

**Société  
du Grand  
Paris**



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# The Grand Paris Express and its Railway System Tenders

Webinar Choose Paris Region  
28/09/2021

**Title of document: The New Metro**

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28/09/2021

# At the core of the implementation process: Société du Grand Paris

The Société du Grand Paris is the government-created public company tasked with **managing the rollout and financing of the Grand Paris Express**.

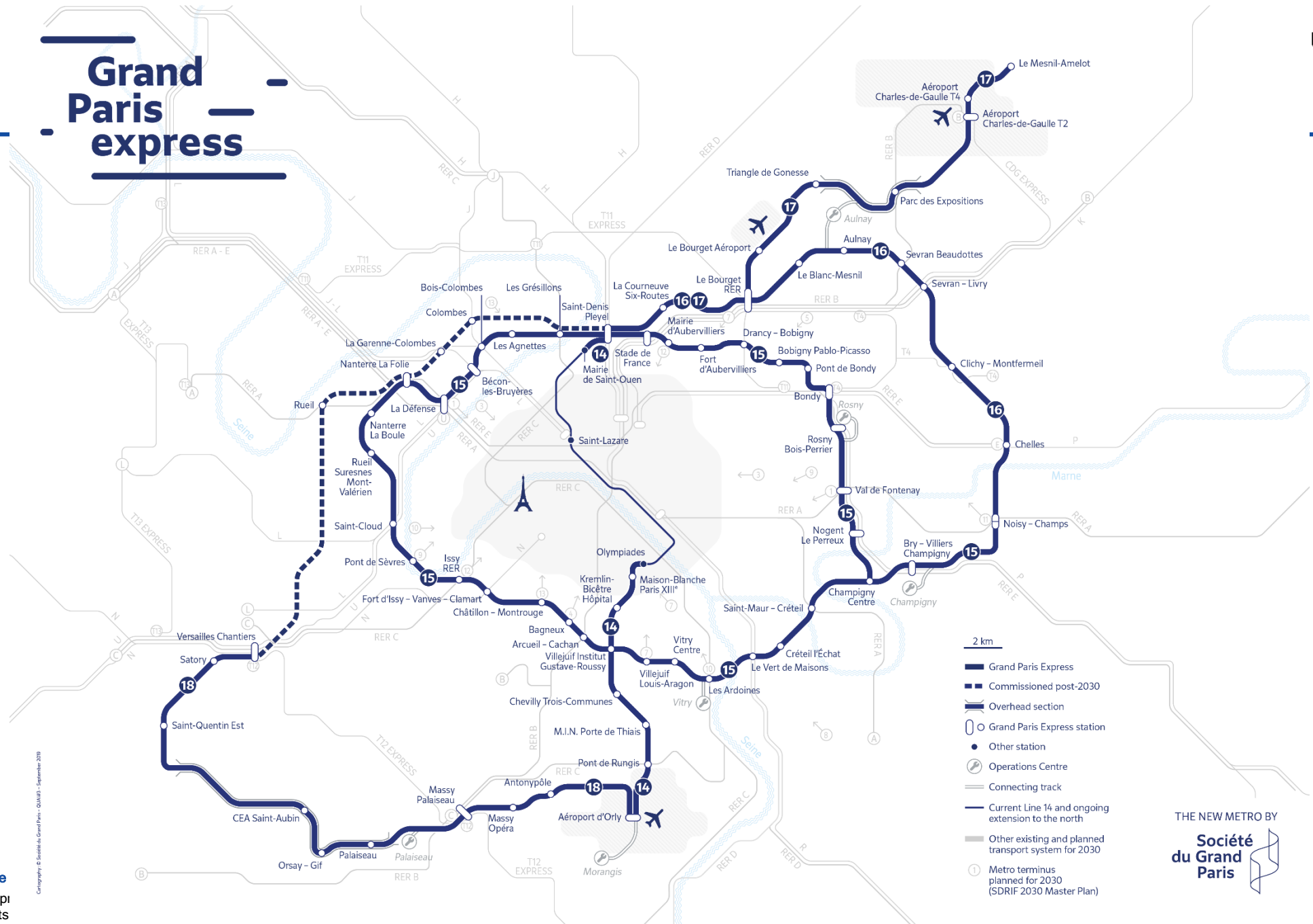
It is responsible for **the construction of the infrastructures** required for the new metro system and purchasing the required rolling stock and its associated systems.

It also carries out **development operations** in areas impacted by the Grand Paris Express.

Since it was created in 2010, the company has been supported by a **team of specialists** in engineering, transport and development project management to build this extensive strategic network.

