

THE NATIONAL SAFETY AUTHORITY FOR RAILWAYS IN IRELAND

2022

**ANNUAL REPORT
TO THE EUROPEAN
UNION AGENCY
FOR RAILWAYS**

Version control

Document issued by:	Commission for Railway Regulation Temple House, Blackrock, Co. Dublin, Ireland
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Version:	01
Date:	27.10.2023
Type of document:	Report
Status of document:	Issued

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Definitions and abbreviations

CSI	Common Safety Indicator
CSM	Common Safety Method
CST	Common Safety Target
DoT	Department of Transport
EC	European Commission
ECM	Entity in charge of maintenance
EMM	Enforcement Management Model
ERA	European Union Agency for Railways
ERAIL	European Railway Accident Information Links
ERTMS	European Railway Traffic Management System
EU	European Union
FTE	Full Time Equivalent
IM	Infrastructure Manager
IOD	Interoperability Directive
NIB	National Investigation Body for railway accidents
NoBo	Notified Body
NRV	National Reference Value for CST
NSA	National Safety Authority for railways
PRM TSI	Technical specifications for interoperability relating to accessibility of the Union's rail system for persons with disabilities and persons with reduced mobility
RAIU	The Railway Accident Investigation Unit, the NIB in Ireland
Railway Organisation	An Irish legal term that collectively describes Railway Undertakings and Infrastructure Managers
RSD	Railway Safety Directive
RU	Railway Undertaking
SMS	Safety Management System
TDD	Train Drivers Directive
TSI	Technical Specification for Interoperability
VA	Vehicle Authorisation

1 Introduction

1.1 Purpose, scope and addressees of the report

1.1.1 Purpose and scope of the report

The Commission for Railway Regulation (CRR) is pleased to submit its annual report to the European Union Agency for Railways (ERA) for the year 2022. This is the second annual report under the CRR's current strategy for 2021–2024.

Article 19 of the Railway Safety Directive 2016/798/EC (the Directive that is transposed in Ireland by Statutory Instrument 476 of 2020) requires the CRR to publish an annual report by 30th September each year concerning its activities in the preceding year and to send it to the European Union Agency for Railways (ERA).

In this report, the CRR endeavours to show how the railway system in Ireland is performing, highlighting difficulties and good practices while fostering and encouraging the railway industry in Ireland on its safety improvement journey. This report aims to provide evidence of the CRR's ongoing efforts to improve safety performance in the State, communicate its main safety messages and objectives, show what it is doing and why, and explain how well it is succeeding.

The geographic scope of this report is the 1600mm gauge national railway system in Ireland.

1.1.2 Structure/data to which the document refers

The annual report contains information on:

- The development of railway safety, including an analysis at Member State level of the common safety indicators (CSIs) laid down in Annex I of the Railway Safety Directive.
- Important changes in legislation and regulation concerning railway safety.
- The development of safety certification and safety authorisation.
- Results of and experience relating to the supervision of infrastructure managers and railway undertakings.
- Derogations for entities in charge of maintenance of vehicles decided in accordance with Article 14a(8) of the Directive.

This report uses the assigned template (GUI_MRA_002 V 3.0) which includes the extended requirements under the fourth railway package.

1.1.3 Target audience of the report

To improve European railway safety, the ERA needs to understand how the EU railway system is functioning and any issues that are impacting on safety performance. This annual report demonstrates how the CRR, as the National Safety Authority (NSA) for railways in Ireland, is promoting the EU rail regulatory framework while fulfilling its tasks under the Railway Safety Directive (EU) 2016/798.

This report offers some insight to the operational railway companies and applicants for safety certification and safety authorisation, including the railway undertakings (RU), the infrastructure manager (IM) and the entities in charge of maintenance of vehicles (ECM), which should help them to continually improve their safety management systems (SMS).

This report may also be of interest to the National Investigating Body (NIB) for railway occurrences and to the Department of Transport.

1.1.4 Availability of the report to stakeholders

This report will be published on the websites of the CRR and the ERA.

1.2 Main conclusions on the reporting year

1.2.1 Main conclusion about how the railway system performed

The first months of 2022 saw the removal of Government COVID-19 restrictions and the beginning of a return to pre COVID-19 regulatory engagement. New ways of working and the use of IT platforms that facilitated our continued engagement with regulated entities and stakeholders during COVID-19 have now been integrated into our work streams and will continue to be a central part of our work processes.

The CRR developed its 2022 supervision programme with a balance of activities including audits, inspection and safety performance meetings. These activities are directed at all the entities we regulate based on their risk profile. Our overall approach has been and continues to be based on support, advice, encouragement and when necessary, enforcement.

Since COVID-19 restrictions were lifted in early 2022, there has been a steady and marked increase in passenger numbers, with 35.84 million passenger journeys reported for the conventional railway.

Overall, the safety performance of the Irish conventional railway sector was assessed as positive in 2022, both when compared against previous years and European statistics, cognisant that passenger numbers are not yet back to pre-pandemic levels.

One notable accident in 2022 involved the collision of a Road Rail Vehicle (RRV) with a member of Iarnród Éireann staff during planned maintenance, i.e., the railway line was closed to passenger train movements. The member of staff suffered life changing injuries and required substantive medical attention. This occurrence is not considered to be a significant accident as per CSI definitions. A significant accident was reported following trespass on the line, where one person died at a station following a collision with a non-stopping train. Unlike 2021, there were no occurrences notified to the CRR that would indicate a violation of rules. Inspectors continue to promote safe working and the importance of adhering to rules and procedures.

Using reports produced by the European Union agency for Railways, it is observed that Ireland's safety performance is good in comparison to other member states. However, we recognise the fact that the small size of the IÉ-IM network means that this statistic must be viewed with caution as even a small number of accidents would have a significant effect on this standing.

Nevertheless, Ireland has consistently been among the member states that have the lowest fatality rates. It should also be noted that there have been no passenger fatalities in Ireland during this period and the fatalities that have been reported are a result of trespass/misadventure by persons.

1.2.2 Overall trends

2022 saw a return to more normal railway operations, all be it with changed travel demand that suggest that a return to pre-pandemic travel patterns is unlikely in the short to medium term. The return to larger passenger volumes did not seem to be associated with any significant changes in safety risk, but it is likely these trends will take time to materialise if they are present.

There were no passenger fatalities in 2022. One person who accessed the track without permission was struck by a train, the only significant accident for the year. 6 people lost their lives after trespassing onto the railway in what are considered to be acts of self-harm.

In an operational context, the number of SPAD occurrences increased by 50% on the Iarnród Éireann rail network (8 in 2021 v 12 in 2022). The involved railway organisations have plans for both internal and external reviews to provide further detail on causal analysis. Each SPAD occurrence is now reviewed by human factors experts. Even though the number of such events remains low, this accident precursor will remain a focus for the CRR given the low percentage of services that avail of automatic train protection. The number of train derailments was the same as in 2021 with all 4 of the 2022 occurrences being in Iarnród Éireann sidings. There was an increase in the number of collisions with animals on the line (46 in 2021 v 59 in 2022), and as for other years this variable can be hard to control and is often associated with weather events.

1.2.3 Impact of the above analyses on the next year activities

Ascertaining a trend in accident and incident statistics in Ireland is difficult given that the number of occurrences is very low. In 2022, the CRR Supervision Team focused as always on those key assets that give cause for concern. In planning its annual program of work every year the CRR reviews the safety performance of each RU and IM, including the type and number of accidents, incidents they have suffered, audit and inspection findings, complaints and representations by, or on behalf of staff and passengers. Using this data, together with professional judgement, new supervision plans are developed for the forthcoming year.

These supervision plans are risk based meaning those RU's and IM's that have greater exposure to risk, by virtue of the size of the operation, can expect more supervision than those who have limited exposure to risk. The CRR adopts the principles for supervision that include proportionality, consistency, transparency and we work closely with the RU's and IM's we regulate to ensure a safe system.

1.2.4 Priority actions for the next year

With the transposition of the Railway Safety Directive and the Interoperability Directive in 2020, the CRR will continue to include actions to ensure that both Railway Undertakings and the Infrastructure Manager who are assessed for conformity or authorised under the new directives are aware of the new requirements which they place on them. Similarly, we will ensure that we are in a position to assist the regulated entities to meet these requirements.

The CRR continued implementing its Statement of Strategy in 2022 and will therefore prioritise engagement with all the sector stakeholders to ensure that the strategy reflects the key objectives relevant to the future development of our national rail system and its continuous improvement.

2 Summary

In the initial months of 2022, Government COVID-19 restrictions were lifted, marking the commencement of a transition back to the pre-COVID-19 regulatory environment. Novel methods of operation and the adoption of new communication platforms that enabled ongoing interactions with regulated entities and stakeholders throughout the pandemic are now seamlessly integrated into our operational processes. These innovations will continue to be important elements of our workflow moving forward.

The CRR developed its 2022 supervision programme with a balance of activities including audits, inspection and safety performance meetings. These activities are directed at all the entities we regulate based on their risk profile. Our overall approach has been and continues to be based on support, advise, encouragement and, when necessary, enforcement.

Since COVID-19 restrictions were lifted in early 2022, there has been a steady but notable increase in passenger numbers, 35.84 million passenger journeys reported for the conventional railway.

Overall, the safety performance of the Irish conventional railway sector was assessed as positive in 2022, both when compared against previous years and European statistics, cognisant that annual passenger numbers are not yet back to pre-pandemic levels.

All NSA functions continued to be performed in 2022, which included work associated with the certification and authorisation required under EU legislation, Designated Body recognition, as well as safety supervisory functions on the regulated entities, including audit and inspection planned on a risk-based analysis. We continued to monitor RU's and IM's implementation of CRR required actions and the recommendations of the Rail Accident Investigation Unit (RAIU), where progress is observed to be reasonable.

In 2022, the CRR issued one 'Stage 3 – Detailed Design letter of acceptance' for new train carriages to become part of an existing diesel multiple unit fleet. One IM was granted a safety authorisation against Commission Regulation (EU) 2018/762. There was a total of 49 Train Driver licences issued by the CRR in 2022. There were two such licences amended. As the recognition body for Designated Bodies (DeBo's) for the IE network the CRR undertook 6 initial recognition activities in 2022.

In 2022, the CRR signed a Memorandum of Understanding (MoU) with the Department for Infrastructure of Northern Ireland and specifically their Railway Safety Authority. The principal objectives of this MoU are:

- Facilitate cooperation in discharging our statutory responsibilities.
- Enhance supervision activity by both parties in terms of coordination of supervision plans.

