

## AMsfree - 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

**Partners:** University of applied Sciences Karlsruhe (Coordinator, Germany); IMC (Switzerland); InGEO (Nederland); Ruhr University Bochum (Germany)

### **Project Introduction**

As a result of the CEDR Call 2015 (project Interlink) a framework for a European road OTL is available. AMsfree builds on this result and aims for a wider implementation among individual CEDR members. The AMsfree project analyses the architecture of Infrastructure Asset Management Systems (IAMSs) used by National Road Authorities (NRAs), as well as the asset information content in current IAMSs in order to establish detailed technical requirements for linking IAMS and Building Information Models (BIMs) as infrastructure asset databases on a macro and micro level. The analysis is performed on a range of BIM models utilized by designers and contractors, so the level of development (LOD) for the common infrastructure asset BIM can be agreed on. Hereafter the recommendations for handling the insufficient exchange data are established, as well as the rules for semantic transformation. All data from the source systems is transferred to a reference 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 universal mapping approach between different IFC properties of different legacy systems is defined. For this purpose, a corresponding architecture is developed and prototypical implemented. Existing national data formats (e.g. OKSTRA, Interlis2) are linked with the IFC format.

Based on the results, the interoperability proof-of-concept is developed. Afterwards, the requirements are defined to enable the linkage between the data in IAMS and the IFC model. Based on the requirement a prototype is developed and documented.

### **Project Work Packages**

The work is divided in seven work packages:

- 1) Project management
- 2) Comparative analysis of IAMS and common BIM in Europe
- 3) Digital condition assessment
- 4) Data fusion and semantic transformations
- 5) Development of a referenced vendor-free IFC-based data structure
- 6) Semantic transformations to legacy systems
- 7) Development of a prototype