# The Grand Paris Express

# Grand Paris express



- 2 km
- Grand Paris Express
- Commissioned post-2030
- Overhead section
- Grand Paris Express station
- Other station
- Operations Centre
- Connecting track
- Current Line 14 and ongoing extension to the north
- Other existing and planned transport system for 2030
- Metro terminus planned for 2030 (SDRIF 2030 Master Plan)

THE NEW METRO BY  
**Société  
du Grand  
Paris**

# Grand Paris, a leading metropolitan area

**68** stations  
And 6 technical centres



**2,000,000**  
passengers  
per day



**100 %** accessible  
For people with  
reduced mobility

**1** train every 2 to 3  
minutes

**90 %** of network underground

**200** KM of lines  
added to the existing  
200 km Île-de-France  
(metro and RER)

**100 %** automatic  
Guarantee of regular  
service, stability, confort  
and safety

Travelling at the speed  
**55 km/h\***

\* on average

# Saint-Denis Pleyel

Estimated number of passengers/day	Platform depth	Architect
<b>250,000</b>	<b>28 metres</b>	<b>Agence Kengo Kuma &amp; Associates</b>



# Systems of the Grand Paris Express

# HV/LV and line cabling (GO1)

Contract Review



# Contract Review: HV/LV and line cabling (GO1)

The HV/LV services comprise of:

- Transport and distribution of overhead HV electrical energy;
- Transformation, transport distribution of LV electrical energy required for operating equipment

HV/LV services include the supply and installation of the following equipment rooms:

- 20kV energy Delivery Points (DP);
- Lighting Power Posts (LPP) in stations up to and including LV switchboards, and associated battery units
- Power Posts (PP) in ancillary structures (or in-station utilities in the case of Saint Denis Pleyel) up to and including LV switchboards, and associated battery stations

Main equipment:

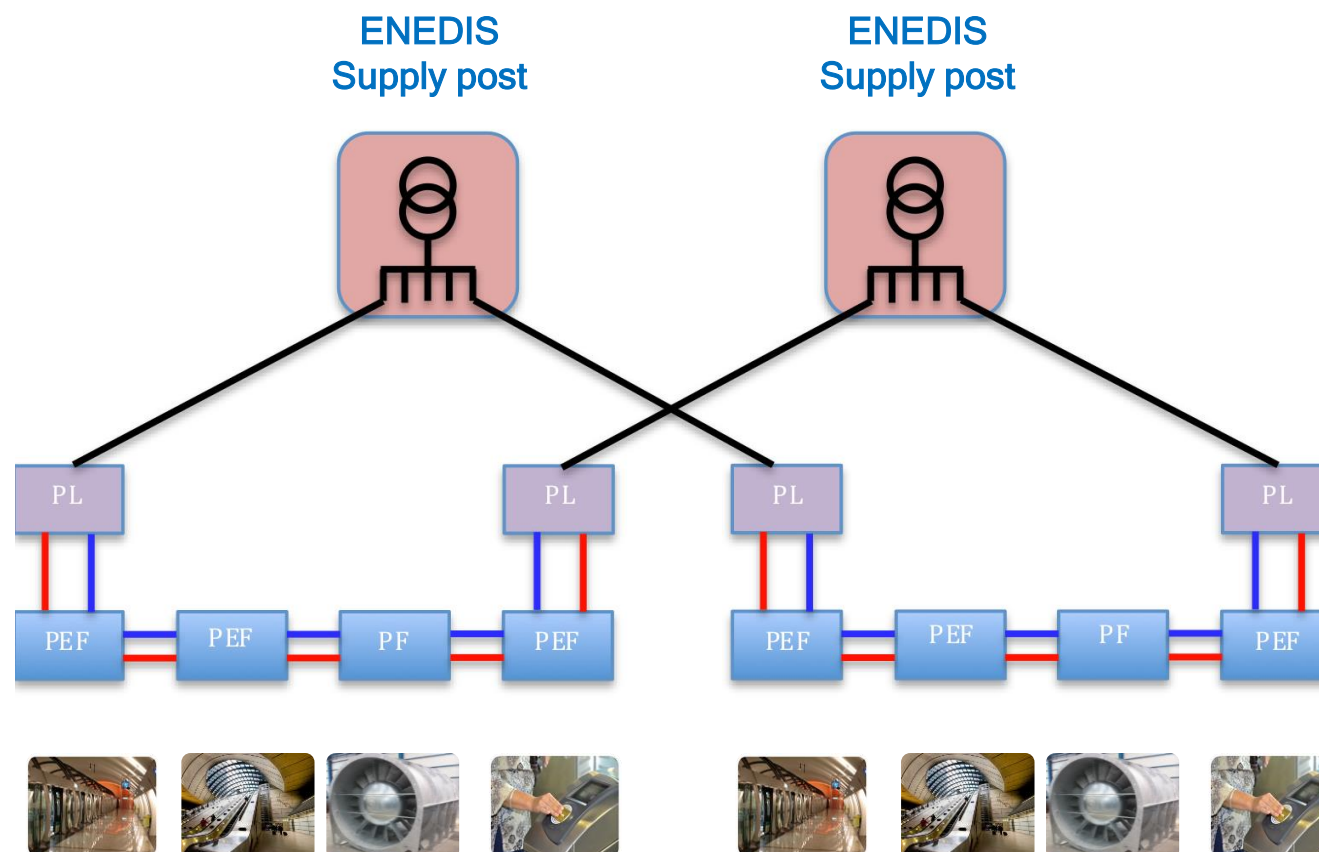
- 20kV / 400V transformers with a power rating between 400 and 2000kVA;
- LV switchboards;
- Uninterrupted Power Supply (UPS) units between 10 and 160kVA;
- Battery stations,
- Overhead HV switchboards (Delivery Post),
- Overhead HV cells,
- Capacitor banks,
- Complete control systems for controlling the HV/LV equipment in the post



