
POMA
URBAN CABLE
TRANSPORTATION
SUSTAINABLE MOBILITY SOLUTION

Ropeway and sustainable urban mobility

The challenges of tomorrow's city

Cities around the world are facing a rapid and increasing urbanization, which is saturating the urban infrastructure. It is estimated that **70% of the world's population will live in urban areas in 2050**, while the number of motor vehicles will double every 7 years. While the urban road networks cannot absorb such pressure in terms of the number of journeys, **the average speed of conventional transport in town (cars, buses, taxis) is decreasing year after year**.

The challenge is to limit traffic jams which paralyze cities and provoke an increase in air pollution by CO2 emissions, noise pollution and road accidents. The objective is ensuring a **sustainable, inclusive and economically efficient development**.

Mobility is in the air

The cable transportation solution opens a third dimension; **flying over the city to avoid ground constraints** and to create connections where other means of transportation cannot go.

The cable transportation solution is **sustainable, ecological and economical**. It transcends the problems of urban congestion creating air links between urban areas and complementing existing transportation networks. It **fits perfectly into cities** thanks to its small footprint in the ground and **reduces users' travel times**.

Technical Solution

Cable transportation systems are based on **proven, resilient and flexible technology**. There are several technical solutions for detachable gondolas that meet different needs in terms of line profiles, capacity and design.

MONOCABLE

The Monocable system relies on a single rope that acts simultaneously as a track and a haul rope. The detachable vehicles slowdown in the stations until they reach a boarding speed that allows easy access for all.

- Up to **4 500** pphpd*
- Up to **12** passengers
- Up to **7** m/s
- Up to **500** m

MULTICABLE

The two-ropes (2S) and three-ropes (3S) systems are propelled by a haul rope and are supported by one or two track ropes. These systems offer greater capacities on the line, larger cabins, longer crossings and superior wind resistance.

- Up to **6 000** pphpd*
- Up to **35** passengers
- Up to **8** m/s
- Up to **3** km

(*) Passengers per hour and per direction

The Cable Transportation advantages

Obstacle clearance
Unmatched ability to fly over natural and urban obstacles

Minimum footprint
Impact on public space limited to a few square feet for towers and stations for an optimal urban integration

Exclusive route transportation
Independent system free of urban traffic on the ground

Intermodal integration
Easy integration with an existing public transportation network

Quick installation
Light infrastructure able to be installed within 18 to 24 months

Guaranteed travel time
Continuous boarding with a few seconds between cabins and fixed travel time in all circumstances

Accessibility
Cabins offering easy boarding and unboarding for all

Safety and availability
Safe, available and reliable system, based on proven technology, much safer than road insecurity

User experience
A smooth and pleasant mobility offering a breathtaking view of the city to the user

Low-carbon mobility
All-electric system with no CO2 emissions which preserves air quality

Low investment and operating costs
Light infrastructure and easy operation

Unequaled urban integration

Obstacle clearance

Like no other mode of transportation, **ropeways fly over natural obstacles** (rivers, seas, complex topography) and **urban** obstacles (buildings, roads or railways).

Minimum footprint

In already dense urban environments, ropeways are easily integrated thanks to **compact stations** and line structures of only a few square feet on the ground. This **frugality of land use** makes projects easier both to integrate and to build into cities.

Exclusive route transportation

Ropeways lines **operate completely independent** of other ground transportation modes and are not subject to traffic jams or accidents. This unique feature offers **a guaranteed travel time for users** at any time during the day.

Intermodal integration

Urban ropeways can be **harmoniously integrated into a multi-modal network** and reinforce existing transport infrastructure by feeding mass transportation systems or by **completing the network**.

Quick installation

Most urban cable projects are **built within 18 to 24 months**. Ropeways lines can also be dismantled and relocated allowing reversibility and flexibility of the solution.

San Francisco - U.S.A

Guayaquil - ECUADOR

Ankara - TURKEY

New York City - U.S.A

Travel quality for all

Guaranteed travel time

Ropeways offer a direct and uninterrupted route between stations thanks to the **total absence of interference** with ground traffic (pedestrian, road or rail), and therefore is a **constant travel time** at any time of the day. The continuous movement of the system and **the high passage frequency of the cabins in the station** ensure a constant boarding flow for passengers.

Accessibility

Access and a **fluid route adapted to all passengers**: people with disabilities and families. A boarding platform at the same level as the cabin floor and a range of wide-opening cabins with custom-made interior fittings offer optimal accessibility.

