

2021 RD51 Test Beam

Jun				Jul				Aug				Sep				Oct				Nov			
Week		24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Machine																							
North Area	T2-H2 option 2	CMS Outer Tracker 7	SPS & TT20 Setup 7	NA Setup 7	NA61 SHINE 16	FASER cal 7	ATLAS FCAL PULSE 7	STORM 7	KLEVER 7	CMS HGCAL 7	NA61 SHINE 7	ATLAS ZDC 7	NA61 SHINE 7	NA65 14	CMS HGCAL 7	NA61 SHINE 33							
	T2-H4 option		SPS & TT20 Setup 7	NA Setup 7	GIF RD51 9	LHCb CAL 18	NA64e 28					GIF 7	LHCf 14	CMS ECAL 14	LHCb CAL 7	GIF RD51 14	HERD 7	GIF 5					
	T2-H4 req.				CMS ECAL 9																		

Mon. 12/07/2021 – Wed. 21/07/2021

Wed. 20/10/2021 – Wed. 3/11/2021

Physics Scope (2021)

Generic and Application driven R&D

Muon/Tracking: GEM, mm and μ RWELL

TPC: TimePix (LC), Twin and Tandem GEM TPC (Beam monitoring)

Timing: PICOSEC micromegas, FTM

Calorimetry: RPWELL (DHCAL)

Medical: mm (Proton Computed Tomography)

Confirmed setup

Week 28-29	Project/Experiment	Beam Requirements	Reference Team
AMBER upgrade (mm & TIGER)	AMBER upgrade (mm & TIGER)	mu	INFN Torino
BES III	Upgrade of current inner drift chamber with a cylindrical GEM	mu, pi	INFN Ferrara
PICOSEC	Fast and Precise timing with MPGD (micromegas)	mu, e-	PICOSEC Coll.
RD51	New FE&DAQ for beam telescopes (SRS/VMM3a)	mu, pi, high rate	RD51 VMM

Project driven R&D

HL-LHC: GEM (CMS), mm (ATLAS) and μ RWELL (LHCb)

FCC-ee: μ RWELL (IDEA)

PBC: mm and GEM (AMBER/COMPASS++)

Detector Commissioning

e+e- collider : CGEM(**BESIII**)

FE electronics and DAQ

TIGER-GEMROC

VMM3a-SRS

Week 43-45	Project/Experiment	Beam Requirements	Reference Team
COMPASS Upgrade	AMBER upgrade (mm & TIGER)	mu	INFN Torino
RPWELL	DHCAL	mu, pi	WEIZMANN
COMPASS++/AMBER	COMPASS++/AMBER upgrade (GEM)	mu	BONN-GDD
CMS	GE2/1, ME0	mu, pi	CMS GEM
IDEA project	μ RWELL	mu	LNF μ RWELL
FTM, High Resolution GEM	FTM, GEMs	mu, pi	INFN Bari
Small Pad Resistive mm & embedded readout	Small Pad Res. Mm	mu, pi	INFN Roma 3, Naples, CERN
SRS/VMM3a Gem TPC	GEM TPC	mu, pi	HIP
PICOSEC	Fast and Precise timing with MPGD (micromegas)	mu, e-	PICOSEC Coll.
Proton Computed Tomography	Detector commissioning / Med	mu	LMU
Tandem Gem TPC	Beam Monitoring TPC	mu, pi	Wigner
RD51	New FE&DAQ for beam telescopes (SRS/VMM3a)	high rate pi	RD51 VMM
RD51	RD51 μ RWELL telescope	mu, pi, high rate	RD51 μ RWELL tracker

Physics Scope (2021)

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Detector Commissioning

e+e- collider : CGEM(BESIII)

FE electronics and DAQ

TIGER-GEMROC

VMM3a-SRS

WG7 - Common Test Facilities -			
09:00	COMPASS Upgrade - mm and new DAQ (TIGER)	Maxim Alexeev	
	remote-only		09:00 - 09:15
	COMPASS++/AMBER upgrade	Michael Lupberger	
	remote-only		09:15 - 09:30
	RPWELL	Luca Moleri et al.	
	remote-only		09:30 - 09:45
	IDEA, μ RWELL	Giovanni Benvenuti	
	remote-only		09:45 - 10:00
10:00	BESIII	Giulio Mezzadri et al.	
	remote-only		10:00 - 10:15
	FTM, High Resolution GEM	Piet Verwilligen	
	remote-only		10:15 - 10:30
	News from MB & ECFA Detector R&D Roadmap	Leszek Ropelewski et al.	
	remote-only		10:30 - 10:35
	Coffee Break		10:35 - 10:50
	remote-only		
11:00	CMS GEM	Piet Verwilligen	
	remote-only		10:50 - 11:05
	Small Pad Micromegas	Mauro Iodice	
	remote-only		11:05 - 11:20
	PICOSEC	Antonija Utrobic	
	remote-only		11:20 - 11:35
	VMM3a in a GEM-TPC in twin configuration	Francisco Ignacio Garcia Fuentes	
	remote-only		11:35 - 11:50
12:00	Tandem GEM TPC	Dezso Varga et al.	
	remote-only		11:50 - 12:05
	Commissioning of Alu Micromegas and TPC for Proton Computed Tomography	Jona Bortfeldt et al.	
	remote-only		12:05 - 12:20
	General news and Info	Yorgos Tsiopolitis et al.	
	remote-only		12:20 - 12:25
	RD51-WG7 subscription		
	remote-only		12:25 - 12:26

More info @ <https://indico.cern.ch/event/989298/timetable/#20210219.detailed>

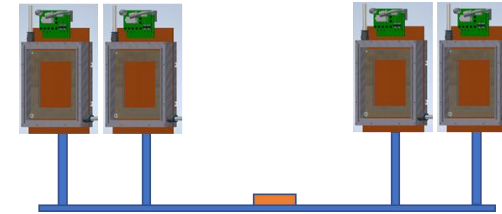
COMPASS MM prototyping

The main objective of the long term project is a study for a possible substitution to the aging MWPC chambers

The main objective during this TB will be to test the future test bench, based on prototype MMs and gather experience on internal tracking in beam conditions

People present at the test: 2 colleagues from Dubna
1-2 permanent and 1-2 present at CERN from Torino

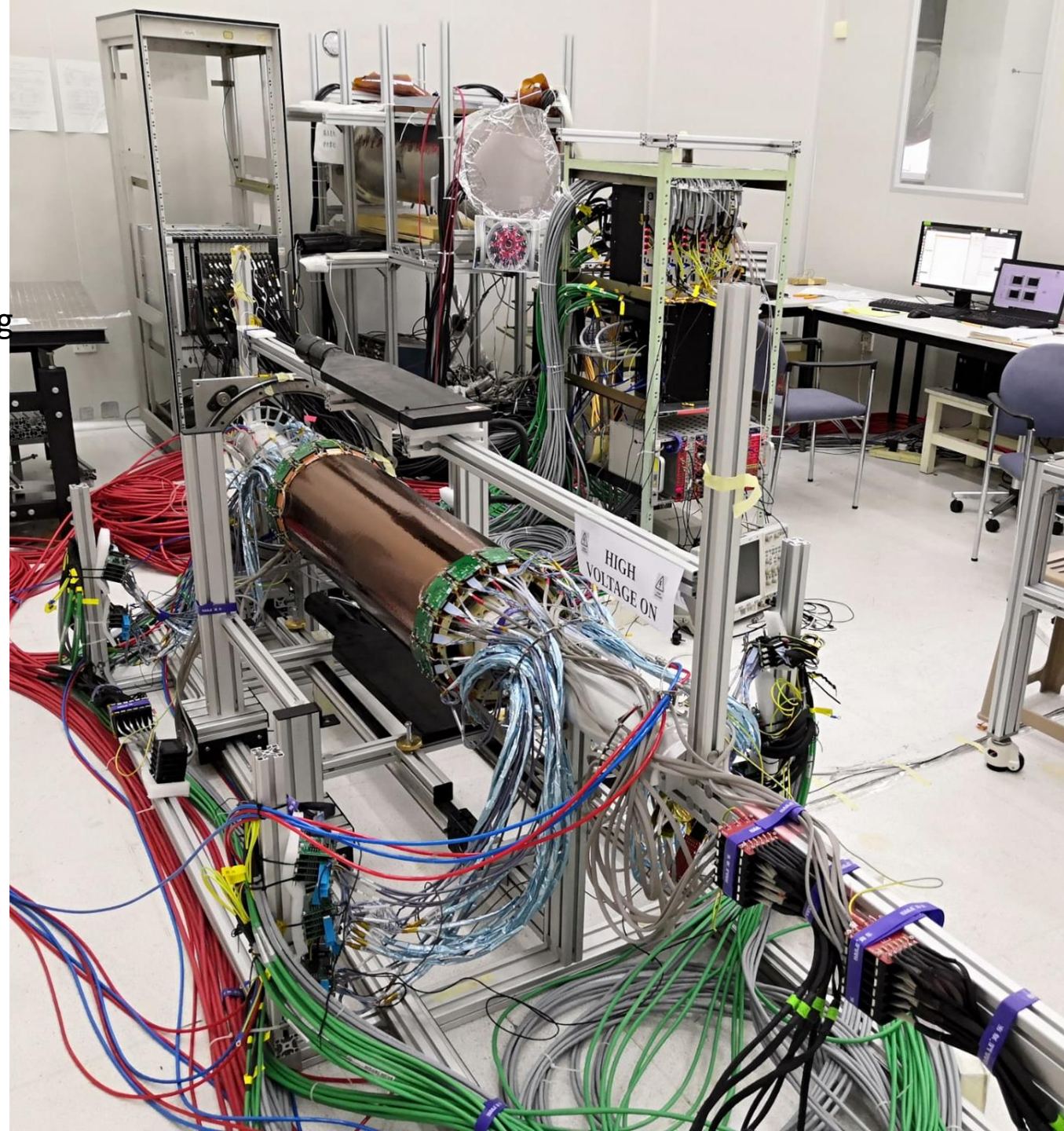
- We plan to be at CERN starting 08.07 and till the end of the TB (to be confirmed)
- All the material will arrive with the arriving people no special transport is foreseen
- No departure constraints, we will be present at CERN for the whole July



