

Safety Briefing for Test Beam User



- ⦿ There is NO physics result **worth risking** your or other persons' **health**, or even **life**!
- ⦿ Life is **dangerous** enough, and there is no need to increase the **risk** of **harming** ourselves
- ⦿ We do not like setups that are a test of the cleverness of co-workers, and especially of newcomers!

Safety Briefing for Test Beam User

⊙ Responsibilities/1:

- ⊙ One of you, the **run leader**, is the **boss** and **responsible**:
 - ⊙ He/She has to be designated **since from the beam time application** (of course can be changed afterwards)
 - ⊙ He/she has provided the **access documentation** before coming to the test beam
 - ⊙ He/she is the **contact person** with BTF and DAΦNE teams
- ⊙ If more then one group are working in an area a **coordinator** has to be assigned, generally the **run leader** of the “main user” group



Safety Briefing for Test Beam User

© Responsibilities/2

- ◉ **B. Buonomo** is the safety officer for all DAΦNE installations, including the test beam area
- ◉ The **BTF staff** member(s) following your installation and run will:
 - ◉ Instruct on safety in the test beam area
 - ◉ Check [and **enforce**] safety rules
 - ◉ Starting from Rule #1: if you are **not in the list** of authorized personnel, **you cannot enter** the test beam area



Safety Briefing for Test Beam User

◎ Safety & Radio-protection office

- LNF has a **safety** and a **radiation safety** service for the entire Laboratory
- They are responsible for the general safety rules (reported in the "LNF general safety document")
- There are then **safety officers** in charge of the main installations and laboratories
- All this responsibilities are collected on the **door sheet** that has to be filled and placed next to the door of the control room!



Safety Briefing for Test Beam User



**Fire or accident:
Call 5555!**



Do **not** directly call **ambulance** or **fire brigade** yourself!

If you got completely lost you can ask
help
to the main door surveillance, phone **2200**
or to the accelerator control room, phone **2400**



Safety Briefing for Test Beam User

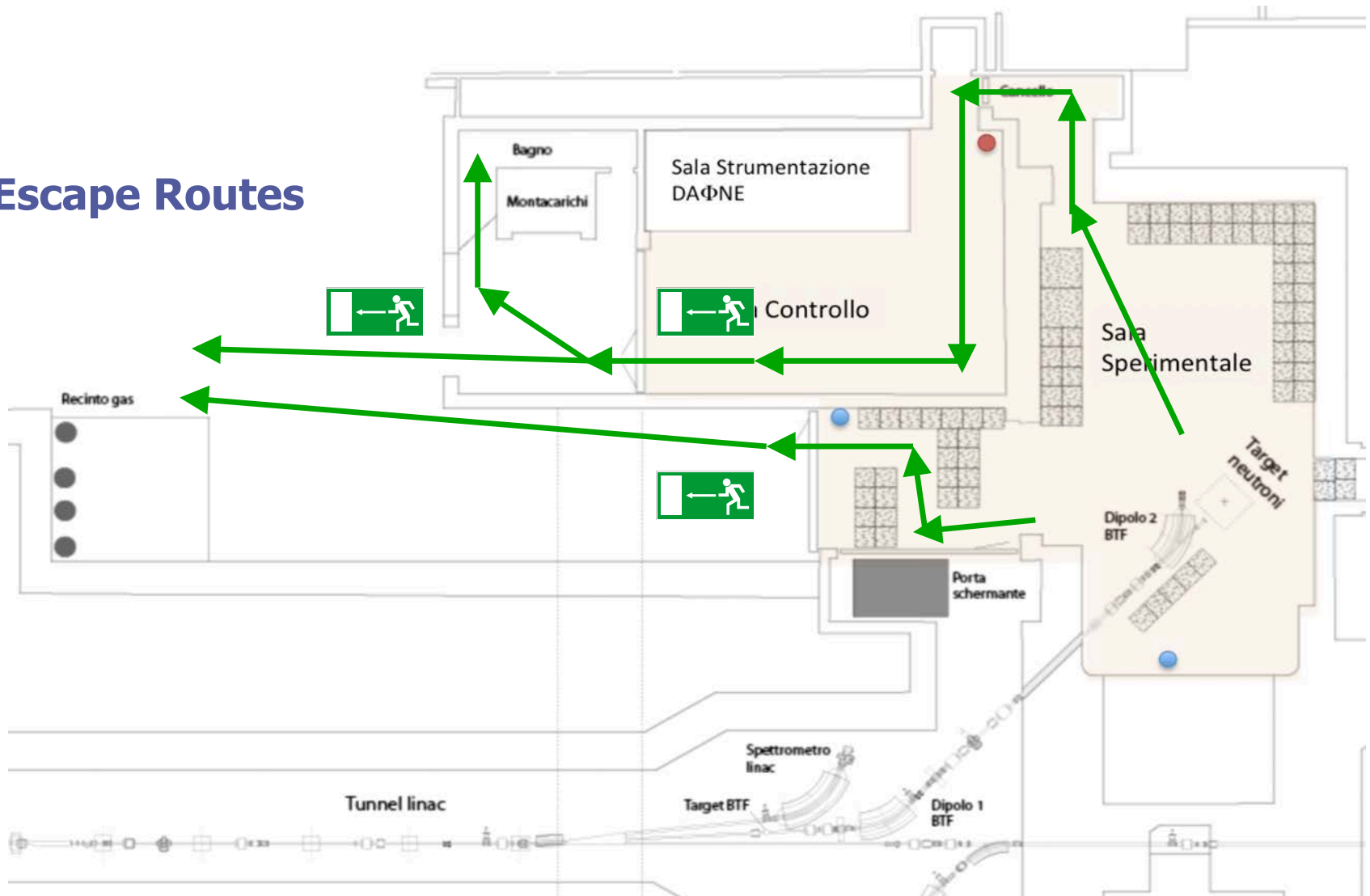
⊙ General (1):