In 2022, CRR inspectors concluded a total of 41 Inspections broken down as follows:

- IÉ-IM: 23 Inspections.
- IÉ-RU: 10 Inspections.
- NIR: 0 Inspection.
- RPSI: 5 Inspections.
- RSIE: 3 Inspections.

These inspections included sample checks on infrastructure assets, depots, train driver licences, train operations and rolling stock maintenance activities. These inspections resulted in a multitude of outcomes ranging from 'scope for improvement' where action is determined by the railway organisation to 'major non-compliance' where evidence is sought by CRR inspectors to ensure that action has been taken. Primary results are discussed in section 7.1.1. Three audits were completed in 2022. The CRR conducts occurrence inspection activities on accidents and incidents to review compliance with the regulatory framework. 50 such activities were recorded as completed for 2022. A total of 78 outcomes (recommendations) were recorded for organisations within the scope of this report.

In 2022, the CRR established a Rail Human & Organisational Factors Sector Group open to all railway organisations operating within the state. Our inaugural meeting was held in October 2022 and attended by more than 20 railway professionals with representatives from all the heavy and light railway organisations. Participants ranged from heads of safety to engineering/operations managers all with an interest in HOF. At this first meeting, the group's Terms of Reference were established and agreed. There were also presentations by the CRR on our SMS expectations in relation to HOF and Safety Culture and by the Head of Human Factors at Irish Rail on current projects of interest.

3 NSA safety strategy, programs, initiatives and organisational context

3.1 Strategy and planning activities

2022 was the second year of the CRR's current three-year strategy which was developed in consultation with all stakeholders. Within the new strategy the CRR is committed to advancing railway safety, through effective regulation, and by fostering and encouraging the continuous improvement in safety management by railway organisations. It advocates the participation of all stakeholders in the further development of Ireland's rail sector so that it is a safe and efficient mode of transport that benefits our society.

In accordance with the CRR's vision of "safe and sustainable railways that provide efficient and convenient transport for society", its safety initiatives are linked to the main safety critical areas and indicators of accidents and precursors in order to improve common safety indicators.

We have set key strategic priorities relating to rail safety, railway regulation, engagement with Government, communication with stakeholders and for our own organisation.

We have also set key values for how we work, which include integrity, respect, independence and excellence in what we do.

Also of note was the continued progress in the implementation of elements of the CRR action plan developed to address a number of deficiencies identified during the ERA NSA monitoring audit in 2020. A draft supervision strategy in line with CSM 2018/761, was completed by the end of 2022.

The CRR plans its supervision activities, which are risk based, and identified the main areas that were to be focussed on through audit and inspection. COVID-19 continued to have an impact on the working environment in Ireland and throughout Europe in early 2022.

We commenced the planning for key stakeholder engagement on elements of the transposed Railway Safety and Interoperability Directives initially planned for 2022 but was deferred to 2023.

3.1.1 NSA process of review and continual improvement of its strategy and planning of activities/initiatives

3.1.1.1 CRR supervision

The CRR's supervision activities are planned annually on a risk basis using qualitative and quantitative means. During the year the CRR Supervision team meet bi-weekly at which time ongoing tasks and activities are discussed. At these meetings Inspectors can share experiences and often, as a result of these discussions, there are changes to activities or the way we work.

Moreover, the CRR Supervision team together with colleagues from the Conformity Assessment and APIS Team come together annually to essentially undertake a SWOT Analysis of the year's supervision activities.

Inspectors are encouraged to share what they felt worked well and what did not. Similarly, staff are encouraged to suggest new supervision activities or methods for same. At this 'workshop', Inspection Templates are reviewed and where necessary amended thereby demonstrating continuous improvement/refinement of our supervision processes. The 2022 Annual Supervision Programme introduced a process of prioritisation of activities, particularly in the audit area where these were ranked as low, medium or high priority. In the event of resource constraints arising the high and medium activities would be retained.

3.1.1.2 Assessments and authorisation

The CRR re-issued two of its guideline documents, CRR-G-006-C – Guideline for the Design of Railway Infrastructure and Rolling Stock – Section 5 Level Crossings and CRR-G-053-B – Guideline for CRR Designation/Recognition of Designated Bodies in Ireland.

Ireland has a limited number of entities involved in the operation of railways in the state. There is one infrastructure manager and four railway undertakings operating on the network. Therefore, we have good visibility for SMS certification/authorisation applications in a given year. A renewed Safety Authorisation was issued to the Infrastructure Manager in 2022. In addition, the CRR commenced the pre-engagement phase with the state railway undertaking and the On-Track Machine Railway Undertaking (both due for recertification in 2023). Both SMSs are to be submitted through the ERA OSS for assessment, with NSA IE being requested to perform that assessment.

With regard to authorisation to place in service projects, at the end of each year the principal inspector communicates with all potential applicants to determine as far as possible what applications are expected in the coming year to assist with resource and competency planning.

3.1.2 NSA strategies in international activities

In the early stages of 2022, COVID-19 continued to keep the approach based on remote/virtual engagement in place for international activities. The ability to travel and attend on site meetings increased as the year progressed. The CRR has maintained its capacity to engage in such international activities. We have found that there are significant resource benefits to also being able to continue to engage virtually for such activity, and this is an approach we will continue to use.

The CRR although a small NSA values participation in as broad a range of national and international fora as possible. The virtual and in person engagement in 2022 included the ERA's NSA Network, European Commission's Railway Interoperability and Safety Committee, as well as other ERA Working Groups and Task Forces.

In addition, our nominees continued to contribute to work of the International Liaison Group for Government Railway Inspectorates (ILGGRI) plenary meetings and railway related conferences.

The CRR is also an active member of the International Railway Safety Council (IRSC) which it sees as an excellent forum for the exchange of experience and lessons for improving railway safety. In 2022, the CRR sent four delegates to the conference.

3.2 NSA measures adopted or planned regarding to the recommendations issued by NIB and monitoring of their implementation status

(in accordance with art. 26(2) of the Directive (EU) 2016/798)

This is an ongoing task of the CRR Supervision Team has been monitoring the implementation of NIB Safety Recommendations since 2008. Safety recommendations issued by the NIB to the CRR are reviewed and formally issued by means of a letter to the necessary organisations. The organisations in turn are required to advise the CRR of their acceptance or otherwise, together with details of actions taken or proposed or details as to why they believe no action is necessary.

There is a requirement for progress to be reported to the CRR on a quarterly basis, and for the principal RUs and the IM to review progress. Records are kept and there is then a formalised method by which evidence is submitted, reviewed and closed. The status of recommendations is shown in the following table.

NIB safety recommendations

Year	Reports	Open	Submitted	FER	Closed
2014	6	0	0	1	25
2015	2	0	0	1	3
2016	3	6	0	2	12
2017	1	0	0	2	7
2018	1	1	0	1	7
2019	4	11	0	4	21
2020	4	6	0	8	4
2021	7	16	0	9	11
2022	3	16	0	0	0

The status categories are:

Open/In Progress: Feedback (Evidence) from Railway Organisation (or another party) is awaited or actions have not yet been completed.

Submitted: The Railway Organisation (or other party) has made a submission to the CRR, advising that it has taken measures to effect the recommendation and the CRR is considering whether to close the recommendation.

FER (Further Evidence Requested): The CRR has reviewed a submission (or further submission) but considers that further evidence is necessary to close the safety recommendation.

Closed: The CRR has reviewed a submission (or further submission) and is satisfied that the safety recommendation has been addressed.

3.3 Safety measures implemented unrelated to the NIB safety recommendations

3.3.1 NSA measures adopted or planned by NSA

The focus of the CRR's 2022 Supervision Programme was to:

1. Supervise the continued application of the Railway organisations approved SMS, i.e., checking compliance with legal requirements, i.e., Common Safety Methods, the Railway Safety Act 2005.
2. Supervise areas of identified risk, and RU/IM Risk Control Measures.
3. Encourage ROs to 'Move Beyond Compliance', i.e., challenging their SMSs to not only ensure compliance but that they are truly delivering expected outcomes.
4. Promote human factors training for RO staff to improve awareness and knowledge. Promote the need for organisation leaders (Managers) to promote internally a positive organisational/safety culture.
5. Install in the minds of railway company personnel that safety is their no. 1 policy.

The CRR's principal supervision activities, i.e., audits, inspections and meetings are devised and planned to achieve points 1 and 2 above. In 2022, a total of 58 inspections were commenced across the operational RUs and the IM. Three audits were concluded and a further seven were commenced in 2022.

The CRR established a sector working group on Human & Organisational Factors in 2022 to support efforts to improve the industry's capability in this area.

A memorandum of understanding was agreed between the CRR and the Department for Infrastructure Northern Ireland with the objective of facilitating co-operation, enhancing our actions and establishing principles of engagement.

3.3.2 Monitoring of implementation status

The CRR reviews the implementation of the plan identified in Section 3.2.1 at a bi-weekly meeting at which all Supervision Inspectors attend. Activities allocated to individual Inspectors are discussed and their progress reviewed. Moreover, the wider CRR team meet monthly at which the Principal Inspector with responsibility for supervision provides an update as to work completed in the previous month and work in progress. The Commissioner and the Principal Inspector's also meet on a monthly basis to review the current and future work activity and outcomes. Lastly, the programme is reviewed annually in Quarter 4 at the supervision workshop. Items incomplete or unresolved are reviewed to determine if they should be carried forward to the next year or if they are still valid/a cause for concern.

3.4 Safety organisational context

The CRR continued to receive the majority of its funding through the annual levy that the CRR places on the entities that are subject to regulation, as allowed for in the legislation establishing the CRR. The levy is allocated on the basis of the level of activity relating to the functions the CRR engages in with each regulated entity including certification, authorisation and supervision in that year. The balance is received as Grant-in-Aid from the Department of Transport and by charging agreed statutory fees for other specific activities such as the designation of DeBo's.

3.4.1 Railway organisational context in the Member State and main changes

The organisational context in MS IE remained constant and there were no main changes. 2022 saw a limited continued impact of COVID-19 in the early part of the year.

The railway network in Ireland is managed by the IÉ-IM and comprises approximately 2,400 km of railway track, of which approximately 1,660 km is currently active, and includes 147 passenger stations and 372 platforms. It also comprises of 5,100 bridges, 909 level crossings, over 4,900 cuttings and embankments and 14 tunnels. The railway is mainly single track, with 886 km of double track and 60 km of multiple track. The network includes main lines, suburban and commuter passenger routes, together with freight-only routes. Most of the network is comprised of radial lines focused on the capital, Dublin. The network largely provides for inter-urban connections providing strategic transport links at the national level between the six key cities on the island, Dublin, Cork, Galway, Limerick, Waterford and Belfast.

