



STRMTG

TECHNICAL SERVICE IN CHARGE OF SAFETY
FOR ROPEWAYS AND GUIDED TRANSPORTS



**MINISTÈRE
CHARGÉ DES
TRANSPORTS**

*Liberté
Égalité
Fraternité*



ANNUAL REPORT 2023

WWW.STRMTG.DEVELOPPEMENT-DURABLE.GOUV.FR/EN/



CONTENTS

ÉDITORIAL	4-5	4 - STUDIES AND RESEARCH	30-33
ORGANIZATIONAL CHART	6-7	Study of sight obstructions during dynamic control of trams.....	30
STRMTG IN NUMBERS	8-9	“Batteries and fire risks” study.....	31
1 - REGULATIONS AND STANDARDS	10-19	Platform-Train-Track Interface Study.....	32
Standardisation for transport systems.....	10-11	Study on mass evacuation of automated metros.....	33
Safety in urban guided public transport tunnels.....	12	5 - PATHOLOGIES AND ACCIDENTS	34-36
Certification of the first approved qualified organisation for ARTS.....	13	PARTAGE is on line!	34
Application guide for ARTS SMS	14	Crisis management: measures in place at STRMTG.....	35
STRMTG/Cerema* factsheets “Urban insertion of surface public transport”	16-17	Recommendations for dealing with technical problems detected on systems	36
For universal accessibility to urban aerial cableway transport.....	18	6 - DISCUSSIONS AND TRAINING	38-41
Update of lift system guides on safety management systems (RM-SGS).....	19	Tram discussion day 2023	38
New guides on aerial ropeways (RM1 and RM2).....	19	“Tram Power” Technical Day	39
2.1 - OPERATIONS MONITORING	20	Training on engineering structures	39
Driver observation by inspection offices	20	Regulatory training for POMA employees	40
2.2 - INNOVATION	21	STRMTG supports ski schools responsible for ski-tows and mountain resort travelers	40
First forum of the French transport innovation agency.....	21	Rail Bike Conference 12-13 October 2023	41
3 NEW PROJECTS	22-29	Unecto Congress	41
3.1 New ropeway projects		7 - ORGANIZATION AND MANAGEMENT	42-45
First POMA 7 m/s gondola lifts.....	22	First Advisory Committee with a representative panel of STRMTG partners.....	42
The Crémaillère Express gondola lift Luchon-Superbagnères ski resort (31).....	23	Renewal of STRMTG’s ISO 9001 certification	43
Grands Montets service ropeway project.....	24-25	STRMTG’s new English website	43
3.2 New guided transport projects		“STRMTG culture” seminar on 8 June 2023.....	44-45
Extension of Strasbourg’s tram network.....	26	8 - INTERNATIONAL	
The first towers have been installed for Cable 1 in the Île-de-France region.....	27	RESCOR: sharing best practices in urban guided transport.....	46
T10 tram, a new line linking Antony (RER B) and Clamart.....	28	Urban Tram Forum 2023.....	47
The T12 tram-train completes the Île-de-France network	29	Discussions with the future operator of Quebec City’s tram system	47
		Ittab in Hong-Kong and visit to China.....	48
		Contribution to OITAF activities	49
		Memorandum of understanding with Dubai’s RTA service.....	49
		Exchanges with STRMTG Serbian counterparts	50
		Exchanges with the JTPA	50
		French market supervisory authority	51
		9 - NOTIFIED BODY	
		Notified body accreditation renewed for 5 years	52
		New customers for STRMTG-ON in 2023: IESA Automation and Aix-Hydro	55

EDITORIAL



Daniel Pfeiffer, director of STRMTG.

SUPPORT FOR INNOVATION AND THE SEARCH FOR APPROPRIATE, PRAGMATIC RULES TO IMPLEMENT IT REMAIN AT THE HEART OF OUR CONCERNS.



The world of guided transport, ski lifts and automated road transport is constantly changing: new projects are being developed, innovations are being introduced, international standards are being drawn up, new issues such as cybersecurity are being addressed, competition is being opened up, with multiple operators on the same network creating new complexities, and there are challenges linked to ecological transition.

In this context, STRMTG is faced with a demand for greater safety, but also efficiency and simplification.

Faced with these challenges, in 2023 STRMTG has continued to adapt by anticipating new challenges, taking care not to create unnecessary complexities for professionals and guaranteeing a framework and working conditions that are motivating and appropriate for its staff.

In practical terms, the department has of course continued to carry out its tasks of appraisal and control, providing support to the players involved, particularly with regard to innovative and complex projects, whether in the field of guided transport, such as automatic metros or the urbanloop project, or in the field of cable transport for urban projects.

Support for innovation and the search for appropriate, pragmatic rules to implement it remain at the heart of our concerns. This year has been particularly fruitful for automated road transport, with the production of a number of standards and the approval of the first qualified body. But 2023 also saw the updating of several other national standards, in close collaboration with the DGITM, as well as European standards.

THIS YEAR HAS BEEN PARTICULARLY RICH FOR AUTOMATED ROAD TRANSPORT, WITH THE PRODUCTION OF NUMEROUS STANDARDS



STRMTG has also continued to conduct studies aimed at improving technical knowledge and advancing standards.

In all these endeavours, STRMTG works in close collaboration with the entire profession, to find the simplest, most appropriate and effective solutions that meet our common concern: safety.

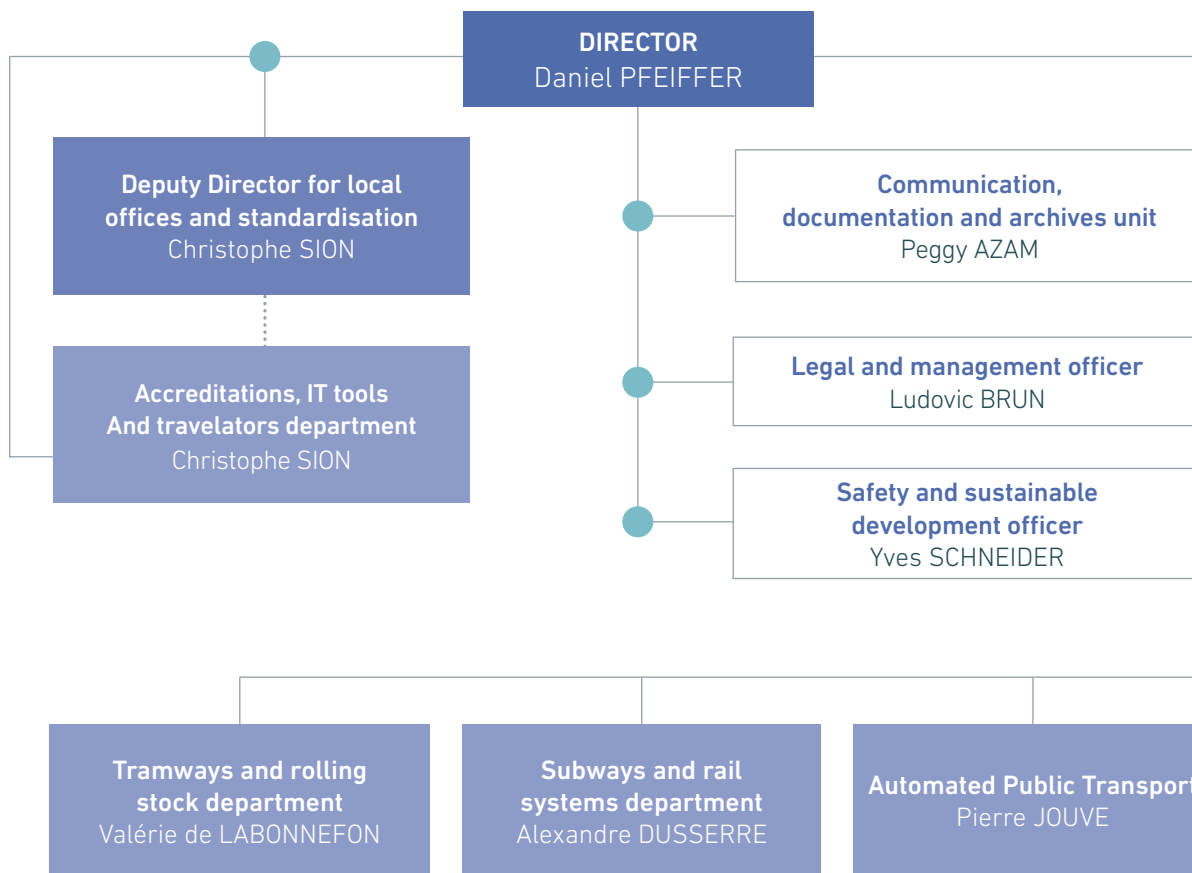
It also ensures that it remains present at international level, because it is at this level that standards are increasingly being developed.

All these actions are only possible thanks to the passionate commitment of the department's staff, and the work that is being done to reinforce our values.

In June 2023, a seminar was held for all staff to share our common culture. In addition, the department ensures that, despite major constraints, particularly in terms of travel, everyone can fulfil their potential in their work, finding meaning, interest and motivation in it.

Finally, at a time when the ecological transition is becoming a national priority, STRMTG is fully committed to the eco-responsible public services (SPE) approach. In 2023, it has carried out a number of actions, thanks to the active participation of its staff, including the continued electrification of its vehicles and the deployment of recharging points.

I am therefore pleased to invite you to find out more about the activities carried out by STRMTG in 2023.



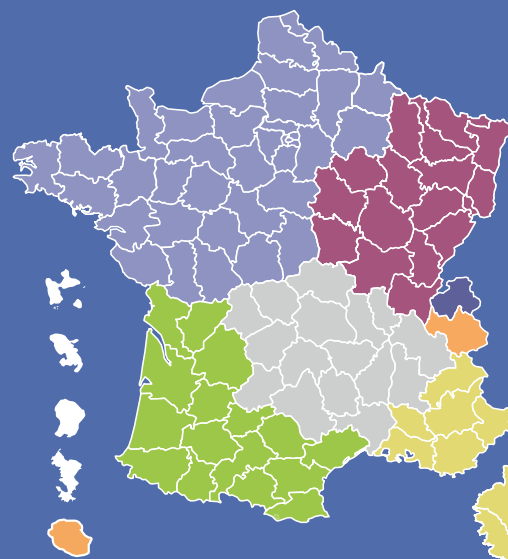
North-West office
Autorité conjointe DRIEAT IdF
Manager
Nathalie NOEL

Southern Alps office
Gap
Manager
Bruno ANDEOL

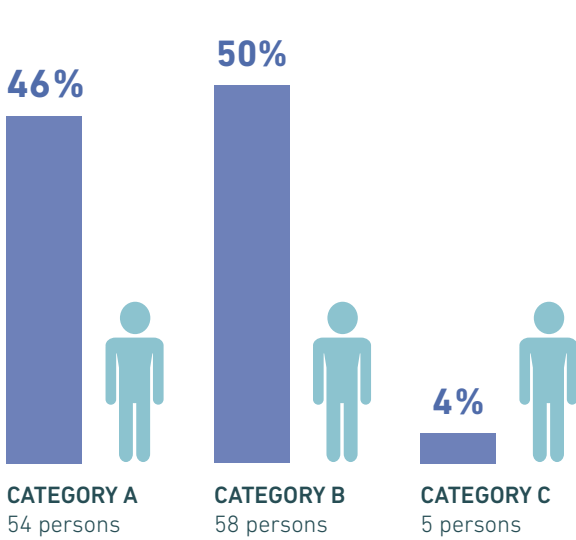
Savoie office
Chambéry
Manager
Romain PAULHE

Haute-Savoie office
Bonneville
Manager
Anatole ARMADA

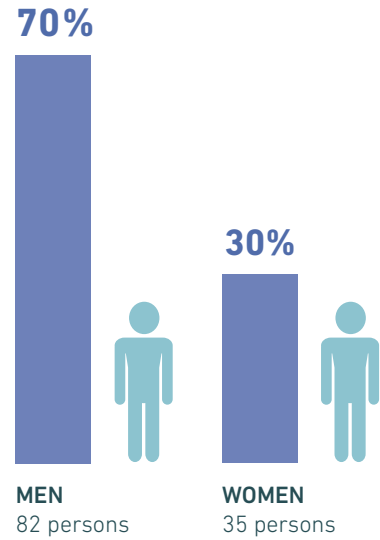
**LOCAL OFFICES
ROPEWAYS**



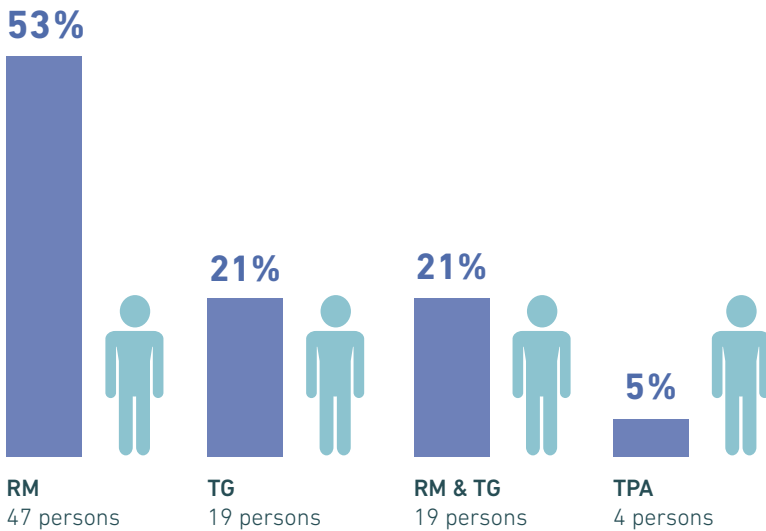
BREAKDOWN OF STRMTG STAFF BY GRADE AND AREA OF EXPERTISE



