

The background image shows a city street scene with a modern building on the left, a multi-story apartment building in the center, and a gondola car suspended from cables in the foreground. The sky is overcast, and there are trees and streetlights visible in the lower part of the image.

OITAF

GONDOLA IN CITIES

Challenges & Opportunities

— Who's who?



Patrick VIAL

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Projet Téléph. Urbain "Téléo" / 3km – 3 stations connected to TC Métro/ BHNS

Projet Métro Ligne C – Toulouse – 27 kms – 21 stations



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— THE URBAN CABLE CAR

Highly connected public transport

Urban cable cars are

- **interconnected** with "heavy" public transport systems:
 1. Metros (line B in Toulouse / line 8 in Paris Créteil)
 2. Important multimodal interchange hubs (buses, ports, etc.)

Hence a continuous and wide range of service hour

- **connected** with areas dense in housing or public services or employment areas
 1. Hospitals, Colleges and Universities
 2. Industrial activity zones or population density zone

Hence the requirement for a level of quality of service for all types of users

These are areas where the substitution of public transport services is complex, with significant travel time losses and numerous load breaks



— INCREASED OPERATING REQUIREMENTS

Operation 7/7 – 355 days a year (10 days of downtime maximum: need perfect availability >99%– with only a few hours per night for maintenance (Teleo 00:30 – 5:30))

- Rethinking the ranges and the organisation of maintenance
- Listen to the operation of the machine to guide priority maintenance actions
- choose the storage strategy for the cabins at the end of operation.

"Obstacles" to be constantly monitored: Road or rail infrastructure / transport of hazardous materials or convoys, Rivers with possible flooding, Private property overhead, sensitive areas (military, SEVESO, firefighters), wooded areas with a risk of fire..

**WE NEED TO RETHINK THE APPROACH TO OPERATIONS
AND MAINTENANCE**

TECHNICAL AND ORGANIZATIONAL RESPONSES

- Break up the controls before operation - start the night before for what cannot deteriorate during the night, do certain tasks during the day because at 5:30 a.m. It's night, using the cameras, the eyes and ears of the dock agents...
- Organize maintenance to optimize the annual shutdown (especially track ropes)
- Organize the operation with maintenance in mind, given the response times and the difficulties in getting from one station to another when the machine is stopped.
- Deploy predictive maintenance solutions to limit early or unnecessary dismantling and replacement
- Ensuring an ultra-competent 24/7 on-call service, capable of connecting remotely in security (OIV)



— SPECIFIC RISKS AND FEARS

As in all public transport, the subjects

- Safety, harassment, theft are to be considered
- The accessibility of this specific system is also to be analysed

But this transport introduces other fears due to lack of knowledge

- What about co-visibility?
- What about the noise generated

WE NEED TO RESPOND TO THE CHALLENGES AND EDUCATE

TECHNICAL AND ORGANIZATIONAL RESPONSES

Generalize technical, security and operational support video surveillance (intermediate stations)

- ✓ Passenger safety, workers, equipment, access to the quays under the platforms and machinery by minimizing machine stoppages (gangways, modification of access architecture, etc.)
- ✓ Intelligent fire detection (different technologies) according to the urban environment (reflection on the windows of adjoining buildings, reflections on the ground on puddles of public lighting, variation of shadows over the whole year Assurer un gabarit libre suffisant versus incendie (surtout pour les porteurs) et la croissance de la végétation bien souvent conservée en ville . Ce qui gère aussi les nuisances sonores potentielles

Integrate the transport chain represented by the cabins to assimilate them to public transport vehicles in order to integrate them into global systems for managing travel and modelling travel times in real time.





CASE STUDY – EUROPE (EN)



— LA RÉUNION, PAPANG

3kms- 5 stat. 1000pphpd

Project owner (Maître d'ouvrage):

CINOR – Communauté Intercommunale du Nord de La Réunion, the local authority that led the project.

Design-builder (Concepteur-constructeur):

Groupe Filao led by POMA (France) as main contractor, with Egis, Atelier Architectes, etc.,
under a design-build-operate-maintain contract.

Independent assessor: ERIC – Bureau Veritas

Operator (Exploitant):

ETOI'L – a local joint venture uniting POMA, maintenance specialist ISR, and SODIPARC (the historic transit operator) . In practice, SODIPARC (the public transit company) operates the gondola.

Maintainer: ISR (Île de La Réunion maintenance specialist) as part of the ETOI'L joint venture, responsible for system maintenance (with POMA's support).

Estimated project cost: ~€54–55 million total (including €11 million earmarked for 5 years of operation & maintenance).

Contractual model: Model 3 (as per chap.15) – turnkey design-build-operate-maintain by the supplier (POMA handles both operations and maintenance) .

Opening date: 15 March 2022, as the first urban cable car in the Indian Ocean region



— TOULOUSE, TÉLÉO

3km-3 stations - 2000pphpd

Project owner (Maître d'ouvrage):

TISSEO COLLECTIVITES, the local authority of Mobility for the Great Area of Toulouse (116 cities , 1,2 million inhabitants)

Design-builder (Concepteur-constructeur):

Groupeement led by POMA (France) as main contractor, with Bouygues TP, Systra and SETI as design office for procedures , Sequences as Architect under a design-build-operate-maintain contract.

