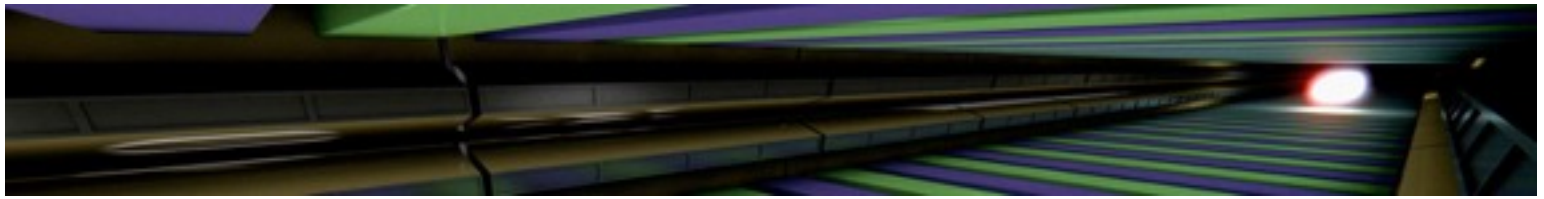


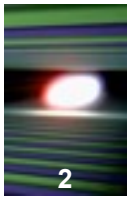
Introduction

Tobias Haas

Technical Meeting

21 Oct 2016

Topics



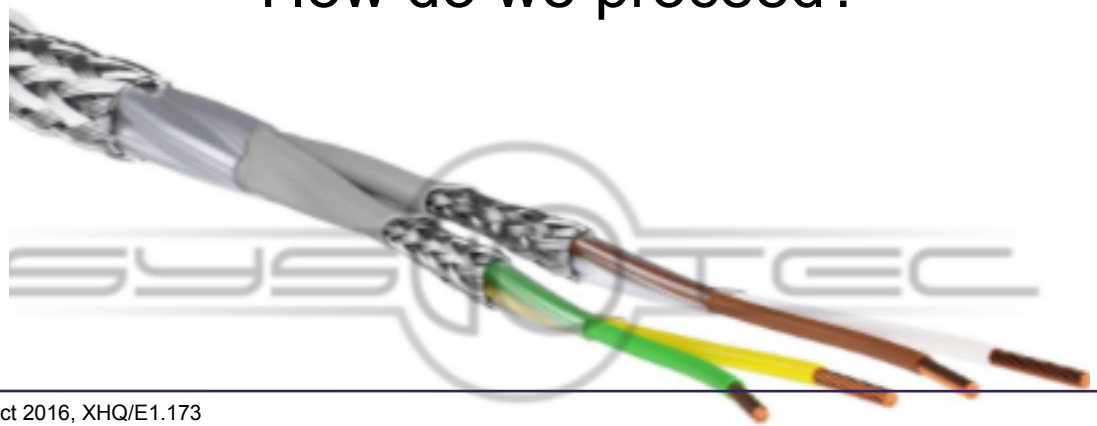
- Personel at WTM
- Encoder Cable for Phase II
- Damage to the accelerator
- Status

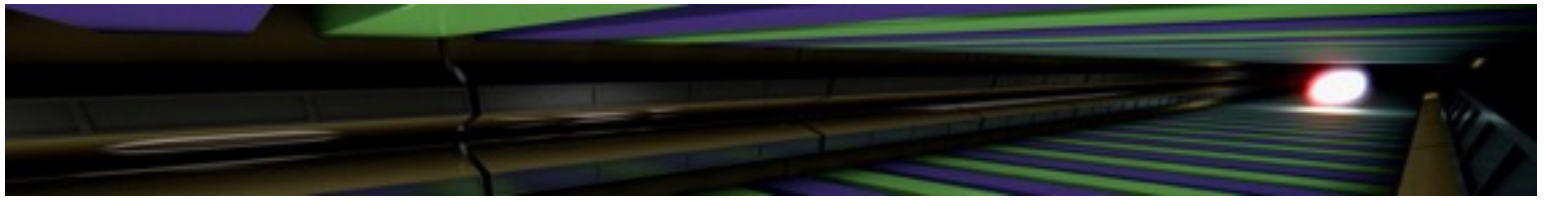
Personel at WTM

- J. Stammerjohann, our civil engineer at WTM shall enter maternity leave on 25 Nov
- Her tasks at XFEL will be taken over as follows:
  - Civil Construction Supervision: Klaus Löptien
  - Planning and coordiation: Per Dost
- From now on both should be put in cc of all correspondence with Jana
- K. Löptien effectively takes over supervision starting next week.
- I would like to express my special appreciation to J. Stammerjohann who has and is still doing a superb job!!!