# Contract Review: HV/LV and line cabling (GO1)

## HV/LV power supply principles in stations and Ancillary Structures (AS)

Each OVH HV loop powers approximately three stations (average number) via Lighting Power Posts (PEF) and seven ancillary structures (average number) via a Power Post (PF). Each OVH HV loop is powered by two Delivery Points (PL). The two DPs on the same loop are situated at the either end of the loop.



Examples of equipment to be powered:

- Standard and emergency lighting
- Ventilation for comfort and smoke extraction
- Air treatment systems
- Heat pumps
- Lifts
- Escalators
- Platform doors system
- Water pumping
- Transmission/radio networks
- CCTV
- Access control/ Interphones / Telephones
- Ticketing systems
- Customer information
- Fire detection systems
- ...

# Contract Review: HV/LV and line cabling (GO1)

Line cabling services comprise of :

## **Fibre-optic:**

- Inter-structures Fibre-Optic (FO) connection equipment in the Low Current (LC) equipment rooms, LC Centralised Control Posts (CCP), and local operators;
- Line fibre-optic cabling, up to main LC equipment rooms, LC CCP, LC shafts and local operators;

## **Temperature increase detection in tunnel garage areas**

- **The temperature increase detection equipment in tunnel train garage areas to be installed in the main LC and LC shafts equipment rooms;**
- **The temperature increase detection cabling in tunnel train garage areas up to the main LC and LC shafts equipment rooms;**

## **Lighting and emergency power in tunnels:**

- **Lighting and emergency power equipment in tunnels, including cabling and connections to lighting Distribution Boards (DB) and emergency power DBs;**

## **Sound powered telephone system:**

- **Sound powered telephone equipment in tunnels, including cabling, up to LGI equipment rooms and shafts.**

## **Handcar alcove equipment:**

- **Lighting equipment, charging points and maintenance points, including cabling up to the lighting Distribution Boards (DB) and emergency power DBs,**
- **Cabling between the alcove and the lighting Distribution Boards (DB) and emergency power DBs for power and feedback on the status of the security grille.**

# Traction and power supply to trains

Contract Review

# Contract Review: Traction contract (GO1)

## Technical scope: electrical power supply to trains

Two types of equipment rooms:

### ❑ Rectification Sub-stations (RS)

Located in stations and in maintenance areas, RSs ensure:

- Connection to to the 20kV ENEDIS public electricity supply (**20kV cells**)
- Transformation of 20kV supply into 1500Vdc for traction (**transformer and rectifier**)
- Electrical power supply and protection of the railway line (**ultra-rapid circuit breaker**)
- Traction automatic control systems and data exchange with centralised control (**control cabinet**)

20kV cells



Transformer



Rectifier



Ultra-rapid circuit breaker



Control cabinet



# Contract Review: Traction contract (GO1)

## Technical scope: electrical power supply to trains

### □ Isolating Sub-stations (IS)

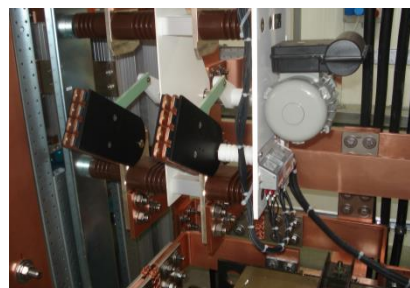
Located on the lines and in maintenance areas, ISs ensure the isolation of the traction network for the needs of:

