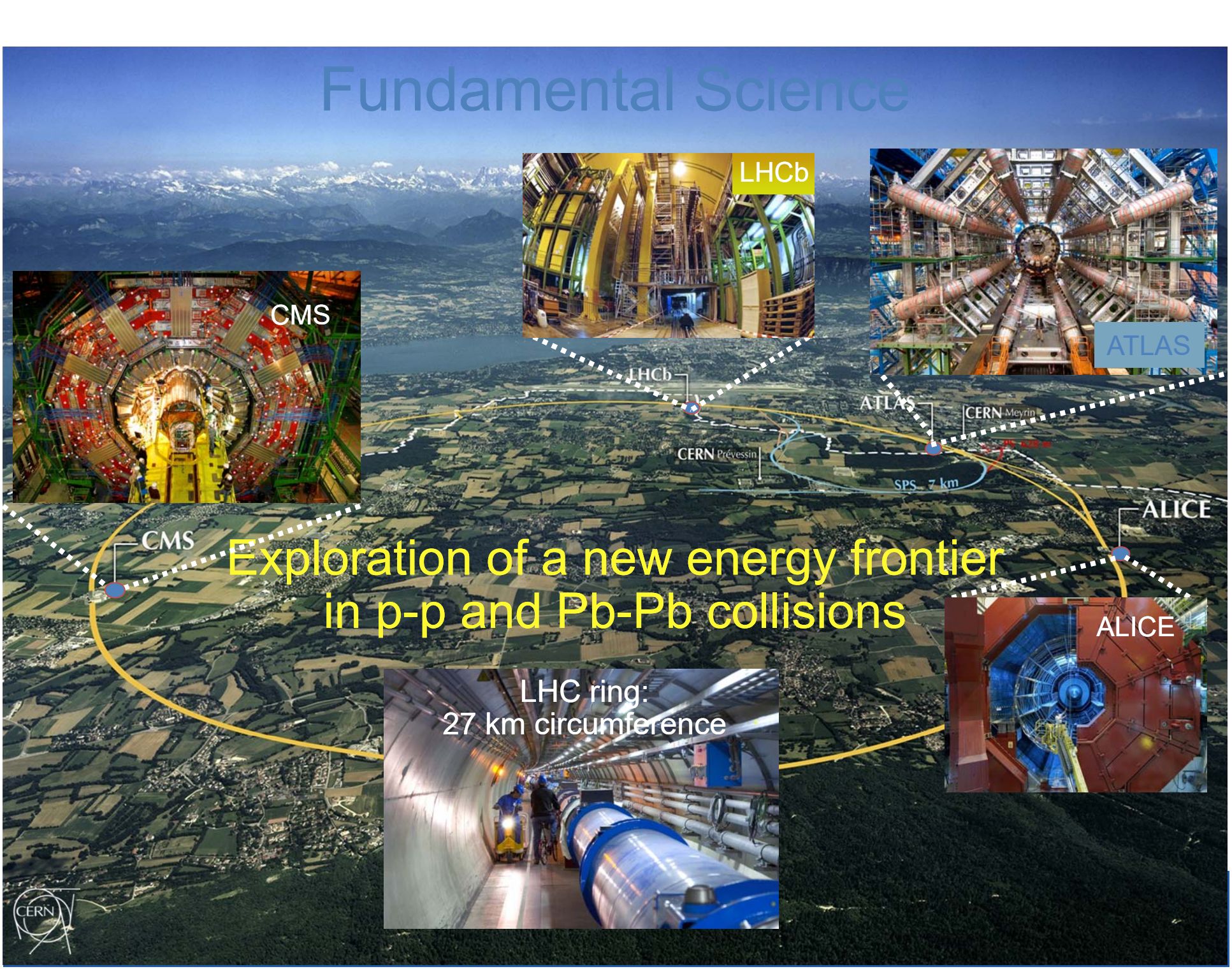
GS Department

Ll. Miralles

Fundamental Science

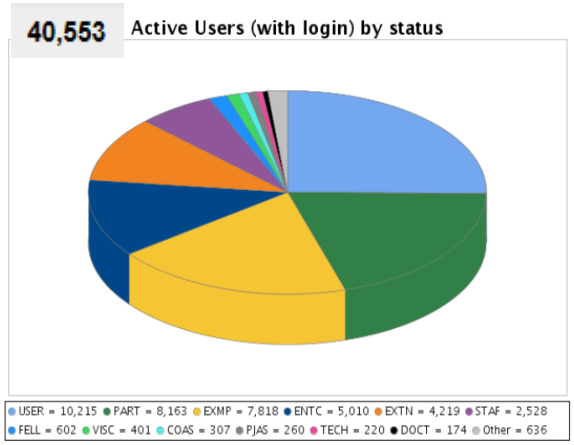


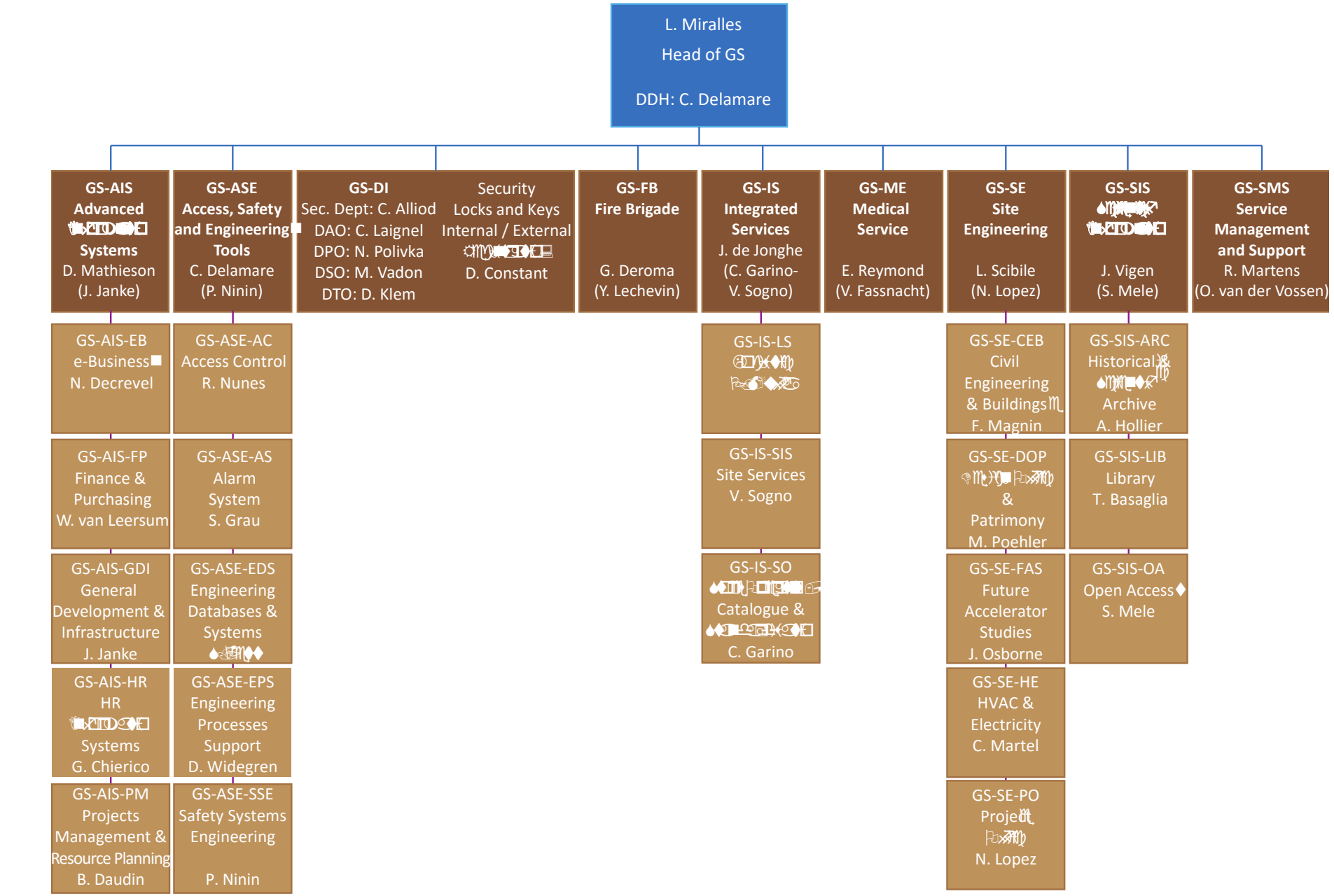
Exploration of a new energy frontier
in p-p and Pb-Pb collisions