Contact person:
Maxim Alexeev
alekseev@to.infn.it

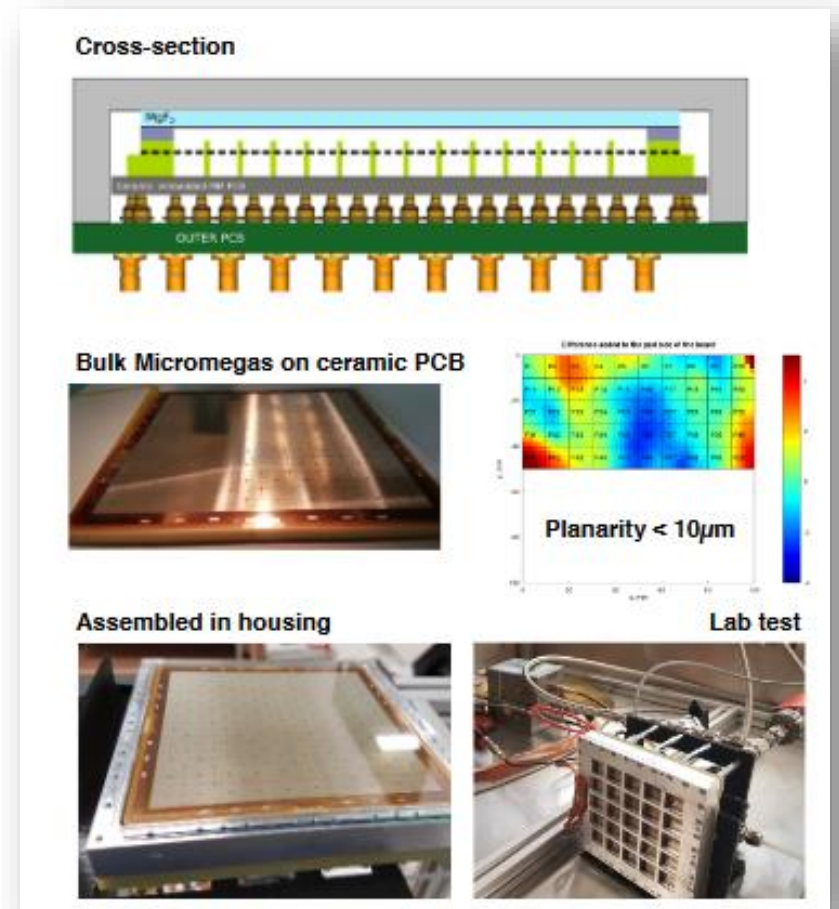
BESIII Cylindrical GEM detector

- From the beginning of the pandemic outbreak, 2/3 of the CGEM detector is taking cosmic data in Beijing with a "temporary", remotely-controlled setup
- Since we cannot travel to China, we are continuing the electronics integration and validation in Italy
- The main purpose of the Test Beam is the validation of the full readout chain including the newly developed global/local fanout system
- About 8 people from INFN Ferrara and Turin will participate
- The arrival at CERN is currently scheduled for the afternoon of July 8th – the setup will travel with us, and we'll wait for it at the end



PICOSEC- July test beam

1. PICOSEC: precise timing detector.
 - Detectors to be tested:
 - PICOSEC 100 channel prototype: characterization of the time resolution over the multiple channels.
 - single pad detector: test of different photocathodes, single gap, new preamplifier from Saclay, SAMPIC readout.
 - multi-pad PICOSEC with resistive MM: characterization of the time resolution over the multiple channels [to be confirmed]
2. Number of people coming: up to 5 people, ref. contact: Antonija Utrobicic
3. Material and 100 channel prototype are at CERN. Single pad detector, preamplifiers and multi-pad PICOSEC with resistive MM will arrive at CERN within next 2 weeks.
4. No constraints in departure.



SRS/VMM3a based DAQ for the new RD51 Tracker

A new tracker out of several new developments

New FE ASICs: VMM3A (BNL)

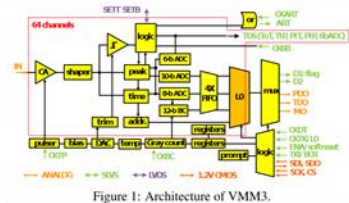


Figure 1: Architecture of VMM3

<https://cds.cern.ch/record/2309951/files/ATL-MUON-PROC-2018-003.pdf>

One example of an existing common tracker: micromegas & SRS/APV25



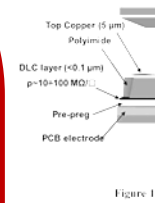
Important investment
(about 40kCHF in total) of resource
from the collaboration.

Additional Support may come from
AIDAInnova test beam and DAQ WP

New Development on MPGD technologies

New Developments on multichannel readout AISCs: VMM3A

New Detector



<https://arxiv.org/abs/2006.04758>

New Development
MPGD muon
Readout System
SRS/VMM

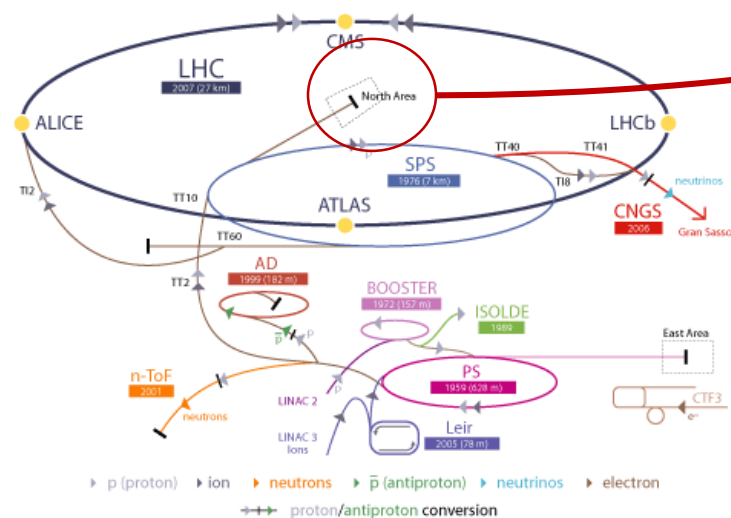
New
tracke

- Activity for the preparation of the new RD51 tracker based on μ RWELL and SRS/VMM3a
- July beam: focused on electronics (hardware/software)
- Tested on the RD51 triple GEM tracker
- 3+ people at CERN for the full period, contact: L. Scharenberg
- Material already at CERN
- No constraints on departure

