



## ALPHALINK'S DATA CENTER

# Telco Center

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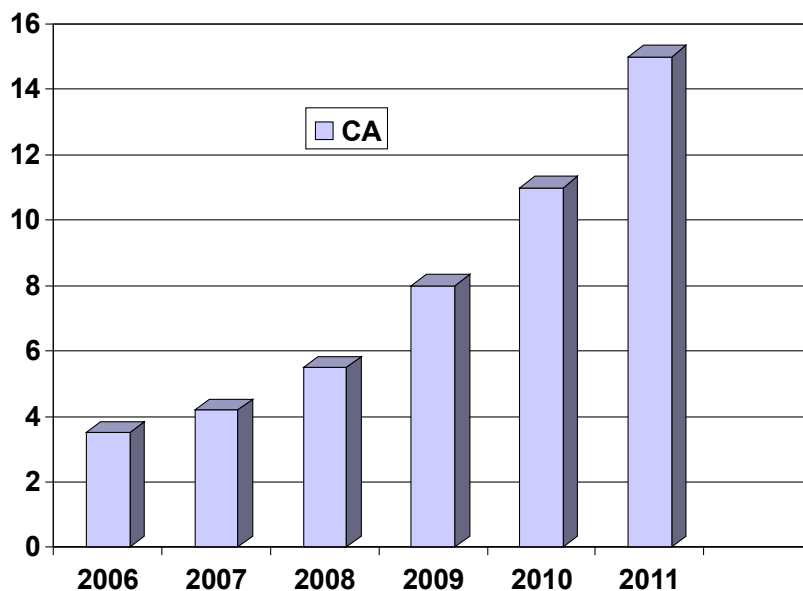
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# 1 ALPHALINK GROUP

## 1.1 Key figures

- Operator since 1999, licensed L33.1,
- SAS with 500 K€ capital,
- Sales 2010 : 10,3 M€ - 2011 : 13 M€ estimate),
- 100% of capital held by the operational actors of the company
- 10 years of profitability.
- 50 employees,
- Telco Center, an investment of nearly 10 million euros,
- up to 15% of sales allocated to R & D
- 85 Tbit of data transported over the network each day
- Backbone connecting more than 10,000 sites operated in France and worldwide
- 18,000 kilometers of optical fiber used to meet the needs of our customers
- more than 50,000 Alphalink network users daily



## **1.2 Eco responsible**



To offset our emissions of carbon dioxide (CO<sub>2</sub>), we engage in a true ecological approach around two axes.

### **Reducing energy consumption**

- Telco Center is conditioned to an ambient temperature of 24 ° C. The choice of this temperature level (compared to the habits of 19/21 ° C) reduces from 10 to 15% energy consumption without impacting the performance and infrastructure security servers,
- Using fluorescent lighting type,
- Production and automated maintenance of our servers based on virtual technologies,
- Electric equipment tested, inspected and maintained regularly, subject to annual thermo-graphic controls statements : the modules with energy "losses" are systematically identified and replaced,
- Infrastructure servers with constant updates,
- Park equipment consists of recent units with low power multiprocessor energy
- Not air-conditioned offices.

### **Reducing paper consumption**

- Dematerialized sending of our estimates and invoices (PDF),
- Digital archiving of our key documents in order to circulate information through our teams without paper consumption,
- Providing our customers access to the extranet for order management and incident handling.

## 2 TELCO CENTER

### 2.1 Introducing TelCo Center

Located in Courbevoie, Alphalink's data center provides, to all market players, a collocation space of 1500 m<sup>2</sup>, distributed over several air-conditioned and secured rooms.

Telco Center provides :

- neutral collocation
- exchange node
- continuity of services
- energy efficient management

Two major ambitions :

- **Ensure neutrality of access** by connecting customers, with complete transparency, to access services or third services from different datacenters.
- **Ensure continuity** of services through a secure facility that provides dual connection (optical fiber) and physical redundancy for high availability of services (energy, air conditioning, access control, fire, humidity).

The advantages of Alphalink :

- Energy efficient design for improved environmental management
- Construction in the state of the art
- Dual connection and physical redundancy for high availability of critical systems and services
- Electric and climate secured facilities, classified Tier III + and high energy capacity,
- Penalty of qualified technicians for ongoing maintenance 24/24 and 7 / 7
- Remote hands
- Infrastructure, dark fiber to ethernet, multi-operator : connectivity provided to all major market players, in complete neutrality.

### 2.1.1 Collocation

Alphalink offers a collocation solution for telecom and computer equipment on a specialized site, with neutral access to third operators

It takes the shape of quarter, half or full rack on a standard 19"rack 47U 600x1000 mm to a private area of 'n' m2.

The rack doors are perforated sheet 80% and supplied with combination lock.

Energy is supplied by an IEC 309 32A 2P + E with a power from **2 to 7 KVA in single or dual connection** (redundant power supply in the rack).



### 2.1.2 hosting

It is a rack of 19"1U, 200 VA, up to a half-rack powered by 1 to 3 KVA.

