

# ETpathfinder Workshop

2026-03-23

## Installation Update

M. Baars, R. Elsinga, K. Lam  
for the ETpathfinder team



# Contents

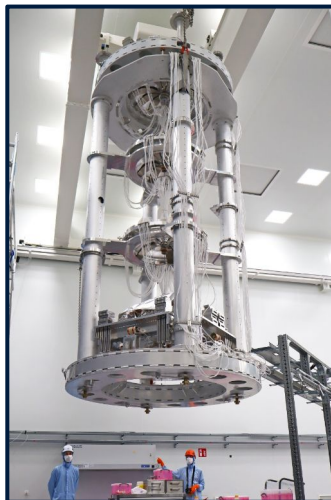
- Installation progress since last workshop
- BST and INT installation differences
- Installation plans moving forward
  - SIT
  - Infrastructure



# Installation progress since last workshop (June 2025)



BST IM installed



BST Tower closing

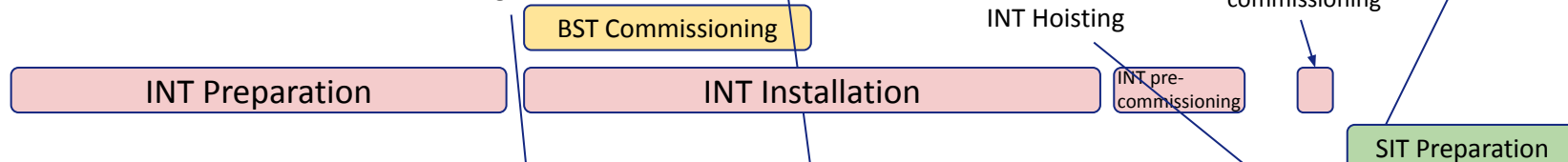


INT Hoisting



INT Tower closing

INT commissioning





# Insights in how INT differs from BST

- Personnel - **some improvements**
  - Not one big installation group, but several specialized sub-groups
  - Installation groups were filled more intelligently
    - Matching amount of work to amount of people, generally giving smaller groups
    - Better spread of specialists
    - Less “tourism” / invest time with coming towers in mind
- Communication - **more or less the same**
  - Slack / Mattermost still work very well for quick communications
  - The Gitlab ticket system continued to be used for smaller preparatory tasks
  - The parts storage overview again proved to be very useful
- Planning and preparation - **improved**
  - More parallel working and starting building things as soon as possible
  - Dedicated UM visits just for gathering parts, in advance of planned work

