
SAND General Meeting

KLOE-to-SAND and ECAL-WG Status Report

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KLOE-to-SAND Operation Activities at LNF

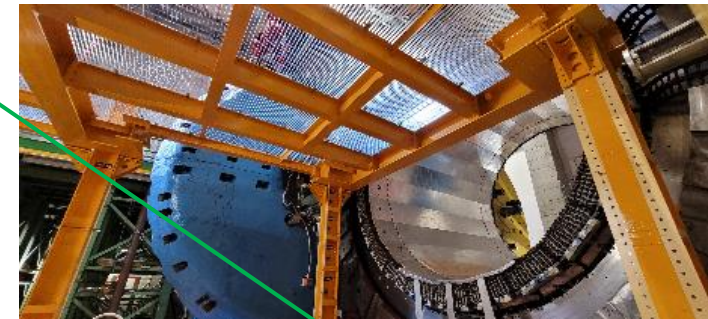
- ✓ Removal of all the cables and the FEE+HV racks
- ✓ Extraction of the Drift Chamber

CALORIMETER

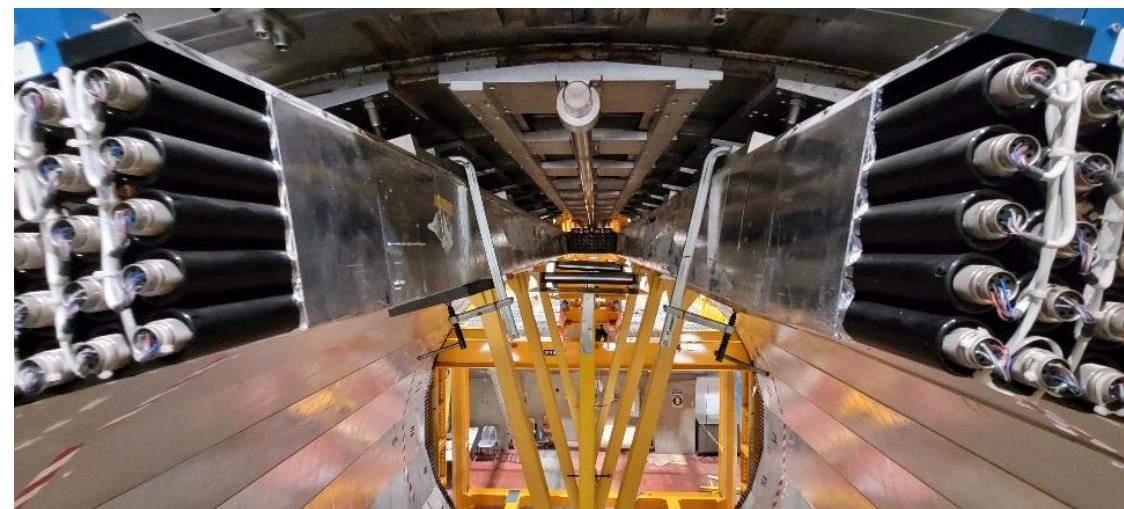
- ✓ Laser Tracker survey
- ✓ Extraction of Barrel (24 modules)
 - ✓ Variable height platform design and construction
 - ✓ Insertion/extraction machine refurbishment
 - ✓ Dismounting of PMTs
- Dismounting of 4 End-Caps
 - Tools refurbishment and construction
- Modules consolidation
- Operational test

MAGNET AND YOKE

- Installation of new Power Supply
- Colling and operational test
- Extraction of the Cryostat
- Dismounting of the Iron Yoke
- Packaging and Shipping