- Managing electrical faults
- Putting into place temporary operating services
- Putting maintenance operations into place

Switch gear



Isolator



Contactor



Control cabinet



Isolator/contactor/switch gear



# Tunnel Ventilation - Decompression - Smoke Extraction (GO8)

Contract Review

# Contract Review: Tunnel ventilation - decompression - smoke

## extraction contract (GO8)

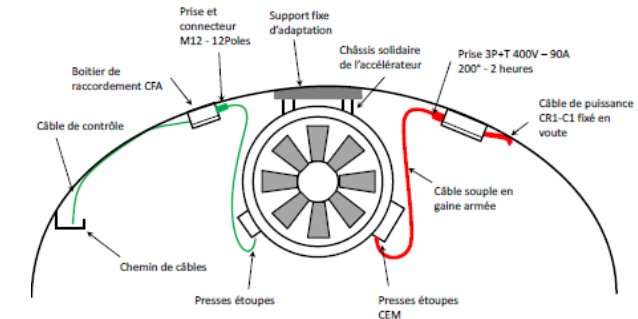
The contract comprises of four lots of technical services:

- Electro-mechanical ventilation services,
- Low voltage electricity services,
- Control and low current services,
- Metalworking and equipment handling services.



The electro-mechanical ventilation services comprise of the following equipment:

- Axial fans,
- Transformation parts,
- Accelerators,
- Motorised flap valves,
- Sound traps,
- Windbreak curtains.



Fixation de l'accélérateur en voute

The low voltage electricity services comprise of the following equipment:

- Variators,
- Starters,
- Low voltage cabinets,
- Power cables and cable runs

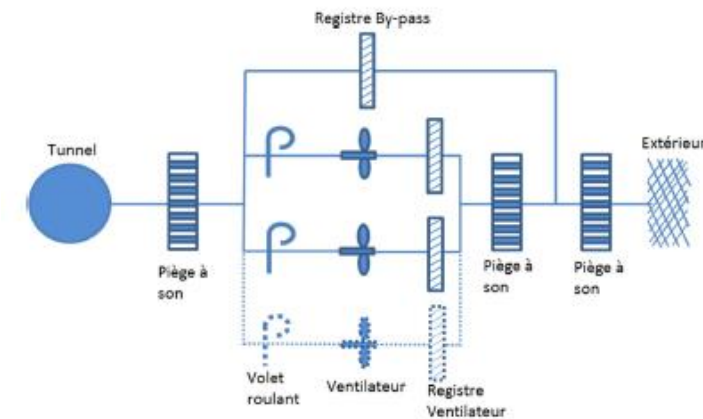


Schéma d'une installation de ventilation mécanique ainsi qu'une trémie de décompression