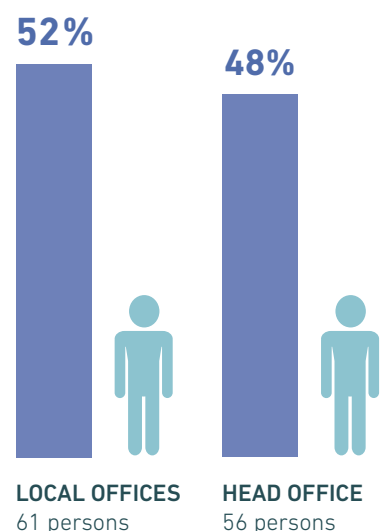
WORKFORCE BY MACROGRADE



GENDER DISTRIBUTION



WORKFORCE BY TRANSPORT SYSTEM



LOCAL OFFICES AND HEADQUARTERS BREAKDOWN

RM: cable cars / TG: guided transport / TPA: automated public transport

SYSTEMS MONITORED BY STRMTG, KEY FIGURES JANUARY 1, 2023



1875 ski lifts



1092 aerial ropeways



83 trams



31 metro / 2 regional express network



485 travelators



34 other installations*



3 light rail system



5 railway systems
commuter

ROPEWAYS PARK

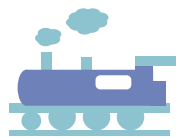
Units: 3486

URBAN GUIDED TRANSPORT NETWORKS

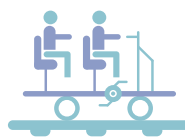
Fleet: 124 lines



5 metre-gauge
railways



61 tourist and
heritage railways



65 rail bike**

Rail bike are not subject to guided transport regulations. However, STRMTG provides assistance to prefects at their request, within the framework of their general police powers.

LOCAL RAIL NETWORKS AND RAIL BIKE

Fleet: 131 lines

*Other installations» include rack trains, funicular railways and inclined elevators. **Of which 14 networks are mixed Tourist and heritage railways and rail bike.

1 - REGULATIONS AND STANDARDS

Before building a lift system, a guided transport system or automated public transport system, you need to be familiar with the rules governing this type of construction, particularly in terms of safety. These rules include all official regulations (European laws, decrees, orders, regulations and directives), technical guides and standards.

STANDARDISATION FOR TRANSPORT SYSTEMS

As part of standardisation for transport systems, STRMTG continued to work throughout 2023 to present and defend its safety policies through the following working groups:

URBAN GUIDED TRANSPORT

- ▶ Designing tram front ends for pedestrian safety: STRMTG is participating in work to transform the technical report "Vehicle end design for trams and light rail vehicles with respect to pedestrian safety" into a standard. STRMTG is keeping a close eye on this work, which falls within the scope of STRMTG technical guide "Design of tram front ends", which is still applicable in France;
- ▶ Access door systems for rolling stock: STRMTG is taking part in work to revise standard EN 14752, which will be submitted for public inquiry in 2024;
- ▶ Braking systems for urban and suburban public transport: STRMTG continues its involvement in the revision of standard EN 13452;
- ▶ Digital simulation: STRMTG is taking part in the work to turn the CEN/TR 17833 technical report into a standard. This technical report focuses on digital simulation as an alternative to physical testing;



- ▶ **Operational safety of software:** STRMTG participated in the work of TC9X/WG 28 to merge standards EN 50128 and EN 50567 which cover software for railway control and protection systems and software on board rolling stock. This work led to the publication of standard NF EN 50716 “Requirements for software development” in November 2023;
- ▶ **Platform barrier systems:** STRMTG is contributing to the international work to migrate standard EN 17168 “Platform barrier systems”, published in 2021, to the ISO
- ▶ **Cybersecurity:** STRMTG is taking part in the work of TC9/PT 63452 to prepare an international standard for cybersecurity applied to the railway sector, incorporating the results of the European technical specification CLC/TS 50701 “Cybersecurity” published in 2021.

CABLEWAY INSTALLATIONS

- ▶ **Vehicles:** STRMTG is leading the revision of standard EN 13796-1. The aim of this work is to incorporate changes in industry practices, as well as feedback from accidents in France and other countries.

For example, one of the objectives of the revision is to better address the risk of passengers becoming trapped between the guardrail and the armrest of chairlifts;

- ▶ **Evacuation and recovery:** STRMTG is leading work to amend standard EN 1909 to include integrated recovery. This means that vehicles and passengers can be returned to stations without the need for vertical evacuation. It applies to a growing number of cableway systems, particularly urban cableway systems, which are expanding rapidly.

MOUNTAIN RESORT TRAVELATORS

The work on the revision of European standard EN 15700 “Safety for travelers for winter sport or tourist use”, started in 2018, was completed with the publication of revised standard EN 15700 in August 2023.

This new version incorporates high-speed travelators (up to 1.2 m/s), tunnels and additional requirements to better protect worker safety (maintenance run, etc.).



SAFETY IN URBAN GUIDED PUBLIC TRANSPORT TUNNELS

Over the past two decades, since the entry into force of the Order of 22 November 2005 on safety in urban public guided passenger transport system tunnels, STRMTG has built up a wealth of experience in applying the requirements of this piece of legislation.

The construction of projects or extensions to urban guided transport lines has highlighted the importance of revising these technical regulations. This is due to the frequent problems regarding their interpretation, or even the inability to apply them, resulting from the implementation of these technical regulations. The alternatives initially mentioned in the Order, in connection with technological and standards developments, have also multiplied over the years. In 2021, a working group was created, including:

- ▶ the General Directorate for Transport Infrastructure and Mobility (DGITM);
- ▶ the Ministerial Delegation for Accessibility under the Ministry of Ecological Transition;
- ▶ the French Ministry of the Interior's Directorate General for Civil Security and Crisis Management (DGSCGC);
- ▶ project owners potentially in charge of building new urban guided transport tunnels;

- ▶ transport operators who operate and maintain the tunnels,
- ▶ rescue services;
- ▶ tunnel experts from engineering firms and qualified organisations;
- ▶ the Centre for Tunnel Studies (CETU);
- ▶ STRMTG.

Eleven meetings were held to discuss technical and organisational recommendations.

The main changes to the text concern:

- ▶ the scope of application, now extended to existing tunnels and the commissioning of new rolling stock on its own;
- ▶ cable fire performance requirements;
- ▶ requirements for the communication system between the Central Command Centre (CCS) and passengers;
- ▶ smoke extraction;
- ▶ managing people with disabilities and reduced mobility;
- ▶ periodic safety drills.

The near-finalised version of the draft text was presented at the end of 2023 for final comments, in preparation for the consultation process launched by the DGITM.



CERTIFICATION OF THE FIRST APPROVED QUALIFIED ORGANISATION FOR ARTS

The commissioning of an automated road transport system is decided by the transport authority. It is subject to the prior approval of a qualified organisation approved by STRMTG (ARTS AQO).

Prior to commissioning, approved qualified organisations are tasked with assessing the safety of ARTS in the following technical areas:

1. Operational safety of embedded systems
2. Operational safety of connection or positioning equipment
3. Cybersecurity
4. Safety of road infrastructure and equipment
5. Safety of vehicle road behaviour
6. Operational safety management systems
7. Overall system safety assessment.

After commissioning, the ARTS operator arranges for an annual external audit to be carried out by an AQO approved for the technical field of the safety management systems in operation.

Under the French Transport Code, STRMTG is responsible for examining certification applications and issuing them to organisations. To this end, it carries out an in-depth review of the skills, professional experience, technical and human resources and working methods of the candidate organisations. They must demonstrate their ability to ensure the quality and objectivity of safety assessments of automated road transport systems in the technical fields in which they intend to work.

In 2023, STRMTG approved UTAC for technical fields 1 and 5, in view of its technical expertise in automated road vehicle safety and its assessment organisation.

For these two technical fields, UTAC will now be able to carry out the first safety assessments provided for in the French Transport Code. These will ensure that the



automated road transport systems assessed do not have any unacceptable risks affecting the safety of passengers and third parties.

This first certification marks an important step in the national strategy for the development of automated and smart road mobility, which aims to make France the leading place in Europe for the deployment of such services, while ensuring their safety.



Approved qualified organisation

APPLICATION GUIDE FOR ARTS* SMS**

Operators of automated road transport systems** (ARTS) must establish and implement an operational safety management system* (SMS). Article R.3151-1 of the French Transport Code defines the safety management system as “a set of rules, procedures and methods to be implemented to continuously achieve safety objectives”.

In 2023, STRMTG led a working group created to define the requirements applicable to ARTS safety management systems. The group’s work led to creation of the application guide “Requirements applicable to safety management systems for ARTS”, which STRMTG published on its website on 6 November 2023.

A particular feature of this guide is its adoption of the ISO’s high-level structure for management system standards.

This structure functionally divides SMS requirements into the following clauses:

1. Context of the organisation
2. Leadership
3. Planning
4. Support
5. Operation
6. Performance Evaluation
7. Improvement

It is used by the main international standards applicable to management systems (ISO 9001 for quality management systems, ISO 14001 for environmental management systems, etc.). The use of this structure can be particularly useful for operators who implement a single management system (sometimes referred to as an “integrated” management system). It enables them to meet the requirements of two or more management system standards at the same time.

This structuring of requirements also facilitates the understanding and application of a process-based approach to SMS development, implementation and improvement by the operator. The guide aims to ensure continuous improvement of the SMS by adopting a PDCA (Plan-Do-Check-Act/Adjust) approach.

The guide’s requirements therefore facilitate continuous improvement of the SMS:

1. **Plan:** (1. Context, 2. Leadership, 3. Planning)
2. **Do:** (4. Support, 5. Operation)
3. **Check:** (6. Performance Evaluation)
4. **Act/Adjust:** (7. Improvement)





Mairie de Paris



Île de France mobilités

100%
AUTONOME

100%
ÉLECTRIQUE

EXPERIMENTATION 100% AUTONOME 100% ÉLECTRIQUE NAVETTE GRATUITE

easymile

F W -974-HX 75

STRMTG/CEREMA* FACTSHEETS “URBAN INSERTION OF SURFACE PUBLIC TRANSPORT”

2023 was a particularly busy year with the publication of a number of new and updated factsheets in the “Urban insertion of surface public transport” series co-published by STRMTG and Cerema*.



IUTCS FACTSHEET NO. 4

TRAMWAYS AND VISIBILITY – METHODS AND TOOLS

Visibility is an essential factor in anticipating and managing conflicts when driving a tram (driving-on-sight principle), particularly between trams and third parties, even when there are traffic lights. This document proposes a method for determining minimum visibility conditions (by defining visibility cones). This helps reduce the risk of accidents between trams and third parties, taking into account the type of conflict and how it is managed.

The June 2023 update mainly restates the assumptions used to determine visibility cones for bicycle crossings not managed by traffic lights, and for tram crossings equipped for pedestrians not managed by traffic lights. These assumptions make it possible to take into account accumulated experience, and to formulate a more credible approach to cyclists.



IUTCS FACTSHEETS NO. 7 AND NO. 8

With the increase in bicycle and tram traffic, the safety of this type of travel needs to be improved. This requires the creation of infrastructure that meets safety, performance and comfort requirements, both for trams and users of bicycle infrastructure, including traditional bicycles, cargo bikes, adapted bicycles, motorised personal transport devices, etc.

STRMTG has therefore prepared two factsheets on the subject of bicycle infrastructure in the vicinity of tramways. These factsheets are the culmination of several years of work with professionals involved in writing and proofreading them:

IUTCS FACTSHEET NO. 7

TRAMWAYS AND BICYCLE INFRASTRUCTURE - GENERAL PRINCIPLES AND TRAFFIC SIGNALS

This factsheet presents the general principles and traffic signal options to be considered when creating bicycle infrastructure near tramways.

IUTCS FACTSHEET NO. 8

TRAMWAYS AND BICYCLE INFRASTRUCTURE - DESIGN RECOMMENDATIONS

The purpose of this factsheet is to provide recommendations and decision-making tools for designing bicycle in-



frastructure near and interfacing with tramways. It covers aspects such as design, separators, signage and signals, etc.

You can also watch the replay of the “Rendez-vous Mobilités” meeting on bicycles and trams organised by CEREMA and STRMTG, presenting these two factsheets in detail and including accounts from planners.



IUTCS FACTSHEET NO. 2 TRAMWAYS AND PEDESTRIAN CROSSINGS: DESIGN PRINCIPLES

Pedestrian tramway track crossings, whether on exclusive segregated tramway tracks or mixed traffic areas, must comply with the design principles set out in this factsheet. Its aim is to explain the issues at stake, clarify current regulations and best practices, and provide the key design principles for addressing issues such as safety. This factsheet was updated in June 2023 to incorporate the changes made by IUTCS factsheet no. 03 “Tramways in general traffic”, concerning pedestrian crossing markings on tramway platforms when tramways operate in general traffic, as well as changes based on feedback.



IUTCS FACTSHEET NO. 9 CHANGES TO THE 120-SECOND RULE: HOW TO REDUCE WAITING TIMES AT TRAFFIC LIGHTS.