Some general info

We will not go through all of them in detail but good to have them

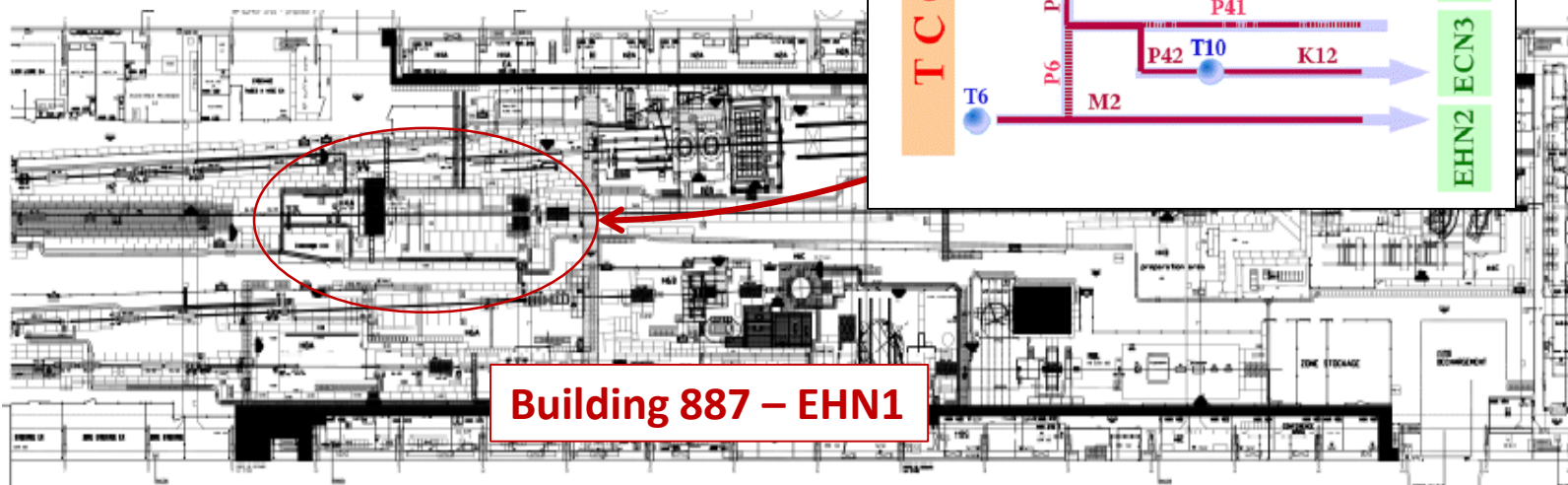
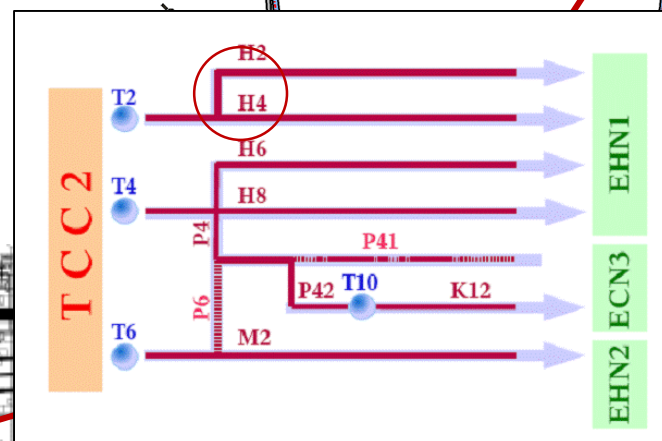
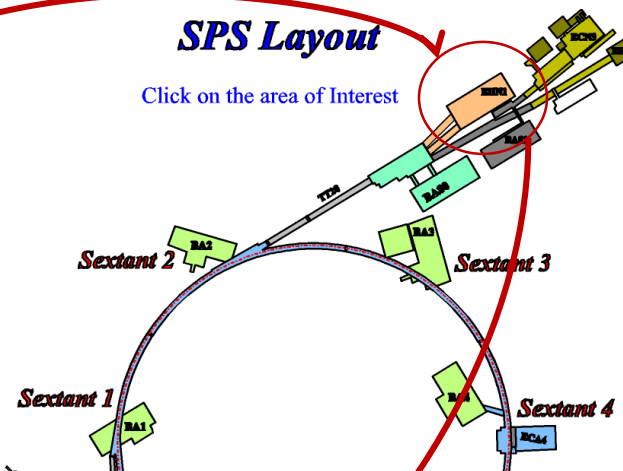
CERN Accelerator Complex



LHC Large Hadron Collider SPS Super Proton Synchrotron PS Proton Synchrotron
 AD Antiproton Decelerator CTF3 Clic Test Facility
 CNGS Cern Neutrinos to Gran Sasso ISOLDE Isotope Separator OnLine DEvice
 LEIR Low Energy Ion Ring LINAC LINear ACcelerator n-ToF Neutrons Time Of Flight

SPS Layout

Click on the area of Interest



Building 887 – EHN1



<http://sba.web.cern.ch/sba/BeamsAndAreas/resultbeam.asp?beamline=H4>

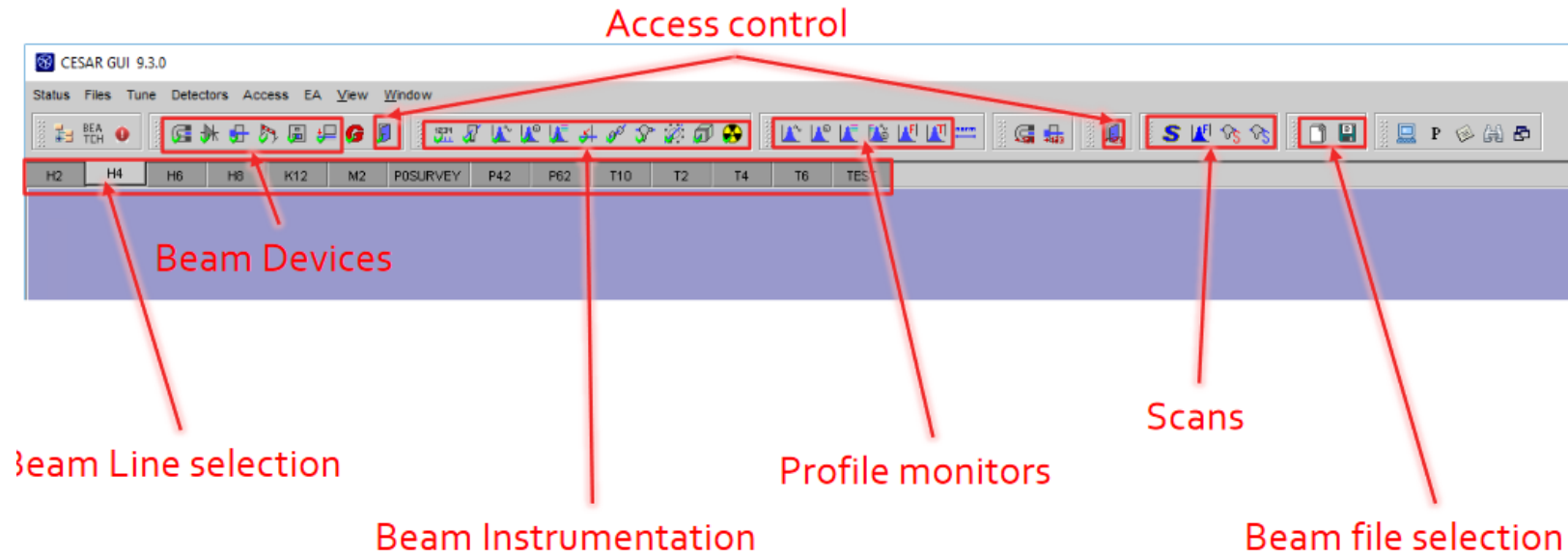
H2/H4 General Information

- **Two unique experimental beam lines**
 - Magnetic spectrometers with maximum dp/p : 2%
 - Separating momenta and not particle species !
- **Available momenta : 20 – 400 GeV/c**
 - Mixed hadron or pure electron modes
 - Purity variable with momentum/intensity and beam line configuration
- **Spill duration: ~4.8 s flat-top, 1-2 spills / supercycle**
 - Rates @ your detector : a few hundred particles/spill – 1E7 particles /spill
 - RP and other limitations may apply
- **Very dynamic facilities**
 - Modifiable, easily accessible, and adaptable to user needs....within limits.

H4 beam line

- **The H4 beam line** is located in EHN1. It is a high-energy, high-resolution general purpose beam suitable for both experiments and tests. Main parameters: $P_{max} = 330$ (450) GeV/c, $Acc. = 1.5 \mu Sr$, $\Delta p/p_{max} = \pm 1.4 \%$ The maximum momentum is 400 GeV/c.
- **detailed user guide:** [H4](#)
- **Beam types:**
 - polarized protons for $\Lambda 0$ decay, enriched low-intensity beam of anti-protons, or K^+
 - electrons from γ -conversion,
 - Attenuated primary beam, Heavy ion beam
- **Maximum intensities** for 10^{12} incident protons at 400 GeV/c:
 - n^+ , e fluxes similar to H2
 - $\sim 10^7$ protons at 400 GeV/c
 - $\sim 10^7$ Pb

CESAR

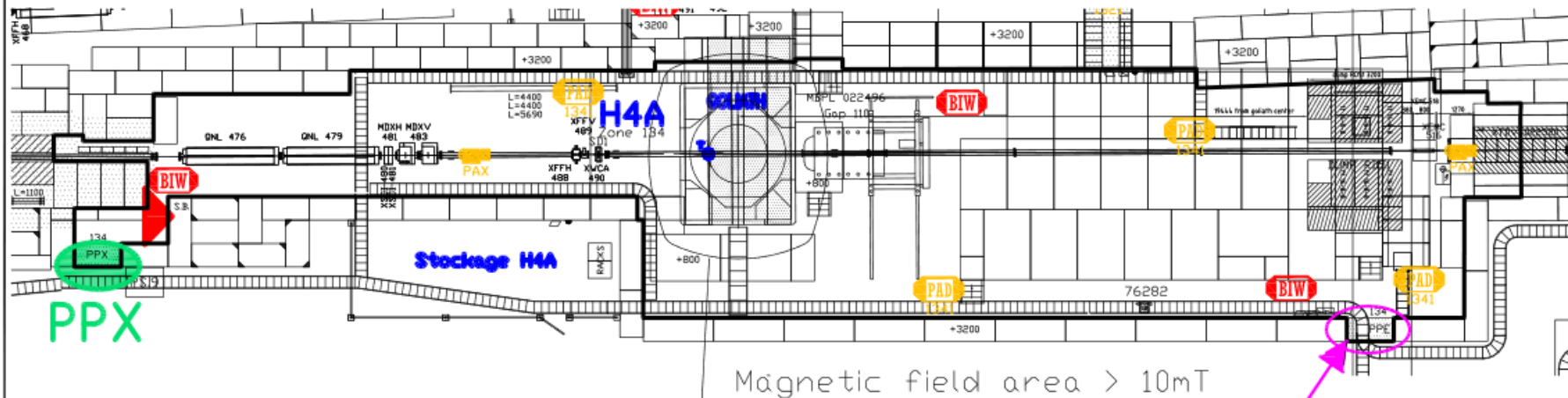


CESAR is the software that allow you ton control the beam, and ask for Beam on or off:

- When opening CESAR in the control PC you just click on "logging by location"
- When you request for Beam on you should enter your NICE credential.
- Please contact me (bastien.rae@cern.ch) to organize a small training (~45min).