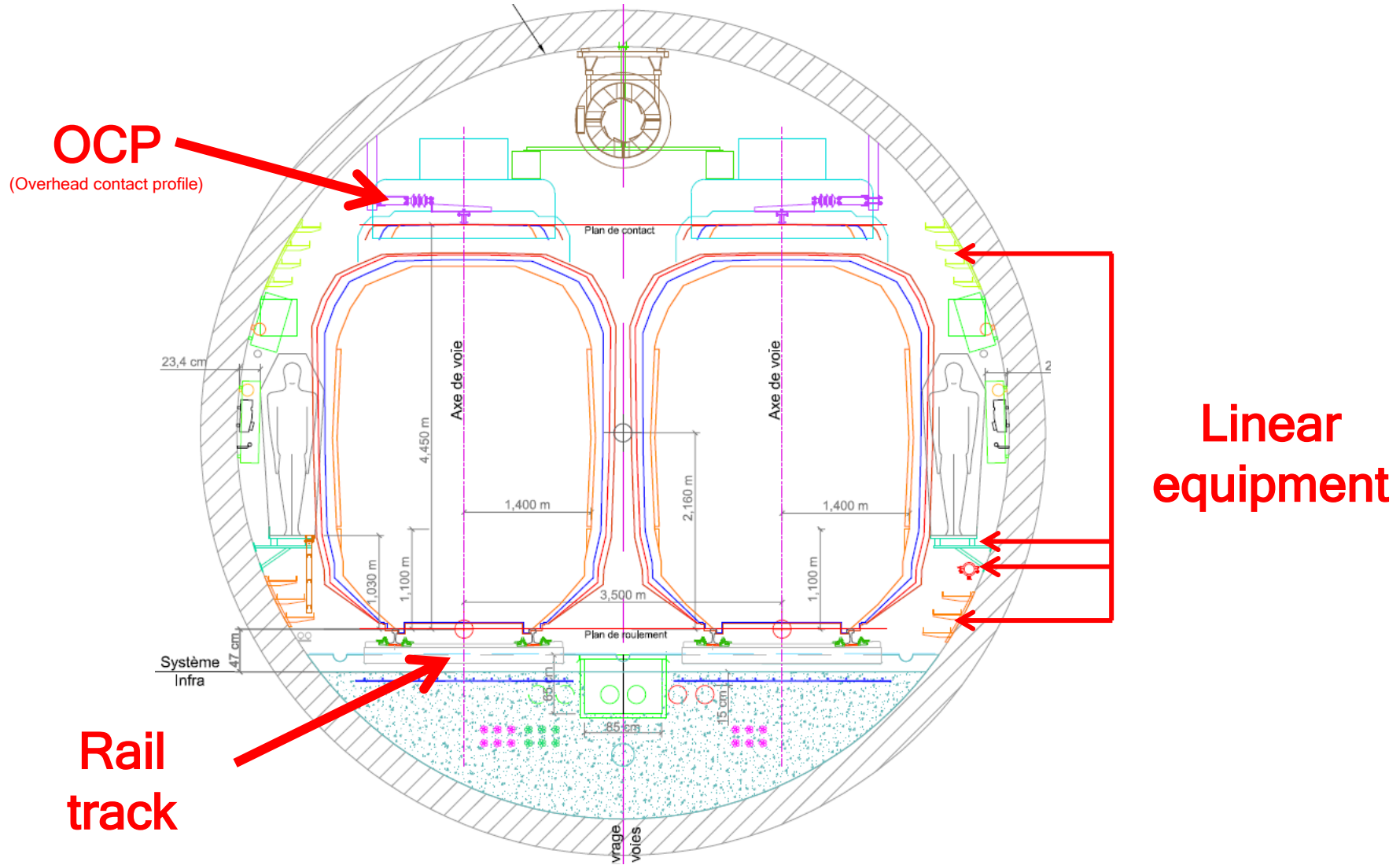


# Rail track, catenary and linear equipment (GO9)

Contract Review

# Contract Review: Rail track and catenary contract (GO9)

## Equipment systems to be installed



# Contract review: Rail track and catenary contract (GO9)

## Rail track



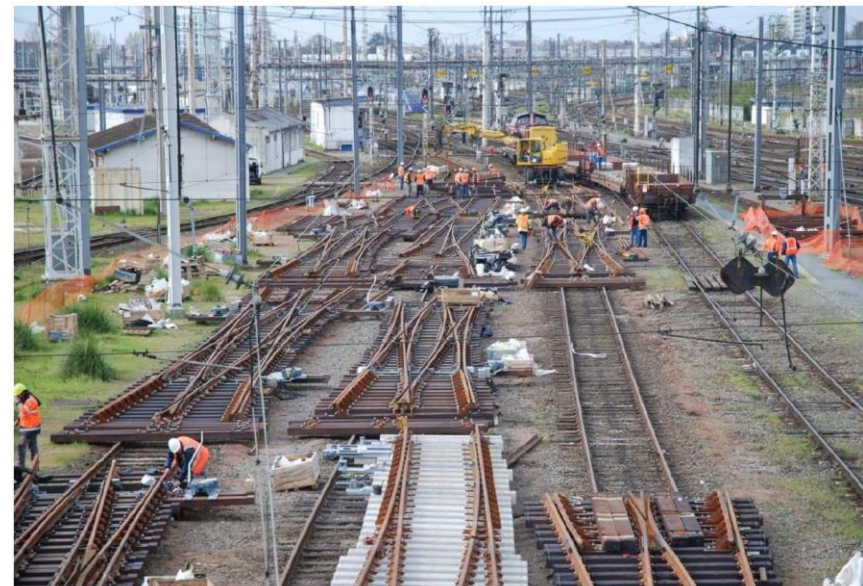
**UIC 60  
Rails**

