



# Safety Training at CERN

## An Introduction

Presentation to EASITrain Spring 2018

March 8<sup>th</sup> 2018

Christoph BALLE  
*Head of Safety Training*

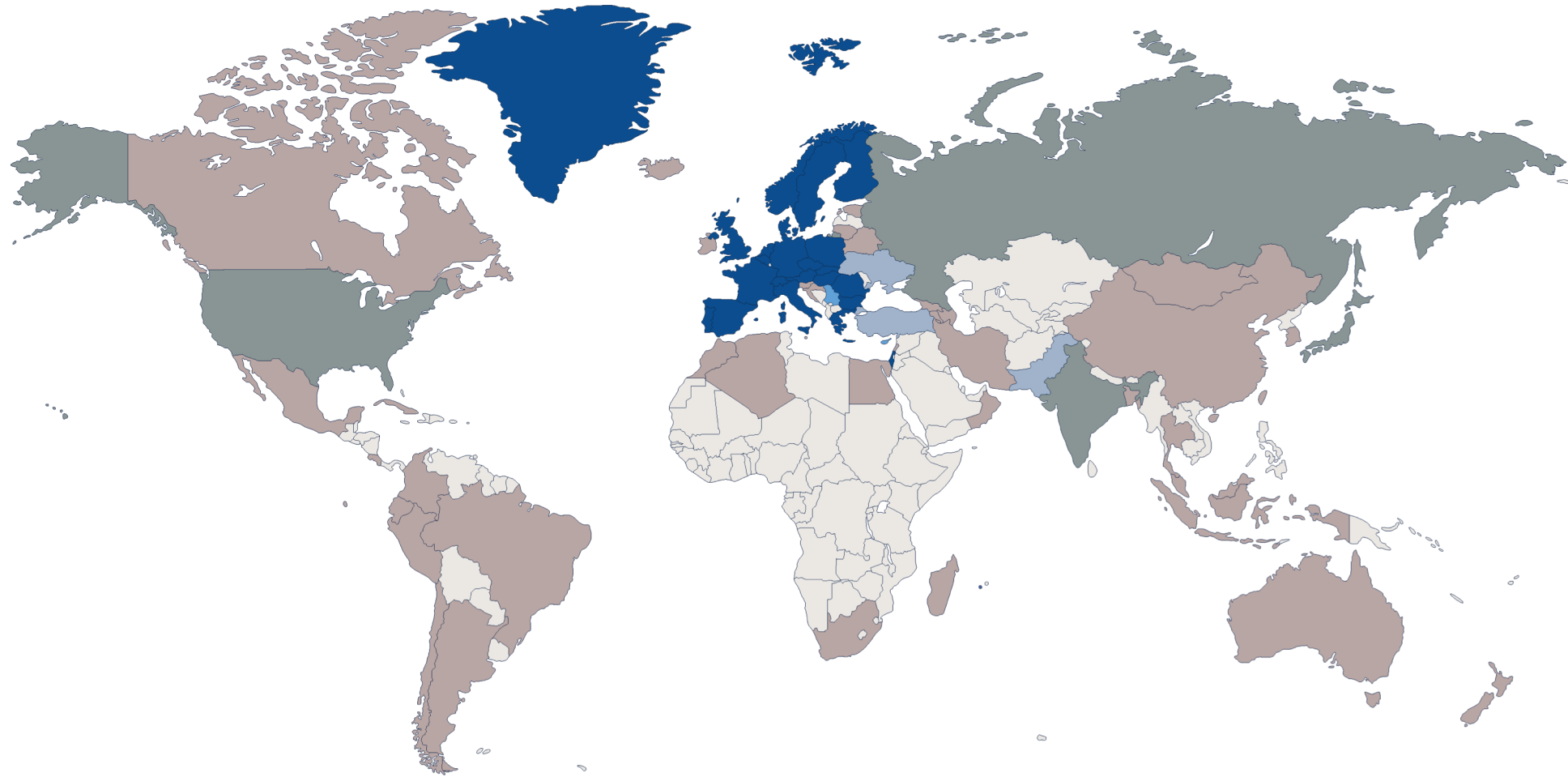


- **MEMBER STATES**
- **ASSOCIATE MEMBERS, PRE-STAGE OF MEMBERSHIP**
- **ASSOCIATE MEMBERS STATES**
- **OBSERVER STATES**
- **OTHERS**

**70**

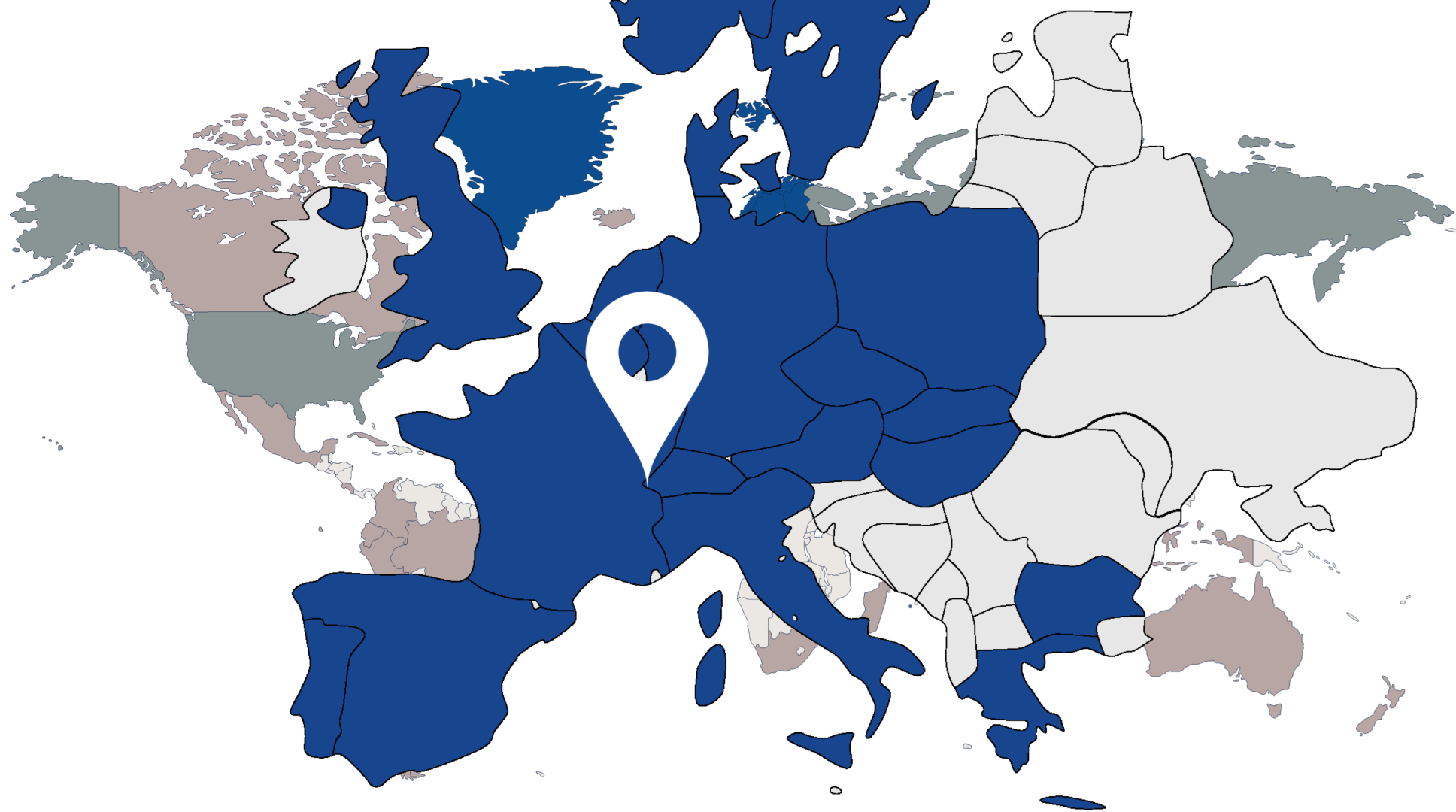
- **PEOPLE**
  - 2 500 CERN staff
  - 12 000 Users from institutes
  - 1 400 Contractors
  - 100 Temporary labors

**16 000**



▪ **LOCATION**

- Franco-Swiss border near Geneva



▪ **PEOPLE**



## ■ ENVIRONMENT PROTECTION

- Air
- Water
- Soil
- Noise
- Waste
- Energy
- Radiation

## ■ INSTALLATIONS SAFETY

- Chemical Safety
- Electrical Safety
- Fire Safety
- Mechanical Safety
- Radiation Protection
- Non-ionizing radiation
- Worksite

## ■ PEOPLE HEALTH

- Everybody working at CERN



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**THE CERN SAFETY POLICY**

CERN, an intergovernmental organization for fundamental research in particle physics, defines and implements a Safety Policy. Safety covers occupational health and safety, including radiation protection, the protection of the environment and the safe operation of CERN's Installations, including radiation safety.