Encoder Cable (Phase II Cabling)

- 22 km of encoder cables ordered and already delivered are wrong
  - Instead of double shielding they only have a single shield
- A meeting has been scheduled today at 11:
  - EET, AE, Instruments, S. Molodtsov, PSPO
  - How do we proceed?



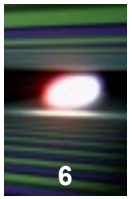


Damage of Accelerator Infrastructure during Pressure Test

Winni Decking

DESY

Accelerator Consortium Coordination



During the pressure test of a Helium exhaust line severe damage to accelerator infrastructure happened late night on October 11, 2016.

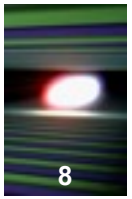
No people were injured since the tunnel was closed during the test.

Investigations are still ongoing but a first rough estimate of the needed repair time is about three months

DN200 He Exhaust Line

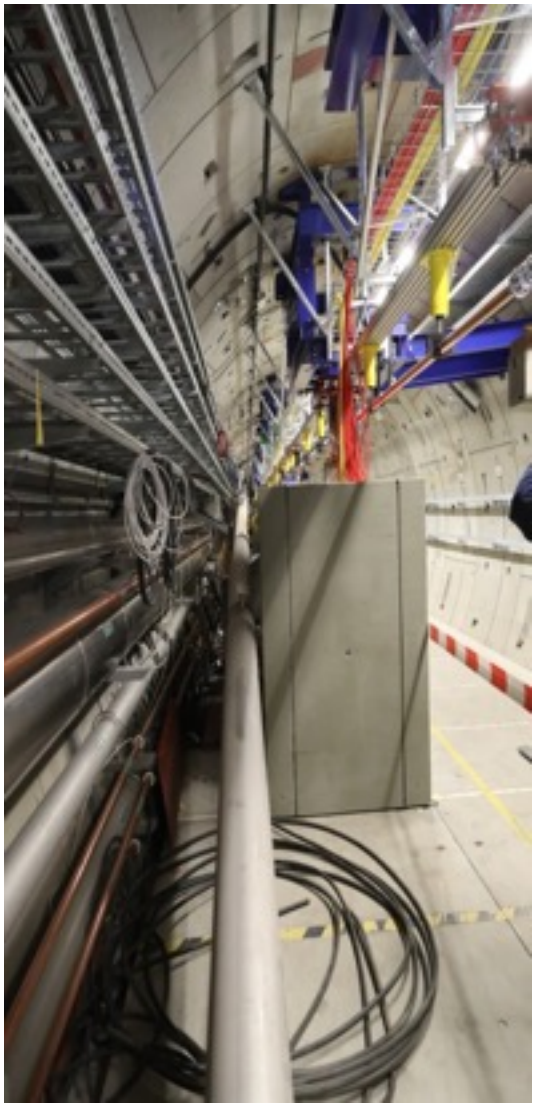
- DN200 exhaust line all along the linac to collect He in case of abnormal operation conditions in the process lines of the accelerator modules. Safety valves with short hoses connect the cryogenic string connection boxes to the exhaust line.
- Exhaust line was designed, constructed and installed by an external company. Installation finished in 2014 with an acceptance test including full pressure check without any apparent problems.
- After completion of connections to all cryogenic boxes a final pressure test was needed to prepare for the upcoming cool-down of the accelerator.

