

# SNCF'S SECURITY DIVISION: OUR EXPERTISE IN ACTION

## 1- EXPLOSIVE-DETECTION DOGS

SNCF cannot discount the risk that an improvised explosive device (IED) could be planted on its land. It is all too easy to find instructions on how to make these devices on the darknet, and major terrorist organizations actively encourage their followers to use them. The French government considers IEDs a credible threat.

Whenever an abandoned item is reported, the authorities thus deploy bomb disposal officers to the site, who cordon off an area of up to 100 metres around the suspect package. But this disrupts crowd flow in our stations, prevents trains running on track inside the cordon, and creates easy targets for sniper fire.

We trialled an alternative approach during the UEFA Euro 2016 football tournament, when we brought in specialist dog-handling teams to detect explosives on our network. The sniffer dogs helped to put passengers' minds at ease and allowed us to maintain a high degree of security while keep our stations clear and our trains running. On average, it takes around 10 minutes to deploy a dog-handling team. By comparison, bomb disposal officers take at least 30 minutes to arrive on scene in the Paris Region, and two hours or more elsewhere in France.

Following the successful trial, we now have over 20 teams operating across our network, responding to around 1,200 reports each year. We are aiming to double the number of teams in the next two years. The dogs and handlers are trained by the National Police and the National Gendarmerie, and we have an in-house training programme.

We have also worked with law enforcement to draw up a clear procedure, and shared it with every department across our business. Close cooperation with the authorities is vital to showing that we are serious about training our teams and applying our procedure. Bomb disposal officers have audited SNCF's procedure to determine whether it was being properly applied and how effective the dogs were at detecting explosives. Now that the authorities—including the Paris Police Prefecture and the General Secretariat for Defence and National Security—have endorsed our procedure on both fronts, it could be adopted by other operators (such as the Paris metro) and in other sectors.



Passengers have proven more receptive to the dog-handling teams than we had expected, due in large part to the animals' sociable nature. But while attention from the public is welcome, it can also divert handlers' attention. We have therefore introduced dog "calling cards"—similar to those used by the British Transport Police in the UK—so that our teams spend less time talking to passengers.

## 2- ACCESS CONTROL AND INTRUSION DETECTION SYSTEM

SNCF uses an integrated system to control access to all rail land and infrastructure in France. The system, known as CANIF, is purpose-built because there is no off-the-shelf integrated solution that caters to the specific requirements of a transport operator.

The system manages more than 12,000 card readers and over 200,000 ID cards held by SNCF employees, our suppliers and subcontractors, and staff working for other rail operators. With its in-built flexibility, it provides effective protection for our entire network:

- The system is divided into two parts: a hypervisor, which manages card-holders and access permissions, and local units, which unlock doors and gates whenever someone swipes an authorized card. This design means that individual components can be upgraded (for instance, adding biometric or key-fob technologies) without having to overhaul the entire system.
- The hypervisor queries the database to check whether protected sites are fully secure (whether the card readers, actuators and access permission databases are working, whether the card-holder database is managed properly, etc.).
- The hypervisor can also access a log for each entry point, showing which cards were used to enter and when.
- The split-architecture design also means that the system is technology-independent, allowing us to use best-in-class card readers, actuators and programmable logic controllers in different locations.
- The system currently adheres to the Calypso standard, meaning that employees of any organization can be enrolled as long as they hold compatible cards.

We are currently simplifying our system as we look to improve performance and minimize operating costs. We are also exploring ways to make the system even more open, and we are working with managers to embed a strong security culture throughout our organization.



SNCF - DOCUMENT CONFIDENTIEL



## CANIF – National Interoperable Railway Access Control

The Hypervisor CANIF manages access rights for the 12 500 card readers.

CANIF is the SNCF standard regarding access control. This standard belongs to SNCF.



