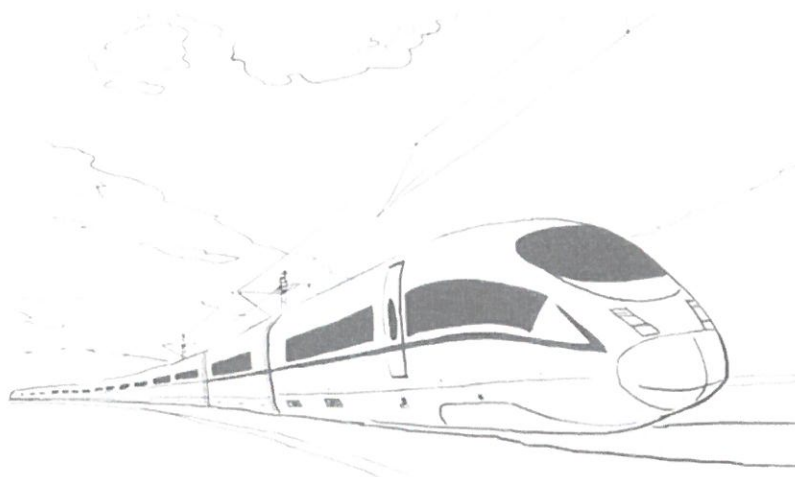




REPUBLIC OF CROATIA
AIR, MARITIME AND RAILWAY TRAFFIC ACCIDENTS INVESTIGATION AGENCY
Department for Railway Traffic Accidents Investigation

NIB CROATIA ANNUAL REPORT 2022

according to Article 24(3) of Directive (EU) 2016/798 of the European
Parliament and of the Council of 11 May 2016 on railway safety
(recast)



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PUBLICATION OF ANNUAL REPORT AND COPYRIGHT

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- Art. 24(3) of Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast),
- Art. 6(4)(5) of the Act of establishing the Air, Maritime and Railway Traffic Accidents Investigation Agency (Official Gazette Nos. 54/2013 and 96/2018) and
- Art. 132(7) of the Act on Safety and Interoperability of the Railway System (Official Gazette No. 63/2020).

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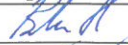
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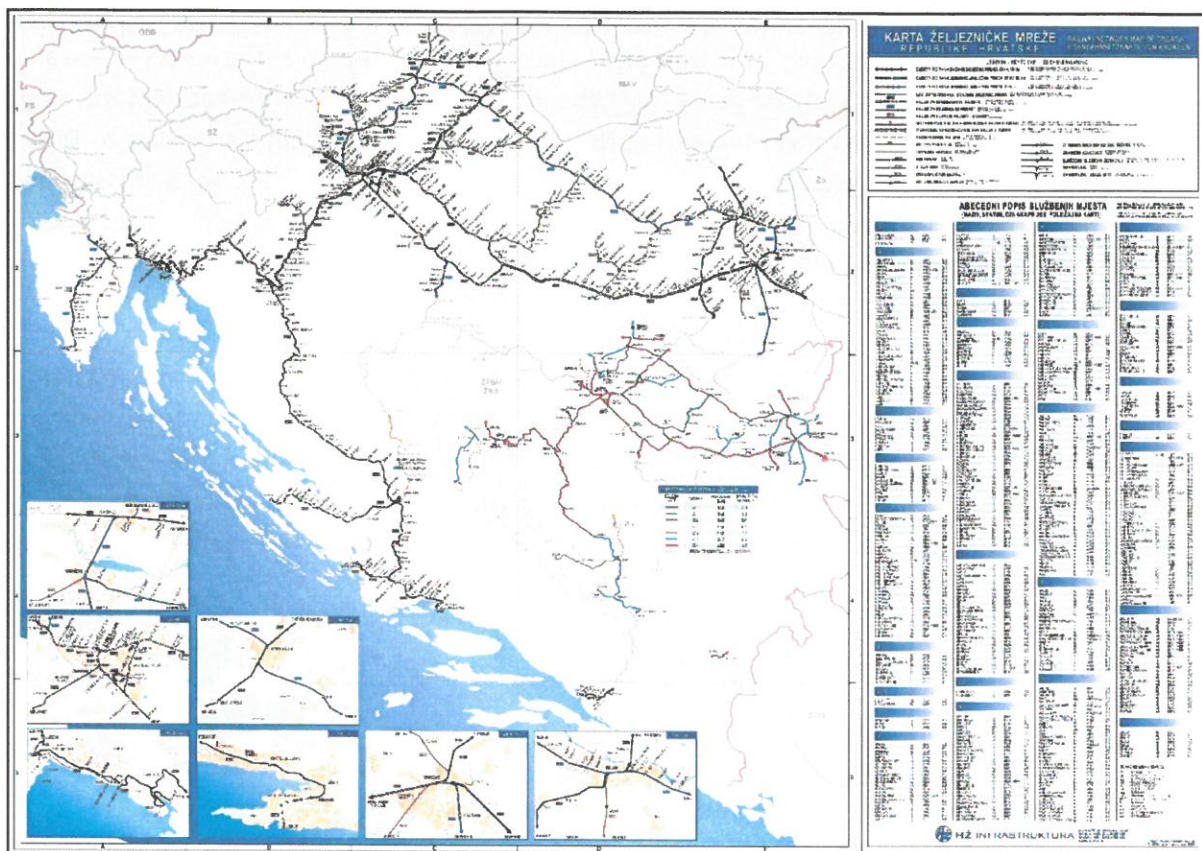
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ABBREVIATIONS

AIA/AIN	Air, Maritime and Railway Traffic Accidents Investigation Agency
NIB	National Investigating Body
EU	European Union
IM	Infrastructure Manager
RU	Railway Undertaking
NSA	National Safety Authority
ERA	European Union Agency for Railways
LC	Level crossing
RS	Rolling stock
SA	Serious accident
A	Accident
I	Incident
SR	Safety Recommendation
KM	Kilometer position of the railway
SPAD	Signal passed at danger

CROATIAN RAILWAY NETWORK



Source: https://www.hzinfra.hr/wp-content/uploads/2022/07/HZ_Railmap_2022_WEB.pdf

The construction length of the Croatian railway network is 2.617 km, of which:

- 2.341 km of single-track and
- 276 km of double-track lines.