### 2.1.3 Dedicated suites

In its first phase, Telco Center consists of 5 rooms. Each room has an area of 150 m2 useful (out of 1500 m2 for the whole space). Alphalink has 2000 m2 in reserve.

Available energy per m2 is **2.2 KVA** (dual power energy) and **2.5 KVA** in mixed (single and double power supply).

The UPS Distribution boards consist of 2x120 departures of 32 amps to the racks.

This is the standard configuration of rooms dedicated to racks. It is adaptable in the context of renting space in m2 according to customer requirements.

### 2.1.4 Appropriate services

The collocation on Telco Center is accompanied by services such as :

- remote hands service
- racks and necessary accessories supply,
- Advanced network engineering, supply of dark fiber to IP transit.
- Customer Support Center available 24 hours / 24 and 7 / 7.



*lock code.*

## 2.2 Technical Incursions

### 2.2.1 Security intrusion

Secure access to Telco center uses a comprehensive range of access control equipment on site. Access procedures allow traceability and monitoring of access.

All the areas are monitored by video surveillance center. The image recording is triggered automatically upon detection of an intrusion.

Access to Telco Center is allowed only on presentation of a magnetic card, combined with a biometric identification system.



*Zalix biometric system*

### 2.2.2 Fire safety

The fire safety of Telco Center is provided by detection systems and extinguishing SIEMENS subject to regular testing

The fire detection system consists in :



- a box with SSI addressable control and signaling equipment (ECS),
- a box of fire extinguishing system that manages the self-extinguishing inert gas,
- indicators of actions in each room,
- manual triggers,
- sounders,
- optical addressable detectors of smoke or flames.

The fire detection system is secured by two detection loops operating simultaneously in volumes atmosphere and false floor (addressable optical smoke detectors). It is coupled to an inert gas extinguishing system with nitrogen N2. Nitrogen (N2) is a totally inert gas suitable for protection against fire. It acts by suffocation by reducing oxygen levels.



This system meets the quality reference ISO14520-1 and ISO14520-13.

This fire detection system complies with Rule R7 APSAD (on the automatic fire detection, the Labour Code and the law of 19 July 1976 on classified installations for environmental protection).

The manual extinguishing system consists of manual hand-held extinguishers, placed at critical points of the Telco Center : nearby tanks, generators, computer rooms and technical rooms.





### 2.2.3 Energy



The Telco Center is connecting electrical high voltage, double derivation 20,000 volts (one active and one spare), It helps distributing all rooms with an electric capacity of 2.2 KVA/m<sup>2</sup> in dual power. The active components of energy chains are N+1 redundant, ranking Telco Center Tier III +.

#### Security of the energy chain :

In case of transformer high voltage power cuts, transformer spare automatically takes up the task.

Any malfunction of this leads to a shift of electricity production on a generator, himself rescued by a second generator spare.



Output ripple current of 220V is assured by an uninterruptible power supply which consists of several UPS operating in degraded mode. The whole chain is secured by a battery ensuring business continuity in case of EDF failure, EDF transformers and generators.