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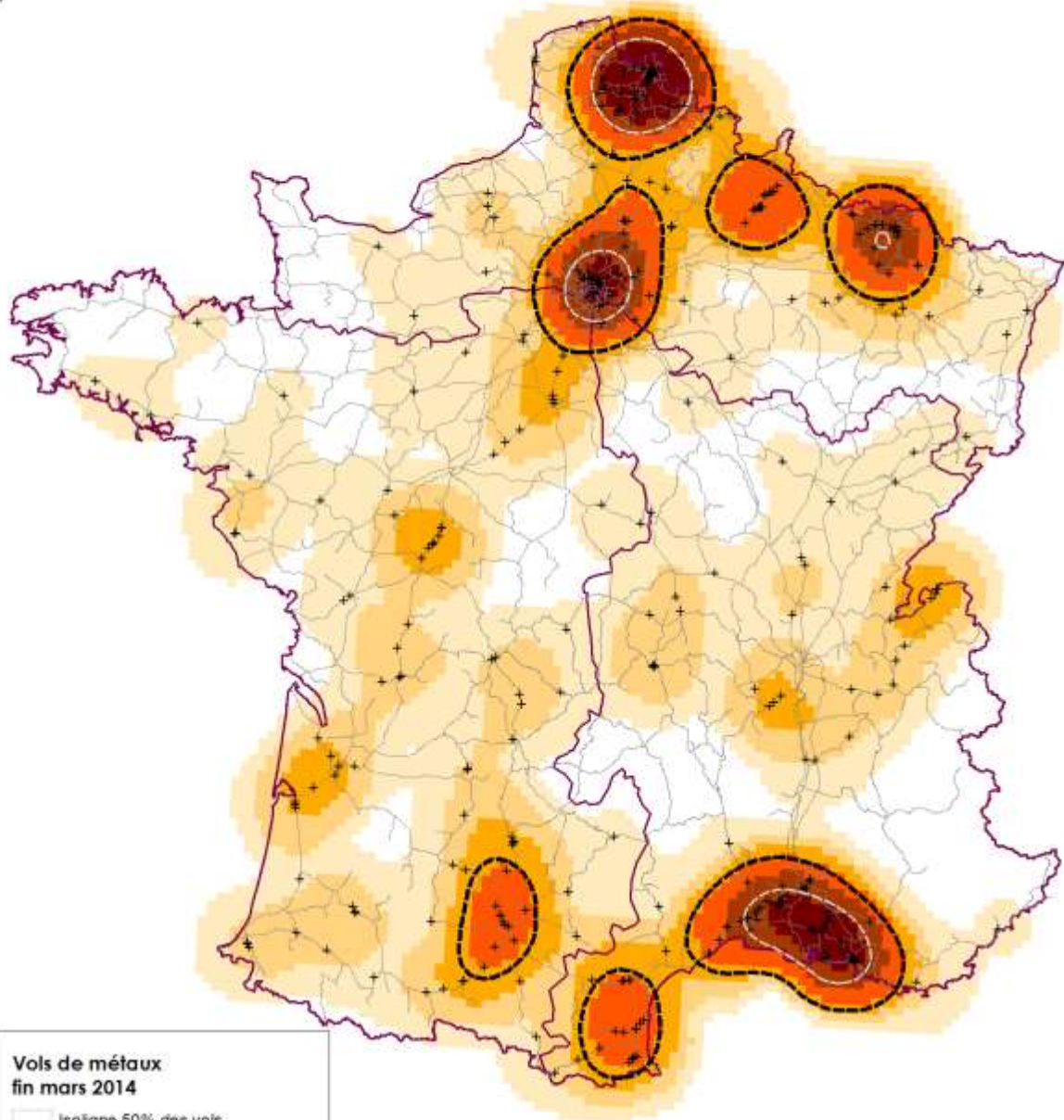
### **3- SECURITY INCIDENT REVIEW: CEZAR DATABASE AND MAPPING TOOL**

SNCF rail police (SUGE) agents and other authorized employees report more than 160,000 security incidents every year. We have been collating those reports in our CEZAR security risk management database for close to 20 years, categorizing incidents and analyzing patterns of crime so we can learn lessons and gain a clear picture of criminal behaviour on our network.

We use a mapping tool to identify when and where incidents happen, and what types of crime are most likely to occur in a given location. For instance, by honing in on specific problems such as cable theft, we can pinpoint crime hotspots and make sure our agents—and the authorities—are primed to respond. Because the tool also shows how incidents are spatially distributed, we can anticipate where thieves are likely to strike when we lay new track over part of an older line.

