

# MEC Session



Lars Schmitt, FAIR

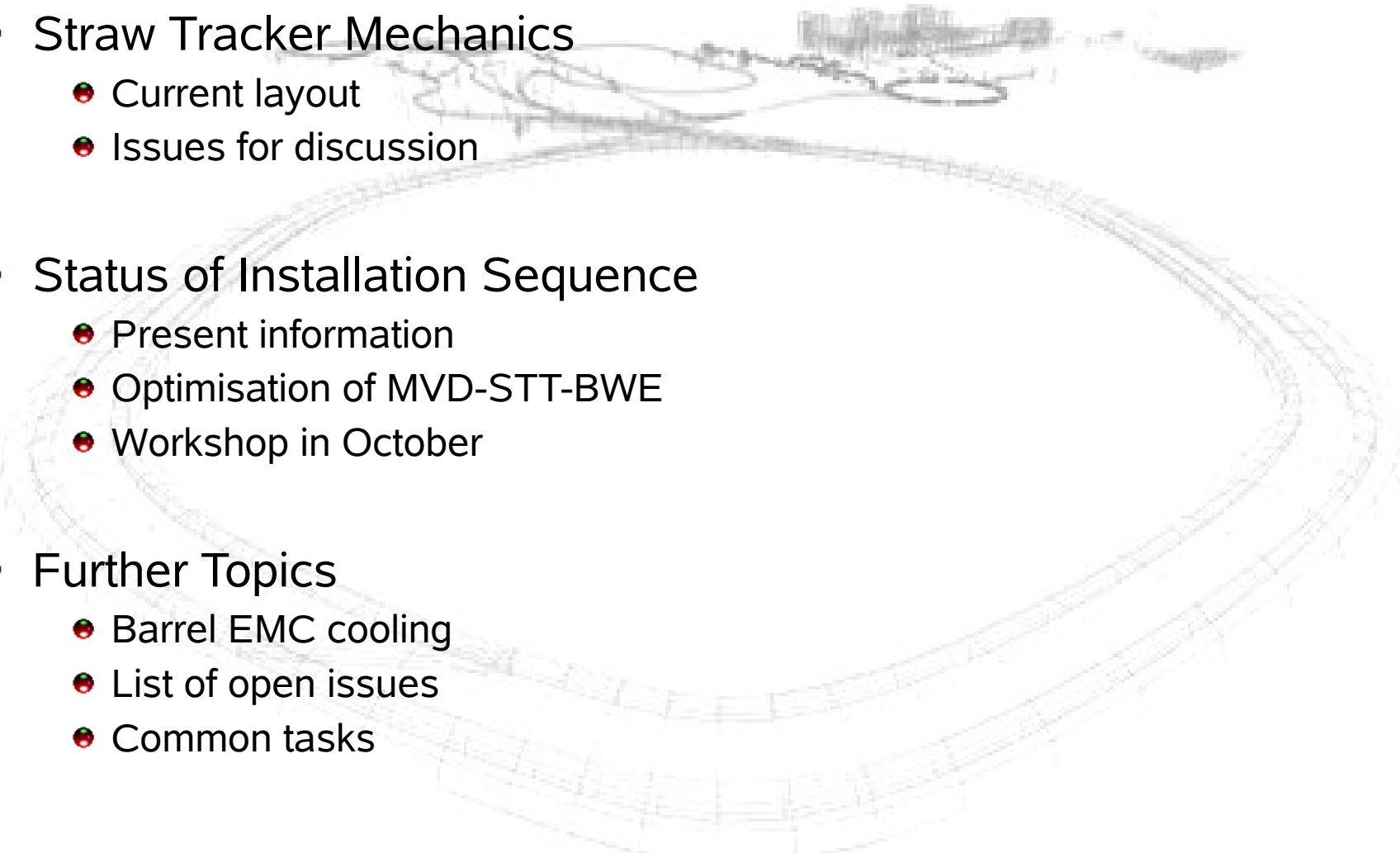
*PANDA CM L, Frascati, September 8, 2014*