Intra-urban rail is also extensive within the Dublin area with the provision of DART in 1984 on the main network providing the core high-capacity network that is central to the Greater Dublin Area's mass transit system. Passenger transport and freight services are provided on the network by IÉ-RU. In addition, Northern Irish Railways also operate a joint (the 'Enterprise') service with IÉ-RU between Dublin and Belfast as well as operating its own event based special serviced between Belfast and Dublin. The full detail is provided in the Iarnród Éireann Infrastructure Manager Annual Network Statement.

Passenger numbers saw a significant return to pre-COVID levels with a Q4 comparison between 2021 and 2022 showing a 67% increase.

Ireland's National Development Plan 2018-2027 points to significant investment in the railway system in the coming years which includes further electrification of the conventional railway, new stations, elimination of level crossings, new rolling stock and development of a new metro system for Dublin. Engagement with the CRR continued on a number of these developments in 2022.

3.4.2 Information relating to the NSA organisation and main changes

The organisational structure of the CRR is shown in Figure 1, with a corresponding diagram indicating CRR workflow and relationships in Figure 2.

**Figure 1
Staffing of the CRR
at end of year 2022**

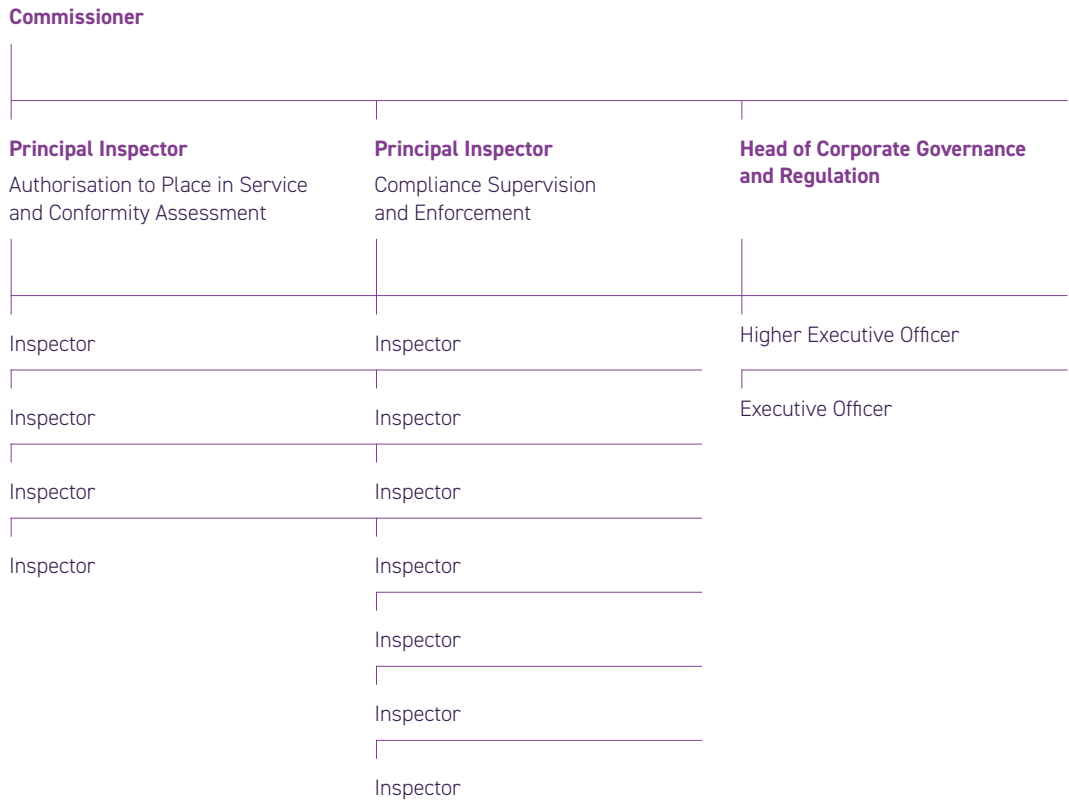
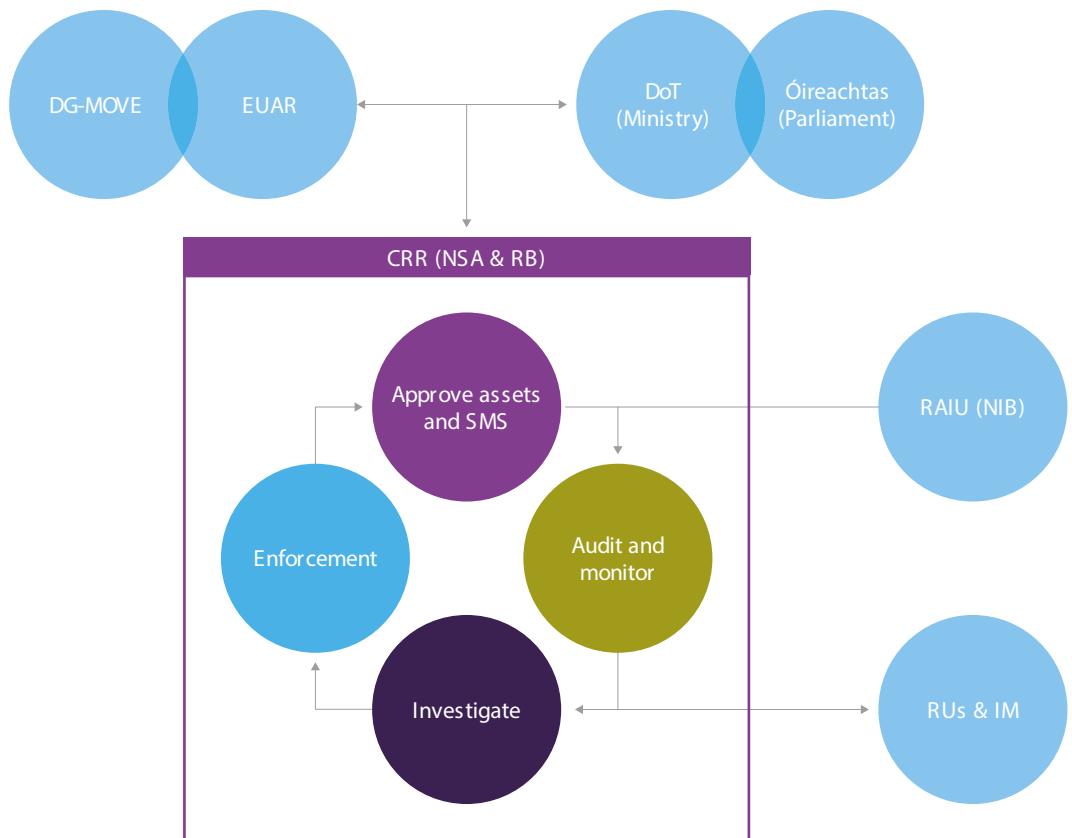


Figure 2
Organogram of independent CRR organisation and primary workflows



3.4.3 NSA staff and the NSA competence management system

The following sections summarise how competence is managed for NSA staff.

3.4.3.1 Single Safety Certificate

As advised in our 2021 report, the process for delivering safety certificates and safety authorisations is described in CRR-G-030, 'Application Guide for Single Safety Certificates, Safety Authorisations and Safety Management Certificates'.

In terms of the ongoing management of staff competence, this area involves both formal training and on-the-job mentoring whereby a new/less experienced member of staff will shadow a more experienced member of the team. All NSA Inspectors either have attended or are attending a MSc course at the University of Birmingham titled 'MSc in Railway Systems Engineering & Integration' which provides the necessary background knowledge to the railway domain and the various railway sub-systems.

During an SSC assessment project, frequent internal team meetings take place to discuss the content of an application and to ensure consistency of approach for all applications.

It was intended that a competence management system (CMS) would be implemented in 2022 and while the system was developed and finalised in 2022, its introduction has been scheduled to commence in January 2023.

3.4.3.2 Vehicle authorisation

The process for vehicle authorisation is described in CRR-G-009 'Guidance on Application for Authorisation and Application for Acceptance for Heavy Rail Fixed Installations and Vehicles'. NSA inspectors who work on vehicle authorisation projects have attended the pool of expert training at ERA. Bespoke training for NSA inspectors on vehicle authorisation is made available as a need is identified. Additional expert advice is contracted by the NSA as necessary.

As stated above, a CMS has been developed and will be rolled out in 2023.

3.4.3.3 Supervision

The principal activities undertaken by CRR Supervision Inspectors are audits, inspections, and meetings.

There is a formal induction training programme in place for newly recruited inspectors. Inspectors receive this induction training together with all the necessary railway safety competences required to access the various railways we supervise. Prior to undertaking any activity there is also a period of on-the-job learning where more junior inspectors are mentored by more experienced staff. This includes acting in a support role on audits, and shadowing Inspectors as they carry out asset/task observation inspections. In the case of auditing, this is supported by formal, classroom-based Lead Auditor training which all Inspectors receive.

CRR Inspectors are encouraged to maintain their own continuous professional development and are all offered the opportunity to complete a relevant MSc course such as the 'MSc in Railway Systems Engineering & Integration' in the University of Birmingham.

The Principal Inspector with responsibility for Supervision has an annual budget allocation per Inspector reporting to him and it is used at the discretion of the Principal Inspector for training purposes.

Inspector reports are always peer reviewed and feedback given when necessary. Moreover, Inspector performance is reviewed twice per year as per the CRR Performance Management and Development System.

It was intended that a competence management system (CMS) would be implemented in 2022 and, while the system was developed and finalised in 2022, its introduction has been scheduled to commence in January 2023.

3.4.3.4 Train driver licences

The requirements for issuing train driver licences are detailed in RSC-G-025, sections 9, 10 and 11. In 2022, a new NSA Inspector was trained in these requirements shadowing another member of the team to gain experience in what is required to be done. The relevant principal inspector checks that all requirements are met before train driver licences are issued.

In 2022, a member of the Supervision Unit of the CRR attended EU level meetings on Train driver licensing. They also responded to a small number of sector questions (staff/public representations) on the topic of train driver route knowledge. Further inspections were also planned by the team.

4 Safety performance

Reference to requirement: art. 19 (a) of Directive (EU) 2016/798

4.1 Statistics and analysis of general safety performance trends

This chapter uses the CSIs and national safety indicators when considering the reasons and context behind recent safety developments. National safety indicators are shown in the CRR's Annual Railway Safety Performance report which is published separately on the [CRR website](#). The infrastructure manager has in recent years modernised their occurrence reporting and data collection systems in part to ensure that CSI and national indicators are collected by the Infrastructure Manager and all Railway Undertakings operating the national railway system.

