



**CMS Guide Training**  
The visitors path

# Meet the visitors

## A. Non-expert

### Objects

- General public
- CERN community
- Local community
- Inspire
- Raise awareness and interest
- Show the accessibility of the site
- Increase the confidence in their ability to learn about the topic

## B. Affiliated with science

### Objects

- Students
- Scientists
- Impress
- Give quick, clear messages
- Show industrial return, spin offs

# Key Messages

- Fundamental Science is fascinating and advances mankind
- LHC is a circular particle accelerator with 27km circumference which collides in the centre of CMS protons 40 000 000 time per second
- CMS & LHC will answer fundamental open questions about our understanding of the origin of our universe
- CMS is a very large and ultra precise Detector which takes pictures of the collisions
- CMS is a worldwide collaboration acting in 43 countries and 193 institutes and situated in Cessy, France
- CERN hosting CMS is the world largest particle physics laboratory and is one Institute in the CMS collaboration
- CMS and CERN are like an “open enterprise” ‘you are a part of this’, be a partner, participate via different education programs or similar.

# Talking about CMS

Sign up for the CERN Communication course: [CTA](#)

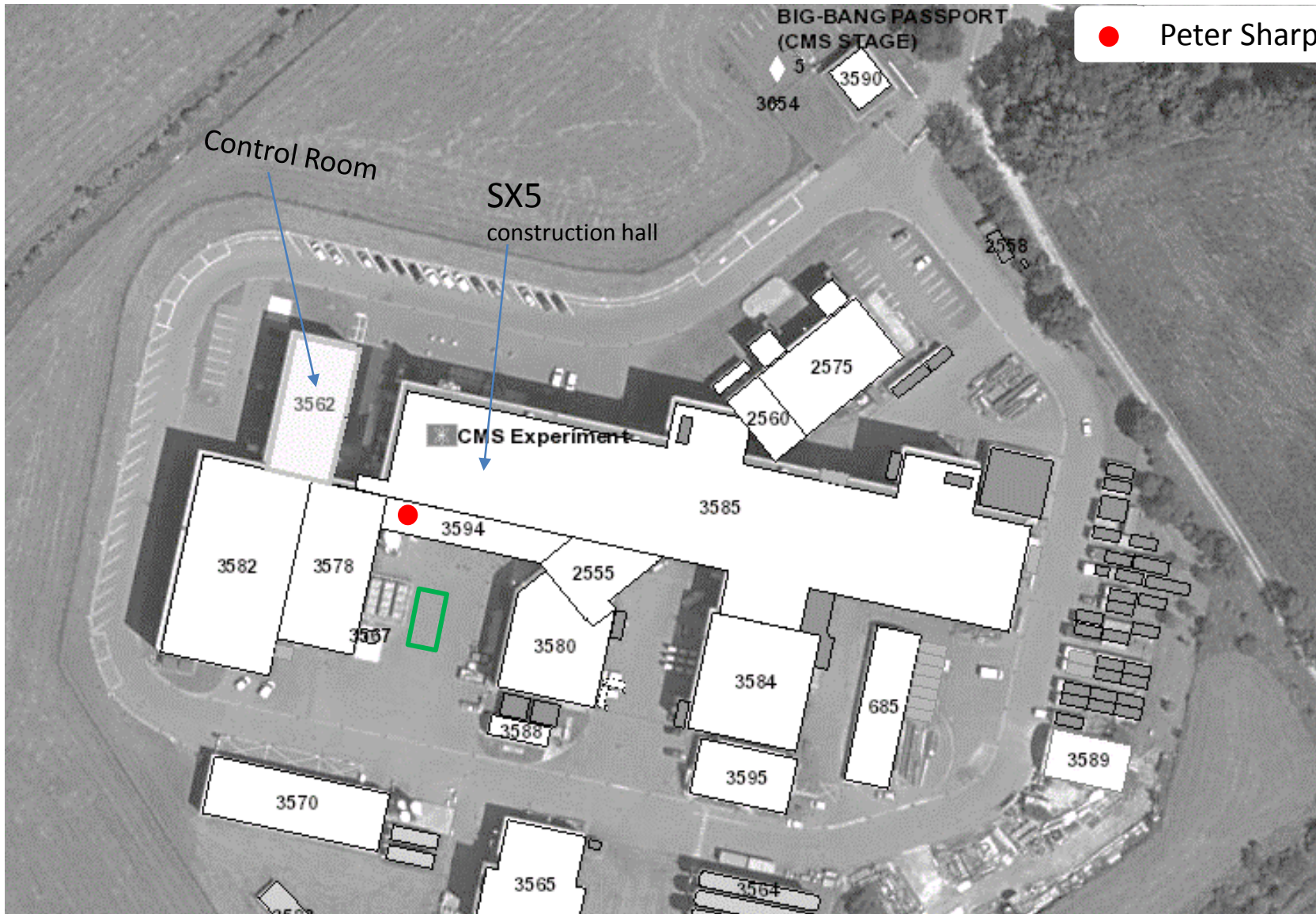
- offered by the CERN visitor service
- ½ day training for 10 people each course