- ⊙ Be aware of the **escape routes**
 - ⊙ Keep them clear!
 - ⊙ Remove your trash!
- ⊙ Do not explore **other areas**
- ⊙ Obey **safety signs!**
- ⊙ Do **not climb** on the walls, do **not enter** not accessible areas
- ⊙ **NO** open **fires** in the hall! (should we say it?...)
- ⊙ Watch out for **crane** work
 - ⊙ Stay clear of hanging loads
 - ⊙ Wear hard heads if you assist



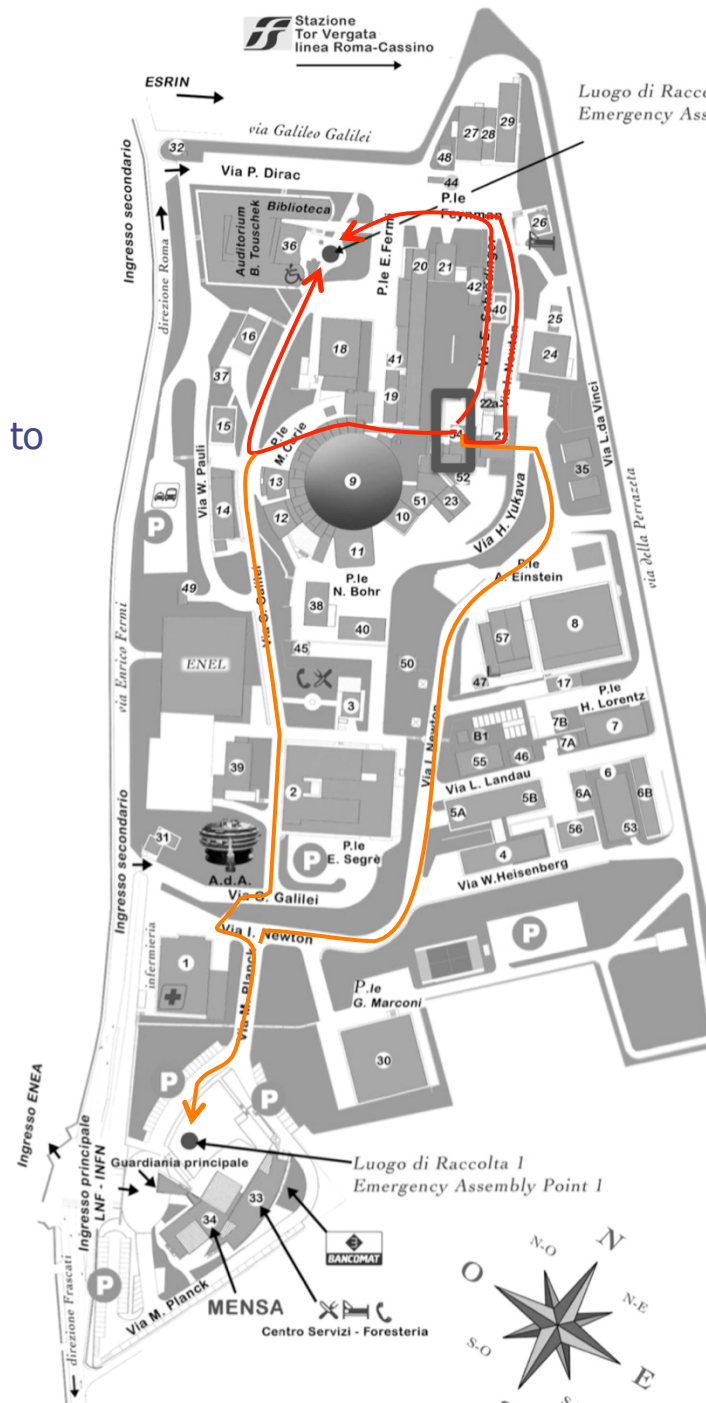
Safety Briefing for Test Beam User

© Escape Routes



Legenda Edifici

- 1 Direzione - Uffici Amministrativi - Magazzino Centrale
- 2 Divisione Acceleratori - Officine Centrali - Magazzino Metalli
- 3 Bar
- 4 Puls - Servizio Meccanica ed Impianti
- 5 Officine Servizi Ingegneria Meccanica - 5a Laboratorio Servizi Vuoto
- 6 SPARC - 6a Sala Controllo - 6b Sala Macchine
- 7 Laboratorio Tecnologie - 7a & 7b Sala Compressori
- 8 Laboratori Gran Sasso ed Antenna Gravitazionale NAUTILUS
- 9 DAFNE
- 10 Centrale Impianto Criogenico
- 11 Sala Sperimentale KLOE
- 12 Sala Sperimentale DAFNE - Luce
- 13 Sala Sperimentale DAFNE - Luce UV
- 14 Edificio Centrale Calcolo
- 15 Edificio Fisica Sanitaria
- 16 Edificio - Servizi Generali - Edilizia - Impianti - Sicurezza
- 17 Laboratorio Officina Meccanica - VIRGO - ROG
- 18 Sala Macchine Alimentatori
- 19 Laboratorio Impianti a Fluido
- 20 Sala Modulatore
- 21 LINAC