Incident during pressure test

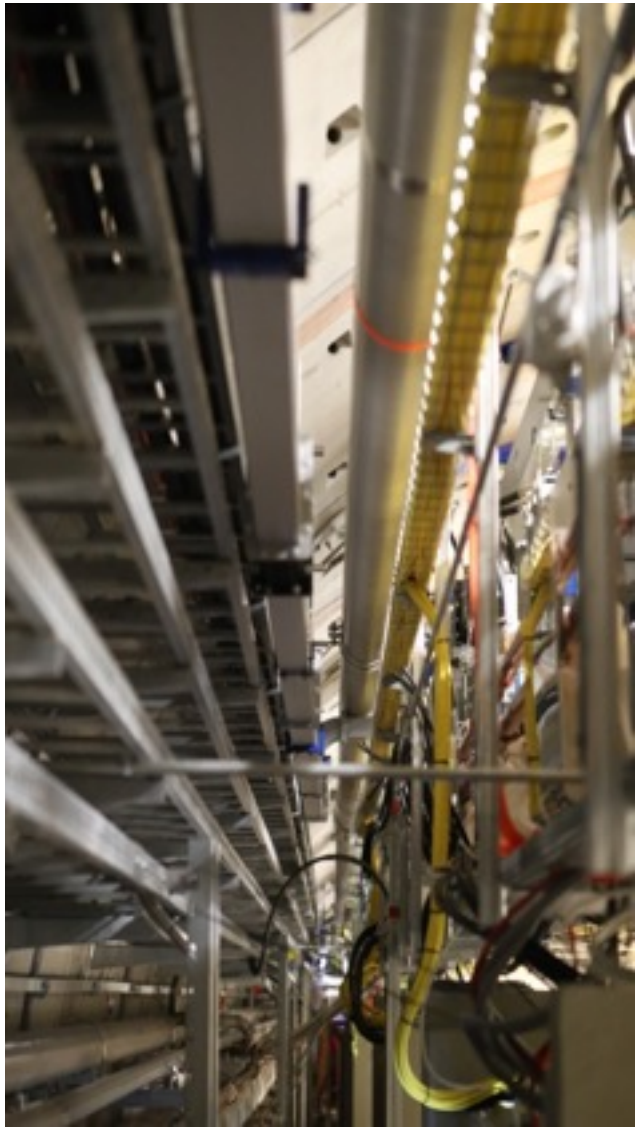


- Both ends of the line have fix points to take the forces in longitudinal direction. The upstream fix point broke, and in consequence the pipe end moved by roughly 1.5 m towards Schenefeld.
- The sliding fixtures along cryostrings CS8 and CS9 also broke and the line fell down.

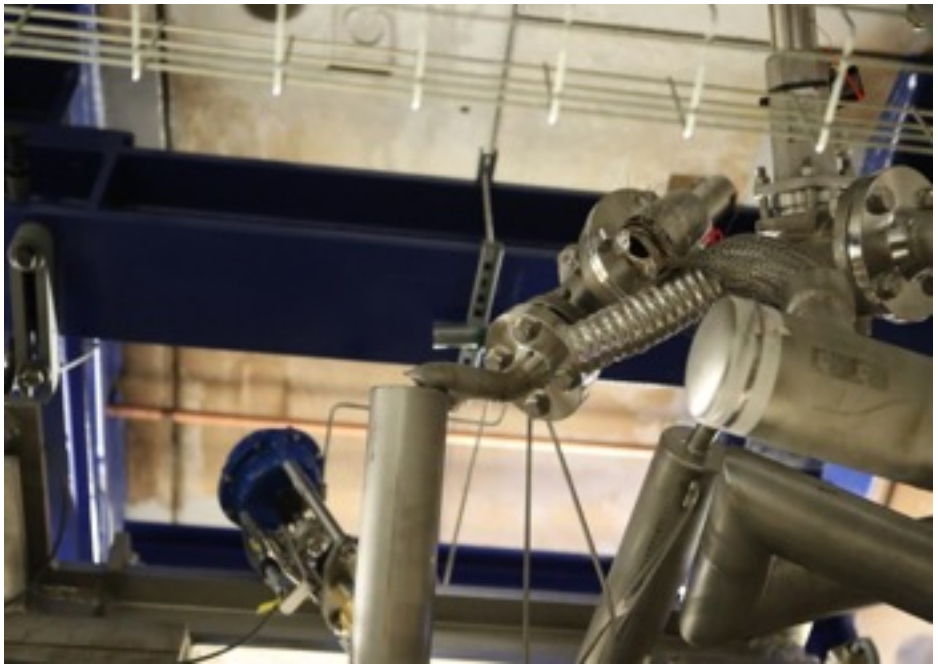
- Downstream of CS9, along the replacement the line fell down to the floor, without major damage of other components.



- Along CS9 and CS8 the line came to a halt on some of the wave guide sections which are 0.5 m below the original position of the pipe.

