DAC Sector Statement

Rail freight automation and digitalisation is an important enabler for the transport sector to meet the EU's greening targets

There is a common understanding of the need to strengthen rail freight in Europe, which is in decline today. It is nine times better in terms of CO_2 emissions than road transport and will help Europe in achieving its Green Deal and decarbonisation targets. Electrification of road transport is far from being mature and cost-effective and will still consume seven times more energy than freight transport on rail.

Automation and digitalisation will enable rail freight to become more efficient and attractive for logistics service providers and shippers and will bring relevant benefits for European society in general. It will increase the still underestimated growth potential for single wagonload traffic and strengthen the role of intermodal transport, both strategic segments for the modal shift. Especially, together with future ERTMS developments, they will contribute to increase infrastructure capacity. Their implementation will also increase safety at work and counter the predicted labour shortage in the sector by replacing outdated, mostly manually-operated technologies of the past, especially the coupling of freight wagons.

The rail sector stakeholder signatories of this paper are convinced that rail freight automation and digitalisation as well as a better, more modern and safer working environment are key to the viability and long-term prospect of this sustainable mode of transport in Europe.

However, the market alone cannot bear such a transformation, and no single company will be able to gather alone the necessary capital investments for such an endeavour, because it is first and foremost a European scale type of investment. Should social and economic benefits materialise, substantial public support is therefore urgently needed, especially for the introduction of the Digital Automatic Coupler (DAC) and its associated automation and digital technology.

We are fully committed to achieve the deployability of this technology through intensive testing campaigns and we are ready, under a clearly pre-defined EU strategy and with fulfilment of the below preconditions, to the successive deployment of DAC and its automation and digital technology at European scale. A challenge of this dimension would indeed require the support from the European Commission and the Members States, to ensure that all the necessary investments are properly coordinated and that obvious market failures are addressed by the policy-makers, such as the imbalanced distribution of costs and benefits among actors, and counter-balanced with appropriate funding and financing measures.

Where we are today

Progress has been made so far by the rail sector in developing state-of-the-art DAC technology, including with the support from the European Union and Member States. The rail freight sector from both EU and non-EU countries and the European supply industry are fully engaged and have already invested significant resources to develop a European state-of-the-art DAC including its automation and digital technology.

- The sector has united forces in the European DAC Delivery Programme (EDDP), enabled by Europe's Rail Joint Undertaking (EU-Rail JU), and supported strongly by the European Commission (EC) and the European Union Agency for Railways (ERA). EDDP has specified the basic DAC

technology, developed a draft migration plan and elaborated the initial versions of the DAC Cost-Benefit-Analysis (CBA).

- 71 partners are engaged in the DAC and automation technology development within EU-Rail JU's Flagship Project 5 (FP 5-TRANS4M-R) with a total project cost of around € 95 million, a major part of which is raised by the sector.

This intended and unprecedented transformation impacts the entire rail freight system, including its customers. As rail freight is largely international and essential for the realisation of the Single European Railway Area, careful planning, scoping and good coordination are key to master the deployment of European DAC including its automation and digital technology.

The historical situation of the European rail freight vehicle fleet needs to be taken into account in an intelligent way in order to minimise the transformation challenges and to optimise the need for public funding. The following preconditions are currently being worked out by the sector and will have to be implemented under a clear EU deployment strategy. They must be fulfilled before DAC deployment can start:

- DAC, its automation and digital technology and operational procedures have to be clearly defined and harmonised (single operational, mechanical, electrical and digital European DAC system).

- Clear evidence has to be available through successfully completed tests and validation in real operation, demonstrating that the final DAC and its automation and digital technology will deliver the expected benefits. All essential requirements (in particular reliability, availability, maintainability and safety, under all relevant climatic and operational conditions) have to be met. This evidence, including on maintenance cost, forms the basis for the final update of the CBA and the revision of the relevant Technical Specifications for Interoperability (TSIs) and standards.