The railway network contains 559 stations and stops, 1444 level crossings, 109 tunnels and 543 bridges.

INTRODUCTION TO THE REPORT

A National Investigating Body (NIB) operates in the Republic of Croatia as the Air, Maritime and Railway Traffic Accidents Investigation Agency (AIA), Department for Railway Traffic Accidents Investigation for conducting independent investigations of railway accidents and incidents according to Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast), which principles and requirements have been implemented into the Croatian national legislation. The aim of investigating railway accidents and incidents is to improve the safety of the railway system and prevent future accidents.

This annual report is issued by the AIA, Department for Railway Traffic Accidents Investigation for 2022, in accordance with Article 24(3) of Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast), Article 6(4)(5) of the Act of establishing the Air, Maritime and Railway Traffic Accidents Investigation Agency (Official Gazette Nos. 54/2013 and 96/2018) and Article 132(7) of the Act on Safety and Interoperability of the Railway System (Official Gazette No. 63/2020).

The annual report contains information regarding:

- the NIB,
- railway accidents and incidents investigation system,
- review of completed accidents and incidents investigations in 2022,
- issued safety recommendations.

1 INTRODUCTION TO THE INVESTIGATING BODY

1.1 Legal Basis

The process of the implementation of Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast), into the national legislation of the Republic of Croatia was completed with two national legal Acts, the Act of establishing the Air, Maritime and Railway Traffic Accidents Investigation Agency (Official Gazette Nos. 54/2013 and 96/2018) and the Act on Safety and Interoperability of the Railway System (Official Gazette No. 63/2020).

For accidents and incidents occurring from May 17, 2020, we are applying Commission Implementing Regulation (EU) 2020/572 of 24 April 2020 on the reporting structure to be followed in railway accident and incident reports with all 6 titles and their subtitles included in this Regulation and the English translation of the summary, safety recommendations and conclusions.

The AIA investigates accidents and incidents which, according to their nature and consequences, are divided into the following categories:

- serious accidents,
- accidents,
- incidents.

The accidents and incidents investigation performed by the AIA are independent of any other party and independent of the investigation conducted by other bodies, especially judiciary investigation and the investigation of the causes and circumstances of accidents and incidents conducted by Infrastructure Manager (IM) or Railway Undertakings (RU).

1.2 Role and Aim

The AIA was established on 29 July 2013 by the Act on Establishing of the Air, Maritime and Railway Traffic Accidents Investigation Agency (Official Gazette No. 54/13, 96/18) as a legal person with public authorities. The founder of the Agency is the Republic of Croatia and the founder's rights are exercised by the Government of the Republic of Croatia. The Agency is functionally and organizationally independent of all authorities responsible for air, maritime and railway traffic and of all legal and natural persons. The mission is to guarantee independent investigation of the causes and circumstances of railway accidents and incidents. The national legislation of Republic of Croatia does not authorize the AIA to investigate accidents and incidents within trams, trolleybuses and cable-cars.

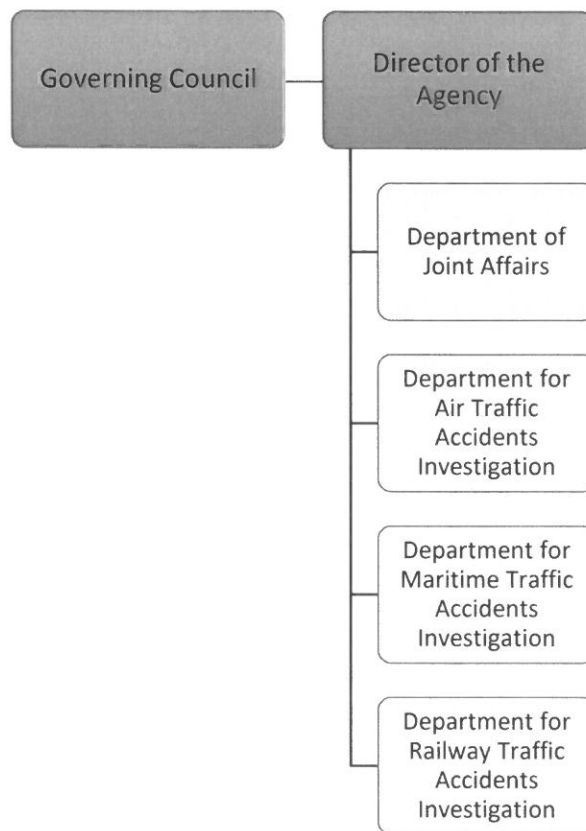
The main goal of the AIA work is to prevent future accidents and incidents. Therefore, the AIA:

- investigates the causal and other factors that preceded the occurrence of railway accidents and incidents,
- issues final reports and safety recommendations to RUs, IM, to the National Safety Authority (NSA) or other authorities and parties.

1.3 Organisation

The AIA is a multimodal institution, consisting of three independent departments for safety investigations. One of the departments is the Department for Railway Traffic Accidents Investigation, which was established in April 2014. The remaining two departments are the Department for Air Traffic Accidents Investigation and Department for Maritime Traffic Accidents Investigation. In 2022, the Department for Railway Traffic Accidents Investigation consisted of two responsible Investigators (of which one is the Chief Investigator) and one senior expert advisor.

The AIA organogram



1.4 Organisational flow

The structure of railway sector in Republic of Croatia and relationships among the parties involved are defined in the Act on Safety and Interoperability of the Railway System (Official Gazette No. 63/2020).

The bodies responsible for the railway system in the Republic of Croatia are the Ministry of The Sea, Transport and Infrastructure, NSA and AIA. The Ministry for Transport is in charge of the national railway legislation, including implementation of the EU railway legislation. The Railway Safety Agency is the NSA which activities include tasks related to safety certificates, approvals, permits and other authorizations, as well as supervision and inspection in order to ensure continuous compliance with railway system safety requirements, keeping prescribed registers and performing other tasks determined by national legislation and EU regulations. The AIA is

independent of any party in the railway system. Budget funds of the AIA are granted through the Ministry of The Sea, Transport and Infrastructure budget system.

2 INVESTIGATION PROCESSES

2.1 Occurrence to be investigated

The national legislation of Republic of Croatia orders the AIA, in accordance with European principles, to investigate the causal and other factors of extraordinary events occurring within the railway system.