- Staff, users, ext. ~ 26 000
- Visits ~ 100 000 en 2014
- Vehicles ~ 22 000
- Site entrances 20
- Entries/day 20 000
- Sites 16
- Site surface ~ 200 Ha
- Fenced perimeter ~ 22 km

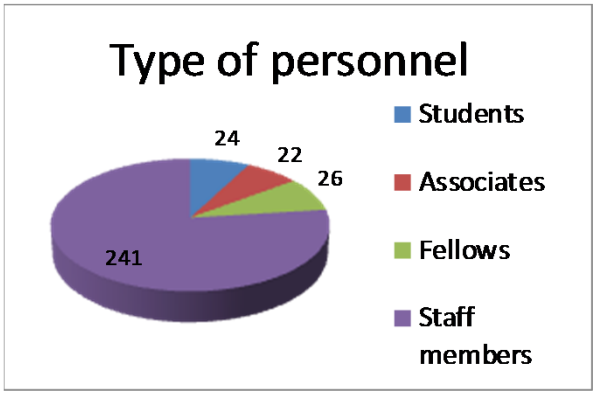
- Civil engineering services
- Material Management & Storage Services
- Fire protection services (Fire Brigade)
- Registration, access & safety services
- Facility management services
- Business application services
- Alarm system services
- Mail, Removal & Distribution of Goods Services
- Transport, Shipping & Goods Reception Services
- Waste Management Services
- Person mobility services (Cars, Bicycles, Shu
  ..)
- Library & Archive Services
- Housing & Hotel Services
- Finance & Purchasing Services
- HR Services
- …

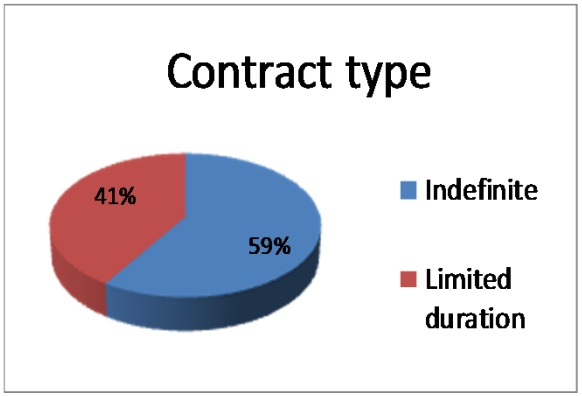
- 495 hotel rooms, 3 restaurants
- 2 main Sites, 657 Buildings, 238 Barracks
- > 15000 active access cards
- > 1000 cars
- > 234000 items at the stores

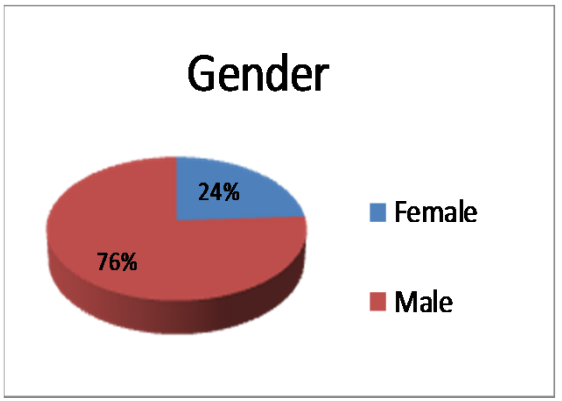


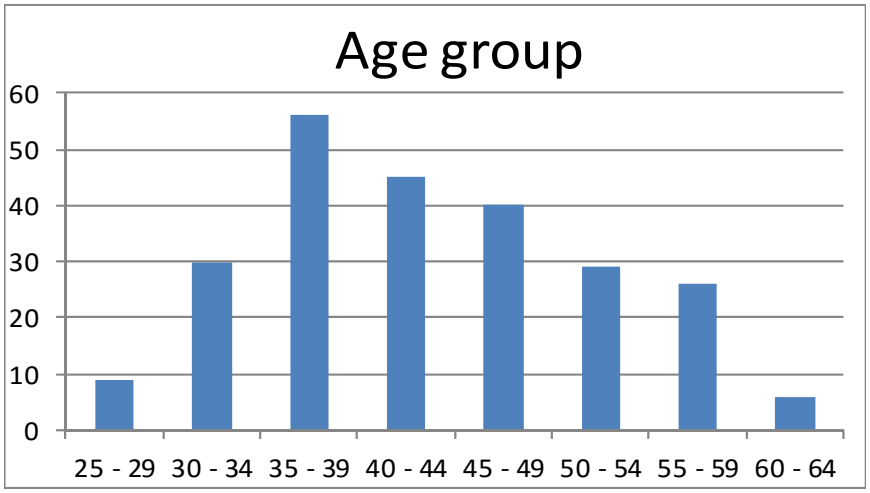

L. Miralles
Head of GS
DDH: C. Delamare
GS-AIS
Advanced Systems
D. Mathieson
(J. Janke)
GS-ASE
Access, Safety and Engineering Tools
C. Delamare
(P. Ninin)
GS-DI
Sec. Dept: C. Alliod
DAO: C. Laignel
DPO: N. Polivka
DSO: M. Vadon
DTO: D. Klem
Security
Locks and Keys
Internal / External
D. Constant
GS-FB
Fire Brigade
G. Deroma
(Y. Lechevin)
GS-IS
Integrated Services
J. de Jonghe
(C. Garino-
V. Sogno)
GS-ME
Medical Service
E. Reymond
(V. Fassnacht)
GS-SE
Site Engineering
L. Scibile
(N. Lopez)
GS-SIS
J. Vigen
(S. Mele)
GS-SMS
Service Management and Support
R. Martens
(O. van der Vossen)
GS-AIS-EB
e-Business
N. Decrevel
GS-AIS-FP
Finance & Purchasing
W. van Leersum
GS-AIS-GDI
General Development & Infrastructure
J. Janke
GS-AIS-HR
HR Systems
G. Chierico
GS-AIS-PM
Projects Management & Resource Planning
B. Daudin
GS-ASE-AC
Access Control
R. Nunes
GS-ASE-AS
Alarm System
S. Grau
GS-ASE-EDS
Engineering Databases & Systems
GS-ASE-EPS
Engineering Processes Support
D. Widegren
GS-ASE-SSE
Safety Systems Engineering
P. Ninin
GS-IS-LS
GS-IS-SIS
Site Services
V. Sogno
GS-IS-SO
Catalogue &
C. Garino
GS-SE-CEB
Civil Engineering & Buildings
F. Magnin
GS-SE-DOP
&
Patrimony
M. Poehler
GS-SE-FAS
Future Accelerator Studies
J. Osborne
GS-SE-HE
HVAC & Electricity
C. Martel
GS-SE-PO
Project
N. Lopez
GS-SIS-ARC
Historical Archive
A. Hollier
GS-SIS-LIB
Library
T. Basaglia
GS-SIS-OA
Open Access
S. Mele