- A single, non-discriminatory, European funding and financing scheme, set up jointly by the EC as well as EU and non-EU countries, has to be guaranteed for the whole DAC migration period to cover the upgrading of existing wagons and locomotives and other asset-related and operational expenditure related to the DAC introduction. The funding rate must avoid any deterioration of the competitiveness of the European rail freight sector in general and its individual members. It should also reflect the time lag between investments and the full realisation of benefits.

- In coordination with the European Union Agency for Railways, suitable DAC authorisation provisions need to apply in Europe without compromising safety. With the help of the sector, authorisation risks for wagons and locomotives have to be mitigated (including availability of relevant documentation) in order to avoid negative impacts on the fleet availability during the (re-)authorisation process.

- A sound, realistic migration plan has to be set up, agreed by all actors, backed up by legal provisions and coordinated at EU level in close cooperation with EU and non-EU countries. It must guarantee effective DAC deployment in Europe, based on substantial funding, established capacities for production, the feasibility of upgrading of wagons and locomotives and for their (re-)authorisation, staff training and availability of the necessary infrastructure and IT adaptations.

- The plan must allow a certain limited flexibility for the transitional coexistence of screw coupler and automatic coupler, for dealing with freight wagons from non-EU countries and with the fully separable parts of the European wagon fleet, e. g. wagons used in block-train and intermodal production systems only. It must minimise shortages of rolling stock impacting railway operators and customers during migration, risking a reverse modal shift. It shall determine for the vehicle

keeper an economic and technical optimum between screw coupler, DAC and automation/digital technology upgrading and the scrapping/renewal of rolling stock, in particular locomotives and intermodal wagons. The integration of fleets/vehicles, mainly operated on networks functionally separate from the rest of the Union rail system (e. g. different gauge), must be subject (and conditional) to a case-by-case CBA, considering traffic flows and national specificities and lead to a positive outcome.

Such a plan will allow for a maximum positive impact of DAC and its automation and digital technology on European rail freight, ensuring the highest level of interoperability possible under the given economically reasonable circumstances, whilst requiring minimised transformation cost and optimised public funding. It will ensure the buy-in of all sector actors to fully endorse such transformation.

What needs to be done now

The European rail freight sector is working continuously on fulfilling the above-described DAC deployment preconditions on its side.

In parallel, **the signatories of this paper, who are already engaged and committed to work jointly on the solution to address the challenges described to make such transformation happen, would like to collaborate with the European Commission and the Member States** to ensure that DAC implementation is aligned with national as well as EU strategies, and in particular with the next European Multi-Annual Financial Framework, so that preparation for the migration of the DAC and its automation technology could start in 2028.

We call on the European Commission and Member States to jointly start the work on shaping the political, budgetary and legal framework conditions for a coordinated European deployment of DAC and its automation and digital technology, ensuring substantial public support for the upcoming phases, in full complementarity with the necessary ERTMS and infrastructure investments:

1. **DAC Legal Package** ***from now*** *until ca. 2028*
   Creation of the **legal & budgetary framework** for DAC Deployment including authorisation and for the DAC Deployment Management Entity on the EU and Member State level.

2. **DAC Pre-Deployment** *2025 to ca. 2028* | total costs ca. € 210 million
   Funding of a large-scale testing phase across Europe for DAC based technology with around 100 pre-deployment trains to prepare a successful migration and to start DAC industrialisation. Setting up of a **Pre-deployment Management Entity**.

3. **DAC Deployment** *as of ca. 2028* | total costs ca. € 13 billion (2021 price base)
   Funding of full-scale **DAC deployment** in Europe and the **Deployment Management Entity**.

We are convinced of the need to set up a **centralised European Deployment Management Entity, for the necessary coordination at European level,** as described in the EU-Rail JU's EU DAC Investment Plan study. We recommend that the European Commission proposes a suitable implementation plan for this. A European benchmark could be the Joint Undertaking for the Single European Sky Air traffic management Research (SESAR).