This factsheet provides solutions for reducing waiting times at traffic lights, as well as recommendations for dealing with tramway and bus rapid transit system junctions. Much of the performance of a traffic light junction depends on its design.

The operation of the lights alone cannot compensate for the shortcomings of phases ahead of the lights (i.e. geometry). It provides recommendations for the various stages in the design of traffic light junctions and presents current regulations and an example of optimisation.

* CEREMA: Centre d'études et d'expertise sur les risques, l'environnement, la mobilité et l'aménagement - Centre for Studies on Risks, the Environment, Mobility and Urban Planning

“FOR UNIVERSAL ACCESSIBILITY TO URBAN AERIAL CABLEWAY TRANSPORT”

Over the past few years, cableway transportation has been gaining ground in urban areas in France.

In this context, and to make it easier to take into account accessibility for people with disabilities and reduced mobility, the Ministerial Delegation for Accessibility (DMA) decided to provide project developers with a document to help them with their projects. To this end, STRMTG helped the DMA and GART*, in collaboration with CEREMA, to create a guide designed to help local authorities adopt a universal accessibility approach, and to capitalise on the experience of systems already in operation.

Whether using gondola lifts or twin-cable aerial ropeway technologies, ropeway transport, initially designed for a mountain sports clientele, did not have to be as accessible as other means of transport. The increasing use of these systems around the world and in France, and the need to integrate them into existing transport networks designed to offer users proven accessibility, has prompted the French government to capitalise on best practices. These lessons, drawn from trials and discussions, have contributed to this guide for universal accessibility.

Therefore, a number of areas of attention have been identified and clarified, from the design of the gondolas/cabins to the stations, including their integration in the urban fabric, as well as access from outside the stations to the vehicles.

The guide was based on a collective effort involving the entire cableway industry, as well as numerous transport user associations and associations involved in the field of disability in the broadest sense.

Ropeway transport has already proved to be a robust and reliable technical solution for serving dense urban areas. If it is to be accepted by city-dwellers, its capabilities in terms of accessibility need to be consolidated.

* GART: association of local authorities dedicated to mobility



UPDATE OF LIFT SYSTEM GUIDES ON SAFETY MANAGEMENT SYSTEMS (RM-SGS).

As soon as safety management systems (SMS) for mountain resort ropeway and travelator operators were implemented in 2017, it was agreed that a review would be carried out to fine-tune the measures after a few years in operation.

Following initial work with the industry at the end of 2022, a major survey of the industry was conducted until March 2023.

With around 180 contributions from operators, operators' representative unions and SMS inspection bodies, the survey was a great success. It highlighted the general

satisfaction of the industry, the advantages of the measures, but also the constraints and difficulties encountered by the people concerned.

Work on revising the RM-SGS1 and RM-SGS2 guides therefore began in June 2023. One of the main focuses is to eventually generalise periodic inspections into a tri-annual audit cycle, following the success of the pilot project conducted since 2021. The updated guides will be published in the first half of 2024.

NEW GUIDES ON AERIAL ROPEWAYS (RM1 AND RM2)

The new versions of RM1 (operation, modification and maintenance of aerial ropeways) and RM2 (general design and substantial modifications to aerial ropeways) technical guides were published by STRMTG in July 2023, following a major revision project carried out since 2021 in consultation with the industry.

This update incorporates a number of changes identified as necessary on the basis of feedback, as well as developments in European best practice.

As a result, these new versions of the aerial ropeway guides cover a number of recommendations made to STRMTG by the French Land Transport Accident Investigation Bureau (BEA-TT) following significant incidents on French ropeway systems (wind management rules for gauges, logging of operating parameters such as the triggering of station or line safety devices, assessment of dynamic effects on new or modified bicable systems).

Similarly, the new versions of the guides further improve convergence with the latest versions of harmonised European standards, with, for example, the adaptation of line calculation rules or the elimination of old French rules that remained concerning the notion of a secure cable loop for the hauling cables of bi-cable reversible aerial ropeways.

With regard to civil engineering works, the introduction on 1 January 2020 of European justification rules (EN13107 and Eurocodes) highlighted the need to specify the requirements of European standards. The new version of the RM2 guide therefore introduces practical measures to ensure consistent application of European regulations, while capitalising on positive feedback from certain earlier French rules.

2.1- OPERATIONS MONITORING

Operational monitoring enables day-to-day activities to be closely monitored, performance to be assessed, any problems to be detected and corrective action to be taken to ensure safety throughout the year.

DRIVER OBSERVATION BY INSPECTION OFFICES



Driver observation is carried out by inspection offices on tram networks.

The aim is to carry out an inspection on a date unknown to the operator, in order to check that the driving rules established by the operator are being properly followed.

For half a day to a full day, the observers will act as "mystery passengers". They will take the tram anonymously, position themselves near the driver's cab, and note the practices of each driver, and in particular whether they follow the rules put in place by the operator.

This driver observation is in addition to the operator audit. It either confirms shortcomings raised during a previous audit, or provides input for a future audit, if the observations reveal a shortcoming on the part of the operator.

The North-West office (BNO) has developed a template of observation grids on Google Drive that can be used on a smartphone, facilitating both completion and end observation statistics.

A report is drawn up within two months of the driver observation inspection, and sent to the operator. They then have two months to respond to the negative points raised.

In 2023, BNO carried out three driving observation inspections, on the Angers, Lille and T8 networks in the Île-de-France Paris region.

2.2- INNOVATION

STRMTG encourages and supports the rise in innovation in transport systems, ensuring that safety is well integrated from the beginning of development.

FIRST FORUM OF THE FRENCH TRANSPORT INNOVATION AGENCY

Just over a year after its creation, the French transport innovation agency, (Agence de l'Innovation pour les Transports - AIT) held its first forum on 7 and 8 February 2023, at the Cité des Sciences et de l'Industrie in Paris. STRMTG was, of course, at the event.

The aim of the forum was to present and highlight the agency's current initiatives (e.g. its innovation support and acceleration programme) and future goals. The event was attended by all AIT and innovation stakeholders, including innovative companies, scientific partners, investors, local authorities, students, institutions and government services. The two days featured a wide range of workshops (with small-group role-playing exercises), round-table discussions, debates, discussions and meetings, as well as demonstrations. A wide range of topics were discussed, including the future of mobility, the French transport industry, hydrogen in transport, the 2024 Olympic and Paralympic Games, the role of transport service and infrastructure operators in innovation, local support for innovation, support for start-ups, urban planning, innovation provided by civil servants, and more. Daniel PFEIFFER, Director of STRMTG, spoke at the round table on "The commons: a new basis for innovation in mobility?" STRMTG also had a stand throughout the two days:



staff from the North-West office, the department for metros and rail systems, the automated public transport department, the quality-audit mission and the management team were able to meet and share ideas with numerous innovative companies.

Clément Beaune, Minister Delegate for Transport under the Minister of Ecological Transition and Territorial Cohesion visited the AIT forum on the second day. He was able to observe STRMTG's efforts to support innovation (autonomous shuttles, innovative rail systems, innovations in cableway and ropeway transport, etc.).

3- NEW PROJECTS

Once regulations, standards and procedures are known, it is then possible to design and build new transport systems or modify existing ones.

The transit authority will then take all the necessary steps to obtain permits for its transport system. STRMTG is responsible for the technical assessment of the files required by the regulations prior to commissioning.

3.1 NEW ROPEWAY PROJECTS

FIRST POMA 7 M/S GONDOLA LIFTS

A major trend in current ropeway projects in France is the construction of detachable gondola lifts operating at speeds of 7 m/s. This requires an exemption from the 6 m/s speed limit, and a special safety demonstration to justify this higher speed.

Interestingly, the other countries of the Alpine arc have far fewer projects of this type. Since 2020, five Doppelmayr and LEITNER 7 m/s gondola lifts have been put into service in France.

In 2023, POMA also built its first two detachable monicable gondola lifts designed for this maximum speed of 7 m/s. This led to special discussions involving STRMTG headquarters and relevant inspection offices:

- for the POMA gondola lift system, with solutions and technical justifications that sometimes differ from those of other manufacturers,
- on each system, to take account of its specific features: station layout, throughput, line calculation, braking capacity, dynamic behaviour, wind control, etc.

These discussions were held with the manufacturer, the operators and the approved prime contractors, some of whom had not yet managed an exemption application of this type.



System tests were carried out on each 7 m/s system, going beyond what is common practice on more conventional installations.

The Planchamp gondola lift in Valmorel, for example, has had an exemption for 7 m/s since December 2023, and the Pontillas gondola lift in Serre Chevalier should follow suit in 2024, with tests already carried out at this speed.

This 7 m/s trend seems to be continuing in France, where at least five gondola lifts are scheduled for 2024 at this speed.

THE CRÉMAILLÈRE EXPRESS GONDOLA LIFT LUCHON-SUPERBAGNÈRES SKI RESORT (31)

Noting the saturation and pathologies of the 4-seater Liaison gondola lift dating from 1993, the Luchon-Superbagnères ski resort acquired a new urban elevator (POMA 10-seater detachable gondola lift) called Crémaillère Express in 2023.

The name refers to the cog railway (crémaillère in French) that launched the ski resort (1912-1965). It should be noted that Luchon, together with Chamonix, was responsible for the rise of downhill skiing in France.



Since 1993, when the first gondola lift was built, this route has held the French record for vertical ascent, with 1200m for a distance of 2600m (600m-1800m).

POMA has built an ultra-modern system using the largest and most robust components in the range (60mm cable, Diamond EVO2 glass gondolas, 1500kW direct drive motor, 6m/s speed, etc.). The new four-season gondola lift is also unique in terms of landscape integration, in line with the requirements of the Architecte des Bâtiments de France.



THE CALMAZEILLE COMBINED LIFT (MONOCABLE DETACHABLE CHAIRLIFT AND GONDOLA SYSTEM) AT FORMIGUÈRES SKI RESORT (66)

- ▶ Manufacturer: MND
- ▶ Length: 1391 m
- ▶ Min/max altitude: 1751 m / 2096 m
- ▶ Vertical rise: 347 m
- ▶ Number of towers: 13
- ▶ Speed: 6 m/s
- ▶ Transit time: 3:50 mins
- ▶ 48 vehicles (12 gondolas and 36 chairs)
- ▶ Gondola capacity: 10 people
- ▶ Chair capacity: 6 people
- ▶ Throughput (provisional): 2025 p/hr (100% up and 35% down)

LES AIRELLES GONDOLA LIFT (DETACHABLE) AT FONT-ROMEU SKI RESORT (66)

- ▶ Manufacturer: LEITNER
- ▶ Length: 1761 m
- ▶ Min/max altitude: 1758 m / 1945 m
- ▶ Vertical rise: 187 m
- ▶ Number of towers: 11
- ▶ Speed: 6 m/s
- ▶ Transit time: 5 mins
- ▶ 40 vehicles
- ▶ Gondola capacity: 10 people
- ▶ Throughput: 2000 p/h (100% up/down)
- ▶ Operation: winter / summer

GRANDS MONTETS SERVICE ROPEWAY PROJECT

On Tuesday 11 September 2018, a symbol of the history of lift systems and mountain conquest went up in smoke in Chamonix. The Grands Montets ropeway, comprising 2 sections built between 1961 and 1963, linked Argentière to the Aiguille des Grands Montets, covering a vertical rise of more than 2,000 metres. The fire in the intermediate station, located on the Lognan plateau at an altitude of 1,970 m, put a definitive end to the operation of this historic system.

To restore access to the highest point of the iconic Grands Montets site, Compagnie du Mont Blanc is planning to build a new ropeway system, scheduled for completion in 2026. Like its predecessor, it will consist of 2 sections, the first providing access to the Logan plateau from Argentière, and the second completing the ascent to the Grands Montets needle. Architect Renzo Piano (Tjibaou cultural centre,

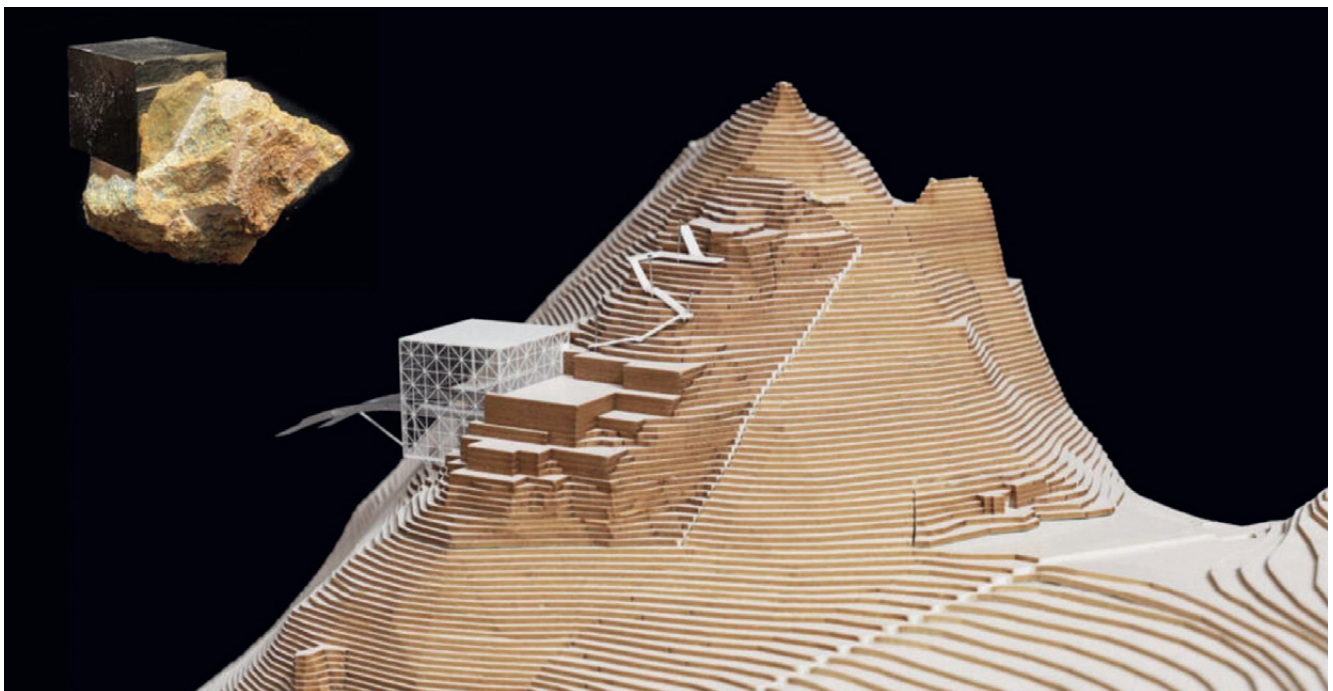
Nouméa, Cité Internationale de Lyon, Zentrum Paul Klee in Bern, etc.) is in charge of building the future bottom and top stations.