Safety and availability

This «air» system is not exposed to road insecurity and is based on proven technology which makes it **one of the safest modes of transport in the world**. The availability rate of over 99.5% allows ropeways to be integrated into an efficient multimodal network.

User experience

The quality of the trip is also enhanced not only by **the comfort of the modern cabins**, but also by **the silence and panoramic views of the city**. In addition, urban ropeways are noise proof to preserve the comfort of passengers and residents.

Santo Domingo – DOMINICAN REPUBLIC

Medellin - COLOMBIA

San Cristobal - CHILE

Yangjiajie - CHINA

Guayaquil - ECUADOR

Carbon-free and sustainable mobility

Urban mobility is **at the heart of the ecological transition**. Every day ropeways allow millions of passengers around the world to travel without using individual or collective motorized vehicles. Ropeways contribute to **reducing CO2 emissions** from urban road traffic by relieving congestion in the city.

In addition, the system uses **100% electric** power to move an entire line of vehicles on a cable with a single, innovative and efficient **DirectDrive** motor.

Additional green energy sources such as photovoltaic panels on the cabins and roofs of the stations can be easily integrated to **reduce the system's consumption**.

Urban cable transportation is part of a sustainable mobility concept, making it possible to respond to city transportation needs and **respect the human and natural environment** at the same time. The aerial connections created by urban ropeways are crucial in the sustainable, inclusive and economic development of the city.

Berlin – GERMANY

Santo Domingo – DOMINICAN REPUBLIC

Rio de Janeiro - BRAZIL

Performing Operation & Maintenance together

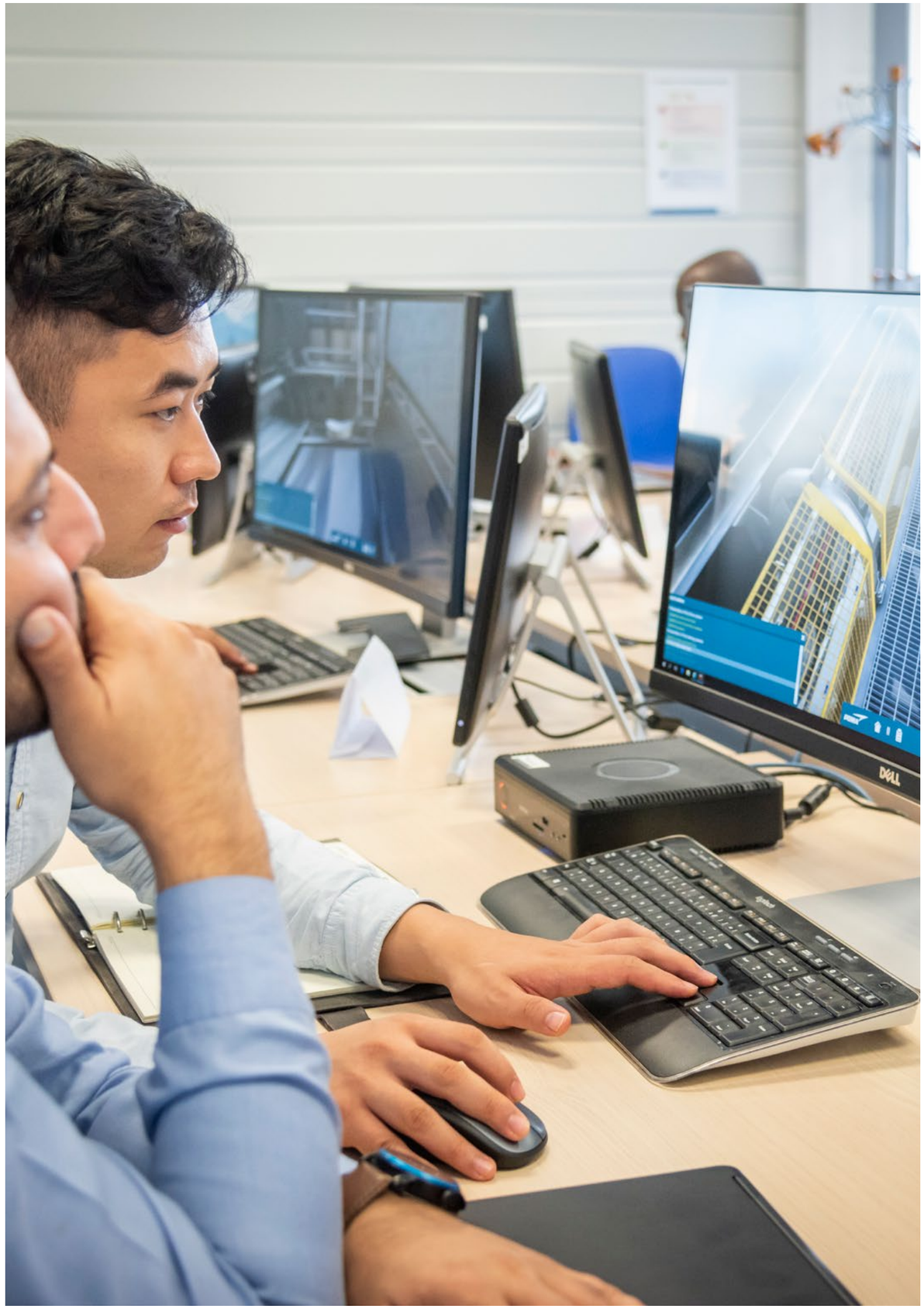
Ropeway mobility is characterized by a **high degree of operational flexibility** (number of vehicles in the line and speed of operation), which makes it possible to adjust the configuration of a system as well as the costs, expectations and constraints of each city considering the most intensive uses.