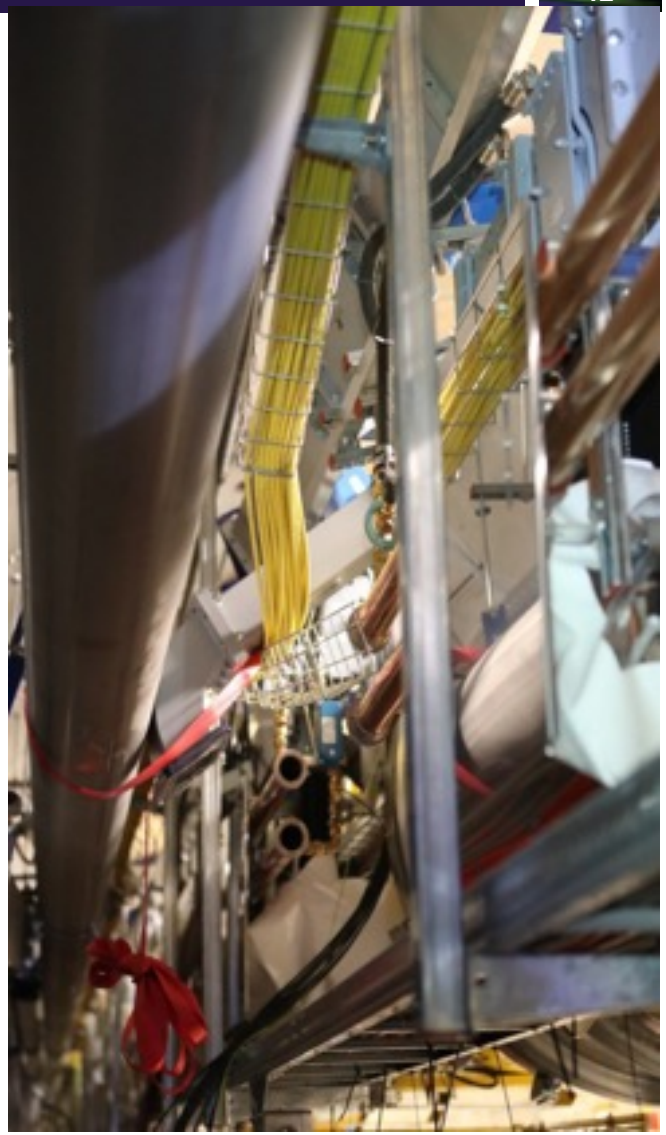


- At the cryo end box and also at the string connection box connecting CS8 to CS9 all connections to the DN200 pipe broke.

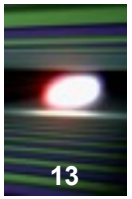


Potential damage to accelerator

- The damage analysis has concentrated on the RF power input coupler. Any mechanical damage can cause vacuum failures, i.e. a venting of one or more of three systems vacuum systems: coupler vacuum; isolation vacuum; and beam line vacuum. Immediately after the accident all pressure readings were carefully checked. Together with a first optical inspection we can state that accelerator module damage is quite unlikely.

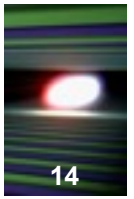


Present activities



- At present the exhaust line is secured in its current position. Together with the piping company all still existing forces in tunnel direction have to be compensated by appropriate fixtures.
- Access for others to the XTL is not possible yet.

Outlook

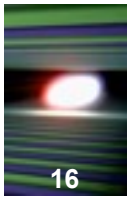


- The detailed repair schedule will only become available after finishing the damage analysis.
- The repair work will be started immediately.
- Overall coordination of the repair work is done by Dirk Noelle together with TC
- Since most of the required experts are not involved in the finishing of the downstream accelerator and photon beam line sections, no delay is expected in the scheduled work in the north and south branch of the facility with its undulator sections.
- Updates and the status of the tunnel access will be posted in the XFEL Baulog (http://ttfinfo.desy.de/XFELBauelog/index.jsp)

Recent Developments

- The damaged DN200 line was secured completely
- In the damaged area investigations continue
- Several critical systems were found to be undamaged:
  - Slit antenna, high-pressure extinguishing system, gas
- XTL will probably re-open today at 7:30
- The area between 1100 – 1500 m remains closed but is considered part of the escape route
- Hence passage of material and people through this section is *NOT* allowed

Status SASE1



- Infrastructure
  - Mostly running and being tuned
    - ➔ Encouraging report by Laser group on AC
  - Quality problems with the MKK air
    - ➔ Still waiting for lab results from Dräger
- Phase I Cables
  - Work is done in the FXE rack hutch
  - Work still ongoing in the SPB rack hutch and in all downstairs areas
  - Subcontractor for coax: Company OFD starts today

