THE NATIONAL SAFETY AUTHORITY FOR RAILWAYS IN IRELAND

2020 ANNUAL REPORT TO THE EUROPEAN UNION AGENCY FOR RAILWAYS

CRR
AN COIMISIÚN UM RIALÁIL IARNRÓID
COMMISSION FOR RAILWAY REGULATION

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COMMISSION FOR RAILWAY REGULATION

Contents

Definitions and abbreviations

CSI	Common Safety Indicator
CSM	Common Safety Method
CST	Common Safety Target
DTTAS	Department of Transport Tourism and Sport
EC	European Commission
ECM	Entities 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	A legal term in Ireland 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 2020. This is the third annual report under the CRR's current strategy for 2018 – 2020.

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).

The CRR endeavours to show how the railway system in Ireland is performing, highlighting difficulties and good practices while leading 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 1,600 mm gauge conventional 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 aggregation 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.

Please note that this report uses the assigned template (GUI_MRA_002 V 3.0) which includes the extended requirements under the fourth railway package, in particular the Railway Safety Directive 2016/798.

1.1.3 Target audience of the report

To improve European railway safety, 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 National Safety Authority (NSA-IE) 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) and the infrastructure manager (IM), and the environment in which they operate.

This report may also be of interest to the National Investigating Body (NIB) for railway occurrences and to the Department of Transport (previously the Department of Transport, Tourism and Sport) of this Member State's Government.

1.1.4 Availability of the report to stakeholders

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

1.2 Main conclusions on the reporting year

1.2.1 Main conclusion about how the railway system performed

2020 has been one of the most unusual and difficult years on record for the railway sector in Ireland. The COVID-19 pandemic led to significant changes for the people of Ireland and their mobility. Significant declines in the usage of the railway systems were observed. It is anticipated that the usage of public transport including rail may change as society emerges from COVID-19 restrictions. Railway workers, passengers and the CRR have had to adapt working methods to ensure the effects of the pandemic were minimised on the railway system. From a regulatory perspective, many activities moved to an online environment thus reducing the opportunities to engage with the railway system in person. In general, the whole sector performed well and displayed much resilience in what were unprecedented and challenging circumstances.

2020 is destined to be an outlier for a variety of reasons when seeking to examine safety performance. Passenger numbers were down 64% for the year, and substantially more during times when people's mobility was acutely reduced due to public health restrictions. Freight volumes in Ireland remained mostly unchanged in 2020, which demonstrates its small volumes were relatively unaffected by the pandemic. Traditional peak travel times for the railway in Ireland, morning and evening, were greatly reduced in volume, and it was noted that new peak times emerged associated with weather and cultural events. All of this impacts on safety risk resulting in 2020 being an unusual year and hard to compare to previous years. It is unknown if 2020 is the start of new trend or a temporary breakdown in previous trends. Such uncertainty makes analysis of safety performance challenging. Given all that, the safety performance for the railway system in 2020 was generally positive and continues Ireland's good performance for CSI categories.

One organisation has received Part A and Part B certificates, but otherwise no other SMS conformity assessment activities concluded in the year.

Extensive supervisory functions including audit and inspection were planned and carried out on a risk basis. On the national rail network, formal enforcement after an audit or inspection was required in one instance.

No significant accidents were reported in 2020, which is a continuation of the recent good trend. Numbers are generally small in this category so the CRR is very conscious of how performance may vary.

The fourth railway package was transposed for Ireland in October 2020, which is timely as Ireland's railway system will in the coming years' experience significant investment and developments in the extension of electrification, new stations, and new rolling stock.

1.2.2 Overall trends

2020 was a unique year in the history of railway transport and determining its relevance to recent trends is a difficult task in the short term. The pandemic and the substantial drop in use of the railway system in Ireland meant that the safety risk profile of the system was dramatically altered, with this being manifested in indicators that are influenced by the volume of passengers on the system.

There were no passenger fatalities in 2020, but 6 people lost their lives after trespassing onto the railway. One of these fatalities was that of a railway worker. There were no reports of deaths at level crossings.

2020 saw a continued reduction in train collisions, particularly with large animals. Signal Passed At Danger (SPAD) occurrences remained steady, with 10 again reported in 2020. 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.

There is some clarification required regarding the accuracy of data collected for 'Wrong Side Failure' occurrences. This is discussed in detail in section 4.

1.2.3 Impact of the above analyses on the next year activities

Ascertaining a trend within the Common Safety Indicator framework for Ireland is difficult given that the volume of occurrences tends to very low. In 2021, the CRR Supervision Team will focus 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 the IM that have greater exposure to risk, by virtue of the size of the operation, their complexity, and safety performance history, can expect more supervision than those who have limited exposure to risk. The CRR adopts the principals for supervision that include proportionality, consistency, transparency, and we work closely with the RU's and IM's we regulate.

1.2.4 Priority actions for the next year

With the transposition of the 4th Railway Package Railway Safety Directive and Interoperability Directive and their coming into effect on 31st October 2020 the CRR will include actions to ensure that both Railway Undertakings and the Infrastructure Manager are aware of the new requirements which they place on them. Similarly, we will ensure that we as the NSA are in a position to assist the regulated entities to meet these requirements, including the updating of our published guidance.

The CRR will be renewing its Statement of Strategy in 2021 and will therefore prioritise engagement with all the sector stakeholders to ensure that the new strategy reflects the key objective relevant to the future development of our national rail system and its continuous improvement.

Following on from the ERA Monitoring in 2020 we will prioritise the relevant key elements of our action plan developed to address any deficiencies identified.

We will also be recruiting additional staff and ensuring that they are fully integrated into the organisation.

2 Summary

The CRR had a challenging program in 2020 relating to its safety and regulatory functions. COVID-19 had a significant impact on how the railway was used and how the sector worked. In terms of railway system use, the railway system in Ireland is predominantly used for passenger services and in 2020 the demand for services from passengers declined dramatically by some 64%. For certain periods in the year this decline was measured at 91% by Eurostat. Such deterioration in passenger volumes inevitably impacts on safety risk, but as CSI data shows the relationship is certainly not directly proportionate. 6 people lost their lives in accidents involving trains in motion, all related to trespass. Unfortunately, this number of fatalities is not unusual and is within a normal trend for the Irish system, hence effects of the pandemic on this indicator are probably not proportionate.

In terms of working during a pandemic with restrictions on movement, much of the sector in Ireland worked remotely or at home where possible. Core tasks such as maintenance and operation continued to be executed on the railway and related sites, train services were available at only a slightly reduced frequency but at a much-reduced capacity due to social distancing. The CRR performed most of its functions remotely and whilst this was new to the organisation, initial results indicate a generally positive experience.

The core functions of the CRR include safety assessments associated with the certifications and authorisations required under EU legislation, as well as safety supervisory functions on the major 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, NIB-IE), which continue to be addressed by the regulated entities.

In addition, the CRR as the monitoring body for the Infrastructure Manager Multi Annual Contract fulfilled all its functions. The duties and responsibilities to ensure the maintenance of the infrastructure in the contract were fulfilled within budget.

The CRR in 2020 continued its engagement in relation to Brexit with all relevant stakeholders and the impact that a no deal Brexit would have on railway undertaking licencing, certification and driver licencing and certification in the context of EU legislation in the field of rail transport. Two new Safety Certificates, a Part A and a Part B were issued to Northern Ireland Railways on 29.10.2020 under Directive 2004/49/EC and applicable national legislation. There were also 55 train driver licences issued to Northern Ireland Railways' train drivers. No other SMS conformity assessment or vehicle authorisations processes concluded in 2020, but much work took place on preparing new guidelines following the transposition of the fourth railway package in October 2020. 99 Train driver licenses were issued, including the 55 referred to above. There were no licences amended, renewed, suspended, or withdrawn. The CRR issued two Authorisations for Placing in Service of Fixed Installations, one for the CCT Subsystem and one for the INF Subsystem.