*CERN strives for excellence in matters of Safety.*

**INTRODUCTION BY THE DIRECTOR-GENERAL**

CERN strives for excellence. We strive for excellence in science, excellence in innovation, and excellence in everything we do. Safety is very much at the heart of that. The objective of CERN's Safety Policy is that the Organization's scientific and technical excellence be matched by excellence in matters of Safety. To this end CERN promotes environmentally aware research, best practices in matters of Safety and strives for the optimal protection of the health and safety of all those involved in its activities.

CERN's performance in matters of Safety is dependent on every one of us. I invite you to familiarize yourself with the CERN Safety Policy and our Safety Rules, and I am confident that you will actively contribute to CERN's excellence in matters of Safety through exemplary conduct and the use of best Safety practices when carrying out your activities at CERN.

Fabiola Gianotti  
Director-General  
8 July 2016

*Fabiola Gianotti*

CERN



▪ **DIRECTOR GENERAL**

- Executive of CERN

▪ **ORGANIC UNITS**

- Following hierarchical line
- Implementation of Safety

▪ **SPECIALIZED UNITS**

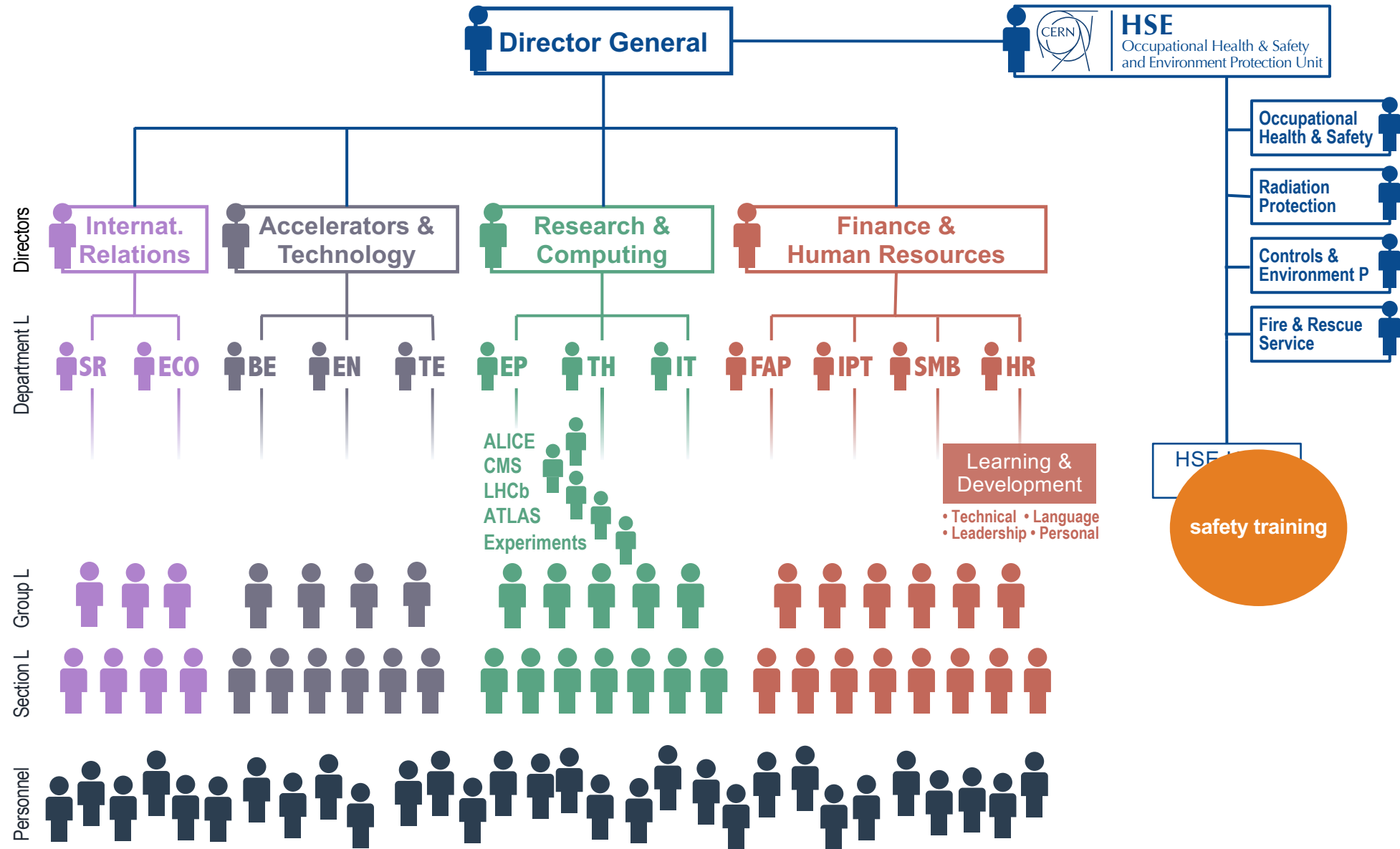
- Specific tasks

▪ **INDIVIDUALS**

- Each person

▪ **HSE**

- Reports to Director General
- Monitoring
- Assistance for Implementation of Safety  
- Continuous training



- MANDATORY FOR EVERYBODY
- BEFORE ACTIVITY
- CONTINUOUS
- QUALITY
- LANGUAGE
- INSTALLATIONS
- RULES
- QUANTITY OF LEARNERS
- DIVERSITY OF LEARNERS
- BEAM OPERATION SCHEDULE





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# Training



Classroom Training



Theory

+



Practice

+



Exam



On-the-job Training

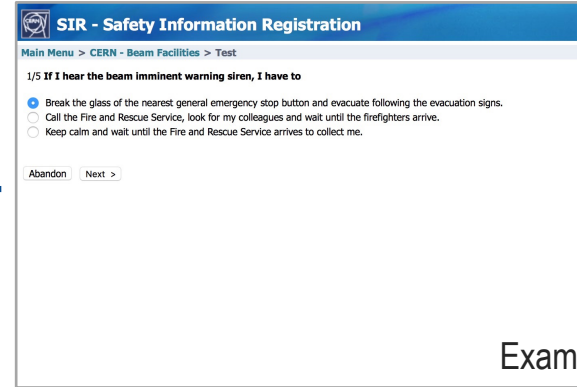


Online Training



Theory

+



Exam

## Initial / Refresher English / French

## Training Types



Training Catalogue

HR Training Website Safety Training Website English | Print | Logout

Welcome to the CERN Training Catalogue. Please use the form below to search among the 354 available courses.

88 courses found. Please select one from the results below.

*Tailor-made Safety course	Language	Next Session	Duration	Availability	Competencies
Tailor-made Safety training course	English or French	to be scheduled		no more people needed	
<b>*Installation Specific Safety</b>					
ALICE - Confined Space	English	11-Jan-16	3 hours	5 places available	Occupational health & safety
ALICE - Underground - Guide	English	26-Jan-16	2 hours	No more places available	
CMS - Shift Leader in Matters of Safety (SLMAoS)	English	11-Dec-15	4 hours	15 places available	Occupational health & safety Safety management
CMS - Technical Shiftler	English	11-Dec-15	2 hours	6 places available	
CMS - Underground - Guide	English	19-Jan-16	3 hours	10 places available	
ISOLDE - Experimental Hall - Electrical Safety - Handling	English	26-Jan-16	1 hour	12 places available	
ISOLDE - Experimental Hall - Radiation Protection - Handling	English	26-Jan-16	2.5 hours	12 places available	
<b>*Chemical Safety (C)</b>					
ATEX Habitation - Level 1	French	14-Mar-16	1 day	10 places available	Sanit & sécurité au travail
ATEX Habitation - Level 2	French	07-Apr-16 to 08-Apr-16	2 days	8 places available	Gestion des risques liés à la sécurité Sanit & sécurité au travail

**110** Exclusive Refresher Training  
English/French version

  
Classroom  
Training

  
On-the-job  
Training

  
Online  
Training

CERN | SIR

SIR - Safety Information Registration

Welcome to SIR - Safety Information Registration.