Files examined by the BHS as part of the project to reconstruction project:

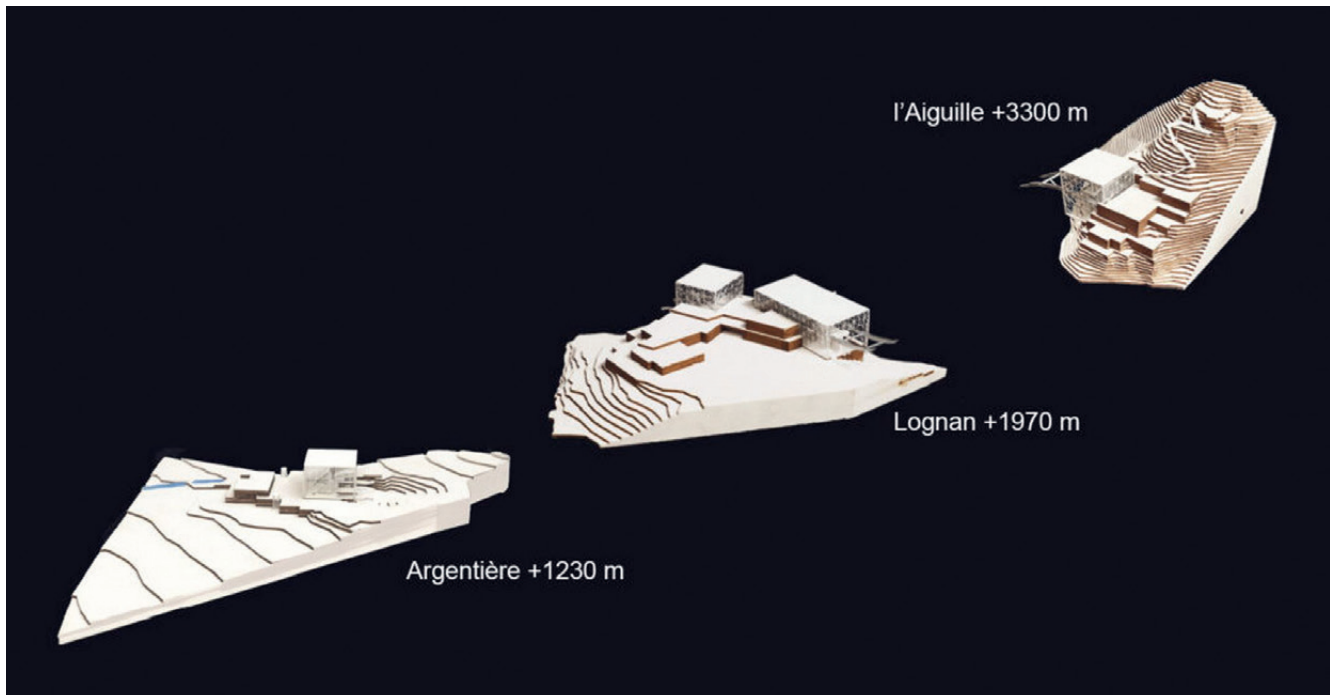
- ▶ 2022: DAET for section 1
- ▶ 2022: DAET for section 2
- ▶ 2023: DAET modifying section 2
- ▶ 2023: DPS for the service cable car

This project will require the construction of two blondins, which will be used to transport materials to the site. A service aerial ropeway will also be installed, to provide access for workers to the site of the future needle top station. This is a two-cable reversible aerial ropeway, with

Bottom station of the future ropeway system, at the foot of the Grands Montets Needle



The stations of the Grands Montets ropeway system reconstruction project



two carrying ropes and a looped hauling rope. Equipped with a single 8-seater gondola, the lift will enable construction personnel to reach the former Grands Montets top station in around 5 minutes, from the arrival point of the Herse chairlift. It will be dismantled when the project has been completed.

Since the end of 2023, STRMTG's Haute Savoie office has been examining the preliminary safety file for this service ropeway, a prerequisite for starting construction. The procedures applicable to this system differ from those usually applied to lift systems, which are governed by the French Tourism Code.

Permits for construction, and subsequently for operation, are covered by the "STPG" decree, and will be issued by the prefect (and not the mayor, as is usually the case). This specificity is due to the fact that the system will be operated solely for private use, to transport construction company personnel, and will be inaccessible to the public.

In addition to this administrative peculiarity, this ropeway also has a number of technical features. It is designed without a support assembly brake, a device designed to stop the vehicle in the event of a hauling rope failure, which will entail specific requirements for the design and monitoring of the gondola drive chain. In addition, the ropeway's environment (high mountains) presents constraints that make it difficult to use the usual evacuation solutions in the event of a technical failure, so the system will be operated on an "integrated recovery" principle, meaning that passengers will be able to be brought back to the station whatever happens. This will require special design and solutions to deal with different failure scenarios.

The service ropeway will be built in spring 2024, with the aim of it being operational before summer.

3.1 GUIDED TRANSPORT

EXTENSION OF STRASBOURG'S TRAM NETWORK

The last extension to Strasbourg's tram network went into service in August 2020, extending Line F to the west of the Eurometropole as far as Koenigshoffen. Since then, the Strasbourg Eurometropole has been working on two major projects to improve the network.

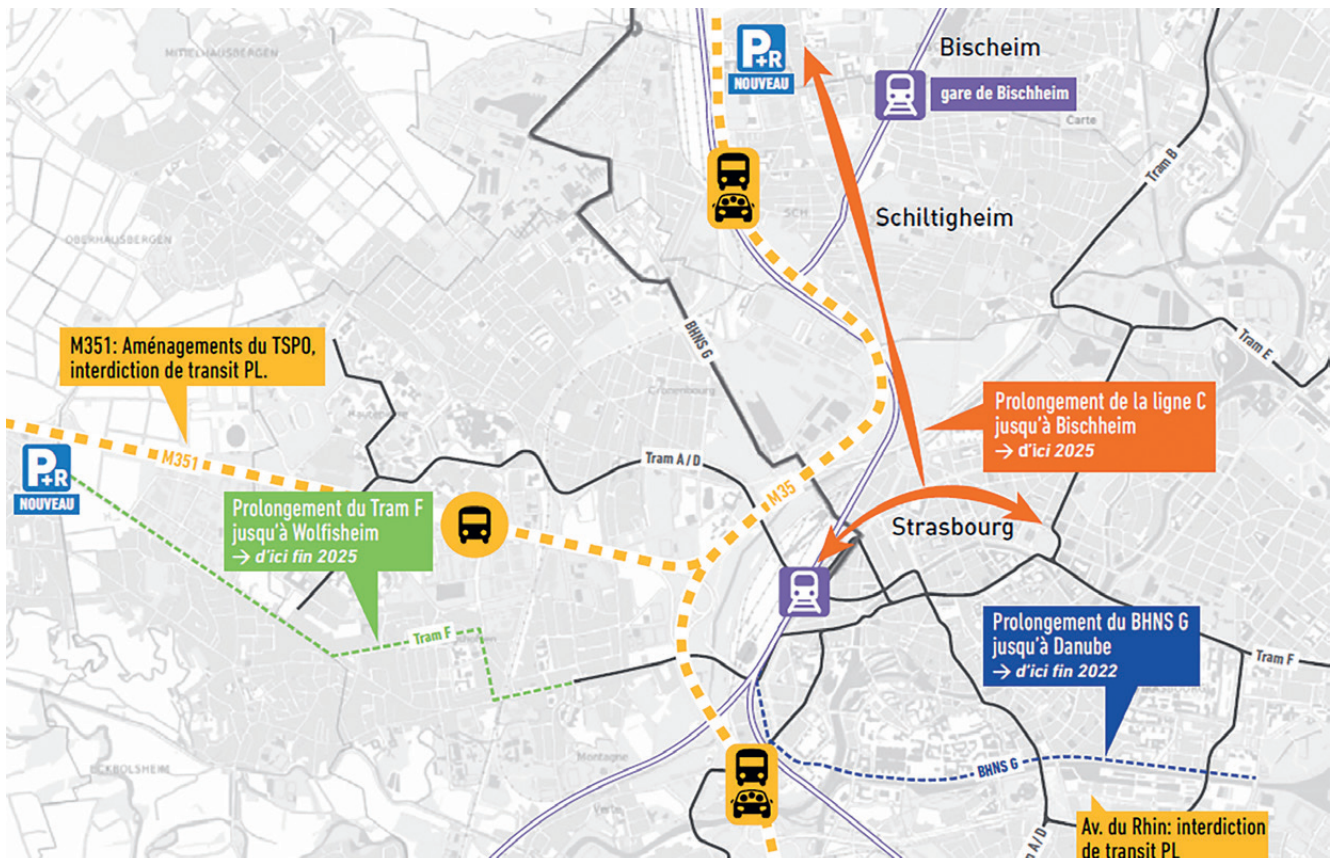
The first involves continuing the extension of Line F, taking its route as far as Wolfisheim, via the "Poteries" station shared with Line D. This extension will expand the network by 4 km, with 8 new stations.

It will include mixed traffic sections, a first for the network. The preliminary safety file was approved by the Bas-Rhin Prefect on 12 October 2023 following the opinion issued by STRMTG. Commissioning is scheduled for 2025.

The second project is the construction of a new 5 km line to serve the communities of Schiltigheim and Bischheim to the north of the Eurometropole. This project will also include a bypass of the Place de l'Homme de Fer railway junction to relieve tram traffic congestion in the city centre.

The project includes 9 new stations and the construction of 3 new rail triangles, two of which will link up with existing lines.

The BasRhin Prefect issued an opinion of the definition safety file on 12 December 2023 following the opinion issued by STRMTG. Submission of the Preliminary Safety File is scheduled for 2024, with completion scheduled for 2027.



THE FIRST TOWERS HAVE BEEN INSTALLED FOR CABLE 1 IN THE ÎLE-DE-FRANCE REGION

In February 2023, work began on Île-de-France's very first ropeway system, which will link Créteil to Villeneuve-Saint-Georges. This line gives an area with little public transport access to the last station on Line 8 of the Paris metro in 18-minutes, serving 3 intermediate stations in the communities of Limeil-Brévannes and Valenton.



Île-de-France Mobilités chose to install a monocable detachable gondola lift, a type of ropeway typically found at ski resorts and some large South American cities. It will be designed and installed by Austrian manufacturer Doppelmayr. The system features integrated recovery to facilitate the rapid evacuation of passengers on the line in the event of an incident.

The technical assessment of the preliminary safety file, carried out by STRMTG's North-West office, with the support of the Department for cableway installations, provided a precise analysis of how the fire risk is covered. As the line travels over and close to buildings and roads with a variety of uses, justifications and measures to cover this risk had to be applied on a case-by-case basis to ensure a sufficient level of safety for the line's users.

Finally, the assessment of this project provided an opportunity to examine accessibility for people with reduced mobility in greater depth, thanks to frequent discussions between Île-de-France mobilités, the prime contractor, STRMTG, the French ministerial delegation for accessibility, the manufacturer and relevant associations during the design phase.

The first Cable 1 towers were installed in mid-October 2023. The project is scheduled to be commissioned in summer 2025.

Cable 1 in figures

- ▶ 4.5km long
- ▶ 3 cable loops
- ▶ 33 "bird's wing" towers
- ▶ 105 CWA Omega V gondola cabins with 10 adjustable seats
- ▶ 5 ground-level stations

T10 TRAM, A NEW LINE LINKING ANTONY (RER B) AND CLAMART



2023 saw the opening of tram Line 10 between Croix Berny (RER B) station in Antony and Jardin Parisien in Clamart. The line is operated by RATP Cap Bièvre and began operating on 6 July 2022.

The 6.7 km-long project has 13 stations and links three major networks (RER B, T6, Trans-Val-de-Marne). It serves four municipalities in the Hauts-de-Seine département: Clamart, Le Plessis-Robinson, Châtenay-Malabry and Antony. Eventually, the line will be extended to the Clamart station of the Transilien N line and the future Line 15 of the Grand Paris Express.