The CRR carries out supervision and enforcement functions with an emphasis on support, advice, encouragement and when necessary, direction. With regard to asset management, CRR inspectors undertook the following inspections in 2020:

— 18 stations.
— 2 stations following structural failure of specific elements.
— 13 railway bridges.
— 12 level crossings.

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. With regards to audits, these are fewer in number given the greater resource requirement for such activities. 2 audits were completed in 2020.

In 2020, the CRR undertook post occurrence inspections following 34 events and in several instances remedial/corrective action was considered necessary for the railway organisations concerned. From these key findings included:

— An absence of maintenance documentation relating to weld repairs on 201 Class Locomotives.
— Ineffective monitoring of work in engineering possessions.
— Failings in the management of safety critical information from Original Equipment Manufacturers (OEMs).
— Gaps and weaknesses in vehicle maintenance inspections on gangway doors.

An important inspection involved reviewing the principal railway organisations management and response to the COVID-19 pandemic. These included reviewing risk assessments, the railway organisation management of deviations to standards, e.g., managing the ongoing competence of safety critical workers whilst adhering to socials distancing restrictions and other measures. Checking risk management related to COVID-19 evolved as more knowledge became available as to how the disease was transferred between people.

3 NSA safety strategy, programs, initiatives, and organisational context

3.1 Strategy and planning activities

3.1.1 NSA strategy and planning of activities/initiatives to improve the safety railway system

In 2020, the CRR began its development of a new three-year strategy. Within the new strategy the CRR will commit to advancing railway safety, through effective regulation, and 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 the CSI trends.

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, and these include integrity, respect, independence and excellence in what we do.

During 2020, the CRR was audited as part of the ERA NSA monitoring programme. Based on the outcome of the audit we have commenced the development of a supervision strategy and supervision procedure in line with the revised CSM on supervision (EU) 2018/761 with reference to the Agency guidance document.

As with every other year the CRR produced a plan of its supervision activity and the main areas that were to be the focus on through audit and inspection. It is of note that COVID-19 had a major impact on the working environment in Ireland and throughout Europe since March 2020. Against this background, while complying with all public health restrictions we ensured that our conformity assessment, authorisation to place in service, supervision and regulatory functions continued to be performed and were in line with all notifications from the Agency and Commission.

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

3.1.2.1 CRR supervision

The CRR Supervision section was subject to NSA Monitoring by the Agency in Q4 2020 and in response to the conclusions from this audit we have developed an action plan to address the small number of deficiencies identified. Actions will be targeted to bring about improvements in setting strategic high-level priorities for supervision, reviewing the prioritisation of tasks, techniques and responsibilities formalising the periodic review of internal guidance documents and procedures.

Nonetheless for 2021, in which a resumption to more normal activities are expected, a greater focus on SMS auditing will be undertaken.

The CRR's process of reviewing its supervision activity has continued with bi-weekly Team Catch-Up meetings at which Inspectors provide updates as to the status of their activities. Furthermore, Inspectors are expected to highlight any areas of concern which can be discussed and strategies to tackle these are developed. Moreover, when considered necessary annual plans can be adapted to include new supervision tasks as the need arises.

3.1.2.2 Assessments and authorisation

There is one infrastructure manager and a small number of railway undertakings operating on the network in the Republic of Ireland. This means we can determine what SMS certification/ authorisation applications will be made in a given year. No applications for single safety certificates or safety authorisations under the new Directives were anticipated during 2020, which turned out to be the case. Work commenced on updating CRR application guide for single safety certificates and safety authorisations. Due to other urgent tasks together with having no applications the completion of this guideline was forwarded to 2021.

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.

On the 3rd of November 2020 the 'European Union (Railway Safety) Regulations 2020' [S.I. 476] and the 'European Union (Interoperability of the Rail System) Regulations 2020' [S.I. 477] were published. These regulations give effect to Directive (EU) 2016/798 and Directive (EU) 2016/797 of the European Parliament and of the Council.

During 2020 the CRR worked on drafting an update to its APIS Guideline, CRR-G-009 'Guideline for the Process of Authorisation for Placing in Service Railway Sub Systems'. CRR-G-009 was renamed to 'Guidance on Application for Authorisation and Application for Acceptance for Heavy Rail Fixed Installations and Vehicles'. This revision brings the guidance up to date with the new legislation and in doing so provides the Irish railway industry with guidance and explanation on the European and the Irish legal requirements for authorisation and/or acceptance of railway subsystems. The updated version was published on the CRR website on 3rd Feb 2021 and was also circulated to all relevant stakeholders.

Under S.I. No. 477 of 2020 the CRR were mandated to designate the bodies responsible for carrying out the verification procedure in respect of national rules. During 2020 and in advance of the publication of S.I. No. 477 of 2020, the CRR began developing and drafting the process and guidance for CRR recognition of designated bodies.

3.1.3 NSA strategies in international activities

The CRR although a small NSA values participation in as many national and international fora as possible. These include the ERA's NSA Network, European Commission's Railway Safety and Interoperability Committee as well as ERA Working Groups and Task Forces (TF).

The most significant challenge in 2020 was that imposed by the public health restrictions implemented due to the COVID-19 pandemic. We ensured that we had the technical capability to continue to engage will all our national and European colleagues and stakeholders, we fully participated in national and international meetings, all be it remotely. While we look forward to the opportunity to meet face to face again in the not too distant future we see the developments relating to the use of virtual meeting platforms as a means of enhancing our continued participation with stakeholders particularly in Europe.

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)

In accordance with Article 26(2) of the Directive (EU) 2016/798 safety recommendations made by the NIB are addressed to the CRR as the relevant national safety authority. Having reviewed a new investigation report by the NIB, the CRR formally issues them to the relevant railway organisation(s) by means of a letter. 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. The CRR reviews these submissions and either accepts the proposed action plans or requests further information from the railway organisation.

Thereafter periodic meetings (typically quarterly) are held with 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. No new measures were adopted or planned in 2020.

NIB safety recommendations

Year	Reports	Open	Submitted	FER	Closed
2010	5	1	0	0	25
2011	6	0	0	2	14
2012	3	0	0	0	13
2013	2	0	0	1	9
2014	5	0	0	5	16
2015	2	0	0	2	2
2016	3	7	0	2	11
2017	1	1	0	2	2
2018	1	5	0	2	2
2019	4	18	0	11	7
2020	3	6	0	1	1

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 2020 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 etc.
2. Supervise areas of identified risk, and the associated Risk Control Measures.
3. To continue encouraging Railway Organisation's to 'Move Beyond Compliance', i.e., challenging their SMSs to not only ensure compliance but that they are striving to achieve excellence.
4. Promoting human factors training for Railway Organisation staff to improve awareness and knowledge.
5. Promote the need for organisation leaders (Managers) to promote internally a positive organisational/safety culture.
6. Install in the minds of railway company personnel that safety is their no. 1 policy.

As in previous years, the CRR's principal supervision activities, i.e., audits, inspections and meetings are devised and planned to achieve points 1 and 2 above. While much of the first quarter of 2020 saw normal working, from the 17th March 2020 the Republic of Ireland went into the first of a series of national lockdowns owing to the COVID-19 pandemic. This impacted greatly on the CRR's ability to carry on with normal on-site supervision. This required an adaption to working practices and to using virtual platforms to engage with those organisations we regulate. Nonetheless, in 2020 a total of 109 such activities (inspections and meetings) were undertaken across the operational RUs and the IM.