- 22 Edificio Fisica Nucleare - 22a Lab. DEAR
- 23 Sala Booster Accumulatore
- 24 Uffici distaccati Alte Energie - Luce Sincrotrone
- 25 Laboratorio produzione Superconduttori
- 26 Foresteria Adone
- 27 Laboratorio Finuda
- 28 Laboratorio Camera pulita LHCB
- 29 Laboratorio Divisione Ricerca
- 30 Amministrazione Centrale - Uffici
- 32 Guardiana pedonale - ingresso secondario
- 33 Centro Servizi - Foresteria - Guardiana principale
- 34 MENSA
- 35 Deposito materiali attivati
- 36 Edificio Alte Energie
(Aula B. Touschek, Aula seminari, Auletta A1, B1, B34, T-73, T-75)
- 37 Deposito Sorgenti
- 38 Laboratorio MISURE MAGNETICHE
- 39 Stazione Elettrica
- 40 Sala pompe DAFNE
- 41 Laboratorio ROG
- 42 Sala Pompe Linac
- 43 Locale deposito
- 44 Cabina elettrica
- 45 Locale deposito
- 46 Cabina elettrica
- 47 Locale compressori
- 48 Locale deposito
- 49 Centrale idrica antincendio
- 50 Box impresa pulizie
- 51 Sala pompe Accumulatore
- 52 Sala alimentatori Accumulatore
- 53 Capannone deposito materiale
- 54 Sala controllo BTF
- 55 Uffici SPARC
- 56 Laboratorio FLAME in assetto provvisorio
- 57 Ampliamento Laboratorio GRAN SASSO e annessi uffici
- 58 BANCA
- B1 Box - Uffici - Magazzini



Assembly Points

- The points are **marked**.
- In case of an evacuation alarm go to the assembly point **immediately** and wait for further advices.