This application allows you to access CERN safety self-training modules. Click on any of the training proposed below.

Please pass your mouse over a course title to see a quick description of it. You can also find out which course is made for you by selecting a pre-defined profile in the "Filter" list.

Please note that successfully passing a course doesn't give you any access rights to controlled areas but, on the opposite, safety courses may be required to validate your existing access authorizations. You can control the validity of your access authorizations on [AdAMS](#) and request new access authorizations on [EDMS](#).

Available courses and their current status	Course description	Your safety contacts	Your access authorizations
Computer Security	DISG y	DISG y	
CERN Safety Introduction	DISG y	DISG y	
Safety at CERN	DISG y	DISG y	
Chemical Safety - Awareness	DISG y	DISG y	
Electrical Safety - Awareness	DISG y	DISG y	
Environmental - Awareness	DISG y	DISG y	
Radiation Protection - Supervised Area	DISG y	DISG y	
Radiation Protection - Refresher	DISG y	DISG y	
Road Traffic - Blue-Flagging	DISG y	DISG y	
CERN - Beam Facilities	DISG y	DISG y	
AD - Target Area	DISG y	DISG y	
LHC - Machine	DISG y	DISG y	
SPS - Machine	DISG y	DISG y	

**39**





## Chemical Safety



## Electrical Safety



## Mechanical Safety



## Fire Safety



## Radiation Protection



## Non-ionizing Radiation



## Worksite



## Safety & Health



## Environment



## Installation Specific Safety



## Safety Organisation

ATEX Habilitation - Level 1

ATEX Habilitation - Level 2

Respiratory Protective Equipment - Fundamentals

Respiratory Protective Equipment - Fit Test

Chemical Accident

Rubidium - Handling - Contaminated Equipment

Rubidium - Handling - Transfer

Electrical Safety - Using Gloves

Electrical Certification - Non-Electrician - Initial

Electrical Certification - Non-Electrician - Refresher

Electrical Certification - Electrician Low Voltage - Initial / Refresher

Electrical Certification - Electrician Low and High Voltage - Initial / Refresher

Electrical Certification - Person making Tests in Labs or on Test Bench - Initial / Refresher

Electrical Certification - Electrician Low Voltage - Working with power on

Electrical Certification - CERN Firefighter - Initial

Electrical Certification - Personnel Radio Frequency - Refresher

Electrical Certification - Personnel Radio Frequency - Refresher - Train the trainer