AVAILABILITY 99.5+% *OPEN ALL YEAR ROUND*
20 hrs/day **7000 hrs/yr**

The feedback we have gained from our experience transporting more than 100,000 people per hour on our urban ropeways is used to provide O&M assistance which is essential for the proper **management of operations in terms of safety, availability and cost controlling**.

Leitner-Poma of America helps the future operators to understand this new mode of transportation integrated in their existing network. Even **before the opening of the ropeway**, **Leitner-Poma of America trains the operators** with cutting-edge educational tools such as a **3D simulator**.

Leitner-Poma brings a **specific answer to each customer** from New York, Santo Domingo (Dominican Republic), La Reunion (France), Algiers, Cairo, etc.; training, consulting, technical management, commercial operation, maintenance, operation and maintenance in partnership, etc.

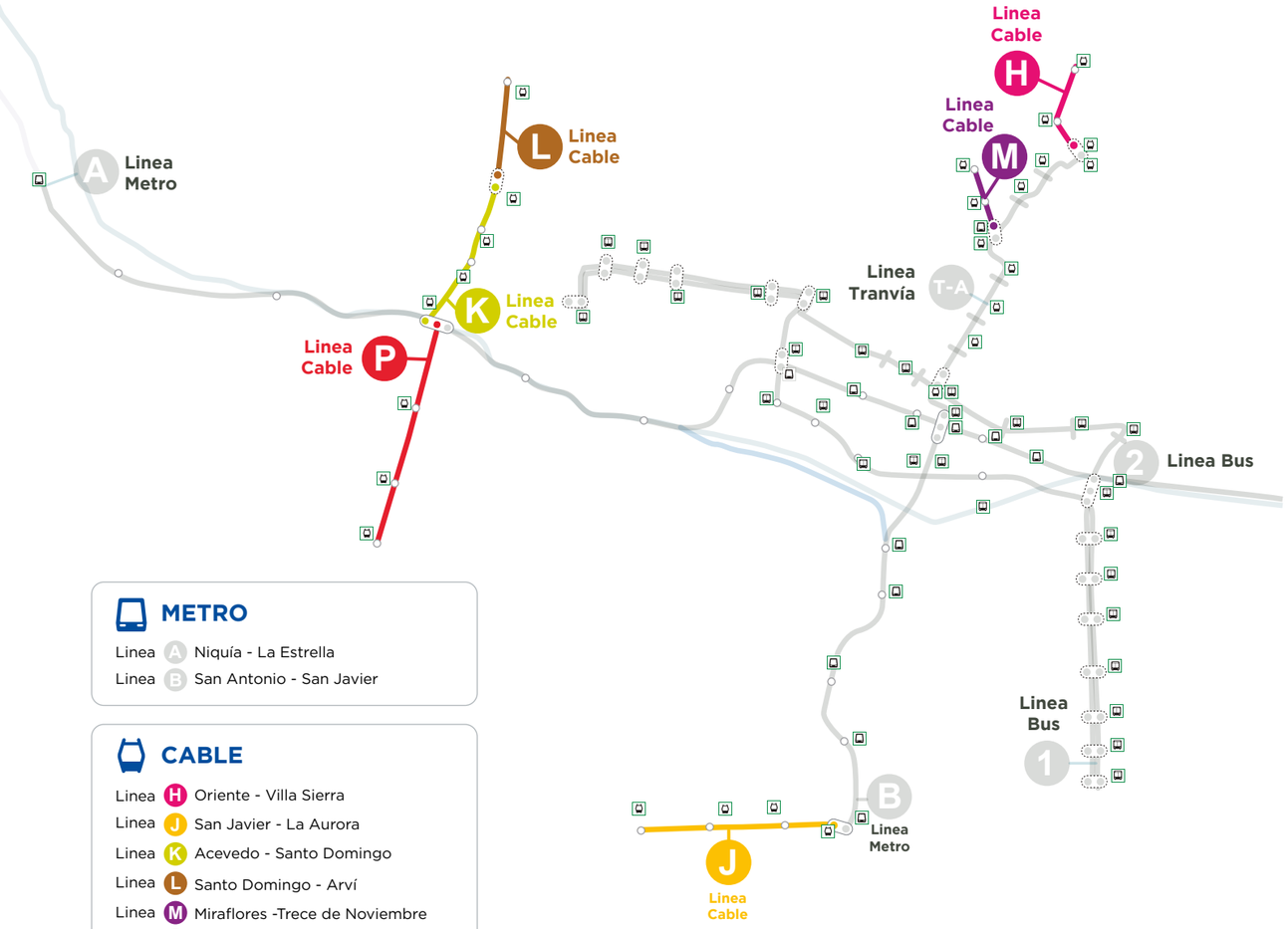


Medellin, Colombia. Pioneer city of urban cable transportation

Medellin, Pioneer City of “Metrocables”

In 2004, Medellin, Colombia was **the first city in the world to use a detachable monocable gondola lift as urban mass transportation** for its residents with its famous «Metrocable». Connected to the Metro and the Tramway through multimodal stations, there are now **6 lines** that play a feeder role and **increase the number of passengers** in the integrated transport network.

The Metrocables both geographically and socially connect the isolated neighborhoods and enhance the quality of life for its residents by providing a faster, safer and more reliable access to downtown employment and services.



METRO

Linea A Niquía - La Estrella
Linea B San Antonio - San Javier

CABLE

Linea H Oriente - Villa Sierra
Linea J San Javier - La Aurora
Linea K Acevedo - Santo Domingo
Linea L Santo Domingo - Arví
Linea M Miraflores -Trece de Noviembre
Linea P Acevedo - El Progreso

TRANVÍA

Linea T-A San Antonio – Oriente

BUS

