

CERN  
OPENDAYS

Volunteers  
Volontaires



## Training for Guides in Computer Centre CERN Open Days 2013

20<sup>th</sup> September 2013

IT Volunteer Coordination:  
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- ## Outline

- Introduction
- CC Tours – Visitors Flow
- Guiding a group through the CC
- Computer Centre - facts and figures
- Questions

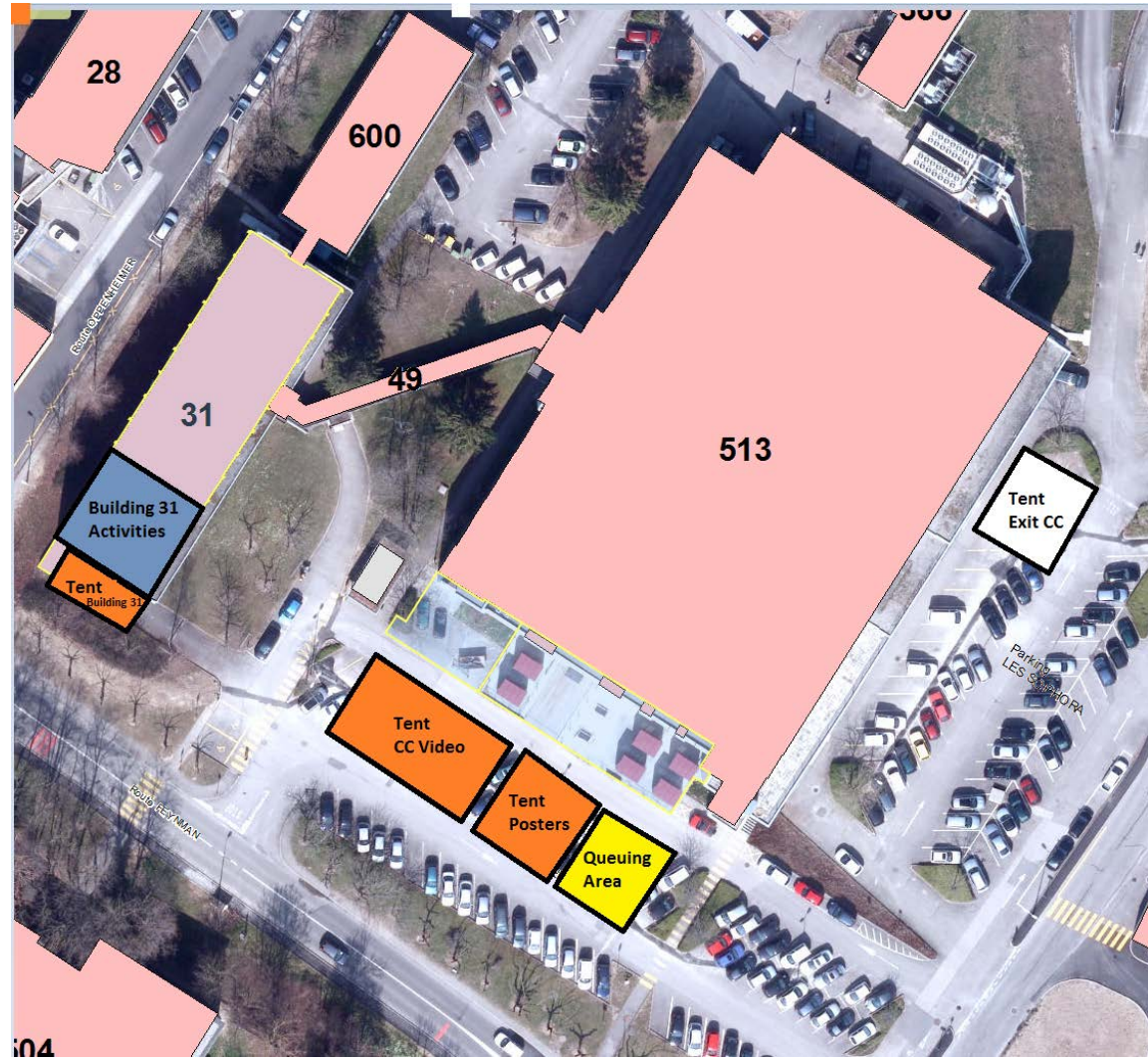


- Computer Centre Guides for Open Days:
  - as of 20.09.2013: 87 CC Guides total!
- CC Guides - Training Itinerary:
  - Today's training session
    - Will be recorded and made available
  - Next week, 5 sessions 'Hands-on'; please sign-up!
  - Material
    - 'cheat-sheet' with key info and numbers about CC