Electrical Work - Lockout

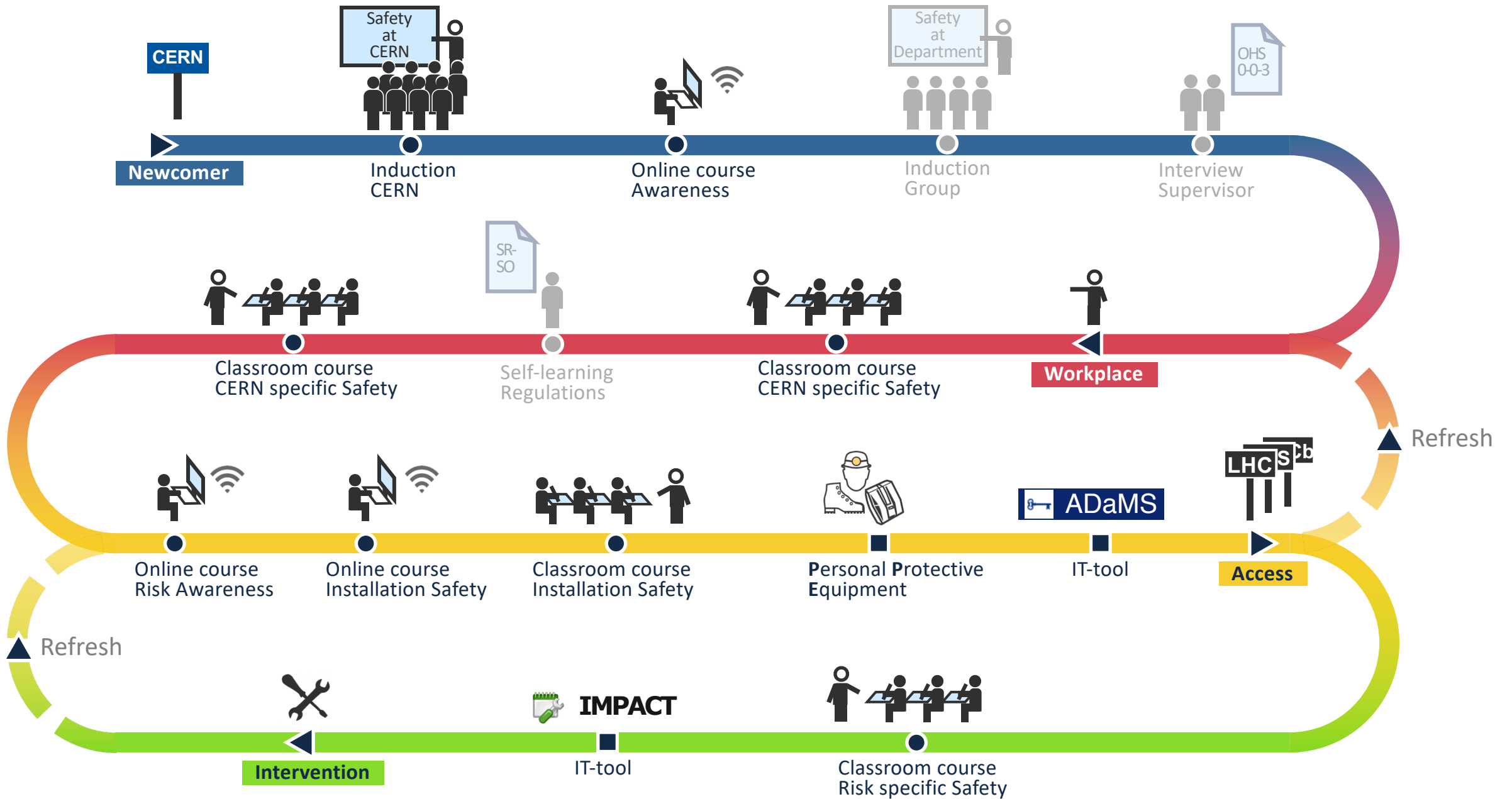
Electrical Installation - Grounding

Electrical Installation - ATEX - Designing

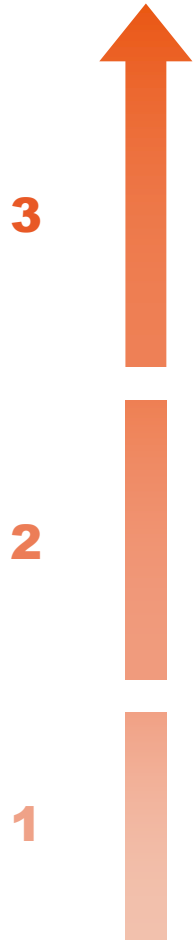
Electrical Component - Explosion Hazard

SF6 Gas - Operation - Awareness

SF6 Gas - Operation and Recovery - Certification



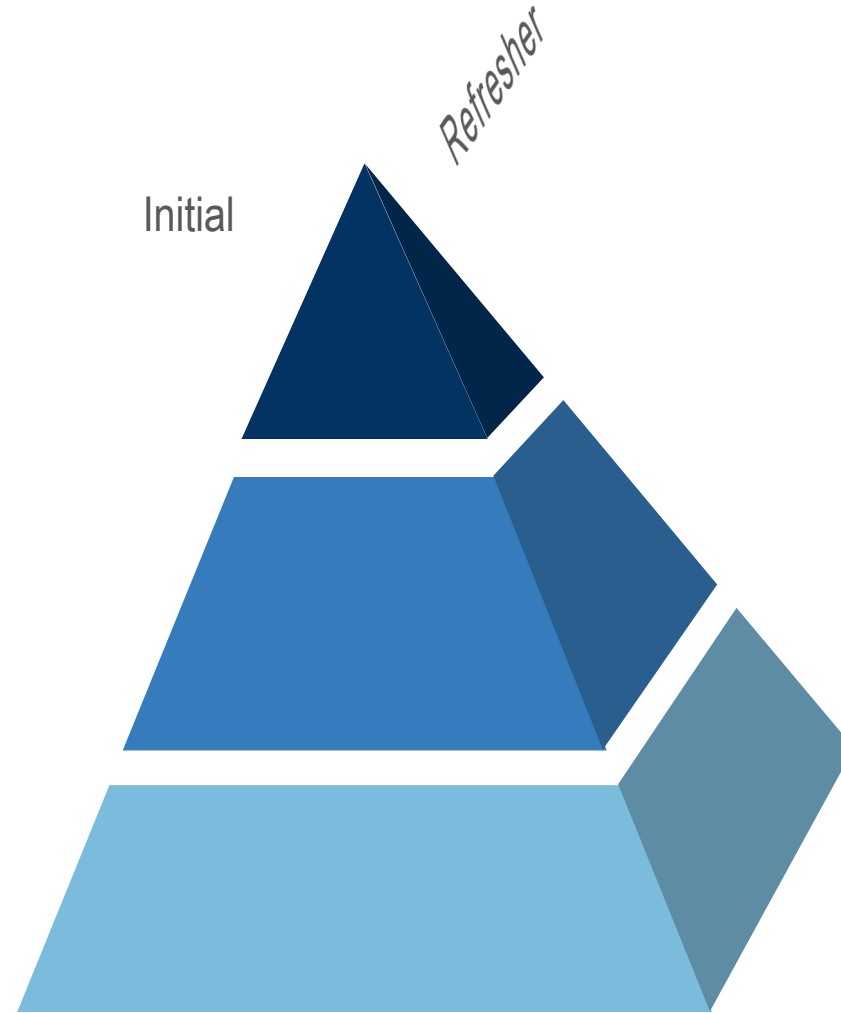
Level



Expert

User

Awareness



# World Day for Safety and Health

...today  
but what about  
tomorrow?

safety  
training!

click here :-)  
[cern.ch/safety-training](http://cern.ch/safety-training)

For more info, contact us!  
<http://cern.ch/safety-training> - [safety-training@cern.ch](mailto:safety-training@cern.ch)



**HSE**  
Occupational Health & Safety  
and Environmental Protection Unit



## Safety Training

News for CERN internal Safety Trainers

*Flyer*  
*Special edition*

3/2014 - September 2014

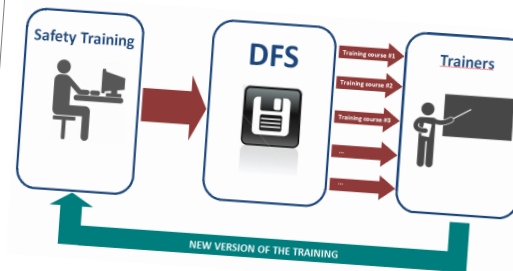
Here is a special edition of the Safety Training flyer.

### ODH Portable Detectors

Dear Self-Rescue Mask Trainers, please do not spread information to participants about the ODH Portable Detectors until the information becomes official. We will come back to you after the foreseen workshop on **September 4<sup>th</sup>** to let you know what has been agreed (please refer to the email sent by Christoph on July 28<sup>th</sup>).

### DFS and your training presentations

Please note that from now on, you **MUST** give your presentation(s) to the Safety Training in order to track and save them on **DFS** and be available from any classroom at the Safety Training Centre in Prévessin. We will then avoid issues such as forgotten presentation of incorrect and untraceable version.



[safety-training@cern.ch](mailto:safety-training@cern.ch)



**HSE**  
Occupational Health & Safety  
and Environmental Protection Unit





# Safety Training

- Home
- Procedures
- Centre
- Dashboard
- About Us

## Welcome to Safety Training!

The Safety Training is an independent training programme organised by the Safety Training team, a section in the HSE Unit. Our team is in charge of providing Safety training and awareness courses as well as advising people responsible for learning and development in the technical, scientific and administrative departments. We organise, plan and coordinate classroom, online and tailor-made courses on health and Safety and we provide support on course selection and on enrolment procedures to all people working at CERN.

The objective is to enable all personnel to be aware of the occupational risks present at the laboratory and to offer them appropriate training.

The classroom courses are listed and described in the [CTA](#) catalogue. They take place at the [Safety Training Centre](#) at Prévessin and they typically include both a theoretical and a practical part. The training sessions are held by CERN internal trainer or external training providers. CERN contractors need to consult the catalogue to find out to which classroom courses they are accepted in.

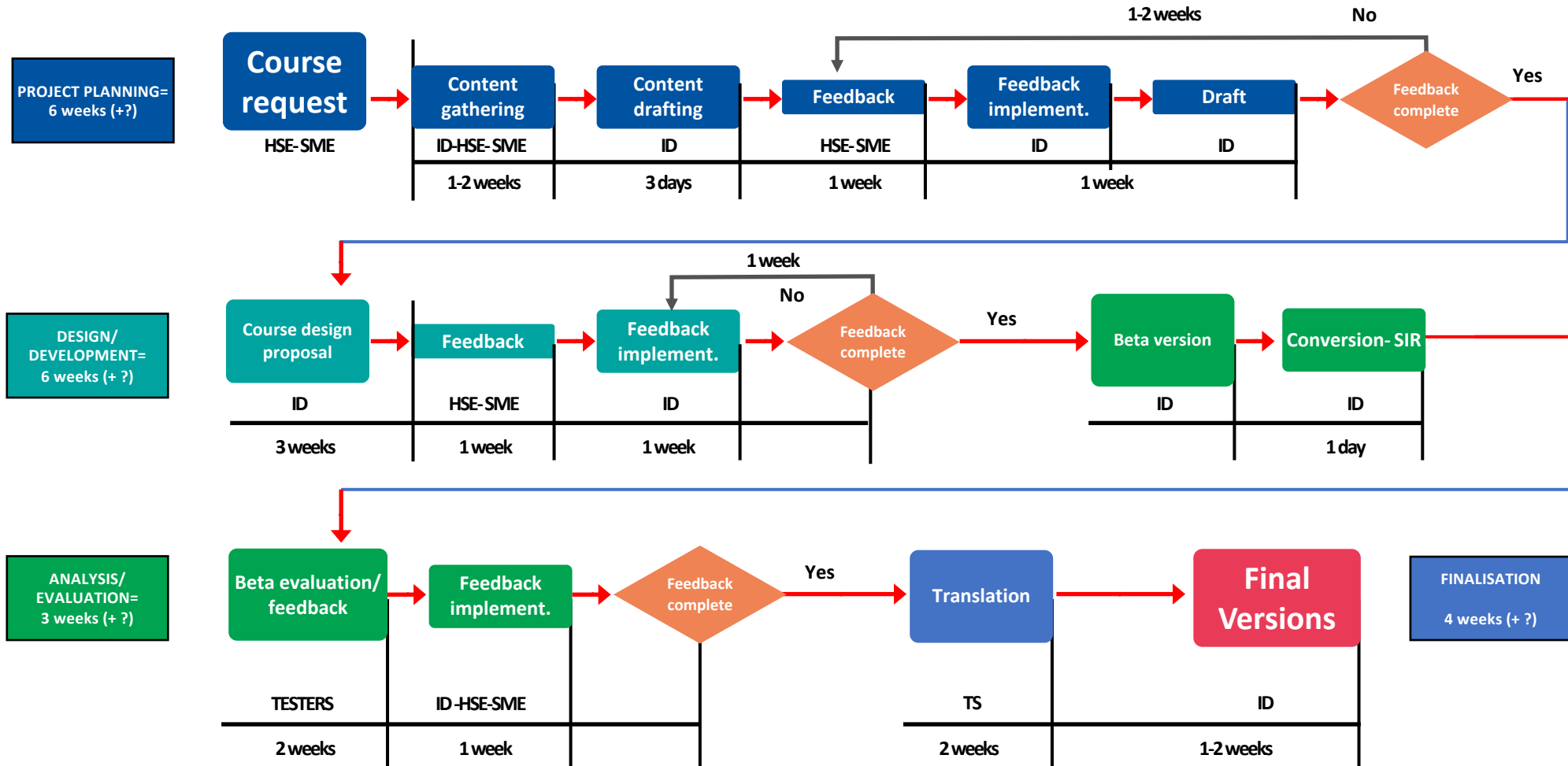
The online courses, free and open for everybody working at CERN, are listed in the [SIR](#) catalogue.