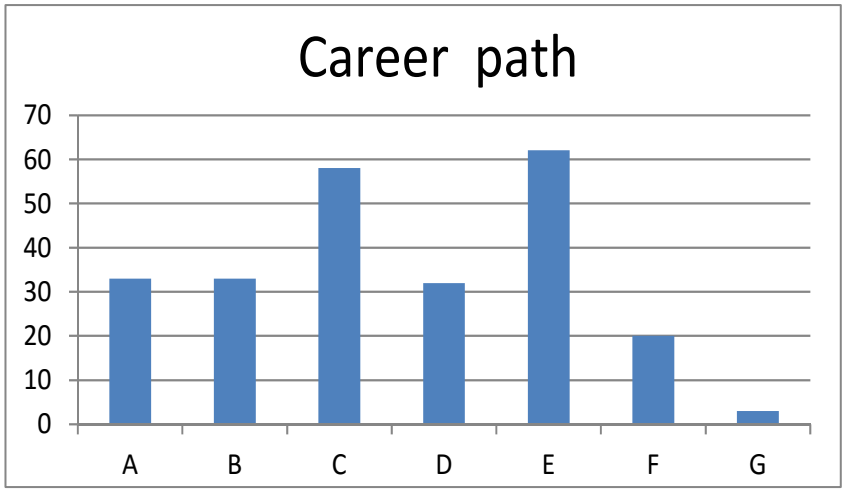
2014 personnel statistics











2014 personnel

• Staff	40.2 MCHF
• Fellows	2.3 MCHF
	42.5 MCHF

2014 material budget

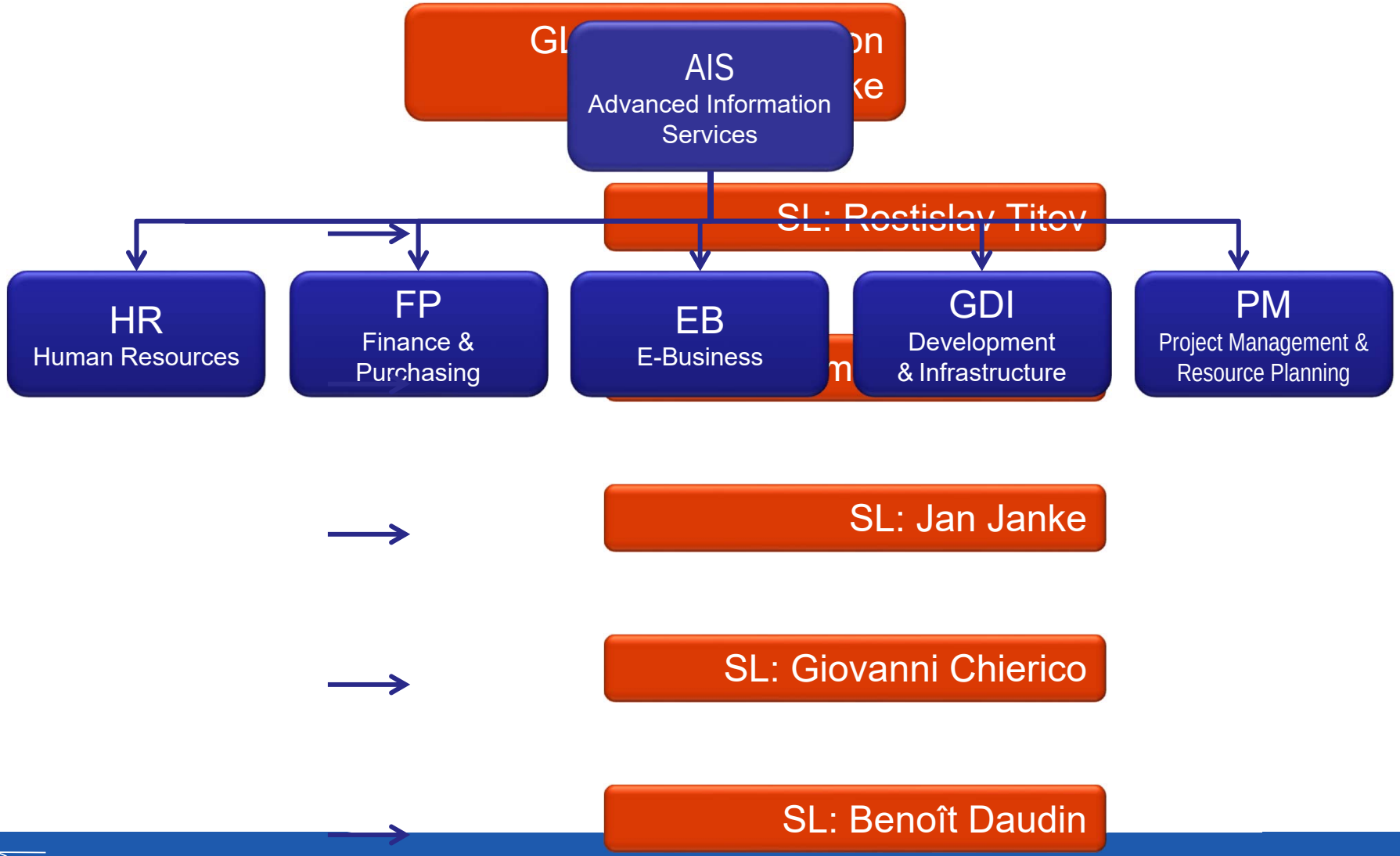
Work realised in 2014:

- Operation 35.6 MCHF
- Projects 46.9 MCHF

GS Department

Advanced Information Systems

GS-AIS Organization chart



Review 2014

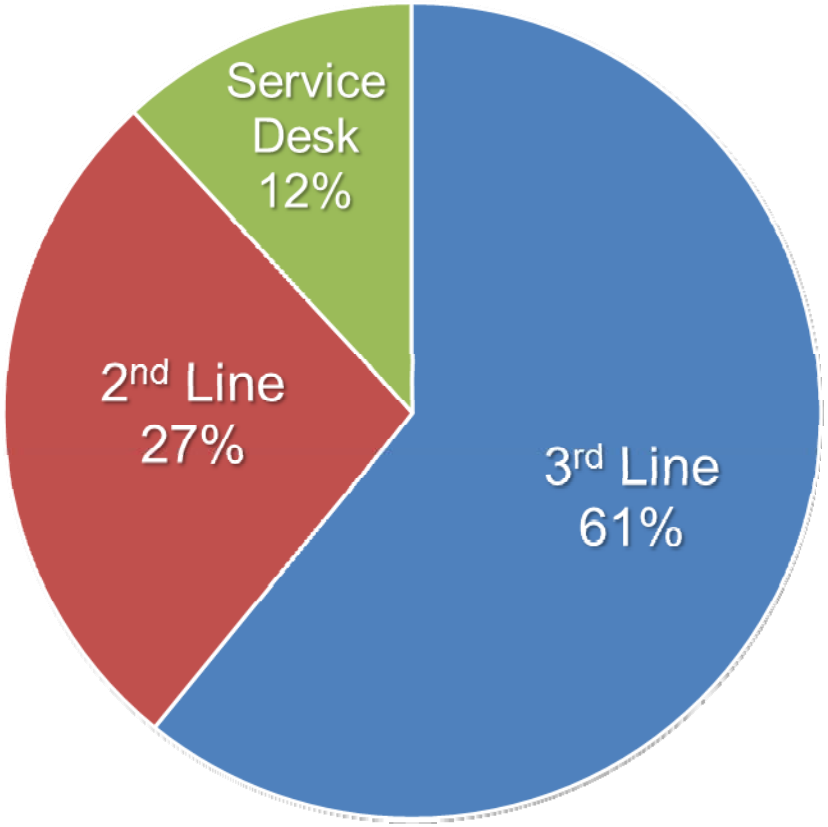
- Finance:
  - SEPA payments
  - Patents Management
  - Improved Contract Support
  - Software License Manager Tool
- HR:
  - PRT for Users' Office
  - Payroll Upgrade
  - e-RT upgrade
- *e*Personnel File
  - Project Start
- EDH:
  - New EDH Forms
  - Workflow Engine Replacement
- Contract Changes
  - Simulations
- IMPACT
  - Avis d'Ouverture de Chantier support
  - Integration of Fire Permit
- Public Outreach:
  - Parallel visit groups
  - Automated guide payments
  - Ticketing for CERN's 60th anniversary event
- Pension Fund
  - Project Start
  - Re-implementation of business rules
- EVM for NICA (JINR)
  - Application delivered
- Activity Planning Tool (APT)
  - New Profit and Loss report