Please find [here](#) further information to enrich your guiding stories.

# Surface P5

 Bus Parking

 Peter Sharp room



# Welcoming the visitors

Visitors arrival point!



“Badging in” the visitors



Taking the visitors in the Peter Sharp room

# Visitors Path

## Surface & Underground

### Surface – Stops

1. Peter Sharp Room
2. Assembly Hall -SX5
3. Blue Area
4. Elevator Shaft – MAD Hall
5. Control Room
6. Collaboration Space
7. Computer Center TIER 0 -3562/2<sup>nd</sup> floor
8. The LHC dipoles

### Underground- Stops

1. USC55 -1, Old Computing Room – 3D Video
2. USC55 -2, Roman Villa Spot, Detector mock-up
3. USC55 -2, The Racks
4. *UXC55 – the visitors balcony -Visiting the detector*

# 1. The Peter Sharp Room

- PC & projector: showing videos ([instructions](#))
- Muon Detector: explaining how muons are detected ([instructions](#))
- Different posters & interactive exhibits with explanatory tags



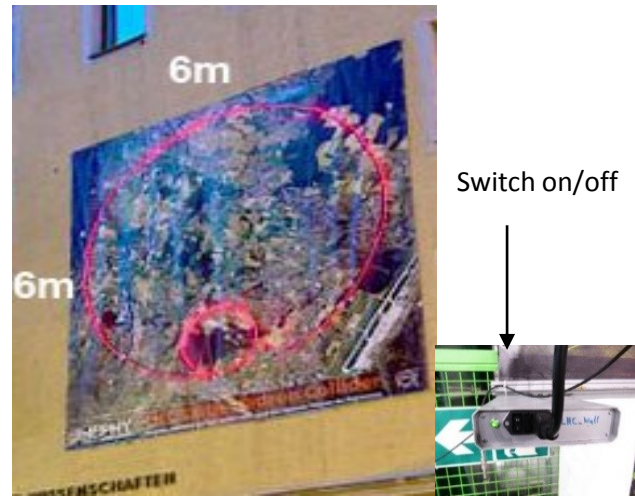


## Welcome to CMS at the LHC

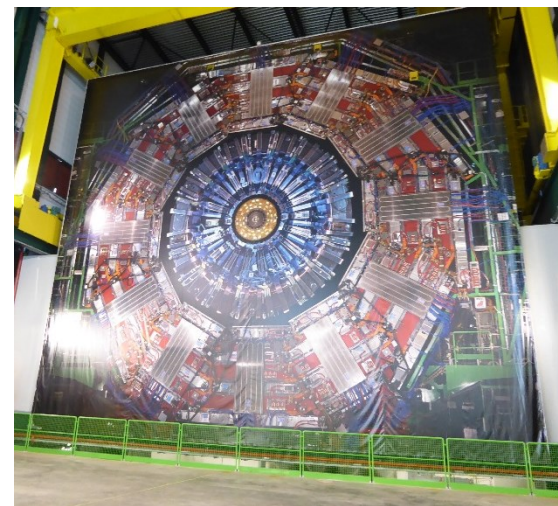
*“Where are you – What’s LHC – What’s CMS”*

# 2. Assembly Hall

SX5 building



Art at CMS exhibits  
<http://artcms.web.cern.ch/>



CMS Life size poster

[LHC poster](#) light animation

## 2b. The SL53 window

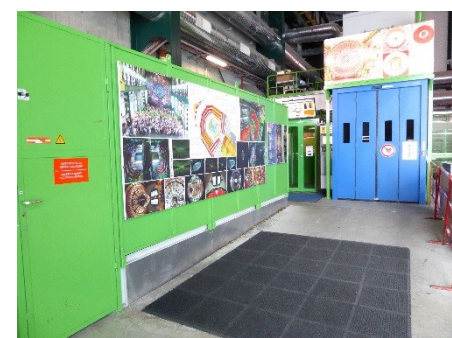
There are periods when due to technical conditions we cannot visit the SX5 (big construction hall), if this is the case, guides are advised to take visitors to the SL53 window, to show them the CMS life size-poster & the SX5 plug.