 Stazione
Tor Vergata
linea Roma-Cassino

ESRIN

via Galileo Galilei

*Luogo di Raccolta 2
Emergency Assembly Point 2*

Ingresso secondario

direzione Roma

Via P. Dirac

Auditorium
B. Touschek

Biblioteca

P.le E. Fermi

P.le
Feynman

Via W. Pauli

P.le
M. Curie

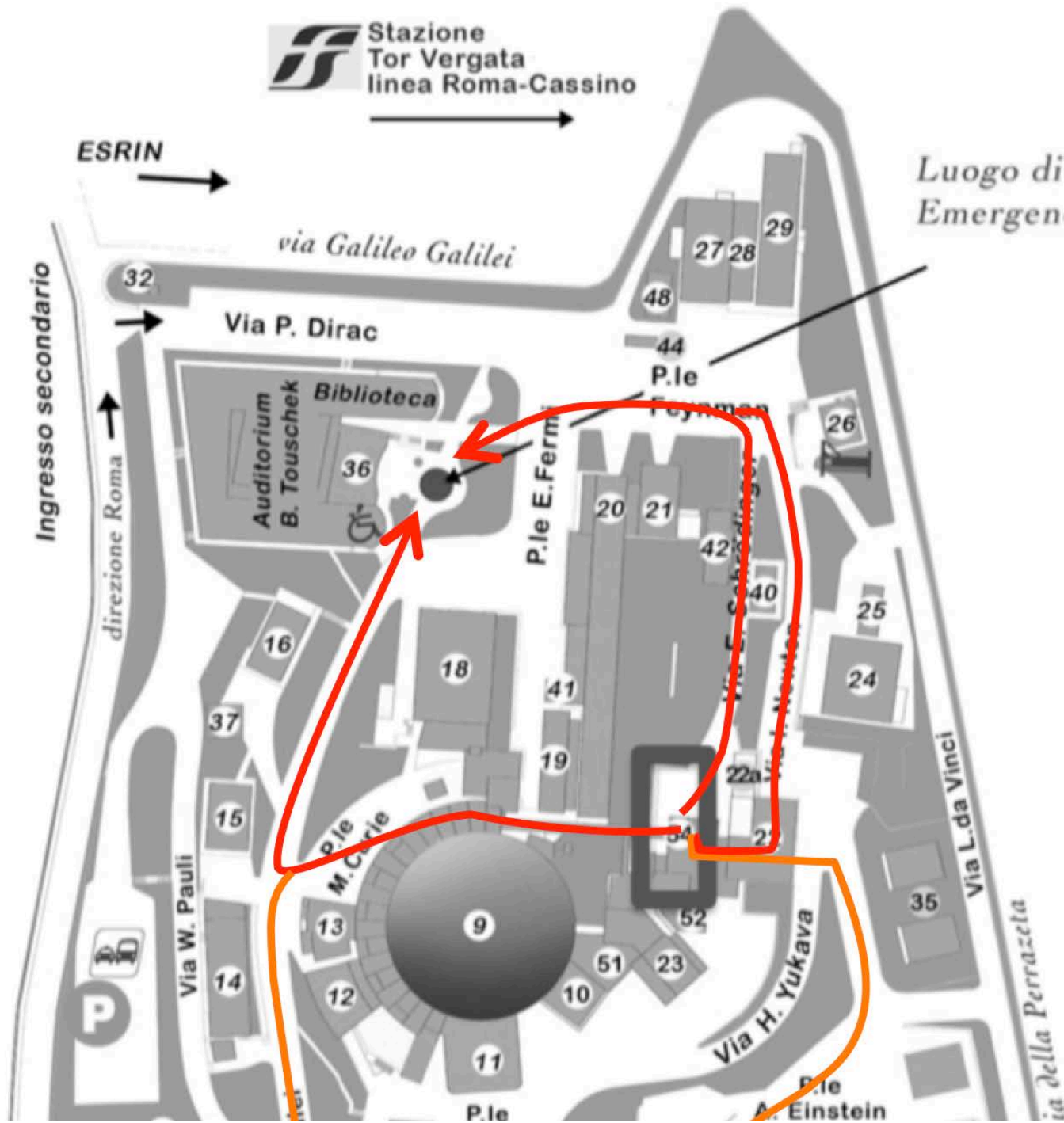
Via H. Yukawa

Via L. da Vinci

Via della Perrazeta

P.le

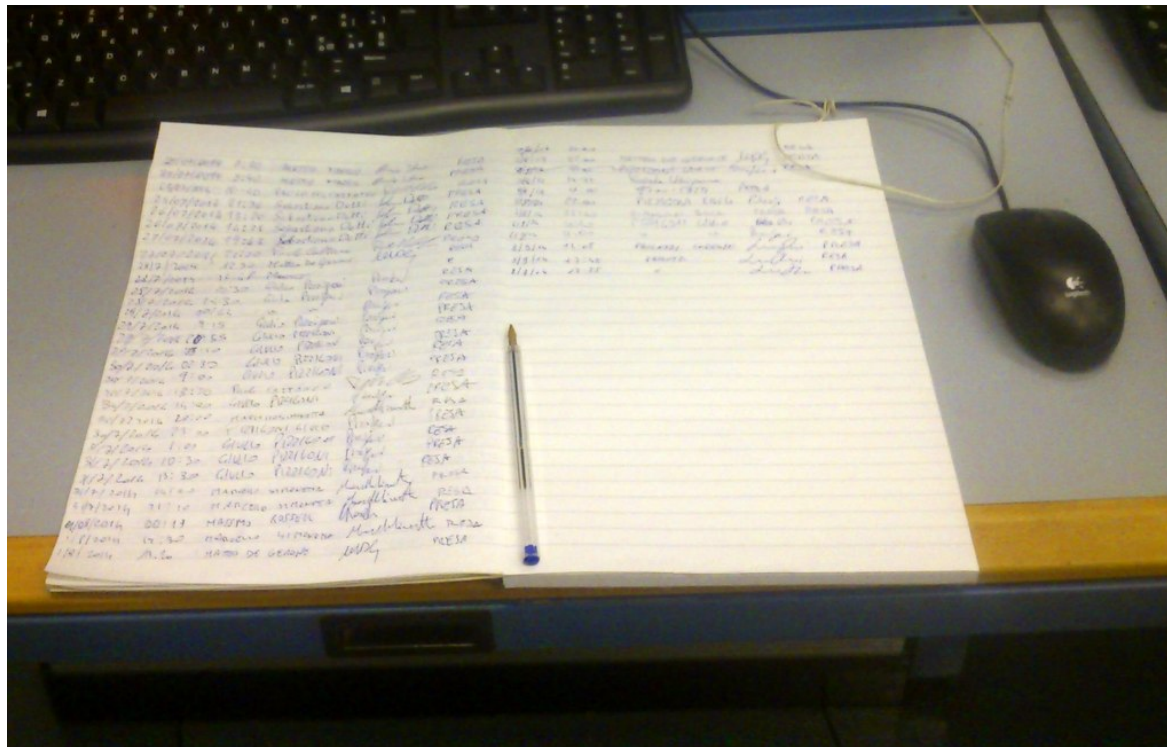
P.le
A. Einstein



Safety Briefing for Test Beam User

◎ Key:

- ◎ Get the BTF key in the **DAFNE main control room**
- ◎ **Sign the register** every time you **take** and **give back** the key



Safety Briefing for Test Beam User

⊙ Authorized personnel:

- ⊙ Only the previously authorized person can access the BTF area
- ⊙ **All participants** should attend the safety course
- ⊙ **All participants** have to sign the safety register in the BTF control room after the course

ALLOWED EXPERIMENTAL				
List of people allowed in BTF from 28/07/14 to 04/08/14				
NAME	Phone	Mobile	SIGNATURE	
Mirco	2388 2291		Bogdan	
Adriano	2388 2291			
Don Luigi	2388 2291			
Bruno	2268 2388 2400	8295		
Luca	2502		Luca	
Antonio	2388 2291			
Luca Gennaro	2268-2388	8092		
Enrico	2388 2291		Enrico	
Shida	2388 2291		Shida	
Binori	2388 2291		Binori	
Id	2388 2291		Id	
Bo	2388 2291		Bo	
Simo	2388 2291		Simo	
O	2388 2291		O	
Ello	2388 2291		Ello	
Ke	2388 2291		Ke	
	2295	8047		
	7311		Dob. Kell	

ALLOWED EXPERIMENTAL				