It connects the two terminus stations in approximately 20 minutes, with trams every 6 minutes at peak times. Nearly 25,200 passengers are expected to use the line daily. The rolling stock is tram-trains from the Alstom CITADIS 405 range. They are 44 metres long and 2.65 metres wide. The line will operate with 13 trains. STRMTG's North-West office assessed the safety files with the support of the department for tramways and rolling stock, and has been working with this new Paris region operator since July 2023.

Administrative steps related to project safety:

- ▶ 22 October 2015: Paris and Île-de-France Prefecture (PRIF) opinion of the updated DDS¹
- ▶ 21 December 2017: PRIF approval of the initial DPS², authorising the start of work
- ▶ 8 February 2019: PRIF approval of the amended DPS concerning the train detection system
- ▶ 2 August 2021: approval of the amended DPS concerning the creation of the Jardin-Parisien terminus station in Clamart
- ▶ 27 July 2022: PRIF approval of the DAE³, authorising the start of dynamic testing
- ▶ 22 July 2023: PRIF approval of the DS⁴
- ▶ 24 June 2023: start of commercial operation

¹ DDS: Definition safety file

² DPS: Preliminary safety file

³ DAE: Test authorisation safety file

⁴ DS: Safety file

THE T12 TRAM-TRAIN COMPLETES THE ÎLE-DE-FRANCE NETWORK



In early December 2023, the tram-train T12 linking Massy to Evry-Courcouronnes added a new line to the Paris region network.

The 16 stations serve 12 municipalities in the Essonne region over a 20.4 km route, in the following order: Massy, Palaiseau, Champlan, Longjumeau, Chilly-Mazarin, Epinay-sur-Orge, Savigny-sur-Orge, Morsang-sur-Orge, Viry-Chatillon, Grigny, Ris-Orangis, Evry-Courcouronnes. Journey time between the two terminus stations is estimated at 40 mins, with trains running every 10 min during peak times. The aim is to reach 3,000 passengers per hour in each direction.

This tram-train runs both on national rail network tracks (Massy to Epinay-sur-Orge), on RER C segments, and on tram tracks in urban areas (Epinay-sur-Orge to Evry-Courcouronnes). The 10.1 km of rail track will be shared with freight and passenger trains, making it a mixed system within the meaning of Decree no. 2017-440 (STPG Decree), like the Thur Valley tram-train in Mulhouse. Operation of the line requires 25 Alstom Dualis tram-train

units, each with a capacity of 250 seats. The trains are 42m long, with a 2.65m outside width, and will run in double multiple units, i.e. double trains.

Île-de-France Mobilités (IDFM), the contracting authority, has entrusted operation of the line to SNCF Voyageurs, the incumbent operator. IDFM plans to launch a call for tenders for T12-T13 work packages in 2024.

STRMTG's North-West office assessed the safety files with the support of the department for tramways and rolling stock, and has been working with this new Paris region operator since December 2023.

Administrative steps related to the safety of the project:

- ▶ 22 August 2013: declaration of public utility
- ▶ 1 October 2013: Paris and Île-de-France Prefecture (PRIF) opinion of the DDS¹
- ▶ 7 December 2015: PRIF approval of the initial DPS², authorising the start of work
- ▶ 13 March 2018: PRIF approval of the amended DPS "Estacade Lot 2"
- ▶ 31 October 2019: PRIF opinion of the supplemental DPS for the Delouvrier intersection
- ▶ 3 August 2022: PRIF opinion of the supplementary DPS for Dualis rolling stock
- ▶ 11 April 2023: PRIF opinion of DAE³, authorising the start of dynamic testing on public roadways
- ▶ 6 December 2023: PRIF opinion of the updated DS⁴
- ▶ 9 December 2023: start of commercial operation

¹ DDS: Definition safety file

² DPS: Preliminary safety file

³ DAE: Test authorisation safety file

⁴ DS: Safety file

4- STUDIES AND RESEARCH

STRMTG conducts important studies and research work, essential to maintaining and building knowledge of systems and the skills of its employees. STRMTG therefore oversees a number of studies each year. Some are conducted with partners from the scientific and technical network of the Ministry of Ecological Transition and Territorial Cohesion, and others are conducted by consulting firms.

STUDY OF SIGHT OBSTRUCTIONS DURING DYNAMIC CONTROL OF TRAMS

In 2023, STRMTG completed the study on sight obstructions during dynamic control of trams, conducted since 2021 in collaboration with 3 players:

- ▶ UPHF/CNRS transport research laboratory;
- ▶ FactHum France, which specialises in human factors analysis;
- ▶ OKTAL, which specialises in railway simulation.

The aim of the study was twofold: firstly, to determine the impact of the alignment of several objects (posts, barriers, trees, etc.) on the visibility conditions of a tram driver approaching an intersection. With speed, an alignment of objects (even narrow ones) can create a sight obstruction. Another aim was to identify the criteria that influence visibility impairment.

To achieve this, the study combined:

- ▶ A simulation of tram routes comprising several intersections with aligned objects ahead of them. Twenty combinations of object alignments were tested (with different diameters, different spacings between them and different distances from the structure gauge);
- ▶ A test on 15 drivers;
- ▶ Analysis of quantitative data on driver actions (braking, bell, speed, etc.);
- ▶ A qualitative analysis conducted through immediate interviews.



The particularity of this study lies in the use of eye tracking glasses to track the vision of different drivers and detect any impediments to visibility.

The study concluded that 5 of the 20 object alignments tested can be considered as sight obstructions ahead of an intersection. It also identified different combinations of criteria that constitute visibility impairments.

This data will be used to update STRMTG/Cerema IUTCS factsheet no. 4 "Trams and Visibility: Methods and Tools".

“BATTERIES AND FIRE RISKS” STUDY INERIS

Some cable transport systems (aerial ropeways, funicular railways) and guided transport systems (metros, trams) are increasingly incorporating batteries to store electrical power:

- ▶ batteries in stations/lift system stations to maintain the functionality of safety systems in the event of a loss of power;
- ▶ batteries installed in vehicles to power auxiliary safety or comfort equipment (e.g. lighting, ventilation, intercom systems, evacuation handles, etc.):
 - for use as a permanent power supply for lift systems, with recharging in stations as a general rule;
 - for use as an emergency power supply in the event of traction power failure for guided transport systems;
- ▶ on-board traction batteries (tramways), although outside the scope of this study.

As part of fire prevention and fire-fighting, an integral part of STRMTG’s inspection responsibilities, it has been noted that the requirements regarding the type of batteries and their integration into installations need to be clarified.

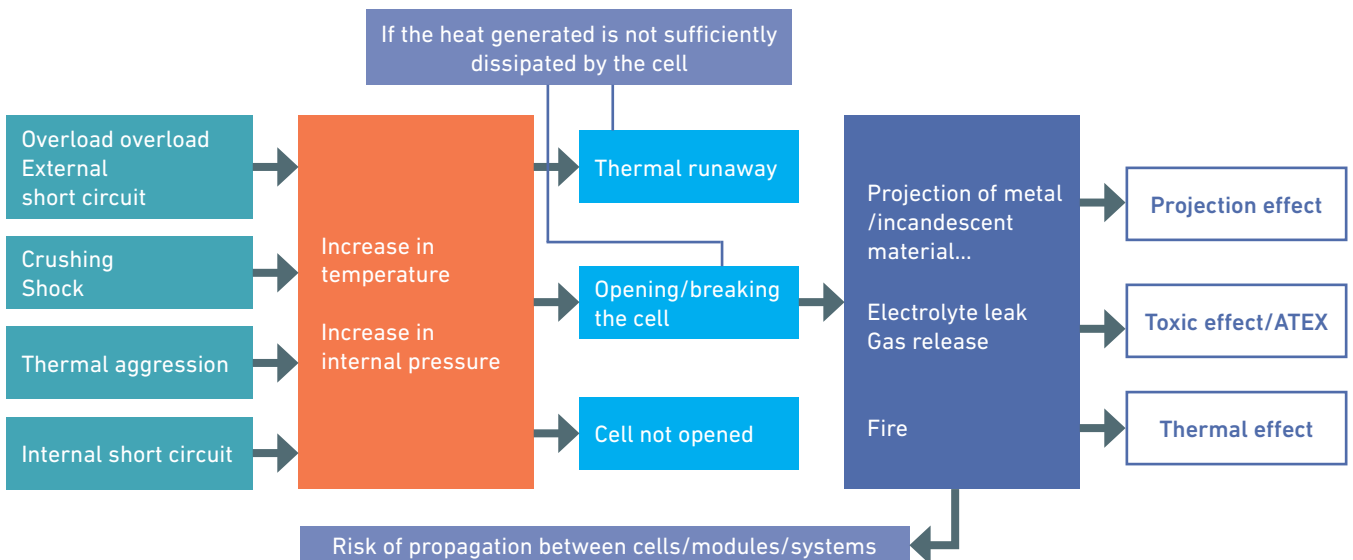
These clarifications vary depending on the system, and aim to better define the following points:

- ▶ measures to be taken to minimise the risk of these batteries causing a fire;
- ▶ measures to be taken to minimise the impacts of a battery fire (particularly the emission of toxic fumes for passengers, risk of explosion, etc.).

For this purpose, STRMTG called on the services of INERIS (Institut national de l’environnement industriel et des risques), an external service provider with expertise in the field of batteries and the fire risks associated with this type of equipment.

The study started in 2022, and also involved a number of external partners (manufacturers, integrators, etc.). This took the form of meetings with INERIS to discuss their overall approach to the topic of batteries. The aim was to improve our approach by gaining from their perspectives. It should be completed in 2024, with the main results posted on STRMTG website.

MAPPING OF BATTERY FAILURES AND THEIR IMPACTS (EXCERPT FROM THE CURRENT STUDY)



PLATFORM-TRAIN-TRACK INTERFACE STUDY

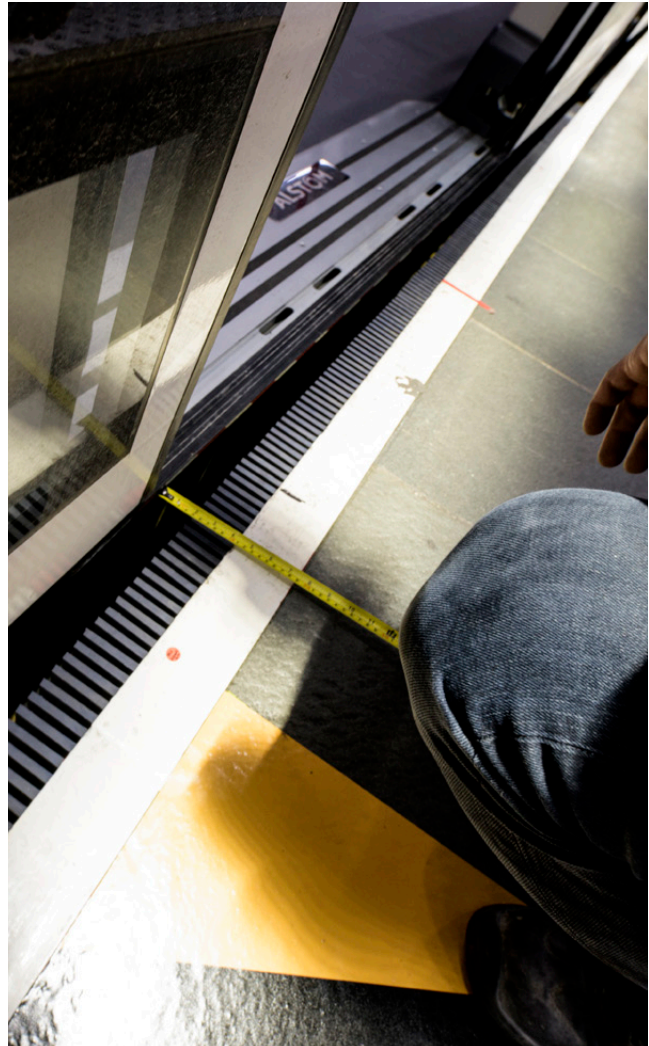
For metro and RER systems, 60% of safety events involve the interface between the platform, train and track. Over the last 5 years, there have been over 900 injuries and 5 deaths linked to events at the platform-train-track interface. This interface is therefore an important area to consider in order to improve the level of safety of these systems in this area.

In 2018, STRMTG's Department for Metros and Rail Systems initiated a study to better understand the causes and precursors of individual incidents and accidents taking place at the platform-train-track interfaces in Metro and RER stations (excluding RFN) apart from suicide attempts. The aim of this study was also to examine the effectiveness of the preventive measures put in place to avoid these incidents, and propose solutions for improving safety at the platform-train-track interface.

The study was divided into two parts.

The first part deals with accident analysis and feedback, and compares several accident analysis methods. This accident analysis was based on exchanges with the various operators of France's Metro/RER networks. The study concluded that the reliability and accessibility of the information needed to understand and anticipate user behaviour was a major issue. It highlighted a number of avenues to be explored in order to improve information sharing and feedback for the various players in the industry.

The second part involved the study of a method for detecting individuals in the gaps, with an analysis of existing preventive solutions. The work carried out involved studying the feasibility of an ultra-wideband radar solution capable of detecting falling objects with an accuracy of within a few centimetres and a range of several metres. The study also confirmed, through an interference study, that this radar technology can coexist with the radio systems in Metro and RER systems.



This solution offers the advantage of accurate object detection and a low cost, but further studies in a real metro tunnel environment are required before it can be implemented. Studies therefore need to be furthered so that the radar detection system can be deployed on the metro/RER networks.

