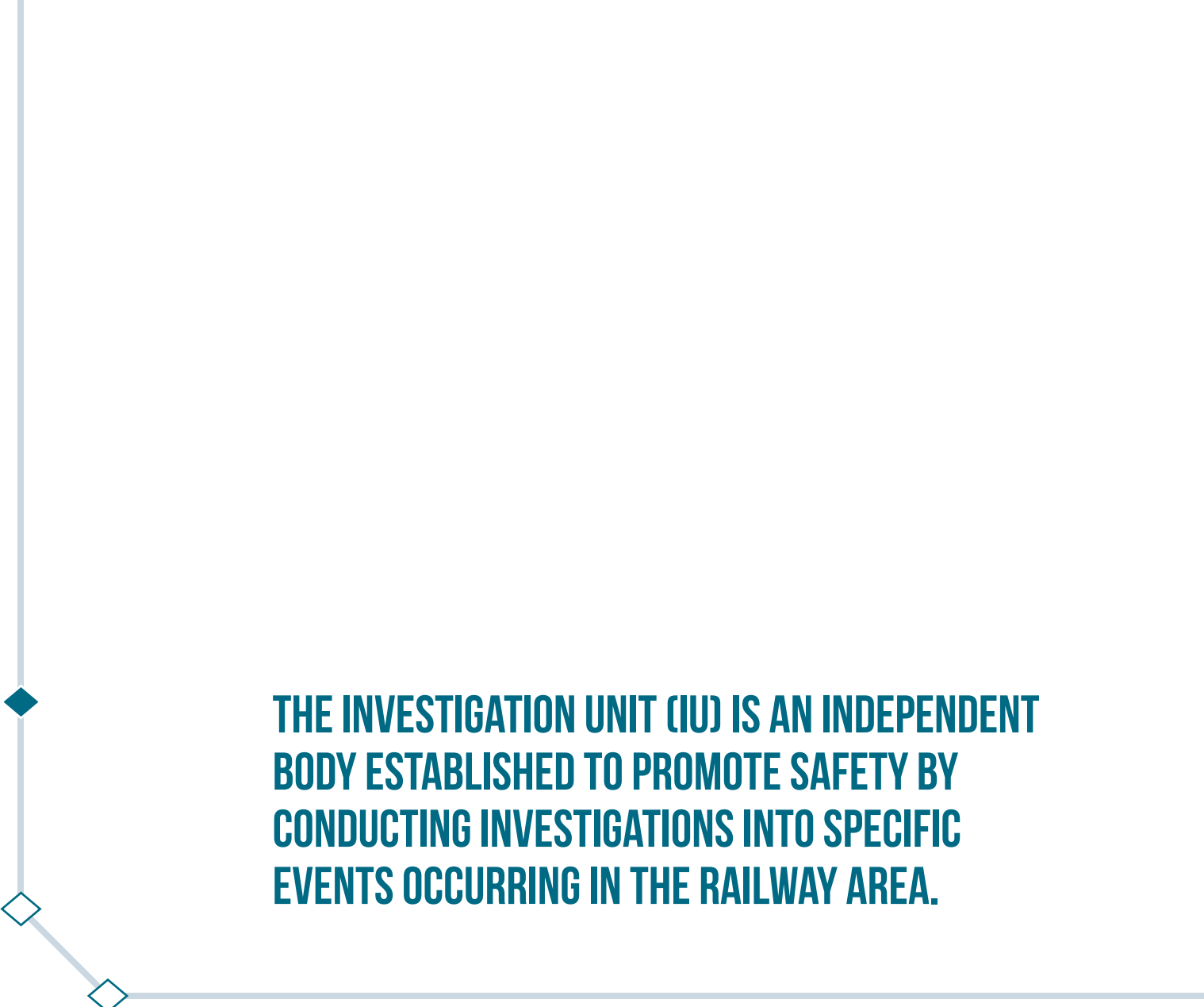




2010

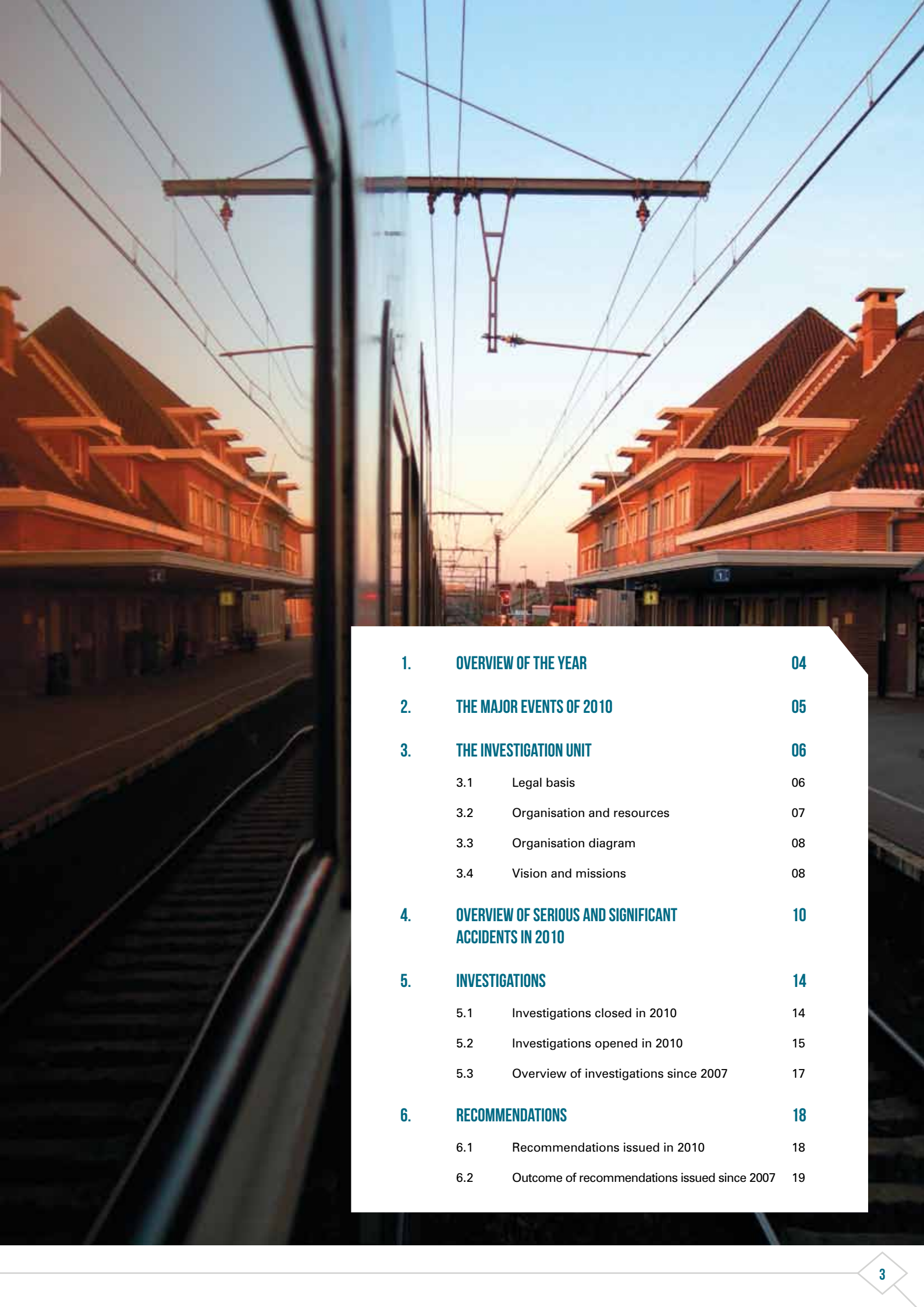
ANNUAL REPORT

Railway Accident and Incident
Investigation Unit
Belgium



**THE INVESTIGATION UNIT (IU) IS AN INDEPENDENT
BODY ESTABLISHED TO PROMOTE SAFETY BY
CONDUCTING INVESTIGATIONS INTO SPECIFIC
EVENTS OCCURRING IN THE RAILWAY AREA.**

This report outlines the activities undertaken by the railway accident and incident Investigation Unit (IU) between 1 January 2010 and 31 December 2010, as required by Article 54 of the Act of 19 December 2006.