When making decision whether to investigate or not an extraordinary event, the AIA must take into consideration the legal requirements, all in order to be able to issue a safety recommendation from the said accident, if necessary, and to avoid similar accidents in the future.

2.2 Institutions involved in investigations

Following the occurrence of railway accident or incident, various parties may launch several independent investigations, depending on the occurrence's nature and consequences:

- **IM or RU** conducts accident or incident investigations within the framework of the safety management system,
- **AIA** investigates the causal and other factors of accidents or incidents and issues safety recommendations,
- **State Attorney's Office and Police Directorate** investigate accident or incident with the aim of defining responsibility for the committing of offenses or criminal acts.

In order to facilitate the work of the on-site investigation procedure, a Memorandum of Understanding between the Police Directorate, State Attorney's Office and NIB Croatia was signed on July 22, 2015.

2.3 Investigation process and approach of the AIA

The aim of the investigation of the causal and other factors of railway accidents and incidents is to gain knowledge for the prevention of future accidents and incidents, reducing the consequences and increasing the safety of railways.

Investigation performed by the Department for Railway Traffic Accident Investigation, focuses on the following aspects of each occurrence:

- independent investigation of the causal and other factors of railway accidents or incidents (serious accidents, accidents and incidents).

When notified about an accident or incident by an IM or RU, the Chief Investigator will decide whether it will immediately go to the accident-site or not. At the accident-site the Department for Railway Traffic Accidents Investigation will launch an independent investigation or just make onsite overview and make decision about launching an investigation later.

Within 30 days of receiving notification of an accident or incident, the Department for Railway Traffic Accidents Investigation decides whether to initiate an investigation and informs all parties involved. Also, the Department for Railway Traffic Accidents Investigation is obliged to

inform European Union Agency for Railways (ERA) about the same within seven days from the day of making the decision to start the investigation.

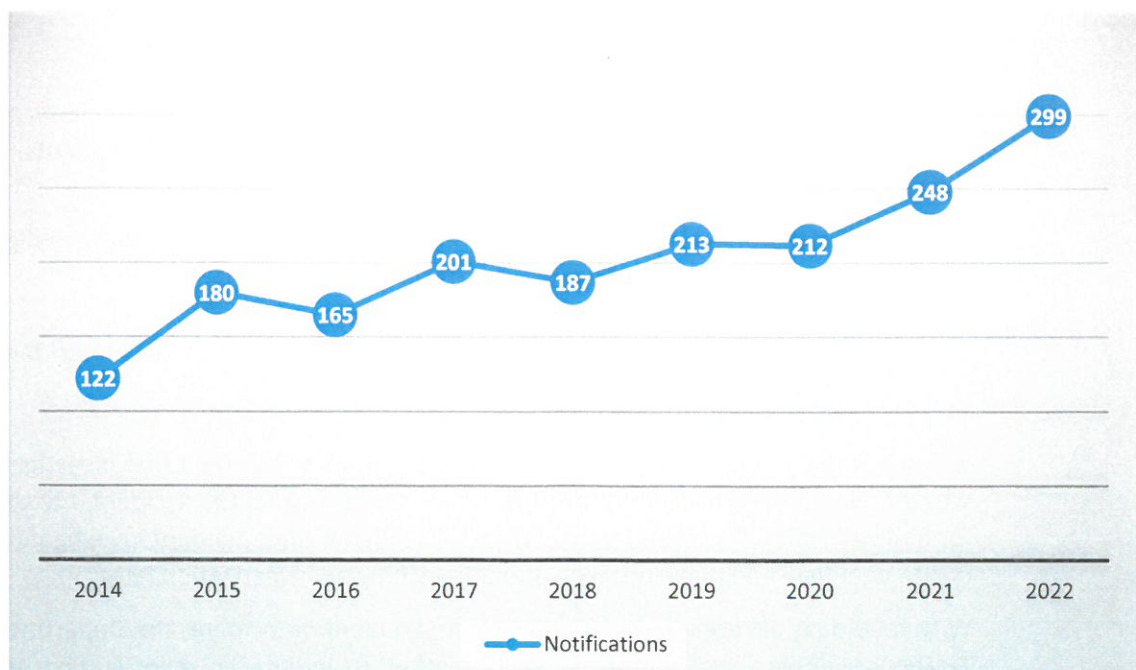
The Department for Railway Traffic Accidents Investigation will publish the conclusions of its investigation in Investigation Reports, the structure of which is based on the requirements of Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast) and Commission Implementing Regulation (EU) 2020/572 of 24 April 2020 on the reporting structure to be followed for railway accident and incident investigation reports. If an accident or incident occurred without any violation of legislation or internal regulations of IM and/or RU, the Department for Railway Traffic Accidents Investigation issues safety recommendation with the aim of preventing reoccurrence of the accident or incident. Safety recommendation is issued also if there are other findings relevant for the safety.

3 INVESTIGATIONS

The Department for Railway Traffic Accidents Investigation has ensured telephone availability of railway accident investigators at any time on the basis of 7/24/365, in order to be able to react as soon as possible and perform an immediate accident-site in accordance with the provisions of the Act on Safety and Interoperability of the Railway System (Official Gazette No. 63/2020). Also, the e-mail address railway.safety@ain.hr has been established in the AIA as a central location where users of railway services can submit all reports of railway accidents and incidents, as well as all other relevant information relating to the field of railway traffic.

In 2022, we received a total of 299 notifications of occurrence in the railway system, of which 12 notifications referred to serious accidents, 62 to accidents, 199 to incidents and 26 notifications related to suicides that the AIA does not investigate.

All notifications received in 2022 were entered into the Database of received notifications kept in the AIA, in which a total of 1827 notifications were recorded from 2014 to the end of 2022:



Following the received notifications, in 2022, we decided to perform an immediate accident-site on 31 accidents/incidents, in accordance with national and EU Laws for the investigation of accidents and incidents.

From those 31 investigations, 4 were commenced in 2022 as it was determined that there were failures in the railway system in specific events.

In 2022, we completed with Final reports and closed 6 investigations.

