of electrical documentation
 - PSS preparations
- Preparations for installations during shutdowns
 - Cooling unit vacuum chamber (spring 2026)
 - Electrical installations (autumn 2026)
- Lead hutches installation – summer 2026
- Water piping preparations tunnel - summer 2026
- Construction of infrastructure starts – autumn 2026



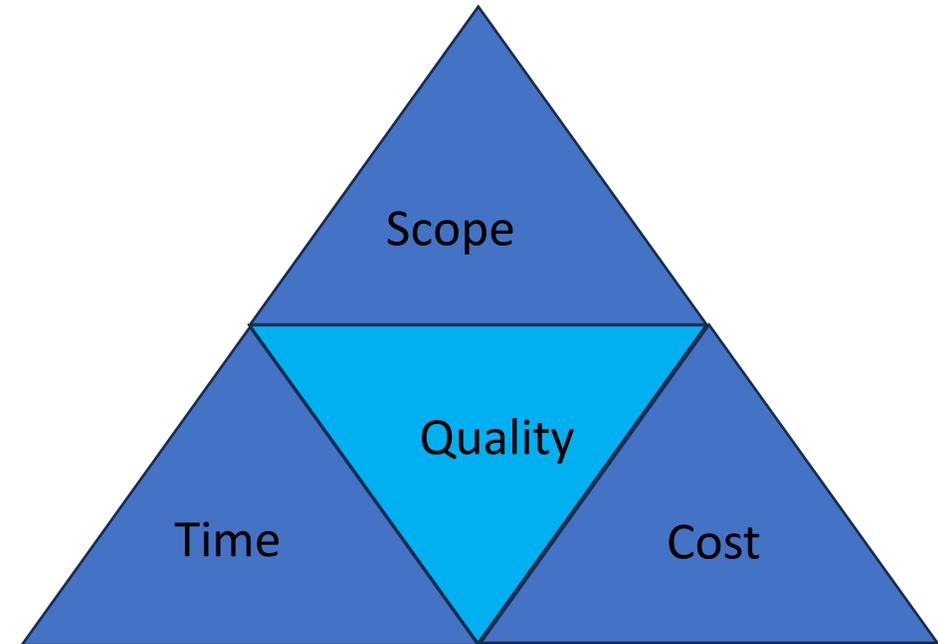
Challenges in the project

Challenges in the project

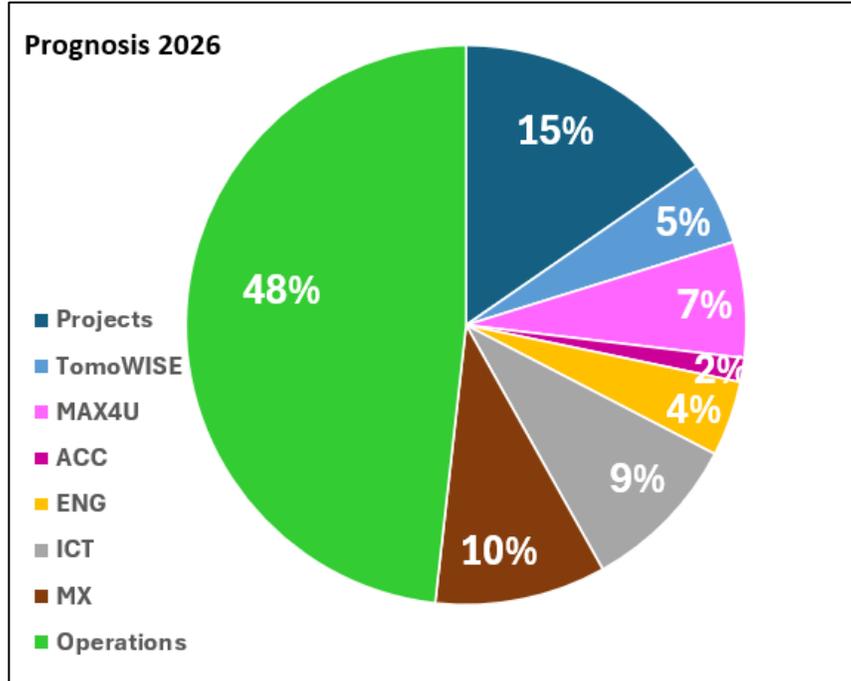
Scope

Cost

Time



Challenges in the project - Time



	Start date	R3														
		M	M	Tu	Tu	W	W	Th	Th	F	F	Sa	Sa	Su	Su	M
1	29/12/25	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
2	05/01/26	H	S	S	S	S	S	S	S	S	S	S	S	S	S	S
3	12/01/26	H	S	S	S	S	S	S	S	S	S	S	S	S	S	S
4	19/01/26	H	S	S	B	B	B	B	B	B	B	B	B	B	B	B
5	26/01/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
6	02/02/26	M	S	S	B	B	B	B	B	B	B	B	B	B	B	B
7	09/02/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
8	16/02/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
9	23/02/26	H	S	S	B	B	B	B	B	B	B	B	B	B	B	B
10	02/03/26	M	S	S	U	U	U	U	U	U	U	U	U	U	U	U
11	09/03/26	H	S	S	S	S	S	S	S	S	S	S	S	S	S	S
12	16/03/26	H	S	S	B	B	B	B	B	B	B	B	B	B	B	B
13	23/03/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
14	30/03/26	H	S	S	U	U	U	U	U	U	H	H	H	H	H	H
15	06/04/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
16	13/04/26	M	S	S	U	U	U	U	U	U	U	U	U	U	U	U
17	20/04/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
18	27/04/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
19	04/05/26	M	S	S	S	S	S	S	S	S	S	S	S	S	S	S
20	11/05/26	H	S	S	B	B	B	B	B	B	B	B	B	B	B	B
21	18/05/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