1.	OVERVIEW OF THE YEAR	04
2.	THE MAJOR EVENTS OF 2010	05
3.	THE INVESTIGATION UNIT	06
3.1	Legal basis	06
3.2	Organisation and resources	07
3.3	Organisation diagram	08
3.4	Vision and missions	08
4.	OVERVIEW OF SERIOUS AND SIGNIFICANT ACCIDENTS IN 2010	10
5.	INVESTIGATIONS	14
5.1	Investigations closed in 2010	14
5.2	Investigations opened in 2010	15
5.3	Overview of investigations since 2007	17
6.	RECOMMENDATIONS	18
6.1	Recommendations issued in 2010	18
6.2	Outcome of recommendations issued since 2007	19



1

OVERVIEW OF 2010

In this annual report of 2010, we cannot ignore the tragic accident at Buizingen. The disaster shocked the entire population, and the Investigation Unit was of course particularly affected. Our thoughts go out to the victims and their families. The investigation by the IU¹ is in the process of finalization.

The Investigation Unit and its role are still little known, and its position has yet to be recognized.

We are firmly committed getting our message heard and making sure it is clearly understood by regulators, the rail industry and the judicial authorities. To promote public confidence in the process of railway accident investigation, the IU must be, and must also be seen to be, objective, independent and free from any conflict of interest.

The agency's independence ensures the objectivity of its findings and recommendations.

Like its credibility, this is based on its competence, openness, integrity and the fairness of its processes.

As was aptly pointed out by the 'assessment' of the ERA² and the Buizingen Commission, the judicial inquiry has taken predominance over the IU's investigation. A change in the law and new procedures are needed to strengthen the IU's position in investigations, such as that of the Buizingen accident. A way needs to be found to share factual data without compromising the duty of reserve in its public statements. The analysis and investigations of the IU and the judiciary must be conducted completely independently.

IU investigations are aimed solely at improving safety.

Significant changes have occurred in the regulatory framework, with important implications for the way the Investigation Unit operates. These have been made in order to eliminate the risk of conflict of interest related to the use of the operational and technical expertise of NMBS/SNCB Holding.

The Investigation Unit has been in existence since 2007, but with a new structure being organised since February 2010. It is in this difficult context that the accident occurred in Buizingen.

¹ IU: Rail Accident and Incident Investigation Unit (In French: Organisme d'Enquête sur les accidents et incidents ferroviaires/in Dutch: Onderzoek-
orgaan voor ongevallen en incidenten op het spoor)

² ERA: European Rail Agency

2

THE MAJOR EVENTS OF 2010

JANUARY 2010

Revision of the Act of 19 December 2006 since January 2010: the Investigation Unit no longer mandates NMBS/SNCB Holding to undertake its investigations.

FEBRUARY 2010

Opening of the investigation into the accident at Buizingen. Buizingen Parliamentary Commission.

MARCH 2010

Strengthening of the IU with the arrival of an administrative officer.

APRIL 2010

Audit by the State Audit Office (Cours de Comptes/Rekenhof) at the request of the Parliamentary Commission.

JUNE 2010

'Assessment' of the Investigation Unit and the Safety Authority by the European Rail Agency at the request of the Parliamentary Commission.

JULY 2010

Publication of the 2008 annual report.

SEPTEMBER 2010

Opening of the investigation into the Arlon collision. Publication of the 2009 annual report.

OCTOBER 2010

Creation of the website. Publication on the website of the annual reports and reports of closed investigations.

NOVEMBER 2010

Strengthening of the agency with the arrival of a new investigator.

DECEMBER 2010

Strengthening of the Investigation Unit's resources with the arrival of two contract engineers.



3

THE INVESTIGATION UNIT 377

3.1 THE LEGAL BASIS

Provision for an independent body to investigate railway accidents and incidents in order to improve safety was made by European Directive 2004/49/EC.

This directive was transposed into Belgian law by statute and two implementing decrees:

- the Act of 19 December 2006: Railway Operating Safety Act, as amended by the Act of 26 January 2010;
- Royal Decree of 16 January 2007, establishing a body to investigate railway accidents and incidents and determining its composition;
- Royal Decree of 16 January 2007, as amended by Royal Decree of 25 June 2010 laying down rules for the investigation of rail accidents and incidents.