AIS 2014 in Numbers

- HR:
  - 454’700 HRT reports run
  - 9’800 trainings taken
  - 36’570 safety courses passed
  - 52’700 payslips calculated
  - 387 Users’ Office Pre-Registrations
- Finance & Logistics:
  - 113’000 CERN Shop sales
  - 2’700 for bookshop sales
  - 15’000 Imports/Exports
  - 176’000 internal transports
- IMPACT:
  - 15’710 coordinated activities
- Public Outreach:
  - 3’960 visits organized (93’490 visitors)
- Pension Fund:
  - 7’048 pension rights validated.
- Phonebook:
  - 29’000 entries
  - 2.1 million searches
- eGroups
  - 38’400 groups
  - 1.8 million memberships
- EDH:
  - 17’849 users
  - 360’713 document created
  - 759’733 electronic signatures
- CERN Hostel:
  - 32’309 Online reservations

AIS Support Activities in 2014

- Over 6,900 tickets answered (excluding password reset)



Support ticket closure by service

GS Department

Access, Safety, Engineering tools

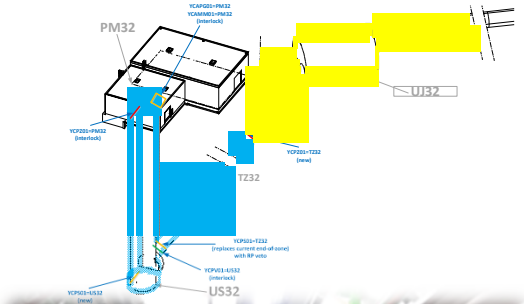
PS Access Project

- Major change & success
- Operational since mid-2014
- Full renovation of 14 zones
  - 22 Access points
  - Buildings, buffer zones, doors & grids
  - Interlocks
- 2015
  - Finalization of the CTF zone
  - Integration of Medicis

LHC Access

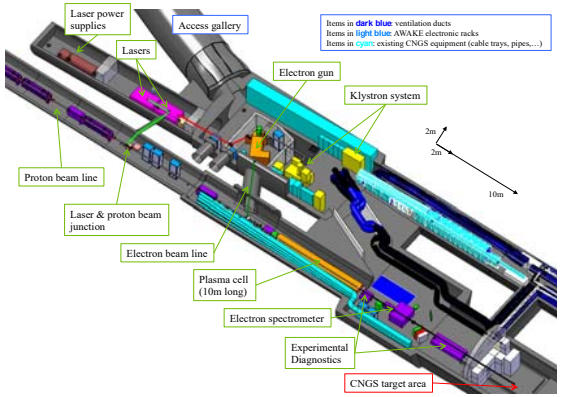
- 17 evolutions carried out during the LS1
  - Maintenance doors
    - Improved LHC availability
  - LHC & SPS Sectorization changes
    - New interlocked zone PM32
    - R2E relocations
    - More radiation veto sectors in the transfer lines
  - Helium confinement improvements
    - New interface to secure the powering tests
  - Activated air confinement
    - New ventilation doors
    - Remotely operated collimation enclosure doors in P7
- Most of them completed before the cool-down

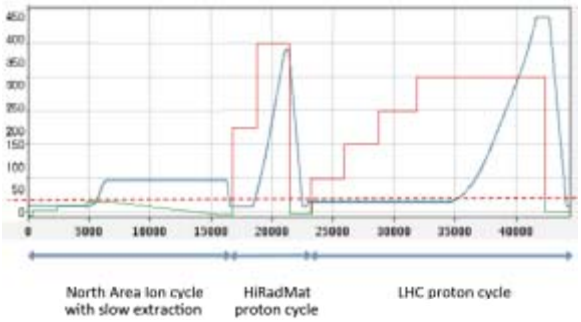
- 2015+
  - Run2: Operation & Maintenance
  - Prepare the LS2



SPS Access

- 2014
  - Operation & Maintenance
  - AWAKE
  - North Hall Ion Beam
    - Installation and Commissioning of a new safety system
- 2015+
  - SPS Access
    - Full system upgrade during LS2
    - Starting now: specification, tendering, contract, test platform; 3D scan; …





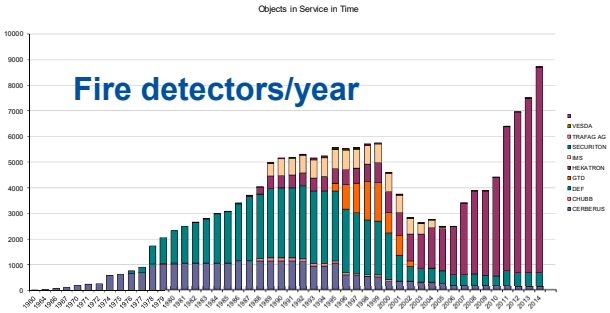
Site Access

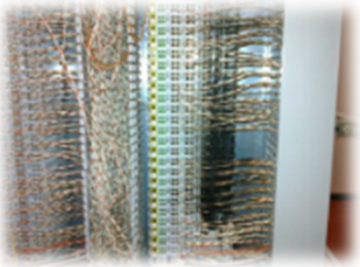
- Continuous growth
  - Badge readers and doors (bld 33)
  - Video-surveillance
  - Electronic locks/cylinders
  - Key cabinets
  - Plate recognition (Inter-Site Tunnel; Globe)
  - Site entrances (Prévessin – Rte Maroc)
- Highlights 2015
  - Heating plant (bld 200)
  - ISR (RWTC); SM18
  - ADaMS v.3 to handle access rights
  - Site Protection Project
    - Consistent with the new CERN access policy
  - And many other requests …

ADaMS

Alarm Systems

- Alarm systems operational 24/24 during the LS1
  - Strong collaboration with GS/FB
- Continuous growth of the installations
- Preventive maintenance is mandatory
  - Prepare for the 18 months ~non-stop run
  - Continuous improvement of the Infor EAM data
- Policy of regular renovation of installations
  - Major replacement of smoke detectors in 2014
  - Linear smoke detectors in the future
  - Important centrals renewals ongoing in Meyrin & Prevessin before LS2
  - Major renovation of LHC centrals to be performed in LS2 & LS3 – underground and surface – 52 centrals concerned
- Alarm Transmission (CSAM-CHAMN)
  - SCADA transparent upgrade (PCVue) done in 2014
  - Analysis of the causes of the evacuations
  - On-going replacement of main PLC concentrator and Text Displays
  - Transmission of smoke detection analog values
  - Preparation of the next generation
    - Reviewing user requirements