Independent assessor: ERIC – INGEROP

Operator (Exploitant):

TISSEO VOYAGEURS – the local operator of all the network of TISSEO COLLECTIVITES (24 kms of subway / one tramway line, 650 buses with 12 high level speed buslines. A subcontract with ALTISERVICE, a company specialized in operating mountain cable car , was done in order to sharetask force for the platerform survey and first level of maintenance.

Maintainer: POMA – ALTISERVICE for 20 years, with an service level objective of 99.3%

Estimated project cost: ~€100 million total (including €11million of accompanying operations like Parc and Ride and roads/trails adaptations).

Contractual model: Model 3 (as per chap.15) – turnkey design-build-operate-maintain by the supplier

Opening date: 22 Mai 2022, as the longest urban cable car in continental Europe before Paris project C1 opening in dec 25.



AJACCIO, ANGELO

3km – 4 stat. 1500 pphpd

Project owner (Maître d'ouvrage):

Communauté d'Agglomération du Pays Ajaccien (CAPA), the local authority initiating the project .

Technical assistance to the project owner : ERIC – Ingérop – Parme

Design-builder (Concepteur-constructeur):

POMA (France) – lead contractor for design & construction , with partners Egis (engineering), Capo Architectes, and Raffalli TP for civil works.

Operator (Exploitant):

POMA via a dedicated local company (POMA is majority shareholder) under a 10-year contract .

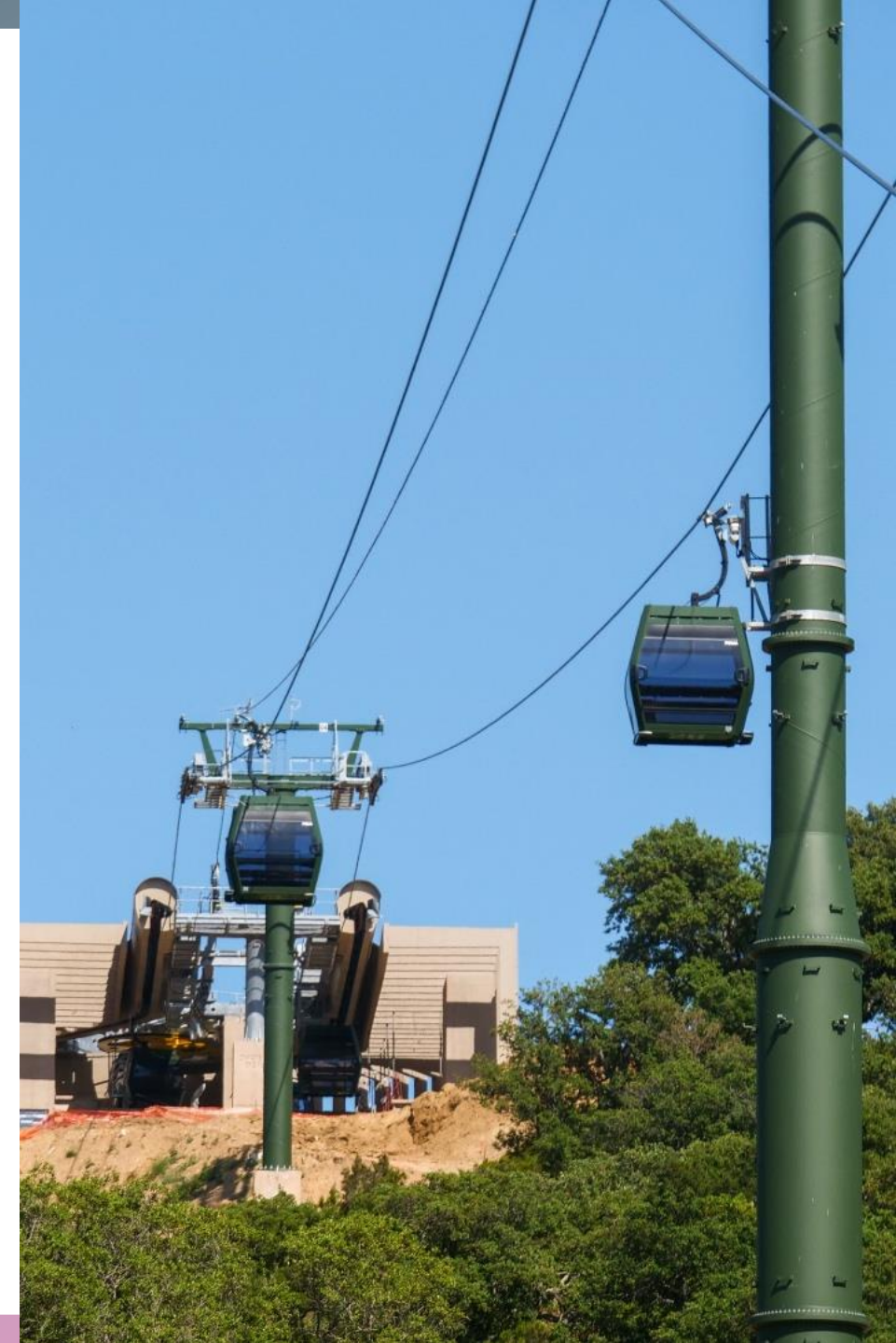
Maintainer:

POMA – responsible for maintenance for 10 years as part of a design-build-operate-maintain contract .

