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## Assessing the Variation in Rail Interoperability in 11 European Countries, and Barriers to its Improvement

Warren E. Walker\*, Gerrit Baarse\*\*, Andre van Velzen\*\*\* and Tuuli Järvi\*\*\*\*

\* Delft University of Technology  
 P.O. Box 5015  
 2600 GA Delft  
 The Netherlands  
 T: +31152785122  
 F: +31152786233  
 E: [w.e.walker@tudelft.nl](mailto:w.e.walker@tudelft.nl)

\*\* Baarse Beleidsondersteuning & Consult b.v.  
 Molenwerf 1  
 2635 JT Den Hoorn  
 The Netherlands  
 T: +31152571103  
 F: +31152682507  
 E: [g.baarse@ba-bv.nl](mailto:g.baarse@ba-bv.nl)

\*\*\* Vital-Link Policy Analysis  
 Gildstraat 78  
 3572 ER Utrecht  
 The Netherlands  
 T: +31302762451  
 F: +31152682507  
 E: [a.van.velzen@vital-link.nl](mailto:a.van.velzen@vital-link.nl)

\*\*\*\* VTT Technical Research Centre of Finland  
 P.O. Box 1800  
 FIN-02044 VTT  
 Finland  
 T: +358207226490  
 F: +358207227056  
 E: [tuuli.jarvi@vtt.fi](mailto:tuuli.jarvi@vtt.fi)

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### Abstract

Work conducted within REORIENT, a Sixth Framework project for the European Commission (EC), is described. One objective of REORIENT was to explain the status of transformation of the European railway sector into a functionally integrated, liberalized, interoperable system. The status of interoperability within and between eleven countries in a corridor stretching from Greece to the Nordic countries was assessed, and conditions in the countries that appear to be barriers to achieving the EC's goals were identified. (Barriers were defined as shortcomings in conditions that would facilitate the implementation of requirements presumed by the EC to lead to seamless international freight transport ("implementation conditions")).

The primary data source for the analysis was a set of interviews with the major actors and stakeholders associated with each country's rail freight system. The (qualitative) information from the interviews was translated into numeric scores, which were subjected to statistical analysis. The primary objective of the statistical analysis was to provide an assessment of the relationships between the requirements and the implementation conditions. The statistical analysis involved both the identification of relevant relationships and an assessment of the strength of these relationships. Overall, we found that there

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was considerable variation in interoperability status across the countries on practically all of the requirements. However, there was also considerable variation in the status of the implementation conditions across the countries. As a result, we found that most of the variability was able to be explained by relationships that were found to exist between the requirements and implementation conditions.

A 'Barrier Significance Score' (BSS) was computed for each country and for each implementation condition. These scores were used to assess the relative importance of barriers across the countries, and to identify the most critical barriers to be removed in order to improve interoperability. Large differences in BSS's were found among countries. In general there are fewer barriers in Nordic countries and more barriers in the south.

Keywords: international rail freight transport; Eastern Europe; interoperability; liberalization