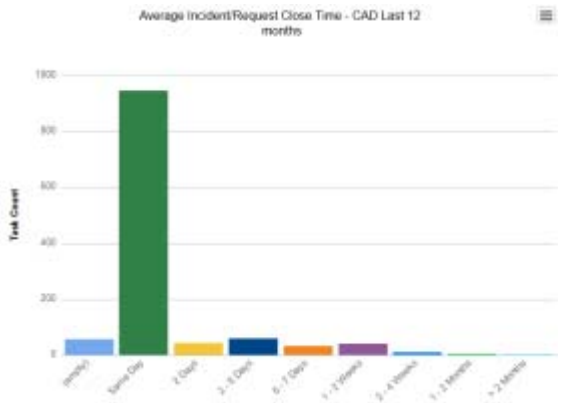


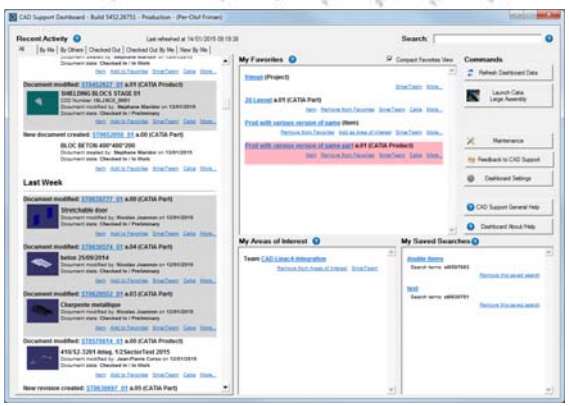
Alarm Systems

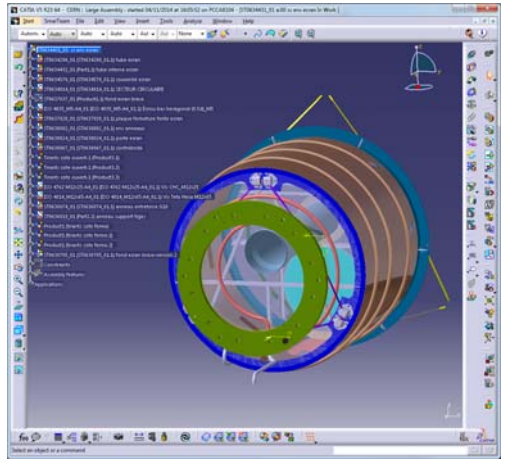
- Fire Detection and Evacuation
  - Bld 774, HIE-Isolde, ELENA, 772, ME59
  - PS Beam Imminent Warning/Evac
  - Numerous LS1 activities
    - R2E activities LHC7 & LHC5; PS Fire doors
    - Triggering of the LHC evacuation by the Fire detection
  - 2015
    - CTF Evacuation & Beam Imminent Warning
    - Medicis, AWAKE, RWTC, CENF, …
    - Prepare LS2 (especially SPS Fire protection)
    - Investigate the Global Emergency Evacuation System
- Flammable Gas and ODH Detection
  - Centrals Point 1 & 5; HIE-Isolde
  - Flammable gas detection by air sampling in UX15
    - New technology at CERN
  - ODH sensors non accessible – solutions deployed
  - ODH portable detectors now mandatory to access the LHC
    - 300 detectors bought
  - 2015
    - 300 detectors to maintain
    - GIF++
    - new gas detection solutions for small & big installation under prototyping

CAD Support

- Continuous and significant support effort
  - >1’200 support tickets and 80 new users in 2014
  - IT infrastructure migrations
- Continuous improvement projects
  - Consolidation of the Smarteam Infrastructure
  - Remake of item profile cards
  - Accelerator layout generation (DMU) with EN
- New: CAD dashboard - Very positive feedback
  - Streamlines common end user task + management overview
  - 2014-2015: CAD data outside CERN design offices
  - Analysis and benchmark of 3D viewers
  - Data Exchange (e.g. HL-LHC project)
- 2015 Highlights
  - (Q1): Major change of lifecycle 2D-3D ➔ Support load
  - Continued Smarteam Infrastructure consolidation
  - Develop new drawing management tools
- 2014-2020: Prepare the succession of CATIA V5

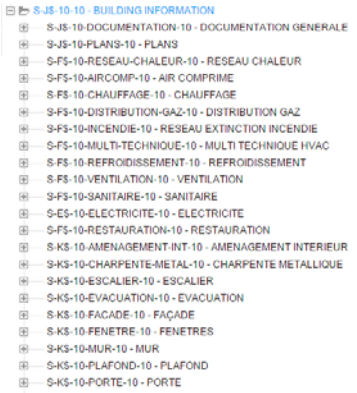






Asset & Maintenance Management

- Pursue the efforts with the A&T sector (Maintenance Management Project)
  - Asset inventory; Work Interventions; Documentation; Spare parts
  - Number of groups using Infor EAM has doubled last 2 years.
    - Sustainable resources and steering to identify
- Major on-going effort and results in GS (SE, FB, IS, ASE)
- Continuous improvement
  - Integrations with Service Desk, CCC-TI, GIS Portal, Baan, …
  - Upgrade to Infor EAM 11, new import tools, etc.
- In the 2015 pipeline
  - Reporting & Business Intelligence
  - Better granularity of Access rights (“Departmental Security”)
  - Contract Management Module (Automate/facilitate invoicing)
  - SCADA integrations to automate meter readings & inspections
  - TREC evolutions
    - Radioactive Waste Management
  - Property Plant & Equipment Project



GS Department

Integrated Services

Storage areas (Conventional)

- Around 11’000m² of covered and open storage areas: many recent improvements.

BEFORE	AFTER
	950

BEFORE	AFTER
	957

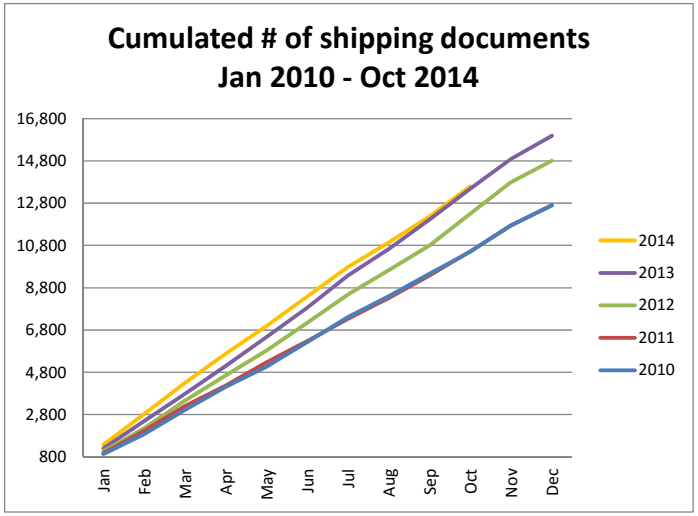
Waste

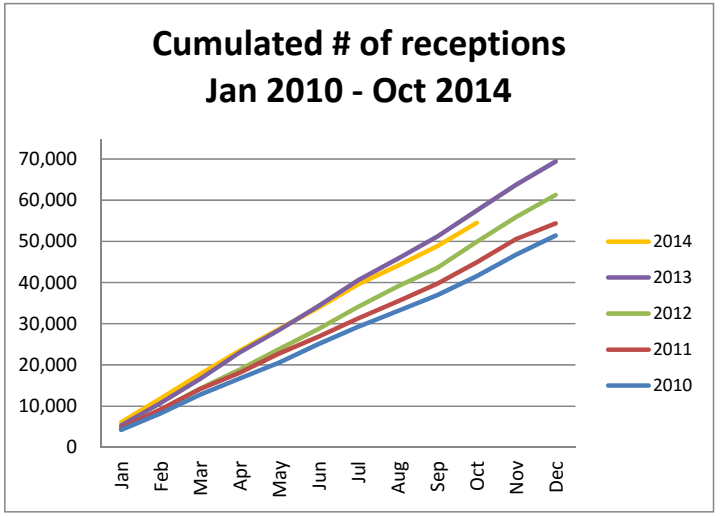
Additional waste produced during LS1, generating extra disposal costs.