### Tools & Services

- Classroom Courses: CTA
- Online Courses: SIR
- Training Request: EDH
- Hazard Identification: OHS-0-0-3
- Installation Access: ADaMS
- Work Declaration: IMPACT
- Safety Roles: SR-SO
- Training Attestation: HRT
- Photo Album: CDS
- Help: Service Now
- FAQ

### News

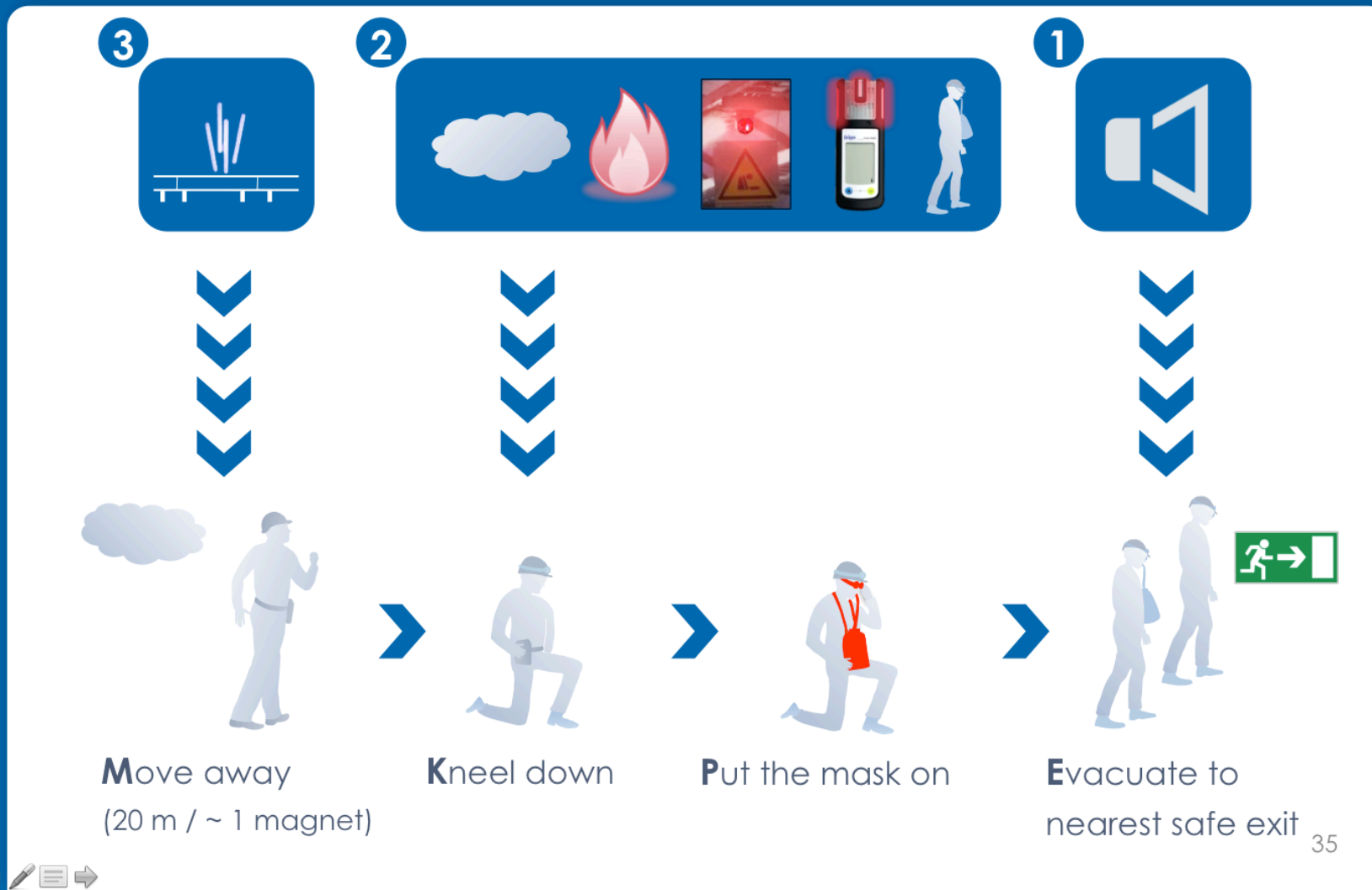
- 'Manual Handling' course in September  
*13 July 2016*
- New online courses  
*23 June 2016*
- Recipe for successful online-training  
*14 September 2015*



Minimum total creation: 20 weeks

Courtesy of: Rosaria MARRAFFINO

# IV. How to respond in emergency situations? Emergency Indicators and actions (Summary)





# Cryogenic Safety

List of chapters



1. Basics



4. Prevention and Protection

# Electrical Safety

List of chapters



1. Basics



4. Emergency

# Chapters of the course



1. Basics



2. Hazards and Risks



3. Prevention and Protection



4. Emergency



5. Further Information



6. Game

Courtesy of: Rosaria MARRAFFINO



# SIR - Safety Information Registration

Main Menu > Portable ODH Detector > Portable ODH Detector (Module 1)

English

OUTLINE NOTES

Search...

- 1. Portable ODH Detector
- 2. Please turn on the SOUND
- 3. Explanation of the player
- 4. Prerequisite for this course
- 5. Learning objectives In this e-learning course you will learn ...
- 6. Portable ODH Detector CERN configuration
- 7. Portable ODH Detector CERN configuration
- 8. Portable ODH Detector CERN configuration
- 9. Operation Pick-up
- 10. Operation Switch on
- 11. Operation Wearing
- 12. Operation Running Mode
- 13. Operation Switch off
- 14. Operation Storage
- 15. Alarms
- 16. Alarm ODH (Oxygen Deficiency Hazard)**
- 17. Alarm ODH (Oxygen Deficiency Hazard)
- 18. Alarm Battery almost empty
- 19. Alarm Battery empty
- 20. Alarm Malfunction
- 21. Summary of the course
- 22. ---

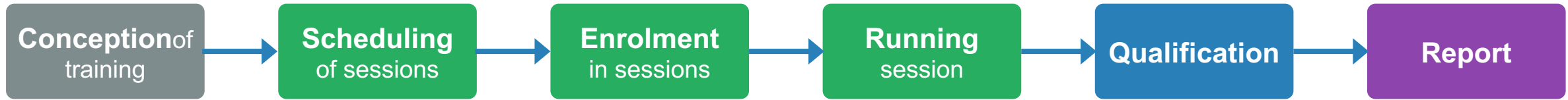
## Alarm ODH (Oxygen Deficiency Hazard)