This act and these two decrees define the powers and duties of the IU, the scope of its work and its interaction with other persons and organisations involved in the handling of railway accidents and incidents.

Examples of the powers of the Investigation Unit (Article 46 of the Act):

- access to the site, the content of recordings by on-board equipment, the results of the examination of the train crew, and to any relevant information or document ...;
- the possibility to question staff and other witnesses, right to obtain copies of the statements of these persons to other bodies.

Why a change in the Act of 19 December 2006 and the Royal Decree?

It was considered that a confusion of interests existed that needed to be ended. The changes remove various governing powers related to safety entrusted until then to NMBS/SNCB Holding, and also no longer allow the IU to mandate NMBS/SNCB Holding to conduct investigations.

The amendment also adds a complementary mission to the tasks of the Investigation Unit, namely to establish a database of all incidents and accidents associated with the operating safety of the Belgian railway network.



3.2 ORGANISATION AND RESOURCES

The IU has its offices in Brussels, in the rue du Progrès, close to the Gare du Nord.

Budget

The changes made to the IU since its inception in 2007 also concern the financial resources made available to it. The creation of an organic budget fund under Article 4 of the Programme Act of 23 December 2009 is intended to ensure the financial autonomy of the railway accident Investigation Unit and to demonstrate that the amounts paid are allocated to the costs of this agency.

The fund's income consists of the contributions payable by the infrastructure manager and the railway undertakings to the operating costs of the IU.

In addition to general expenses (staff, building, operating costs, equipment), specific operating costs also exist, for which the IU needs adequate funding to ensure the performance of its tasks: ad hoc external expertise and consultancy, personal safety equipment, participation in specialised training and conferences (...).

Staff

The IU started 2010 with two people and ended the year with five. The ultimate goal is a minimum of 7 full time equivalents. The necessary budgets have been allocated and the staffing plan has been approved. The first recruitment interviews have been conducted.

It is important to note that the IU is able to call in external expertise to conduct research and analysis in the context of its investigations.

Training

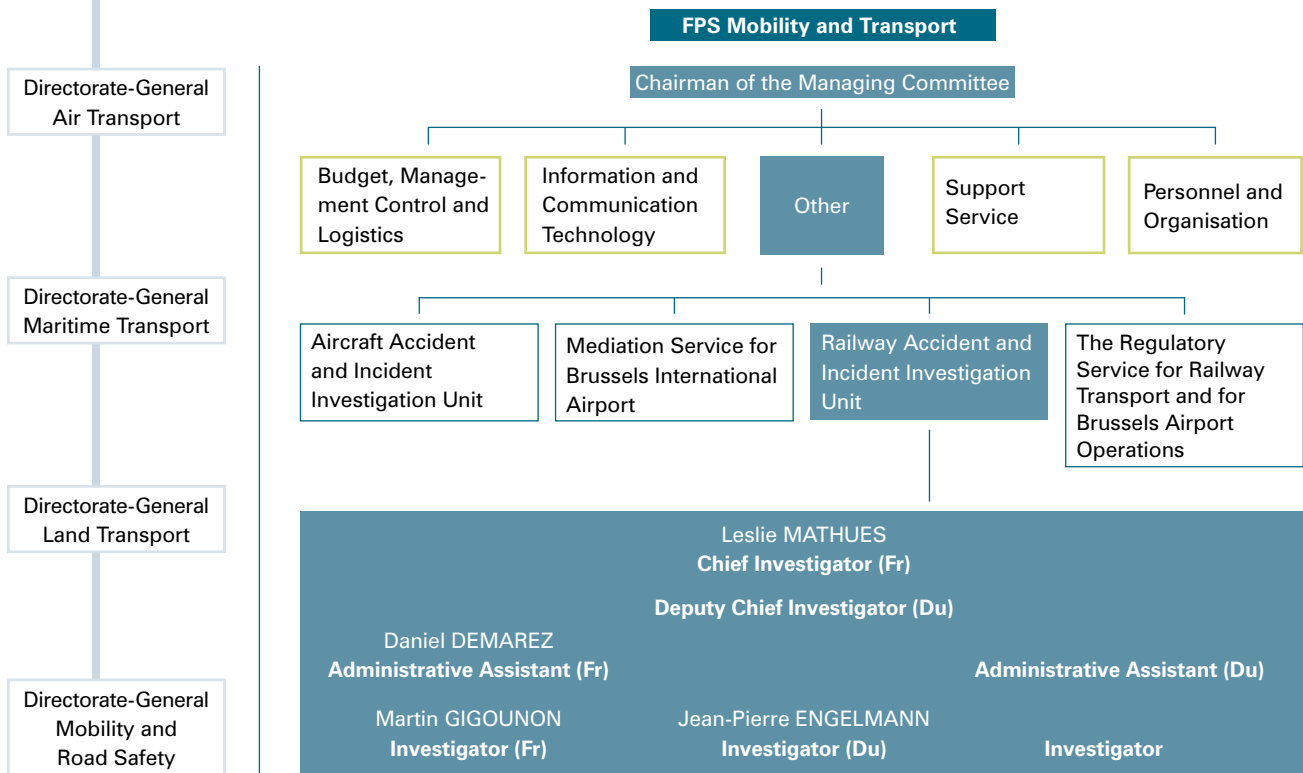
It is difficult to recruit staff with experience in railway accident and incident investigations. We have given priority to persons coming from outside the railway environment, but who possess the required behavioural skills and experience in technical auditing, project management and similar areas.