STUDY ON MASS EVACUATION OF AUTOMATED METROS

In 2019, STRMTG launched a study to help prevent situations that could lead to mass evacuations on fully automated metro lines. The study particularly focuses on the risks associated with passenger self-evacuation, highlighting the risk of panic.

The results of the study have been summarised in best practice information sheets, divided into three distinct sections:

1) PREVENTION:

This category aims to limit the occurrence of situations generating mass evacuations on fully automated metro lines. Recommended measures include improving the robustness and functionality of the operating system, technological integration by the operator, and adjustments to human organisation and procedures.

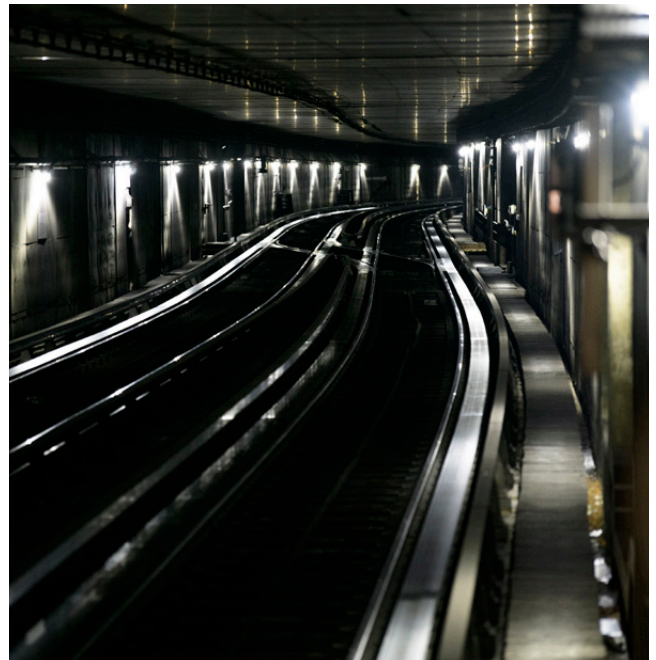
2) MANAGEMENT:

Focused on improving how operators organise evacuation management, this category covers aspects such as decision-making, evacuation times, communication with passengers, managing people with reduced mobility, supervision of passengers during evacuation, as well as behaviour management to prevent crowd movements and the risk of panic.

3) CORRECTION:

This section seeks to limit the impact of mass evacuations, recommending a return to normal or slightly degraded operations.

The study is based on feedback from passenger evacuation events that occurred in tunnels in France and Europe between 2014 and 2020. It takes into account both fully automated lines and conventional (driver-operated) metro and RER lines, and draws lessons that can be applied to both.



This analysis encompasses evacuations of different scales, from mass situations to those involving a small number of people, in order to understand the differences and identify relevant lessons. The study evaluates situations that could lead to evacuation, always with the aim of returning trains to the station. It also explores scenarios not yet encountered, but considered possible on existing and future lines, based on project safety analyses.

By the end of the study, 12 best practice sheets had been drawn up for preventing evacuation events, 5 for handling and managing evacuations, and 2 for correcting evacuation events. The final study report was completed in January 2024. The next steps will include converting the report into a list of best practices, for public distribution on STRMTG website, taking into account all types of metros and RER.

5 - PATHOLOGIES AND ACCIDENTS

Accidents and incidents can occur throughout the life of a system. STRMTG monitors and analyses these events and draws lessons from them to improve safety.

PARTAGE IS ON LINE!



PARTAGE Parc et Accidentologie des Réseaux de TrAnsports Guidés

With 124 lines, France's urban guided transport network is operated by 37 tram/tram-train operators and 8 metro/RER operators.

Operators are required to report all events occurring on their network to STRMTG every year, i.e. some 9,000 events per year. This is in keeping with the regulatory context of Decree no. 2010-1580 of 17 December 2010 on the Technical Service in Charge of Safety for Ropeways and Guided Transport (STRMTG).

Initiated in 2003, discussions with the industry have helped define the criteria for classifying events, and the information to be entered, in order to create harmonised national databases. STRMTG uses these databases to consolidate feedback and improve the safety of guided transport.

These databases were initially developed and made available to operators in Microsoft Access format. However, operators have reported technical or practical problems related to their use.

STRMTG has therefore decided to develop a new tool called PARTAGE to:

- ▶ make it easier for users to exchange and share information;
- ▶ improve data security;
- ▶ simplify data entry and updating;

STRMTG, DNUM (the digital department of the French Ministry of the Ecological Transition) and several operators worked together on this project, using the Agile Scrum method. PARTAGE began being developed in May 2021. On 5 December 2023, the new PARTAGE database went live. It now enables operators to enter/view/search/edit events on their networks and associated annual production data directly from a web browser. For trams, line coding data is also available.

In 2024, the application will be further developed to give operators access to standard graphs based on the data they have entered.

CRISIS MANAGEMENT: MEASURES IN PLACE AT STRMTG

Since 2011, at the joint request of the DGITM and the SHFDS (department of the senior defence and security official), STRMTG has been contributing to the ministerial crisis management response in the event of an event affecting transport systems under the jurisdiction of the Ministry of the Ecological Transition (MTE).

These measures are meant to facilitate the role of the ministerial operational watch and alert centre (CMVOA) in efficiently relaying alerts within the MTE. They also make it possible to prepare the deployment of (inter)ministerial crisis management teams and the logistics required.

Over the years, in order to contribute to the early warning system, STRMTG has adapted and refined the organisation of its head office and territorial units, as well as its partnership arrangements with the relevant professional contacts - transport network operators, Direction départementale des Territoires (M), etc., and has:

- ▶ formally defined the types of events to be handled for each type of transport system;
- ▶ prepared specific action guide documents setting out the role of each stakeholder;
- ▶ defined on-call duty¹ for events outside regular working hours and days.

For the sake of consistency, STRMTG used this same approach to define the conditions for informing the French Land Transport Accident Investigation Bureau (BEA-TT) in the event of an incident. This framework has also enabled the rapid mobilisation of STRMTG staff, even during non-working hours, in situations that are fortunately exceptional, in order to collect as much data as possible on a serious event affecting a system.

A number of general observations can be made from the events managed over the past thirteen years:

- ▶ the majority of alerts concern minor accidents, with a



logically higher frequency during the Christmas and winter school holidays, due to the peak use of ski lifts during these periods;

- ▶ reported serious accidents, numbering a few dozen a year, involve situations resulting in hospitalisation lasting more than 24 hours or fractures. The number of these is clearly overestimated due to the difficulty of confirming this characterisation at the time of the alert;
- ▶ high-profile events tend to be the result of either technical malfunctions (installations) or organisational failures (operating errors).

¹ Regulatory framework enabling an employee, who is not permanently at the disposal of their employer, to work for the administration for a limited period of time during non-working hours.

RECOMMENDATIONS FOR DEALING WITH TECHNICAL PROBLEMS DETECTED ON SYSTEMS



In 2023, like every year, STRMTG was informed of several technical incidents that occurred on French aerial ropeways. Some of these incidents are caused by safety component malfunctions, or highlight defects in these components or in civil engineering structures.

STRMTG analyses these incidents, carrying out field investigations in some cases. The aim of these analyses and investigations is to identify the causes of the events and assess the associated safety issues. Depending on the circumstances, appropriate measures need to be taken to prevent the event from occurring again on the system in question, or on other systems in France.

STRMTG always involves the professionals concerned by these events (operators, manufacturers) in these analyses, and consults with them accordingly to define the appropriate action plans. The aim is to define the measures and timetables best suited to the safety issues identified and the constraints that may be encountered by the professionals responsible for implementing them (technical and economic feasibility, etc.).

These measures, formalised in the form of documents

called recommendations, can take various forms: visual inspection campaigns carried out by the operator, inspection campaigns after dismantling by independent inspectors, replacement of equipment, etc.

In 2023, STRMTG published 6 recommendations, calling for inspections to be carried out, components to be replaced or safety devices to be installed on certain components. Numerous other analyses have been carried out, without formal recommendations being made. When these analyses are considered sufficiently conclusive, they are entered in the CAIRN database.

Finally, at the request of operators and their representative association (Domaines Skiabiles de France), STRMTG set up a permanent discussion group in 2023, with the participation of manufacturers, to improve the reporting and management of feedback. This group, called GT REX RM, is led by STRMTG and meets two or three times a year.



6- DISCUSSIONS AND TRAINING

STRMTG strives to build its own skills and those of other stakeholders through training initiatives and its ties with organisations in the Scientific and Technical Network (RST). It involves the industry in drawing up rules to ensure that safety issues are properly understood.

TRAM DISCUSSION DAY 2023



The 7th edition of the tram discussion day took place in Lyon on 27 June 2023. STRMTG is thrilled to see the enthusiasm surrounding this day, which attracts more and more participants each year.

The 230 participants included representatives of a large number of players, such as transit authorities, operators, contractors, manufacturers, approved qualified organisations (AQO), road managers, researchers, experts, etc.

The day was a unique opportunity for the industry to share views on tram safety, through presentations, in-depth discussions and less formal exchanges.

A variety of topics were addressed:

► accidentology at the national level and the specific case of Angers (personal mobility devices, roundabouts);

- urban integration: regulatory changes, new IUTCS fact-sheets, progress on the evaluation of M12 and R19 in Lyon, results of the study on sight obstructions during dynamic control and progress on the study of pedestrian crossings;
- rolling stock: progress on STRMTG "TOR Methodology" guide, feedback on train repairs, life extension, application of NF EN 45545 and innovative installation of flashing lights in Bordeaux;
- professional qualification process for tram drivers;
- general regulatory changes.

STRMTG looks forward to the next edition in 2025.

“TRAM POWER” TECHNICAL DAY

In 2023, STRMTG organised a day on the topic of “power for tram systems”. The purpose of the day was to meet with professionals in the sector to share feedback on “tram power” topics.

The event was attended by contracting authorities support teams, prime contractors, qualified organisations in the energy field, qualified organisations involved in overall systems, STRMTG’s department for tramways and rolling stock and STRMTG’s ins-

pection offices (25 people in attendance).

The following topics were covered: Special protection measures in the case of a lowered overhead contact line - gauge requirements, SIL of emergency traction power cut-off, focus on STRMTG recommendation on insulating loops, overhead contact line safety coefficient, feedback on energy maintenance plans, exchanges on earthing and negative traction measures, protection height on engineering works.

All participants indicated that they would like to see this type of event repeated on a regular basis (annual / biannual), depending on current issues.

TRAINING ON ENGINEERING STRUCTURES

STRMTG organised a two-and-a-half-day training seminar on railway engineering structures, designed for the department’s own staff but also open to EPSF (French public railway safety authority) colleagues. The seminar, led by an expert who spent his career at SNCF, took place in Cahors, with field visits in the surrounding area. It was mainly aimed at tourist and heritage railway and rail bike business managers, and is part of the revision of corresponding technical standards.

After an initial theoretical session in the classroom, a field visit was organised to illustrate and cover different examples. Participating employees visited several types of structures found on tourist and heritage railway systems, which tend to be older, such

as steel bridges, masonry bridges, concrete structures, tunnels and retaining walls.

The following topics were covered:

- ▶ the materials used for construction,
- ▶ reading the geological environment (theory and in the field),
- ▶ the various ways to inspect structures,
- ▶ the main pathologies, by type of structure, and associated risks.

Although the inspection department’s staff do not directly carry out inspections of structures on systems falling within their area of responsibility, this training seminar does provide them with a cultural base and knowledge on the particular issue of engineering structures.



The aim is to improve the relevance of inspection reports included in safety files or safety assessments, and of the organisational solutions set up to monitor and repair systems, whether scheduled or carried out by network operators or managers.

REGULATORY TRAINING FOR POMA EMPLOYEES

At the request of POMA, STRMTG provided 3 training seminars for the manufacturer's employees on "cableway installation" regulations. The programme was quite broad, covering European and French regulations as well as standardisation. All of STRMTG's teams contributed, with the participation of

- ▶ **Lucie ROUX**, Deputy Director, on management and aspects surrounding notified bodies;
- ▶ **Christophe SION**, Deputy Director, for market surveillance and standardisation;

- ▶ **Ludovic BRUN**, in charge of legal affairs for French regulations ;
- ▶ **Anatole ARMADA**, head of the Haute-Savoie inspection office, on the assessment of files.

The participants had a range of backgrounds, with people in both sales and technical positions. The seminars gave rise to rich, in-depth discussions. Feedback shows that the seminars were well received.

For STRMTG, this provided the opportunity to clarify its interpretation of certain points in the regulatory texts, and to present more details on its expectations. This should help make future exchanges more straightforward.

STRMTG SUPPORTS SKI SCHOOLS RESPONSIBLE FOR SKI-TOWS AND MOUNTAIN RESORT TRAVELATORS



STRMTG plays an active role in informing and supporting ski school managers who operate mountain resort travelators and ski-tows. Since 2019, ski schools concerned have been required to implement a safety management system, the guidelines of which are subject to approval by the prefecture. STRMTG therefore took part in the

annual meeting of the facility directors of the sector's two main trade unions:

- ▶ the Syndicat international des moniteurs de ski (SIMS), on 22 September 2023 in Albertville.
- ▶ Syndicat national des moniteurs du ski français (SNMSF), on 12 October 2023 in Dijon;

STRMTG also took part in a training seminar for new ESF managers at SNMSF headquarters in Meylan.