Linea 1 Universidad de Medellin - Aranjuez
Linea 2 Universidad de Medellin - Aranjuez

METRO DE MEDELLÍN
CALIDAD DE VIDA

Linea L Access to the city's green lung

Linea H Extension of the network through intermodality

Linea K 1st public transport by cable in the world in 2004 (in 2021: 112,000 hours of operation!)

Linea M Development of the intermodal network which complements the Tramway

Linea P Complementary network contributing to the sustainable mobility for the city

Linea J Peri-urban development with the network extension to a new neighborhood

Cable transportation in the city of tomorrow

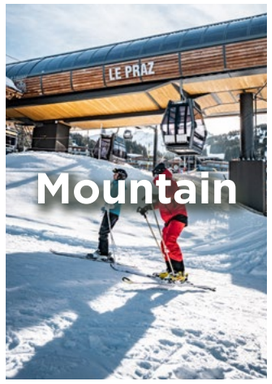
The definition of the city of tomorrow implies that we must consider exchanges around **transportation and mobility**. **Urban development** is structured around transportation networks and transforms stations into multimodal urban hubs and **multifunctional living spaces**. Ropeways are part of this **Smart City** and respond to these challenges.

Following the example of **Grenoble in France, European Green Capital 2022**, the urban cable transportation reflects the ambitious objectives of structuring the city around **sustainable mobility projects**. With a **sober and modern design, green roofs, and energy optimization devices**, the Grenoble “Metrocable” will be integrated into the urban transportation network from 2023.

A world leader «made in France»

Over 85 years of existence, and the pioneering spirit of POMA remains intact. A world leader in cable transportation solutions, active on five continents, the group keeps innovating since 1936.

POMA offers carbon-free and sustainable mobility, in the heart of cities, but also access to viewpoints, tourist spots, or mountain peaks, and provide material transportation solutions for industries.



POMA exports French excellence and Made in France products to more than 90 countries. Its international subsidiaries ensure an essential proximity with its customers, and a long-term support.