The Irish network accounts for a small proportion of total EU railway traffic. In 2022, 1748 million passenger-km was reported, along with 80 million tonne km for freight services. For context, the last available figures for the EU as a whole were about 220 billion passenger-km and 370 billion tonne-km respectively. Figures for railway passenger transport more than doubled in 2022, reflecting the removal of restrictions associated with COVID-19, along with population growth and a growing national economy. The Irish system is predominantly used for transport of people but, following a long period of decline, it is now expected freight services will expand due to climate action requirements, rail transport efficiency, and proposed plans to improve connectivity to ports in Ireland.

Ireland continues to have relatively low accident rates per million train-km. Although it is difficult to pick up on significant trends within the CSI data as the values are very small, there has been an underlying decline in the five-year rolling average number of reported significant accidents. One significant accident was recorded for 2022, which is the same as 2021 but continues a broadly positive trend since CSI's were introduced. It is observed from the agency's latest report on Railway Safety and Interoperability in the EU that Ireland is towards the more positive side of comparative data for railway fatality rates in Europe. The overall picture of safety in the rail industry is a good one, with most indicators trending positively.

The Common Safety Indicators (CSIs) for Ireland are provided to ERA using the agency's designated reporting template. The following is an analysis of trends related to CSIs and national safety indicators.

4.2 Number of fatalities/serious injuries (total and relative to train-km)

Excluding acts of self-harm there was one fatal accident reported for Ireland in 2022. A person walked from the platform to cross the railway north of Dublin City without permission and was struck by a train. One railway worker was seriously injured during infrastructure maintenance tasks where road rail vehicles were involved, with the occurrence deemed to be outside of the scope of common safety indicators. Both of these occurrences were reviewed by the NSA and no significant compliance gaps were observed. 6 instances of fatal self-harm occurrences were recorded for 2022, and similarly no compliance gaps were noted in respect of the involved railway organisations. 1 attempt at self-harm was reported which resulted in a serious injury for the person involved.

The Irish network continues to have a satisfactory performance relative to other European national networks, although it is recognised that there is always scope for improvement, and that the performance measures can quickly turn negative within a small railway system.

4.3 Number of significant accidents (total and relative to train-km)

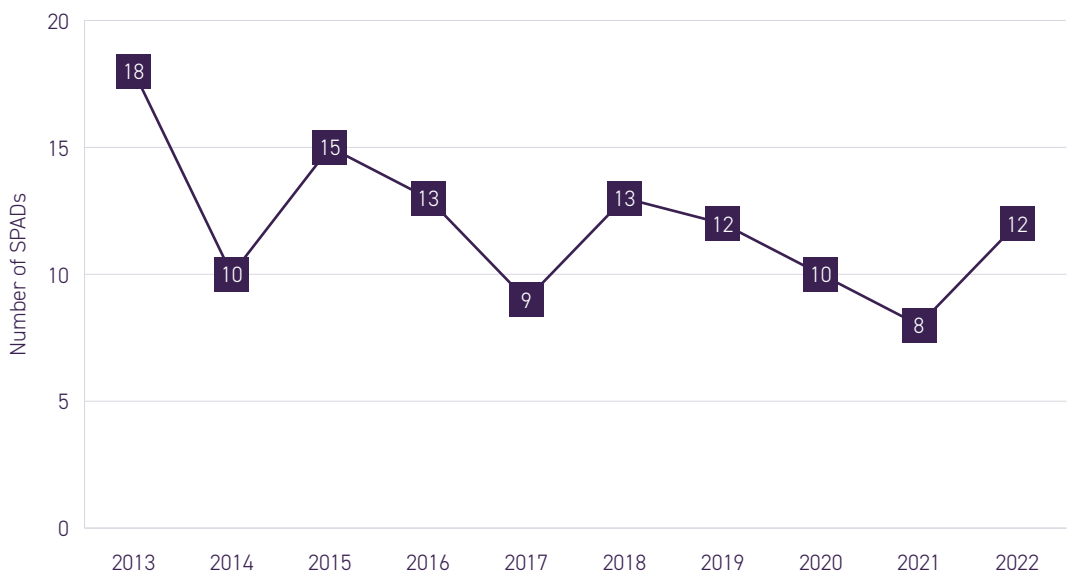
One significant accident occurred, as described in 4.1.2. Good performance for this category continues in 2022, but it is noted that there is always potential for occurrences to evolve into significant accidents if circumstances were slightly altered.

4.4 Overview of safety incidents (CSI precursors to accidents and nationally used accidents)

The total number of precursors is 12 in 2022, slightly up from 11 in 2021, but down from 28 in 2019. A primary factor in the downward trend is an error in interpreting the definition for this category that is stated in ERA document ERA-GUI-02-2015 'Implementation Guidance For CSI'. Involved railway organisations overestimated the number of Wrong Side Failures as they included incidents where track circuits did not operate due to contamination, which was mostly in Autumn. This definition was corrected for 2022 data. An inspection has found that systems for collecting CSI data were not sufficiently robust and require further revision. An action plan is now in place to address related gaps.

Signals passed at danger performance deteriorated in 2022 and rose by 50% to 12, as per figure 3. Given the small numbers it is difficult to discern a trend, however there is some concern and to that end the relevant infrastructure manager has commissioned a report to analyse causal factors.

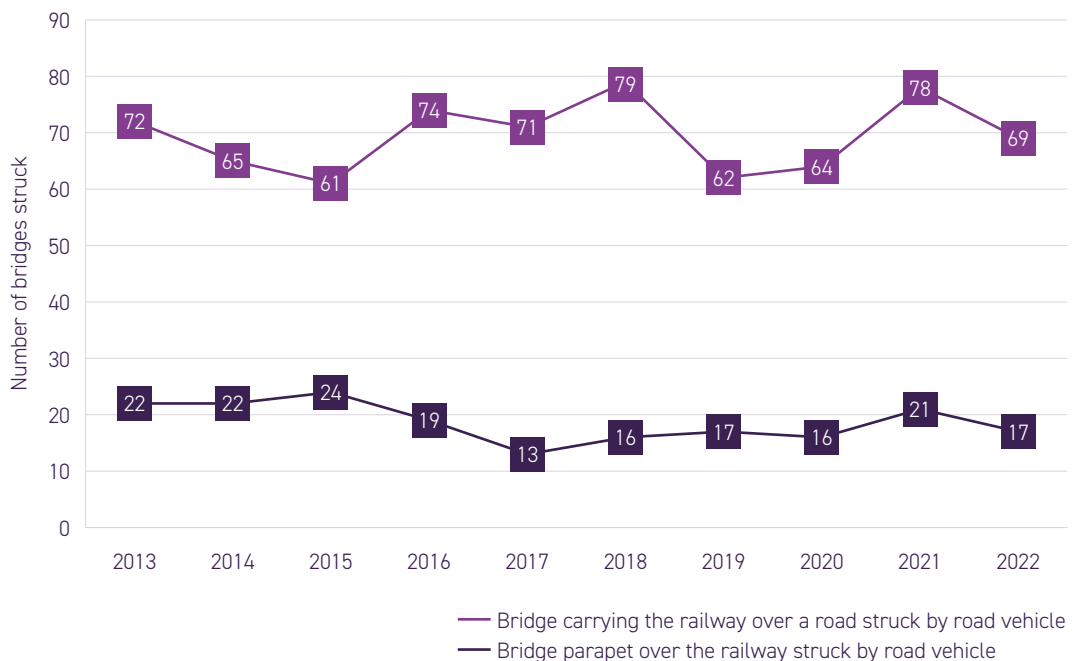
Figure 3
SPAD occurrences



As shown in Figure 4 below, collisions with railway bridges are tracked on a national level as they have potential to cause significant harm and are a continued focus for all stakeholders. There are in excess of 4,400 bridges of varying structure types on the Irish railway network. All must be inspected and maintained by the infrastructure manager at various periodicities depending on numerous factors such as their age, type, location and risk profile. In terms of simple categorisation there are two categories of railway bridge to be inspected. The first is where a road is over the railway (over bridge) and the second is where the railway is over a road (under bridge). A bridge strike is where a road vehicle strikes the parapet or roadside containment of an over bridge or where a road vehicle strikes the underside of a railway bridge over a road (under bridge). Both types of occurrences can, in certain circumstances, result in very severe consequences such as causing a track misalignment or structural weakness or failure, either of which could result in a train derailment.

The number of bridge strikes reduced in 2022 in both categories of bridges. The reduction has brought the total number of bridge strikes to a level more in line with the flat trend of c.90 strikes per year. As has been previously reported, some bridges are more susceptible to strikes than others and these are well known to the infrastructure manager. However, the risk control measures can be reasonably complex to implement, involving planning and coordination with local authorities, so improvements to performance can take time.

Figure 4
Railway bridges struck
by road vehicles



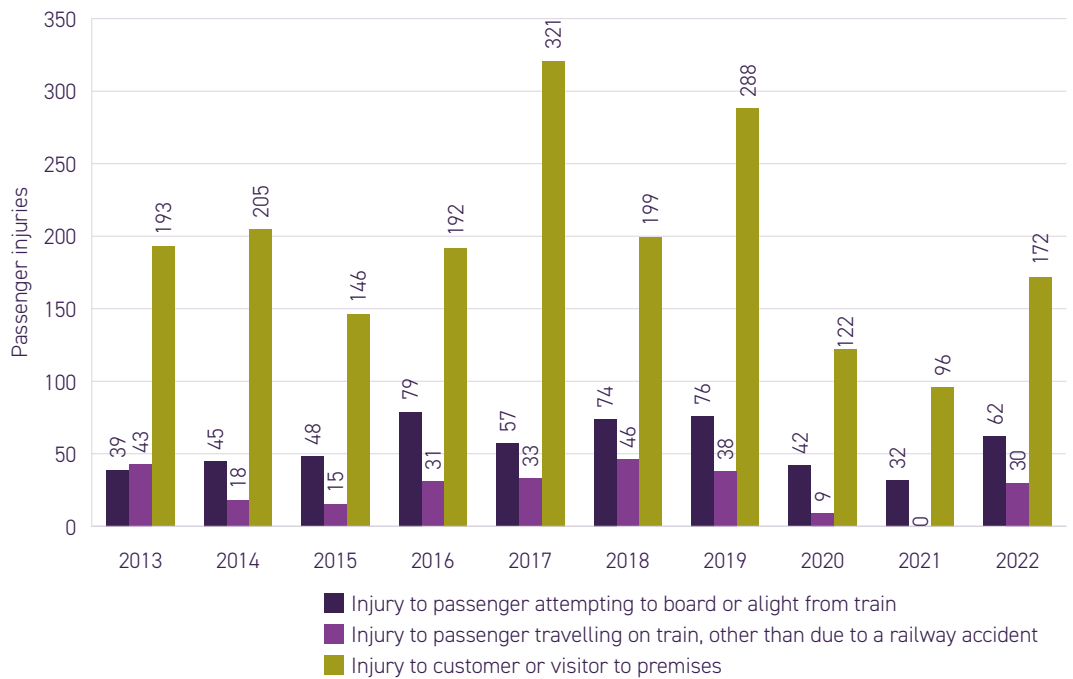
4.5 Overview of safety outputs CSIs, such as level-crossing per type, ATP statistics and other nationally used metrics

The infrastructure remained mostly at steady state in Ireland in 2022, where there continues to be a significant focus on asset renewals and planning for large projects to replace existing signalling and energy systems. The infrastructure manager has changed level crossing designation in several categories due to the installation of a new decision support system (DSS) which provides road users with advice on the presence of an oncoming train. Four level crossings had the DSS installed and commissioned in 2022.