A key area for inspection by CRR Inspectors was the railway organisations management in relation to COVID-19 restrictions and government's public health advice for their staff and the travelling public. Towards the latter end of 2020 we completed some remote SMS audits, which while not ideal was a positive development.

A 2020 objective had been to establish a sector working group on Human & Organisational Factors to support efforts to improve the industry's capability in this area. Unfortunately, this was not considered possible and it was considered prudent to postpone this to such time as in person meetings could resume.

3.3.2 Monitoring of implementation status

The CRR reviews the implementation of the plan identified in section 3.3.1 annually given the underpinning objectives are of a strategic nature. Items incomplete or unresolved are reviewed at our annual workshop to determine the next action depending on the principles for supervision.

Specifically in relation to the state Railway Undertaking, and Infrastructure Manager, both have reasonably mature safety management systems given they are in their 3rd approval cycles. However, isolated areas of non-compliance have been identified albeit these are typically in the minor category. Measuring effectiveness on the other hand, i.e., moving beyond simple compliance, is still difficult and CRR Inspectors are challenging the RU and IM to actively document non-compliance with internal standards when they are conducting internal investigations.

In terms of promoting human factors training and increasing the knowledge base, Iarnród Éireann has rolled out HF Training to some staff. The CRR is also encouraged by recent recruitment drivers to bolster internal HF competence by actively trying to hire an additional HF expert.

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. The levy is allocated on the basis of the level of authorisation or supervision that each entity will be subject to in that year and account for approximately 80% of funding. The balance was received as Grant-in-Aid from the Department of Transport.

3.4.1 Railway organisational context in the Member State and main changes

The railway network in Ireland is managed by the IÉ-IM and as indicated in its current Network Statement comprises approximately of 2,400 km of operational track and includes 144 passenger stations and 372 platforms. It also comprises of 4,440 bridges, 917 level crossings, over 3,300 cuttings and embankments and 13 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 service with IÉ-RU between Dublin and Belfast.

It is obviously the case that passenger reduced dramatically from March 2020 in a similar manner to that throughout Europe due to limitations on public transport capacity implemented due to COVID-19. However, all rail services continued to operate all be it at a reduced capacity.

Rail travel from Northern Ireland effectively became travel from a third country rather that another Member State post Brexit. To address the continued operation of Northern Ireland Rail within our jurisdiction the relevant railway undertaking undertook, fulfilled, and met all of the required European criteria relating to licencing, conformity assessment and driver licencing to enable their continued operation in the Republic of Ireland.

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. Early engagement with the CRR commenced on a number of these developments in 2020.

3.4.2 Information relating to the NSA organisation and main changes

The Commission for Railway Regulation is the NSA in Ireland. In 2020, the Commission received sanction for an additional two members of staff, bringing its staff number to 17. 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 2020

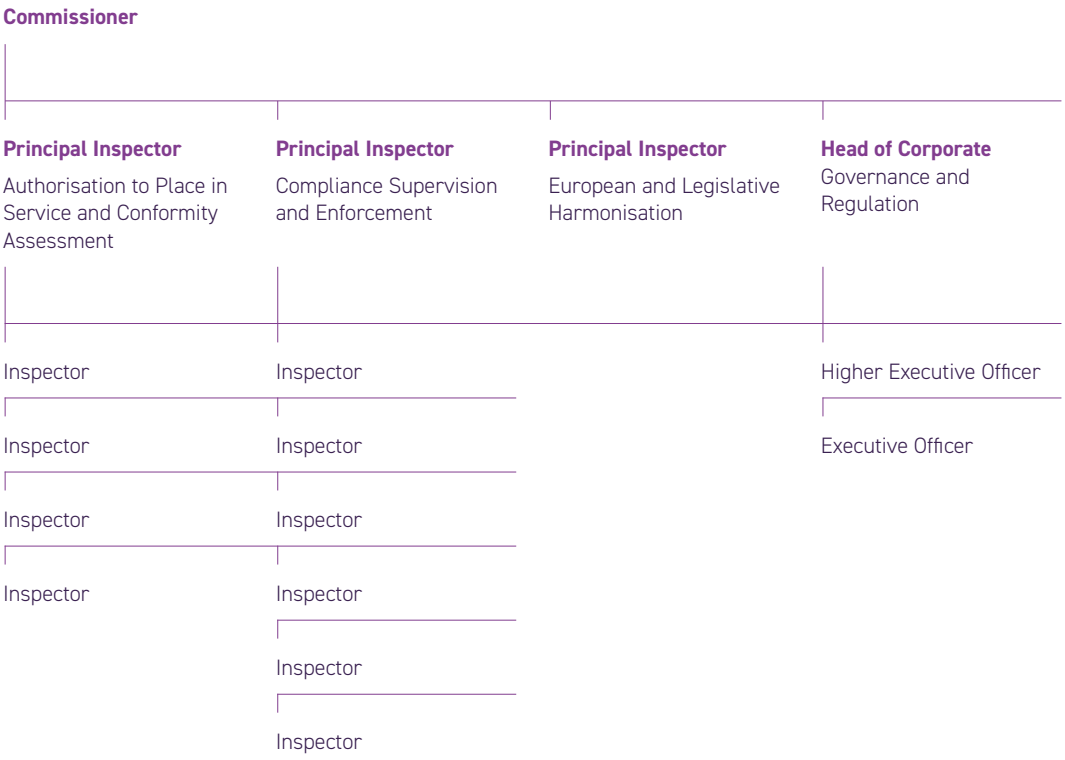
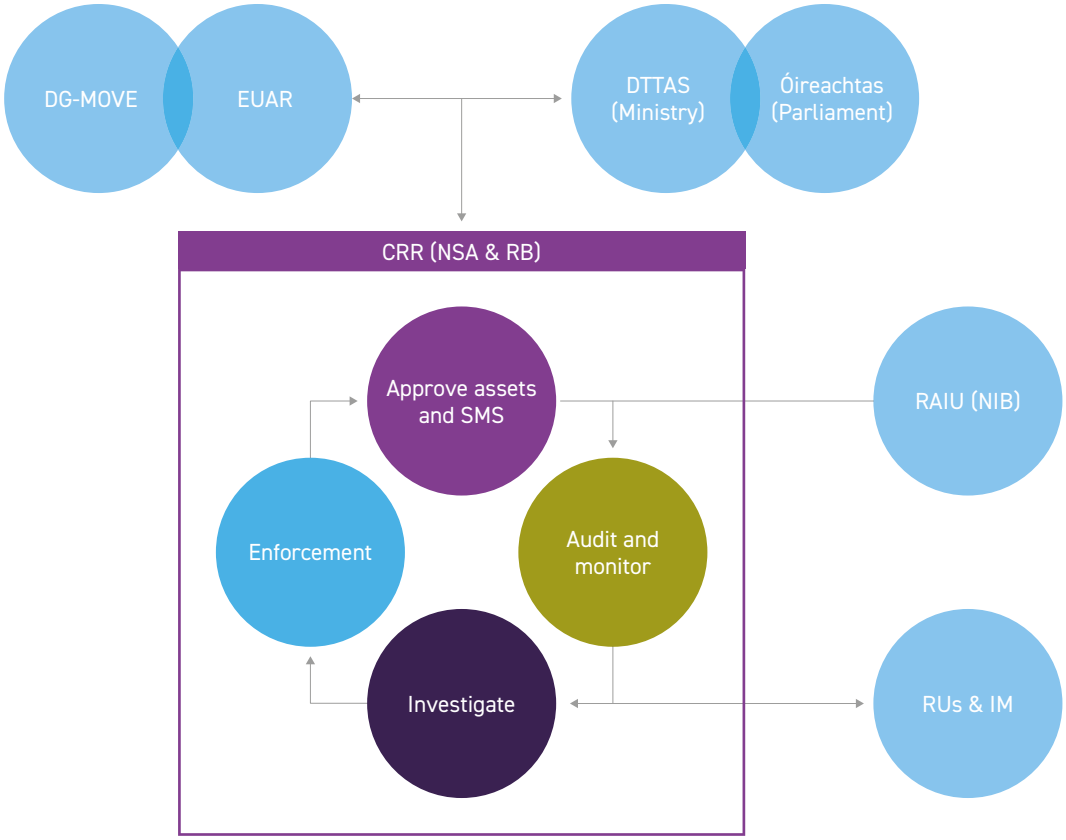