With its expertise, POMA manages its projects from A to Z and covers the entire value chain: design, supply, installation, operation and maintenance.

Key figures of the POMA Group

Creation of POMA in **1936**

100% industrial sites of POMA France are based in Auvergne-Rhône-Alpes Region
5 industrial poles of expertise

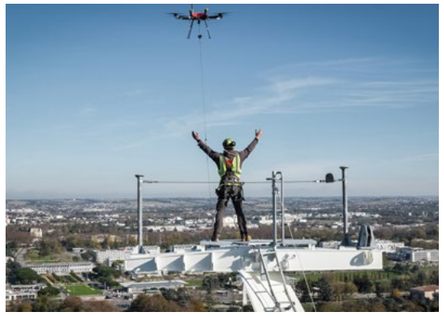
Presence in
90+ countries
22 subsidiaries

1500 employees
(850 in France)

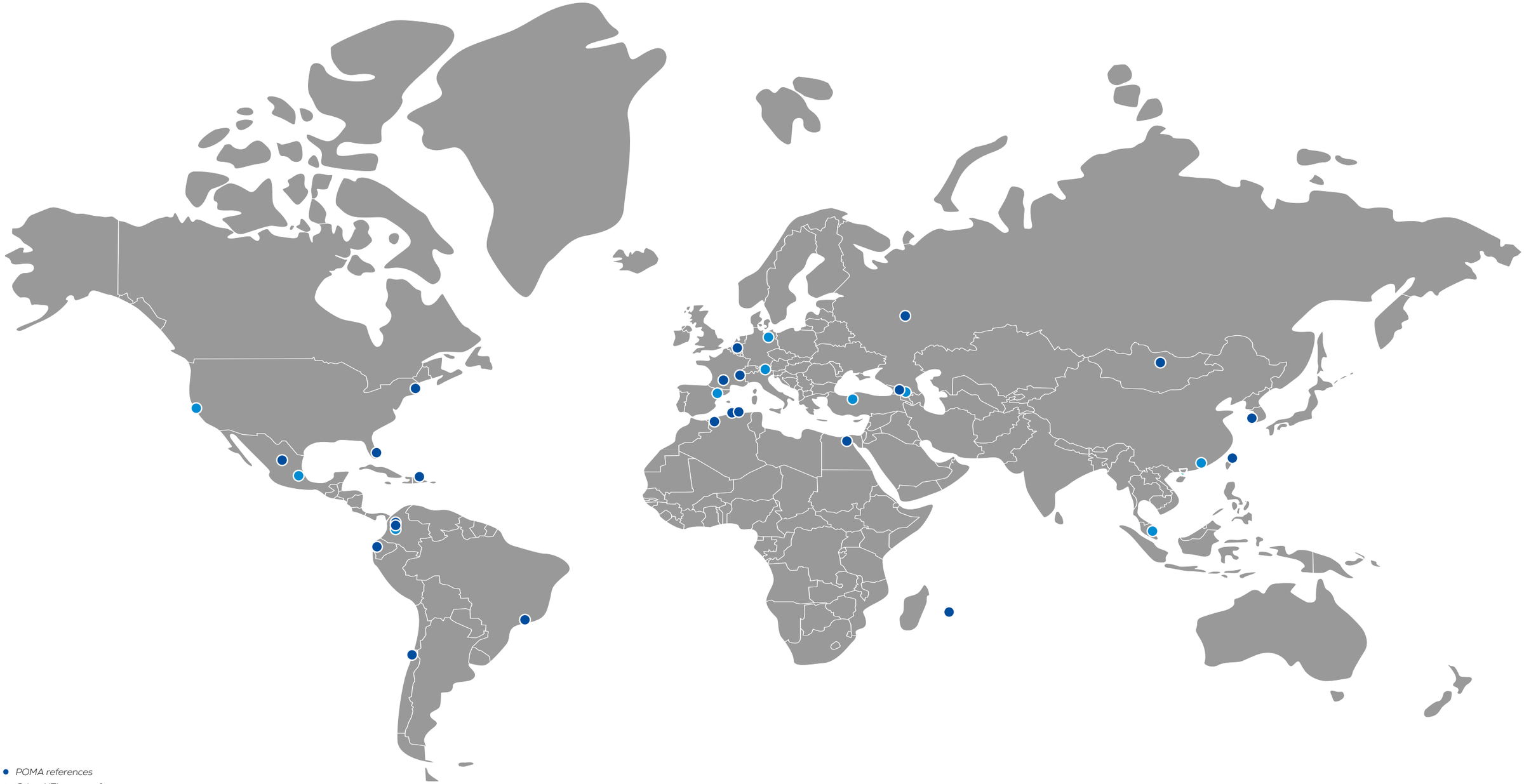
2019 turnover: **480M**€
70% export sales

