PRESENTATION
DATA CENTERS
Publications Office of the EU

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Role and Location

Strategic applications: CELLAR, EURLEX, Eubookshop, TED monitor

- In operation, data centers must ensure continuity of service for all Information Systems in a completely secure and stable environment
- Information Systems are classified per function: Critical or Essential
- The main Data Center is located on the 4th floor of MERCIER building (230m² -Office 451). A second site (DRC*) is located in the building EUFO2 at Gasperich(100m²)
- The distance between the two sites is 4 km (from Luxembourg station area to *Cloche d'or* at Gasperich)
- Active/Active data centers mode

*: DisasterRecoveryCenter

Data Center MERCIER

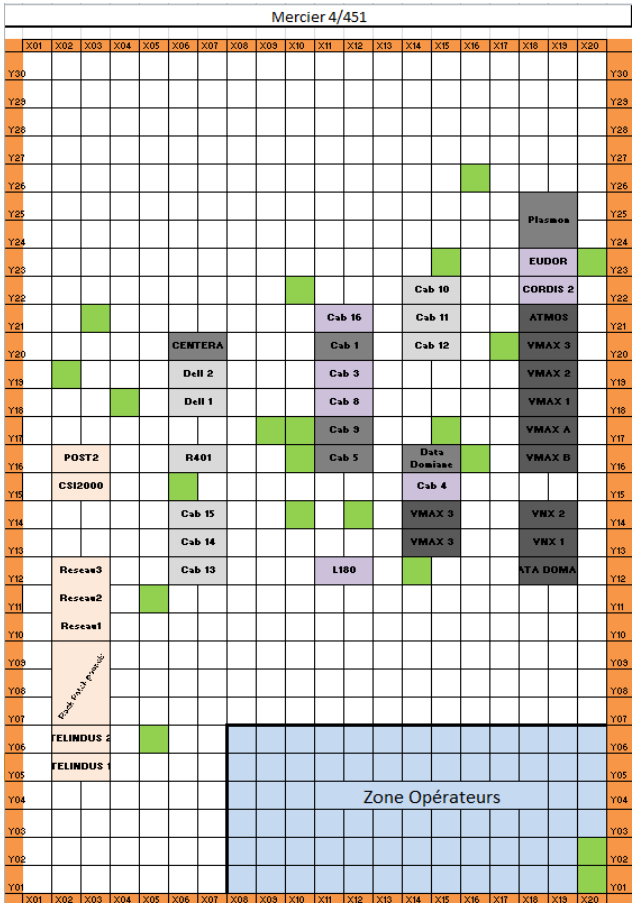
The Data Center MERCIER was completely renovated in 2000-2001.

Its area is +/-230m², divided into 2 parts:

- Operators room (+/-30m²)
- Server room (+/-200m²)

Operators room

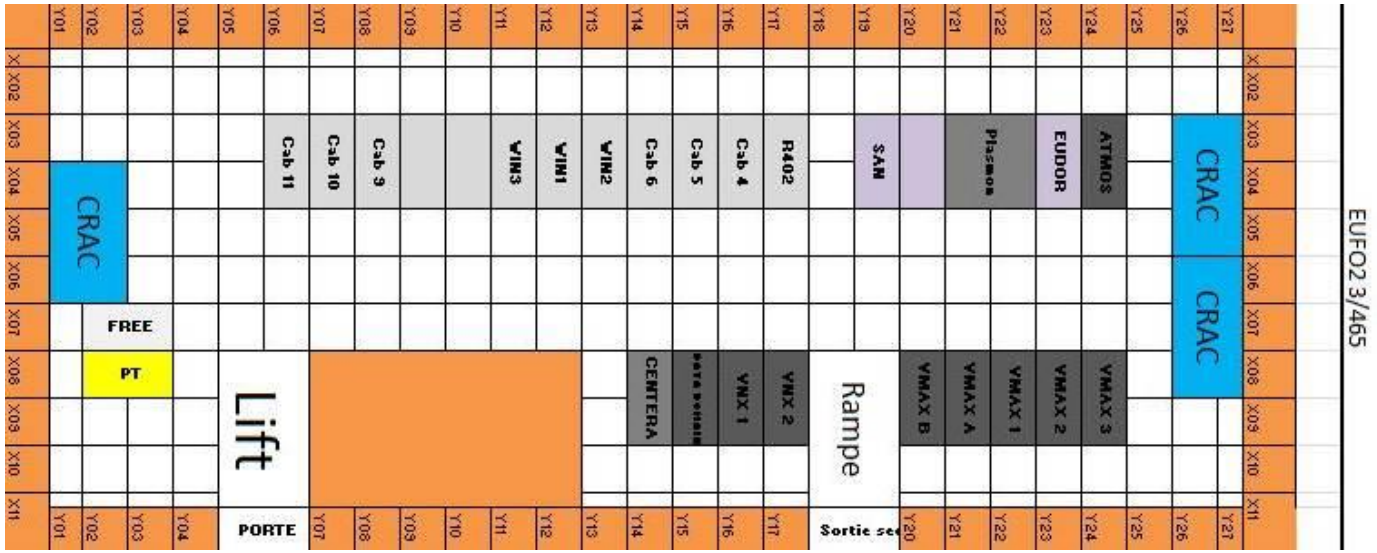
DC MERCIER 4/451



DRP Data Center EUFO2

- Located in EUFO2 building at Gasperich. Its area is 100m²
- Site in operation since November 2006, for certain applications
- Mirrored synchronous data between sites, redundant gateways internal/external, reverse proxy

DC EUFO2 3/465



DC EUFO2 3/465

Access Control

Access is allowed only to authorized staff. Data Centers are protected by special card system access and cameras.