Status SASE1/Phase II Cabling

- Confectioning started this week but was stopped again due to the problem with encoder cabling.
  - We informed Actemium that we shall have a decision within 1 week
- H. Martinsteg and J. Reifschläger visit the company where confectioning is done in Bremen next week

Status SASE1

- A bump in the floor of the FXE hutch gives trouble for air pad movement. Floor is out of specs.
  - A solution is being prepared with TS (Emmerich)
- Installation of rack cooling units delayed
  - not critical at the moment
- Installation of Frames for Beckhoff electronics started in the FXE rack hutch

SASE1 Top Open Issues

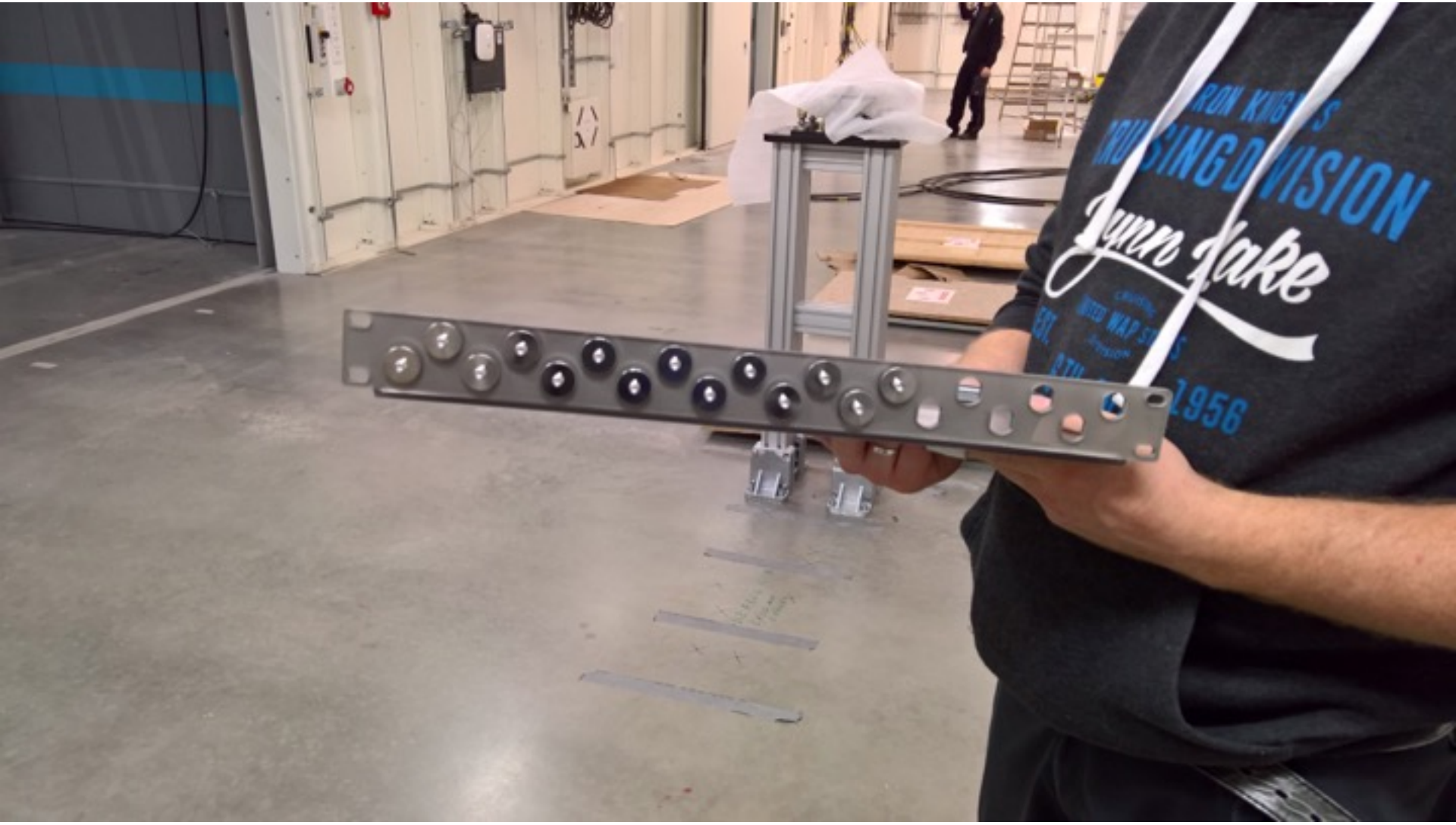
- XHEXP1 Sewage pump
  - Being pursued by BAU and TS with high priority but solution will take some time
- MKK compressed air
  - Waiting for lab results
  - MB asked for an independent investigation