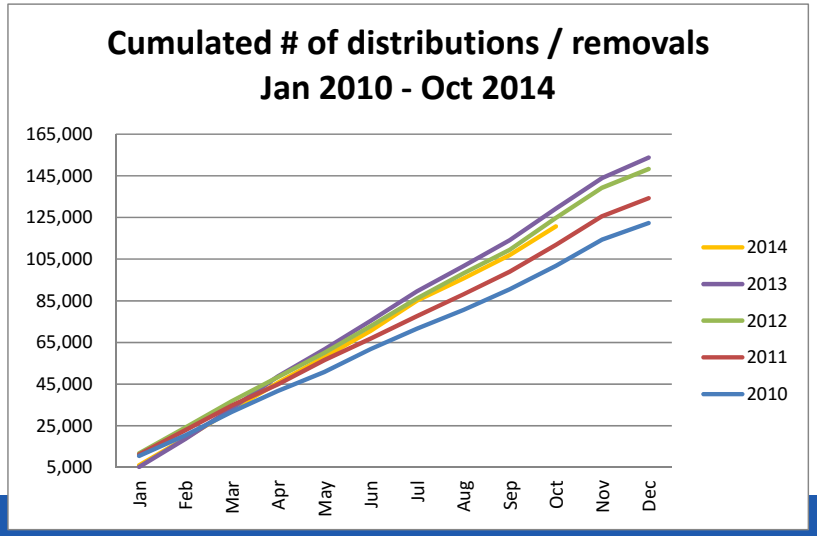
DG-IA 12-R2 | Audit of Waste Management

- Conventional and hazardous waste : Formalize objectives and strategy

Shipping/Reception/Distribution







Cleaning

LS1 cleaning activities include:

- Barracks / Bases de vie
- Tunnels and experimental caverns

Lessons learned for LS2:

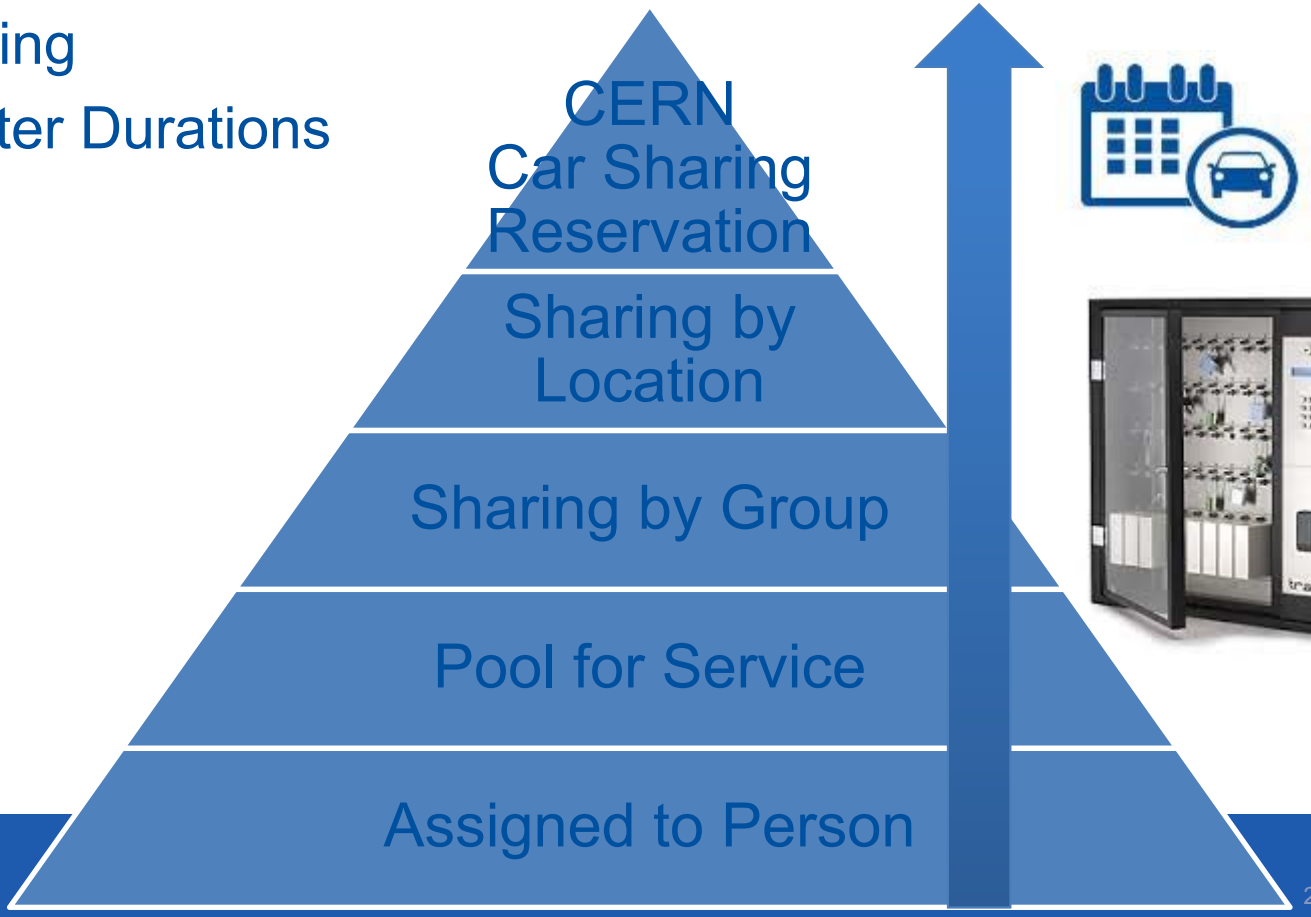
- Cleaning methods to be reviewed to avoid dust in the tunnels (action: GS)
- Search for vacuum cleaners that are adapted for work in controlled areas (RP)

New Buildings (774)

Mobility: Car-Pool: towards a new model

Two axes to improve usage:

- Increased Sharing
- Rental for Shorter Durations



Integrated Mobility

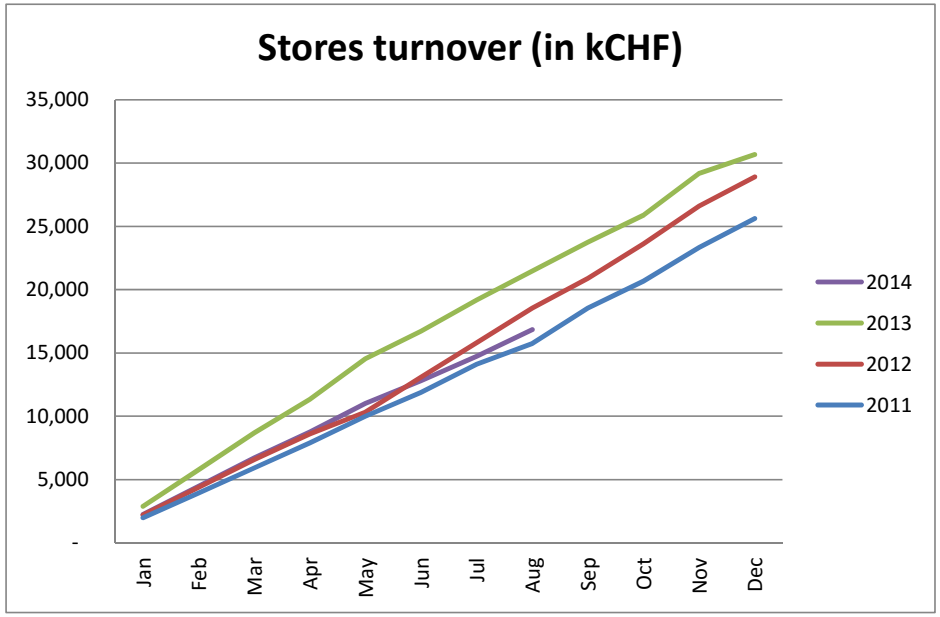
Car sharing CERN

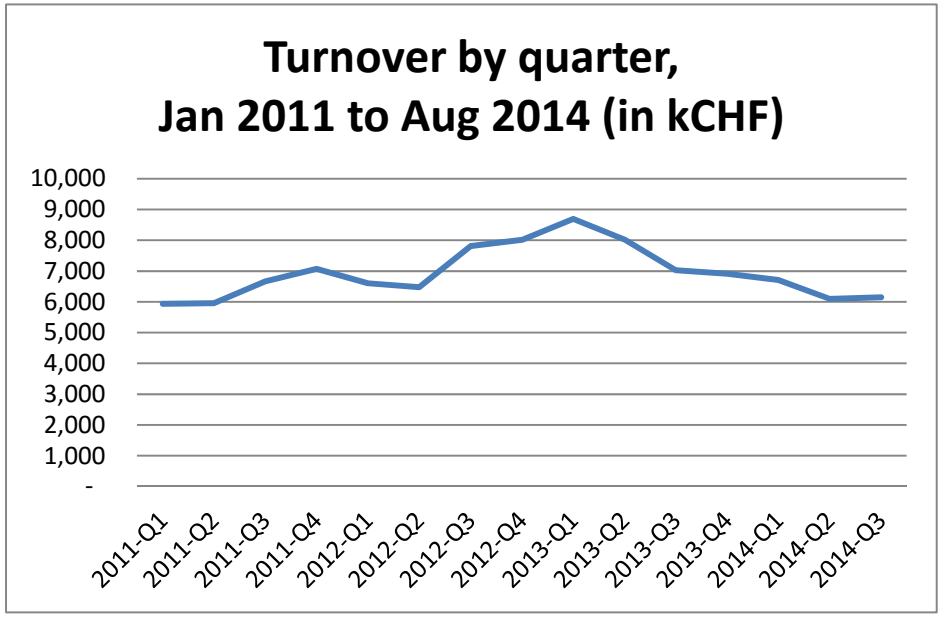
There's An App For That

Shuttle service CERN

Stores

- LS1 generated a turnover increase (similar pattern as other activities within the group)





