CETRA2026 27-30 May 2026, Bol, Island Brač, Croatia
9th International Conference on Road and Rail Infrastructure

THE ROLE OF DESIGNATED BODIES IN RAILWAY INFRASTRUCTURE AUTHORISATION

Barbara Belinić, Sabina Seražin Korper, Marko Vajdić
DB Engineering & Consulting GmbH, Branch office Zagreb, Croatia

Abstract

When submitting an application for authorization to place railway infrastructure subsystems into service, those subsystems must be fully compliant with the applicable Technical Specifications for Interoperability (TSIs) and national rules, in accordance with the Law on Safety and Interoperability of the Railway System. This ensures that all infrastructure subsystems - including civil engineering, energy, signaling and safety, and traffic management and control subsystems - meet the essential requirements of safety, technical compatibility, and integration into the overall railway system. According to the Croatian Railway Safety Agency, conformity assessment is carried out by the system manufacturer in order to demonstrate that all prescribed requirements have been fulfilled, thereby confirming technical and safety compliance prior to placing the subsystem into service. The Law distinguishes between two types of conformity assessment bodies: Notified Bodies (NoBo), which perform assessments in accordance with the relevant TSI, and Designated Bodies (DeBo), which assess compliance with national rules under their own responsibility. DeBo plays a key role in providing expert evaluation and issuing verification certificates, including technical documentation that clearly presents the assessment performed and the basis for granting authorization. As the DeBo system in Croatia is relatively new, this article focuses on analyzing current challenges in the authorization procedure for infrastructure subsystems. The analysis is supported by examples from previously assessed projects, highlighting common design errors and proposing measures to reduce them during the design phase. Such an approach makes it possible to optimize costs, reduce risks during the construction phase, and contribute to the more efficient and safer functioning of the railway system.

Keywords: designated body, railway infrastructure subsystem, national rules, project evaluation

1 Introduction

In order for infrastructure subsystems to be placed into service, they must be designed, constructed, and installed in such a way that, when integrated into the railway system, they meet all prescribed essential requirements, for which the appropriate authorization must be obtained. The authorization to place an infrastructure subsystem into service must be held by the infrastructure manager and is issued by the Croatian Railway Safety Agency as the competent authority for infrastructure civil engineering, energy, traffic management and control, and signalling and safety subsystems on the line. Flowchart of the approval process for railway infrastructure subsystems can be seen in figure 1.
The authorization procedure is based on verifying compliance with technical and safety requirements. The applicant is required to submit the relevant documentation to the Agency, including EU Conformity Certificate of verification, evidence of technical compatibility, and

DOI: https://doi.org/10.5592/CO/CETRA.2026.1993

proof of the safe integration of the subsystem in accordance with the TSIs, national rules, and Common Safety Methods (CSMs). In the case of subsystems containing equipment of the European Train Control System (ETCS) and/or the Global System for Mobile Communications – Railway (GSM-R), the procedure additionally includes a positive decision from the European Union Agency for Railways (ERA) [1].

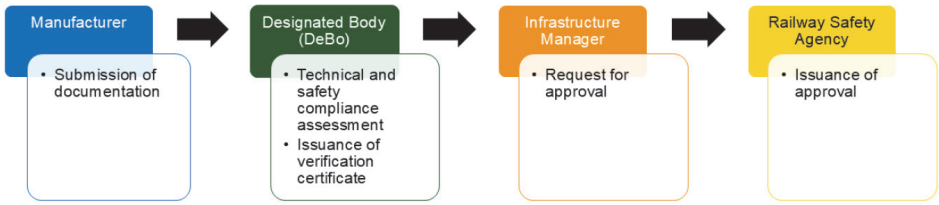

Figure 1 Flowchart of the approval process for railway infrastructure subsystems

Given the complexity of the above-mentioned procedure and the level of requirements that must be fulfilled prior to placing infrastructure subsystems into service, authorized conformity assessment bodies are involved in the process. In this context, a significant role is played by the DeBo and NoBo, which carry out assessments of compliance with national rules and TSIs.