A1

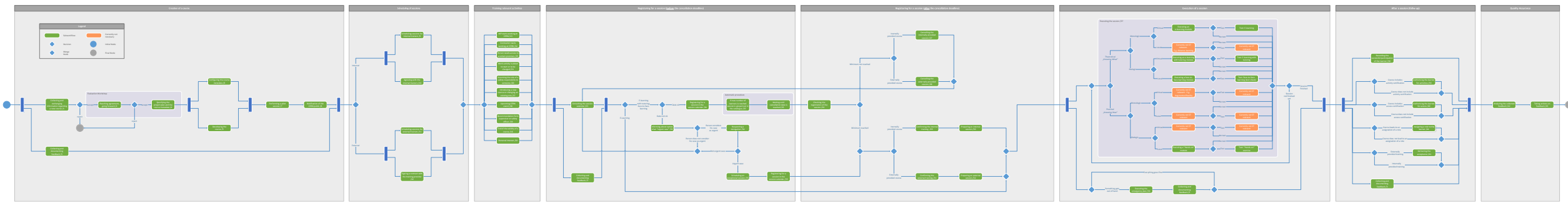
CERN

16 / 22 05:44 / 07:47

PREV NEXT



Safety Training Workflow

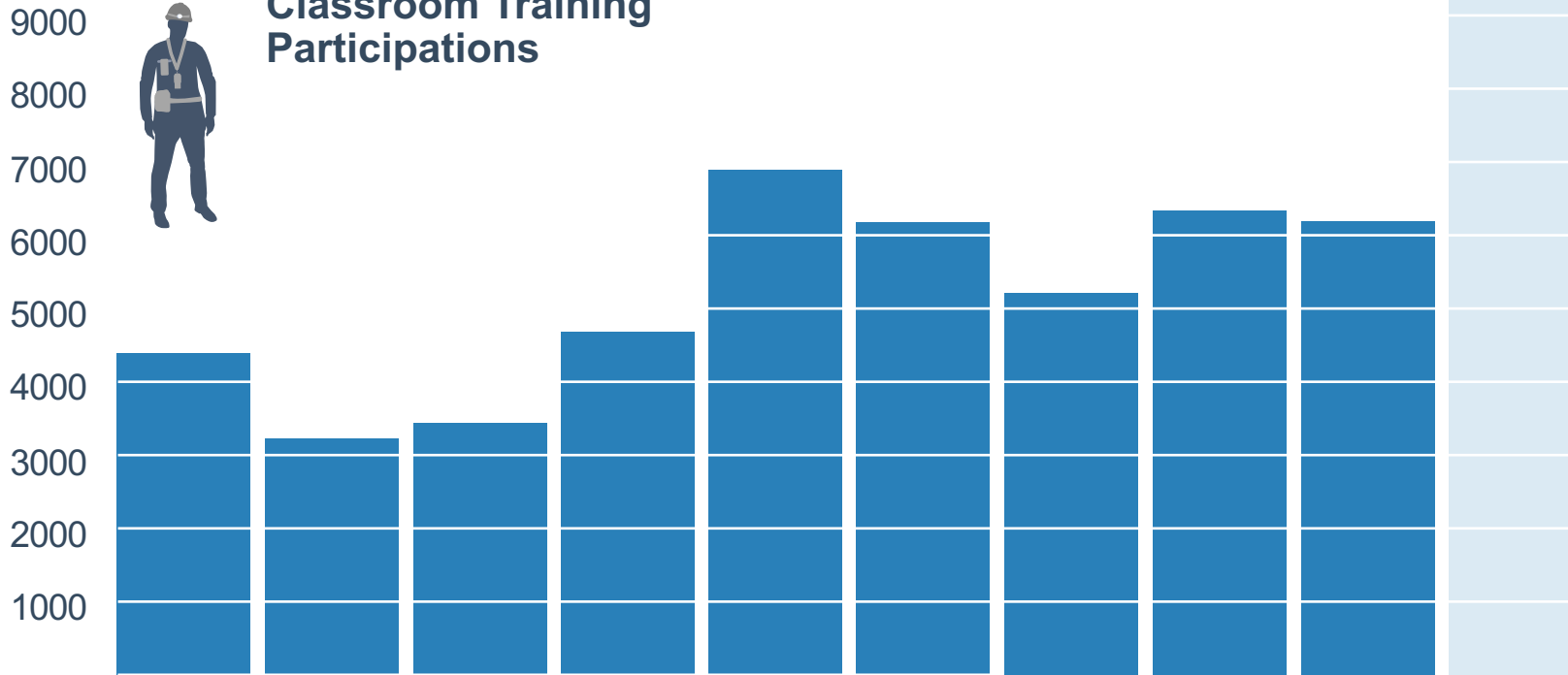


	Mon 22 Jan	Tue 23 Jan	Wed 24 Jan	Thu 25 Jan	Fri 26 Jan	Sat 27 Jan	Sun 28 Jan	Mon 29 Jan	Tue 30 Jan	Wed 31 Jan	Thu 01 Feb
<b>1. ST (6959/R-001)</b>								29-JAN 14:00 - 16:00 STFIE01IF Fire Extinguisher (fr)			01-FEB 10:00 - 12:00 STCRG03IE Cryogenic Safety - Fundamentals (en)
<b>2. ST (6959/R-002)</b>	22-JAN 09:30 - 11:30 STSRM01IE Self-Rescue Mask - Initial (en)	23-JAN 09:00 - 11:00 STFIE01IE Fire Extinguisher (en)						29-JAN 09:30 - 11:30 STFIE01IF Fire Extinguisher (fr)			
<b>3. ST (6962/R-001)</b>	22-JAN 09:00 - 11:00 STFIE01IE Fire Extinguisher (en)			25-JAN 09:00 - 17:00 STIRP02IF Radiation Protection - Controlled Area - Initial (fr)				29-JAN 09:00 - 11:00 STFIE01IE Fire Extinguisher (en)	30-JAN 09:30 - 11:30 STSRM01IE Self-Rescue Mask - Initial (en)	31-JAN 09:00 - 17:00 STIRP02IF Radiation Protection - Controlled Area - Initial (en)	01-FEB 08:30 - 17:00 STIRP02IF Radiation Protection - Controlled Area - Initial (fr)
<b>4. ST (969/R-001)</b>	22-JAN 14:00 - 16:00 STSRM01IF Self-Rescue Mask - Initial (fr)	23-JAN 14:00 - 16:00 STSRM01RF Self-Rescue Mask - Refresher (fr)	24-JAN 14:00 - 16:00 STSRM01IE Self-Rescue Mask - Initial (en)	25-JAN 09:30 - 11:30 STSRM01RE Self-Rescue Mask - Refresher (en)	26-JAN 14:00 - 16:00 STFIE01IF Fire Extinguisher (fr)			29-JAN 14:00 - 16:00 STSRM01IF Self-Rescue Mask - Initial (fr)	30-JAN 09:00 - 11:00 STFIE01IE Fire Extinguisher (en)		01-FEB 09:30 - 11:30 STSRM01RE Self-Rescue Mask - Refresher (en)
	22-JAN 10:00 - 12:00 STFIE01IF Fire Extinguisher (fr)	23-JAN 10:00 - 12:00 STFIE01IF Fire Extinguisher (fr)	24-JAN 09:30 - 11:30 STSRM01IE Self-Rescue Mask - Initial (en)	25-JAN 14:00 - 16:00 STSRM01IF Self-Rescue Mask - Initial (fr)	26-JAN 10:00 - 12:00 STFIE01IE Fire Extinguisher (en)			29-JAN 09:30 - 11:30 STSRM01IE Self-Rescue Mask - Initial (en)	30-JAN 14:00 - 16:00 STSRM01RF Self-Rescue Mask - Refresher (fr)		
<b>5. ST (FIRE SIMULAT)</b>	22-JAN 10:00 - 11:00 STFIE01IE Fire Extinguisher (en)	23-JAN 10:00 - 11:00 STFIE01IE Fire Extinguisher (en)			26-JAN 10:00 - 12:00 STFIE01IE Fire Extinguisher (en)			29-JAN 10:30 - 11:30 STFIE01IF Fire Extinguisher (fr)	30-JAN 09:00 - 11:00 STFIE01IE Fire Extinguisher (en)		
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								29-JAN 09:30 - 10:30 STFIE01IE Fire Extinguisher (en)			
<b>6. ST (MOCK-UP)</b>	22-JAN 09:30 - 11:30 STSRM01IE Self-Rescue Mask - Initial (en)	23-JAN 14:00 - 16:00 STSRM01RF Self-Rescue Mask - Refresher (fr)	24-JAN 09:30 - 11:30 STSRM01IE Self-Rescue Mask - Initial (en)	25-JAN 14:00 - 16:00 STSRM01IF Self-Rescue Mask - Initial (fr)	25-JAN 14:00 - 16:00 STSRM01IF Self-Rescue Mask - Initial (fr)			29-JAN 09:30 - 11:30 STSRM01IE Self-Rescue Mask - Initial (en)	30-JAN 14:00 - 16:00 STSRM01RF Self-Rescue Mask - Refresher (fr)		01-FEB 09:30 - 11:30 STSRM01RE Self-Rescue Mask - Refresher (en)
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# Classroom Training Participations



# Online Training Participations in 2017

**34 015**



Large Hadron Collider



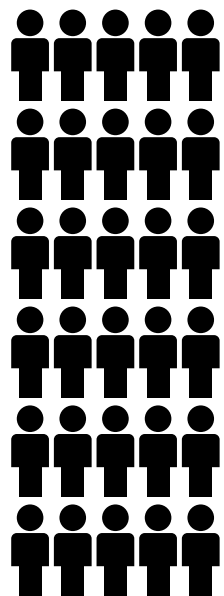
LHC Injectors Upgrade



High Luminosity LHC

Internal Trainers: **118**  
External Trainers: **45**





safety-training@cern.ch



IT Ticket System  
servicenow™



CERN Service Desk



Safety Training



Coordination



Design



Training Centre



IT related



Head

?