Beam H4 - PPE134

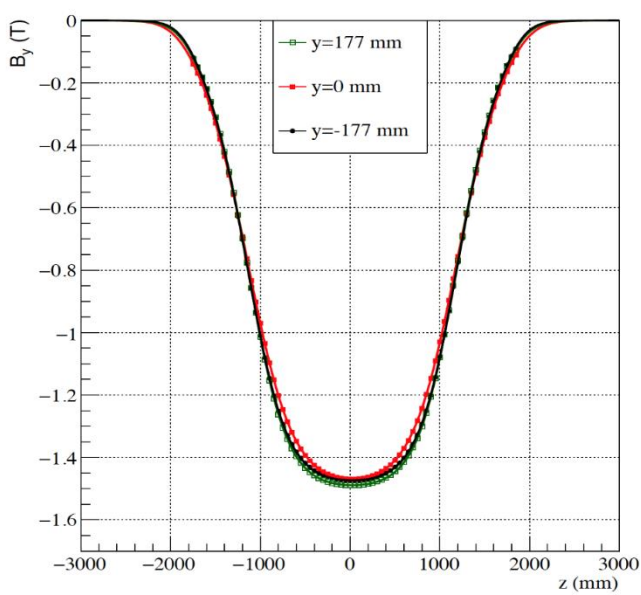
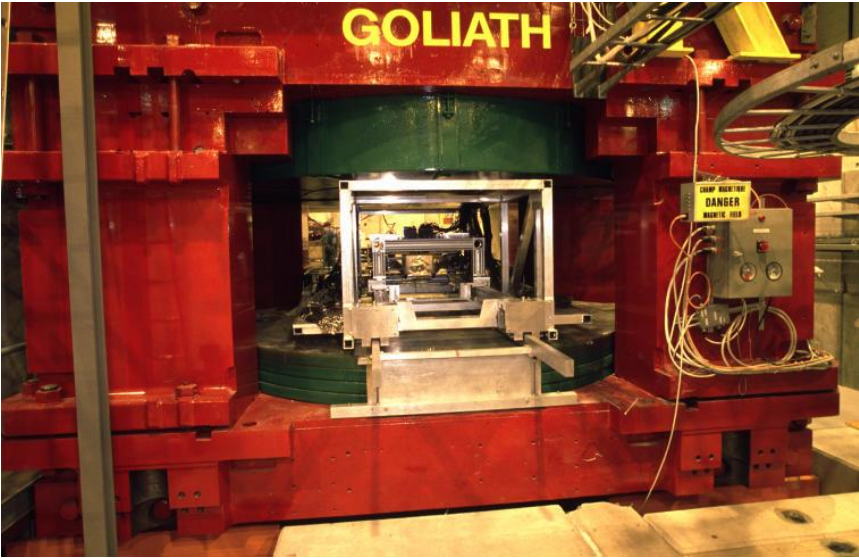


You are here

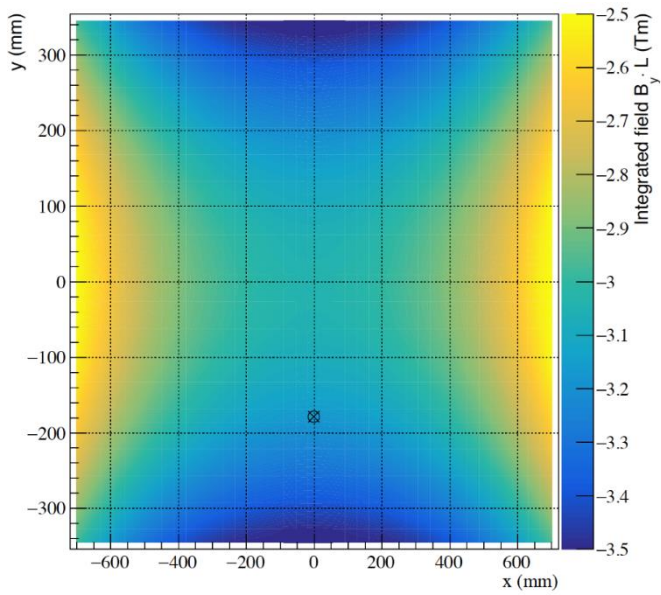
- 1 Exit door PPX / PPG
- 1 Patrol box
- 3 BIW Flash Beam Imminent Warning
- PAD Radiation display
- PAX Radiation monitor

For access problems
please contact CCC: 77500

Goliath Magnet



Z (beam axis)



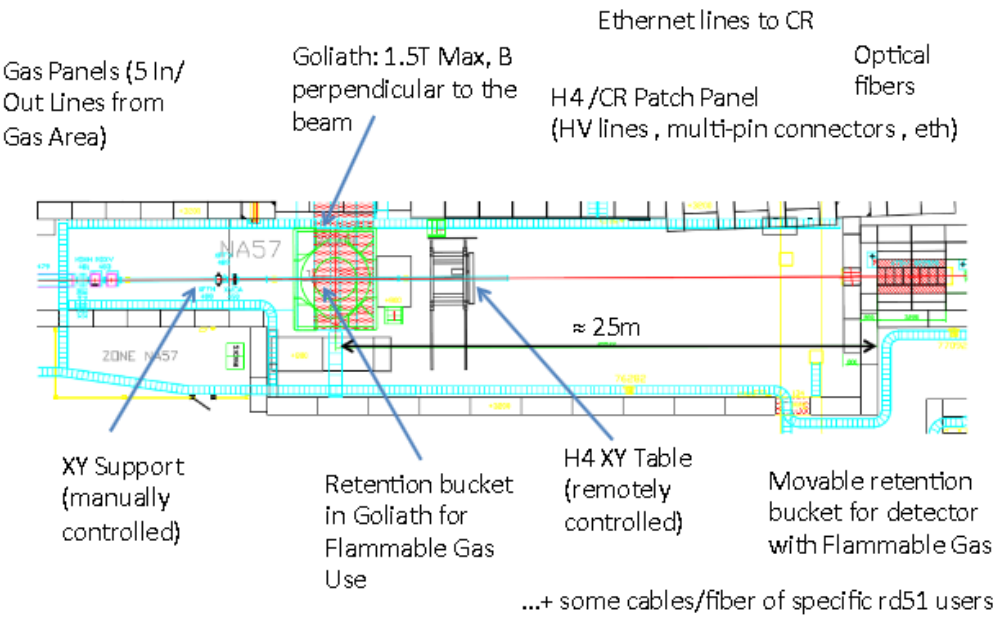
RD51 Test Beam Organization/Sharing/Common infrastructures/...

Internal (beam sharing between groups) and **external** (GIF++ and with any other parallel user) coordination

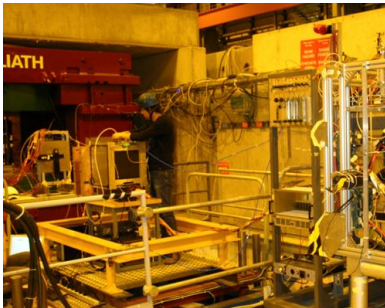
Typical Shift Scheme

	MAIN	Parasitic1	Parasitic2
Shift1	ALICE TPC	WIS/Aveiro/Coimbra	LNF
Shift2	ATLAS NSW	ALICE TPC	WIS/Aveiro/Coimbra
Shift3	CMS GEM	ATLAS NSW	ALICE TPC
Shift4	LAPP/UA/NCSR/IRFU	CMS GEM	ATLAS NSW
Shift5	LNF	LAPP/UA/NCSR/IRFU	CMS GEM
Shift6	WIS/Aveiro/Coimbra	LNF	LAPP/UA/NCSR/IRFU
Shift7	ALICE TPC	WIS/Aveiro/Coimbra	LNF
...			

Infrastructures (gas, HV, LV, sensors,...)