#### Production of ripple alternating current :

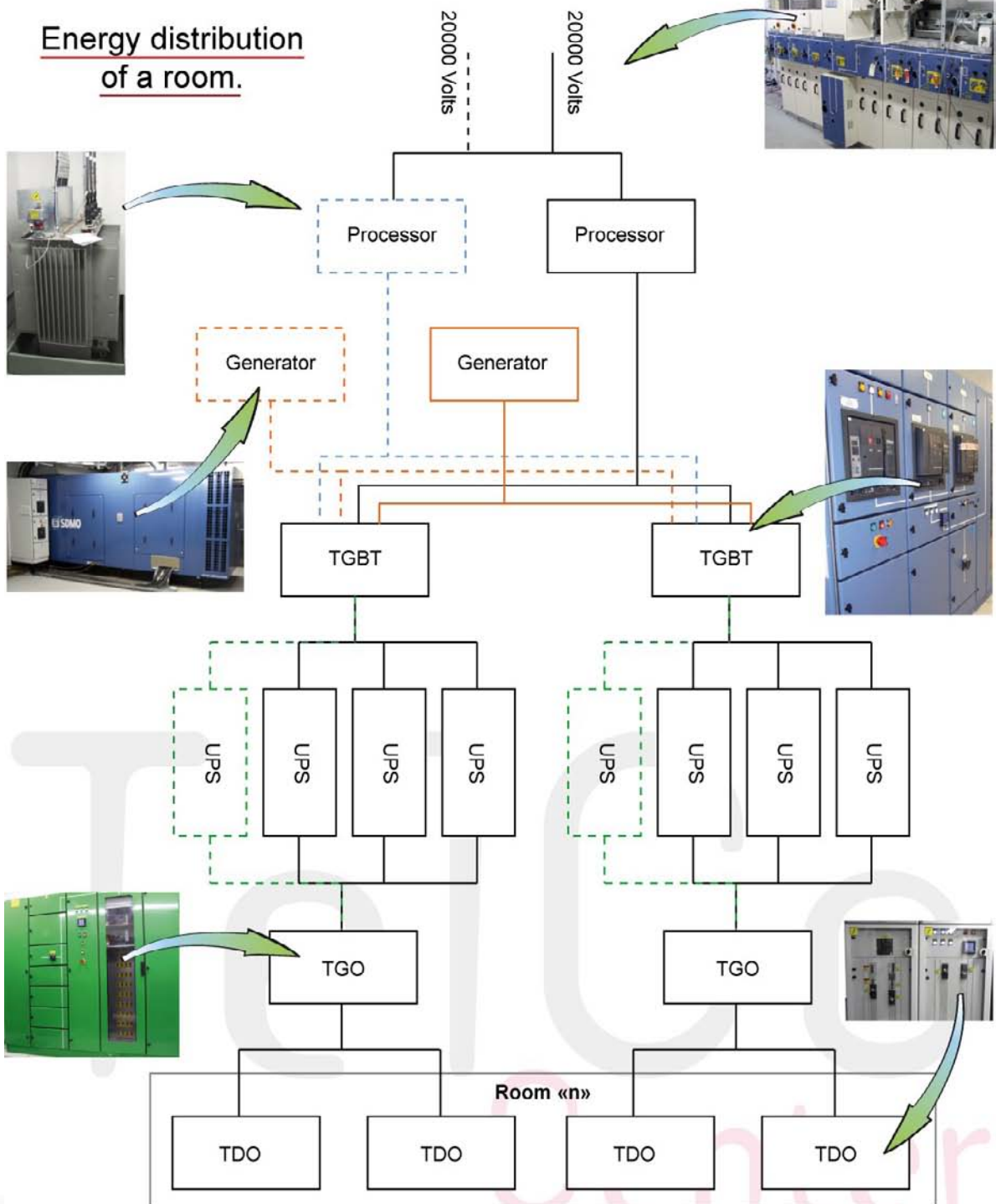
- Voltage of 400 V three-phase + neutral with a tolerance of  $\pm 1\%$
- Frequency: 50 Hz  $\pm 2\%$
- UPS with a battery to ensure continuity of service for 12 minutes.

#### Distribution of ripple alternating current

- Voltage of 220V single phase delivered into the rack.
- energy is supplied by default with an IEC 309 32A 2P + E 220V. It supplies each rack from 2 to 7 KVA in single or dual power (redundant power supply in the rack).

Power is supplied, by default, on a IEC 309 32 A 2P+E in 220V plug. Each rack can be powered by 2 to 7 Kva in single or dual power (redundant power in the rack).

### Energy distribution of a room.



N+1 redundancy :

TGBT : Low Voltage Electric Switchboard ; TGO : UPS Electric Switchboard ; TDO : UPS Divisionnal Electric Switchboard.

## 2.2.4 Air conditioning

The cooling system is based on a aero refrigerating system or dry-coolers, exchanger operating in forced convection for cooling a liquid (water + antifreeze).

The fans, dry-coolers, draw outside air to cool the liquid from the machine rooms and return the cold generated through an hydraulic system to racks with direct expansion.

The HVAC (Heating Ventilation Air Conditioning) helps sustain an environment in server rooms, according to the characteristics of the Class 3.1 standard specified by ETSI 300 019-1-3 (European Telecommunications Standard), based on independent air conditioning units with blown reversed (blowing in subfloor and return in atmosphere)



Technology 'cold corridor' reinforces the system to constrain the flow of warm air over cold air flow.

### **Abstract :**

- The dry-coolers do operate in N +1 redundancy,
- Temperature maintenance provided by six air conditioning units, per room, N +1 redundancy in downflow (blowing in subfloor and return in atmosphere) and equipped with battery exchange direct expansion,
- Ambient temperature of  $24^{\circ}\text{C} \pm 2^{\circ}\text{C}$
- Cold corridor separating the flow of hot and cold air
- Availability rate of the air-conditioning: 99.97%  
the cooling system reaches a level of certification TIER III +.



*Siemens probe temperature and humidity*

## 2.2.5 The network

Telco Center is located in Courbevoie, in the heart of telecom operators networks. It has a multi-operator connectivity. Two separate ducts enter on separate paths, the Netcenter SFR.

### Ethernet :

- Dual optical adductions and physical redundancy for high availability services.
- Optical fiber ring connecting the main data centers : Exterinfo/Overlap, Netcenter, Telecity, Telehouse 1 & 2.



### Internet :

Alphalink meets the standard "Carrier Hotel" by ensuring and providing its customers neutral access to operators,

Telco Center has an Ethernet backbone infrastructure with a capacity of 10 Gb "n" times redundant.

- Neutrality of access to operators (carrier neutral)
- Total capacity of 40 Gb Internet transit,
- Redundancy of a link with an operator and an operator on the other.