**Concrete roadbed**

**Anti-vibration  
concrete sleepers  
+ rail fixings**

# Contract Review: Rail track and catenary (GO9)

## Rail track

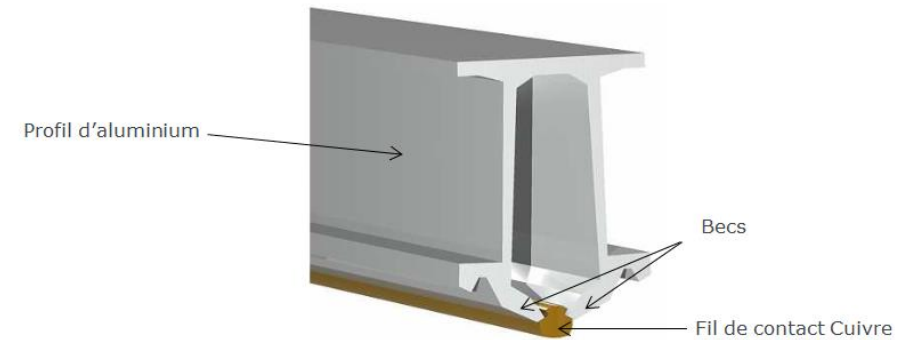
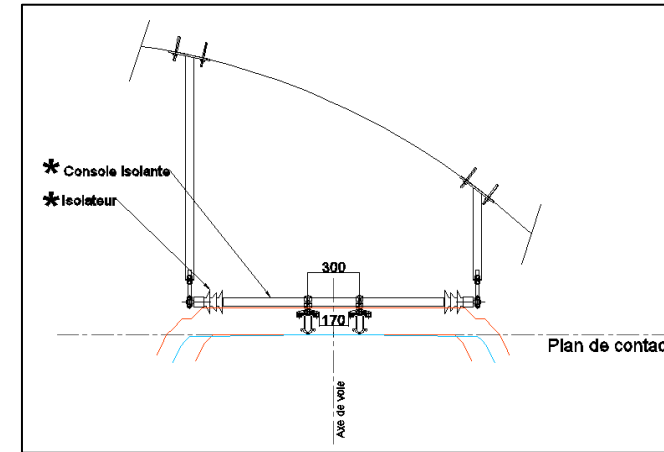
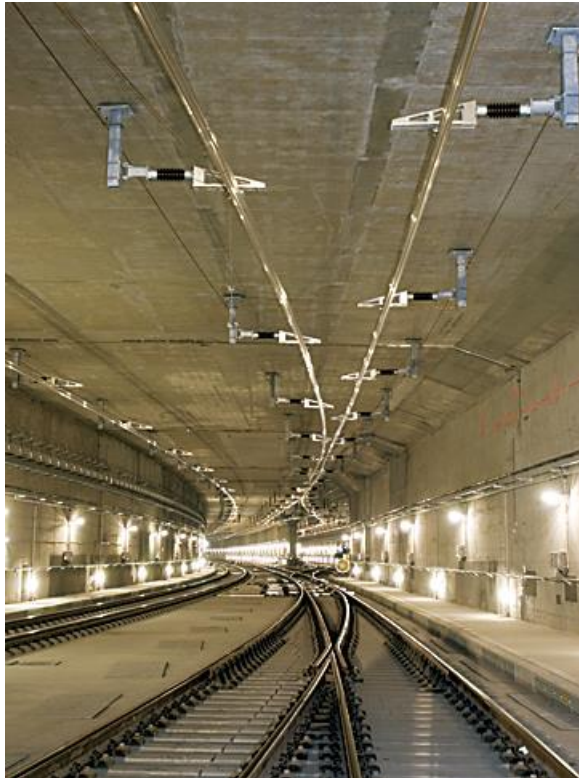


## Points and crossings

Simple crossover, crossing crossover, switch, acute crossing...