3.1 Overview of investigations completed in 2022, identifying key trends

Trends of completed investigations in 2022

Type of accidents investigated	Number of accidents	Number of victims		Damages in € (approx.)	Trends in relation to previous year
		Deaths	Ser. injuries		
Collisions	1	0	1	<150.000	100%
Derailments	1	0	0	<150.000	-66%
LC-accident	2	1	0	<150.000	-33%
Accident to persons involving RS in motion	1	1	0	<150.000	100%
Fire in RS	0	0	0	<150.000	-100%
Other	1	0	0	<150.000	-50%

3.2 Investigations completed and commenced in 2022

Investigations completed in 2022

Date of occurrence	Title of the investigation (Occurrence type, location)	Type of occurrence	Completed (date)
27 January 2021	Derailment of train No. 61019 at station Meja	A	08 February 2022
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV	SA	06 May 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina	SA	04 July 2022
17 June 2021	LC Grgur, accident between train No. 1272 and road vehicle	SA	05 July 2022
11 November 2021	SPAD at station Novska	I	28 October 2022
03 December 2021	LC Zagreb Klara, accident between train No. 81973 and road vehicles	A	05 December 2022

SA-Serious accident, A-Accident, I-Incident

Investigations commenced in 2022

Date of occurrence	Title of the investigation (Occurrence type, location)	Type of occurrence
28 March 2022	Train number 2011 running over track worker on the track between stations Novska-Okučani	SA
01 August 2022	LC Milja, accident between train No. 89717 and road vehicle	A
09 September 2022	Trains collision (train Nos. 2506 and 41200) between stations Okučani-Novska	SA
14 November 2022	Trains collision (train No. 62077 and group of wagons) at station Škrlevo	A

SA-Serious accident, A-Accident, I-Incident

3.3 Research studies (or Safety Studies) commissioned and completed in 2022

Safety Studies completed in 2022

Date of occurrence	Title of the investigation (Occurrence type, location)	Type of occurrence	Completed (date)
	none		

Safety Studies commenced in 2022

Date of occurrence	Title of the investigation (Occurrence type, location)	Type of occurrence	Completed (date)
	none		

3.4 Summaries of investigations completed in 2022

See the Annex of this annual report.

3.5 Comment and introduction or background of the investigations

Investigations commenced in 2022 and not followed

Date of occurrence	Title of the investigation (Occurrence type, location)	Legal basis	Reason of non-following or suspension of investigations	Who, why, when (decision)
	none			

3.6 Accidents and incidents investigated during last nine years (in 2014-2022)

Rail investigations completed in the period 2014–2022

The Department for Railway Traffic Accidents Investigation started its work in April 2014, so first investigation was opened in 2014.

The table groups investigations by year of their completion

Accidents investigated		2014	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
Serious accidents	Train collision	0	0	0	0	0	0	0	0	1	1
	Train collision with an obstacle	0	0	0	0	0	0	0	0	0	0
	Train derailment	0	0	0	0	0	0	0	0	0	0
	Level-crossing accident	0	0	1	1	0	0	0	1	1	4
	Accident to person caused by RS in motion	0	0	0	2	0	0	0	0	1	3
	Fire in RS	0	0	0	0	0	0	0	0	0	0
	Involving dangerous goods	0	0	0	0	0	0	0	0	0	0
	Other	0	0	0	0	0	1	0	0	0	1
Accidents	Train collision	0	1	0	1	0	0	0	0	0	2
	Train collision with an obstacle	0	1	1	0	1	0	0	0	0	3
	Train derailment	1	3	2	4	4	3	5	3	1	26
	Level-crossing accident	0	2	1	1	0	1	2	2	1	10
	Accident to person caused by RS in motion	0	0	1	0	1	0	0	0	0	2
	Fire in RS	0	1	0	0	0	0	0	1	0	2
	Involving dangerous goods	0	0	0	0	0	0	0	0	0	0
	Other	0	0	0	0	0	0	0	0	0	0
Incidents		0	2	1	2	2	1	1	2	1	12
TOTAL		1	10	7	11	8	6	8	9	6	66

4 RECOMMENDATIONS

4.1 Short review and presentation of recommendations

A safety recommendation can be issued only on a basis of an independent investigation performed by the AIA. Safety recommendation is usually issued when an accident occurred without any violation of legislation or internal regulations of IM and/or RUs, or if there are other findings relevant for the safety. According to national legislation, safety recommendations are not legally binding. When a recommendation is issued, RUs and IM are obliged to adopt their own preventative safety measures based on issued safety recommendation.

Implementation of recommendations during 2014 – 2022

Recommendations issued		Recommendation implementation status					
		Implemented		In progress		Not implemented	
Year	[No.]	[No.]	[%]	[No.]	[%]	[No.]	[%]
2014	4	2	50%	1	25%	1	25%
2015	7	4	57%	2	29%	1	14%
2016	11	3	27%	1	9%	7	64%
2017	11	8	73%	2	18%	1	9%
2018	3	3	100%	0	0%	0	0%
2019	3	3	100%	0	0%	0	0%
2020	13	6	46%	6	46%	1	8%
2021	9	9	100%	0	0%	0	0%
2022	15	6	40%	5	33%	4	27%
TOTAL	76	44	58%	17	22%	15	20%

Accidents with safety recommendations issued in 2014 – 2022

Date of occurrence	Title of the investigation (Occurrence type, location)	Status of implem.	Completed (date)
11 July 2014	Derailment of a RS near station Mađarevo, SR/14	Implemented	22 December 2014
19 September 2014	Collision on LC in city Krapina, SR 1/14	Implemented	02 April 2015
19 September 2014	Collision on LC in city Krapina, SR 2/14	Accepted	02 April 2015
19 September 2014	Collision on LC in city Krapina, SR 3/14	Not implemented	02 April 2015
19 September 2014	Collision on LC in city Krapina, SR 1/15	Accepted	02 April 2015
4 September 2014	Fire in RS at station Varaždin, SR 2/15	Not implemented	18 May 2015
22 June 2014	Trains collision was avoided at station Dugo Selo, SR 3/15	Implemented	23 October 2015
10 November 2014	Derailment of maneuver locomotive at station Sisak, SR 4/15	Implemented	5 December 2016
11 November 2014	Accident caused by rolling stock in motion, Zdenčina, SR 5/15	Accepted	02 November 2015
12 January 2015	Collision on LC at place Kupinec, SR 6/15	Implemented	22 December 2015
11 September 2014	Derailment of locomotive due to rock slide near station Kaštel Stari, SR 7/15	Implemented	03 March 2016
27 February 2015	Accident on LC at place Kosovo, SR 1/16	Accepted	07 March 2016
27 February 2015	Accident on LC at place Kosovo, SR 2/16	Not implemented	07 March 2016
27 February 2015	Accident on LC at place Kosovo, SR 3/16	Not implemented	07 March 2016
27 February 2015	Accident on LC at place Kosovo, SR 4/16	Not implemented	07 March 2016
27 February 2015	Accident on LC at place Kosovo, SR 5/16	Not implemented	07 March 2016
10 July 2015	Serious accident on LC at place Švogari, SR 6/16	Implemented	12 September 2016
10 July 2015	Serious accident on LC at place Švogari, SR 7/16	Implemented	12 September 2016
10 July 2015	Serious accident on LC at place Švogari, SR 8/16	Not implemented	12 September 2016

