ISAC project – Intelligent Surface Access Community

Project Understanding

The Intelligent Surface Access Community (ISAC) is a project within CEDR Transnational Research Programme Call 2023 Intelligent Access. The participating NRAs are Finland, Ireland, the Netherlands, Norway, and Sweden.

NRAs are facing budgetary constraints and climate challenges associated with road transport. Intelligent Access (IA) can help NRAs address these issues by optimising the use of road infrastructure and promoting sustainable freight transport. The ongoing digital transformation in NRAs and the logistics sector provides opportunities to enhance road monitoring and control access to road use.

Currently, NRAs rely on visual counts, counting loops, weighing loops, and surveys, which offer limited insight and control over road usage by freight transport. IA leverages data from freight vehicles and transport companies to align road usage with the conditions set by NRAs. The objective of IA is to ensure "the right vehicle with the right load on the right road at the right time," utilizing digitization and connected vehicles.

Project Aims

IA offers several potential benefits:

- **Optimised Infrastructure Use:** Traffic management based on time and place.
- **Reduced Infrastructure Degradation:** Improved management of vehicle weight, speed, and routing.
- **Climate Objectives:** Reduced congestion, prioritization of climate-friendly vehicles, and greener logistics.
- **Increased Road Safety**: Less overloading and better insight into safety incidents.
- **Fair Competition:** Improved compliance with regulations among haulers/carriers.
- **Controlled Transport of Abnormal Loads:** Better management of dangerous goods and high capacity vehicles.
- **Streamlined Cross-Border Transport:** Faster and more controlled processing of transport documents through digitalization.

The aim of this research is to explore how IA can help NRAs optimise infrastructure use and promote environmentally sustainable road freight transport. The main output will be identifying scenarios where IA can be applied to manage cross-border road transport, highlighting opportunities and challenges for road authorities and other stakeholders. The research will also provide guidelines for implementing IA at the national level.

Project researchers will collaborate with relevant stakeholders, including CEDR members, industry partners, service providers, and haulers/carriers. The data collected during the study will be made available for dissemination upon completion.

Project Delivery

ISAC consortium will deliver guiding principles and recommendations for the implementation of results to enable CEDR members to choose an application of IA that fits their national context for cross-border transports for specific groups in road freight transport, specific corridors, and/or specific vehicle configurations.

The research will build on the previous research and explore how IA can be set up, both cross border and at national level, as a part of the digital transformation, to get more insight and control over road use by road freight transport, using IA as a useful aid to regulatory compliance rather than just as an enforcement tool.

Specific Work Packages include establishing the Building Blocks for an IA Framework utilising a systematic review process, developing IA Scenarios and road maps and assessing those scenarios in the context of digitisation and automation.

The project commenced in May 2024 and is scheduled to finish in May 2026.