2 Function, designation, and responsibilities of the designated body

2.1 The role and legal framework of the designated body

The delineation of responsibilities between the NoBo and DeBo is based on the legal framework within which they operate, the manner of their appointment, and the type of technical requirements they assess. NoBo is an entity notified by a member state to the European Commission and is responsible for carrying out conformity assessment procedures in relation to the requirements laid down in the TSIs. Within the scope of its authority, a NoBo may entrust certain tasks to other bodies acting on its behalf and under its responsibility. By contrast, a DeBo operates within the national legal framework and performs conformity assessments in relation to national technical rules, without the obligation of notification to the European Commission. In this way, the NoBo and the DeBo together constitute the system of conformity assessment bodies within the railway interoperability framework, with the NoBo ensuring compliance with European technical requirements and the DeBo ensuring compliance with national technical requirements [2].

DeBo thus represents a conformity assessment body designated by a member state in accordance with national law and operating under its own responsibility. Within the scope of its powers, the DeBo carries out technical inspections, testing, and verification of compliance with the requirements established by national technical rules [2].

Interoperability of the railway system within the European Union is governed by a common legislative framework aimed at ensuring technically harmonised, safe, and efficient railway transport between member states. The principal legal act in this field is Directive (EU) 2016/797 on the interoperability of the rail system within the European Union, which prescribes the application of the TSIs as mandatory requirements at EU level, while allowing for the application of national technical rules in areas not covered by the TSIs [3]. In accordance with this framework, member states are required to designate a DeBo and to ensure appropriate supervision of its activities, while the national legal framework further regulates its role in conformity assessment procedures related to national technical rules.

2.2 Designation of a designated body and staff requirements

In order for a legal entity to be designated as a DeBo, it must fulfil the requirements laid down in the Law on Safety and Interoperability of the Railway System [2]. The term "Designated Body" within the Law refers to a body formally appointed by a member state to carry out conformity assessments of subsystems in relation to national technical rules, including inspections and verification of compliance [2]. One of the fundamental requirements is the independence of the DeBo. The DeBo, its management, and its personnel must not be directly involved in the design, manufacture, construction, placing into service, maintenance, or operation of the subsystems or their constituents that they assess, as this could compromise the objectivity and independence of their judgment. Although a body may form part of a business structure operating in activities related to infrastructure or rolling stock, the absence of conflicts of interest must be demonstrated and clear functional independence ensured [1]. In addition to legal and organizational requirements, the Law [2] also prescribes qualitative requirements for DeBo personnel. The body must have a sufficient number of qualified staff with appropriate technical and professional education, knowledge, and experience necessary to perform conformity assessment tasks. This includes the ability to understand technical documentation, carry out technical inspections, and prepare certificates, records, and reports forming the official documentation of the assessments performed. Furthermore, the DeBo must have documented procedures, internal policies, and the equipment necessary to carry out its tasks, including adequate resources for administrative and technical activities, as well as access to equipment required for exceptional inspections. Personnel conducting assessments must guarantee impartiality and professional objectivity, and their remuneration must not depend on the number of assessments carried out or on their outcome [1].
The Law [2] also requires that the DeBo hold liability insurance covering potential damage arising from the performance of its activities, unless such liability has been assumed by the state. All information and data collected during assessments are considered confidential, and personnel are obliged to maintain confidentiality, except where the exchange of information with state authorities and investigative bodies is permitted under statutory exemptions [1]. The Ministry of the Sea, Transport and Infrastructure of the Republic of Croatia issues decisions designating legal entities as DeBo for the conformity assessment of railway subsystems in relation to national technical rules. These decisions specify the scope of competence and the subsystems for which the bodies are authorized, while the list of all designated bodies is publicly available on the official website of the Croatian Railway Safety Agency.

2.3 Responsibilities and conformity assesment procedure performed by the designated body

The conformity assessment procedure within the railway system is based on verifying compliance with the applicable national technical rules, with the DeBo playing a key role in ensuring the safety and compliance of railway infrastructure. The procedure is primarily founded on a review of technical documentation and, where the railway line has been constructed or is in the final stage of construction, on-site inspections. The review of technical documentation includes the analysis of design and technical documents relating to the railway line, including technical descriptions, drawings, calculations, and test reports. The purpose of this review is to determine the compliance of the proposed technical solutions with the applicable national technical rules and regulations. In this process, DeBo applies to national rules that have been approved for use and published in the European Union Agency for Railways Database of Interoperability and Safety (ERADIS).