<https://information-technology.web.cern.ch/staff/openday-2013>

# Thank you for volunteering!

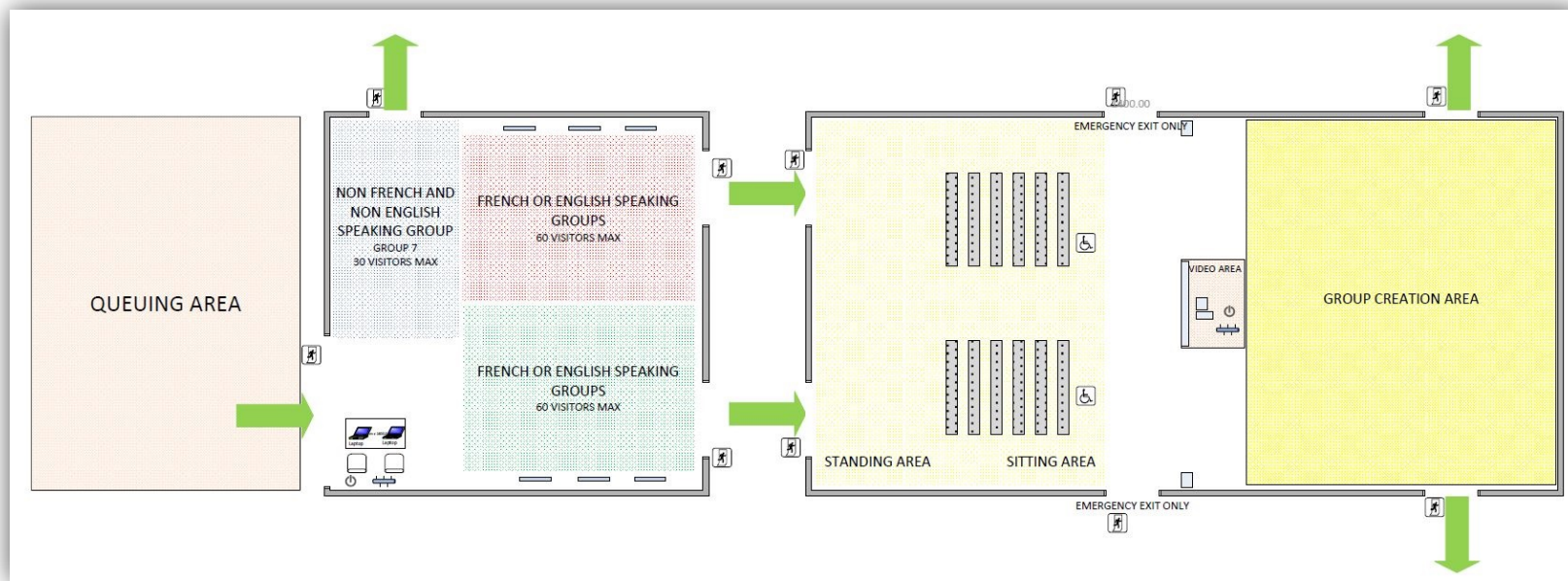




Site Manager:

**Vincent Dore**





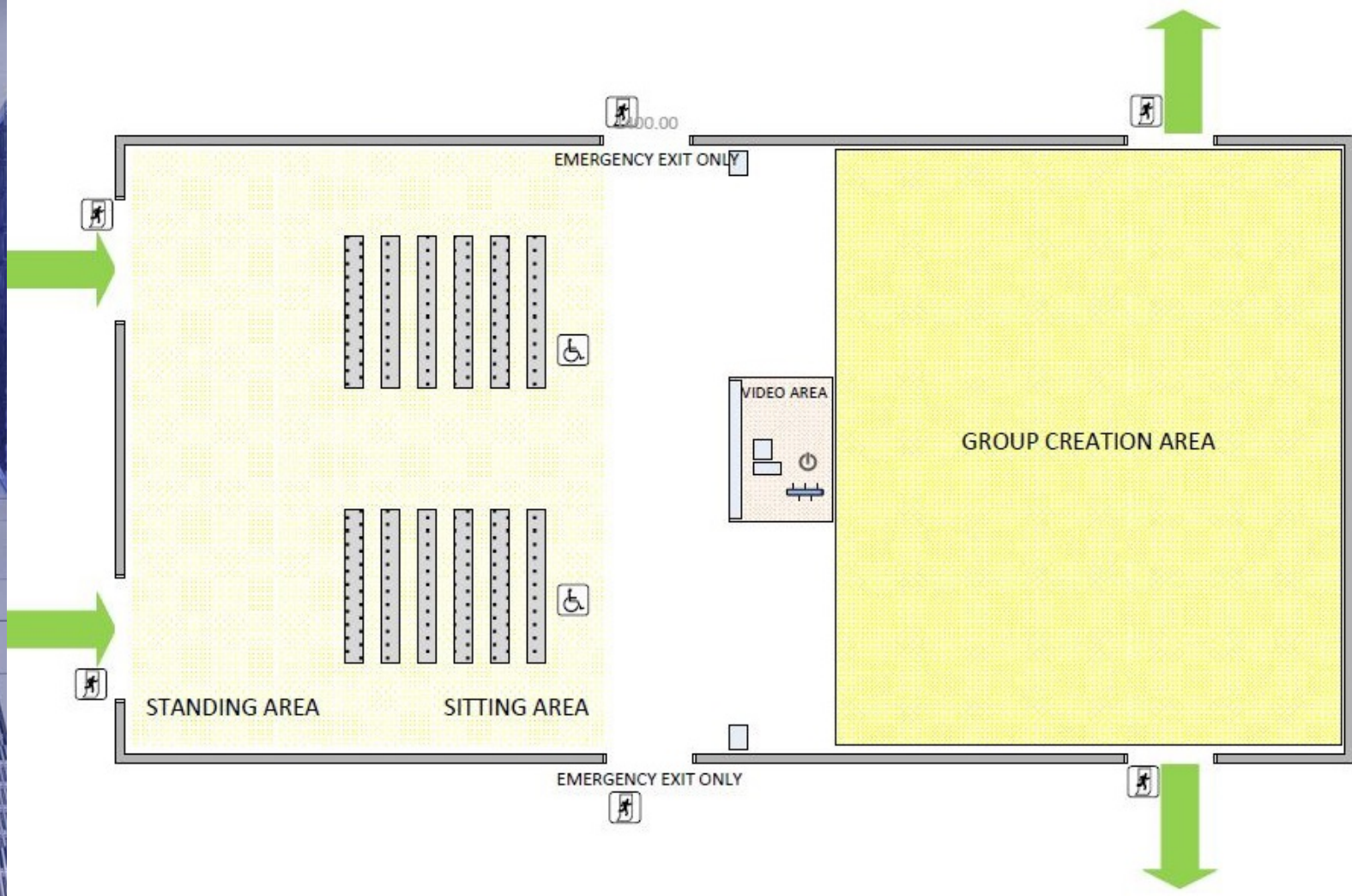


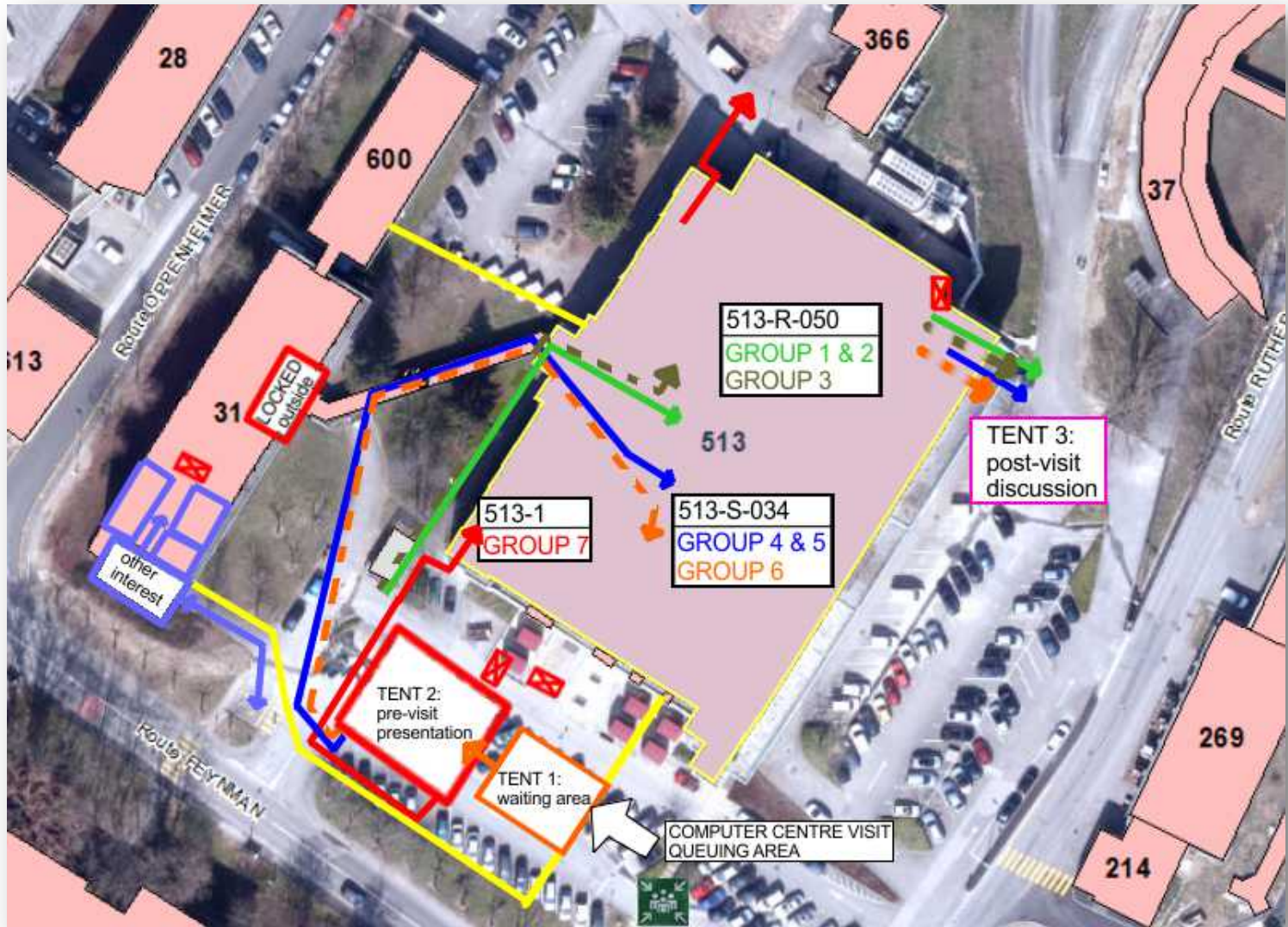
- Video for the Open Days about IT
  - 7 minutes' video, 3 parts:
    - How computing evolved at CERN (from 1954 till now)
    - The role of the IT department
    - The data centre