Agenda

STT Mechanics

Installation Sequence

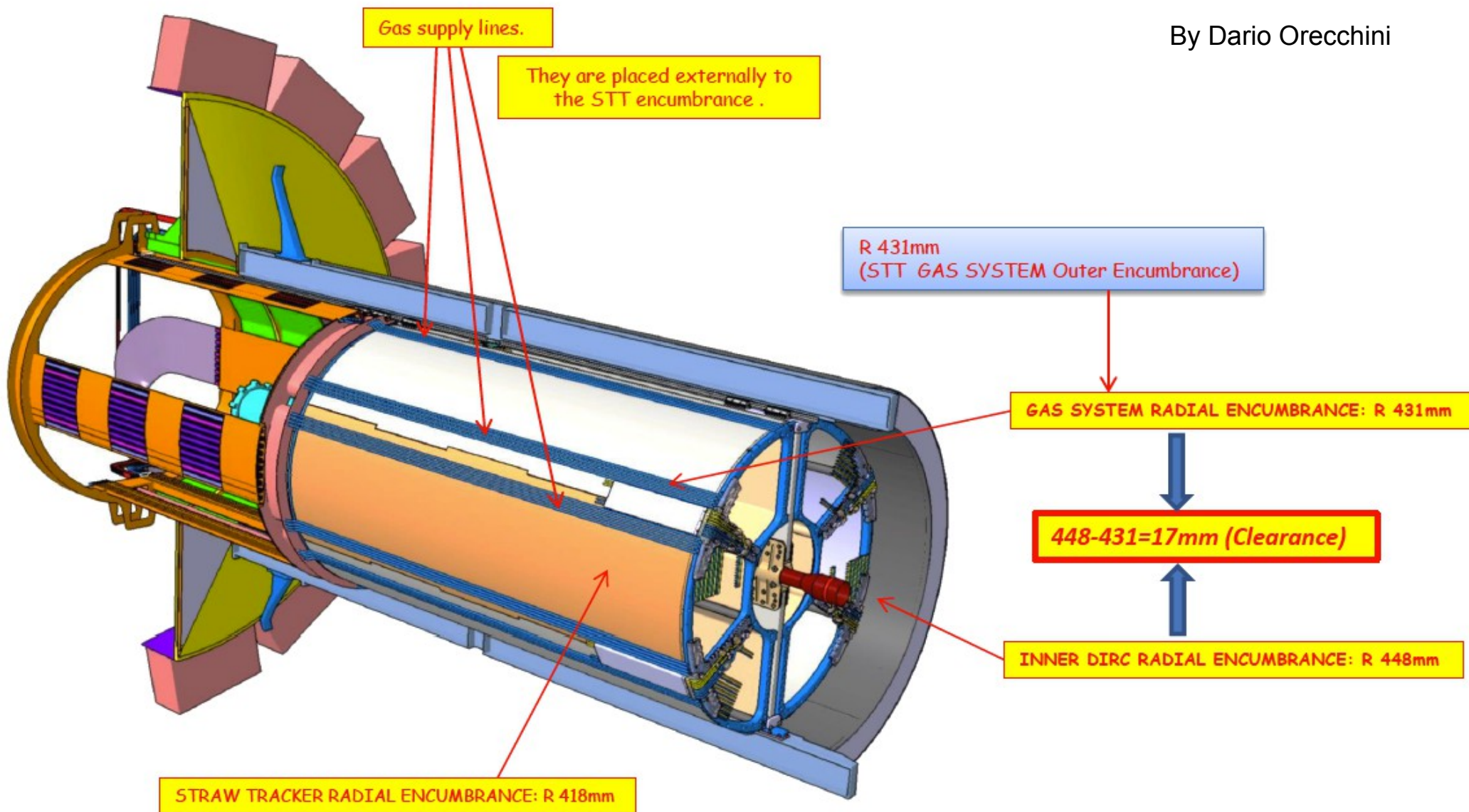
Other Topics

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- A 3D wireframe model of the Panda ring, showing the circular structure with various components and tracks. The model is rendered in a light gray color and is positioned in the background of the slide.
- Straw Tracker Mechanics
    - Current layout
    - Issues for discussion
  - Status of Installation Sequence
    - Present information
    - Optimisation of MVD-STT-BWE
    - Workshop in October
  - Further Topics
    - Barrel EMC cooling
    - List of open issues
    - Common tasks

