

Connected Data for Effective Collaboration

General overview of CoDEC project

Newsletter N°2 - December 2020

Editorial

Welcome to the second CoDEC Newsletter!

CoDEC is a CEDR (Conference of European Directors of Roads) funded project aiming to integrate data from different Asset Management Systems and Building Information Modelling (BIM) within the European highways industry. The objective of the project is to provide a standardised process across different Road Authorities to enable them to access, manage and use asset related data between Asset Management Systems and BIM platforms.

CoDEC project started on 1st October 2019 (duration 24 months).

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Progress at a glance

Developing the data dictionary

The main progress for last 6 months on this project is developing "CoDEC Data Dictionary".

To enable data integration between different data management systems and the data flow to and from BIM and asset management system CoDEC has developed this "Data Dictionary".

CoDEC "Data Dictionary" provides a logical hierarchical system of data written in plain language (English) that gives the "logical" flow of the data (and metadata) to build "Data Queries" between Database Systems (e.g. between Asset Management System (AMS) and BIM). This is essentially based on the well-defined structure of legacy data within AMS.

One of the main purposes of this Data Dictionary is to help both the Asset Managers and Software developers to translate the legacy data structures into a "Linked Data Environments" for successful data integration process. This Data Dictionary format is created in such a way that is adaptable by different Organisations and easily extendable in future to cater new data types.

The data dictionary focuses on three key asset types: Road, Bridge and Tunnel. The data dictionary was enriched with input from other sources such as IFC, ISO standards, EurOTL and some other existing data dictionaries or Object Type Library OTL's.

The Data Dictionary will provide a list of data types on the key asset types and the connection to meta data or attributes for creating an Object Type Library (OTL) for the BIM platform.

The Data Dictionary has two main sections; **1. Static Data and 2. Dynamic Data.**

Static Data is the information about the Assets; e.g. what is the asset, where is the asset, what is it made of, what are the components, when it was constructed etc. Dynamic Data is the information on the asset condition, operation and maintenance. This data is continuously changing, hence the structure of this Data is different from Static Data. Although it is essential that both are connected to each other. Dynamic Data is connected to Static Data by a "Unique ID". Dynamic Data gives the framework of any data that can be captured by either a "Fixed Sensor" or a "Mobile Sensor".

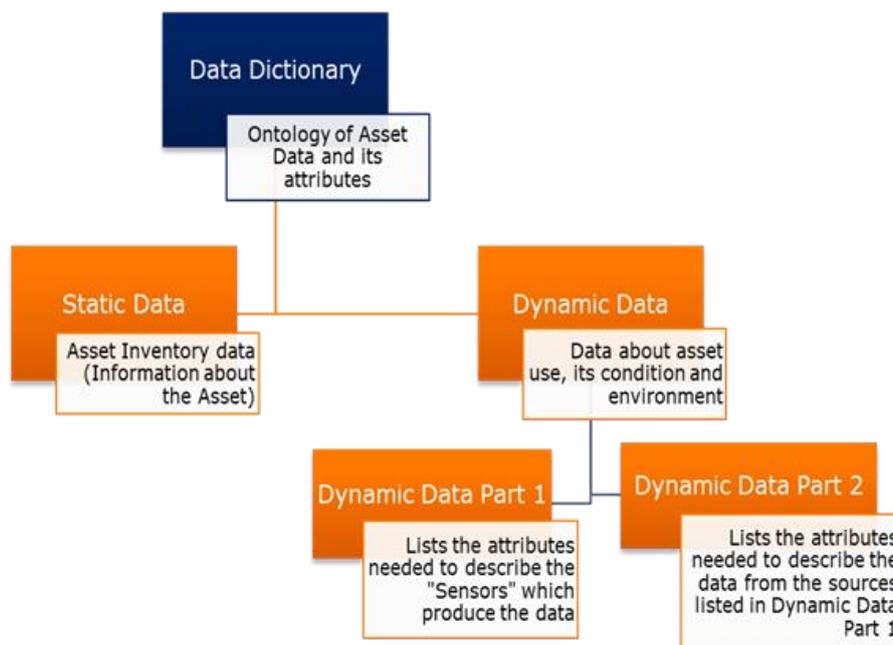


Figure 1: CoDEC Data Dictionary Structure

Five online workshops were organised with the CEDR members and CoDEC gathers their views and suggestion on building the Data Dictionary.

The setup of the three pilot projects was discussed in an early stage and the setup was deepened and clarified through contacts with the implementation partners in April-June 2020. Therefore, the data dictionary provided for the needs for the setup of the pilot projects.

The consortium partners involved in undertaking pilot projects were already involved in the development phase of the data dictionary. Furthermore, a presentation of the final draft of the data dictionary was made to them early September 2020 and their feedback in finalising the Data Dictionary.

Providing direction to pilot projects

CoDEC is now working on creating the domain specific ontology based on the Data Dictionary structure and creating an Open API to validate the connection through three Pilot Projects. CoDEC is working closely with the project Implementation Partners; Belgium, Netherlands and Finland to develop the pilot projects on three specific asset types, Roads, Bridges and Tunnels.

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