4.6 Analysis of trends for main safety outcomes per category of accident and user type, safety incidents, safety outputs

In line with European trends, the largest proportion of incidents occur to persons during time spent at stations as opposed to time spent on trains and in 2022 this was no different. Thirty injuries were reported by passengers travelling on a train in 2022 which is an increase (from zero) that is in line with the total passenger numbers for the year. As explained earlier, the increased passenger journeys are very likely a factor in the increase of injuries to passengers travelling on a train, other than due to a railway accident, and Figure 5 demonstrates how they still remain within reasonable levels when the past ten years are taken into consideration.

Figure 5
Passenger injury statistics by year



Injuries to persons (customers or visitors) on railway premises remain the largest single group with slips, trips and falls of various sorts being the dominant cause of these injuries. No injuries were reported for passengers travelling on trains that are associated with other railway accidents.

4.7 Provide information on national safety targets and underlying safety improvement plans

Ireland currently does not define targets at a national level through legal mechanisms.

5 EU legislation and regulation

Reference to requirement: art. 19 (b) of Directive (EU) 2016/798 and art. 19 (e) of Directive (EU) 2016/798

5.1 Changes in legislation and regulations

5.1.1 Important changes in the implementation of the EU legal framework

(e.g., RSD, IOD, other relevant Directives, Regulation and Secondary legislation, including the change in the scope)

Not required in 2022.

5.1.2 Eventual amendments necessary in order to achieve CSTs

(art. 4(1) point f, art. 7(7) of the Directive (EU) 2016/798)

Not required in 2022.

5.1.3 Review of the operational companies' implementation of new EU regulatory framework

(Concerning rolling stock, infrastructure, staff performing safety-critical tasks, staff competencies and training)

Not required in 2022, first requirement will be 2023.

5.1.4 Changes in legislation/regulation following the recommendations and opinions of the Agency pursuant to RSD

(art. 32 of the Directive (EU) 2016/798 and art. 13 of the Regulation EU 2016/796)

Not required in 2022.

5.1.5 Changes in legislation/regulation following the NIB Safety Recommendation

(art. 26(2) of the Directive (EU) 2016/798)

Not required in 2022.

5.1.6 Changes/amendments to the national legal framework relating to railway safety

(Legal acts and administrative regulations)

The following Statutory Instruments were published in 2022:

- S.I. No 194/2022 Railway Safety Act 2005 (Section 26) Levy Order 2022.

5.2 Derogation from RSD system of certification of ECM

5.2.1 Derogations decided in accordance with Article 15 Directive (EU) 2016/798

(Derogations from the system of certification of Entities in Charge of Maintenance (ECM))

No derogations.

5.2.2 Information according to art. 15(3) of the Directive (EU) 2016/798

No derogations.

6 Safety Certifications, Safety Authorisations and other certificates issued by the NSA

Reference to requirement: art. 16 of the Directive (EU) 2016/798, art. 19 (c) of the Directive (EU) 2016/798, art. 24 of the Directive (EU) 2016/797, art.7 of the Commission Regulation No 445/2011, art.14 of the Directive 2007/59/EC and art. 20 of the Directive 2007/59/EC)

6.1 Safety Single Certificates and Safety Authorisations

6.1.1 Status and changes to the number and awardees of safety certificates and safety changes to strategy and procedure related to the process of issuing Safety Single Certificate/Safety Authorisation

As advised in section 3.1.1.2, the railway sector in Ireland is relatively small with just one Infrastructure Manager and just four railway undertakings operating on the heavy rail network. Consequently, there are very few changes to the number and awardees of safety certificates year on year, as can be seen in the table below.

Status	Change/detail	Number
Number and awardees (names of the companies)of new safety certificates		0
Number and awardees of renewed safety certificates		0
Number and awardees of amended safety certificates (e.g., for extensions or reductions in scope...) and main issues faced		0
Number of revoked safety certificates and main reasons		0
Number and awardees of new safety authorisations		0
Number and awardees of renewed safety authorisations	Iarnród Éireann (Irish Rail) Infrastructure Manager (IÉ-IM)	1
Number and awardees of amended safety authorisations (e.g., for extensions or reductions in scope...) and main issues faced		0

With regards to changes to strategy or procedures related to the process of issuing Safety Single Certificate/Safety Authorisation, there was one significant change in the CRR's assessment process. This was in relation to IÉ-IM's safety management systems being assessed against Commission Regulation (EU) 2018/762 rather than against Commission Regulation (EU) 1169/2010 which was in place previously.

As part of this 2022 conformity assessment activity the CRR's assessment team were checking that important new aspects such as Human and Organisational Factors and safety culture were adequately covered by the Infrastructure Manager's SMS.

6.1.2 Outcomes of discussions of supervision results with other NSAs in the context of certification/authorisation

There was no activity in this area in 2022.

6.1.3 Changes to strategy and procedure (shall only be included if relevant) related to the process of issuing Safety Single Certificate/Safety Authorisation

There were no changes in 2022.

6.2 Vehicle Authorisations

6.2.1 Status of the number and awardees of Vehicles Authorisations (VA) during the reporting year

The CRR's guideline CRR-G-009 is the process followed by the CRR when authorising railway vehicles. There are six stages involved within each discrete authorisation. These are:

- Stage 1: Concept.
- Stage 2: Preliminary Design.
- Stage 3: Detailed Design.
- Stage 4: Testing.
- Stage 5: Interim Operation.
- Stage 6: Service Operation.

The table below lists those projects that were either received or advanced in some way during 2022.

Status	Change	Number
Number and awardees of new issued VA	CRR issued a stage 3 – Detailed Design letter of acceptance in August 2022 in relation to additional class 22000 intercity diesel multiple units for Iarnród Éireann – Railway Undertaking.	1
Number and awardees of modified and/or renewed VA and main issues faced		0
Number of suspended VA and main reasons		0
Number of withdrawn VA and main reasons		0

6.2.2 Changes to strategy and procedure related to the process of Vehicle Authorisation

CRR guideline CRR-G-009 Revision G, which remained in place during 2022 is the principal document relevant to the process of vehicle authorisation. It covers the 'Application for Authorisation and Application for Acceptance for Heavy Rail Fixed Installations and Vehicles'. It provides guidance and explanation on the European and Irish legal requirements for authorisation of fixed installations and vehicles.

Work commenced on reviewing this guidance and it is expected that it will be revised and republished in 2023.

6.3 Entities in Charge of Maintenance (ECM)

The CRR in its role as a certification body for ECM, reports as follows:

6.3.1 Certificates issued, amended, renewed, suspended, and revoked during the reporting year

The CRR conducted no certification activities during the reporting period. Consequently, there have been no certificates issued, amended, renewed, suspended or revoked in 2022.

6.3.2 In case of suspended or revoked certification please describe the main causes/reasons

Nil.

6.3.3 Report of non-conformities which have been detected by the NSA during its surveillance activities

Nil.

6.3.4 Changes to strategy and procedure related to the process of ECM certification

Nil.

6.4 Train drivers

6.4.1 Train driver licenses issued, amended, renewed, suspended, withdrawn during the reporting year (Directive 2007/59/EC, Art.14)

There were a total of 49 licences issued by the CRR in 2022. There were two licences amended. The table below shows the breakdown by railway undertaking.

Railway undertaking	No. of licences issued
Rhomberg Sersa	8
Irish Rail	41 (including 2 amended)
Total licences issued	49

Rhomberg Sersa operate and maintain the On-Track-Machine (OTM) fleet for Iarnród Éireann – Infrastructure Manager while Irish Rail (Iarnród Éireann) are the state railway undertaking operating passenger and freight services.

6.4.2 Training centres recognized during the reporting year (Directive 2007/59/EC, Art.20 and Art.23(6))

Currently there is just one recognised training centre in Ireland, that is operated by the national state railway, Iarnród Éireann. They were recognised in March 2020 for a period of 5 years. Consequently, there was no activity in this area in 2022.

6.4.3 Changes to strategy and procedure related to the process of train driver licensing

There were no changes to the CRR's procedures in 2022.

6.5 Other type of authorisation/certifications

6.5.1 Cases where NSA acts as certification body for other type of railway authorisations/certification

As recognition body for Designated Bodies (DeBo's) for the IE network, the CRR undertook the following activity in 2022:

Company	Initial recognition	Modified recognition	Re-recognition	Witnessing	Surveillance
Rina Services S.p.A	■				
Certifer HHC DRS B.V	■				
Rail and Transit Verification Denmark ApS	■				
Certifer SA	■				
Ricardo Certification B.V	■				
TUV Rheinland Rail Certification B.V	■				

All companies initially recognised in 2022 have a five-year validity.

6.6 Contacts with other National Safety Authorities

6.6.1 Cooperation with foreign safety authorities

In 2022, the CRR signed a Memorandum of Understanding (MoU) with the Department for Infrastructure of Northern Ireland and specifically their Railway Safety Authority. The principal objectives of this MoU are to:

- Facilitate cooperation in discharging our statutory responsibilities.
- Enhance supervision activity by both parties in terms of coordination of supervision plans.

The other main route to engagement with other NSAs is through the CRR's attendance at ERA NSA Network meetings and other working groups. However, given our small size, the CRR must prioritise our resources in terms of selecting which working groups and task forces to attend.