# 4. Elevator Shaft – MAD Hall

## The CMS detectors

“CMS uses forefront technology”

- Real detector samples in the show cases
  - More detailed explanations for each show case
  - Samples ready Ecal / Tracker/ Magnet/ RPC
- 
- Posters



# 4b. Elevator Shaft – MAD Hall

## CMS data stream & processing

### GRID-Wold Wide Data processing for CMS

- GRID – Data flow art installation [ connected to-2b]
- Shaft (Plexi-glass window to look down)



*Date processing*

*Data taking*

# 5. Control Room

## CMS control room

*“The steering wheel of CMS”*

*The CMS Control Room is 24h/7days operational while the LHC runs*

- Working Area – time and space have to be minimized for all visits
- Info panels above the Screens; Trigger, Shift leader, Tracker, ...



# 6. Collaboration Space

## CMS collaboration

*“CMS is a global operating institution”*

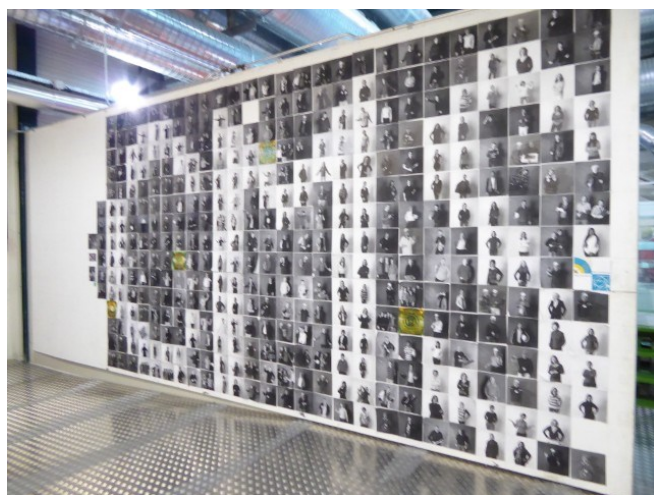
CMS is a worldwide collaboration acting in 45 countries and 193 institutes and situated in Cessy, France

### CMS People

- FACES of CMS Portraits photos (“M” shaped with the women’s photos)

### Clocks Wall

- Collaboration posters with LED in the place of the institutes
- Google Earth screen with infos about all institutes and their contributions
- County contribution poster
- Time Zone installation (several watches next to each other showing different times with the list of institutes in the same time zone below)