# Current STT Layout



By Dario Orecchini



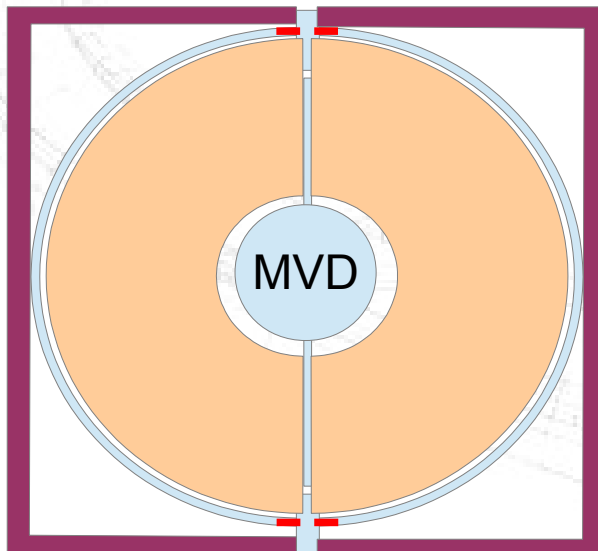
- Assumptions:
  - Optimisation of installation time
  - Maintenance each year
  
- Movement during installation and maintenance:
  - Length of movement
  - Tolerances
  - Safety and ease
  
- Routing of cables to racks:
  - Total cross section is known
  - Location of patch panel
  - Connector types
  - Path of cables
  - Interaction with other system

## Advantages

- Access for maintenance to STT electronics and MVD
- Simpler mounting/dismounting procedure
- Transfer to hypernuclear setup simplified

## Concerns:

- Stability of cable duct

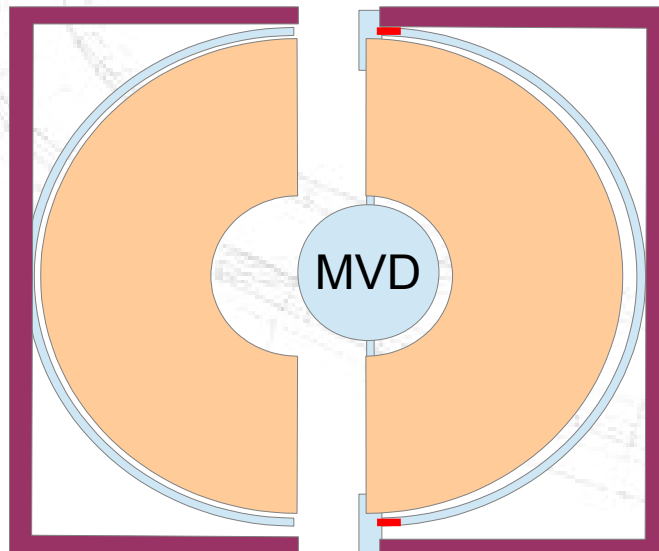


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## Concerns:

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- The puzzle pieces: individual procedures and requirements
  - Presentations of central trackers (MVD/STT), BE EMC, FE EMC
  - Urgently needed: Barrel EMC, Target
  - Further systems: GEM, Barrel DIRC/ToF, Disc DIRC (goes with FE EMC)  
Target spectrometer
  - Magnet installation
- Solving the puzzle: putting together all pieces
- Optimization of the procedures
- Determination of schedule

We soon need a dedicated workshop on this:  
Proposed date: 1-2 days in KW44 (Oct 27-31)