6.6.2 Outcomes of discussions of supervision results with other NSAs

In terms of Supervision, the CRR met with the Railway Safety Authority of Northern Ireland on two occasions post signing of the MoU. Information was shared regarding supervision activity on Northern Ireland Railways (Translink) and Iarnród Éireann – Railway Undertaking.

6.7 Exchange of information between NSA and railway operators

6.7.1 Exchange of information between the NSA and RU/IM

(describing the scope, the frequency and how the exchange is done)

CRR Inspectors meet with RU/IM Executives to review the projects they are working on and specifically those projects that will require CRR authorisation. At these meetings we obtain high level details of the various projects underway or planned together with likely project timelines and their current status.

These meetings are typically bi-monthly with the Infrastructure Manager and quarterly with the state Railway Undertaking. At these meetings the CRR passes on any regulatory framework updates, details of any updated guidelines etc.

From a 'supervision' perspective, on a quarterly basis CRR Inspectors meet with company executives from 'high priority' railway organisations. These are the state RU (Iarnród Éireann – Railway Undertaking) and the state IM (Iarnród Éireann – Infrastructure Manager). At these meetings safety performance is reviewed along with discussions on railway accidents/incidents. In advance of these meetings the railway companies provide Key Performance Indicator data that is then discussed in the meetings. Should there be any APOM/APIS issues raised this information can be relayed back to the Approvals/Authorisation Team.

6.7.2 Topics/critical points exchanges/discussed for the reporting year

As stated above, CRR Inspectors meet with RU/IM Executives to discuss infrastructure and rolling stock projects and their ongoing safety performance.

It offers a forum whereby information and regulatory updates can be shared and discussed. Moreover, it affords the opportunity for the railway organisations to ask questions on the authorisation process.

6.7.3 Relating findings and initiatives

There was no activity.

7 Supervision

(Reference to requirement: art. 19 (d) of Directive (EU) 2016/798 and Commission Delegated Regulation EU 2018/761)

7.1 Strategy, plan, procedures and decision making

7.1.1 Supervision strategy, including how planning (e.g., data concerning CSIs, input from Safety Recommendations, etc.) takes this into account and any relevant changes made as a result of the analysis of safety data along with an explanation of why those changes were made

The CRR's Statement of Strategy, published in 2021 and covering the period 2021-2024 inclusive, is the high-level document (Supervision Strategy) that sets out the Commission's mandate, mission, vision and key priorities in the period. It forms the basis of the Commission's activity across all units, including the Supervision Section. These key priorities, from a supervision perspective, are areas of risk on which the CRR will pay particular attention during the life cycle of the strategy. These are identified based on our knowledge of trends in safety performance, previous audit/inspection findings, NIB safety recommendations and other sources. For the period 2021-2024, the CRR have identified 4 key areas, and these are:

- Track Worker Safety, given an increase in occurrences involving front line workers and contractors, in particular those operating road rail vehicles;
- Level Crossings safety, given recent occurrences, NIB safety recommendations and the IM introducing novel technology to assist level crossing users;
- Contractor management, linked to track worker safety, given the increasing prevalence of the use of external contractors for both labour and plant (machinery); and
- Control assurance & risk management, given the roll out of the 4th railway package and associated EU legislation

Also identified in our Statement of Strategy are risks associated with Human Factors (HF), e.g., automation and the digitisation and digitalisation of our railways. Moreover, HF integration not only in systems/sub-systems but also into railway organisations SMSs is an area the CRR will focus on.

Taking the above into account, i.e., to address these areas of risk and to supervise the continued application and effectiveness of each RU and IM safety management system, the CRR prepares annual supervision plans for several RU's and the IM. For 2022, these included:

- Iarnród Éireann (IÉ-IM): Infrastructure Manager.
- Iarnród Éireann (IÉ-RU): Railway Undertaking.
- Rhomberg Sersa Rail Group (Ireland): Railway Undertaking.
- Railway Preservation Society of Ireland (RPSI): Railway Undertaking.
- Northern Ireland Railways (Translink): Railway Undertaking.

Each railway organisation's supervision plan that the CRR develops include audits, inspections and meetings with senior managers.

These plans are developed by the CRR Inspectors at an annual workshop where the safety performance of each individual railway organisation supervised is discussed. This includes review of National Indicators and Common Safety Indicators. Then, depending on their performance, the level of activity can increase or decrease as is proportionate to safety risk.

Additionally, in terms of a plan's execution, each organisation is assigned a risk classification that determines the level of supervision activity they will receive for that year.

With regards to the Infrastructure Manager, the CRR sought to focus on level crossing assets, road rail vehicles in track maintenance possessions, competence verification for railway system control staff, and processes for verification of conformity with risk acceptance criteria. For the state railway undertaking the focus was on freight management, station management, wheelset management, safety related information, and processes for verification of conformity with risk acceptance criteria.

On the sole On-Track-Machine RU the CRR conducted a number of inspections that looked at SMS auditing, wheelset management, and change management.

7.1.2 Decision-making criteria on how the NSA monitored, promoted and enforced compliance with the regulatory framework and the procedure for establishing those criteria

The CRR's supervision activities are based on assessed risk to the safety of passengers, staff and third parties. Safety performance data together with intelligence sources such as previous CRR supervision activities, accidents, incidents and dangerous occurrences, NIB reports etc. collected in the preceding year informs Inspectors of areas where their attention may be required and supports the development of the next year's supervision plans.

RU's and the IM are assigned a risk profile based on inspector opinion and those organisations with a higher risk profile can expect more supervision than better performing railway organisations.

When it comes to enforcement CRR Inspectors can employ the 'risk gap' technique where they first assess the level(s) of actual risk arising from the railway organisation's activities, in particular the risk to the safety of persons. Inspectors base this judgement on information about risk levels perceived for the issue at hand, using evidence obtained in the inspection and knowledge of best practice within the industry.

Having identified the level(s) of actual risk the Inspector may identify the risk gap, i.e., is it minor, inadequate, absent or extreme. Depending upon the Inspectors judgement together with a peer review an enforcement action is taken. The process for doing this is stated in CRR Guideline RSC-G-023-C and is available on the CRR website.

Relative to the national rail network, Section 76 of the RSA 2005, a request for an Improvement Plan was used on 5 occasions in 2022. Two were related to Rhomberg Sersa Rail Group (Ireland):

- A derogation from the SMS was provided for performance of a safety critical maintenance task. Such derogations were prohibited in the SMS.
- An audit that identified gaps in risk evaluation, the effectiveness and monitoring of associated risk controls.

Two Improvement Plans were requested from IÉ-IM:

- During an occurrence in which a road rail vehicle overturned in a construction worksite in a maintenance depot, it was found that the vehicle was lifting a section of track with another vehicle in the absence of suitable procedure for the task.
- A train collided with infrastructure maintenance equipment. An improvement plan was requested to address the following:
 - The lack of compliance with identified control measures relating to engineering possessions, and
 - An apparent poor safety culture where staff feel it necessary to take short cuts and possibly even make attempts to cover up their acts/omissions.
 - To prevent a culture of misreporting for whatever reason, e.g., the perceived lack of a just culture within the organisation.

One Improvement Plan was requested from IÉ-RU in relation to multiple deficiencies identified following from an audit on their management of train driver competence.

7.1.3 Main complaints submitted by stakeholders (if any) on decisions taken during supervision activities and the replies given by the NSA. If there is a negative return this should be recorded

Following a supervision activity, be that an audit, inspection or meeting, draft reports/minutes are issued for comment to the relevant organisation. The applicable organisation is encouraged to raise any concerns they have and identify any factual inaccuracies that may have been made. These are formally recorded and then responded to by the lead Inspector. In most cases issues are resolved prior to the finalisation of the report/minutes, however, if there are diverging views these are recorded in the report together with CRR reasoning for its decision.

No formal complaints were raised by stakeholders regarding decisions taken during supervision activities or on the replies given by the NSA to any comments or queries raised by CRR Inspectors in 2022.

7.1.4 Any changes to the regulatory regime in the member state with impact on supervision strategy, plan or decision making

Nil.

7.2 Supervision results

7.2.1 Number and outcome of inspections and audits carried out during the reporting year

In 2022, CRR inspectors concluded a total of 41 Inspections broken down as follows:

- IÉ-IM: 23 Inspections.
- IÉ-RU: 10 Inspections.
- NIR: 0 Inspection.
- RPSI: 5 Inspections.
- RSIE: 3 Inspections.

These inspections included sample checks on infrastructure assets, depots, train driver licences, train operations and rolling stock maintenance activities etc. These inspections resulted in a multitude of outcomes ranging from 'scope for improvement' where action is determined by the railway organisation to 'minor non-compliance' where evidence is sought by CRR inspectors to see that action has been taken. Primary results are discussed in section 7.1.1.

Three audits were completed in 2022:

Railway organisation	Title of audit
RSIE	Audit: Management of Change – Annex II Criteria A, E, F, G, I, M, (Inspection No.6)
IÉ-RU	CSM criterion N Training & competence of Train Drivers
IÉ-IM	Audit: Annex II Criterion A, N, O, P

The CRR conducts investigation activities on accidents and incidents to review compliance with the regulatory framework. 50 such activities were recorded as completed for 2022. Significant occurrences are previously identified in the enforcement element of 7.1.2.

7.2.2 Results of and experience related to the supervision such as how many visits required remedial work from the supervised entity

Outcomes (trackable recommendations) across heavy rail organisations within the scope of this report were made relating to all parts of railway in 2022, with notable findings listed below:

- Three major non-compliances relating to the management of rolling stock wheelsets.
- A major non-compliance relating to competence management of safety critical workers.
- 15 minor non-compliances were identified in regard to train driver management including one major non-compliance.
- Non-compliances associated with updated SMS procedures and safety related information for freight operations.
- Risk evaluation as it pertains to structures on the railway.
- Deficiencies in emergency planning for stations.

Actions have or are being taken by railway organisation to address issues found and CRR Inspectors actively follow up with the companies to ensure this is being done.

7.2.3 Supervision results by topic of supervision, including supervision of training centres and transport of dangerous goods

No activities were conducted on training centres or dangerous goods in 2022.

7.2.4 Supervision results of the correct application by RUs/IMs and effectiveness of all processes and procedures in the management system according to Regulation (EU) 1078/2012¹

All RUs and the State IM have an approved SMS that are assessed as having adequate internal audit standards to monitor the correct application and the effectiveness of their SMS. The CRR meets quarterly with the larger RUs and the IM to review their safety performance in the preceding quarter. A standing item on the agenda at these meetings is to review their progress against their own internal audit/inspection plans, findings and outcomes from these and any actions being taken to address issues found.