An intensive training programme has been established for the staff of the Investigation Unit.

Priority to staff training and development

Many training days, seminars, conferences,... are also planned in 2011.

3.3 ORGANISATION DIAGRAM



3.4 VISION AND MISSIONS

Vision

1. To help improve safety through our investigations and our recommendations.
2. To constantly develop our expertise (credibility).
3. To enhance our range of skills.
4. To improve internal procedures so that they are of high quality and replicable.

Missions

1. Investigations

The main task of the Investigation Unit is to conduct investigations of so-called 'serious^{3'} operating accidents occurring on the Belgian railway network.

In addition to serious accidents, the IU has the authority to investigate other accidents and incidents that affect railway safety. There is no need to investigate situations where safety devices have been able to prevent a potential collision.

The decision to investigate is made by the Investigation Unit on the basis of initial information, taking into account the seriousness, and also possibly the imprecise nature of the circumstances in which the events took place.

Safety investigations are conducted to determine the circumstances and causes of the event and not the responsibilities.

They cover many aspects: infrastructure, operations, rolling stock, staff training, regulations, etc.

Transparency and openness

Inclusion of a section on the website of the FPS Mobility and Transport
www.mobilit.fgov.be

When an accident occurs, the railway undertakings and infrastructure managers involved are required to notify the IU. Based on the initial data obtained by phone, the investigators decide to proceed to the site to assess the situation and gather the necessary information.

These investigations are separate from the judicial inquiry, which is held in parallel.

The results of investigations are analysed, evaluated and summarised in the investigation report.

The investigation report does not constitute a formal decision. It may contain safety recommendations addressed at the authorities, railway undertakings, infrastructure managers ...

The purpose of the recommendations is to minimise the risk of similar accidents occurring in the future, but also to reduce their consequences.

2. Database

The railway organisations (infrastructure manager, railway undertakings, workshops, etc.) notify the Investigation Unit of any events occurring during railway operations.

The Investigation Unit gathers the information obtained by it in a single database.

This integrated tool facilitates the identification of trends as well as further analysis.

The database also serves to provide the common safety indicators for which provision is made by the European directives transposed into Belgian law.

3. European cooperation

The Investigation Unit is involved in the activities of the network of National Investigation Bodies (NIB⁴), which take place under the auspices of the European Rail Agency in order to benefit from the experience of other investigation units and to collaborate in the European harmonization of regulations and investigation procedures.

4. Communication

A website has been created to enable both railway organisations and the public to access the published reports, which include in particular the recommendations made.

To promote public confidence in the process of railway accident investigations, the IU must be, and must also be seen to be, objective, independent and free from any conflict of interest.

The IU's independence ensures the objectivity of its findings and recommendations.

Like its credibility, this is based on its competence, openness, integrity and the fairness of its processes.