8000+ systems installed
6,5+ millions passengers
transported per hour

POMA is a world **leader of cable** transportation



Our urban references



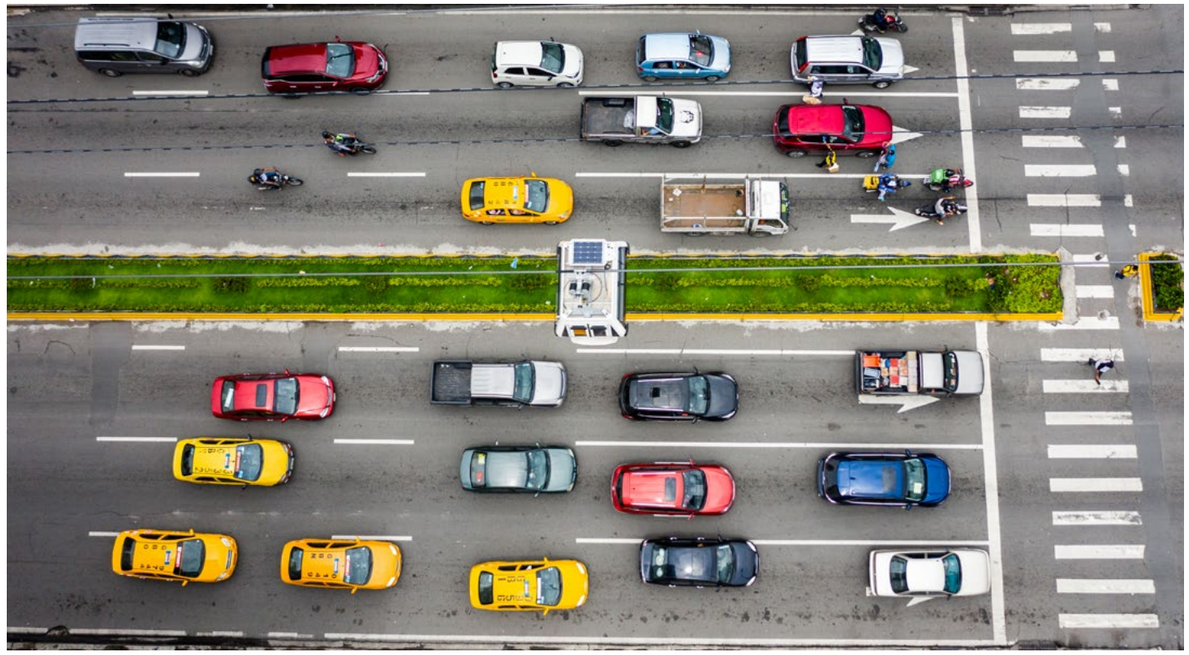
- *POMA references*
- *Other HTI group references*

- Algeria - Tizi Ouzou
- Algeria - Alger
- Algeria - Tlemcen
- Austria - Innsbruck
- Belgium - Namur
- Brazil - Rio de Janeiro
- Chile - Santiago
- China - Taipei
- China - Hong Kong
- Colombia - Medellin
- Colombia - Manizales
- Colombia - Pereira
- Dominican Rep. - Santo-Domingo
- Egypt - Cairo
- Ecuador - Guayaquil
- France - Grenoble
- France - Toulouse
- France - Saint-Denis-de-la-Réunion
- Georgia - Chiatura
- Georgia - Tbilissi
- Germany - Berlin
- Italy - Bolzano
- Malaysia - Pahang
- Mexico - Mexico City
- Mexico - Zacatecas
- Mongolia - Ulan Bator
- Russia - Nijni Novgorod
- South Korea - Mokpo
- Spain - Barcelona
- Turkey - Ankara
- U.S.A - Miami
- U.S.A - New York City
- U.S.A - San Francisco

Examples of realizations

Saint-Denis de la Réunion - FRANCE

Barcelona - SPAIN



Guayaquil - ECUADOR

Nijni Novgorod - RUSSIA

Mexico - MEXICO

Toulouse - FRANCE (ongoing project)

San Francisco - U.S.A

Tlemcen - ALGERIA

Miami - U.S.A

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URBAN MOBILITY