Faster and cheaper rail vehicle certification

An EU initiative proposed quicker and more cost-effective ways to certify trains so that they can operate throughout Europe’s rail network and reinforce safety.

The creation of an integrated European railway area calls for improved interoperability of infrastructure, rolling stock and signalling systems. Rail vehicles have to meet European regulations to be approved for use across the rail network. However, the current approval process for railway vehicles in Europe is very long and costly.

Funded by the EU, the AEROTRAIN (Aerodynamics total regulatory acceptance for the interoperable network) project set out to introduce a set of innovative methodologies to make the process for rail vehicle certification with respect to aerodynamic effects easier in Europe.

Project members addressed the technical specifications for the interoperability of high-speed trains and conventional railways. These specifications harmonise European and national standards on aerodynamics in order to reduce certification costs and time. To help achieve this reduction, they replaced current cross-wind and slipstream tests with new options without jeopardising safety and introduced virtual testing for validating head pressure pulse loads and cross-wind aerodynamic loads.

The team defined methodologies and then proposed new measurement methods to be applied to the developed certification procedures. It ensured that proposals for new or modified standards are directly applicable and in line with European and national safety authorities.

AEROTRAIN presented a time- and cost-efficient certification process for new interoperable rail vehicles. This leads to improved interoperability while enabling future certification procedures for aerodynamic effects to cost less and not take so much time. Rail transport will see a boost in competitiveness and desirability as a result.

Related information

Report Summary

Final Report Summary - AEROTRAIN (AEROdynamicsTotal Regulatory Acceptance for the Interoperable Network)

Keywords

Rail vehicle certification, trains, rail network, interoperability, aerodynamics