A procedure manual is being drafted:

- to establish criteria for the selection of incidents and accidents which the IU should investigate;
- to systematise the exchange of views and opinions;
- to formalise the investigation process.

³ A serious accident is a collision, derailment or other incident which results in:

- at least one death;
- at least five persons seriously injured;
- extensive damage to infrastructure, rolling stock or the environment (totalling at least two million euros).

⁴ NIB: National Investigation Bodies.

4

OVERVIEW OF SERIOUS AND SIGNIFICANT ACCIDENTS IN 2010

There is no legal obligation to investigate significant⁵ accidents as opposed to serious accidents. However these are included in the statistics of the common safety indicators; it is in this context that they are listed in this report.

15 FEBRUARY 2010: BUIZINGEN, COLLISION OF TWO PASSENGER TRAINS

The slow passenger train from Leuven to Braine-le-Comte was leaving the platform at Buizingen and moving onto the A track of line 96 in the direction of Halle. At the same time, the Inter City train from Quiévrain to Liège was travelling along the B track of line 96 in the direction of Buizingen. The driver of the slow train realized that the Inter City train was cutting across his path of travel and applied the emergency brakes. The two trains collided side-on on Monday 15 February 2010 at 8.28 am between Halle and Buizingen, at points number 46A.

The Investigation Unit visited the site and opened an investigation.

- Serious accident:**
- 19 deaths;
 - 171 persons with serious and minor injuries;
 - extensive damage to infrastructure and rolling stock;
 - significant disruption of rail traffic.





4 MARCH 2010: GLONS, COLLISION OF TWO FREIGHT TRAINS



On Thursday 4 March at 21. 49, freight train Z96301 (Montzen - Genk Goederen) struck train E44538 (Antwerpen-Noord - Montzen) which had stopped before a stop signal at Glons on the B track of line 24. Several wagons were derailed and their loads displaced. In addition, two empty tank wagons which were empty but not cleaned after transporting dangerous materials were part of the train that was hit and one of them was derailed. There was no leakage of dangerous material but degassing of the wagons was necessary. The Investigation Unit visited the scene of the collision but did not open an official investigation.

Significant accident:

- significant disruption of rail traffic;
- material damage;
- dangerous goods;
- no injuries, no deaths.

9 MARCH 2010: MONS, DERAILMENT OF A PASSENGER TRAIN



On 9 March at 04.53, the last carriage of the passenger train leaving Mons in the direction of Saint-Ghislain derailed on points 43B in the 'grill' just outside Mons, damaging several sets of points.

The Investigation Unit visited the scene of the collision but did not open an official investigation.

Significant accident:

- damage to infrastructure;
- damage to rolling stock;
- significant disruption of rail traffic.

⁵ Significant accident:

Any train collision or derailment which results in:

- at least one death or one seriously injured person;
- or significant damage (> 150 000 euros) to equipment, track and/or the environment;
- or significant disruption of traffic (> 6h).

10 APRIL 2010: DEINZE, DERAILMENT OF A FREIGHT TRAIN

On 10 April 2010, a freight train was diverted at Deinze station from track 2 to track 7. During the passage of the freight train, the first 8 wagons derailed. The eighth wagon was empty but had been carrying dangerous materials and had not been cleaned. There was no leakage of dangerous material but degassing of the wagon was necessary.

The Investigation Unit did not visit the scene of the collision and did not open an official inquiry.

- Significant accident:**
- significant disruption of rail traffic;
 - damage to rolling stock;
 - no injuries, no deaths.

15 JULY 2010: COURCELLES, TRAIN COLLISION WITH A TREE

At 16.23, a travelling locomotive struck a tree lying across tracks A and B of line 124A.

The Investigation Unit did not visit the scene of the collision and did not open an official inquiry.

- Significant accident:**
- significant disruption of rail traffic;
 - no deaths, no serious injuries;
 - damage to rolling stock.

15 SEPTEMBER 2010: ARLON, COLLISION OF TWO PASSENGER TRAINS

On 15 September 2010 at around 18.00, the passenger train (Arlon - Luxembourg) that was leaving from track 3 collided side-on with the passenger train (Luxembourg - Libramont) that was entering the station on track 4.