Four operators, working in two shifts, guarantee a presence in the room from 7:00 a.m. to 7:30 p.m.

All unauthorized persons (technicians) are registered and must be justified by an intervention sheet

Power

The power supply is redundant, a no-break power system provides all the equipment in case of failure of the power supply by the City of Luxembourg

Elements of a power cycle no-break

Electricity
Luxembourg City

In case of failure, relay made by batteries for 30 seconds

After these 30 seconds, support for the supply of electricity by 2 diesel generators (400Kw)

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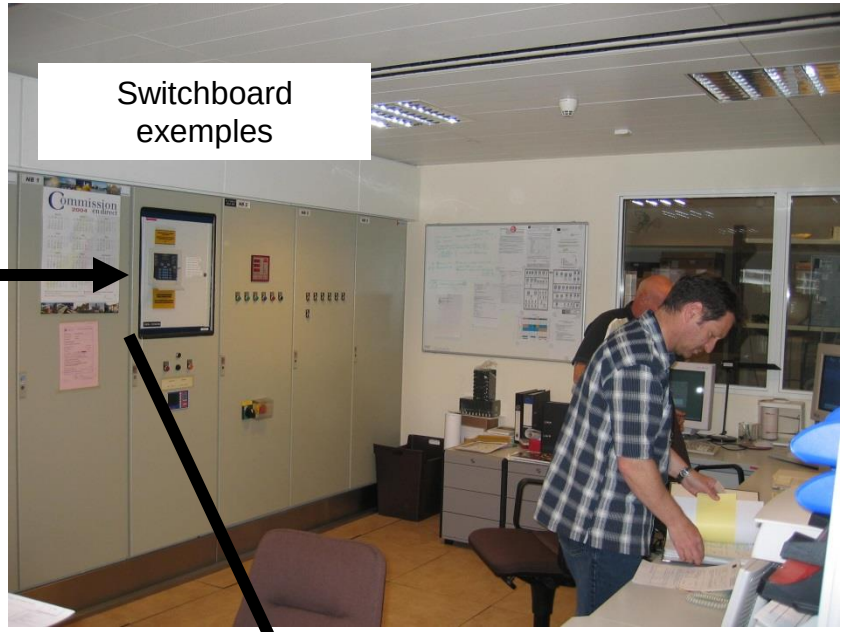
Switchboard exemples



Server rack model

Fire detection and suppression

Fire detection and suppression systems are protecting the server room. Inert gas fire suppression will automatically extinguish a fire by discharging its payload and smothering any fire source. It will ensure minimum damage to the entire infrastructure

Meansof firedetection:

- Optical sensors
- Heat detectors
- Smoke detectors
- Ultraviolet detectors

Two zones in alarm automatically trigger the ejection of gas after 30 seconds

Cooling

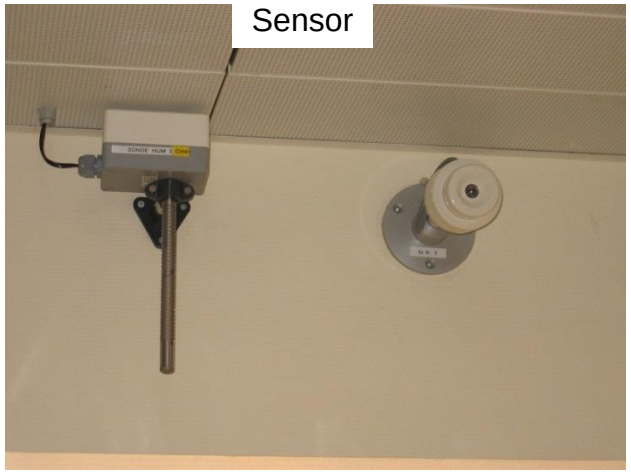
Independent air conditioning system provides fresh air to drive a temperature of 17 °C in the false floor. Air extraction is through the ceiling

The average temperature of the room is +/-23 °C and average humidity is +/-50%

Measurements are taken in real time 24/24 hours and automatically trigger alarms (audible and GSM call) when thresholds are reached

Thresholds: Temperature (min 15 °C –max 30 °C)

Humidity (min 30% -max 70%)



Daily activities:

- ***DC are up and running 24/24 hours**, but no astreintes are required for operators*
- Hardware deliveries management
- Organization making the inventory (detailed identity card per server)
- Physical server installation follow-up
    - Power cabling
    - Network and SAN patching
    - Labelling
- Printings and distribution (color printing)
- Network connexion/patching between servers and switches with optical fibers and wired cables.
- DVD/CD burning on demand and for Ted
- Supplies management: Optical fiber cables, network patch cords, DVD…

Some figures (end of 2014)

- Power consumption average+/-:
  - 90 kW/hour(MERCIER)
  - 70 kW/hour(EUFO2)

- Total backup size/month: +/-400 TB
- Data storage capacityfor production, test and development environments(MER-EUFO2):
  - EMC² storage+/-400 TB / site (VMAX, VNX)
  - SUN storage 24 TB phase out
  - SUN storageNas 64 TB phase out = total +/-488TB

- Backup data storage capacity:
  - EMC²: +/-250TB/site (DATA DOMAIN)
- Archive data storage capacity:
  - EMC²: +/-130 TB/site (ATMOS)