# 7. Computer Center TIER 0

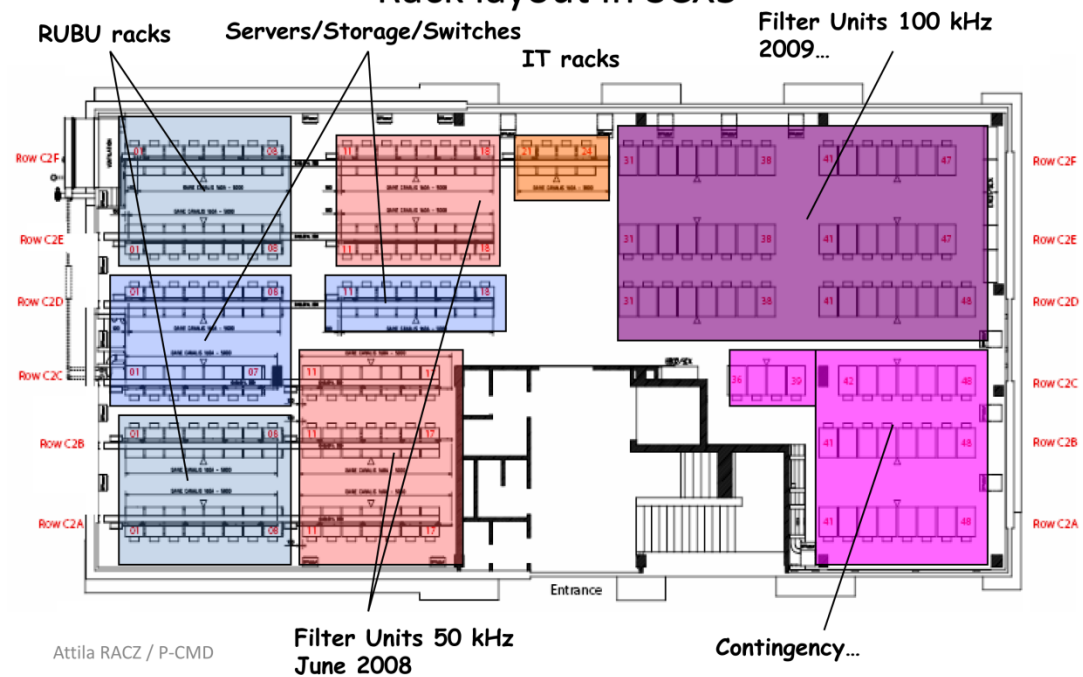
3562/2<sup>nd</sup> floor



## CMS collaboration

"Forefront technology used for CMS"

### Rack layout in SCX5



# 1. USC55 level -1

## Underground control room – 3D Cinema room

- CMS cinema 3D full HD with beamer and screen
- 1b Service cavern level 1
  - Visuals slow control
- Elevator shaft
  - Cooling system visuals



# 1b. USC55 level -1

**General Power and CMS magnet**

*“biggest superconductive magnet worldwide”*



USC Level -1



# USC55 – level 2

## CMS underground architecture & construction

“we are 100m underground 8m away from to the CMS experimental cavern”

- 2a Elevator exit;
  - Safety Visuals
- 2b Elevator shaft level -2;
  - Plexi glass model
  - Visuals about the excavation work and timeline
  - Start of Data Flow-art installation – light chains from the CMS model – shaft to the surface

Roman Villa Poster & story



# USC55 – level 2

## CMS electronic – Trigger – DAQ

*“25ns collision rate 80m away in the center of CMS”*

### 2c Service cavern electronic

- Visuals about electronic installations, trigger,..

### 2d Service cavern cable channels

- Glass floor illumination below and above the service cavern
- View to the cable shafts up and down at the rear of the electronic racks

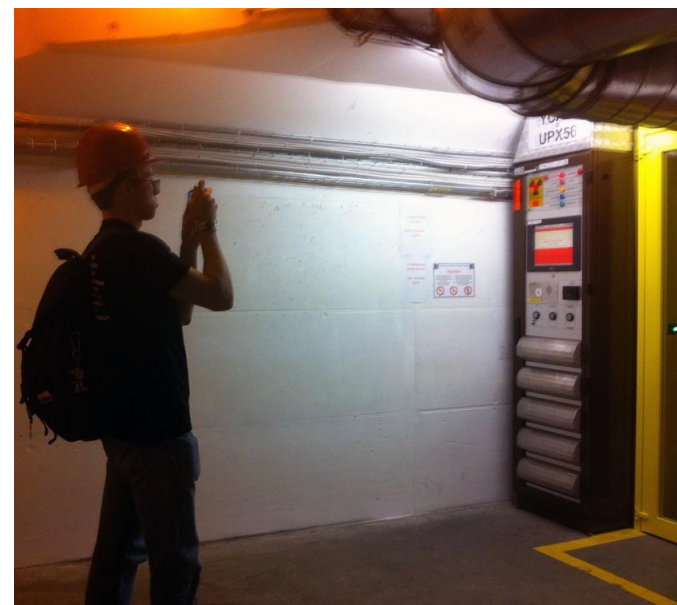


# Underground level 2 USC

## Entrance to CMS and LHC

“High safety standards, very close to the running CMS experiment”

- 2e Door to the LHC tunnel
  - LHC poster – open LHC magnet
  - 3D TV screen with 3 minutes video sequence
- 2f Eyes scan
  - Eyes scan explanation poster
  - CMS poster
  - 3D TV screen with 3 min video on CMS



# **We need you to:**

- Ensure the CMS operation
- Pass our passion for science to the people
- Invite visitors to participate to CMS

# **We hope you will:**

- Have fun showing our beautiful CMS detector to the public
- You are welcome to participate with ideas and actions our CMS visitor path
- Tell your colleagues about CMS Visits!

# CMS Guide Training

The visitors path

Thank you!