This database contains all notified national rules, together with the decisions of the European Union Agency for Railways (ERA) and the European Commission regarding their admissibility. For the purpose of verifying and assessing the conformity of the infrastructure (civil engineering) subsystem, only those approved rules applicable to the specific infrastructure subsystem in question are applied.
The applicant seeking authorization to place an infrastructure subsystem into service initiates the conformity assessment procedure by submitting a formal request and the relevant technical documentation to the DeBo. Upon receipt of the documentation, DeBo conducts a documentation review. Where the railway line has been constructed or is in the final stage of construction, the procedure is supplemented by an on-site inspection in order to verify the consistency between the designed and the executed state in relation to national rules. Where necessary, the DeBo may subsequently request additional technical documentation required for the subsystem assessment procedure. Based on the assessments carried out, DeBo prepares an expert opinion addressing each relevant provision of the applicable laws and regulations. This opinion is documented in the DeBo file, and a certificate of conformity of the infrastructure subsystem may be issued, depending on the outcome of the assessment procedure. The results of the assessment form the basis for the subsequent authorization process for placing the railway subsystem into service.

3 Challenges in the practical work of the designated body

3.1 The most common technical and design deficiencies

The most common design errors relate to the positioning of fixed objects on platforms, particularly their distance from the platform edge and from the outer edge of the tactile warning strip. In practice, fixed objects are often installed too close to these boundaries, contrary to the provisions of the Ordinance on Technical Conditions for Railway Traffic Safety to Be Met by Railway Lines [4]. An additional issue is that design documentation frequently does not contain complete and precise information on the actual positions of all structures and fixed objects on the platform, nor on their exact distances from the platform edge and the outer edge of the tactile strip. Such deficiencies in the documentation make it more difficult to verify compliance with applicable regulations and increase the risk of irregularities during construction.
It has also been observed that designers often overlook the requirement that, on newly constructed platforms, the minimum distance between fixed objects must not be less than 2.40 m. Where the distance is smaller, the objects must be connected into a single unit (Ordinance on Technical Conditions for the Safety of Railway Traffic to be Met by Railway Lines [4]). In practice, such connected units are frequently classified as structures longer than 10 meters, which entails greater prescribed distances from the platform edge and the outer edge of the tactile strip. Consequently, these solutions often fail to meet the requirements set out in the relevant provision of the Ordinance [4]. Figures 2 and 3 show two examples of design errors observed during the field inspections where figure 2 shows an example of grouping multiple fixed objects into a single unit on the platform, and figure 3 shows an example of a platform of insufficient width, illustrating the issue of inadequate distance between a fixed object and the platform edge, as well as the outer edge of the tactile strip.
A cabinet together with a canopy column and an underpass railing was treated as a fixed object forming a single unit. As a result, this unit exceeded ten meters in length and did not satisfy the prescribed minimum distance requirement.

Figure 2 Field inspection – grouping multiple fixed objects

A problem was also identified concerning a railing with different foundation terminations (with and without a parapet along part of the underpass), which was treated as a fixed object longer than 10 meters. During the assessment, the distance from the section of the railing with a parapet to the platform edge and to the outer edge of the tactile strip was measured. The prescribed minimum requirements stipulated a distance of at least 2.40 m from the platform edge and at least 1.60 m from the outer edge of the tactile strip. In this case, these requirements were not met.

Figure 3 Field inspection – platform of insufficient width

For the purposes of a more efficient DeBo verification process, it would be beneficial for the design documentation to include a consolidated layout drawing showing all structures and fixed objects within the track and platform area. Such a drawing should integrate elements from the designs of different subsystems, thereby facilitating the verification of their mutual consistency and compliance with national technical rules. Furthermore, in reconstruction projects, the width of an island platform is often constrained by the existing track alignment. This frequently results in solutions that do not comply with the applicable national technical rules and therefore fail to pass the conformity assessment procedure. A reduced island platform width directly affects the distance between fixed objects and both the platform edge and the outer edge of the tactile strip, which may hinder or prevent compliance with the prescribed minimum safety distances.

A common issue is also the discrepancy between the designed and the as-built condition, where drawings show only the structural axis without accounting for the full thickness of the structure. In practice, this leads to deviations from the prescribed safety distances. Designers often fail to take into account the obligation to design additional guiding railings in the area of railway–road and pedestrian level crossings. The Ordinance on the Method of Securing Traffic at Railway–Road and Pedestrian Crossings [5] stipulates that, where there are no obstacles preventing pedestrians from bypassing the bypass protective railing and where local conditions permit, additional guiding railings of equal height must be installed alongside the bypass railing, in accordance with Annex 4 of the same Ordinance [5].

