



Conférence Européenne  
des Directeurs des Routes  
Conference of European  
Directors of Roads



**AMS**  
**FREE**

**Exchange and exploitation of data  
from Asset Management Systems  
using vendor free format**

**CEDR Programme:  
Call 2018 Building Information Modelling  
(BIM)**

**Project Duration:  
01.12.2019 – 31.11.2021**



## Project

As part of the project Interlink (CEDR Call 2015) a framework for a European road object type library (OTL) was developed. AMSfree builds on this result and aims for a better understanding how to free and enrich data to and from asset management systems with the goal of wider implementation among CEDR members.

The AMSfree project analyses the architecture of Infrastructure Asset Management Systems (IAMs) used by National Road Authorities (NRAs) as well as the data structure in current IAMs. Thus, the detailed technical requirements for linking data between IAMs and Building Information Models (BIMs) on a macro and micro level are established.

The analysis is performed on BIM models utilised by designers and contractors, so the level of development (LOD) for the common infrastructure asset BIM can be agreed upon. The recommendations and guidance for data exchange as well as the rules for semantic transformation are established. All data from the source systems is transferred to a referenced database by using the established transformation rules.

The semantic transformation between different legacy systems is enabled on the basis of the Industry Foundation Classes (IFC) property templates, taking into account the IFC import/export capabilities of various systems. Specifically, a uni-

versal mapping approach between different IFC properties of different legacy systems is defined. For this purpose, a corresponding architecture is developed. Existing national data formats (e.g. OKSTRA, Interlis2) are linked with the IFC format.

Based on the results, a proof-of-concept is developed, and the systems' interoperability is verified. Consequently, the requirements to enable the linkage between the data in IAMS and the IFC model are outlined. Based on these requirements a prototype is developed and documented.

## **CEDR**

CEDR is an organization of European national road administrations that promotes Excellence in the Management of Roads. The CEDR Transnational Research Programme (TRP) operates through a series of annual transnational calls on topics that address the needs of European road authorities. The aim is to produce research results that can be implemented by CEDR members and contribute to a safe, sustainable and efficient road network across Europe. The TRP is funded by CEDR members on a voluntary basis. Participation is open to any legal entity, though all consortia must be led by a legal entity from a European country.

## **Website**

For further information, newsletter registration or publications visit [www.amsfree.eu](http://www.amsfree.eu)

## **Contact**

For questions or further information, the consortium can be contacted via e-mail: [info@amsfree.eu](mailto:info@amsfree.eu)

# Project Goals

The main goal of the AMSFree Project is to establish detailed technical requirements for linking IAMS and Building Information Models (BIMs) as infrastructure asset databases on a macro and micro level.

## **WP 1** **Project Management and dissemination**

Ensure that project objectives are met within the budget and on time, and ensure that the project results are appropriately disseminated.

## **WP 2** **Comparative analysis of IAMS in and common BIMs in Europe**

Determine commonality and differences between the asset management systems used in Europe and common BIMs used in Europe.

## **WP 3** **Digital condition assessment**

Adapt existing inspection and monitoring procedure for BIM and develop data workflow for new sensor and scanning techniques. Identify how the data can be used directly in condition scores or transformed to provide key performance indicators.

## **WP 4** **Data fusion and semantic transformations**

Establish a reference database and interfaces to different database (archipelago) that allow semantic transformations.

## **WP 5** **Development of a referenced vendor-free IFC-based data structure**

Establish the interoperability between the IAMS and BIM software and data acquisition devices. Detailed specification of the individual data exchange processes. Development of a data structure using the IFC standard.

## **WP 6** **Data exchange to legacy systems**

Develop a transformation concept for data exchange between different legacy systems. Procedure for the systematic integration of national characteristics.

## **WP 7** **Development of a prototype**

Demonstrate the integration of or interoperability between BIM and IAMS.

# Consortium

## Coordinator



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## Partners

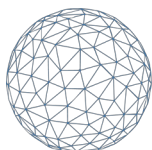


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