# Contract Review: Rail track and catenary contract (GO9)

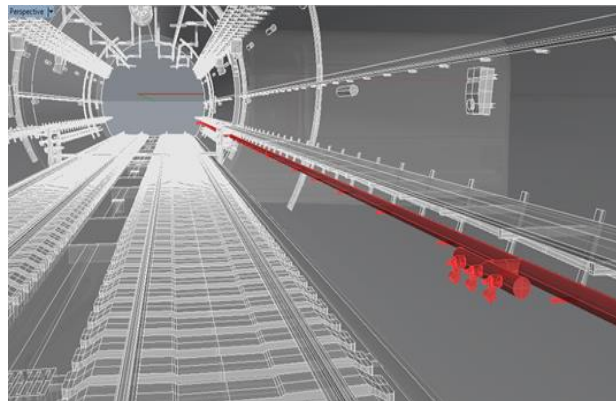
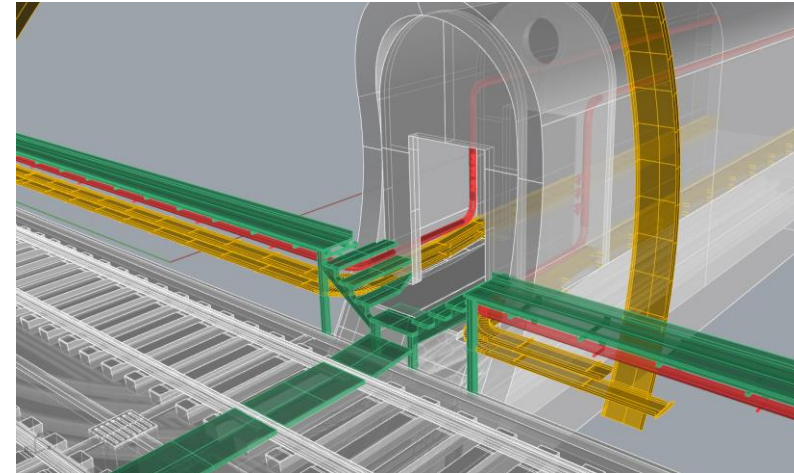
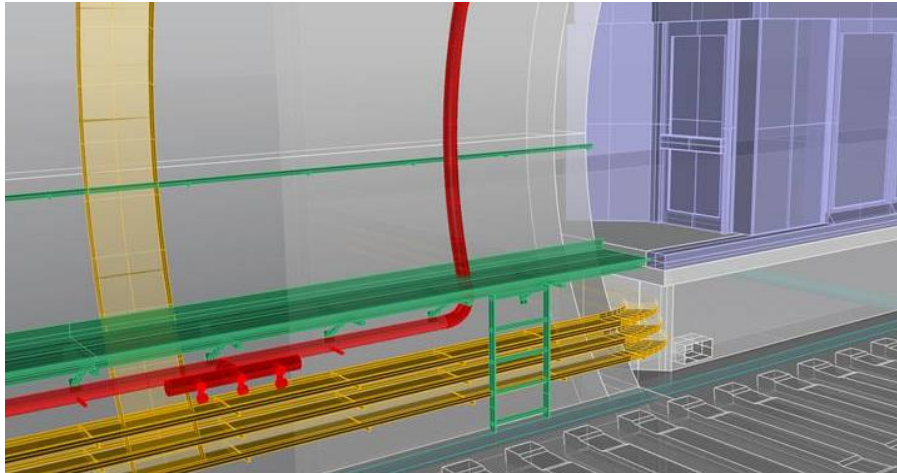
## Overhead contact profile



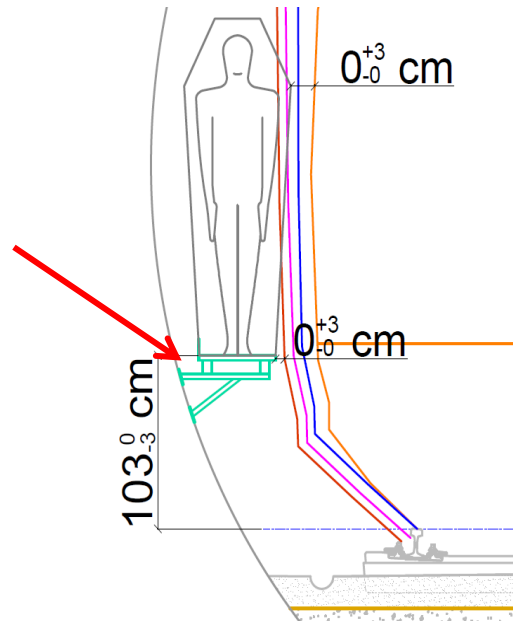
**OCP = “Rigid catenary”**  
Adapted to restricted volume, restricted environments