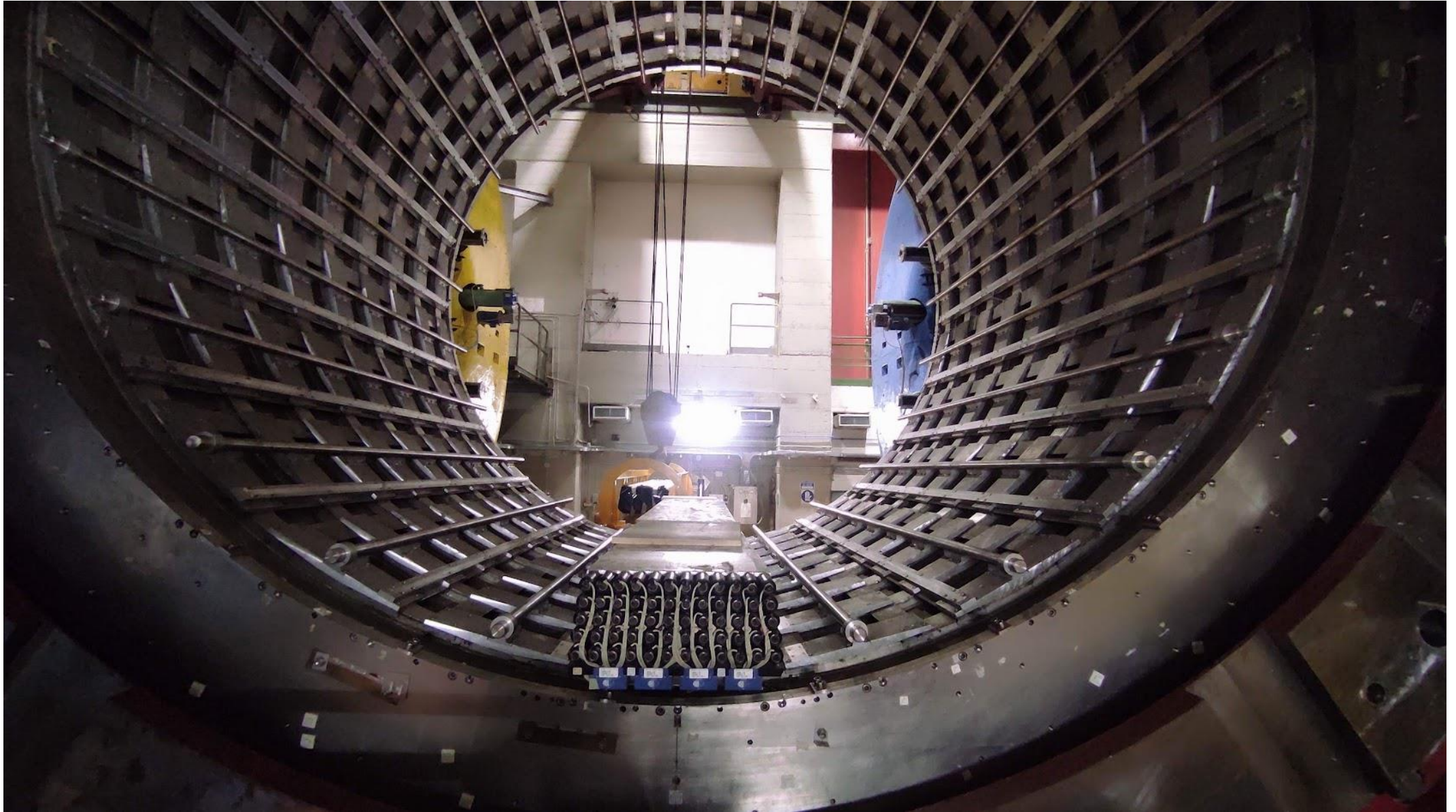
ECAL Barrel Module Extraction



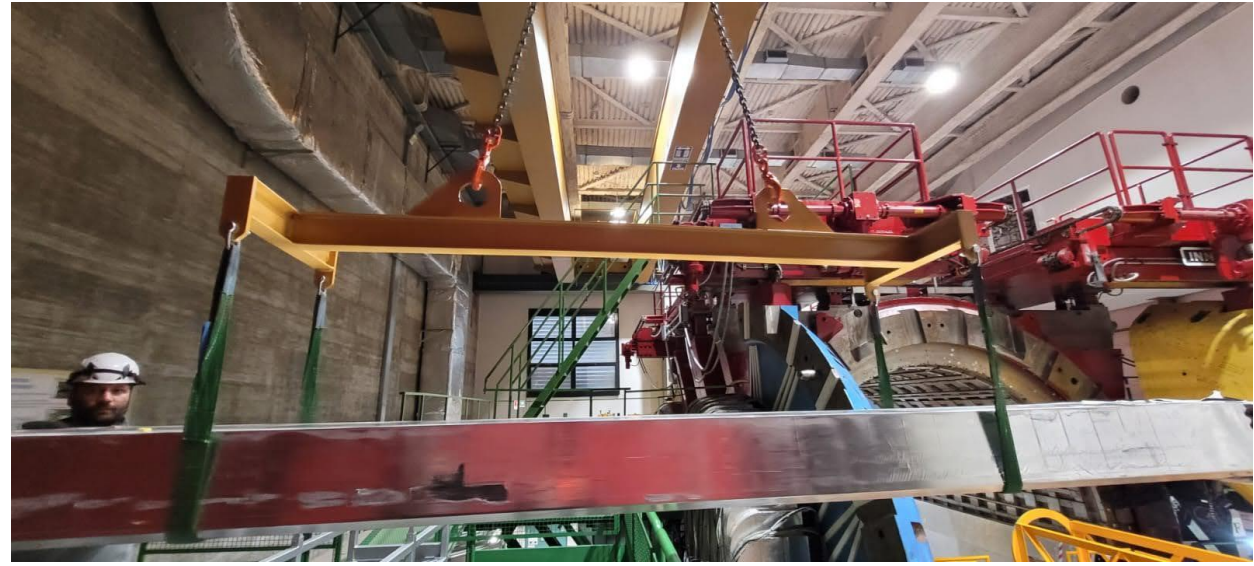
ECAL Barrel Module Extraction



The Last Module



Storage of Modules in Building 57



Refurbishing of Modules



Gluing of light-guides and refurbishing of PMT support plate (1 module)