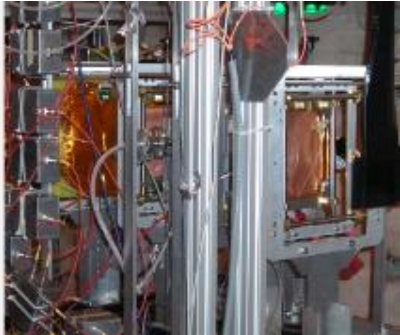
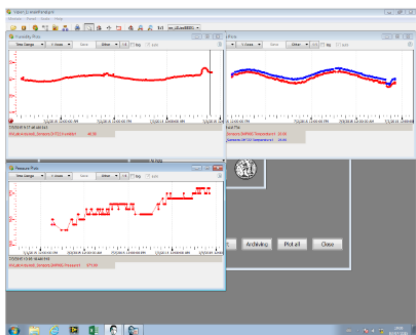
Remotely controllable platform (CERN SPS/NA)



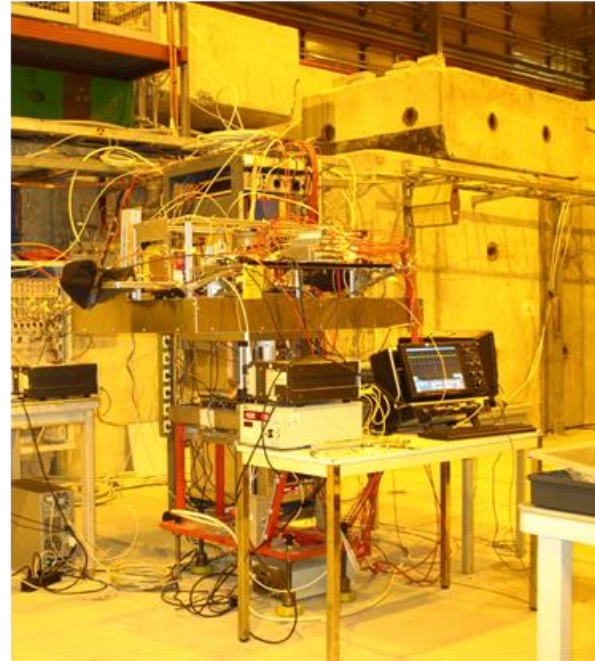
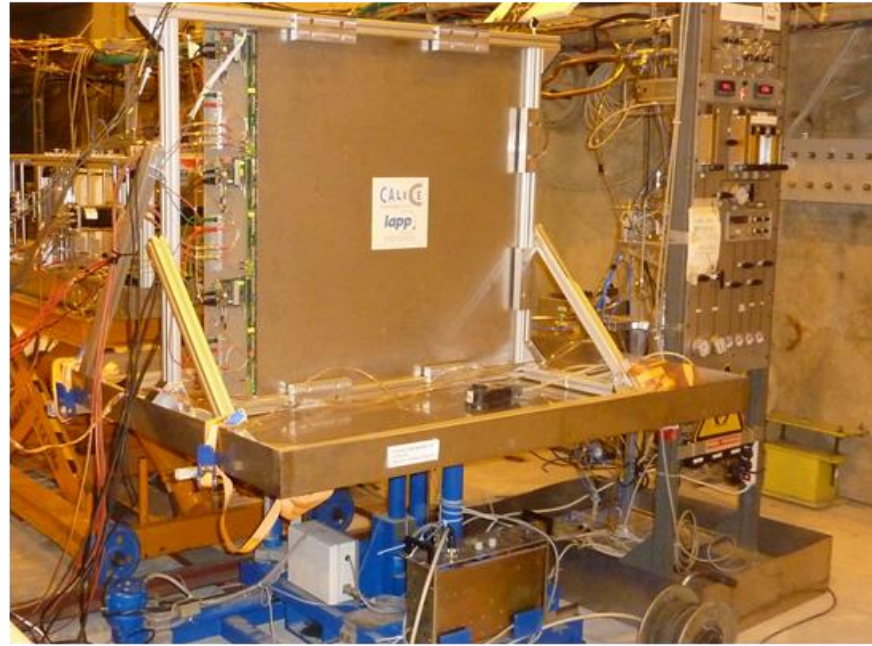
RD51 DCS (Control and monitoring)
Environmental plots during Test Beam

RD51 Trackers and SRS/APV25 DAQ

Mechanical support (Miranda)



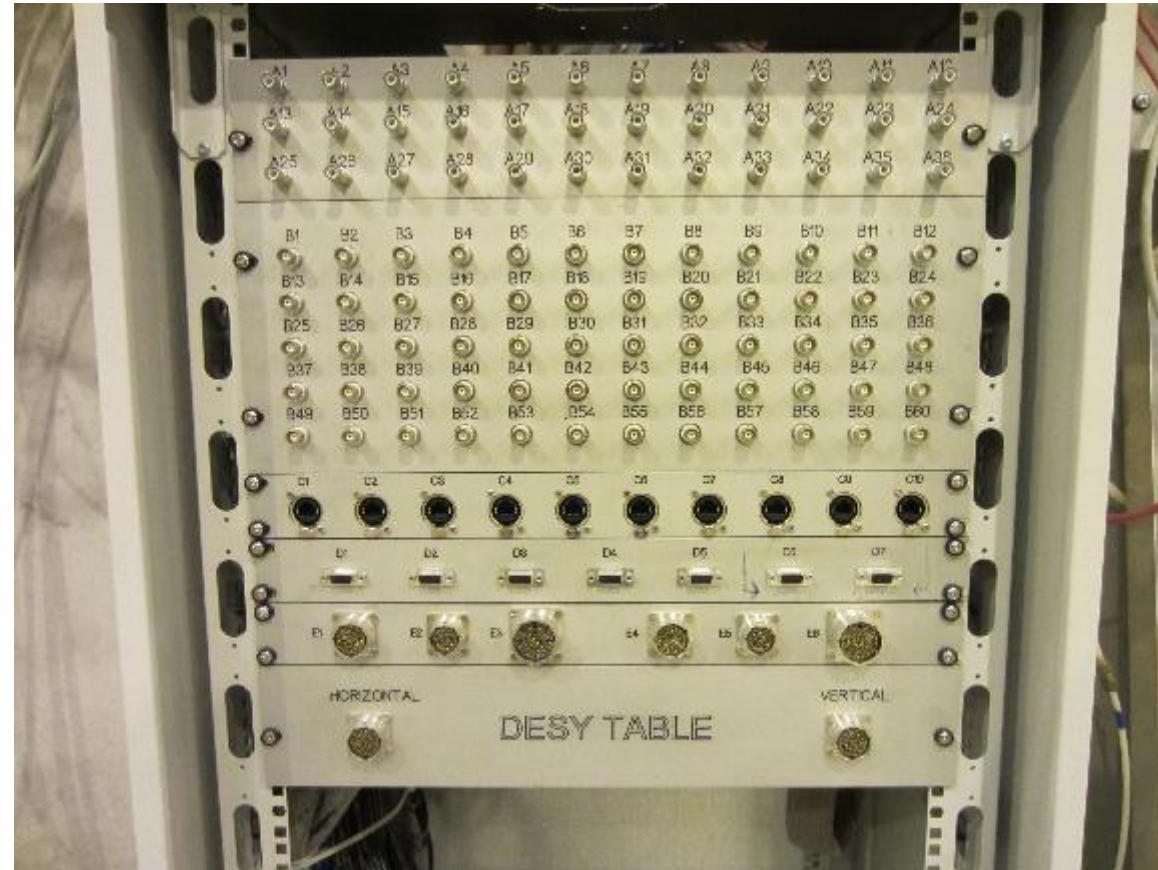
Moving tables & supports from CERN/NA & RD51