List of people allowed in BTF from 08/09/14 to 15/09/14				
SURNAME	NAME	Phone	Mobile	SIGNATURE
	Mirco			
	Roberta	2388 2291		P. Decchi
	Bruno	2268 2388 2400	8295	
	Roberto	2388 2291		R. Puchell
	Nicola	2388 2291		
	Luca	2502		
	Luca Gennaro	2268-2388	8092	
	Lorenzo	2388 2291		Lorenzo
	Paolo	2795	8047	



Safety Briefing for Test Beam User

⊙ General (2):

- ⊙ **Working alone** is only permitted for data taking during normal working hours.
 - ⊙ Working **alone** during **night** or **weekend** will be possible only in the main DAΦNE control room. Ask first!
- ⊙ If you hear anomalous noise (e.g. whistling) or if you notice other **anomalous or unexpected situations** (water floods, fountains, smoke, vapours, sparkles, etc.)
 - ⊙ Call **5555**
 - ⊙ Take into account to leave the hall before.
- ⊙ For more detailed information read the general LNF safety instruction:



Safety Briefing for Test Beam User

◎ Large fires:

- Leave the hall as fast as possible.
- Call **5555**

◎ Small fires:

- Small fires elsewhere in the hall **may be** attacked by you with a **fire extinguisher**.
- Press **emergency off!**
- Keep a distance of **1 meter minimum** from electrical and HV systems!
- For HV systems use **CO2 fire extinguisher!**
- In any case, inform test beam co-ordinators and safety officers



Safety Briefing for Test Beam User

◎ Accident/Emergency:

- ◎ If a person is seriously injured or ill call **5555**.