Date of occurrence	Title of the investigation (Occurrence type, location)	Status of implem.	Completed (date)
10 July 2015	Serious accident on LC at place Švogari, SR 9/16	Not implemented	12 September 2016
10 July 2015	Serious accident on LC at place Švogari, SR 10/16	Not implemented	12 September 2016
30 June 2015	Accident to person caused by RS in motion at station Split Predgrađe, SR 11/16	Implemented	16 January 2017
28 December 2015	Collision on LC Male Sredice, SR 1/17	Implemented	07 July 2017
28 December 2015	Collision on LC Male Sredice, SR 2/17	Accepted	07 July 2017
12 May 2016	Passenger train crossed an unprotected LC at station Vinkovci, SR 3/17	Implemented	28 June 2017
16 July 2016	Derailment of wagons at Sljeme Tunnel, SR 4/17	Not implemented	31 August 2017
17 October 2016	Collision on LC Kuljevcica near town Ivanec, SR 5/17	Accepted	11 October 2017
17 October 2016	Collision on LC Kuljevcica near town Ivanec, SR 6/17	Implemented	11 October 2017
05 September 2016	Collision of two special railway vehicles on the station Zagreb Ranžirni, SR 7/17	Implemented	25 October 2017
05 October 2016	Trains crossed an unprotected LC Danica, SR 8/17	Implemented	27 February 2018
05 October 2016	Trains crossed an unprotected LC Danica, SR 9/17	Implemented	27 February 2018
05 October 2016	Trains crossed an unprotected LC Danica, SR 10/17	Implemented	27 February 2018
05 October 2016	Trains crossed an unprotected LC Danica, SR 11/17	Implemented	27 February 2018
27 March 2017	Derailment of wagons at station Zagreb Ranžirni, SR 1/18	Implemented	12 February 2018
27 March 2017	Derailment of wagons at station Zagreb Ranžirni, SR 2/18	Implemented	12 February 2018
04 April 2017	Passenger falling out of the wagon at station Križevci, SR 3/18	Implemented	09 May 2018
02 June 2018	Unauthorised movement of train No. 69327 at station Kutina, SR 1/19	Implemented	19 August 2019
02 June 2018	Unauthorised movement of train No. 69327 at station Kutina, SR 2/19	Implemented	19 August 2019
27 June 2018	Derailment of 2 freight wagons which hit the parapet during maneuver at station Slavonski Brod, SR 3/19	Implemented	30 September 2019
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 1/20	Implemented	14 July 2020
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 2/20	Implemented	14 July 2020
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 3/20	Accepted	14 July 2020
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 4/20	Implemented	14 July 2020
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 5/20	Implemented	14 July 2020

Date of occurrence	Title of the investigation (Occurrence type, location)	Status of implem.	Completed (date)
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 6/20	Accepted	14 July 2020
13 October 2018	Collision of passenger train No. 4708 with personal vehicle at LC Vernalska, SR 7/20	Accepted	14 July 2020
21 October 2018	Derailment of passenger train No. 783 at on the railway section Dugo Selo-Vrbovec, SR 8/20	Accepted	27 July 2020
21 October 2018	Derailment of passenger train No. 783 at on the railway section Dugo Selo-Vrbovec, SR 9/20	Not implemented	27 July 2020
5 May 2019	Falling of two containers from freight train No. 62006 while passing through station Škrlevo, SR 10/20	Accepted	24 August 2020
5 May 2019	Falling of two containers from freight train No. 62006 while passing through station Škrlevo, SR 11/20	Implemented	24 August 2020
23 September 2019	Collision of special purpose railway vehicle registered as the train No. 89949 with personal vehicle at LC Vartilen-Podrute, SR 12/20	Accepted	21 October 2020
18 June 2019	Derailment of the wagon of freight train No. 61153 due to the fracture of the axle at station Novoselec, SR 13/20	Implemented	25 November 2020
20 March 2020	Derailment of passenger train No. 3300 on derailler No. I-3 at station Čakovec, SR 1/21	Implemented	26 January 2021
19 October 2019	Broken wheel on locomotive 1141 of train No. 42811 at station Prečec, SR 2/21	Implemented	10 March 2021
22 June 2020	Collision of freight train No. 29713 with personal road vehicle at LC Kupljenovo, SR 3/21	Implemented	11 June 2021
07 September 2020	Collision of freight train No. 48974 with personal road vehicle at LC Pračno, SR 4/21	Implemented	30 September 2021
15 November 2020	Self-starting of freight train No. 41991 due to lack of braking at station Lipovljani, SR 5/21	Implemented	20 October 2021
15 November 2020	Self-starting of freight train No. 41991 due to lack of braking at station Lipovljani, SR 6/21	Implemented	20 October 2021
16 October 2020	Fire on diesel engine sets No. 7121-101/102 as part of train No. 6016 near station Našice, SR 7/21	Implemented	16 November 2021
16 October 2020	Fire on diesel engine sets No. 7121-101/102 as part of train No. 6016 near station Našice, SR 8/21	Implemented	16 November 2021
13 January 2021	Derailment of freight wagons during maneuvering at station Bregi, SR 9/21	Implemented	15 December 2021
27 January 2021	Derailment of train No. 61019 at station Meja, SR 1/22	Accepted	08 February 2022
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV, SR 2/22	Accepted	06 May 2022