22	25/05/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
23	01/06/26	M	S	S	B	B	B	B	B	B	B	B	B	B	B	B
24	08/06/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
25	15/06/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
26	22/06/26	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
27	29/06/26	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
28	06/07/26	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
29	13/07/26	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
30	20/07/26	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
31	27/07/26	M	C	C	C	C	C	C	C	C	C	C	C	C	C	C
32	03/08/26	M	S	S	S	S	S	S	S	S	S	S	S	S	S	S
33	10/08/26	H	S	S	S	S	S	S	S	S	S	S	S	S	S	S
34	17/08/26	H	S	S	B	B	B	B	B	B	B	B	B	B	B	B
35	24/08/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
36	31/08/26	H	S	S	B	B	B	B	B	B	B	B	B	B	B	B
37	07/09/26	M	S	S	U	U	U	U	U	U	U	U	U	U	U	U
38	14/09/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
39	21/09/26	H	S	S	S	S	S	S	S	S	S	S	S	S	S	S
40	28/09/26	H	S	S	B	B	B	B	B	B	B	B	B	B	B	B
41	05/10/26	M	S	S	U	U	U	U	U	U	U	U	U	U	U	U
42	12/10/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
43	19/10/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
44	26/10/26	H	S	S	S	S	S	S	S	S	S	S	S	S	S	S
45	02/11/26	M	S	S	B	B	B	B	B	B	B	B	B	B	B	B
46	09/11/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
47	16/11/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
48	23/11/26	H	S	S	B	B	B	B	B	B	B	B	B	B	B	B
49	30/11/26	H	S	S	U	U	U	U	U	U	U	U	U	U	U	U
50	07/12/26	M	S	S	U	U	U	U	U	U	U	U	U	U	U	U
51	14/12/26	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
52	21/12/26	H	H	H	H	H	H	H	H	D	D	D	D	D	D	C
53	28/12/26	C	C	C	C	C	C	C	C	D	D	D	D	D	C	C

Thank you

Questions?

visit@maxiv.lu.se