Figure 2
Organogram of independent CRR organisation and primary workflows



3.4.3 NSA staff and the NSA competence management system

(Only staff dealing with railways is included, with a focus on staff dealing with the following activities: issuing Single Safety Certificate, Vehicle Authorisation, Supervision and Train Driver's licenses)

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

3.4.3.1 Single Safety Certificate

To be employed by the CRR an applicant must have a recognised degree in a relevant discipline together with a minimum level of industry experience. A number of Inspectors have master's degrees in related disciplines, and some are at chartered engineer status.

As described in 3.1.2.2 no applications for single safety certificates or safety authorisations under the new Directives were received during 2020. The process for delivering safety certificates and safety authorisations is described in RSC-G-030 'application guide for safety certification/authorisation'. The update to this guideline commenced in 2020 and will be finalised during 2021 and will include self-learning for Inspectors during the drafting process. Two NSA inspectors have attended the pool of expert training at ERA on single safety certification. Other inspectors who work on safety certification/authorisation work closely with their line manager on their first project.

All NSA inspectors have been offered the opportunity to complete the MSc course in the University of Birmingham titled 'MSc in Railway Systems Engineering & Integration'. The NSA has a performance management development system in place where training needs are identified and an annual budget for training purposes is in place.

3.4.3.2 Vehicle Authorisation

The process for vehicle authorisation is described in RSC-G-009 'Guidance on Application for Authorisation and Application for Acceptance for Heavy Rail Fixed Installations and Vehicles. As described in 3.1.2.2 above the guideline was significantly developed during 2020 which included self-learning for Inspectors during the drafting process. NSA inspectors who work on vehicle authorisation projects have attended the pool of expert training at ERA, and on-the-job training continued to be used for vehicle authorisations during 2020. The management of competence for vehicle authorisation is included in the CRR competence management system, which is still in development. Additional expert advice is contracted by the NSA as necessary.

All NSA inspectors have been offered the opportunity to complete the MSc course in the University of Birmingham titled 'MSc in Railway Systems Engineering & Integration'. The NSA has a performance management development system in place where training needs are identified and an annual budget for training purposes exists.

3.4.3.3 Supervision

The CRR's management of competence was subject to NSA Monitoring by the Agency in Q4 2020, and, at the time of writing, actions have been developed to address these. Nonetheless, CRR staff engaged in supervision activities essentially undertake three types of activity, namely, auditing railway organisations SMSs and associated processes and procedures, inspecting assets and checking compliance with maintenance management standards and meeting with railway organisation executives to review their safety performance.

To be employed by the CRR an applicant must have a recognised degree in a relevant discipline together with a minimum level of industry experience. A number of Inspectors have master's degrees in related disciplines, and some are at chartered engineer status.

All new entrants receive a comprehensive induction together with all the necessary railway safety competences required to access the various railways we supervise. Prior to undertaking any activity there is 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, shadowing Inspectors are they carry out asset/task observation-inspections while in the case of auditing, Inspectors must attend and pass formal, classroom-based Lead Auditor training.

Continuing professional development is important to us and CRR Inspectors are encouraged to maintain their own continuous professional development and self-learning. Moreover, all are offered the opportunity to complete the MSc course in the University of Birmingham titled 'MSc in Railway Systems Engineering & Integration', which most have availed of. Following on from this the Principal Inspector with responsibility for Supervision has an annual budget allocation per Inspector reporting to him/her to be 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 following the government structured approach.

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. The administrator at the NSA has been trained in these requirements. The principal inspector checks that all requirements are met before train driver licences are issued.

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. 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. NSA-IE has reviewed the system, and while it is accepted to be generally effective for the purposes of indicator reporting, a problem in relating to the misalignment of definitions was observed in 2020 data. 'Wrong Side Failure' indicators for 2020 were noted to be collected using a category definition that is broader than the one specified in the Common Safety Indicator framework. The error was discovered during a data verification process conducted by the CRR. The incorrect definition used by the data collection system led to more events being categorised as 'Wrong Side Failures' than that specified in the CSI Framework. A figure of 29 was first reported, but on closer inspection none of these met the specification in ERA guideline 'Implementation Guidance on CSIs' (ERA-GUI-02-2015). This has resulted in an improved performance for IE for 2020 in this category. Previous years are currently being reviewed and NSA-IE will revert to the ERA at the earliest opportunity to address any further issues.

The Irish network accounts for a small proportion of total EU railway traffic, with 15.8 million train-km and 864 million passenger-km recorded for year 2020. 2020 was an exceptional year as COVID-19 pandemic led to public health restrictions that greatly reduced the amount of people travelling on the conventional railway system. The CSI analysis shows that a reduction of about 64% was noted in passenger km for 2020, which is an unprecedented decline in Ireland. Freight km did not display any such effects from the pandemic. The Irish network is predominantly a passenger railway, with about 74 million freight tonne-km recorded for year 2020, a number broadly in line with 2019. The government is currently reviewing deployment of rail freight in Ireland to understand further how it may contribute social and economic objectives.

Ireland continues to have relatively low accident rates per million train-km. Although it is difficult to pick up significant trends in the CSI accidents as the values are very small, there has been an underlying decline in the five-year rolling average number of reported significant accidents. No significant accidents were recorded for year 2020, which is 2 less than 2019 and continues a broadly positive trend since CSI's were introduced. The overall picture of safety in the rail industry is a good one, with most indicators trending positively.

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

There was one fatal accident to a person reported in 2020, the occurrence involved entry to the railway without permission by a railway worker. 5 other fatalities appear to have been due to acts of self-harm and have been classified as self-harm fatalities. The CRR has not received all verdicts of coroner inquests into the fatalities occurring in 2020, so the classification is based on information received from the involved IM and RU.

There were no other serious injuries to passenger or employee reported in 2020 involving a train movement or train accident. 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)

In 2020, there was 1 significant accident, a fatality as a result of unauthorised entry to the railway as indicated in section 4.1.2. The 5-year average rolling trend for significant accidents has been consistently positive since the introduction of CSI reporting, with the somewhat undesirable trend displayed in 2017 and 2018 has been ameliorated from 2019 on.