Date of occurrence	Title of the investigation (Occurrence type, location)	Status of implem.	Completed (date)
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV, SR 3/22	Implemented	06 May 2022
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV, SR 4/22	Implemented	06 May 2022
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV, SR 5/22	Implemented	06 May 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, SR 6/22	Implemented	04 July 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, SR 7/22	Implemented	04 July 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, SR 8/22	Accepted	04 July 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, SR 9/22	Accepted	04 July 2022
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, SR 10/22	Implemented	04 July 2022
17 June 2021	LC Grgur, accident between train No. 1272 and road vehicle, SR 11/22	Not implemented	05 July 2022
17 June 2021	LC Grgur, accident between train No. 1272 and road vehicle, SR 12/22	Accepted	05 July 2022
11 November 2021	SPAD at station Novska, SR 13/22	Not implemented	28 October 2022
11 November 2021	SPAD at station Novska, SR 14/22	Not implemented	28 October 2022
11 November 2021	SPAD at station Novska, SR 15/22	Not implemented	28 October 2022

4.2 Safety Recommendations issued in 2022

No. of the recommendation: SR 1/22	
Date of occurrence	Title of the investigation
27 January 2021	Derailment of train No. 61019 at station Meja
Addressed to the NSA The involved wagon maintenance workshop should revise its Rolling Stock revision Risk Register updating where necessary to sufficiently cover all reasonably foreseeable risks and eliminate them by adopting operational measures.	
STATUS : Accepted (Održavanje vagona d.o.o.)	

No. of the recommendation: SR 2/22	
Date of occurrence	Title of the investigation
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV
Addressed to the NSA The Infrastructure Manager should ensure that the execution plan is prepared in accordance with the Regulations on safety at work on temporary construction sites Annex IV („Official Gazette“, No. 48/18), and apply the relevant provisions in their telegrams.	
STATUS : Accepted (HŽ Infrastruktura d.o.o.)	

No. of the recommendation: SR 3/22	
Date of occurrence	Title of the investigation
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV
Addressed to the NSA The involved railway undertaking, the company HŽ Cargo, should include more attention in the regular trainings of train drivers in the teaching content of teaching the procedures for the danger of train collisions with railway workers during the performance of works.	
STATUS : Implemented (HŽ Cargo d.o.o.)	

No. of the recommendation: SR 4/22	
Date of occurrence	Title of the investigation
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV
Addressed to the Remont pruga Matić d.o.o. The company, „Remont pruga Matić“ Ltd, as a subcontractor, should revise its Risk Assessment Register and update it where necessary to sufficiently cover the risk of train collisions on all track workers during their execution of works and removed by adopting additional new measures.	
STATUS : Implemented (Remont pruga Matić d.o.o.)	

No. of the recommendation: SR 5/22	
Date of occurrence	Title of the investigation
05 March 2021	Train number 69609 running over worker on the track between stations Zaprešić-Podsused TV
Addressed to the Remont pruga Matić d.o.o. The company, „Remont pruga Matić“ Ltd., as a subcontractor, should develop and implement a process of monitoring and assessing the identification and development of continuous safety performance and competence of its staff, to ensure that works are planned, performed and revised on the basis of laws, sub-legal acts and internal procedures for work safety, especially in the early stages of establishing new contract works and sites of works.	
STATUS : Implemented (Remont pruga Matić d.o.o.)	

No. of the recommendation: SR 6/22	
Date of occurrence	Title of the investigation
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina
Addressed to the NSA The involved railway undertaking, ENNA, should include in the regular trainings of train drivers process of the procedure for stopping trains on the line when the means of communication with neighboring stations or TK dispatcher are not available, in accordance with the Regulations on the manner and conditions for safe operation and management of railway traffic (Official Gazette, No. 107/16).	
STATUS : Implemented (ENNA Transport d.o.o.)	

No. of the recommendation: SR 7/22	
Date of occurrence	Title of the investigation
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina
Addressed to the NSA The railway undertaking involved, ENNA, should include in the regular trainings of train drivers more attention in the teaching of proven communication procedures in railway transport in accordance with the Regulations on the manner and conditions for safe operation and management of railway traffic (Official Gazette, No. 107/16) both in the theoretical part and in the practical part of achieving proven communication.	
STATUS : Implemented (ENNA Transport d.o.o.)	

No. of the recommendation: SR 8/22	
Date of occurrence	Title of the investigation
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina
Addressed to the NSA The railway undertaking involved, ENNA, should reassess the risk/hazard posed by the danger of a train passing a signal showing a "Stop" signal and eliminate it by adopting new measures.	
STATUS : Accepted (ENNA Transport d.o.o.)	

No. of the recommendation: SR 9/22	
Date of occurrence	Title of the investigation
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina
Addressed to the NSA In accordance with the Manual for the Maintenance of the Radio Dispatching Network, the Infrastructure Manager should regularly perform measurements in accordance with the prescribed deadlines and keep records for the same.	
STATUS : Accepted (HŽ Infrastruktura d.o.o.)	

No. of the recommendation: SR 10/22	
Date of occurrence	Title of the investigation
11 August 2021	Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina
Addressed to the NSA The Infrastructure Manager should inform all Railway Undertakings that communication via mobile devices owned by Railway Undertakings, which are outside the official closed communication system, is not a method of prescribed proven communication.	
STATUS : Implemented (HŽ Infrastruktura d.o.o.)	

No. of the recommendation: SR 11/22	
Date of occurrence	Title of the investigation
17 June 2021	LC Grgur, accident between train No. 1272 and road vehicle
Addressed to the NSA The involved Railway Undertaking, should provide at any moment the pilot with an unobstructed view of current speed of the train in cases when the trains are driving in the presence of the pilot.	
STATUS : Not implemented (HŽ Putnički prijevoz d.o.o.)	

No. of the recommendation: SR 12/22	
Date of occurrence	Title of the investigation
17 June 2021	LC Grgur, accident between train No. 1272 and road vehicle
Addressed to the NSA Agency for Railway Safety when issuing the Approvals for the use of certain towing vehicles or sets should pay more attention to those series of vehicles equipped with a pilot's seat, so that it has an unobstructed view of the current speed of the train with regard to the intended seating position while driving in the steering wheel.	
STATUS : Accepted (NSA)	

No. of the recommendation: SR 13/22	
Date of occurrence	Title of the investigation
11 November 2021	SPAD at station Novska
Addressed to the NSA The involved railway undertaking, Transagent, should include in the regular trainings of train drivers in the teaching content more attention around the teaching of hazard procedures train passing the signal prohibiting further driving.	
STATUS : Not implemented (Transagent Rail d.o.o.)	