SASE1: Quiet and Clean

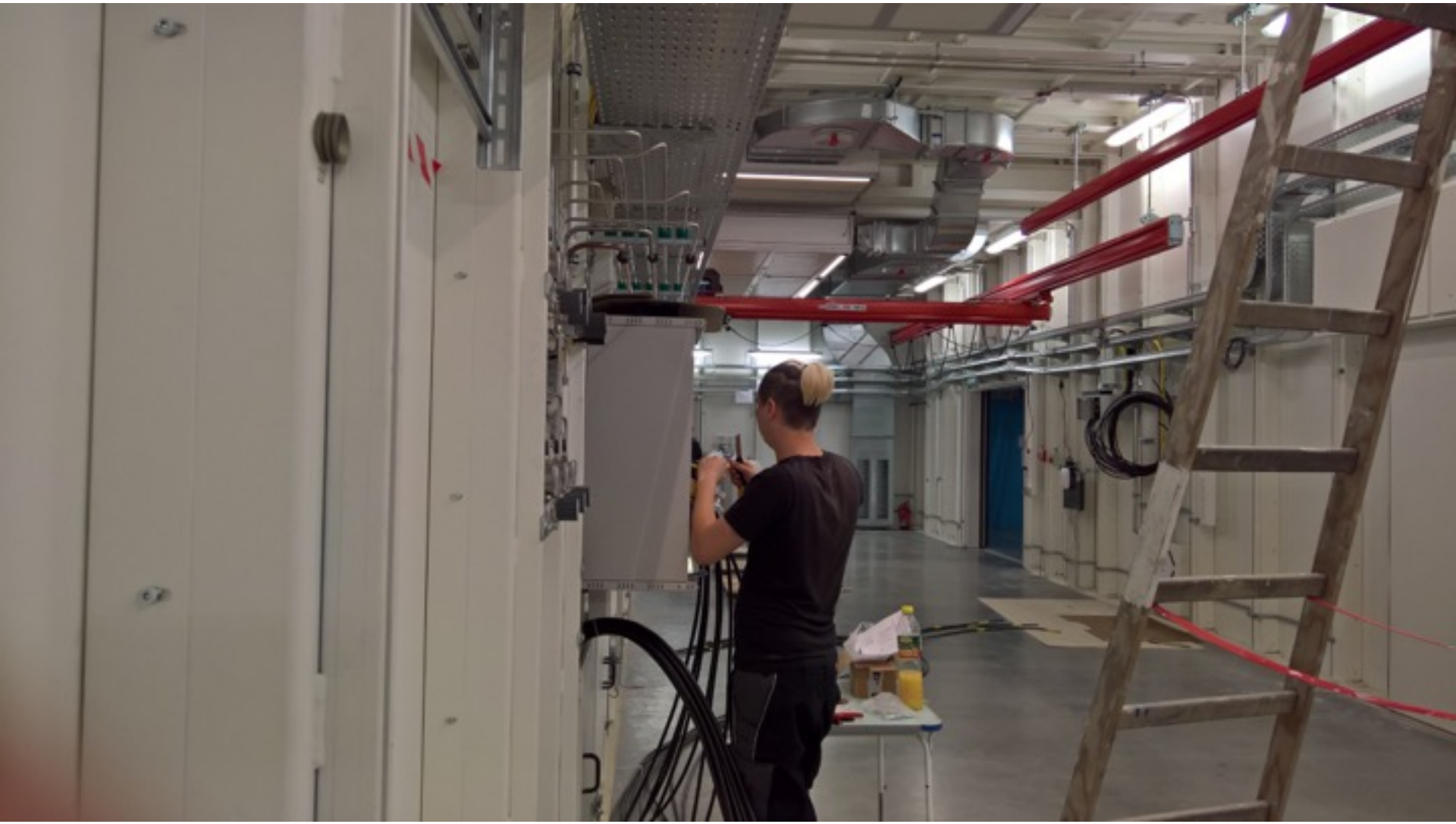
SASE1: Cleantent in front of SPB Optics

SASE1: Infrastructure back after sheet rocking

SPB: Coax panels

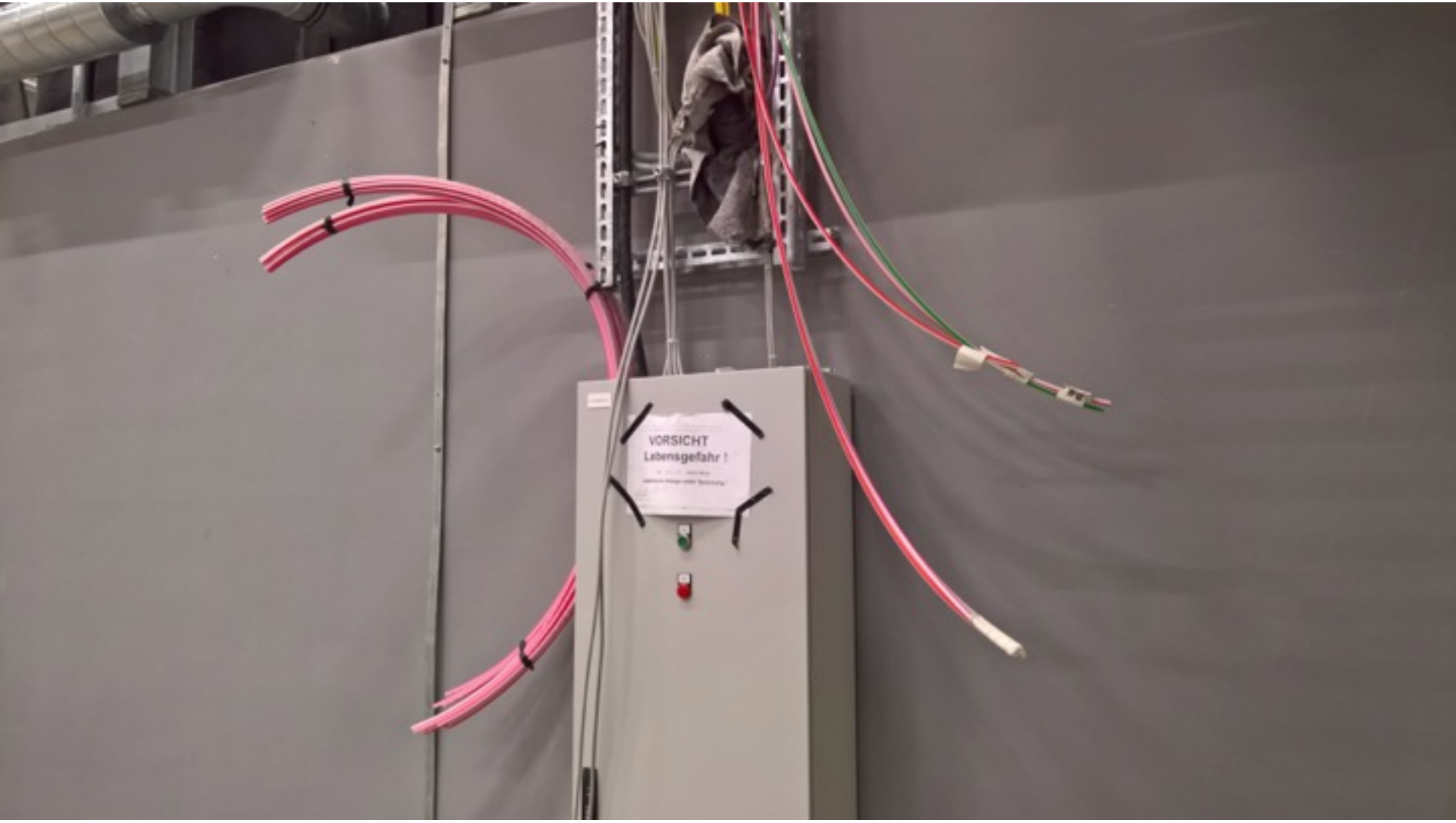


SPB: Work on IT Cabling

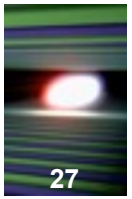


FXE Rack Room: Beckhoff frames

SASE1: Sync Fibers



SASE3 Status



- Civil construction
  - Company Lien almost finished except for doors
- Slow progress on infrastructure