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

The total number of precursors is down in 2020 to 11 from 28 in 2019. As indicated in section 4.1.1, 'Wrong Side failure' events are down to 0 in 2020 as there is likely to be an error in the data collection system for how these events were recorded. The CRR is investigating this issue and will update statistical reporting accordingly. Good performance was noted again for Signals Passed at Danger, where in 2020 a value of 10 for the whole system is indicative of a positive trend over the past 5 years. The main IM in conjunction with the RU's has further enhanced the ergonomic and cultural tools available during its investigations to understand SPAD causation, and it is believed these are having a positive impact. NSA-IE is planning further work to understand their contribution to the SPAD risk profile. The method used to estimate SPAD risk has recently been enhanced and is also subject to further review by NSA Supervision in 2021 to ensure its estimations are appropriate. 1 broken rail in 2020 occurred on a tunnel on the Dublin Suburban Network. The break was found during maintenance inspection and did not significantly affect service.

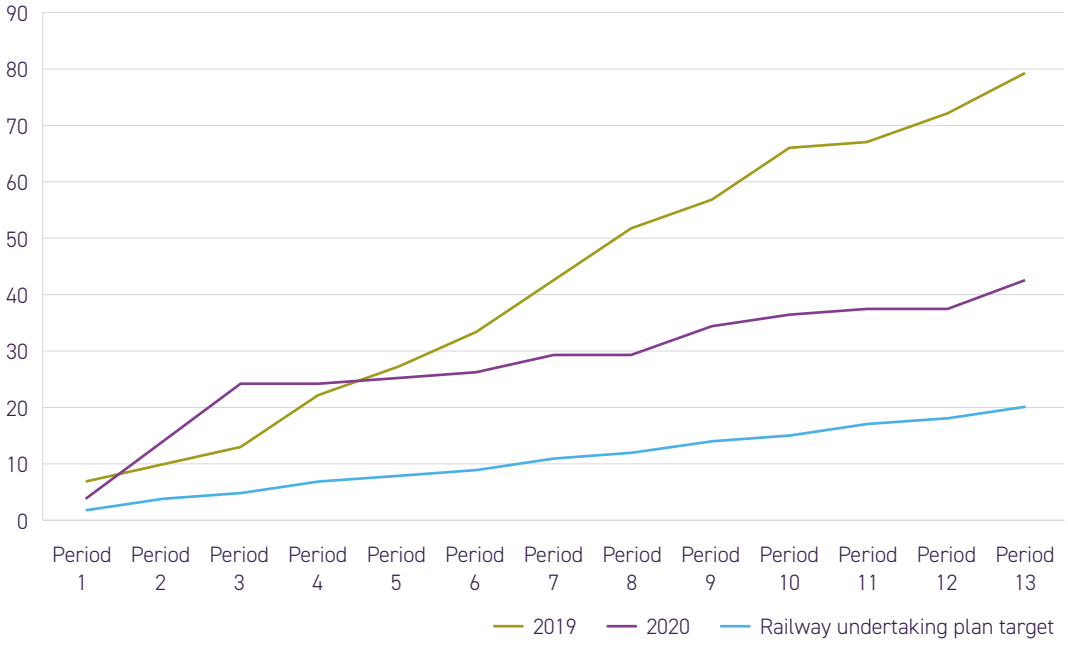
4.5 Overview of safety outputs CSIs, such as level-crossing per type, ATP statistics and other nationally used metrics

The infrastructure remained at steady state in Ireland in 2020, where there has been a significant focus on asset renewals and planning for large projects to replace existing signalling and energy systems. The infrastructure manager has advised in an annual update for 2020 that there were 14 level crossing eliminations and 8 technological enhancements of user worked level crossings using decision support system that provides additional assistance to a pedestrian or car driver on train movement through the crossing.

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

As previously indicated, determining trends from CSI data in Ireland can be difficult due to the relatively small values reported for Ireland. A principal area of concern in Ireland that has emerged from national indicators is incidents at the interface between the platform and the train at stations. As can be seen in figure 3 below, the threshold for 2020 has not been met despite significant declines in passenger volumes on the system.

Figure 3 Platform train interface (injury sustained) (cumulative)



The injuries sustained that are indicated in figure 3 are generally minor and the medical aid provided at the scene of the incident is often sufficient to address personal harm caused. From analysis of specific events, NSA-IE considers such harm could easily escalate to the extent that they would meet the definition of 'seriously injured'. The NSA reviews this performance with IM and RU's at quarterly meetings where there is specific focus on the actions taken to reduce safety risk. Recent initiatives that have been implemented include the introduction of specific risk assessment procedures for this interface. The decline in 2020 is substantial but the threshold is still somewhat off being met, and reasons for this miss will be reviewed with involved organisations in 2021.

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. This is expected to evolve as the fourth railway package is implemented.

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)

Directive 2020/700 of the European Parliament and of the Council amending Directives (EU) 2016/797 and (EU) 2016/798 as regards the extension of their transposition periods.

Transposition of Directives (EU) 2016/797 and (EU) 2016/798 was completed in October 2020 as required. EU 2016/797 is transposed through SI 477 2020 and EU 2016/798 through SI 476 2020.

Regulation (EU) 2020/698 of the European Parliament and of the Council of 25 May 2020 laying down specific and temporary measures in view of the COVID-19 outbreak concerning the renewal or extension of certain certificates, licences and authorisations and the postponement of certain periodic checks and periodic training in certain areas of transport legislation.

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 2020.

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 2020.

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 2020.

5.1.5 Changes in legislation/regulation following the NIB Safety Recommendation

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

Not required in 2020.

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 2020:

- SI 476 2020 – European Union (Railway Safety) Regulations 2020. Transposition of the Railway Safety Directive.
- SI 477 2020 – European Union (Interoperability of the Rail System) Regulations 2020. Transposition of the Interoperability Directive.
- SI No. 448 of 2020 – Health Act 1947 (Section 31A – Temporary Restrictions) (COVID-19) (NO. 8) Regulations 2020. Classifying essential services in the context of COVID-19 restrictions.
- SI No. 398 of 2020 – European Union (Regulation of Railways) (Amendment) Regulations 2020 – giving effect to Directive (EU) 2016/2370.
- SI No. 143 of 2020 – Railway Safety Act 2005 (Section 26) Levy Order 2020.
- SI No. 430 of 2020, European Union (Railway Safety) (Reporting and investigation of serious accidents, accidents and incidents) Regulations 2020.

5.2 Derogation from RSD system of certification of ECM

5.2.1 Derogations decided in accordance with Art. 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

Status	Change	Number
Number and awardees (names of the companies) of new safety certificates	Northern Ireland Railways – Parts A and B	2
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		0
Number and awardees of amended safety authorisations (e.g., for extensions or reductions in scope…) and main issues faced		0

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

There was no activity.

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

Work progressed on the drafting of guidance for issuing Single Safety Certificates/Safety Authorisations. This work was not completed at the time of transposition of Directives (30.10.2020) due to other urgent tasks. NSA IE did not expect SSC or Safety Authorisation Applications during November or December 2020.

6.2 Vehicle Authorisations

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

(e.g., Number and awardees of new issued VA, number and awardees of modified and/or renewed VA and main issues faced, number of suspended VA and main reasons, number of withdrawn VA and main reasons)

Status	Change	Number
Number and awardees of new issued VA		0
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

Update to CRR guideline, CRR-G-009, was 95% completed during 2020 to reflect the new Directives and associated Implementing Regulation (EU) 2018/545 which includes Vehicle Authorisations. CRR-G-009-G was published in February 2021 on the CRR website.

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

None.

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

None.

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

None.

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

None.

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 99 licences issued by the NSA in 2020. There were no licences amended, renewed, suspended or withdrawn.

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

A renewed statement of recognition was issued for both the Iarnród Éireann training centre and the Iarnród Éireann examination centre.

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

There was no change to strategy or procedure.

6.5 Other type of authorisation/certifications

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

There were two Authorisations for Placing in Service of Fixed Installations, one for the CCT Subsystem and one for the INF Subsystem issued by the NSA.