Support Level

1

2

3

4





Request Fulfillments **Go to** Created  1 to 50 of 213

	Number	Created	Caller	Short Description	Description	Request State	Assignment group	Assigned to	Watch list
<input type="checkbox"/>	<a href="#">RQF0930140</a>	23-01-2018 17:37:04	Stephane	Ajout dans diapo cours CMS sur SIR	From: ... To: s...	Assigned	<a href="#">Safety Training 2nd Line Support</a>		
<input type="checkbox"/>	<a href="#">RQF0930139</a>	23-01-2018 17:33:02	Stephane	Safety Training: First Aider level 2?	From: ... To: safe...	Assigned	<a href="#">Safety Training 2nd Line Support</a>		
<input type="checkbox"/>	<a href="#">RQF0930132</a>	23-01-2018 17:26:54	Genevieve	RE:Cours de sécurité : Radioprotection - Zone contrôlée - Initial (fr) - 01-FEB-18	From: ... To: sat...	In progress	<a href="#">Safety Training 2nd Line Support</a>		
<input type="checkbox"/>	<a href="#">RQF0930131</a>	23-01-2018 17:24:56	Nick	Correction cours CMS SIR	From: ... To: s...	Assigned	<a href="#">Safety Course Design 2nd Line Support</a>		
<input type="checkbox"/>	<a href="#">RQF0930059</a>	23-01-2018 16:41:13	Christophe	Extration listing des personnes Habilités Radioprotection - Zone contrôlée - Initial ou recyclage	From: ... To: s...	Waiting for user	<a href="#">Safety Training 2nd Line Support</a>		
<input type="checkbox"/>	<a href="#">RQF0930057</a>	23-01-2018 16:39:14	Régine	RE: Absence sur le cours 'Masque auto-sauveteur - Recyclage' aujourd'hui	From: ... To: s...	Resolved	<a href="#">Safety Training 2nd Line Support</a>		safety-training-coordinators@cern.ch
<input type="checkbox"/>	<a href="#">RQF0929964</a>	23-01-2018 15:49:40	Régine	Re: Absence sur le cours 'Extincteur d'incendie' aujourd'hui	From: ... To: s...	Resolved	<a href="#">Safety Training 2nd Line Support</a>		safety-training-coordinators@cern.ch
<input type="checkbox"/>	<a href="#">RQF0929901</a>	23-01-2018 15:15:45	Thomas	RE: Cours de sécurité : Superviseur de travaux et prestations de services - role et responsabilités (fr) - 19-MAR-18 au 20-MAR-18	From: ... To: s...	Resolved	<a href="#">Safety Training 2nd Line Support</a>		
<input type="checkbox"/>	<a href="#">RQF0929892</a>	23-01-2018 15:11:44	Marie-Pierre	first aider training	From: ... To: s...	Resolved	<a href="#">Safety Training 2nd Line Support</a>		
<input type="checkbox"/>	<a href="#">RQF0929881</a>	23-01-2018 15:07:39	Marie-Pierre	Safety Training:	From: ... To: s...	Resolved	<a href="#">Safety Training 2nd Line Support</a>		



HAUTE TENSION  
HAZARD  
DANGER









1 mSv = 1000 μSv = 1000000 μrads

**COMMENT**

TEMPS

**RÉDUCTION DU TEMPS D'EXPOSITION**  
**RÉDUCTION DE LA DOSE**

L'activité diminue avec le temps

Nombre de demi-vies

TEMPS

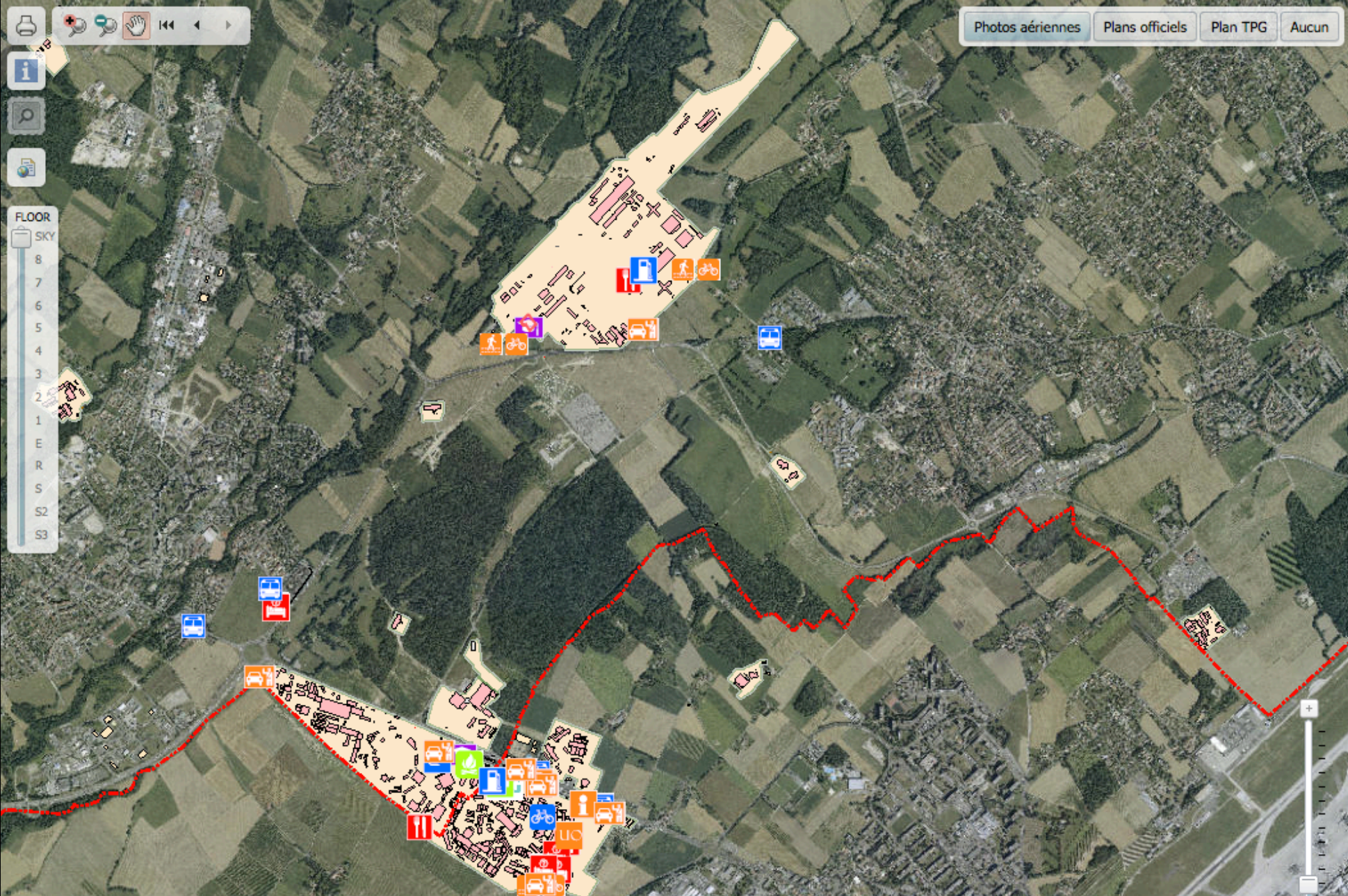
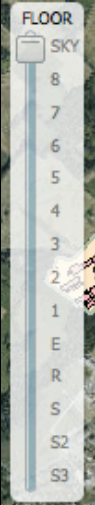
**Définition** = temps nécessaire pour un radionucléide pour perdre la moitié de son activité plus on attend et plus l'activité diminue. Dans la plupart des cas, la demi-vie varie de quelques secondes à une centaine d'années.