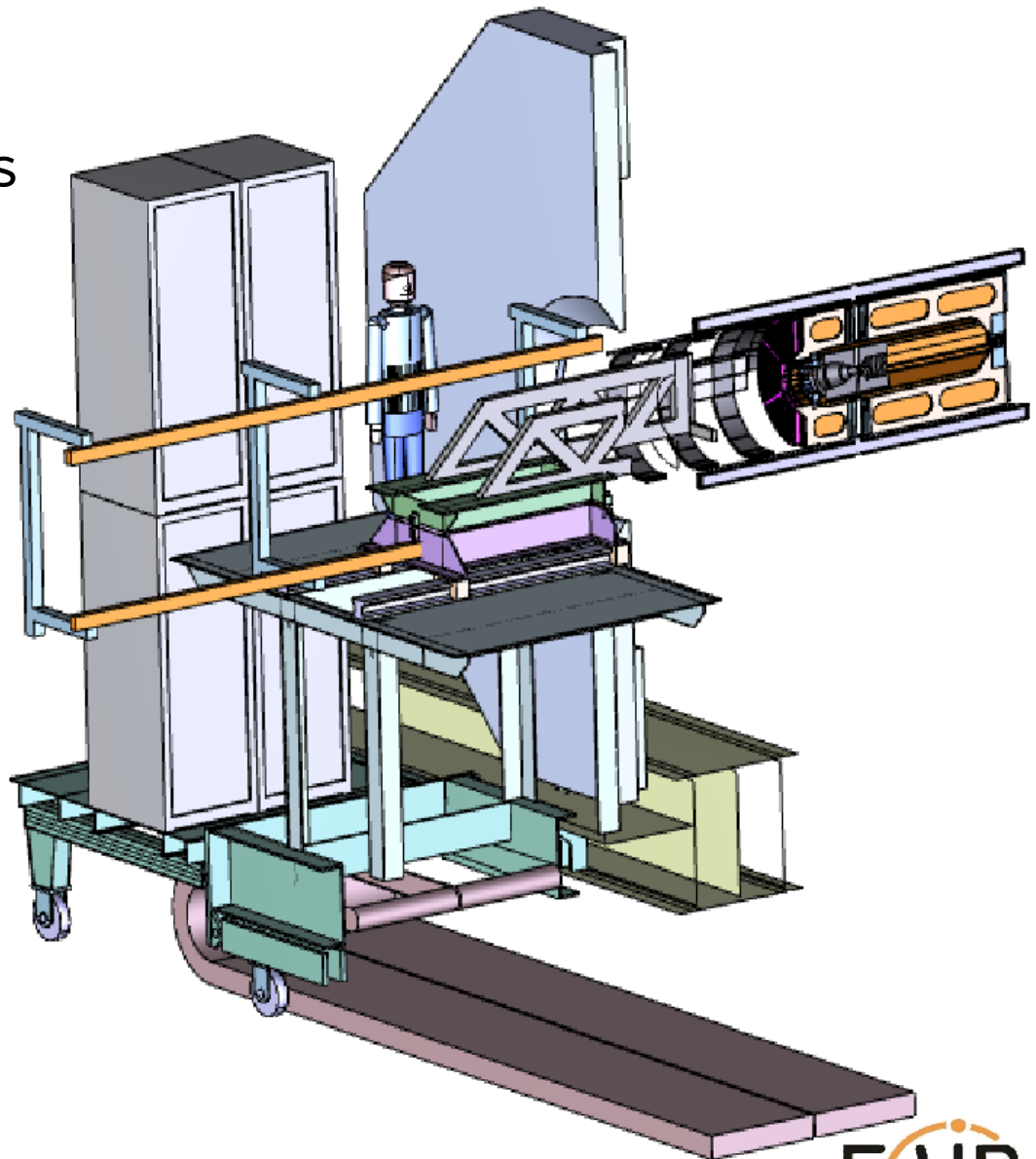
- Assumptions:
  - Optimisation of installation requirements
  - Maintenance each year
- Sequence for installation from upstream:  
Solenoid → Barrel EMC → DIRC/ToF → STT/MVD/Target Cross → BW EMC
- Critical issues:
  - Installation space, tools, platforms
  - Safety of movement
  - Compatible cable & supplies routing
- Open questions on MVD+STT+BW EMC:
  - Movement separate or together
  - Tolerances, static/dynamic
  - Alignment, reproducibility

We wanted to make a list of pros and cons ...



# Draft for Auxiliary Platform

- Approach for unified platform serving BW EMC and Trackers
  - Placement of racks
  - Support of BW EMC
  - Mounting/dismounting of tracker
- Constraints:
  - Height of CT mounting frame
  - Weight of BW EMC
  - Space for cable chain
  - Electronic racks
  - Access to magnet door
  - Cable routing



- Urgent issue: environmental conditions around EMC

- $\langle T \rangle$ ,  $\Delta T$ , RH
- Condensation, ice?
- Envelop with dry gas (e.g. N<sub>2</sub>)?