Estimated project cost: €38.3 million (investment) .

Contractual model: Model 3 (as per chap.15) – turnkey design-build-operate-maintain by the supplier (POMA handles both operations and maintenance) .

Opening date: Service expected to begin September 2025 (testing underway mid-2025).



— CRETEIL, C1

4km – 5 stat.-1700pphpd

Project owner (Maître d'ouvrage): Île-de-France Mobilités (IDFM) – the regional transit authority, in partnership with the Val-de-Marne department and local cities.

Technical assistance to the project owner : Preliminary design phase : ERIC – Ingerop / Realization : Setec

Design-builder (Concepteur-constructeur): Doppelmayr France – leading a consortium (Doppelmayr Garaventa Group with Spie Batignolles, France Travaux, Egis Rail, Atelier Schall) responsible for design, construction and maintenance under a performance contract.

Operator (Exploitant): Transdev – appointed by IDFM to operate C1 and reorganized bus lines in the area; operation will start in 2025 under a 4-year public service delegation.

Maintainer: Doppelmayr–Spie consortium – the supplier team will carry out maintenance of the cable car system (as specified in the design-build-maintain contract) . Transdev focuses on operations and customer service.

Estimated project cost: €138 million (investment) for a 4.5 km line with 5 stations. (Significantly cheaper than a tramway, which was the alternative.)

Contractual model: Model 2 (as per chapter 15) – third-party operator, supplier as maintainer (Transdev runs the service, while the Doppelmayr-led group ensures system maintenance and performance).

Opening date: Dec 2025.

Photo : J. Jollet



— LISTE DES INSTALLATIONS... SOLUTION AVÉRÉE

Nom de l'appareil	Affaire	Pays	Année	Débit	Vit.	Type	Long.	Déniv.
El Madania (35 pl.)	10822	ALGERIE	1982	1255	6,5	TPH	242	111
Notre Dame d'Afrique (35 pl.)	10852	ALGERIE	1982	1150	6,5	TPH	270	98
Hamma Mémorial (35 pl.)	11205	ALGERIE	1987	1200	8	TPH	238	91
Palais de la Culture (35 pl.)	11444	ALGERIE	1987	1200	8	TPH	402	90
MEDELLIN	13134	COLOMBIE	2003	3000	5	TC10	2061	400
BUCARAMANGA	14163	COLOMBIE	2008	500	6	TC8	2122	755
METRO DE MEDELLIN	14043	COLOMBIE	2008	3000	5	TC10	2789	309
SANTO DOMINGO SAVIO	13760	COLOMBIE	2009	1207	5,8	TC10	4619	614
ROOSEVELT ISLAND	14152	USA	2010	1500	8	TPH	970	70
COMPLEXO DO ALEMAO		BRESIL	2011	3000	5	TC10	3,4	121
MEDELLIN	14659	COLOMBIE	2016	1800	5	TC10	1409	197
SANTIAGO	15063	CHILI	2016	1000	5	TC6	2050	208
VIRGEN DEL SOCAVON		BOLIVIE	2017	1000	5	TC8	823	140
BAB EL OUED	14421	ALGERIE	2018	2400	5,5	TC10	2061	223
TLEMCEM	15674	ALGERIE	2018	1500	6	TC10	1698	231
SANTO DOMINGO	15353	REPUBLIQUE DOMINICAINE	2018	3000	5	TC10	3568	20
SANTO DOMINGO	15361	REPUBLIQUE DOMINICAINE	2018	3000	5	TC10	1593	0
MEDELLIN	14660	COLOMBIE	2019	2500	5	TC10	1057	275
KEF NADJA - LA WILAYA	14932	ALGERIE	2020	2400	5,5	TC10	2024	20
SANATORIUM / CENTER	30016	GEORGIE	2020	215	6	TPH15	862	180,28
CENTER / NAGUTI	30019	GEORGIE	2020	215	6	TPH15	1094	150,9
CENTER / MUXADZE	30018	GEORGIE	2020	300	6	TPH15	640	100,56
CENTER / LEJUBANI	30017	GEORGIE	2020	250	6	TPH15	849	66,4
LA WILAYA-SIDI BELLOUA	14933	ALGERIE	2021	1000	5,5	TC10	1945	282
MEDELLIN	13840	COLOMBIE	2021	4000	5,5	TC12	2656	344
PEREIRA	14404	COLOMBIE	2021	1400	5	TC10	3377	123
PAPANG	15766	FRANCE	2022	1200	5	TC10	2669	272
TOULOUSE	15649	FRANCE	2022	2000	7,3	3S 34	3000	100