Cooperation with these organisations is key to promoting the objectives of the safety management system, and

contributing to the safety of these facilities. The discussions also provided an opportunity to reiterate and clarify the ban on "devices that cause a distraction" set out in regulations (Order of 20 February 2023 on the restricted use of mobile devices by certain staff of public guided transport systems and lift systems governed by the French Tourism Code).

RAIL BIKE CONFERENCE 12-13 OCTOBER 2023

STRMTG attended the Vélorail de France 2023 annual meeting, held this year in Dieuze, Moselle, on 12 and 13 October.

Like every year, this is an opportunity for STRMTG and operators to meet and discuss various topics such as accidentology, statistics and rolling stock developments.

The current revision of the standards for the construction and operation of rail bikes was also discussed at length, as was the forthcoming inclusion of rail bikes in the STPG decree.

At the start of the meeting, all operators had the opportunity to share events and issues encountered during the 2023 operating season.

Issues such as fire safety and what to do in case of bad weather were also discussed.

STRMTG staff were represented by the DMF (Department for Metros and Rail Systems), BNO (North-West office), BSE (South-East office) and BNE (North-East office). Informal moments during the day also provided an opportunity for operators and sales representatives to discuss a variety of

topics, including operating plans for the coming year, and future commissioning plans.

These exchanges between operators and the inspection department were appreciated by both sides, and help us understand the challenges facing facilities and the accidentology associated with these systems.

UNETO CONGRESS



STRMTG attended the UNECTO 2023 congress, held this year in Talmont-Saint-Hilaire, in western France, on 9 and 10 November.

As in previous years, STRMTG (DMF, BNO and BSO) had a stand to share ideas and talk with the many operators who attended the 2-day event.

STRMTG also took part in a panel discussion with UNECTO and BEATT on safety approaches and accident/incident handling, and held a conference session presenting feedback from the past year (accidentology and statistics), current recommendations, and regulatory and technical news (current updates to the STPG decree, technical guidelines for tourist and heritage railways and rail bikes).

STRMTG's main focus for the UNECTO congress was the need to share information with operators on major events, but also to identify precursors and near mishaps.

STRMTG would like to express its sincere thanks to UNECTO for holding this event and placing a strong focus on system safety issues.

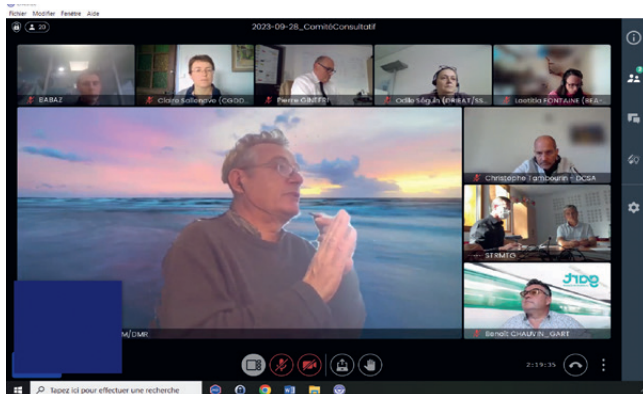


7- ORGANISATION AND MANAGEMENT

STRMTG's organisation is based on a high-performance ISO 9001-certified quality management system. It is also based on a multi-year service project whose priorities are approved by DGITM.

FIRST ADVISORY COMMITTEE WITH A REPRESENTATIVE PANEL OF STRMTG PARTNERS

On 28 September 2023, STRMTG organised its first advisory committee meeting with DGITM. This meeting took place exclusively remotely, and brought together STRMTG management, DGITM and a representative panel of STRMTG's professional partners.



The purpose of the meeting was to gauge the views of STRMTG stakeholders on its strategy and operations. This was an opportunity to:

- ▶ reiterate STRMTG's main responsibilities
- ▶ present the 2022-2025 service project
- ▶ present the main areas of work and related actions
- ▶ review strategic indicators

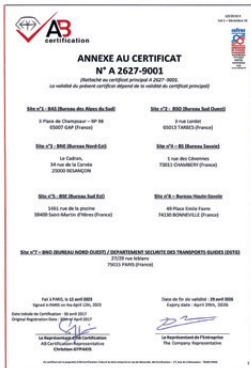
12 professional partners took part in the meeting:

Functional authorities	SIP TG representative	DRIEAT
Beneficiaries	SIP RM representative	DDT Savoie
	Operator representatives	DSF UTP
	Transit authorities	GART
	Manufacturers	International Association of Ropeway Manufacturers (IARM)
	Approved qualified organisations (AQO)	BV Certifier
	Lift system prime contractors (MOE)	DCSA
	Other beneficiaries	BEA-TT
Partners	Scientific and technical partners	CGDD/SRI ANSSI

Overall, all the participants seemed satisfied with STRMTG's transparency during the meeting. They thanked the service for the discussions and support. This also gave them the opportunity to point out their difficulties and constraints, and suggest areas for improvement.

The next meeting is scheduled for September 2024, but the content and form have yet to be determined.

RENEWAL OF STRMTG'S ISO 9001 CERTIFICATION



Since 28 June 2002, STRMTG has had an ISO 9001-certified quality management system. Initially limited to lift systems, certification has been progressively extended to all activities and sites (including the North-West Office/the DRIEAT's Guided Transport Safety Department) since 2011.

ISO 9001 certification is a guarantee of organisational quality and confirms STRMTG's long-term commitment to continuous improvement.

Thanks to our experience and following the audit carried out in March 2023, AB Certification (certification body) has renewed the certification of our quality management system until 2026.

STRMTG'S NEW ENGLISH WEBSITE: ON THE PATH TO GLOBAL REACH

After several months' work, STRMTG's new English-language website has been up and running since September 2023. This update is an important step forward in our efforts to make our information more accessible to an international audience.

Key features of the new site:

- ▶ English interface for a better global reach.
- ▶ Redesigned site architecture for greater user friendliness.
- ▶ Detailed content on STRMTG's responsibilities, activities and latest news.
- ▶ Simplified access to key resources for industry professionals.

This achievement was made possible thanks to the hard work of STRMTG webmasters and site administrators. Their involvement has been instrumental in the design and roll-out of this new platform, in line with our accessibility and efficiency goals.

The aim behind redesigning the English version is to extend our reach and make it easier for our international partners to understand our responsibilities and activities. These changes reflect our ongoing commitment to modernise and adapt to meet the changing needs of our audience.

STRMTG invite its partners, colleagues and international users to explore STRMTG's new English-language website and discover key information about our transport and safety-related activities.



“STRMTG CULTURE” SEMINAR ON 8 JUNE 2023

After the Covid pandemic, Focus 2 (“STRMTG culture”) of the 2022-2025 strategic project identified the need to:

- ▶ bring back enjoyable opportunities for cohesion within the department;
- ▶ share common goals and values;
- ▶ cultivate team spirit while developing solidarity and mutual respect between staff members;
- ▶ cultivate the work and skills of our employees.

After an initial management seminar in 2022, which helped define the service’s values, STRMTG organised a seminar on 8 June 2023, which brought together around a hundred employees on the beautiful Saint-Jean de Chépy site in Tullins.



Employees were able to enjoy the great weather and magnificent setting to get to know each other better, talk and reaffirm the values that drive us all.



STRMTG has offices on nine sites across France so the day’s activities enabled everyone to get together in a fun atmosphere, with a programme based on several sessions to discover the department, share ideas and build on our values and best practices.

LOYALTY

- ▶ Ensuring good communication and respect for speech to encourage cohesion
- ▶ Respecting and supporting the positions taken by the department and the ministry

WELFARE

- ▶ Making living together a priority
- ▶ Strengthening collective solidarity

ROBUSTNESS

- ▶ Developing the adaptability of our expertise
- ▶ Having access to cutting-edge work tools
- ▶ Contribute to the life of the QMS

COMMITMENT

- ▶ Anticipating for greater efficiency
- ▶ Remaining open to change and innovation
- ▶ Prioritising to maintain a balanced lifestyle

The rich discussions and contributions made throughout the seminar strengthened the bonds between the service’s staff, particularly after the COVID pandemic when contact was more limited.

Employees therefore appreciated the opportunity to get together for the day.



8- INTERNATIONAL

STRMTG shares its expertise with various international bodies. It provides training, exchanges and assistance to foreign supervisory authorities outside France. Finally, it participates in international meetings in the field of transport safety.

RESCOR: SHARING BEST PRACTICES IN URBAN GUIDED TRANSPORT

STRMTG was pleased to organise the 2023 session of the European Network of Services in charge of the Oversight and Regulation of Urban Public Transport Safety (RESCOR) in Lyon in December 2023.

Since its creation in 2014, RESCOR has brought together several European counterparts involved in the supervision, accident monitoring and regulation of urban public guided transport. The meeting on 15 December 2023 was attended by around 15 representatives from Danish, Dutch, French, German, Irish, Serbian, Spanish and Swiss authorities. Participants from the UK, Portugal and Catalonia also took part in the meeting via videoconference.

During the meeting, RESCOR participants had the opportunity to discover or rediscover Lyon's urban guided public transport network thanks to a tour organised by Keolis Lyon, through the metro, tram, cog railway and funicular systems.

The second half-day was devoted to technical and regulatory topics. STRMTG Director expressed his gratitude to all participants and presented the service's activities. Discussions and presentations covered crucial points such as changes to the regulatory framework, the annual summary of events, current recommendations, and technical guides and standards.

Participants shared their experiences and practices in regulatory applications, assessment of commissioning and modification files, and event follow-up.



Now it is time to pass the torch to the next host countries, Germany in 2024 and Ireland in 2025. This promises to maintain the collaborative dynamic established during the successful edition of RESCOR in Lyon.

URBAN TRAM FORUM 2023

The 2023 edition of the Urban Tram Forum (UTF), the network of European experts created following the success of the COST TU1103 Action, was held in Lisbon, with the participation of the Carris and MTS networks. Around 15 participants met on 12 and 13 October to visit the two tram networks in Lisbon on either side of the Tagus, and to discuss a range of tram-related topics, including:

- ▶ Edinburgh tram extension project;
- ▶ lighting on tram platforms in France and the results of STRMTG study on sight obstructions during dynamic control;
- ▶ English and German safety management systems;
- ▶ issues related to cyclists, such as the test to close the rail gap on the German network;
- ▶ comparison with light rail transit (LRT) or bus rapid transit (BRT) systems.



DISCUSSIONS WITH THE FUTURE OPERATOR OF QUEBEC CITY'S TRAM SYSTEM

STRMTG welcomed a delegation from Quebec including two representatives from the future operator of the Quebec City tram (Réseau de transport de la capitale) and a representative from SYSTRA providing assistance in terms of operations in order to share information on safety assessment and monitoring practices.

The meeting took place on STRMTG premises, and provided an opportunity for rich, productive discussions. It was held over one day in two parts:

- ▶ a presentation by RTC on the future Quebec City tram project, the applicable legal and regulatory framework and the safety approach implemented;

- ▶ a joint presentation by the department for tramways and rolling stock and STRMTG's South-East inspection office of the administrative and regulatory context governing tram projects and their operation. STRMTG's organisation for examining safety files and inspecting tram systems in operation was also presented.

ITTAB IN HONG KONG AND VISIT TO CHINA



At the end of September 2023, STRMTG took part in the 71st edition of ITTAB (International Meeting of Technical Authorities for Cableways) in Hong Kong.

ITTAB is an international meeting of authorities and technical control bodies responsible for ensuring the safety of cableway installations.

Its aim is to exchange information and feedback on these transport systems.

In particular, ITTAB focuses on:

- (1) analysis and conclusions drawn from accidents and incidents with the aim of improving safety;
- (2) promoting an open exchange of views between supervisory authorities in a spirit of partnership.

ITTAB members collect and analyse statistical data, present significant accidents and follow-up actions, discuss international safety standards, monitoring methods and all matters related to the operation of cableway installations (including maintenance, passenger recovery and evacuation).

STRMTG, represented by Daniel Pfeiffer, Christophe Sion and Gaëtan Rioult, presented the accident that occurred on the Jandri double monocable lift last April, feedback from

the assessment of urban projects in France, and the project to create a European standard on integrated recovery.

This edition of ITTAB also provided an opportunity to visit the cableway installations in Hong Kong: two funicular railways, two gondolas and a 2S aerial ropeway, all designed to serve tourist attractions.

At the invitation of the Chinese authorities, with whom STRMTG has maintained a partnership for over 15 years, ITTAB was preceded by a bilateral meeting in Beijing between our department and China's National Center of Passenger Aerial Ropeway Safety Inspection.

The meeting provided an opportunity to exchange information on cableway installations, technical incidents in both our countries, changes in safety regulations and current projects.

To round off the meeting, STRMTG delegation visited the construction site for the three 3S aerial ropeways under construction in Zhuhai, a city in southern China close to Shenzhen, Macao and Hong Kong, which should be in service by the end of the year.

CONTRIBUTION TO OITAF ACTIVITIES

The International Organization for Transportation by Rope (OITAF) brings together the various ropeway professionals who, through the organisation's various bodies, help to promote this type of transportation and provide solutions to the design, operational and maintenance problems encountered in the different countries represented.

STRMTG helps to run the organisation's various study committees, with the participation of experts who provide the profession with the know-how and experience acquired by the department over more than 40 years of activity.

In addition to drawing up recommendations that serve as recognised standards in the field of cableway installations, the work of these committees enables points of view to be compared and information and ideas to be exchanged.

This is a strategic area for STRMTG, which aims to significantly contribute to the development of safety rules for cableway installations at the international level.