SASE3 Status

- Electronics and Cabling
  - Phase1 Tender
    - → 2 Bidders
      - One bid close to the our estimate
    - → PI finished the evaluation
    - → Waiting for a few documents from the bidders before awarding the contract

SASE3 Top Open Issues

- Caverion Time Schedule
  - Have been reminded again, but still no news
- Phase1 Cabling tender
  - Contract probably next week
- Eplanning both for modules as well as for cable routing has not started
  - Some progress
- Laser Interlocks
  - LaserMet has started planning

SASE3: Survey work in SCS

SASE3: Staircase in SQS Control Room

SASE2 Status

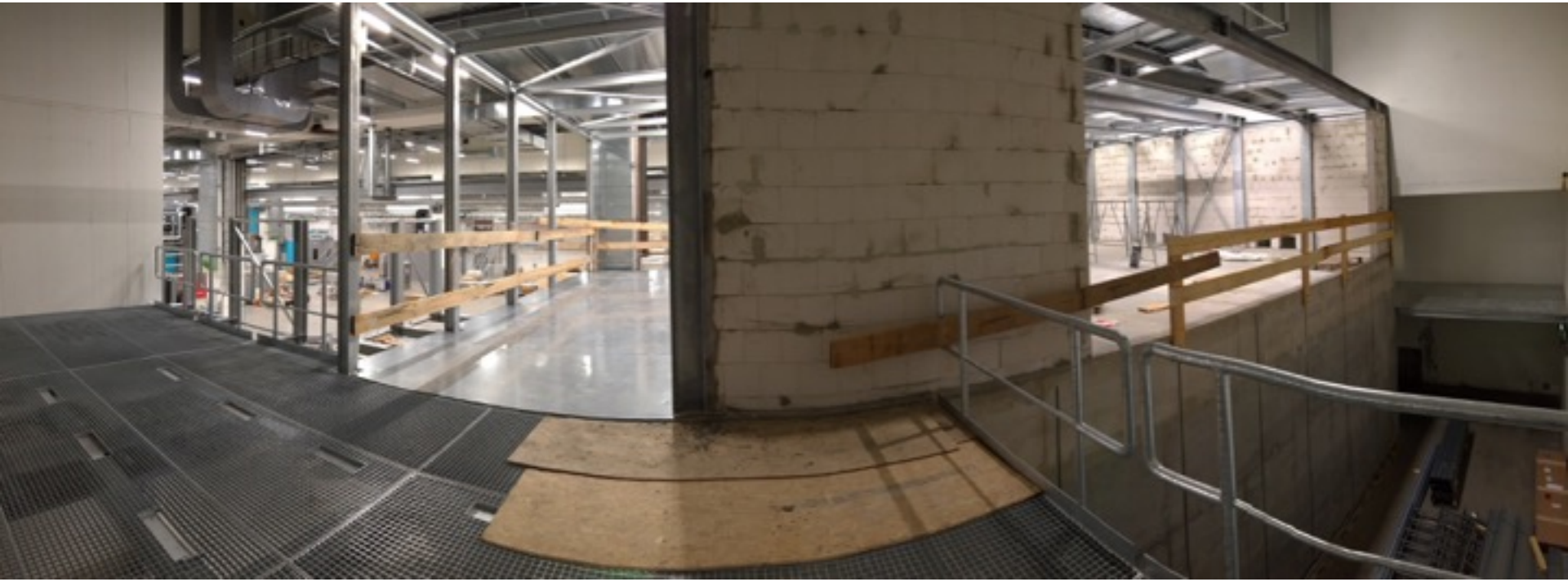
- Civil Construction
  - Pontax done except for doors
  - LIEN continues on time with TGA Support structures
- TGA
  - Regular Instrument-TGA coordination starts this week on Thursday

SASE2 Top Open Issues

- Phase1 Cabling draft planning waiting for comments from our side for two months
  - Now waiting for the tender docs from PI
- Laser Interlocks
  - We need to keep in mind to decide on the contractor by the end of the year.

SASE2: On top of MID

SASE2: Infrastructure platform and laser room



Next Meetings

- Meeting of the Vacuum Controls Commissioning Task Force:
  - Today 09:30 after TechMeet in XTOB
- Next XHEXP1 hall coordination meeting
  - Friday, 28 Oct 8:30 XHQ/E1.173