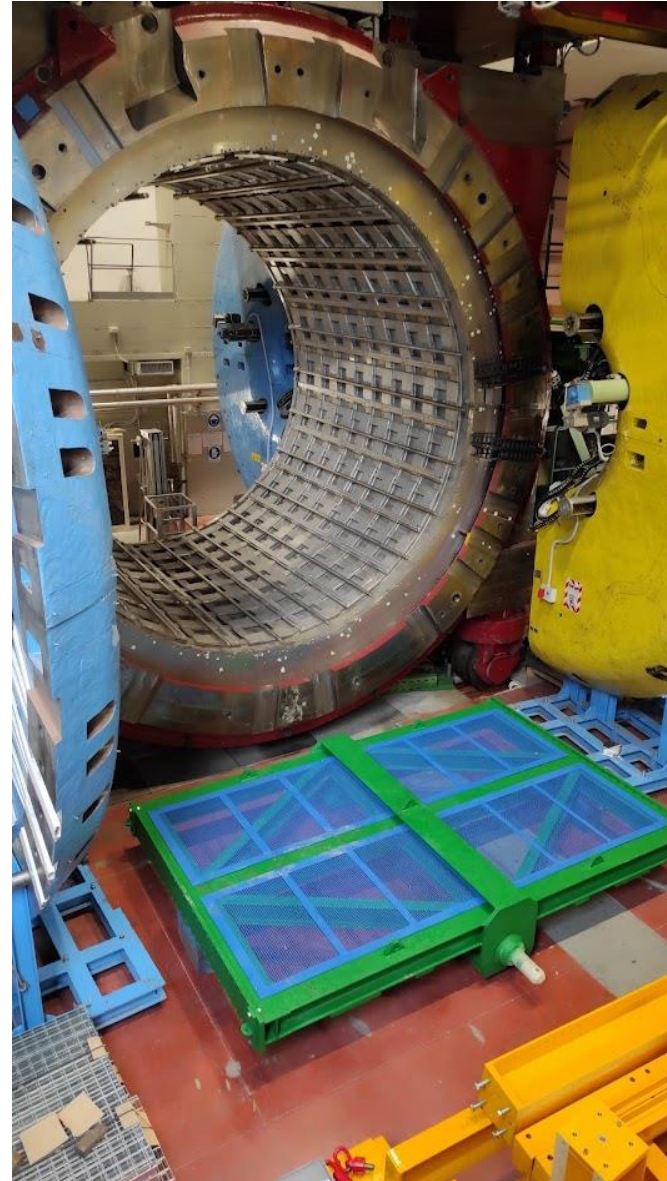
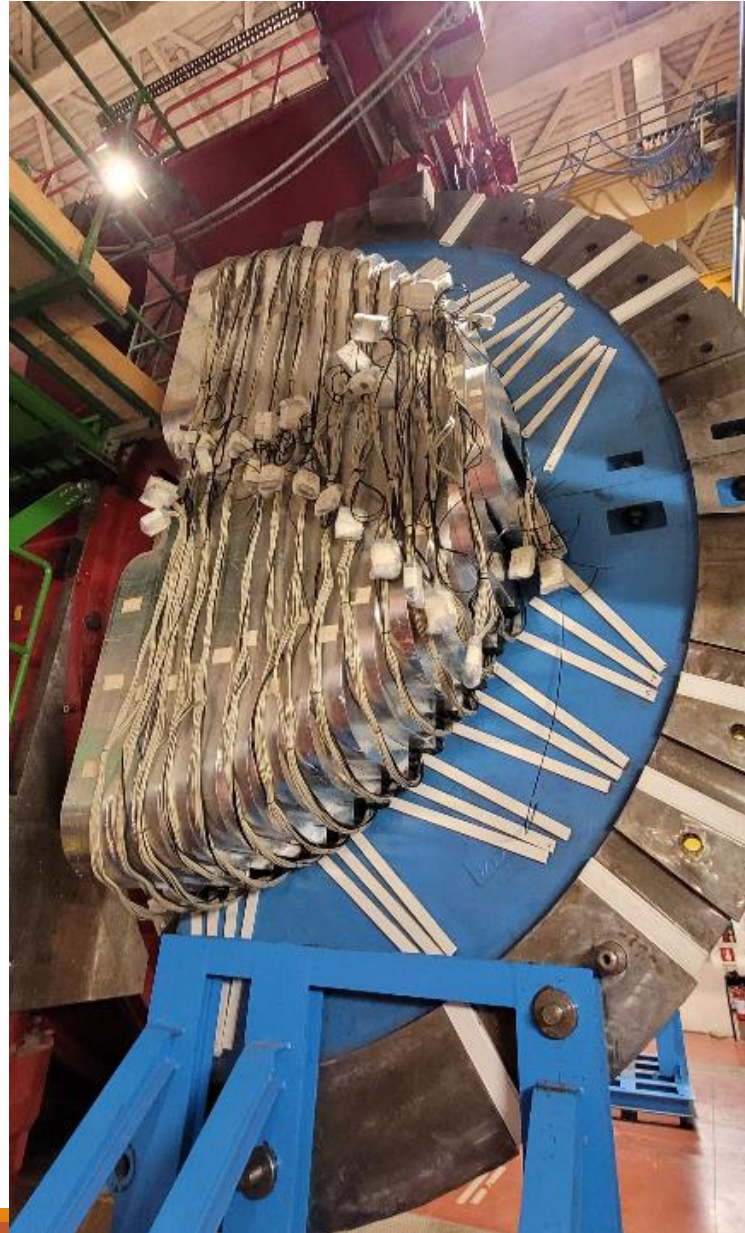
Gluing of delaminated modules (25%) after test of adhesives on Lead-fibres mock-up