STORES

- Supply of equipment for open days

  (264 000 items , Computers, Safety-Cloths, T-Shirts , Hoodies, Pens…)
- Modernization of equipment in Row materiel store (Saw and hydraulic Shears)

Stores: Activity

Last 12 months (27 October 2014)

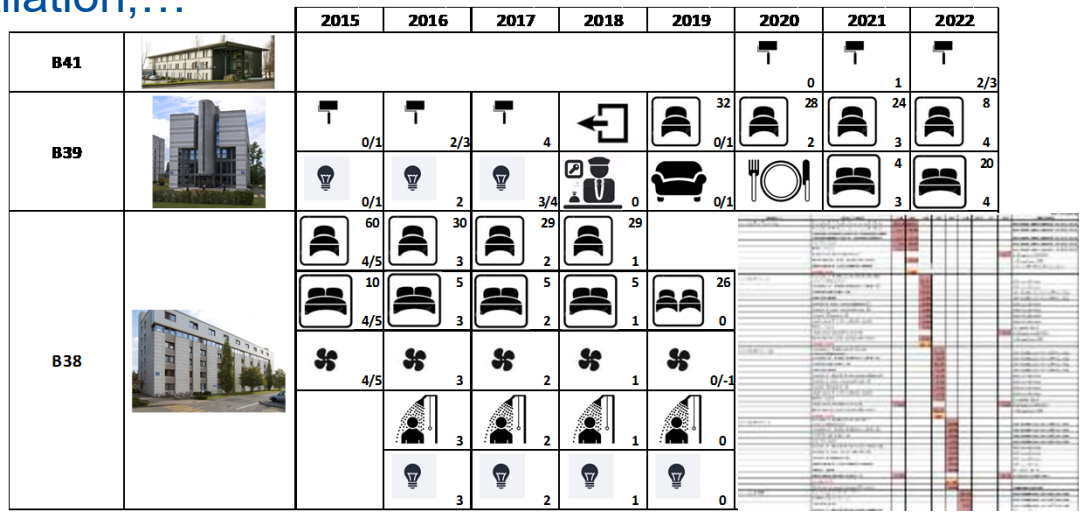
- Items: 18,687
- Demands: 101,521
- Turnover: 17.7M
- Stock value: 8.8M
- Supplier orders: 13,321

Hotels

- Multi-year investment planning: room renovation, painting and flooring in common spaces, lighting, ventilation,…

  - Works staged to maintain hotel capacity (& revenues)

  - GS-SE support is needed



- Excellence in Contract Procedure Hotel → establish a level playing field for contractors!

- **DG-IA/10-R3 | Audit of Housing Fund**
  Define the purpose of CERN accommodation activities and set clear and specific operational and financial performance objectives.

Exhibitions

We support industrial exhibitions of all member states

Israel at CERN

France at CERN

GS Department

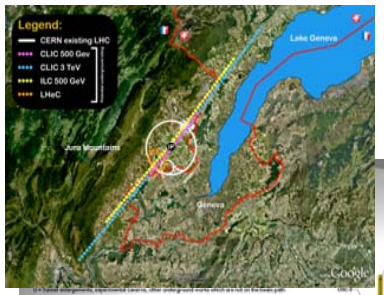
Site Engineering

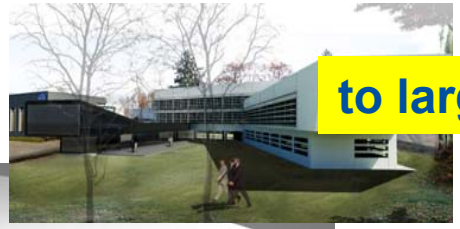
GS-SE Mandate

- The GS-SE Group is responsible to provide, to maintain in working conditions including their eventual operation and to renovate……. the civil engineering structures and infrastructures and the technical services for the tertiary and industrial part of the organization.

- The abovementioned responsibilities include all phases from preliminary design to construction management and hand-over of complete structures and infrastructures.