No. of the recommendation: SR 14/22	
Date of occurrence	Title of the investigation
11 November 2021	SPAD at station Novska
Addressed to the NSA The involved railway undertaking, Transagent, should increase number of random checks of alcohol concentration measurements in the train driver's body during their work.	
STATUS : Not implemented (Transagent Rail d.o.o.)	

No. of the recommendation: SR 15/22	
Date of occurrence	Title of the investigation
11 November 2021	SPAD at station Novska
Addressed to the NSA The involved railway undertaking, Transagent, should revise its own safety management system, so that by applying all its own procedures and methods for detecting and carrying out risk assessment, implements safety measures to manage the risk caused by the reduced train driver perception during working hours due to fatigue or alcohol consumption.	
STATUS : Not implemented (Transagent Rail d.o.o.)	

INVESTIGATIONS COMPLETED IN 2022 SUMMARY

Accident, derailment of train No. 61019 at station Meja, on 27 January 2021



Type of occurrence:	Accident
Date and time:	27 January 2021, 03:30 a.m.
Occurrence type:	Train derailment
Description:	<p>On January 27, 2021, at 03:30 a.m. near the station Meja, on the international line marked M202, at KM 636+072, was derailment of the penultimate wagon of the freight train No. 61019. In fact, while driving train there was a movement of the front right wheel at bearing position number 3 by approximately 50 mm per axle towards to the center of the track on the rear bogie of the wagon number 31 78 7850 041-0. The front of train No. 61019 stopped at KM 633+185 on the 2nd track at the Meja station due to damage caused by wheel movement on the axle hub.</p>
Type of train:	Freight train
Location:	Line No. M202, station Meja
Participants:	HŽ Infrastruktura Ltd. (IM), ENNA TRANSPORT Ltd. (RU)
Consequences:	No one was killed or injured in the accident, while there was great material damage to the railway infrastructure and freight wagons.
Direct cause:	Derailment of wagon number 31 78 7850 041-0 due to the movement of the front right wheel on bearing position number 3 by approximately 50 mm per axle towards the center of the track.
Safety recommendation:	AIN/06-SR-01/2022: The involved wagon maintenance workshop should revise its Rolling Stock revision Risk Register updating where necessary to sufficiently cover all reasonably foreseeable risks and eliminate them by adopting operational measures.

Serious accident, train number 69609 running over worker on the track between stations Zaprešić-Podsused TV, on 05 March 2021



Type of occurrence:	Serious accident
Date and time:	05 March 2021, 01:45 p.m.
Occurrence type:	Accident to person caused by RS in motion
Description:	On March 05, 2021, at 01:45 p.m., on the section of the line M101 at KM 438+180 between stations Zaprešić and Podsused TV, the locomotive of the machine train number 69609 struck a track worker who was within the right track opened to traffic. At the time of the accident, the material train was unloading the crushed stone with the track workers on the left track, which was closed to traffic.
Type of train:	Locomotive train
Location:	Line No. M101, between stations Zaprešić and Podsused TV
Participants:	HŽ Infrastruktura Ltd. (IM), HŽ Cargo Ltd. (RU), Remont pruga Matić Ltd. (railway subcontractor)
Consequences:	In serious accident, a track worker who was performing the duties of a railway manager was fatally injured.
Direct cause:	Struck of the locomotive of the machine train number 69609 on a track worker who was on the right irregular track, which was open to traffic, while performing work task.
Safety recommendations:	<p>AIN/06-SR-2/2022: The Infrastructure Manager should ensure that the execution plan is prepared in accordance with the Regulations on safety at work on temporary construction sites Annex IV („Official Gazette“, No. 48/18), and apply the relevant provisions in their telegrams.</p> <p>AIN/06-SR-3/2022: The involved railway undertaking, the company HŽ Cargo, should include more attention in the regular trainings of train drivers in the teaching content of teaching the procedures for the danger of train collisions with railway workers during the performance of works.</p> <p>AIN/06-SR-4/2022: The company, „Remont pruga Matić“ Ltd, as a subcontractor, should revise its Risk Assessment Register and update it where necessary to sufficiently cover the risk of train collisions on all track workers during their execution of works and removed by adopting additional new measures.</p> <p>AIN/06-SR-5/2022: The company, „Remont pruga Matić“ Ltd., as a subcontractor, should develop and implement a process of monitoring and assessing the identification and development of continuous safety performance and competence of its staff, to ensure that works are planned, performed and revised on the basis of laws, sub-legal acts and internal procedures for work safety, especially in the early stages of establishing new contract works and sites of works.</p>

Serious accident, Trains collision (train Nos. 41990 and 45902) between stations Križevci-Lepavina, on 11 August 2021



Type of occurrence:	Serious accident
Date and time:	11 August 2021, 04:40 a.m.
Occurrence type:	Train collision
Description:	<p>On August 11, 2021 at 04:40 a.m. between stations Križevci and Lepavina, on the international line marked M201 at KM 484+490, train number 41990 collided with the end of train number 45902. Train number 41990 passed by the spatial signal number 142 which showed the signal sign "Stop". Due to the collision, in train number 41990, locomotive number 91 80 6193 271-4 derailed and overturned off the track, wagons of the Sggrs series number 31 80 495 0702-9, 33 54 495 0193-1, 33 54 495 0202- 0 derailed out of track and wagon number 33 54 495 0702-9 derailed with the first axle in the direction of train movement and remained on the track. In train number 45902, series wagons derailed off track Rilns number 33 56 355 2223-0, Rijmms 31 56 353 6029-2, Rils 31 56 353 7059-8, Rilns 31 56 355 2191-9, Rilns 31 56 355 2083-8, while wagon Rilns 31 56 355 2069-7 derailed from both pedestals of the track.</p>
Type of train:	Freight train
Location:	Line No. M201, between stations Križevci-Lepavina
Participants:	HŽ Infrastruktura Ltd. (IM), ENNA TRANSPORT Ltd. (RU), HŽ Cargo Ltd. (RU)
Consequences:	The driver of train number 41990 was seriously injured in the accident and the driver of train number 45902 was slightly injured, while major material damage was caused to railway vehicles and infrastructure.
Direct cause:	Passing of train number 41990 next to the spatial signal number 142 which showed the signal sign "Stop" and the collision at the end of train number 45902 which was stopped due to a momentary failure.
Safety recommendations:	AIN/06-SR-6/2022: The involved railway undertaking, ENNA, should include in the regular trainings of train drivers process of the procedure for stopping trains on the line when the means of communication with neighboring stations or TK dispatcher are not available, in accordance with the Regulations on the manner and conditions

for safe operation and management of railway traffic (Official Gazette, No. 107/16).