Finally, OITAF organises annual seminars in conjunction with the InterAlpin and Mountain Planet trade shows, where STRMTG regularly contributes its perspectives on the rules and procedures required for ropeway installations. In 2023, at the seminar organised in Innsbruck by Committee II (cables), a service expert presented an anthology of the methods available to improve cable service life (installation, maintenance, inspections, etc.).

MEMORANDUM OF UNDERSTANDING WITH DUBAI'S RTA* SERVICE

In 2017, STRMTG signed a Memorandum of Understanding (MoU) with Dubai's RTA (Roads and Transport Authority).

This protocol, which provides a framework for exchanges between the 2 services, has already given rise to 2 visits by STRMTG agents. These visits provided an opportunity to explain the regulations applicable in France for both guided transport and lift systems, and to compare assessment and inspection practices applicable to various transport systems.

Following these initial exchanges, and in the specific context of a ropeway project in the mountain area of Dubai, RTA approached STRMTG again at the beginning of 2023. The aim was to develop a training and discussion session focusing on the technology they were considering for their

project (3S) and the points of attention linked to the acceptance and inspection procedures for this type of system.

2 staff members from STRMTG went to Dubai in October 2023 for informative meetings. A follow-up meeting was discussed, which would enable our RTA counterparts to discover some of our most iconic systems on site in France.

*RTA: (Roads and Transport Authority).

EXCHANGES WITH STRMTG SERBIAN COUNTERPARTS

Following a meeting organised by RATP Dev, STRMTG was able to meet formally with its Serbian counterpart in November. The city of Belgrade is planning to build the country's first metro line. It is looking for legal and technical information to build a suitable regulatory framework, which does not yet exist, even though there are already some old tram lines.

The service was able to present the main French legislation governing guided transport, from the STPG decree to the orders, providing an overview of the acceptance process, regulatory monitoring of operations (including reporting and handling of events, operating reports, etc.). STRMTG has also provided details about its organisation, enabling the production of technical assessments for



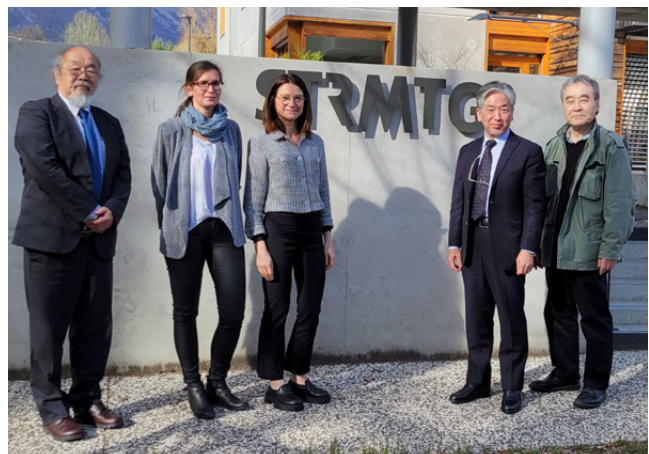
safety files, periodic monitoring of operators, analysis of events and pathologies, and writing specific technical guides and reports.

EXCHANGES WITH THE JTPA (JAPAN TRANSPORT PLANNING ASSOCIATION)

Since 2016, STRMTG has maintained close ties with the JTPA (Japan Transport Planning Association) and particularly its Managing Director Mr. Masahiro Yamauchi, as part of studies carried out by the JTPA at the request of the MLIT (Ministry of Land, Infrastructure, Transport and Tourism) in Japan.

2023 once again provided an opportunity to consolidate the relationship between the two organisations through rich and productive exchanges. STRMTG was therefore able to provide the JTPA with technical details concerning the certification and training of tram drivers in France.

STRMTG presented the provisions of Decree 2017-440 of 30 March 2017 on the safety of guided public transport in this area and its concrete application in French tram networks.



FRENCH MARKET SUPERVIVORY AUTHORITY



STRMTG is the French Market Surveillance authority for cableway installations covered by European Regulation (EU) 2016/424. This role consists of ensuring that Safety Components (SC) and Subsystems (SS) are safe and comply with this European regulation.

This market surveillance is carried out as part of the examination of pre-commissioning applications, inspections carried out during and outside operation, and event reporting by operators.

If the SC or SS has a “formal” non-conformity (e.g. lack of CE marking or declaration of conformity) and/or a risk to the safety of occupants, STRMTG asks the manufacturer to remedy the non-conformity and/or make the product safe. Failure to deal with the risk and/or non-conformity of the inspected product leads to all appropriate measures being taken:

- ▶ to restrict or prohibit the sale of the SC or SS on the market, or
- ▶ to recall or withdraw it from the market.

Depending on the seriousness and/or potential of the cases identified occurring again, STRMTG reports to the European Commission on the handling of the case in

question. This way, other European market surveillance authorities benefit from our investigations to monitor any similar or related cases. By the same token, STRMTG is informed of cases identified by other European market surveillance authorities.

This mutual reporting is provided by a European Commission tool called ICSMS (Information and Communication System for Market Surveillance).

The surveillance authorities for the European cableway market meet regularly in an Administrative Cooperation (AdCo) group. These meetings are held to ensure effective and consistent market surveillance. Cases reported to ICSMS by different countries are presented.

At the 2023 edition, which took place on 28 November in Brussels, the group’s presidency changed countries. After Austria, France now holds the presidency, through Christophe SION, STRMTG Deputy Director in charge of offices and standardisation. In particular, STRMTG will be in charge of running meetings for the next 3 years.

9 - NOTIFIED BODY

NOTIFIED BODY ACCREDITATION RENEWED FOR 5 YEARS



STRMTG has been a notified body since 2003. In this role, it assesses the compliance of cableway installation components and subsystems with Regulation (EU) 2016/424 (which repealed European Directive 2000/9/EC on 21 April 2018):

- ▶ mechanical subsystems (cabins, seats, pulleys, roller batteries, tow-hangers, ropes, tensioning systems, brakes, station safety devices, etc.)

- ▶ electrical subsystems (control-command architecture, backup generators, radio controls, etc.)

It is the only notified body designated by the French government in France in this field.

STRMTG-NB has been ISO/CEI 17020-accredited by COFRAC since 1 August 2004.

Following an audit on 19 and 20 January 2023, COFRAC decided to reaffirm its continuing satisfaction with STRMTG-NB's technical and organisational expertise, and renew its accreditation for a further 5 years.



Convention N° 1985

ATTESTATION D'ACCREDITATION ACCREDITATION CERTIFICATE

N° 3-140 rév. 6

Le Comité Français d'Accréditation atteste que
The French Committee for Accreditation certifies that:

SERVICE TECHNIQUE DES REMONTEES MECANQUES ET DES TRANSPORTS GUIDES
1461 RUE DE LA PISCINE
38400 SAINT-MARTIN-D'HERES
SIREN : 160061040

satisfait aux exigences de la norme : **NF EN ISO/IEC 17020:2012**
fulfils the requirements of the standard :
et aux règles d'application du Cofrac
and Cofrac rules of application

en tant qu'organisme d'inspection de type I / As an inspection body of type I : A

Un organisme de type A est un organisme fournissant exclusivement des services d'inspection de tierce partie indépendante.

A type A body is a body exclusively providing "third party" inspection services.

pour les domaines d'activités de I for the domaine of activities of :

TRANSPORTS / TRANSPORTS

pour lesquelles les activités sont précisément décrites dans l'annexe technique suivante / which activities are precisely described in the following technical annex :

3-140 rév. 6

et réalisées à partir d'une ou plusieurs des Implantation(s) listées dans cette annexe technique.

and performed by one or several of the Geographical unit(s) listed in this technical annex.

Le Cofrac est signataire de l'accord multilatéral d'EA pour l'accréditation pour les activités objets de la présente attestation.

Cofrac is signatory of the European co-operation for Accreditation (EA) Multilateral Agreement for accreditation for the activities covered by this certificate.

Date de prise d'effet / Granting date : **01/06/2023**

Date de fin de validité / Expiry date : **31/05/2028**

Pour le Directeur Général et par délégation
On behalf of the General Director

La Responsable du Pôle Environnement - Transport -
Métrologie Légale,
Pole manager - Environment - Transport - Legal Metrology,

Hélène GIBIERGE

Validé par **Hélène GIBIERGE** le 30/05/2023

La présente attestation n'est valide qu'accompagnée de l'annexe technique.
This certificate is only valid if associated with the technical appendix.

L'accréditation peut être suspendue, modifiée ou retirée à tout moment. Pour une utilisation appropriée, la portée de l'accréditation et sa validité doivent être vérifiées sur le site internet du Cofrac (www.cofrac.fr).

The accreditation can be suspended, modified or withdrawn at any time. For a proper use, the scope of accreditation and its validity should be checked on the Cofrac website (www.cofrac.fr).

Cette attestation annule et remplace l'attestation N° 3-140 Rév. 5.

This certificate cancels and replaces the certificate N° 3-140 Rév. 5.

Seul le texte en français peut occuper la responsabilité du Cofrac. The Cofrac's liability applies only to the french text.

Comité Français d'Accréditation - 52, rue Jacques Hillieret 75012 PARIS

Tel. : +33 (0)1 44 68 62 20 - Siret : 397 879 487 00031 - www.cofrac.fr

INS Form 04 - Rév. 13 - 15 octobre 2022

Page 1/4

Notified Body KEY FIGURES 2023

- ▶ **96** new certificates (or revisions) of design assessment for safety components and/or subsystems.
- ▶ **98** changes to previously evaluated components or subsystems.
- ▶ **15** manufacturer audits.

Since 2003, under directive 2000/9/EC

- ▶ **3 821** procedures (modules H7, B, F, G) and 141 manufacturer audits.

From 2018, under Regulation (EU) 2016/424

- ▶ **1 192** procedures (modules H1 Section 3.6, B, F and G) and **72** manufacturer audits.

NEW CUSTOMERS FOR STRMTG-ON IN 2023: IESA AUTOMATION AND AIX-HYDRO



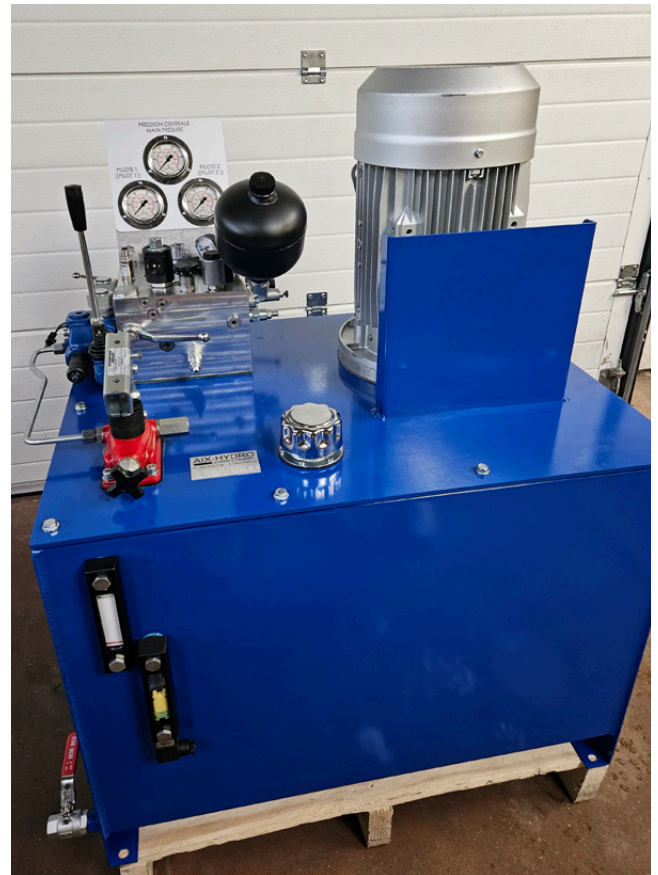
IESA Automation, based in Vienne, Isère, and specialising in industrial automation, asked STRMTG-NB to assess conformity with the essential requirements of Regulation (EU) 2016/424 on cableway installations for the safety component of the "TSF4 Chalet de Bellecôte" and associated Electrotechnical Devices subsystem.

The purpose of this equipment is to cover the electrical safety architecture of the eponymous fixed-grip 4-seater chairlift, installed and commissioned at La Plagne in late 2023, replacing a fixed-grip 2-seater chairlift dating back to 1978, as part of an overall project to restructure the upper part of the La Plagne ski resort.

During the 2nd half of the year, constructive discussions took place between the manufacturer and the notified body, including with SOPEMEA, which was subcontracted to work on this project, in order to approve the design of the electrical architecture, with acceptance tests carried out on the system in early December 2023.

In 2023, Aix-Hydro also asked STRMTG-NB to carry out the conformity assessment of its hydraulic power plants. In conjunction with the electrical architecture, these components control the tension of the carrying-hauling ropes using one or two actuators. The assessment initially approved the design of these plants.

In addition to assessing the design of these components, quality system approval audits of IESA and AIX-HYDRO also verified that the organisation and internal procedures in place ensured that the equipment was manufactured in compliance with European regulations.





STRMTG

The Technical service in charge of safety for ropeways and guided transports

1461 rue de la Piscine - Domaine Universitaire
38400 Saint-Martin d'Hères - FRANCE - Tel. +33 4 76 63 78 78
www.strmtg.developpement-durable.gouv.fr

Publishing director: Daniel Pfeiffer
Coordination: Peggy Azam
Photo credits: STRMTG and TERRA
Page layout: Samuel Herby