6.6 Contacts with other National Safety Authorities

6.6.1 Cooperation with foreign safety authorities

The CRR in 2020 continued its engagement in relation to Brexit with all relevant stakeholders to reduce the impact that a no deal Brexit would have on railway undertaking licencing and certification, and driver licencing and certification. Two new Safety Certificates (Part A and a Part B) were issued to Northern Ireland Railways under Directive 2004/49/EC and the applicable national legislation. There were 55 train driver licences issued to Northern Ireland Railways' train drivers.

6.6.2 Outcomes of discussions of supervision results with other NSAs

There was no formal dialogue with other NSAs in respect of supervision results in 2020, however there were exchanges of information with a number of NSAs on topics that included, wheel brakes and associated processes, station security, cloud-based applications, and NSA decision making processes.

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 involved in the Supervision of railway operators meet regularly with company executives, typically 4 times per year with the larger railway organisations. At these meetings CRR Inspectors review the RU/IM safety performance, their internal investigations, their monitoring and other items related to safety. CRR staff also use these forums to provide legislative updates as may be required, e.g., update the sector on upcoming CMSs.

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

There was no activity.

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

In terms of supervising the continued application and effectiveness of each RU and IM safety management system, the CRR prepares annual supervision plans for each railway organisation. In 2020 these were:

- 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 develop includes a mix of audits, inspections and meetings with senior managers commensurate with their calculated risk profile.

The risk profile of a railway organisation is calculated using a mix of information including trends in their safety performance indicators, findings from previous activities, findings from NIB reports etc. Higher priority railway organisations, such as the state-owned IM and RU, can expect more engagement with the CRR than a lower priority railway organisation, e.g., heritage railway operators.

Annual supervision plans are populated with several activities (audits, inspections and meetings) proposed by the CRR Inspectors at an annual workshop. At this, CRR Inspectors based on their experience, professional judgement together with analysis of the railway organisations safety performance put forward areas for audit and inspection. Activities are then prioritised as being High, Medium or Low with all high priority tasks generally being added to the railway organisations annual supervision plan.

With regards to the Infrastructure Manager, in 2020, the CRR focused on the IM's management of COVID-19 risk certainly for much of Quarter 2 and 3 (April-September 2020), while towards the latter end of 2020 Inspectors resumed on-site inspections of stations and level crossings. On the state-owned Railway Undertaking (Iarnród Éireann – RU), Inspector time was focused on their management of COVID-19 risk and also on specific structural rolling stock issues identified to an out of service locomotive that was stabled in a platform having just finished a journey.

7.1.2 A commentary on the global risks of the railway system in the Member State and how the supervision strategy addresses those risks and how this is linked to the CSTs. The decisions taken on the areas to focus on in supervision should also be linked to an analysis of the risks and expected benefits from the activity

Supervision plan, including the timeframe of the plan and any changes to the plan during the year being reported on and any impact on the next year's supervision activities

The CRR is a small NSA with finite resources. Consequently, we do not have bespoke risk modelling software. The state Infrastructure Manager, however, has developed and uses a bespoke Network Wide Risk Model. The CRR has access to its results and we periodically receive updated reports from the IM on the top five global risks to the railway system. As previously advised the risk model takes into account infrastructure assets, rolling stock and operational data and uses these to undertake a quantitative risk assessment highlighting the IM's highest risks.

The IM defines global risks into 3 categories. These are:

- Prime: accidents entirely within the state railway (RU and IM) control
- Shared: accidents influenced both by the state railway (RU and IM) and the person who experiences the accident
- Illegal: accidents where the person who suffers the accident is acting illegally.

The principal risk areas, total risk and prime risk identified by the state railway undertaking and infrastructure manager and advised to the CRR at the end of 2020, were:

Top five highest risk areas

No.	By total risk	By prime risk
1	Trespass/train surfing	Derailment
2	Platform-train Interface	Collision between train
3	Slips, trips and falls	Train/object collision structural failure
4	Collision between train	Structural failure
5	Derailment	Train/vehicle LX accident

The top five risks in both categories have not changed since 2017 albeit the order has. The highest risks (Total Risks 1-3) are typically high-frequency, low-consequence events. Given the relative size of the Irish Railway Network the number of occurrences is small. Prime risks are typically those low-frequency, high-consequence events. In 2020, there were no incidents of train surfing, however, there were 7 fatal injury involving train in motion on railway or level crossing where trespass or suspicious death was indicated. The only category that saw a notable increase in the number of occurrences, in 2020, was in train collisions and specifically with large animals, typically cattle and large deer. There were no injuries as a result of these, rather minor damage to rolling stock.

The last full update of the NWRM was in 2017, however an interim update was completed in 2020 and the above table is representative from this 2020 run of the risk model. As stated in earlier sections the CRR's supervision plans are developed on an annual basis and NWRM outputs are taken into account when planning annual supervision tasks. As reported in our 2019 annual report the CRR's supervision programme was affected owing to the resignation of two members of staff from the CRR Supervision section. An unsuccessful recruitment campaign in early 2020 continued to curtail our supervision programme for much of 2020. However, we successfully recruited two new Inspectors to backfill the vacancies created in 2019. These inspectors started with the CRR in November 2020.

Additionally, the COVID-19 pandemic and the associated government restrictions that were imposed prevented some active supervision tasks, e.g., audits which would have required face to face meetings. That said Inspectors continued to undertake asset inspections and undertake compliance checks against the railway organisations SMS. Using digital forums such as MS Teams and Skype we continued to engage with railway organisation personnel and in the latter half of 2020 undertook a small number of remote audits.

7.1.3 Supervision plan, including the timeframe of the plan and any changes to the plan during the year being reported on and any impact on the next year's supervision activities

The CRR's decision making criteria on how it monitors, promotes and enforces regulatory compliance did not change from 2019 to 2020. The CRR, at our annual safety performance review workshop, reviews the risk profile of every railway organisation. This involves reviewing each railway organisation's 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. Based upon this qualitative approach each RU's and the IM are assigned a risk profile. Each profile has an associated supervision plan, i.e., a Priority 1 risk profile involves quarterly meetings with management, a number of audits and inspections, while a priority 4 risk profile involves fewer activities given railway organisations with such a rating are considered to pose less of a safety risk.

When it comes to enforcement CRR Inspectors employ the 'risk gap' technique where they first assess the level(s) of actual risk arising from the railway organisation's activities. Inspectors base this judgement on information about hazards and risk control measures informed by their training, experience, knowledge of past incidents and accidents in the State or in other countries, guidance and other relevant sources of information.

Having identified the level(s) of actual risk the Inspector should 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.

To assist CRR Inspectors throughout the process guidance is available and internal discussion and challenge is encouraged amongst the team.

In terms of enforcement the CRR has a number of tools available to bring about compliance. These include requesting Improvement Plans (similar to a corrective action plan) from railway organisations or serving notices to railway organisations in which an Inspector gives the railway organisations a direction (instruction) that must be followed. In extreme cases an Inspector can serve a prohibition notice stopping or preventing an activity from taking place.

In terms of actual enforcement taken by the CRR in 2020, these included:

— An 'Improvement Plan' was requested from IÉ-IM following a collision between two Road Rail Vehicles near Bray Tunnel No.1, Co. Wicklow.

— An 'Improvement Notice' (an extension to an existing notice) was served on the state Railway Undertaking relating to a non-compliant drugs and alcohol policy.

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

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 representations 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 2020.

7.1.5 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

No formal complaints (representations) 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 2020.

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

While changes to the regulatory regime did take place as indicated there did not impact on supervision strategy, plan or decision making in 2020.