Explain: **Who** you are,
what happened
where,
when and
if there is danger of life

Describe the situation briefly: **strong bleedings**,
electrical injury, **downfalls**, etc..

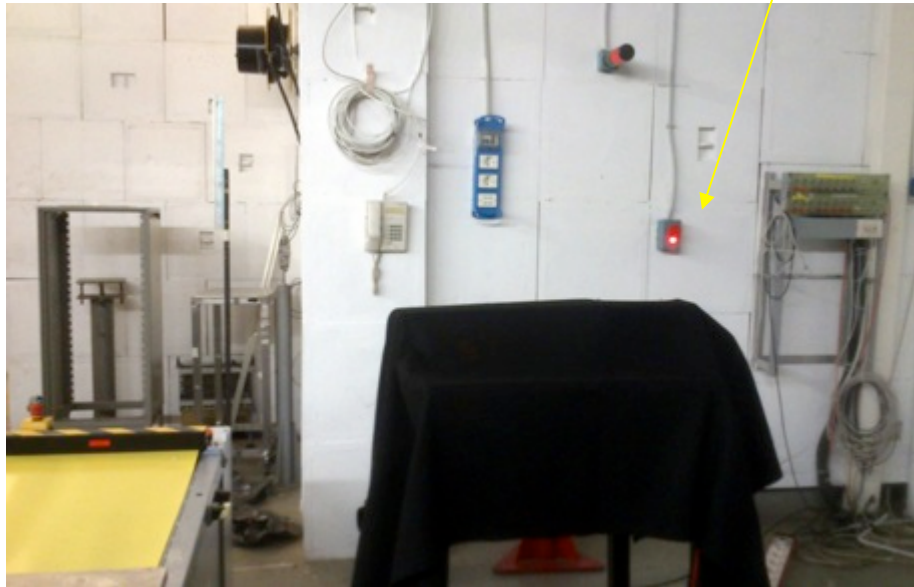
- ◎ Do **not** call directly emergency numbers (fire brigade, ambulance, police, etc.) yourself, **they** will call the fire brigade or ambulance and guide them to the building 54
- ◎ Remember your First Aid Training
 - ◎ (The next **first aid supplies** are available in the white locker in the control room).
 - ◎ **Please inform the test beam staff about any safety relevant incident that occurred.**



Safety Briefing for Test Beam User

🎯 Emergency off:

- ◉ Emergency off buttons in the experimental hall



Safety Briefing for Test Beam User

◎ Translation/rotation stages and trolley/1:

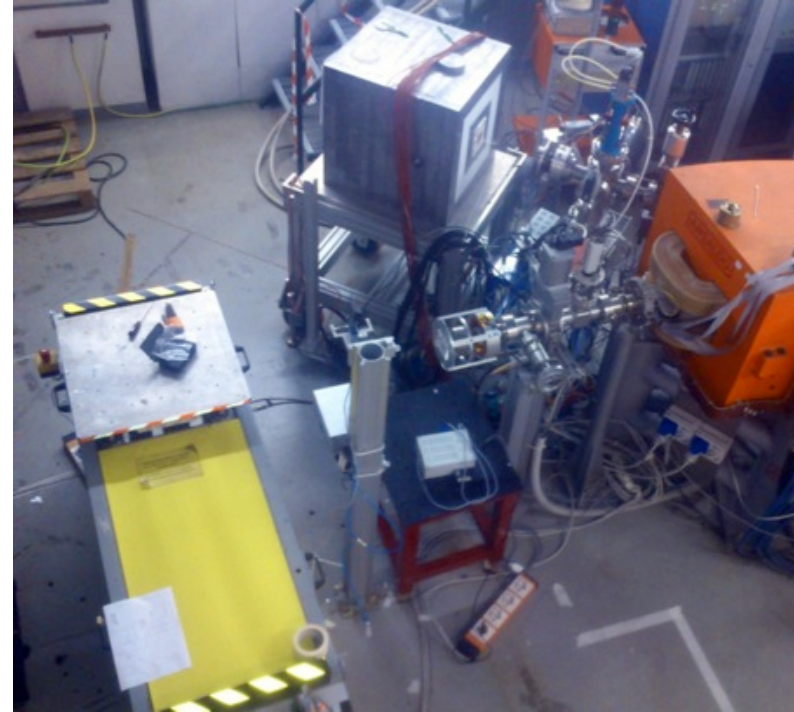
- ◎ Be careful! Danger of squeezing!
(The trolley is authorized up to **200 kg** load)
- ◎ Stay in contact via **phone** during remote operation if people are inside the area!
- ◎ Make sure that the stages **do not touch** other equipment when they move remotely!
- ◎ Be careful with the **cables**, taking into account the full range of possible translation/rotation.