As well as bolstering our analysis and predictive capability, the tool plays a vital role in supporting front-line decision-making. By sharing our findings with the authorities, we can determine where crime-fighting resources should be targeted and deploy agents both promptly and efficiently.

# Cable/metal theft hot spots in France at 31 March 2014



## Vols de métaux fin mars 2014

- Isoligne 50% des vols
- ▣ Isoligne 80% des vols
- + VolsMétauxFinMars2014
- RFN
- ▭ Territoires de production INFRA

### Hot Spots

#### Densité

- 0 - 0,00776
- 0,00777 - 0,0254
- 0,0255 - 0,0509
- 0,051 - 0,0903
- 0,0904 - 0,153
- 0,154 - 0,24
- 0,241 - 0,404



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#### 4- AERIAL SURVEILLANCE

Since 2012, SNCF has accumulated a wealth of experience in the practical, technical and legal aspects of aerial surveillance technologies. Our rail police began using the technology in 2014, and we are now at the forefront of drone innovation in France.

Our expertise spans two areas: developing drone systems (UAVs, sensors, operating systems, and data acquisition and processing technologies), and adapting those systems so they cater to the highly specific demands of rail maintenance and security.

We scour the market to find drone and sensor solutions that meet our needs, and work with the manufacturers to refine their systems. Then, in conjunction with the French Civil Aviation Authority, we explore how best to use the technology before incorporating it into our operations.

This focus means we are one of the biggest players in France's drone industry—by number of partnerships with manufacturers, start-ups, service providers and research centres, and through our dealings with the French Civil Drones Council, which comes under the joint authority of the French Civil Aviation Authority and the French Professional Civil Drone Federation.

Altamétris, a subsidiary of SNCF Réseau, provides three drone surveillance services:

- Fixed-wing drones, which fly over tracks and work sites day and night, within a 20 km range, providing surveillance to dispel concerns or alert security teams to an incident on the ground.
- Static drones, which are powered from the ground and capture panoramic views 80 metres up in the air, replacing multiple—and vulnerable—ground-based cameras.
- Nano-drones and larger portable drones, which agents can use as an “eye in the sky” when they are on the scene of an incident.





Altamétris also specializes in hostile drone detection and disabling technology.

Lastly, our security teams use manned gyrocopters with an on-board camera operator beaming images back to agents on the ground. During the UEFA Euro 2016 football tournament, we used gyrocopters to monitor 17,700 km of track. And in 2015, we kept a close watch on 106 km of track from the air in the 10 days before power was switched on for the new LGV Est high-speed line, so as to guard against likely cable theft.

## 5- SEZAM remote security operations centre





## 6- SUGE—A COMPREHENSIVE, INTEGRATED SECURITY SYSTEM

SNCF's vast Security Division handles every aspect of our security capability. As well as conducting front-line security operations, it specifies technology solutions, and monitors, advises on and facilitates security matters more generally. Most of the division's 3,000-plus staff are members of SNCF's rail police force, who are mandated to enforce France's Transport Code and keep our network and passengers safe. This model allows us to:

- take account of the business side of security, and make it part of the service we provide to our customers
- work closely with other members of the transport community, develop deep specialization, and draw on expertise from every part of our organization
- develop purpose-built processes with shorter decision-making cycles
- react quickly as operational needs evolve
- provide our security agents with the initial and on-going training they need to grow their professional skills, gain respect and credibility within and outside our organization, and develop cutting-edge expertise in technical aspects of rail security.

The Security Division leads on everything from strategic security planning, to specifying surveillance camera technologies, assessing risk, collating incident reports in our database, and managing operations involving uniformed and plain-clothes officers (armed, warranted members of our rail police force). Our Security Academy, drone operators and dog-handling teams also report directly to the division.

## 7- SECURITY AS A TEAM EFFORT

SNCF's Security Division is a multidisciplinary, cross-cutting department tasked with keeping France's railway system secure. In addition to supporting rail operators and infrastructure managers across the network, we are stepping up our performance through partnerships with the wider security community, including state agencies and bodies such as the National Police, the National Gendarmerie and the Customs Office, and local police forces. As well as sharing ideas and harmonizing practices with our partners, we carry out joint operations as permitted by law and within our respective mandates.

We participate in local and national coordination units, and our managers serve as advisors to promote knowledge-sharing and best practices.