The Investigation Unit visited the site and opened an investigation.

- Significant accident:**
- no deaths, no serious injuries but 22 people with minor injuries;
 - disruption of rail traffic;
 - damage to rolling stock.



20 DECEMBER 2010: PEPINSTER, TRAIN COLLISION WITH TREE

On Monday 20 December at 00.41, at the exit of the Louheau tunnel, train E521 travelling against the usual direction of traffic (track A being out of service) struck a tree located on track B of line 37. The driving coach passed over the tree and fell back on the rails. In its fall, the tree dragged along other trees and rocks, blocking the track and interrupting rail traffic. The Investigation Unit did not visit the scene and did not open an official inquiry.

- Significant accident:**
- significant disruption of rail traffic;
 - no deaths, no serious injuries;
 - small-scale damage to rolling stock.

3 DECEMBER 2010: LEMBEEK, DERAILMENT OF A PASSENGER TRAIN

Trains were travelling at reduced speed owing to the accumulation of snow and mud on track B of line B 96. Frozen mud covering track B caused the derailment of the Saint-Ghislain - Liège train.

The Investigation Unit visited the scene but did not open an official inquiry. No damage to infrastructure, no human consequences, but delays to traffic. This was neither a serious accident nor a significant accident.

5

INVESTIGATIONS

5.1 INVESTIGATIONS CLOSED IN 2010

The current members of the Investigation Unit did not participate in the investigations, analysis or preparation of the report on the accident at Gembloux. However, out of respect for the work done by our predecessors, we have decided to publish the report.

Gembloux: level crossing accident involving a pedestrian

On Monday 3 March 2008, at 17.03, a person was struck by a train at level crossing number 2, located near the Chapelle-Dieu halt on railway line 144: Gembloux - Jemeppe-sur-Sambre. Train E8691 was travelling on track A in the direction of Jemeppe.

The victim was thrown onto track B and sustained serious injuries.

The inquiry led to the conclusion that the direct cause of the accident was the cancellation of the remote announcement zones of crossing number 2, due to a confusion in the order of works to be carried out on tracks A and B.

On 3 March 2008, maintenance work was scheduled on track B in order to verify and ensure the quality of the track before heavy traffic (single track) from the next day onwards.

The maintenance work was deferred and replaced with the clean-up of muddy areas.

Track B had to be placed out of service from 08.20 to 16.00, while track A had to be placed out of service from 09.30 to 13.50, so as to ensure the safety of workers busy on track B.

Neither the maintenance nor the clean-up called for the cancellation of the announcement zones of the track A level crossings.

On 4 March, major long-term (10 days) works were programmed (engineering work, track, catenary) on track A.

These required the neutralisation of the remote announcement zones of crossings numbers 2 and 9 given their occupation by construction equipment which would lead to the extensive closure of the crossings.

Any cancellation of announcement zones must be accompanied by prior measures, including in particular the placing of signal flags and detonators on the track; these measures were not applied.

The causes of the accident are on the one hand the cancellation of the announcement zones, undertaken on 3 March and not on 4 March and, on the other hand, the lack of the required safety devices.

Consequently, the road signing of the crossing started functioning late, in fact shortly before the train approached the crossing.



5.2 INVESTIGATIONS OPENED IN 2010

Buizingen investigation

Initially, investigators proceeded to gather data, information and initial witness accounts.

Subsequently, analysis of available evidence made it possible to establish the most likely scenario of the accident.

Following the establishment of this scenario, an analysis of the human and organisational factors was commissioned from a company specialising in this field. This company is totally independent of the Belgian railway system and has an expertise in various industries with a high degree of reliability (nuclear, aviation, ...).

The analysis of an accident in terms of human and organisational factors consists of clarifying the safety model associated with the initiating event, i.e. to reconstitute the safety principles that were supposed to prevent its occurrence, to allow avoiding action to be taken prior to the accident and to mitigate the consequences.

The survey focuses on the 'gaps' between the observed behaviour and the behaviours expected in order to ensure safety.

A final analysis focusses on the functioning of the Safety Management System.

Structured management gives companies an added value to improve their overall performance. This management facilitates the identification of potential hazards and the establishment of an ongoing management of the risks related to the activities of the undertaking in order to prevent accidents.