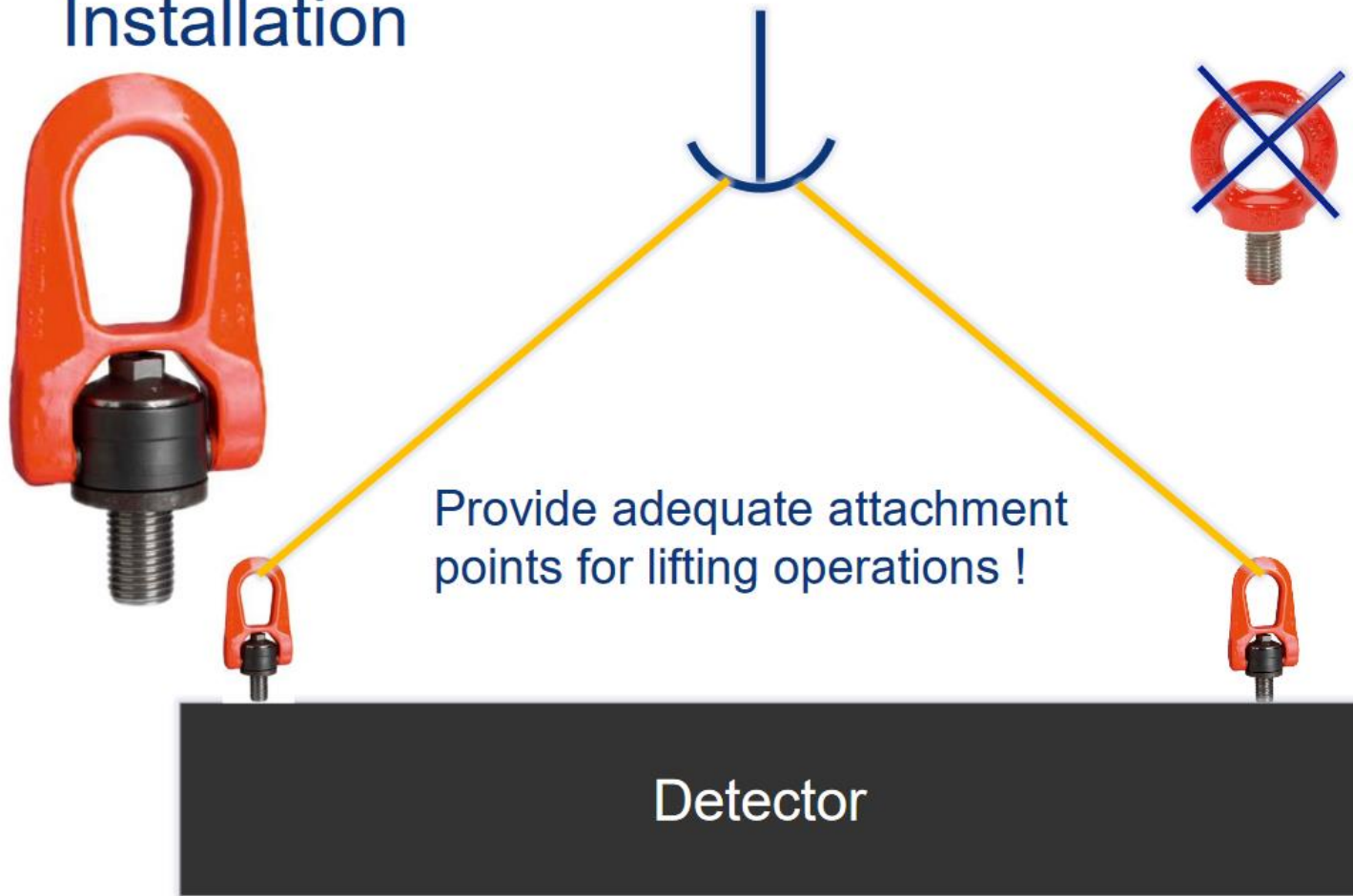
Installation – patch panel

Zone PPE **172** (H2B), **134** (H4A), **146** (H6A), **138** (H8A) & **158** (H8B)

- A: 36 x SHV
- B: 60 x BNC
- C: 10 x RJ45
- D: 6 x Type D
- D: 2 x Profibus
- E: 2 x Burndy 12
- E: 2 x Burndy 19
- E: 2 x Burndy 28
- F: DESY table control



Installation



**To move
detectors/material in
the experimental hole
with the crane**

Access and Safety

Access

- Fill in an EDH- Access Request for the control room and for patrol rights.

Link: [Electronic locks instructions](#)

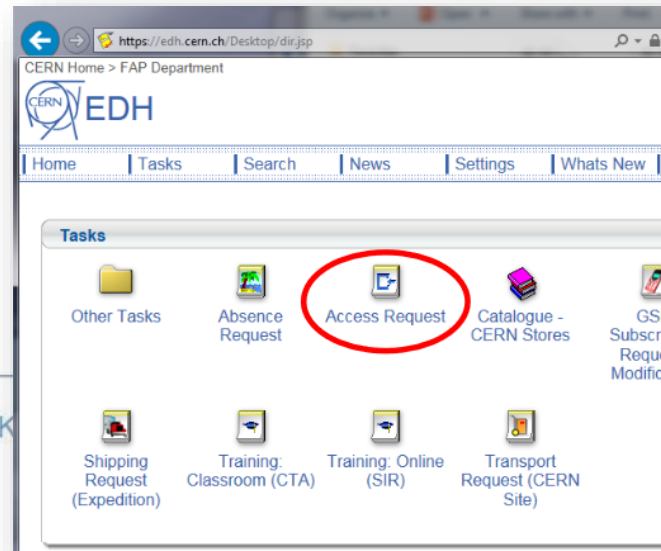


- To enter the experimental hall the personal dosimeter is enough.



Safety courses @ SIR:

CERN Safety Introduction
Electrical Safety – Awareness
Radiation Protection - Supervised Area
CERN - Beam Facilities



Test beam check list

Michael JECKEL EN-EA-EC



EDMS:1745256

https://indico.cern.ch/event/700663/contributions/2874577/attachments/1617340/2571297/Test_beam_check_list.pdf

0887-1-A47

Search permission

<input type="text"/>		Go
▼	<input checked="" type="checkbox"/>	<input type="text" value="Row text contains '0887'"/>
Code ↑	Description	
0887-1-A47	Control Room HNA-348	

OUR CONTROL ROOM

Access

Physic Zones	User	Barrack	
	Zones	EA-Name	TS-Name
H2-152	H2A	HNA-355	887-1-A53
H2-172	H2B	HNA-370	887-1-B71
	H2B	HNA-383	887-1-B81
H4-134	H4A	HNA-348	887-1-A47
H4-154	H4B	HNA-910	887-1-P95
H4-164	H4C	HNA-903	887-1-B95
H6-126	CERF	HNA-445	887-1-Q44
H6-146	H6A	HNA-447	887-1-Q45
H6-156	H6B	HNA-453	887-1-R52
H6-156	H6B	HNA-455	887-1-R53
H6-166	H6C	HNA-457	887-1-Q54
H8-138	H8A	HNA-443	887-1-Q40
H8-158	H8B	HNA-262	887-R-Q64
H8-168	H8C	HNA-468	887-1-Q67
H8-168	H8C	HNA-480	887-1-R77
H8-128	H8Z	HNA-451	887-1-Q49

Only for CERN services

The screenshot shows a web application interface for managing access requests. The main window displays a list of requests with columns for Item, Request, and Status. A 'Line Item Editor' dialog box is open, showing a list of access items and their details. The dialog box has a 'Line Item Editor' title bar and a close button. It contains a list of access items with their details, including Access Site, Access Building, Access Zone, Start Date, End Date, and Justification. The list of items includes:

- 0887-1-Q54: Control Room HNA-457
- 0887-1-Q70: Control Room HNA-468
- 0887-1-Q80: Control Room HNA-480
- 0887-1-Q83: Meeting room EHN1
- 0887-1-R52: Control Room HNA-453
- 0887-1-R53: Control Room HNA-455
- 0887-1-R77: Control Room HNA-480
- 0887-1-R87: Control Room HNA-487
- 0887-R-B84: Control Room HNA-183
- 0887-R-B85: Control Room HNA-186
- 0887-R-C04: Zone d'entreposage de sources radioactives
- 0887-R-C20: CLEAN ROOM JURA SIDE
- 0887-R-C41: CAGE CENTRAL DOOR JURA SIDE
- 0887-R-C52: NA 61 Gas Cage
- 0887-R-M84: CAGE H8 - 1
- 0887-R-M88: CAGE H8 - 2
- 0887-R-Q11: CLEAN ROOM SALEVE SIDE
- 0887-R-Q60: Control Room HNA-262
- 0887-R-R86: CAGE Saleve - 2
- 0887-R-R87: CAGE Saleve - 1
- EHN1-112: Zone Patrol Rights (bldg 887) - H2 (132, 142, 152, 172)
- EHN1-118: Zone Patrol Rights (bldg 887) - H8 (128, 138, 148, 158, 168)
- EHN1-GIF: GIF++ Zone Turnstile
- EHN1-H2: Zone Patrol Rights (bldg 887) - H2 (132, 142, 152, 172)
- EHN1-H4: Zone Patrol Rights (bldg 887) - H4 (124, 134, 144, 154, 164)
- EHN1-H6: Zone Patrol Rights (bldg 887) - H6 (126, 136, 146, 156, 166)
- EHN1-H8: Zone Patrol Rights (bldg 887) - H8 (128, 138, 148, 158, 168)
- EHN1-RAMP: EHN1 access ramps
- EHN1TRP: EHN1 material doors
- NA-GALLERY: Zone Patrol Right - GL300, GL811, GL813, GL814, GL815, GL818

The dialog box also has a 'Justification' field and a 'Start Date' field. The 'Justification' field is currently empty. The 'Start Date' field is currently empty. The 'End Date' field is currently empty. The 'Access Site' field is currently set to 'PREVESSIN'. The 'Access Building' field is currently set to '887'. The 'Access Zone' field is currently empty. The 'Line Item Editor' dialog box is open over the main window, which shows a list of access requests. The main window has a table with columns for Item, Request, and Status. The table contains several rows of data, including requests for ECN3 experimental hall, SPS ring and transfer lines, ATLAS CONTROL ROOM, and various control rooms and cages. The 'Line Item Editor' dialog box is open over the main window, showing a list of access items and their details. The dialog box has a 'Line Item Editor' title bar and a close button. It contains a list of access items with their details, including Access Site, Access Building, Access Zone, Start Date, End Date, and Justification. The list of items includes:

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- EHN1-118: Zone Patrol Rights (bldg 887) - H8 (128, 138, 148, 158, 168)
- EHN1-GIF: GIF++ Zone Turnstile
- EHN1-H2: Zone Patrol Rights (bldg 887) - H2 (132, 142, 152, 172)
- EHN1-H4: Zone Patrol Rights (bldg 887) - H4 (124, 134, 144, 154, 164)
- EHN1-H6: Zone Patrol Rights (bldg 887) - H6 (126, 136, 146, 156, 166)
- EHN1-H8: Zone Patrol Rights (bldg 887) - H8 (128, 138, 148, 158, 168)
- EHN1-RAMP: EHN1 access ramps
- EHN1TRP: EHN1 material doors
- NA-GALLERY: Zone Patrol Right - GL300, GL811, GL813, GL814, GL815, GL818

The dialog box also has a 'Justification' field and a 'Start Date' field. The 'Justification' field is currently empty. The 'Start Date' field is currently empty. The 'End Date' field is currently empty. The 'Access Site' field is currently set to 'PREVESSIN'. The 'Access Building' field is currently set to '887'. The 'Access Zone' field is currently empty. The 'Line Item Editor' dialog box is open over the main window, which shows a list of access requests. The main window has a table with columns for Item, Request, and Status. The table contains several rows of data, including requests for ECN3 experimental hall, SPS ring and transfer lines, ATLAS CONTROL ROOM, and various control rooms and cages. The 'Line Item Editor' dialog box is open over the main window, showing a list of access items and their details. The dialog box has a 'Line Item Editor' title bar and a close button. It contains a list of access items with their details, including Access Site, Access Building, Access Zone, Start Date, End Date, and Justification. The list of items includes:

- 0887-1-Q54: Control Room HNA-457
- 0887-1-Q70: Control Room HNA-468
- 0887-1-Q80: Control Room HNA-480
- 0887-1-Q83: Meeting room EHN1
- 0887-1-R52: Control Room HNA-453
- 0887-1-R53: Control Room HNA-455
- 0887-1-R77: Control Room HNA-480
- 0887-1-R87: Control Room HNA-487
- 0887-R-B84: Control Room HNA-183
- 0887-R-B85: Control Room HNA-186
- 0887-R-C04: Zone d'entreposage de sources radioactives
- 0887-R-C20: CLEAN ROOM JURA SIDE
- 0887-R-C41: CAGE CENTRAL DOOR JURA SIDE
- 0887-R-C52: NA 61 Gas Cage
- 0887-R-M84: CAGE H8 - 1
- 0887-R-M88: CAGE H8 - 2
- 0887-R-Q11: CLEAN ROOM SALEVE SIDE
- 0887-R-Q60: Control Room HNA-262
- 0887-R-R86: CAGE Saleve - 2
- 0887-R-R87: CAGE Saleve - 1
- EHN1-112: Zone Patrol Rights (bldg 887) - H2 (132, 142, 152, 172)
- EHN1-118: Zone Patrol Rights (bldg 887) - H8 (128, 138, 148, 158, 168)
- EHN1-GIF: GIF++ Zone Turnstile
- EHN1-H2: Zone Patrol Rights (bldg 887) - H2 (132, 142, 152, 172)
- EHN1-H4: Zone Patrol Rights (bldg 887) - H4 (124, 134, 144, 154, 164)
- EHN1-H6: Zone Patrol Rights (bldg 887) - H6 (126, 136, 146, 156, 166)
- EHN1-H8: Zone Patrol Rights (bldg 887) - H8 (128, 138, 148, 158, 168)
- EHN1-RAMP: EHN1 access ramps
- EHN1TRP: EHN1 material doors
- NA-GALLERY: Zone Patrol Right - GL300, GL811, GL813, GL814, GL815, GL818

The dialog box also has a 'Justification' field and a 'Start Date' field. The 'Justification' field is currently empty. The 'Start Date' field is currently empty. The 'End Date' field is currently empty. The 'Access Site' field is currently set to 'PREVESSIN'. The 'Access Building' field is currently set to '887'. The 'Access Zone' field is currently empty. The 'Line Item Editor' dialog box is open over the main window, which shows a list of access requests. The main window has a table with columns for Item, Request, and Status. The table contains several rows of data, including requests for ECN3 experimental hall, SPS ring and transfer lines, ATLAS CONTROL ROOM, and various control rooms and cages. The 'Line Item Editor' dialog box is open over the main window, showing a list of access items and their details. The dialog box has a 'Line Item Editor' title bar and a close button. It contains a list of access items with their details, including Access Site, Access Building, Access Zone, Start Date, End Date, and Justification. The list of items includes:

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- 0887-1-R53: Control Room HNA-455
- 0887-1-R77: Control Room HNA-480
- 0887-1-R87: Control Room HNA-487
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- EHN1-112: Zone Patrol Rights (bldg 887) - H2 (132, 142, 152, 172)
- EHN1-118: Zone Patrol Rights (bldg 887) - H8 (128, 138, 148, 158, 168)
- EHN1-GIF: GIF++ Zone Turnstile
- EHN1-H2: Zone Patrol Rights (bldg 887) - H2 (132, 142, 152, 172)
- EHN1-H4: Zone Patrol Rights (bldg 887) - H4 (124, 134, 144, 15

General Safety in EHN1



- Necessary PPEs (Personal Protective Equipment) to enter the building are: **helmet, safety shoes and personal dosimeter**

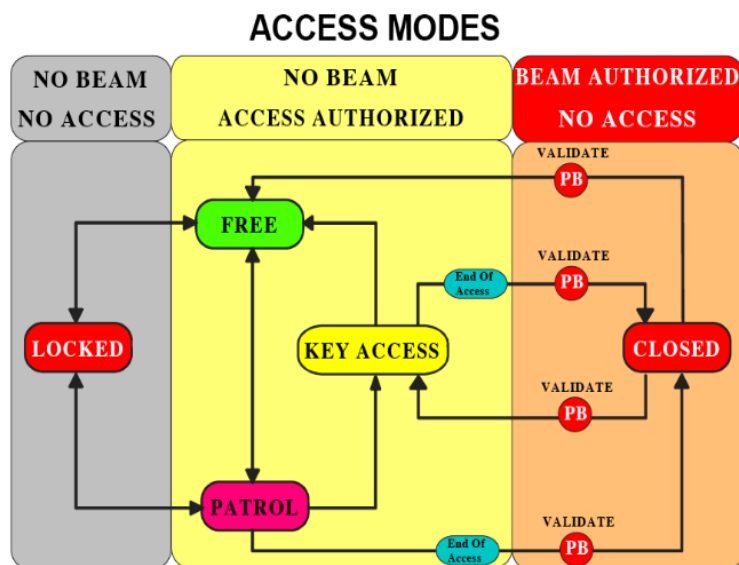


Additional PPEs might be required, depending on the activities to be performed.

- Every experimental area is equipped with safety installations, as **fire extinguishers** and **AUG** (General Emergency Stop – cut the power in the entire building).
Please, take some time to familiarise with their position!
- Any **professional incident** shall be declared via:
<https://edh.cern.ch/Document/General/Accident>

ACCESS MODES OF A SECONDARY BEAM AREA

- **'CLOSED'** area: no access permitted, beam potentially present;
- **'LOCKED'** area: no access possible (except for fire brigade and radiation protection)
- **'ACCESS WITH KEY'**: entering is possible by taking a key, one key per person entering (short KEY ACCESS)
- **'FREE'** access: access without restrictions
- **'PATROL'**: It has a very limited duration and serves changing a zone status from "FREE" to any other mode.



REMARK

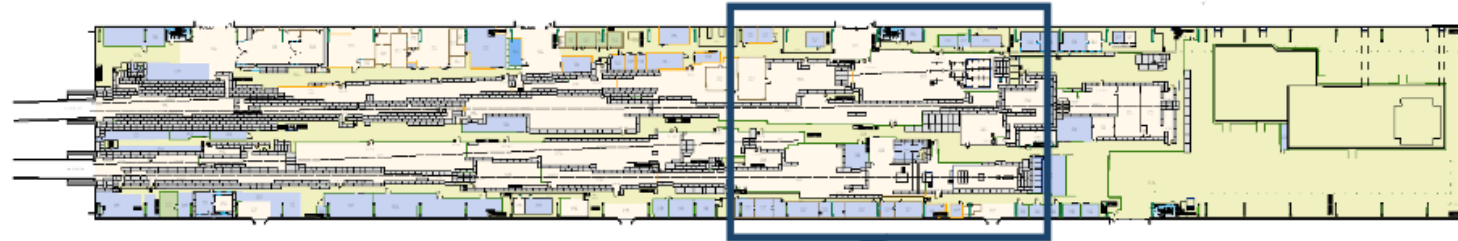
EMERGENCY BUTTON

On each door there is an emergency button above the handle. It's also give you information if you have enter or not.