7.2 Supervision results

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

Regarding infrastructure asset management, CRR inspectors undertook the following inspections in 2020:

— 18 stations.

— 2 stations following structural failure of specific elements.

— 13 railway bridges.

— 12 level crossings.

Other inspections including reviewing the principal railway organisations management and response to the COVID-19 pandemic. These included reviewing risk assessments, the railway organisation management of deviations to standards, e.g., managing the ongoing competence of safety critical workers whilst adhering to socials distancing restrictions etc.

These inspections resulted in 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.

With regards to audits, these are fewer in number given the greater resource requirement for such activities. The following tables present the number of audits carried out during 2020 together with the number of outcomes from each audit.

Table 1: CRR Audits initiated in 2019 and finalised in 2020

Railway organisation	Title of audit	Major non-compliance	Minor non-compliance	Action required
IÉ-IM	Audit of the New Works Department SMS	0	2	0

Table 2 – CRR Audits initiated and finalised in 2020

Railway organisation	Title of audit	Major Non-Compliance	Minor Non-Compliance	Action Required
IÉ-IM	OHLE Maintenance Standards and Contractor Management	0	2	5
IÉ-RU	IÉ-RU Management of Operational Risk	0	2	2

For those audits that were finalised in 2020, as indicated in the tables above no instances of major non-compliance were identified. Across the railway organisations audited a small number of minor non-compliances with legislation and/or an approved SMS were identified and in every case the lead (auditor) Inspector considered if there was a risk to the safety of persons.

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

2020 was a year like no other given the global COVID-19 pandemic and its impacts right across society. The railway sector, like many others had to adapt to ever changing restrictions whilst trying to look after their own staff. The various government restrictions in place did impact the CRR's supervision programme, albeit it necessitated new methods of working that worked better than one could have expected. Given the public health restrictions on face-2-face meetings, on-site auditing activity was impacted. As a result, CRR Inspectors focused on undertaking remote asset inspections.

The CRR is legally required under our national legislation to investigate serious accidents, accidents and incidents for the purpose of determining compliance with a railway organisations SMS. This differs from the NIB's remit to investigate 'for cause'. In 2020, the CRR undertook post occurrence inspections following 34 events and a in several instances remedial/corrective action was considered necessary by the railway organisations concerned. Examples included:

- IÉ-RU: a 201 class locomotive's frame fractured leading to unsafe conditions.
- IÉ-IM: several road rail vehicle collisions and/or derailments in engineering possessions.
- IÉ-RU and IÉ-IM: the failure of a trains pantograph leading to a de-wirement.
- NIR Translink: Wrong Side Failure of a door whilst a train was in motion.

From these key findings included:

— An absence of maintenance documentation relating to weld repairs on 201 Class Locomotives.
— Ineffective monitoring of work in engineering possessions.
— Failings in the management of safety critical information from Original Equipment Manufacturers (OEMs).
— Gaps-weaknesses in vehicle maintenance inspections on gangway doors.

Another area of concern that arose in 2020 is that of possession management and specifically track maintainers either placing equipment on or near the line in advance of possessions being granted and this being struck by a train or leaving equipment on the line and being struck by a train. The CRR are monitoring trends in this area and are seeking periodic updated from the IM on progress being made with corrective actions.

In terms of audits completed in 2020, the CRR audited the IÉ-RU's 'Management of operational risk' and this identified a small number of issues that were brought to management attention. These included:

1. Review of specific issues identified around maintenance, non-technical skills training, internal auditing, out-of-date risk assessments and the Central Risk Register raised in the findings.
2. Ongoing monitoring in future audits of issues associated with staff turnover and recruitment from outside the railway.

An audit across the IÉ-IM's electrification section demonstrated that, in the main, systems were in place and were being followed. The auditors noted that the attitude towards safety was strong. Continuous improvement was evident, but it was recognised that there was still much work to do including completing the necessary suite of technical documentation (OHLE Standards).

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

Training centres were not the subject of any supervision in 2020, nor were there any inspections undertaken on the transport of dangerous goods in the year.

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) 1078/2012[1]

As previously advised the majority of railway organisations including the state-owned railway undertaking and infrastructure manager have reasonably mature SMSs that include requirements that satisfy the CSM for conformity assessment, i.e., Commission Regulations EU 1158/2010 and EU 1169/2010) respectively, both of which continued to be the basis of existing SMS supervision in 2020. The CRR meets quarterly with the larger RUs and the IM to review their safety performance in the preceding quarter and year to date. A fixed agenda item for these meetings is the update of the CRR by the railway organisation on the internal auditing and monitoring they have undertaken and to present any key findings/learning points.

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.

CRR Inspectors also meet with Railway Organisation 'Investigation Managers' to review the status of internal investigations, key findings and associated recommendations. Some improvement in the standard of report writing and content has been observed with immediate and underlying or casual factors routinely stated. Root cause identification remains a challenge for some with some investigations being too quick to simplify and blame individual failings rather than the system underpinning them. Occasionally RU and IM 'Action plans' are sampled by CRR Inspectors to see what actions have been taken to prevent reoccurrence.

As was reported in the CRR's 2019 report there were a significant number of Road Rail Vehicle (RRV) occurrences relative to the total number of occurrences. While there was a smaller number of RRV occurrences in 2020 there is still a cause for concern.

The NIB's class investigation into RRV occurrences published in late 2019 has acted as a catalyst and the Infrastructure Manager is undertaking a substantial review of how RRV's are operated, and the training and competency of RRV Operators. The CRR seeks quarterly updates on progress given the project has a 2-year horizon.

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 area owing to Ireland deferring transposition of the interoperability and safety directives until 2020. Iarnród Éireann – Infrastructure Manager will be the first railway organisation to submit an application for safety authorisation, in accordance with Commission Delegated Regulation (EU) 2018/762 on a common safety method on safety management system requirements, in early 2022.

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

No specific activity was undertaken in this area in 2020 hence no such evidence obtained. However, the CRR has been engaging with Iarnród Éireann – Railway Undertaking's rolling stock engineers frequently since July 2020 when it was identified that a Class 201 Locomotive suffered a significant structure failure to the frame.

7.2.7 Comments on the success of the SMSs in controlling risks

No major non-compliances were identified in 2020 by the CRR during its supervision activities. This is welcomed. Nonetheless, a small number of minor non-compliance were raised typically for sporadic lapses in the implementation of company standards that comprise the railway organisations SMS. 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.

Three formal 'good practice' items were cited in 2020 identified during 2 audits; the first during an audit on Iarnród Éireann – Railway Undertaking's Management of Operational Risk and the second during an audit of Iarnród Éireann – Infrastructure Manager's Management of overhead line assets. Details of these are presented below:

1. IÉ-RU Operations Department has made extensive use of rigorous analysis of human factors in a range of contexts to support analysing underlying causes of both actual and potential future incidents. This practice should be employed as widely as possible to maximise the benefit (including, where appropriate, the use of BowTie analysis as has been undertaken for overspeed incidents).
2. IÉ-RU Operations Department has explored novel approaches to training, the most notable example of which has been their engagement of the company Theatre at Work to develop behavioural training and scenario exploration through the medium of theatre. This has helped staff to better understand how accidents may happen.
3. The OHLE trucks and their associated equipment is checked weekly and managed using a simple colour code which ensures each truck is correctly configured with all the necessary in date equipment.