The investigation has, however, been hampered by the following elements:

- counsel for the train driver has advised his client to refuse to talk with our experts;
- lack of access to certain documents seized by the judicial authorities.

Today, the investigation is almost closed. The report is being drafted and should be published in late 2011.

Arlon inquiry

The inquiry is not yet closed.

The investigators have collected various data, information, initial evidence, ...

Analysis of available evidence has made it possible to establish an initial scenario of the accident to be completed by other elements.



5.3 OVERVIEW OF INVESTIGATIONS SINCE 2007

The following table provides an overview of open and closed investigations since 2007.

Year	Number	Date	Type	Fatalities	Status	Date
2007	1	26/04	Collision	0	Closed	02/09/08
	2	19/06	Collision	1	Closed	23/07/08
	3	02/09	Derailment	0	Closed	08/10/08
	4	29/11	Accident to staff	2	Closed	01/04/09
	5	14/12	Accident to persons	1	Closed	27/04/09
	6	17/12	Accident to persons	1	Closed	26/05/08
2008	1	03/03	Level crossing accident	0	Closed	02/2010
	2	03/07	Collision	1	Closed	02/10/09
	3	25/10	Accident to staff	1	Closed	02/10/09
	4	14/11	Collision	0	Open	
2009	1	23/05	Boarding incident	0	Open	
	2	15/11	Accident to staff	1	Open	
	3	19/11	Derailment	1	Open	
2010	1	15/02	Collision	19	Open	
	2	15/09	Collision	0	Open	

As already mentioned, the Investigation Unit has been in existence since 2007 but a new structure has been organised since February 2010.

With regard to the four investigations opened before 2010, the IU investigators have taken cognizance of the files: of the available evidence, and of the investigations and analysis by NMBS/SNCB Holding.

It is very likely that certain elements are missing and difficult to recover, which does not facilitate the work.

The backlog will take time to recover.

The IU has decided to focus its efforts:

- on setting up the service (creating a database, training of investigators, ...);
- on the Buizingen investigation.

6

RECOMMENDATIONS

6.1 RECOMMENDATIONS ISSUED IN 2010

Gembloux 03/03/2008: level crossing accident involving a pedestrian

The Investigation Unit recommends to Infrabel to take the following measures:	Actions undertaken by Infrabel
1. On the one hand, a strict and rigorous application of the procedures for the decommissioning of a railway line in the event of works and, on the other, to improve the way documents used are prepared.	Internal audits and repeated reminders.
2. Changes to safety facilities during track works: strict respect of the procedures (written notification of changes in work programmes and approval thereof by the responsible person).	Sensitising to the respect of procedures. On site, work is now preceded by a preparatory session with the production of a work sheet by the person in charge of the work. This work sheet details the work to be carried out and the safety measures to be applied.
3. Introduction of a physical system for the temporary suppression of announcement zones (signal flags, detonators, etc.).	Necessary budget provided for phased deployment of a new device to inhibit the level crossing announcement elements, with the exception of the track crossing circuit (closing of the gates).
4. Implementation of a safety management system: when staff members change function, particular attention should be paid to the support given to them and to evaluating their ability to understand their new mission.	Reinforcement of the effectiveness and traceability of the continuing education of employees and of the control of the hierarchic line.

All recommendations issued in 2010 have been accepted.



6.2 OUTCOME OF RECOMMENDATIONS ISSUED SINCE 2007

Over 80% of recommendations have been accepted by the railway undertaking and/or infrastructure manager concerned.

	Number	Accepted	Refused	No answer
Izegem	5	5		
Genk-Goederen	4	4		
Genval	4	4		
Ede	2		2 ^a	
La Hulpe	13	13		
Berchem Mortsel	4		4 ^b	
Hermalle-sous-Huy	3	2	1 ^c	
Walcourt	3	3		
Gembloux	4	4		
Total	42	35	7	

a. Recommendations for the removal of external handles near the doors and actions to avoid the problem of 'train surfing'.

b. The four recommendations were for changes to rolling stock due to the possibility of opening the emergency doors when the train is moving.

c. The recommendation related to the placing of a technical device to check the emergency electrical power source before switching to it.