AIN/06-SR-7/2022: The railway undertaking involved, ENNA, should include in the regular trainings of train drivers more attention in the teaching of proven communication procedures in railway transport in accordance with the Regulations on the manner and conditions for safe operation and management of railway traffic (Official Gazette, No. 107/16) both in the theoretical part and in the practical part of achieving proven communication.

AIN/06-SR-8/2022: The railway undertaking involved, ENNA, should reassess the risk/hazard posed by the danger of a train passing a signal showing a "Stop" signal and eliminate it by adopting new measures.

AIN/06-SR-9/2022: In accordance with the Manual for the Maintenance of the Radio Dispatching Network, the Infrastructure Manager should regularly perform measurements in accordance with the prescribed deadlines and keep records for the same.

AIN/06-SR-10/2022: The Infrastructure Manager should inform all Railway Undertakings that communication via mobile devices owned by Railway Undertakings, which are outside the official closed communication system, is not a method of prescribed proven communication.

**Serious accident, LC Grgur accident between train No. 1272 and road vehicle,
on 17 June 2021**



Type of occurrence:	Serious accident
Date and time:	17 June 2021, 10:22 a.m.
Occurrence type:	LC accident
Description:	On June 17, 2021, at 10:22 a.m. at the LC "Stancija Grgur", passively secured with traffic signs at KM 103+821 on the line R101, a personal road vehicle drove under passenger train number 1272.
Type of train:	Passenger train
Location:	Line No. R101, LC Grgur
Participants:	HŽ Infrastruktura Ltd. (IM), HŽ Putnički prijevoz Ltd. (RU), SŽ – Vleka in tehnika, Ltd. (RU), personal road vehicle
Consequences:	In the mentioned serious accident, the driver of a personal road vehicle was fatally injured and large material damage was recorded on the personal road vehicle and minor material damage to the passenger set.
Direct cause:	Driving of a personal road vehicle over the LC "Stancija Grgur" just before the arrival of passenger train number 1272 despite traffic signs (Andrew's Cross and STOP sign), and drove under the same train.
Safety recommendations:	<p>AIN/06-SR-11/2022: The involved Railway Undertaking, should provide at any moment the pilot with an unobstructed view of current speed of the train in cases when the trains are driving in the presence of the pilot.</p> <p>AIN/06-SR-12/2022: Agency for Railway Safety when issuing the Approvals for the use of certain towing vehicles or sets should pay more attention to those series of vehicles equipped with a pilot's seat, so that it has an unobstructed view of the current speed of the train with regard to the intended seating position while driving in the steering wheel.</p>

Incident, SPAD at station Novska, on 11 November 2021



Type of occurrence:	Incident
Date and time:	11 November 2021, 10:15 a.m.
Occurrence type:	SPAD
Description:	<p>On November 11, 2021, at 10:15 a.m. on the section of line M103 at KM 000 + 684, train number 89265 did not stop in front of the input signal "C" of station Novska, which signaled the signal sign "Stop" and passed the unsecured LC "71-Novska". Shortly afterwards, train number 89265 stopped and drove backwards over the unsecured LC and stopped again in front of the input signal "C". When the train number 89265 entered the station Novska from the station Lipovljani, the train passed the input signal marked "C" which signaled the signal sign "Stop", as a result of which the automatic stop device on the locomotive was activated. The train stopped at the maneuvering signal marked 61V at KM 000+340.</p>
Type of train:	Locomotive train
Location:	Line No. M103, station Novska
Participants:	HŽ Infrastruktura Ltd. (IM), Transagent Ltd. (RU)
Consequences:	There were no injuries or fatally injuries in the incident, as well as no material damage on the railway infrastructure and railway vehicles.
Direct cause:	Passing of train next to the input signal which prohibited further driving and also passing over the unsecured LC, caused by the reduced perception of the train driver.
Safety recommendations:	<p>AIN/06-SR-13/2022: The involved railway undertaking, Transagent, should include in the regular trainings of train drivers in the teaching content more attention around the teaching of hazard procedures train passing the signal prohibiting further driving.</p> <p>AIN/06-SR-14/2022: The involved railway undertaking, Transagent, should increase number of random checks of alcohol concentration measurements in the train driver's body during their work.</p> <p>AIN/06-SR-15/2022: The involved railway undertaking, Transagent, should revise its own safety management system, so that by applying all its own procedures and methods for detecting and carrying out risk assessment, implements safety measures to manage the risk caused by the reduced train driver perception during working hours due to fatigue or alcohol consumption.</p>

**Accident, LC Zagreb Klara accident between train No. 81973 and road vehicles,
on 03 December 2021**



Type of occurrence:	Accident
Date and time:	03 December 2021, 06:18 p.m.
Occurrence type:	LC accident
Description:	On December 3, 2021, at 06:18 p.m. on the LC Zagreb Klara "Block 3", actively secured (light, sound and half-bumper) on the track M404 Zagreb Klara - Delta Rasputnica at KM 000+910, freight train number 81973 ran into two road motor vehicles while operated on the route Zagreb RK - Hrvatski Leskovac - Ogulin.
Type of train:	Freight train
Location:	Line No. M404, LC Zagreb Klara
Participants:	HŽ Infrastruktura Ltd. (IM), HŽ Cargo Ltd. (RU) and personal road vehicles
Consequences:	In the accident driver of one road motor vehicle was minor injured and there was major material damage to road motor vehicles and minor material damage to the locomotive of the freight train.
Direct cause:	Passing of train number 81973 over the LC, which was not secured at the time the train passed, and collision of the train with two road motor vehicles that were crossing the unsecured LC at that moment.
Safety recommendation:	The AIA has no safety recommendation related to this accident.