# Contract Review: Rail track and catenary (GO9)

## Linear equipment

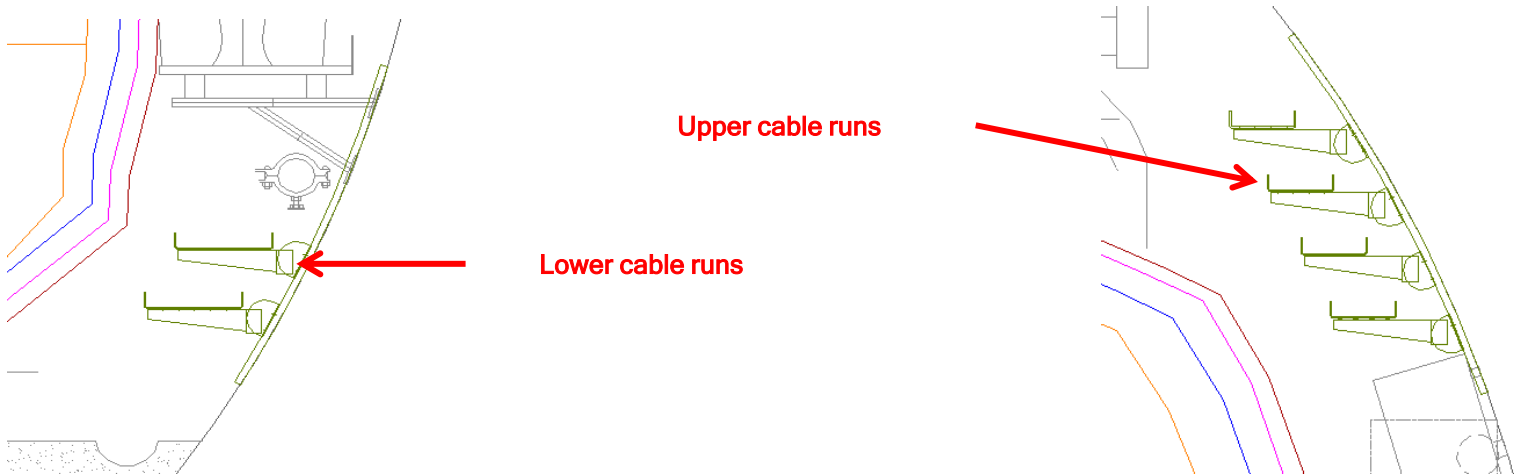
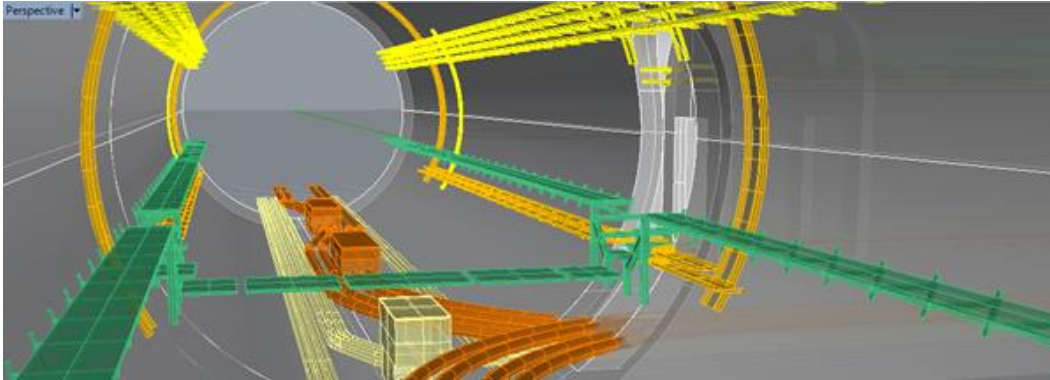


Evacuation path  
Dry standpipe



# Contract Review: Rail track and catenary (GO9)

## Linear equipment



Lines 15, 16, 17 :

- 2 tenders in 2022 (Power Supply to train and Platform Screen doors)
- 3 tenders in 2024 (Rail Track, Tunnel Ventilation Smoke Extraction)

Line 18 :

- 3 tenders in 2022 (Rail Track, HV/LV, Tunnel Ventilation Smoke Extraction)



- Standardisation of bidding documents identical for all markets
  - Harmonisation of bidding documents
  - Optimisation of bidding phases and time investment for businesses
  - Generic documents applying to construction contracts for the main types of stations and ancillary works
    - 1 technical booklet by workstream
- The contracts will also include the following services:
  - **Execution studies/ Detailed Planning**
  - **Building Information Modelling (BIM)**
  - **Sequencing, Piloting and Coordinating (OPC)**
  - **Maintenance in Operating Order (MOO)**

- ✓ Financial Capacity: turnover/ balance sheets
- ✓ Technical Capacity:
  - Expected compulsory skills/professional qualification certificates (equivalent in your home country)
  - References
  - Documents regarding the workforce and tools
  - Summary
- ✓ Standard SGP (Société du Grand Paris) application form
- ✓ Taking into account decree n°2014-1097 of 26/09/2014 - simplification programme for businesses
- ✓ Limitation of the number of candidates admitted to submit a tender: indicative number between 5 and 8
- ✓ Response time adapted to the complexity of the market (between 8 to 12 weeks)
- ✓ Dematerialisation of the calls for tenders (PLACE, the French government e-bidding platform)

- ✓ Tender document for offer standardised by procurement category
  - Structure of the technical offer + financial offer identical for each category and limited in number of pages
- ✓ Response time to submit an offer between 8 to 12 weeks
- ✓ Average time for consultation between the application phase and the attribution: around 12 months
- ✓ Negotiation phases to ensure that **technical and financial objectives** are met
  - ✓ As a general rule; 1 or 2 rounds
- ✓ Tender documents
  - Open to **variants**
  - Open to **areas of progress**
  - Open to **innovation**
  - Respecting **CSR commitments**: Integration - SMEs - concealed work - Security

**Société  
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Paris**



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**Thank you for your attention**