Similarly, following accidents and incidents, railway organisations must conduct robust investigations to determine immediate, underlying and root causes. Action plans must be put in place and these are sampled by CRR Inspectors to see what actions have been taken. No major concerns were identified for this regulation in 2022.

1. Art 1 2(a) to check the correct application and the effectiveness of all the processes and procedures in the management system, including the technical, operational and organisational risk control measures.

7.2.5 In relation to the implementation of the 4th railway package, the supervision results for closing out the ‘type 3 issues’ raised during the single safety certification of the SMS by from either ERA or the NSAs for the areas of use

No work was undertaken in this regard in 2022. Work is anticipated in 2023.

7.2.6 Evidence obtained in supervision activities, when an ECM is not compliant

Railway Undertaking SMS's were checked for compliance with SMS requirements, as indicated in earlier sections, but there was no check of ECM's against ECM management system requirements.

7.2.7 Comments on the success of the SMSs in controlling risks

During the course of CRR supervision activities Inspectors, in addition to checking compliance with standards, also check for areas of 'good practice'. The CRR defines 'good practice' as an area highlighted which, in the opinion of the CRR Inspector/Auditor, is good practice within the industry.

Good practice was cited in four discrete inspections undertaken in 2022. These were in relation to:

- Role exposure for staff who wish to develop their career in roles with safety responsibilities.
- Human and organisational factors improvement have been included in all safety plans for an organisation.
- The introduction and use of mobile technology to assist in asset management and reduce office administration time.
- Introduction of wheelset traceability by an ECM.

7.2.8 Any specific interventions with the operational companies on specific topics, why these took place and results

See section on enforcement in 7.1.

7.3 Coordination and cooperation

7.3.1 Outcomes of discussions of supervision results with other NSAs

The CRR has a memorandum of understanding (MoU) with the Department for Infrastructure (DfI), the NSA in Northern Ireland. Contact between the parties in 2022 is described in section 6.6.2.

8 Application of relevant CSMs by RUs and IMs

Reference to requirement: art. 19 (f) of Directive (EU) 2016/798

8.1 Application of the CSM on Safety Management System

8.1.1 Analysis of the application of the CSM on SMS by RUs and IMs

[e.g., if through an evaluation of the EMM the NSA identifies for RUs and IMs the need of specific training to develop Safety culture and/or address Human and Organisational Factors]

Application of this CSM is at an early stage in Ireland and experience is limited. One organisation was authorised in mid-2022, with more expected in 2023. No material difference to safety performance has been observed.

8.2 Application of the CSM for Risk Evaluation and Assessment

8.2.1 The changes of the sector maturity with the understanding of the CSM, and the increase or the decrease of its application

Application of this CSM has remained broadly consistent amongst the sector in Ireland. The method for assessing 'significance' of a change within the CSM provides for variations in how the regulation is interpreted by an RU/IM, and as such places a reliance on the management maturity of an RU/IM. Work is ongoing to develop approaches for the assessment of organisational maturity. There were no new significant projects identified for railway organisations in 2022.

8.2.2 The differences of experience and application between big and small companies, newcomer and incumbent railway companies, RUs, IMs and ECMs

The quality of application of the CSM by big and small companies is not noted to be substantially different in Ireland in 2022. One minor observation is that small companies apply the regulation less frequently and typically to projects of smaller scale.

8.2.3 The differences in the assessment of technical, operational and organisational changes, including the actor who plays the role of CSM assessment body for operational and organisational changes

Technical and operational changes tend to be grounded in standardisation and technical rules, where use of explicit risk estimation methods is restricted to when codes of practice are not deemed practicable or applicable. Assessment of organisational change is heavily reliant on qualitative risk assessment and is difficult to standardise using a code of practice approach.

8.2.4 Coordination (or lack of) with the actors involved in the change/project for a joint identification and joint management of the risks shared across the interfaces between them, including the way the relevant information is exchanged between them

Experience of management of interface risks during a change project is generally good. As the system in Ireland is not large and SMS's are quite integrated, the number of interfaces is not considered substantial.

8.2.5 Availability in the companies of sufficient qualified and competent resources in the risk assessment and risk management fields

Objectively assessing if relevant practitioners within companies are qualified is a difficult task as NSA-IE has observed some difficulty in interpreting competence management requirements in CSM-CA and CSM SMS; railway organisations have worked together in Ireland to develop competence management guidance which was implemented in 2022. Evaluation on the effectiveness of this guidance is expected in 2023. In practical terms, it is generally noted that most projects have a safety and compliance expert involved who generally ensures the project meets relevant SMS and legal requirements.

8.2.6 Combined use of the CSM for risk assessment and CSM for monitoring for a proactive and controlled management of changes, including the identification of information for the monitoring during the operation and maintenance of the railway system and the effectiveness of predictive measures from risk assessments

CSM MON is observed to be embedded in the SMS's in the sector in Ireland, the Plan-Do-Check-Act cycle is accepted as an important principle for safety management. CSM MON is typically applied automatically following a project where CSM REA is relevant. Significant projects in Ireland are expected to embed monitoring systems to check the safety of the change at all points in lifecycle of the system being changed. When the CSM REA process is concluded, risk assessments are required to be embedded into the register of risk for that company; the effectiveness of how this is done in practice is uneven.

8.2.7 The overall railway sector experience in the country, including the moment when the risk assessment is done (e.g., from the beginning or at the end) in the project and the quality of the risk assessment documentation (real proactive risk management or purely cosmetic paper work)

Projects assessed as significant typically have the NSA's APIS (Authorisation to Place In Service) process applied hence are subject to elevated scrutiny by NSA-IE. The experience is observed to be acceptable, and the quality of risk assessment is mostly adequate. Deficiencies have been observed in inspections and further improvement is considered possible.

8.2.8 The proper use of the concept of significant change or misuse of the concept to escape the obligation to appoint an independent CSM assessment body (lack of trust). In the second case what is the quality of the demonstration of a correct control of the risks arising from non-significant changes when Annex I of the CSM is not used by RUs, IMs and ECMs

The 'test' for significant change is considered to have numerous interpretations that are compliant hence there is little evidence of 'misuse' of the concept. A more precise definition of the concept would be helpful. Railway organisations in Ireland tend to apply the same basic safety principals to significant and non-significant projects, although the level of verification in significant projects is typically higher.

8.2.9 The most positive experience found with the use of the method and the main remaining problems

The most positive experience is the greater degree of standardisation that CSM REA has provided, and all primary problems have been discussed in previous sections.

8.2.10 In relation to the implementation of the 4th railway package, the actions for closing out the 'type 4 issues' raised during the single safety certification of the SMS by from either ERA or the NSAs for the areas of use

No type 4 issues have been closed in Ireland. The relevant CSM was applied first in mid-2022.

8.3 Application of the CSM for Monitoring

8.3.1 Any changes of the sector maturity with the understanding, correct application of the CSM, and improvement of documentary evidence

No changes observed in 2022.

8.3.2 How the companies set out the strategies, priorities and plans for monitoring activities among the following options

The following options were provided by the agency in the guidance for this report:

- a) Proactive monitoring as part of the SMS that checks the effectiveness of the SMS processes, procedures and risk control measures, based on priorities (i.e., areas of greatest risk); or
- b) Monitoring everything; or
- c) Proactive monitoring based on expertise and results from previous monitoring activities to identify what to monitor, but unclear links to SMS;
- d) Reactive monitoring strategy based on lessons learnt from accidents and incidents investigations in order to prevent similar occurrences.

Safety Strategies and plans are guided by a legal principle in Ireland that it is the general duty of an RU/IM to ensure, in so far as is reasonably practicable, the safety of persons during railway operation. As such, the approach to monitoring combines options a, c, and d. Option b is not used as it is accepted that it is not practical to continually monitor everything. For option a, the NSA requires annual plans to be produced and presented at the beginning of each year, where these plans are reviewed quarterly with the NSA. Options c and d are considered reactive but important to implement when unplanned or unexpected events occur. For example, RUs are expected to implement additional interim risk control measures in the event of vehicle fire whilst the cause of the fire is being determined.

8.3.3 In relation to the implementation of the 4th railway package, monitoring of the OPE TSI for any key issues that arise

No issues were observed or reported in the application of CSM MON to the implementation of the fourth railway package or OPE TSI.

8.3.4 Availability in the companies of sufficient qualified and competent resources in the risk assessment and risk management fields

Objectively assessing if relevant practitioners within companies are qualified is a difficult task as NSA-IE has observed some difficulty in interpreting competence management requirements in CSM-CA and CSM SMS; railway organisations have worked together in Ireland to develop competence management guidance which was implemented in 2022. In practical terms, it is generally noted that RU/IM's have a safety and compliance expert involved in managing safety who monitors conformance with SMS and legal requirements.

8.3.5 Any differences with respect to the monitoring of operational processes and procedures vs. organisational and technical risk control measures (e.g., effectiveness or quality of documentary evidence)

No major differences are observed as focus in the Irish sector is on monitoring the process used to ensure the safety of an asset/process rather than just the end result.

8.3.6 Any differences of experience and application between big and small companies, newcomer and incumbent railway companies, RUs, IMs and ECMs

None observed.

8.3.7 Proper coordination (or lack of) with other stakeholders (including the suppliers and sub-contractors) for monitoring the effectiveness of control measures for the risks shared across the interfaces, in particular reporting to manufacturers of defects and non-conformities or malfunctions of technical equipment

Processes for checking control of supplier of services and suppliers of components require improvement within the sector in Ireland. Several minor compliance issues have been observed where service providers are not properly assessed for competence and component suppliers do not always provide a product to the correct specification. NSA-IE has prioritised inspection of related compliance requirements.

8.3.8 Combined use of the CSM for risk assessment and CSM for monitoring for a proactive and controlled management of changes, including the identification of information for the monitoring during the operation and maintenance of the railway system the effectiveness of predictive measures from risk assessments

CSM MON is observed to be embedded in the SMS's in the sector in Ireland, the Plan-Do-Check-Act cycle is accepted as an important principle for safety management. CSM MON is typically applied automatically following a project where CSM REA is relevant. Significant projects in Ireland are expected to embed monitoring systems to check the safety of the change at all points in lifecycle of the system being changed. When CSM REA process is concluded, risk assessments are required to be embedded into the register of risk for that company; the effectiveness of how this is done in practice is uneven however, and NSA-IE is in discussion with regulated entities about how to further improve transfer of risk from the project to operation. Additional guidance on how to assess and transfer risk is one measure being considered.