- Text in English and French



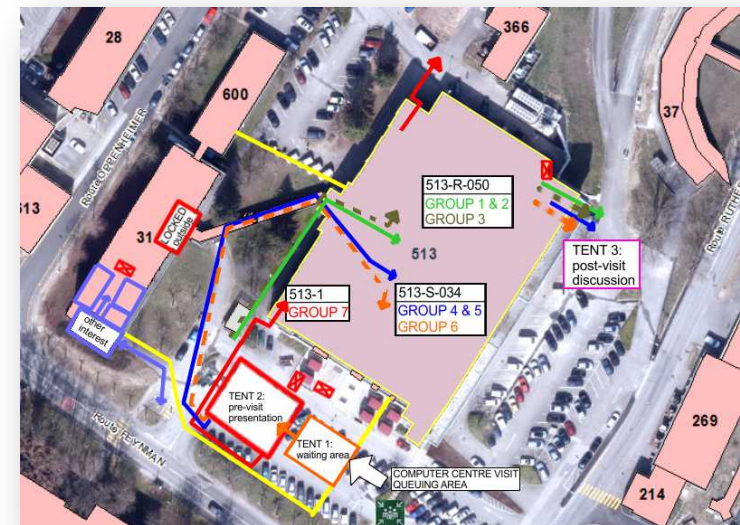








- **Visitors Flow - overview:**
  - 150 visitors / 15 minutes
  - divided into 7 groups, organised by language:
    - Group 1,2,3: CC tour R-050 (20 visitors per group)
    - Group 4,5,6: CC tour S-034 (20 visitors per group)
    - Group 7 (no en/fr): 513 1<sup>st</sup> floor (30 visitors)
  - 2 guides per group:
    - guide 1 gives the tour
    - guide 2 is responsible for keeping the group together
  - In addition non-en/fr language experts on 1<sup>st</sup> floor of 513



- Visitors Flow (Main machine room 513-R-050):



- Visitors Flow (Vault 513-S-035):



- Visitors Flow (513 first floor):





- Guiding a group
  - Two Guides per group
  - Guide 1:
    - gives the explanation
  - Guide 2:
    - Ensures group stays together
    - keeps the time
    - watches other groups
  - The main objective is to **show** the CC
    - ⇒ you have only few minutes for explanations inside the machine rooms!
  - Stick to the time, questions after the visit in/around the exit tent (no more than 5 minutes)
  - Return timely to the video tent exit for the next tour



- Guiding a group - dos and don'ts
  - It will be very busy, so take care that groups don't mix!
  - Guide 2 is always the last person when moving the group!
  - Do not try to overtake other groups!
  - If there are some problems with a group, be firm but polite, and feel free to end the tour at any time and get help if necessary!
  - If you do have a CERN GSM, please bring it along!
    - We will give you all relevant numbers of IT organisers
- Guiding language

Default Guide Language		
~Time	513-R-050	513-S-035
9:00 – 12:00	French	English
12:00 – 14:30	English	French
14:30 – 17:30	English	French
17:30 – 20:00	French	English



- **Computing power**
  - 10,000 servers
  - 90,000 processor cores
  - hosted in 3 CC rooms of 513
  - To cover CERN's needs, since 2013 also CC extension in Wigner Research Centre for Physics in Hungary
  
- **Storage**
  - LHC experiments produce over 25 Petabyte per year (1 PB = 1,000,000 GB)  
25 PB equivalent 5 million DVDs, stacked would be tower of 6 km height
  - Total data stored at CERN: 100 petabytes (~ 700 years of HD quality movies)
  - More than 480 million experiment files are stored in data centre
  
- **WLCG**
  - More than 160 data centres
  - CERN provides about 15% of resources
  - Allows more than 10,000 physicists to access LHC data
  - 250,000 jobs run concurrently on the Grid



## • Networking

- 35,000 km of optical fibre needed to transfer large amount of LHC data to and from CC
- Two 100 Gigabit per second circuits connect CC and Wigner data centre (the first international 100 Gb/s circuits in production worldwide)
- Each day equivalent of 210,000 DVDs of data processed
- Capacity of 4000 simultaneous Wi-Fi connections (6000 devices connected every day)

## • Electricity

- 3.5 megawatt max computing power consumption
- CC protected by UPS (Uninterruptable Power Supply)
  - Allows to start diesel generators for critical systems
  - Provide time to shut down non-critical systems

## • Cooling

- Main Machine room, chilled air via blue ducts, into false floor and then into closed server aisles
- Vault also water cooled racks (higher cooling capacity per rack)
- Cold air temperature 14-21 °C





- CERN Open Days IT Volunteers:
  - Open Days for public: Saturday & Sunday 9:00 – 20:00
  - For IT volunteers:

## Saturday

Morning: 8:00 - 15:00  
Afternoon 14:00 - 21:00

## Sunday

Morning: 8:00 - 15:00  
Afternoon 14:00 - 21:00

Handover of activities: ~14:30

Note: We are still in process to recruiting additional IT volunteers in order to allow for some breaks during your shifts!

- Don't forget to sign up for 'Hand-On' Training Sessions
- This presentation and further relevant information will be made available on the IT Open Days Volunteer pages:

<https://information-technology.web.cern.ch/staff/openday-2013>

- Please do follow the SIR "Open Days" module: <http://sir.cern.ch>

**Thank you for volunteering to make the Open Days 2013  
a great event for IT and for CERN!**





# Questions ?