Safety Briefing for Test Beam User

◎ Translation/rotation stages and trolley/2:

- ◎ **Always** follow the operations **manual**
- ◎ Do **not** exceed the maximum weight of 200 kg
- ◎ **Fix** your stuff **safely** to the metal movable plate of the trolley
- ◎ **Check the full range** of trolley movements both in horizontal and vertical directions
 - ◎ Check your cabling
 - ◎ Check mechanical interference
- ◎ Do **not** put any weight on the **yellow band**



Safety Briefing for Test Beam User

◎ Lead/Iron bricks:

- ◎ Iron and Lead bricks are heavy.
- ◎ Lead is poison
 - ◎ Avoid hand-mouth contact
- ◎ **Always** wear **gloves** when handling lead!



Safety Briefing for Test Beam User

⊙ Ladders

- ⊙ Working on ladders is quit dangerous!
- ⊙ Do **NOT** take broken ones!
- ⊙ Use properly! Right angle! Solid ground! Both feet on the ladder!
 - ⊙ You are **not** allowed to **climb** on the walls
 - ⊙ You are **not** allowed to use the stairs going up the **mezzanine**
 - ⊙ You are **not** allowed to access the **mezzanine**



Safety Briefing for Test Beam User



⊙ **Do not access the mezzanine** and **do not climb on the stairs** going to the mezzanine: this area is reserved to DAΦNE and BTF staff



⊙ There is **really no reason** for climbing there, isn't it?
So... **don't do it!**



Safety Briefing for Test Beam User



⊙Do **not** enter the **DAΦNE instrumentation room** (window panels delimited area)



⊙Arrange **proper cablings** also in the control room
⊙Use only the patch panels corresponding to the ones inside the experimental area
⊙Do **not disconnect** cables **not belonging to you** in any case

Safety Briefing for Test Beam User

◎ Always **watch your step!**

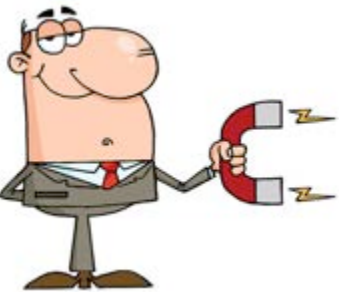
- ◎ Avoid cables running on the floor, and, if you need to:
 - ◎ Block them with **tape**
 - ◎ Avoid the paths to the **search and emergency buttons**
 - ◎ Keep the cabling as **clean** as possible
 - ◎ **Protect connectors**



Safety Briefing for Test Beam User

◎ Magnetic field:

- ◎ **Warning sign!**
- ◎ **NO** people with **pacemakers** in the hall with magnets on: switch magnets off (and put power supply in **stand-by**)
- ◎ Switch magnets off (and put power supply in **stand-by**), when working with magnetic tools!
 - ◎ The forces on tools due to the magnetic field can be very high and you can squeeze parts of your body
- ◎ Do NOT touch or enter areas which are signed as **electrical area**
 - ◎ In case of problems inform experts and safety officer



Safety Briefing for Test Beam User

⦿ Electrical Tools and Equipment

Only **proper** equipment allowed!

- ⦿ **Annual checks** for electrical equipment!
- ⦿ Obey the voltage limits of connectors
- ⦿ (i.e. No high voltage on standard Lemo connectors!)
- ⦿ Avoid extensions, multiple plugs or in general unsafe multiple connections
 - ⦿ In any case, do **not** leave any plug on the **floor**
- ⦿ Take power **only** from the outlet boxes and not from the **blindos-bar**



Safety Briefing for Test Beam User

© High voltage equipment

- Only **proper** equipment allowed!
- **Warning signs**, if needed!
- **NO work** on the HV systems or electrical systems **with the voltage switched on.**



Safety Briefing for Test Beam User

◎ Hazard Materials

- ◎ Have to be announced before!
- ◎ Have to be handled/marked/stored properly!
- ◎ In general, no chemicals/toxic material allowed in the test beam area
- ◎ **All radioactive material that comes to LNF has to be **reported** to the radiation safety group!**
- ◎ In case of **high-intensity** operations, activation of materials should be measured **before** manipulation and transport



Safety Briefing for Test Beam User

⊙ Gas system

- ⊙ **Always** agree with BTF staff the use of compressed gas
 - ⊙ Use the BTF system (external gas fence, dedicated gas lines, pressure reducers, etc.)
 - ⊙ Be aware of the danger of your gas!
 - ⊙ Attach gas bottles!
 - ⊙ Store gas cylinders in the outside gas fence!
 - ⊙ Use exhaust line!
 - ⊙ Ask for the adaptation of the gas safety system if needed!
- ⊙ **NO mechanical work** on a running gas system.
 - ⊙ Check pressure before breaking a gas line!
- ⊙ **NO manipulation** of the gas safety system!