Removal of damaged tape and new wrapping (80% of the modules)



End-Caps Dismounting (Autumn 2024)



4 new transport frames

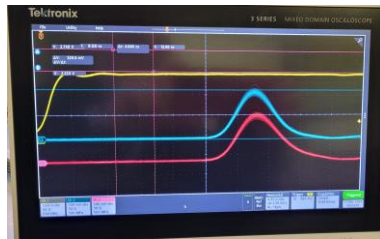
Refurbished
handling frame

ECAL Readout Electronics

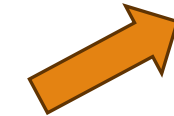
Possible use of picoTDC with
Time-over-Threshold (2 THR's discriminator)
charge measurement

Test in collaboration with CAEN to measure
resolution compared to a digitizer

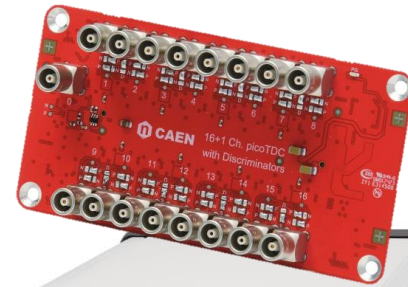
PMT signal
driven by LED



Step
Attenuator



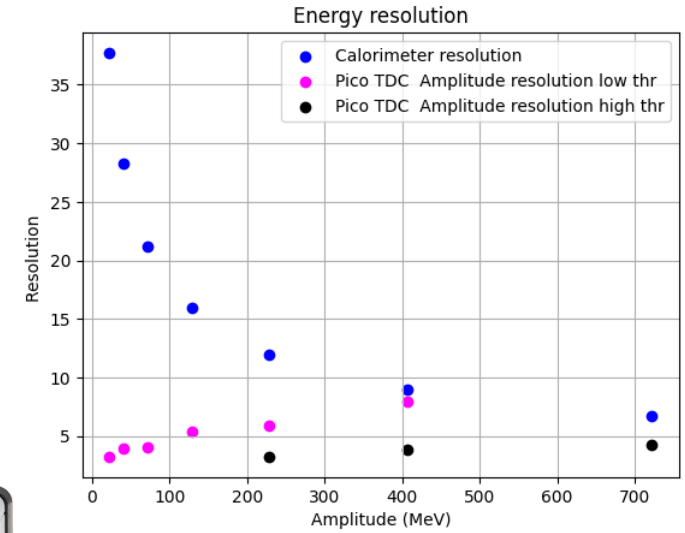
A5256
Discriminator



DT5203
picoTDC



Digitizer

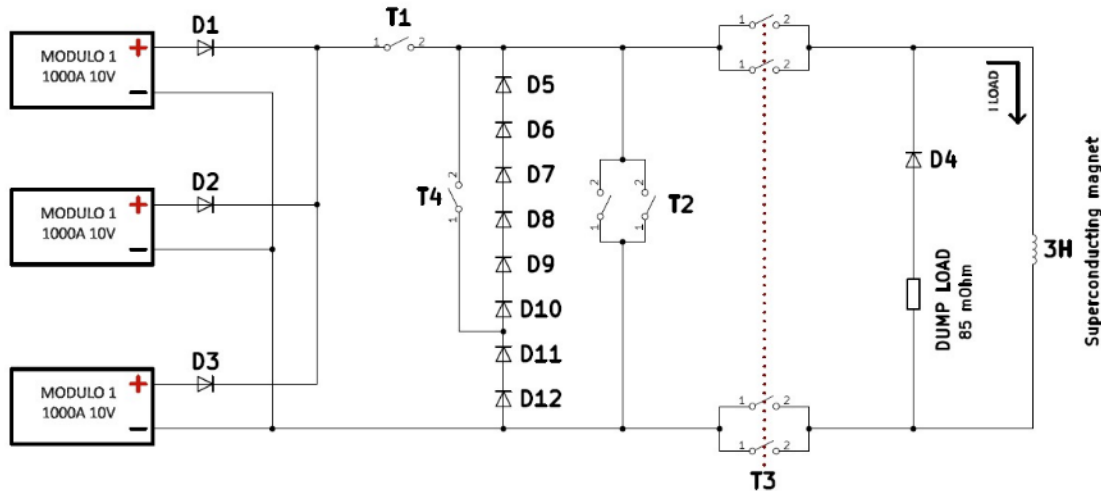


Preliminary results
(THR's to be optimized)

60-70 ps time resolution