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

Excluding specific supervision activities there were several areas where the CRR felt it necessary to make direct representation to railway companies. These included:

i) Communicating ERA Safety Alerts to applicable RUs and the IM.

ii) Communicating directly with the Head of Health & Safety in the Infrastructure Manager regarding two collisions within a short period of time at the same level crossing.

iii) Communicating directly with the Head of Health & Safety – IM following further Road-Rail Vehicle (RRV) occurrences seeking assurances that actions were being taken to improve the level of internal monitoring of engineering possession and a poor safety culture where staff believe they can/have to cut corners to get work done.

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. There was no cause for contact with the DfI in 2020 in relation to supervision results.

Further afield the CRR reached out to other NSAs regarding risk-based supervision.

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)

There is no relevant experience of this as the CSM has not yet been applied in Ireland. Application is expected in 2022.

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. No variations in management maturity levels have been observed but work is ongoing within the NSA to continuously improve the method for assessing maturity.

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 2020. 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 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; this has been addressed by a cross industry working group and the results of that are currently being implemented in the respective SMSs. In practical terms, it is generally noted that most projects have a safety and compliance expert involved who generally ensure 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 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 as entities continue to struggle with this concept.

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 Authorisation processes applied to them hence are subject to elevated scrutiny by NSA-IE. The experience is observed to be acceptable, and the quality of risk assessment is adequate, but there is scope for improvement.

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 multiple interpretations that are compliant hence there is little observation of 'misuse' of the concept.

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 principal 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

This regulation has not yet been applied in Ireland.

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

The sector has matured considerably since the SMS's were first certified by NSA-IE in 2011. Experts within companies understand the CSM and its purpose, and this understanding is transferred to the SMS. The implementation of SMS procedures can sometimes bring uneven results which the NSA has found ineffective, but broadly the trend is positive. Retention of documentary evidence is generally strong.

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, RU's 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

The fourth railway package came into effect in October 2020, no key issues have arisen.

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; this has been addressed by a cross industry working group and the results of that are currently being implemented in the respective SMSs. In practical terms, it is generally noted that most processes have a safety and compliance expert involved who generally ensure the project meets relevant 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 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 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 will incorporate reviews of these risks in 2021 supervision activities.

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 single safety certification activity post the introduction of the 4th Railway Package in October 2020.

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 paperwork

The experience of the regulation is good, and is expected to improve further as the fourth railway package becomes embedded in Ireland.

8.3.13 Any areas for improvement

NSA-IE propose the agency develop a guide that integrates guidance for CSM REA and CSM MON, similar to the guideline 'Taking Safe Decisions' from the UK Railway Safety and Standards Body.

8.4 Participation and implementation of EU projects

No information available.

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

2020 saw far less face-to-face interaction with railway organisations owing to the COVID-19 pandemic and the associated government (and work) restrictions put in place. Consequently, both the evaluation and monitoring of the development of safety culture in railway organisations was impacted.

Nonetheless, CRR Inspectors engaged with RU and IM personnel, mostly through virtual platforms, undertaking various supervision activities. Unfortunately, it is the CRR's opinion that a blame culture remains an issue in some organisations in terms of some managers continuing to focus on an individual's failings for example following an occurrence rather than considering wider system failings. Initiatives have commenced in, for example, the state-owned RU and IM where managers are receiving training on human and organisational factors.

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

In 2019, the CRR reported that it participated in trialling the European Railway Safety Culture Model on behalf of ERA. Feedback was provided to the ERA by the CRR, and this model is now being promoted for use by railway organisations across Europe. In addition, a new but related project commenced in 2020 with ERA developing a European wide Safety Climate Survey. CRR staff participated on the ERA taskforce and contributed to its development. The CRR has made all railway organisations operating in Ireland aware of this safety climate survey at Quarterly meetings and via direct email communication and has promoted and encouraged all railway organisations to participate in the Survey.

9.1.3 Evaluation method to oversee safety culture of RUs and IMs

The CRR have heretofore not had a formal evaluation method to oversee safety culture within the RUs and IM, rather Inspectors would, through their ongoing engagement with those railway organisations, note attitudes, observe behaviours etc., and record these in reports of inspection.

We use, albeit informally, several methods/sources to obtain information regarding safety culture in the sector. These include undertaking audits, inspections and meeting with company executives and others, investigating public/railway staff complaints, reviewing NIB and railway organisation reports, all of which inform us as to a prevailing safety culture within a railway organisation.

In 2019, the CRR's commenced developing a methodology for evaluating safety culture within railway organisations, however owing to loss of expertise in the area, the rollout was delayed. Some work was undertaken in 2019 but nothing considered significant. This work was recommenced in 2020 with the intention to recording safety culture findings in 2021. This would be initially limited to IÉ-RU and IÉ-IM.

The CRR's methodology involves incorporating the safety culture model in all activities rather than in discrete audits or inspections. Inspectors received an initial briefing in late 2020. It is envisaged that Inspectors will document both positive and negative findings relating to the safety culture model fundamentals and enablers. This will ideally be done at the attribute level and it is envisaged that in 2021 this methodology will be trialled.

Our methodology has been to incorporate the safety culture model in all activities rather than in discrete audits or inspections. Positive and negative findings are actively being recorded by some Inspectors, albeit more work is required in this area internally to ensure all Supervision Inspectors are recording their observations and where possible supporting evidence.

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 2020 other than CRR Staff participating on the ERA Task Force tasked with developing the European Railway Safety Climate Survey and promoting the partnership programme to applicable railway organisations.

However, a routine activity undertaken by CRR inspectors, that continued in 2020, was the review of completed accident/incident investigation reports completed by the railway organisations themselves. On a small number of occasions CRR inspectors did follow up on certain organisational culture points with the state RU and IM. Typically, these were following instances where the investigators appeared to focus more on individual failings rather than and looking at underlying and or root causes. Going forward, if trends are identified like that stated above the CRR will audit the relevant railway organisations SMSs

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

None.

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

Safety culture is not a separate project within the NSA but is integrated into the supervision programme.

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

CRR Staff participated on the ERA Task Force tasked with developing the European Railway Safety Climate Survey. The CRR was delighted to be a partner organisation and all Inspectors were advised that their views would be sought on organisational aspects and safety culture within the CRR. Inspectors involved in supervision activities were asked to promote the safety climate survey during their interactions with railway organisation personnel.

9.3 Safety culture communication

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

At the end of 2020 the CRR arranged for our website to be updated to high-light the Year of Rail in 2021 and also the European Railway Safety Climate Survey. See also sections 9.1.2 to 9.1.4 inclusive.

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

Please provide the following information as it is at the 31st December of the reporting year (2020).

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 IOP 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

3	PRM adapted stations (end of year)	
3a	PRM TSI compliant railway stations	0
3b	PRM TSI compliant railway stations – partial TSI compliance	4
3c	Accessible railway stations	110
3d	Other stations	34

4	Train driver licenses (end of year)	
4a	Total number of valid European licenses issued in accordance with the Directive 2007/59/EC (as amended)	663
4b	Number of newly issued European licenses (first issuance)	99

5	Number of vehicles authorized under the interoperability Directive (EU) 2016/797 (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) 2016/797 (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 (total fleet, end of year)	
6a	Tractive vehicles including trainsets equipped with ERTMS Level 1	0
6b	Tractive vehicles including trainsets equipped with ERTMS Level 2	0
6c	Tractive vehicles including trainsets – no ERTMS installed	0

7	Number of NSA staff (full time equivalent employees) by the end of year	
7a	FTE staff involved in safety certification	2
7b	FTE staff involved in vehicle authorization	2
7c	FTE staff involved in supervision	6
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 31.12.2020 (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 (2020).

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 (2020).

6 ERTMS equipped vehicles (end of year 2020)

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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