Safety Briefing for Test Beam User



- ⊙ (Always **agree** the use of compressed gas with the BTF staff in advance)
- ⊙ Use the proper line for the gas you are going to use
- ⊙ Do **not abandon** exhausted bottles
- ⊙ Do **not** leave gas fence **open**
- ⊙ **Always** return the **key** of gas fence
- ⊙ Do **not** use bottles **not belonging** to you!

Safety Briefing for Test Beam User

© Vacuum



Safety Briefing for Test Beam User



- ⦿ Do **not touch** the beam exit windows
- ⦿ In general, avoid touching the beam pipe, pumps, valves, and all parts of the vacuum system.

Safety Briefing for Test Beam User

③ Searching and closing the area

③ Search procedure (Ronda)

③ Two persons:

- ③ the first one must stand close to the gate, ensuring that **nobody is entering the area**,
- ③ the second one checking that nobody else is in the area and pushing the two search **buttons in sequence**:
 - ③ **P1** behind the BTF rack (the one with HV mainframe)
 - ③ Shortly after (<30 seconds) **P2** (close to the large green door)



- ③ As soon as the buttons are pushed, the green light starts **flashing**



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©**Close** the gate, **turn the key** clock-wise (once), and remove the key (you will need the other, **smaller key**, attached to it, for the next step)

©Make sure that the "**RONDA OK**" led in the sinoptic panel close to the gate is **on**, otherwise you have to **repeat the search** correctly



Safety Briefing for Test Beam User

🎯 Searching and closing the area

🎯 **Closing the area and enabling beam**

🎯 Insert the small key in the panel next to the access gate

🎯 Turn from the free (**libera**) to the blocked position (**bloccata**) turning clock-wise

🎯 The **green** led (left) on the key panel will stay **on**

🎯 Ask to **enable beam** to the main control room (**2400**)

🎯 The green led will go off and the **red led** (right) will go **on**

🎯 **Only after the red led is lighted, you can switch on the transport dipole magnet (DHSTB01)**



Safety Briefing for Test Beam User

◎ Operations

- ◎ Check the DAΦNE state in the **TV screen**
- ◎ You can get further information from the status web page:
 - ◎ **<http://www.inf.infn.it/acceleratori/status/>**
- ◎ Follow the instructions of operators from the main control room (**2400**), when required to

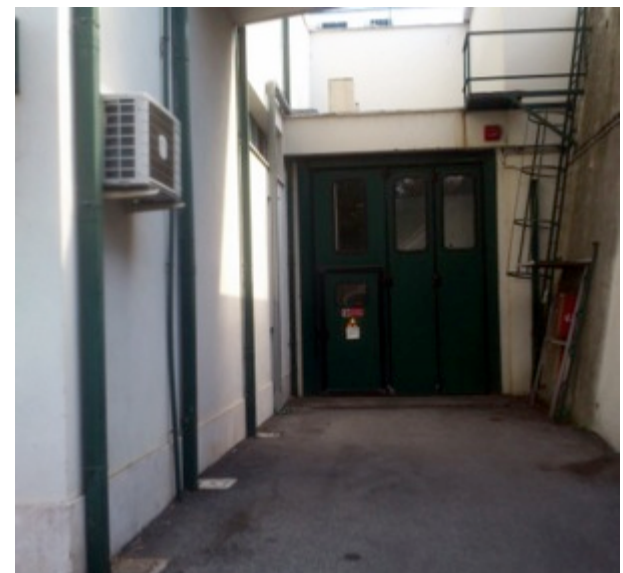


Safety Briefing for Test Beam User

© Miscellanea

© **Always leave free:**

- © The LINAC tunnel emergency door on the “**chicane**” towards the experimental hall large green door,
- © The **chicane** itself,
- © The access to the **green door**
- © The **external access to the green door**
- © Do **not park** in front of the BTF building door



Safety Briefing for Test Beam User

◎ Further reading and documentation

- LNF general safety document
- BTF safety appendix
- BTF manuals