8.3.9 In relation to the implementation of the 4th railway package, the actions for closing out the ‘type 4 issues’ raised during the single safety certification of the SMS by from either ERA or the NSAs for the areas of use

No type 4 issues have been closed in Ireland. The relevant CSM was applied first in mid-2022.

8.3.10 The sector perception of the CSM for monitoring on whether it is considered as a proactive tool protecting the company business and enabling to optimise the company costs and competitiveness or seen just as a legal obligation

The sector has not reported such concerns to the NSA regarding CSM MON. Discussion generally indicates its requirements are appropriate.

8.3.11 The use of results from monitoring by the company top management and middle management to identify the necessary action plans and review the monitoring strategy, priorities and plans

Top management in the sector are made aware of results from monitoring. There is some concern regarding how top management track the effectiveness of action plans; it has been observed that lagging indicators are the main measurement type applied, but this is not always the case as leading indicators are sometimes used.

8.3.12 The overall railway sector experience in the country with the method in using it proactively to prevent accidents and incidents, or just as purely cosmetic paper work

The experience of the regulation is good and is expected to improve further with maturity of regulatory changes related to the fourth railway package.

8.3.13 Any areas for improvement

8.4 Participation and implementation of EU projects

NSA-IE is not involved in any such projects.

9 Safety culture

9.1 Safety culture evaluation and monitoring

9.1.1 Evaluation and monitoring of the development of safety culture at the national level

No specific safety culture evaluation and monitoring activity took place in 2022, at least none at a national level. The CRR did meet with senior representatives from Iarnród Éireann's (Irish Rail's) central services Safety Directorate to review and discuss their programme to implement a 'Just Culture' strategy with the Infrastructure Manager and Railway Undertaking.

Safety culture within other railway organisations is currently less mature but all organisations are aware of the need to embed human and organisational factors and safety culture into their safety management systems and to start educating themselves and their teams on this topic.

As these organisations go through the conformity assessment process, they will need to fulfil the new SMS requirements in Commission Delegated Regulation (EU) 2018/762.

Additionally, all Inspectors are expected to document safety culture positive and negative indicators whilst undertaking any supervision activity, be that an audit, inspection, meeting, or accident/incident follow up.

9.1.2 Use of safety culture models or conceptual frameworks to support regulatory oversight of safety culture

As reported above, just one specific safety culture activity was undertaken in 2022. The CRR have not undertaken any auditing of SMS compliance in relation to safety culture and consequently have not yet used any models in the field. CRR Inspectors are aware of the ERA Safety Culture Model and have been encouraged to review and use it in their everyday engagements with railway organisations.

CRR inspectors are also periodically reminded to record positive and negative markers/findings as part of our railway organisation picture building activity.

9.1.3 Evaluation method to oversee safety culture of RUs and IMs

As reported in our 2021 annual report, the CRR do not yet have a formal evaluation method to oversee safety culture within the RUs and IM. As railway organisations obtain certification/authorisation against the 2018 CSM SMS they can expect to be formally audited against those specific safety culture requirements.

The method by which safety culture has been reviewed to date in the sector has been somewhat ad-hoc insofar as Inspectors would build a picture in their own minds based on their interaction with railway personnel, what they have seen, heard etc. Then come the planning of annual supervision plans they would recommend supervision activities based on their knowledge, experience of the railway organisations they supervise.

This is of course further informed by our reviewing NIB and railway organisation accident investigation reports, investigating public/railway staff complaints etc. Inspectors are encouraged to record positive and negative safety culture findings they have identified on discrete tracker documents, one for each RU/IM.

9.1.4 Summary of activities relating to safety culture included in the planning and execution of supervision and results of those activities

No dedicated safety culture activities were undertaken in 2022 other than the inspection/meeting with Irish Rail regarding their implementation of a 'Just Culture'. Given they are the first railway organisation (Iarnród Éireann – Infrastructure Manager) to be authorised (March 2022) to the new CSM on Safety Management Systems it is still early days in its implementation. Over the authorisation lifecycle, it is planned that the requirements relating to safety culture will be formally audited. The same will be true of all RUs once they have been certified to the new CSM. Moreover, it will likely feature in other supervision activities such as inspections and in quarterly meetings.

9.2 Safety culture initiatives/projects

9.2.1 Initiatives/projects undertaken by the NSA or within the national sector which contribute to the development of a positive safety culture

In 2022, the CRR established a Rail Human & Organisational Factors Sector Group open to all railway organisations operating within the state. Our inaugural meeting was held in October 2022 attended by more than 20 railway professionals with representatives from all the heavy and light railway organisations.

Participants ranged from heads of safety to engineering/operations managers all with an interest in HOF. At the first meeting the groups Terms of Reference were established and agreed. There was also a HF Quiz and presentations by the CRR on our SMS expectations in relation to HOF and Safety Culture, and by the Head of Human Factors at Irish Rail on current projects of interest.

Feedback from the first meeting was very positive, with a real willingness to share openly and learn from each other.

9.2.2 If safety culture is a separate project for the NSA, description of the project carried out

Nothing to report.

9.2.3 Initiatives implemented within the NSA to improve its own safety culture

Nothing to report.

9.3 Safety culture communication

9.3.1 Communication activities to the public/stakeholders relating to the safety culture activities performed

See sections 9.2.1.

10 Theme chapter

The activities of the NSA in Ireland have been described in Section 1–9, no other significant activities are completed.

11 Annex: progress with interoperability, 2022

Please provide the following information as it is at the 31st December of the reporting year.

Please refer to the Appendix for definitions.

1. Lines excluded from the scope of IOP/SAF Directive (end of year)

1a	Length of lines excluded from the scope of application of the IOD Directive [km]	0
1b	Length of lines excluded from the scope of application of the SAF Directive [km]	0

Please provide the list of lines excluded:

2. Length of new lines authorized by NSA (during the reporting year)

2a	Total length of lines [km]	0
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3. PRM adapted stations (end of year)

3a	PRM TSI compliant railway stations	1
3b	PRM TSI compliant railway stations – partial TSI compliance	8
3c	Accessible railway stations ('step-free' access to platforms)	115
3d	Other stations (i.e., where all or part of station is not 'step-free')	31

4. Train driver licenses (end of year)

4a	Total number of valid European licenses issued in accordance with the TDD	702
4b	Number of newly issued European licenses (first issuance)	47

5. Number of vehicles authorized under the interoperability Directive (EU) 2008/57 (during the reporting year)

5a	First authorization – total	0
5aa	Wagon	0
5ab	Locomotives	0
5ac	Hauled passenger vehicles	0
5ad	Fixed or pre-defined formation	0
5ae	Special vehicles	0
5b	Additional authorization – total	0
5ba	Wagon	0
5bb	Locomotives	0
5bc	Hauled passenger vehicles	0
5bd	Fixed or pre-defined formation	0
5be	Special vehicles	0

5. Number of vehicles authorized under the interoperability Directive (EU) 2008/57 (during the reporting year)

5c	Type authorization – total	0
5ca	Wagon	0
5cb	Locomotives	0
5cc	Hauled passenger vehicles	0
5cd	Fixed or pre-defined formation	0
5ce	Special vehicles	0

5d	Authorizations granted after upgrade or renewal – total	0
5da	Wagon	0
5db	Locomotives	0
5dc	Hauled passenger vehicles	0
5de	Fixed or pre-defined formation	0
5df	Special vehicles	0

6. ERTMS equipped vehicles (end of year)

6a	Tractive vehicles including trainsets equipped with ERTMS	0
6b	Tractive vehicles including trainsets – no ERTMS	578

7. Number of NSA staff (full time equivalent employees) by the end of year

7a	FTE staff involved in safety certification	3
7b	FTE staff involved in vehicle authorization	2
7c	FTE staff involved in supervision	8
7d	FTE staff involved in other railway-related tasks	4

12 Appendix to annex: applicable definitions – progress with interoperability

Applicable definitions are those contained in the relevant articles of the legal documents.

In addition, the following definitions apply:

1 Lines excluded from the scope of IOP/SAF Directive (end of year)

Railway lines excluded by the Member States from the scope of the application of RSD/IOD: Directive (EU) 2016/797, Art. 1.4 a-d; DIRECTIVE (EU) 2016/798, Art. 2.3 a-d, as of 31.12.2022 (reporting year).

2 Length of new lines authorized by NSA (during the reporting year)

Length of lines constituting the Union rail system authorized for placing in service in accordance with Article 18.2 of Directive (EU) 2016/797 during the reporting year (2022).

3 PRM adapted stations (end of year)

Railway stations as of 31.12.2020 (reporting year), that complies with the requirements of the Commission Regulation (EU) No 1300/2014 (as amended by Commission Implementing Regulation 2019/772) on the technical specifications for interoperability relating to accessibility of the Union's rail system for persons with disabilities and persons with reduced mobility (PRM TSI).

Full TSI compliance means full conformity with PRM TSI requirements, as demonstrated with the NoBo certificate. Partial TSI compliance means conformity with some (but not all) PRM TSI requirements, as demonstrated with the NoBo certificate. Accessible station means a station considered accessible under national legislation. (No NoBo certificate available.).

Railway station means a location on a railway system where a passenger train service can start, stop or end.

4 Train driver licenses (end of year)

Newly issued and valid driver licenses as of 31.12.2020 (reporting year), issued in accordance with the Directive 2007/59/EC of the European Parliament and of the Council of 23 October 2007 (as amended by Directives 2014/82 and 2016/882 and by Regulation 2019/554) on the certification of train drivers operating locomotives and trains on the EU railway system.

5 Number of vehicles authorized under the interoperability Directive (EU) 2016/797 (during the reporting year)

The number of issued, renewed and amended vehicle authorizations for placing on the market in accordance with Article 21.8 of Directive (EU) 2016/797 during the reporting year (2022).

6 ERTMS equipped vehicles (end of year)

Number of operated tractive vehicles (owned, leased, and rented minus rented-out) equipped and not equipped with ETCS level 1 and level 2.

Vehicles without power units are excluded. Multiple units and or with multiple driving cabs to be counted once. Includes only vehicles which are operated to transport freight or passengers, and shunting locos (if available). Yellow fleet and other IM vehicles are not included. Includes only vehicles which are registered in the country of main business activities of RUs.

7 Number of NSA staff (full time equivalent employees) by the end of year

Total number of full time equivalent NSA employees as of 31.12.2020 (reporting year).

Only staff dealing with railways is to be included.

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