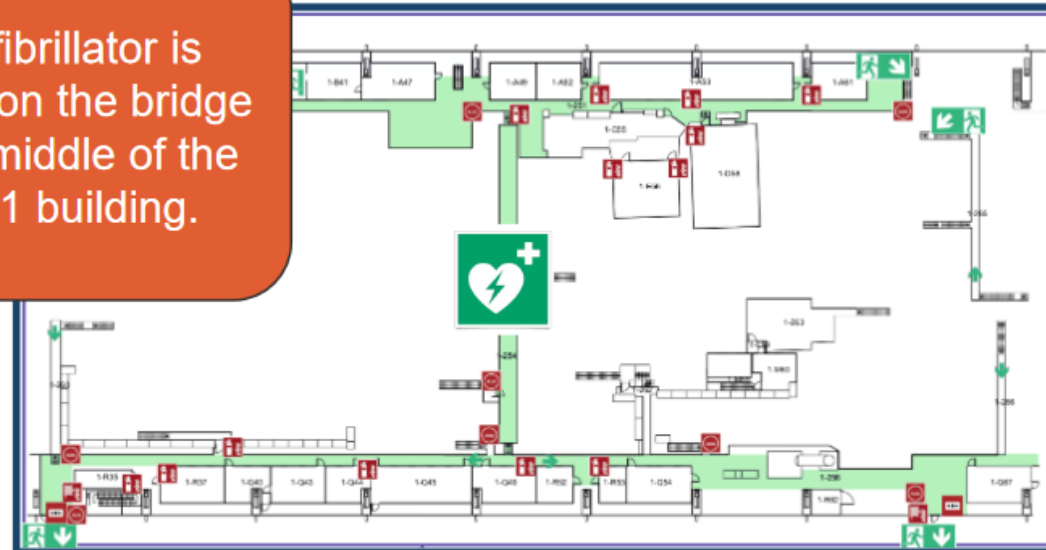


YOU MUST USE THE EMERGENCY BUTTON ONLY IN CASE OF EMERGENCY !

Defibrillator in EHN1



A defibrillator is placed on the bridge in the middle of the EHN1 building.



To learn how to use a defibrillator in case of emergency, you can subscribe to the “First Aid” training on the [Learning Hub](#).

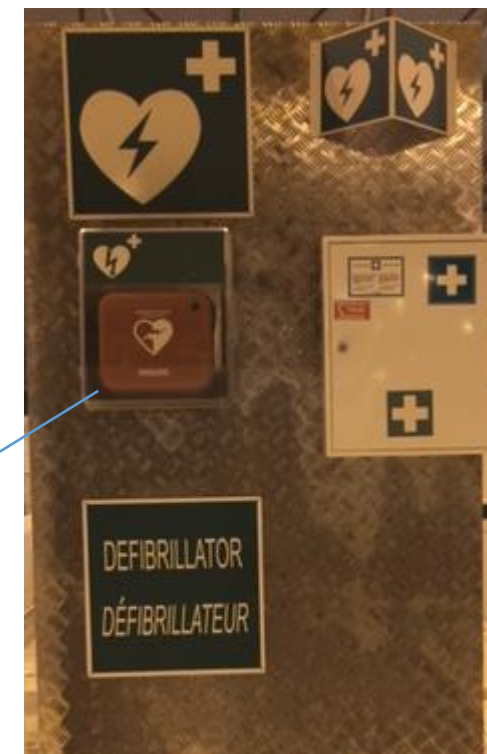
Safety

Defibrillator in building 887

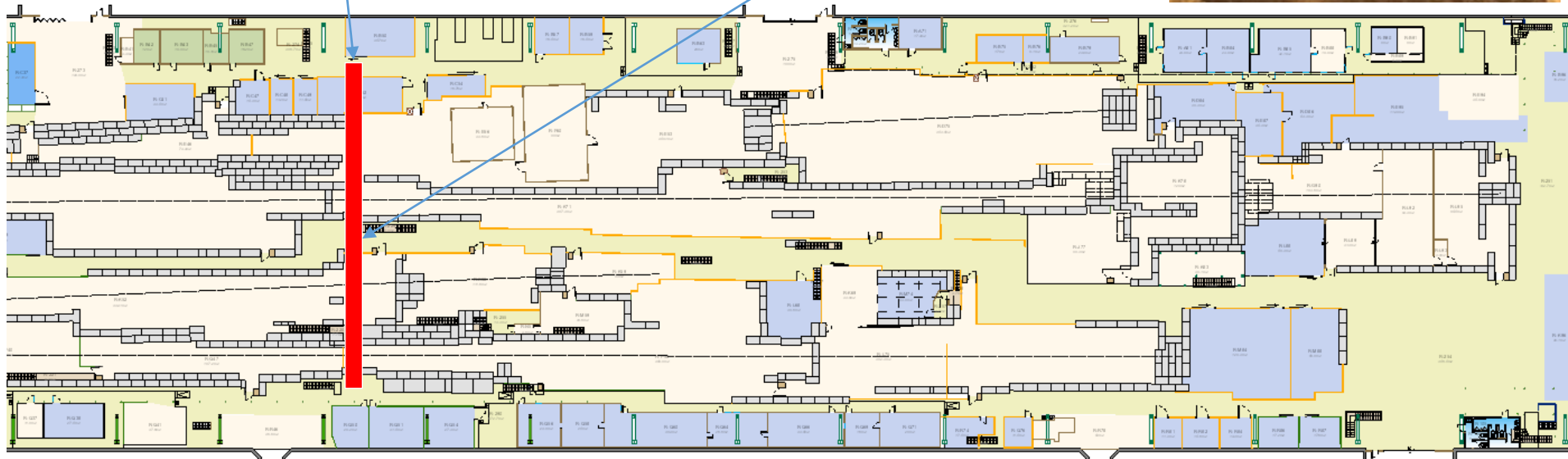


CERN fire brigade 7.44.44

+41.22.767.44.44 from non CERN mobile phones



Central bridge



Assembly points in EHN1

- There are two assembly points, located at the sides of EHN1.
Please, take some time familiarise yourself with their location!



Jura side: close to picnic area



Salève side: car park by the ramp, close to building 892

Safety contacts

- In case of any safety related questions, different safety actors will be available:

TSO – Territorial Safety Officer

Contact: EHN1-TSO@cern.ch

DSO – Department Safety Officer

Contact: ep-adso@cern.ch

COVID-19 Information



- Maximum number of people displayed on control rooms doors (after assessment)
- Masks, hand disinfectant, surface disinfectant, etc. will be provided by CERN
- If any symptoms appear or if you are a confirmed close contact of a positive case, stay at home and contact the CERN Medical Service via the TRAMED application <https://tramed.web.cern.ch>

NEVER come to CERN with symptoms!

- The TRAMED declaration is followed up by a call from the CERN Medical Service. Any COVID test consequence of this declaration is payed by CERN.
- If you are declared as a COVID case (suspected or confirmed), collaborate with the Medical Service and the CoTrac for the tracing of your past activities (working areas, close contacts, etc.)
- Possession of a proximeter and COVID-19 safety training ([link](#)) are necessary to enter CERN

TREC in experimental areas & Radiation Monitoring System in experimental areas

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EDMS 2579972



[https://indico.cern.ch/event/1034416/contributions/4344062/
subcontributions/337739/attachments/2247503/3812139/TRE
C_and_Radiation_monitoring_Exp_areas.pdf](https://indico.cern.ch/event/1034416/contributions/4344062/subcontributions/337739/attachments/2247503/3812139/TREC_and_Radiation_monitoring_Exp_areas.pdf)

Guidelines

- Every material **leaving a beamline** has to be **traced in TREC** and **controlled by RP**
- Every material **leaving a radiologically classified building** has to be **controlled by RP**



Flow



- Identify the material (traceability stickers) **before** installing in the beamline. **Trace reasonably** (i.e. do not use one code per screw)
- Do the request **well in advance**, with indication of the time when the material will be available for the measurement (measurement deadline). Use comments in TREC if needed
- Deposit the material in the Buffer Zone, if possible. Otherwise, call the RP Officer (**Meyrin: 72504, Prévessin: 75252**)
- **Sign the EDH** created by TREC, and **wait for the RPO signature** before leaving the building
- **Update the location** of your equipment when it has been transported

Reminders (often forgotten)

- The TREC code follows the equipment part until the end of his life
- Record your request in TREC
- Indicate a responsible person who is at CERN and available to sign in EDH
- Sign your EDH
- Wait until RPO signature before leaving
- In case of urgency, contact the RPO
- For specific cases, contact the RPO

Radiation alarm displays

Flashing RED light + Audible ALARM
→ Leave the concerned area calmly

Flashing ORANGE light + WARNING SOUND
→ Limit your stay in the concerned area

Continuous green light = NORMAL situation
(low radiation levels, system OK)



Possible sources of EHN1 radiation alarms

- Beam transport and steering
 - In the NA Target area
 - In the transfer lines upstream and around EHN1
 - In the beam lines in EHN1
- Beam intensity
 - **Collimator settings** are a major source of alerts/alarms
- Beam particle type
- Status of beam intercepting devices
 - Including their surrounding

Recommended actions in case of radiation alarms in EHN1

- In case of **any alarm** in a zone under your responsibility
 - **Understand & remove the source of the alarm**
 - CCC, beam line physicists, radiation monitoring data
- EHN1 is a very large building
 - You can safely stay in EHN1 if there is no radiation alarm in your vicinity
 - In case of doubt, please contact the responsible of the zone where the alarm occurs (via the CCC)