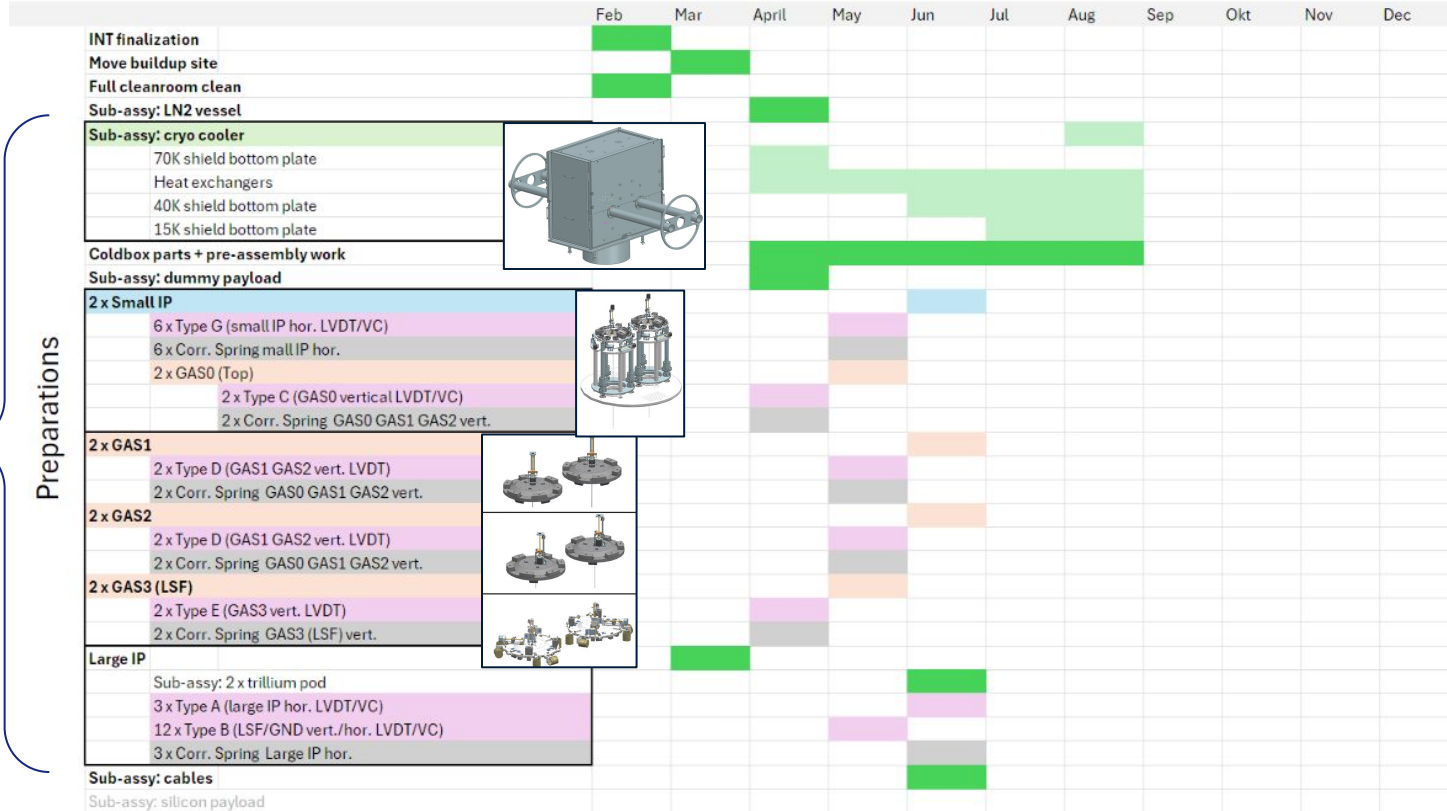


## Insights in how INT differs from BST (continued)

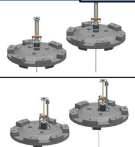
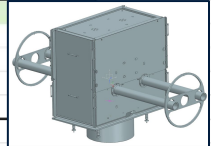
- Installation - **improved**
  - The installation process that was split into multiple chunks of work led by different people, gave rise to intermediate milestones such as “Large IPs installed”, “Optical bench installed”, etc., which improved team morale.
  - GAS1 was filled with manufacturing errors that needed in-situ fixing and repairs, causing 2 weeks of delay.
  - Having learned that a lot of the tuning and balancing steps would be undone from hoisting, less time was spent getting it perfect on the build-up site.
  - Having learned from BST commissioning, a lot of tuning and balancing steps were done in a more informed way, saving time and re-doing things later.
  - This time much more involved in commissioning, gaining new insights that will also benefit coming towers.
  - Shifting as much work as possible from “after hoisting” to “before hoisting” worked very well. The amount of double work was minimal, while the uncomfortable working environment of the bottom vessel was kept to a minimum.