3-5% amplitude resolution
in 20-700 mV range

ToT resolution below
intrinsic ECAL resolution
 $s/E=5.7\%/\sqrt{E}$

New Magnet Power Supply



Superconducting magnet

Power Unit: 3x1kA
modules in parallel with
custom current control

OCEM contracted for
electro-mechanics parts
refurbishment study

Quotation of whole
system due in Autumn

Quench Detector	Dump resistor	Bus bars	Power Unit
	Filter	Contactors	Free wheels diodes

DDD
May 2025



Magnet Test

Validation test of magnet and control system
(PS, Quench Detector, Software Interface)
foreseen before shipping

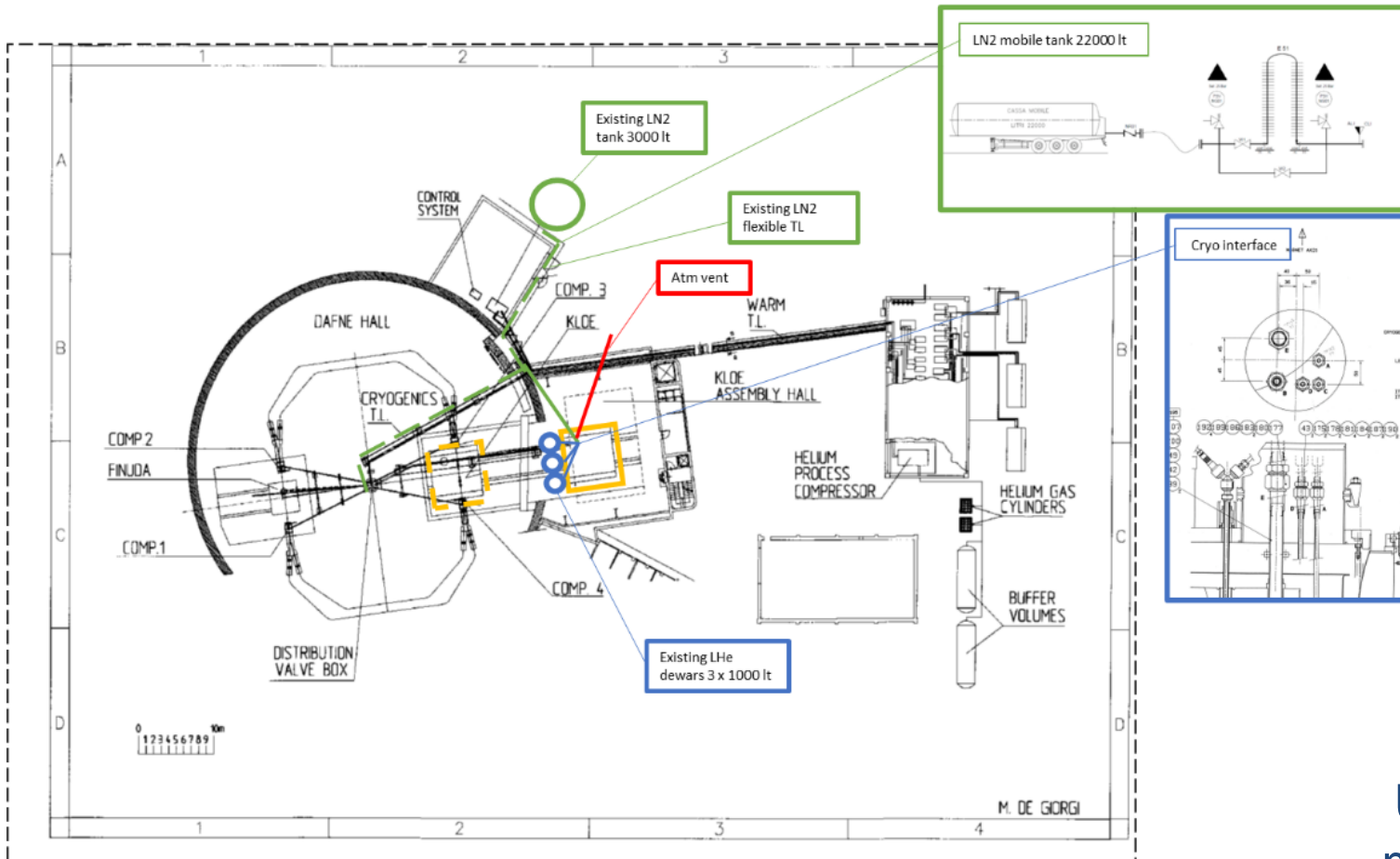
Coil cool-down
Cryo liquids supply by mobile tanks
36kl LN₂ + 6kl LHe
Old cryo plant bypassed
Simple cryo interface
Can be repeated at FNAL