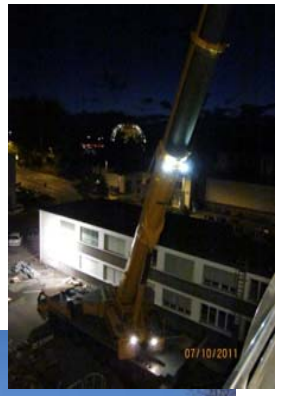
GS-SE scope





to large projects

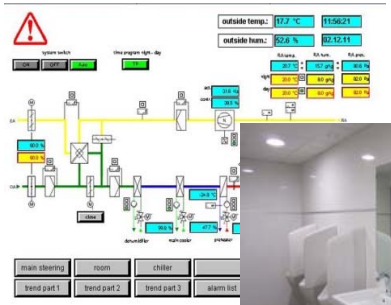
COMPLEXITY



From Design

to construction

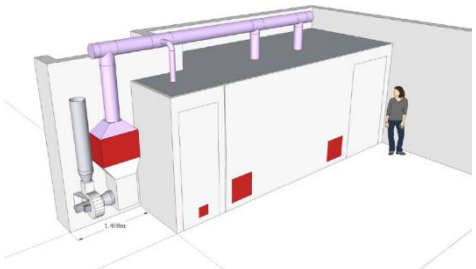
and Operation & Maintenance

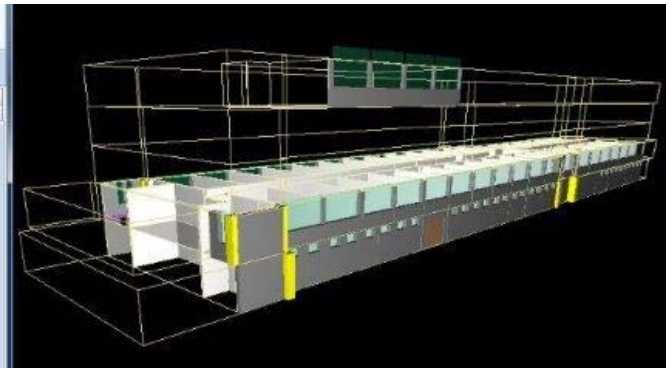


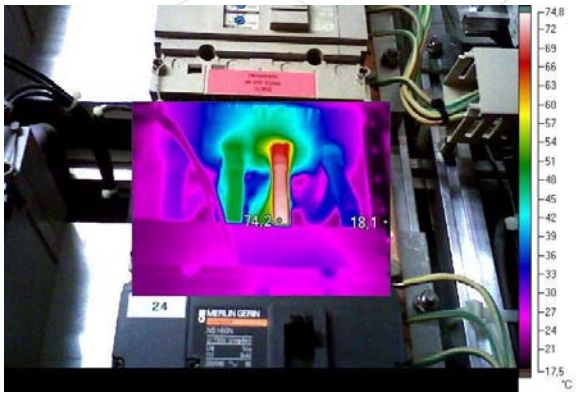
TIME

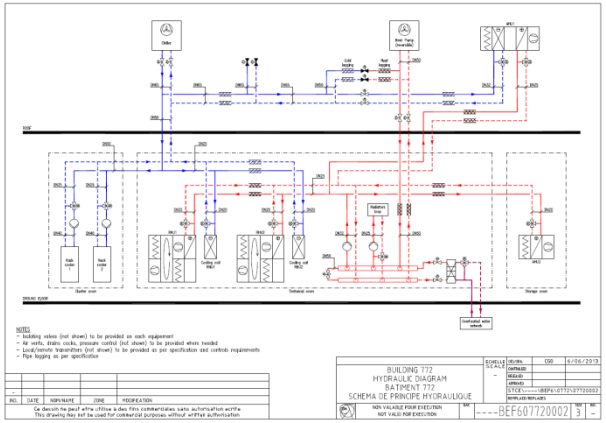
From minor works

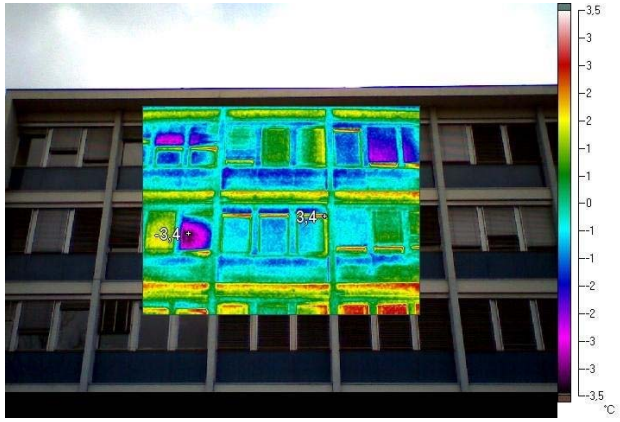
GS-SE - Design examples, ELEC and HVAC

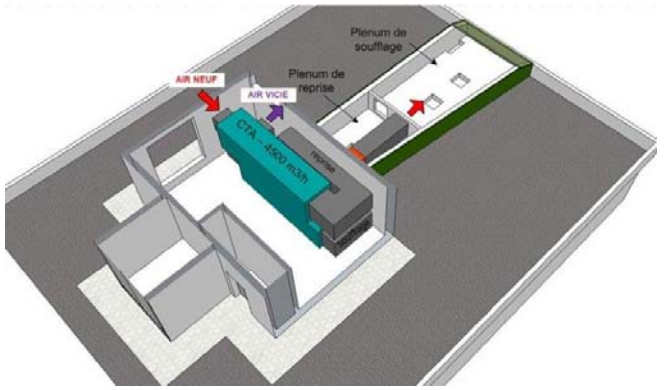




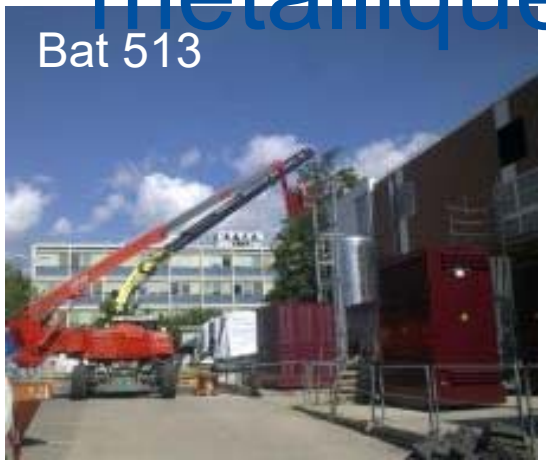




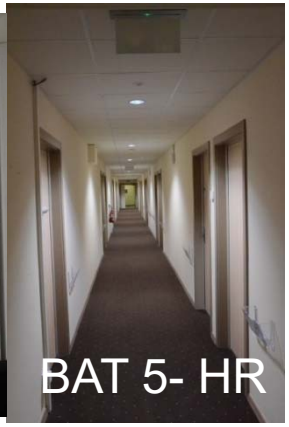




GS-SE works – Charpente metallique



GS-SE works – renovations



GS-SE works – ISR renovations

New technical room in the ISR

Resin floor for the ISR

Crane rail repairs in the ISR

Painting works for the ISR

GS-SE LS1 works - Carbonation cooling tower PT1

GS-SE LS1 works – PS complex

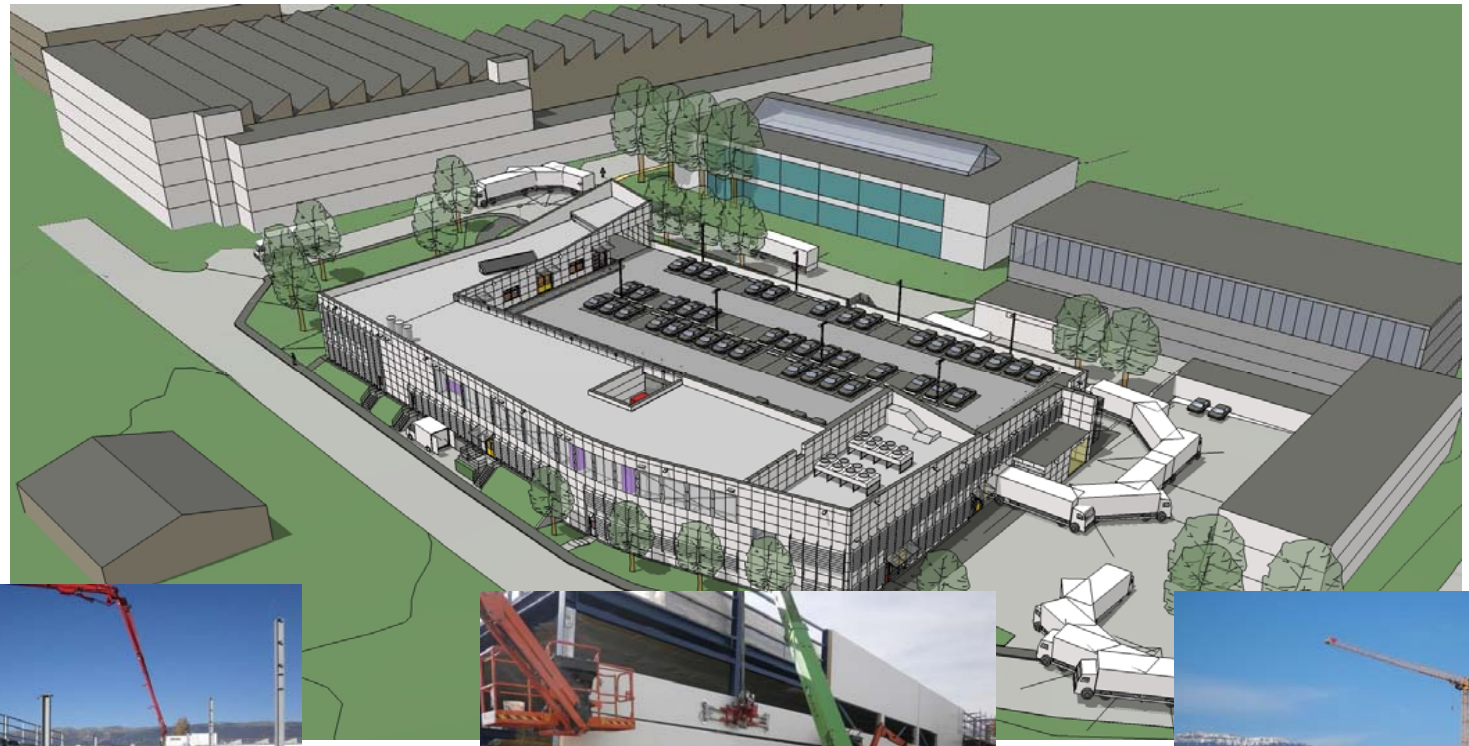
- B151 PS BRIDGE AIRTIGHTNESS

154 CONCRETE SLABS REPLACEMENT

TT2/TT2A AIRTIGHTNESS

B151 PAINTING

GS-SE project – Bld 107



New building 107 – workshops, laboratories and ancillary offices for the TE department.

THANK YOU FOR YOUR ATENTION !!