Timeline

The AMSFree project is in its final stages. For the last six months, we are developing the prototype.

Outlook on the prototype

For an interoperability proof-of-concept, a prototype is in development. The prototype will have a range of functions to be included, which are needed to exchange and display data from Asset Management Systems. For the development, use cases for pavement and bridge were elaborated.

Use cases for pavements

For the usage of the prototype with pavements, three use cases were defined. Therefore, the essential activities in the process of the pavement management system can be displayed in the prototype. The use cases are separated into three updates of the database and the IFC model.

- Update I: Condition assessment
- Update II: Maintenance program
- Update III: Replacement of pavement

In "Update I: Condition assessment" the information of the condition on the pavement will be attached in the IFC model.

Additionally, by attaching the information with IFC alignment to the model, the maintenance program will be included as a virtual surface layer. This is described in the use case "Update II: Maintenance program".

In the third use case, "Update III: Replacement of pavement", replaced pavement sections will be shifted to a history property set, and the new pavement layer information will replace the old ones.
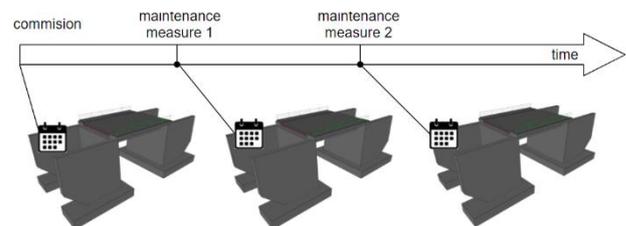
Use cases for bridges

In terms of bridges, two use cases were defined. For bridges, a network-wide maintenance program is not included. The two updates which form the use cases are:

- Update I: Condition assessment
- Update II: Maintenance

With the use case "Update I: Condition assessment", the information of the condition of the parts of the bridge will be attached in the IFC model, similar to in use case "Update I" of pavement.

The use case "Update II: Maintenance" describes the renewal and replacement of structural parts. In the model, the replaced parts will be exchanged with the new parts and will get new IDs. The remaining model has consistent IDs; the information will remain.

Possible implementation of Update III for structures: "time stamp" approach.

Functions

The BIM-model will be presented in a 3D-viewer. The user can get information by clicking on single elements. It will be possible to link sensor data, reports, and photos to geometric reference points.

The input data will define the road sections and the final condition rating will be visualised. In the virtual layer of the maintenance plan, time, costs, and type of maintenance treatment will be stored.

It will be possible to highlight the replaced (or changed) elements of an object model within the prototype and to display different conditions and maintenances over the years.

Final conference

The final conference will be held in February 2022 to conclude the project and present all results.