Procurement

Cryo interface, skid and tank rent,
gases and liquids (not LHe)
already purchased

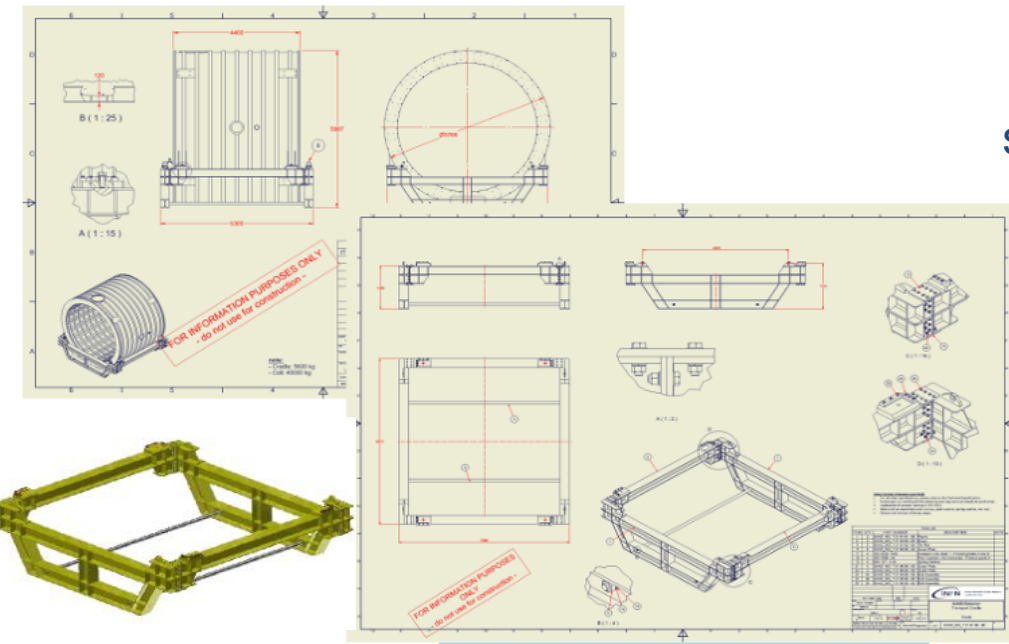
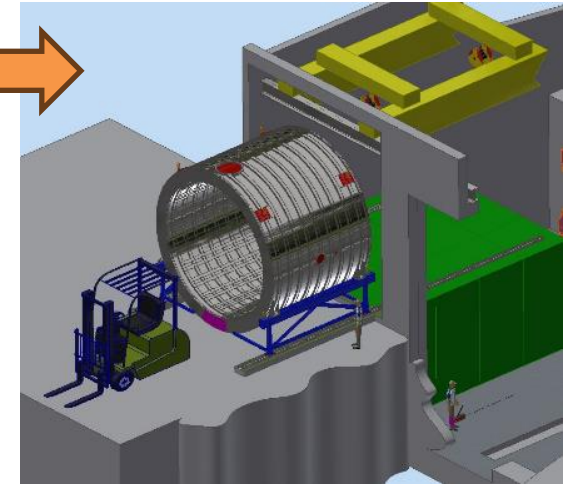
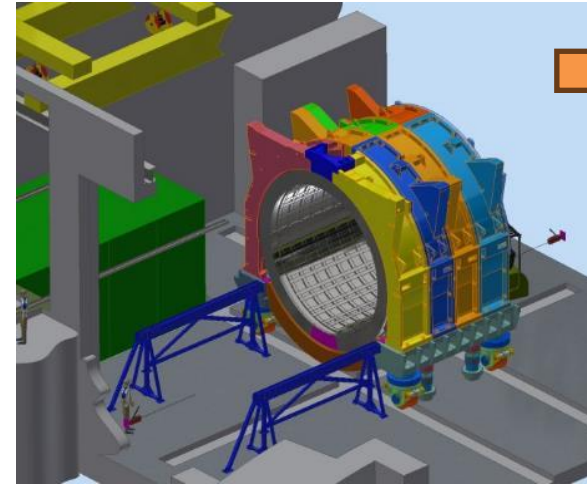
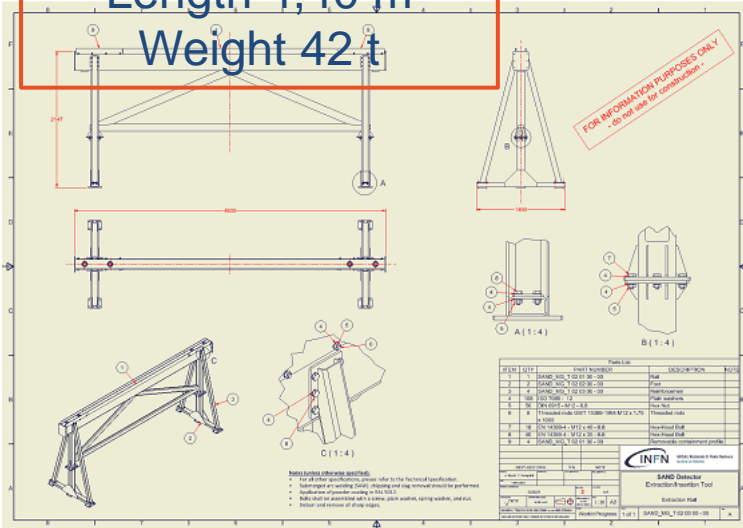


Under definition possible ASG role for
mounting/dismounting of service turret



Magnet Extraction

Diameter 5.80 m
Length 4,40 m
Weight 42 t



Reverse engineering completed
Operational drawings of mechanical structures for extraction and shipping ready
Extraction procedure safety plans and details to be defined with LNF

Engineering study for the extension of deck in progress



Conclusions

Dismount of KLOE Calorimeter started at beginning of February

The 24 modules of the Barrel has been successfully extracted

Tooling for extraction of End-Caps almost completed. Dismounting foreseen in Autumn

ECAL modules refurbishing started and will continue for several months

Definition of ECAL readout electronics is under study with picoTDC solution test

Purchase of magnet PS will be set within this year with delivery in May 2025

Magnet test procedures are being specified with possible support of ASG-Superconductors

Drawings of mechanical tools for extraction/transportation of magnet are ready