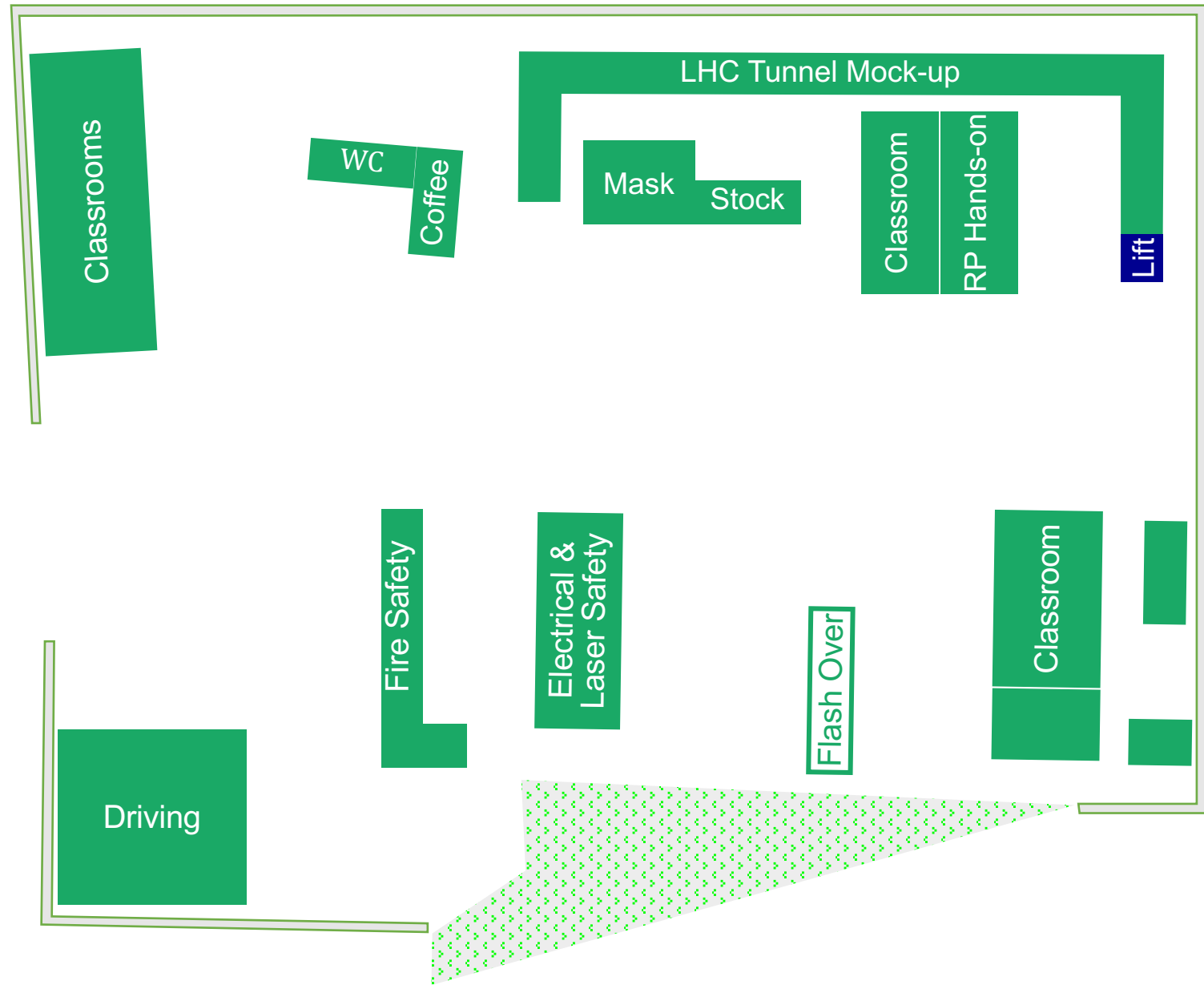


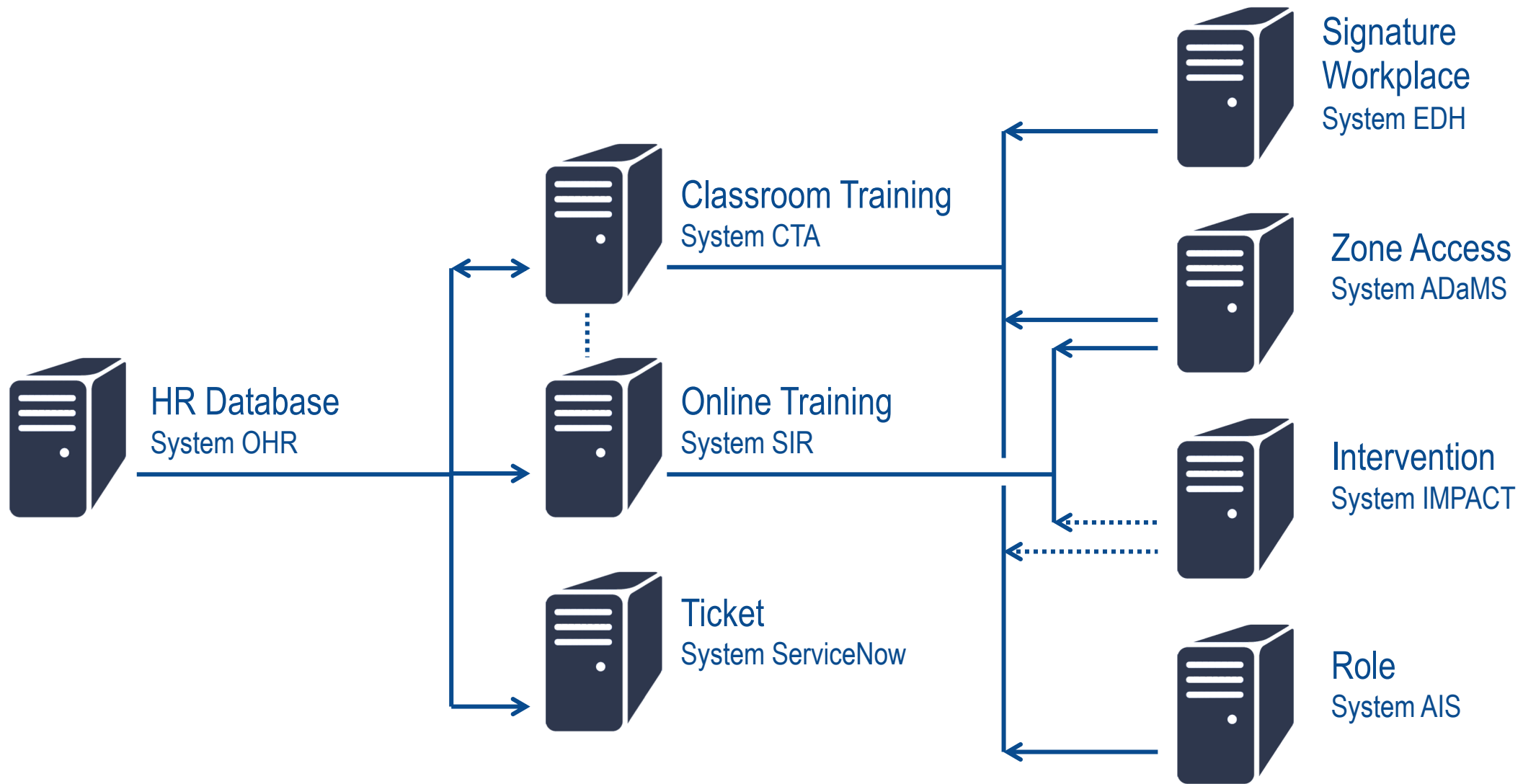




## Safety Training centre

- 4 classrooms
- 5 hands-on facilities
- 1 tent
- 1 shuttle stop, parking
- 1 storage
- 1 workshop





# Permission LHC-TNL

## Required training ranks

Code ↑≡	Description
10010	Safety at CERN
10200	Electrical Safety - Awareness
10390	Self Rescue Mask
10800	CERN - Beam Facilities
10810	LHC - Machine

## Required PPE

Description ↑≡
Frontal Lamp
Helmet
Portable Odh Detector
Safety Shoes
Self-Rescue Mask

# Safety Form OHS-0-0-3 - Identification of occupational hazards



Urgent

## 601 - Use of LASERS

You are exposed to hazards related to non-ionising radiation if:

✓ In carrying out your duties, you will need to use, even if very occasionally, or you think you may need to use lasers of class 2 (to a minimum)

or

✓ In carrying out your duties, you will need to intervene, even if very occasionally, or you think you may need to intervene where lasers of class 2 (to a minimum) are settled in.

or

✓ In carrying out your duties, you will need to intervene, even if very occasionally, or you think you may need to intervene in an area marked out by this safety sign



### Document(s)

[IS 22 Rules for the safe use of lasers at CERN](#)

### Training(s)

The "Laser - User" and "Laser - Expert" courses are offered in the CERN training catalogue.

[Registration](#)

[More information](#)

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# Safety Training

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*Training Centre Care Taker*



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*Head of Safety Training*

### Tools & Services

- Classroom Courses: CTA
- Online Courses: SIR
- Training Request: EDH
- Hazard Identification: OHS-0-0-3
- Installation Access: ADaMS
- Work Declaration: IMPACT
- Safety Roles: SR-SO
- Training Attestation: HRT
- Photo Album: CDS
- Help: Service Now
- FAQ

### News

- 'Manual Handling' course in September  
*13 July 2016*
- New online courses  
*23 June 2016*
- Recipe for successful online-training  
*14 September 2015*





- MANDATORY FOR EVERYBODY
- BEFORE ACTIVITY
- CONTINUOUS
- QUALITY
- LANGUAGE
- INSTALLATIONS
- RULES
- QUANTITY OF LEARNERS
- DIVERSITY OF LEARNERS
- BEAM OPERATION SCHEDULE





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