# Installation plans moving forward - SIT



Preparations



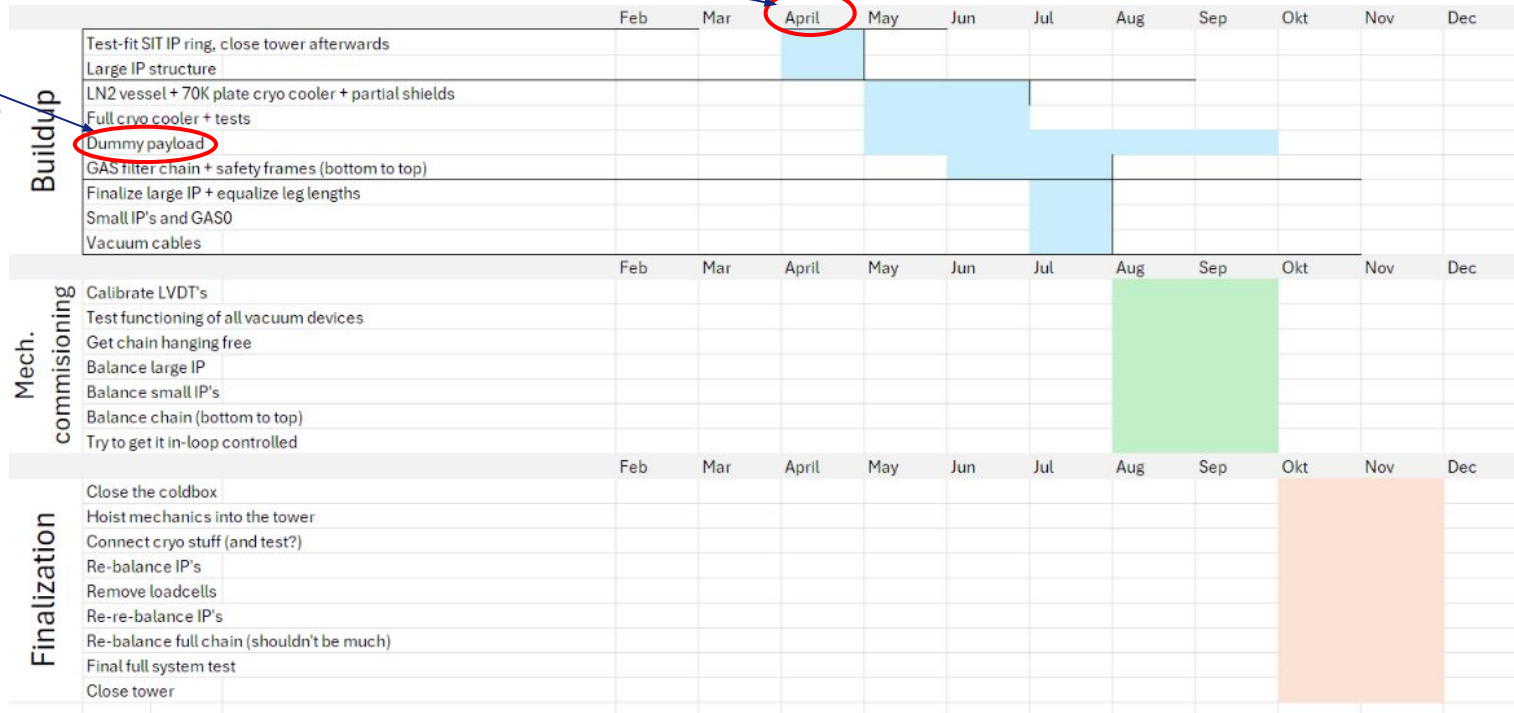
Subassemblies prepared by various partners