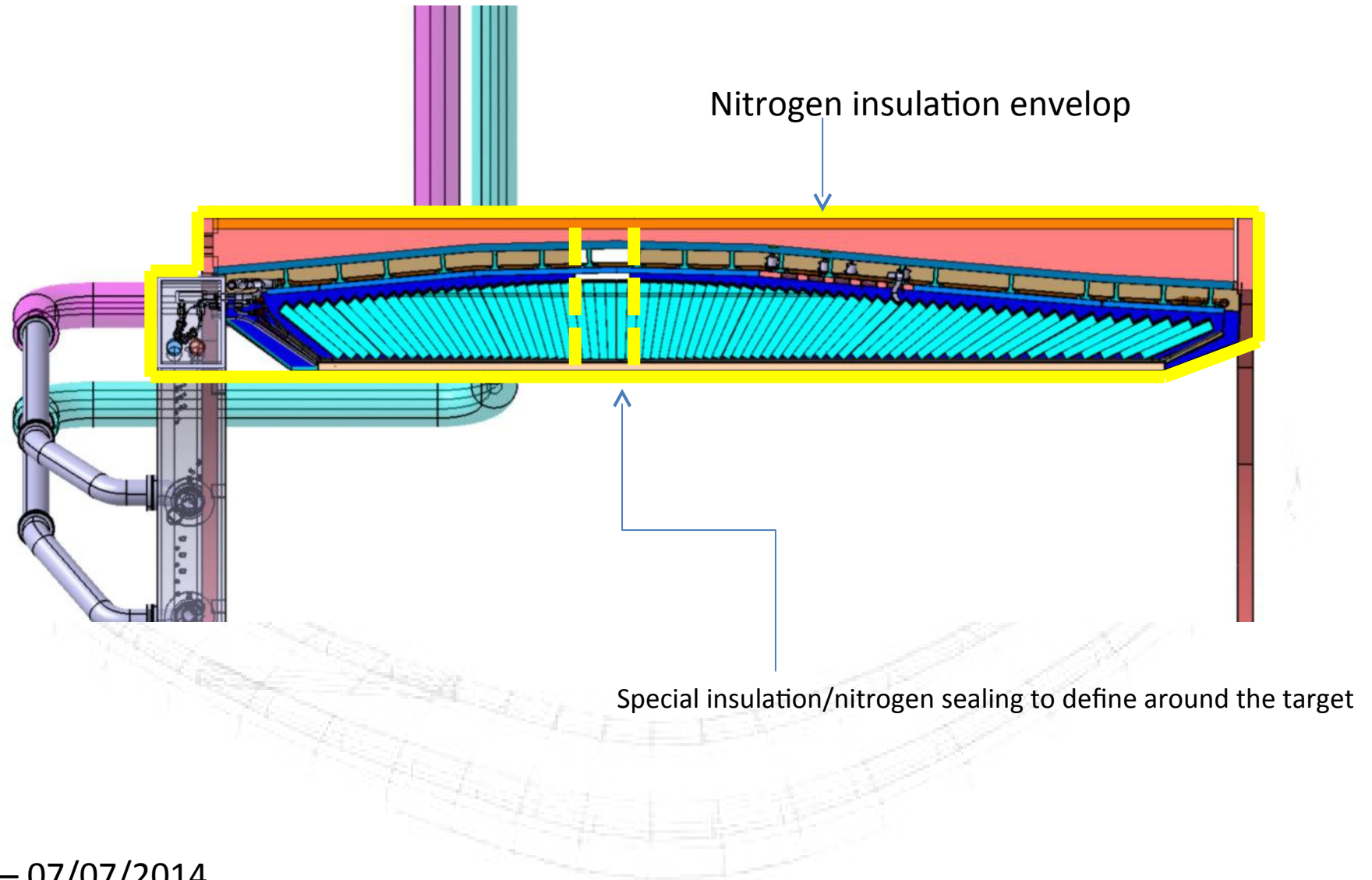


Critical dimensions and gas flow!

- Post of Bernd Lewandowski to be filled again at GSI

- Applications till Sep 26

● **EDMS drawings update mandatory till Nov. 30 !!!**



IPNO – 07/07/2014

- Alignment of systems
  - Component alignment
  - Alignment during installation
  - Choice of technique(s)
  - Requirements, e.g. line of sight
- Beampipe
  - Design and prototyping
  - Pumping scheme validation
- Environmental Conditions:  
<T>,  $\Delta T$ , RH
  - What do we want/need?
  - What can we get?
- Safety concept
- Infrastructure Items:
  - Target platform on top of solenoid
  - Auxiliary platform upstream
  - Mounting platform up-upstream
  - General powering scheme
  - Grounding scheme
  - General gas distribution system

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# Common Tasks



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- Beampipe (→ WP of FZJ)
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