3.2 Challenges in the documentation review process and the implementation of field inspections

A significant challenge in the work of the DeBo lies in the review of technical documentation, which is often incomplete or does not contain all the information required under the relevant provisions of the regulations governing the conformity assessment process. In such cases, it is necessary to request additional documentation, which prolongs the procedure and may cause delays in the issuance of the DeBo file and the certificate of conformity. Additional challenges arise during the implementation of field inspections, particularly in situations where access to the construction site has not been secured in a timely manner, where work is still ongoing, or where safety restrictions are in place on the railway line. These factors may hinder the timely performance of technical inspections and extend the duration of the assessment process.

3.3 Specific features of the reconstruction of existing railway lines

The reconstruction of existing railway lines presents a particular challenge for the DeBo due to constraints arising from the existing alignment, available space, and built structures. Unlike new lines, where design solutions can be fully adapted to current technical regulations, reconstruction projects often require compromise solutions between the existing conditions and regulatory requirements.This is especially relevant for platforms, clearance profiles, safety distances, and the positioning of infrastructure elements. In such cases, the DeBo must carefully assess the compliance of the solutions, considering applicable national rules, permitted deviations, and the overall safety level of the railway system.

3.4 The need for early involvement of the designated body in projects

One of the key factors in reducing technical and administrative issues in the conformity assessment process is the earlier involvement of the DeBo in railway infrastructure projects. In practice, the DeBo is often engaged only at the final stage of a project, when design solutions have already been defined or implemented, which limits the possibility of making corrections without significant interventions and additional costs. Earlier involvement, already at the stage of preparing project documentation, would enable the timely identification of potential non-compliances with national technical rules and reduce the risk of subsequent modifications, delays, and negative outcomes of the conformity assessment procedure. Although DeBo does not assume the role of the designer, its professional expertise in interpreting the application of regulations can significantly contribute to the quality and efficiency of the implementation of infrastructure projects.

4 Conclusion

DeBo plays an important role in ensuring the compliance of railway subsystems with national technical rules and represents a key link between technical requirements, the regulatory framework, and the procedure for placing railway infrastructure into service. In the Croatian context, the DeBo system is relatively new and still in a developmental phase, which is reflected in a number of practical and organizational challenges in the implementation of conformity assessment procedures.

The analysis shows that the work of DeBo in Croatia can be further improved through clearer and more comprehensive definition of the legislative and secondary regulatory framework, particularly regarding national technical rules applied in the conformity assessment process. Furthermore, standardizing the content of the technical documentation submitted by applicants, as well as involving DeBo at an earlier stage in projects, could significantly reduce delays caused by subsequent requests for documentation amendments. Improving the functioning of DeBo also implies strengthening professional capacities through education and training of technical staff, especially for complex subsystems, as well as enhancing coordination with other relevant bodies in the railway sector. The digitalization of procedures, more clearly defined internal processes and better information exchange among involved stakeholders would further contribute to the efficiency and transparency of the system. In conclusion, the further development and strengthening of the role of the DeBo in Croatia is an important prerequisite for a safe, reliable, and interoperable railway infrastructure, aligned with the European regulatory framework and practice.

References

[1] Croatian Railway Safety Agency, https://www.asz.hr/odobravanje-i-pustanje-u-uporabu-infrastrukturnih-podsustava/, 29.01.2026.

[2] Croatian Parliament, Law on the Safety and Interoperability of the Railway System, Official Gazette NN 63/2020, 28.5.2020.

[3] Directive (EU) 2016/797 of the European Parliament and of the Council on the interoperability of the rail system within the European Union, 26.05.2016.

[4] Ministry of the Sea, Transport and Infrastructure, Ordinance on Technical Conditions for Railway Traffic Safety to Be Met by Railway Lines, Official Gazette NN 128/2008, 5.11.2008.

[5] Ministry of the Sea, Transport and Infrastructure, Ordinance on the Method of Securing Traffic at Railway-Road and Pedestrian Crossings, Official Gazette NN 111/2015, 14.10.2015.