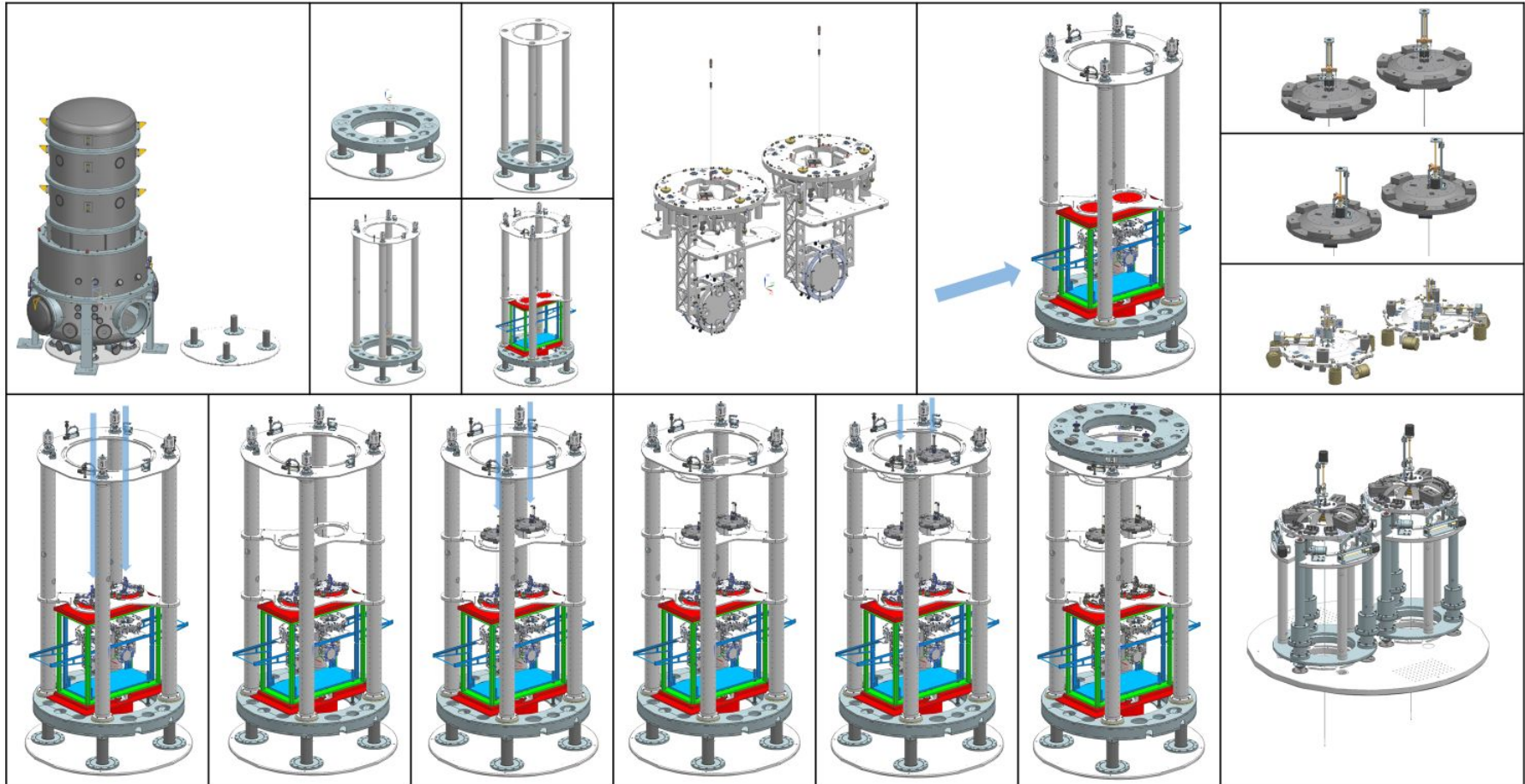
# Installation plans moving forward - SIT (continued)

First steps of SIT installation

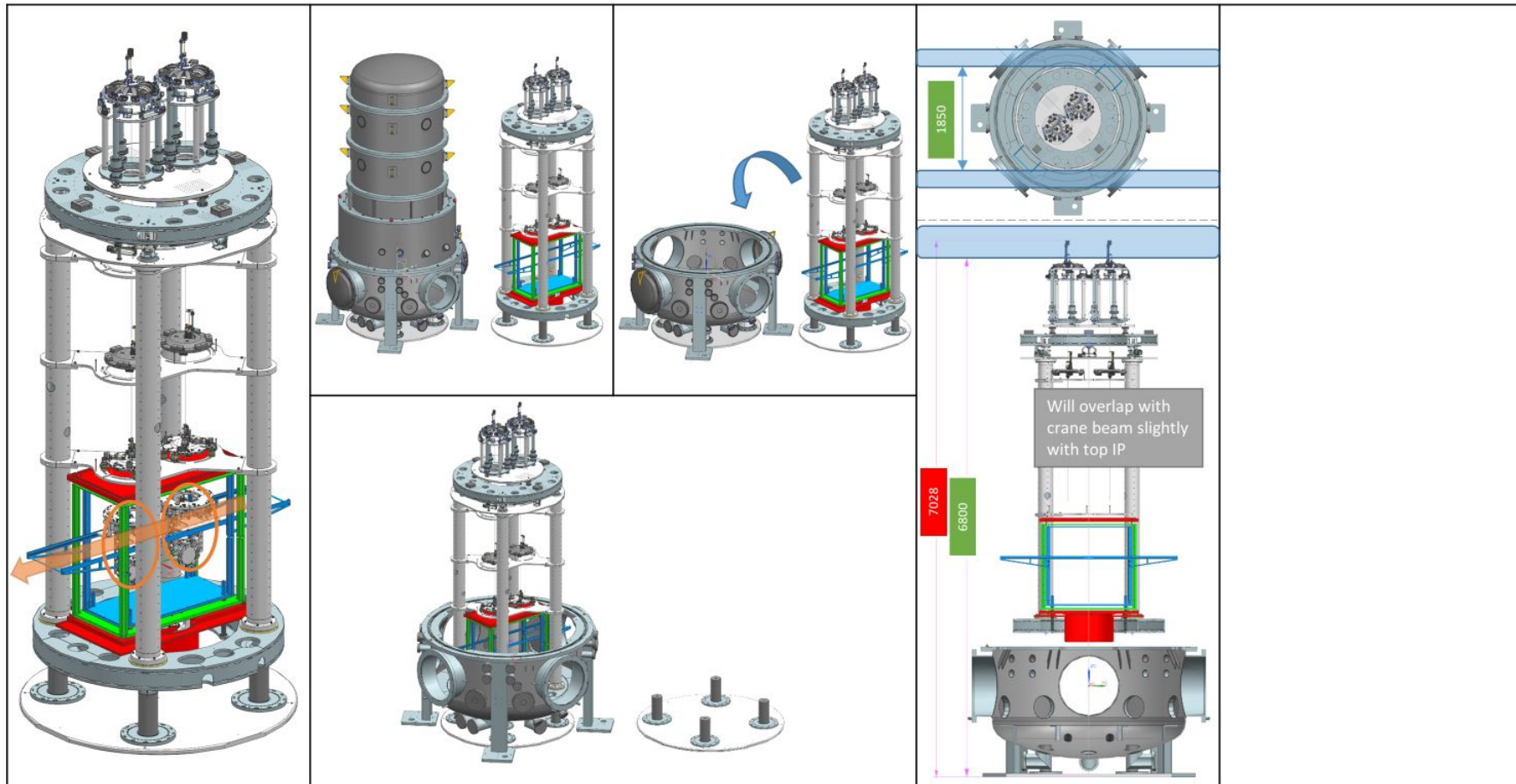
Cryogenic Payload will not be ready! See tomorrow's Payload Discussion Session.



## Rough procedure for populating mirror towers (1/2)



## Rough procedure for populating mirror towers (2/2)





## Installation plans moving forward - Infrastructure in 2026

In addition to the activities towards SIT Installation, there are other infrastructure related installation activities planned as well:

- Cabling of vacuum devices
- Vacuum test of a populated central section (BST + INT)
- Finalize water cooling system for E-racks
- Additional vacuum line for Cryo Consortium
- Mantle Lifting System for BST
- Grounding of metal structures in the cleanroom



## Discussion