Asset management – research projects to support the implementation of dTIMS

MnDOT meeting TRB 2024

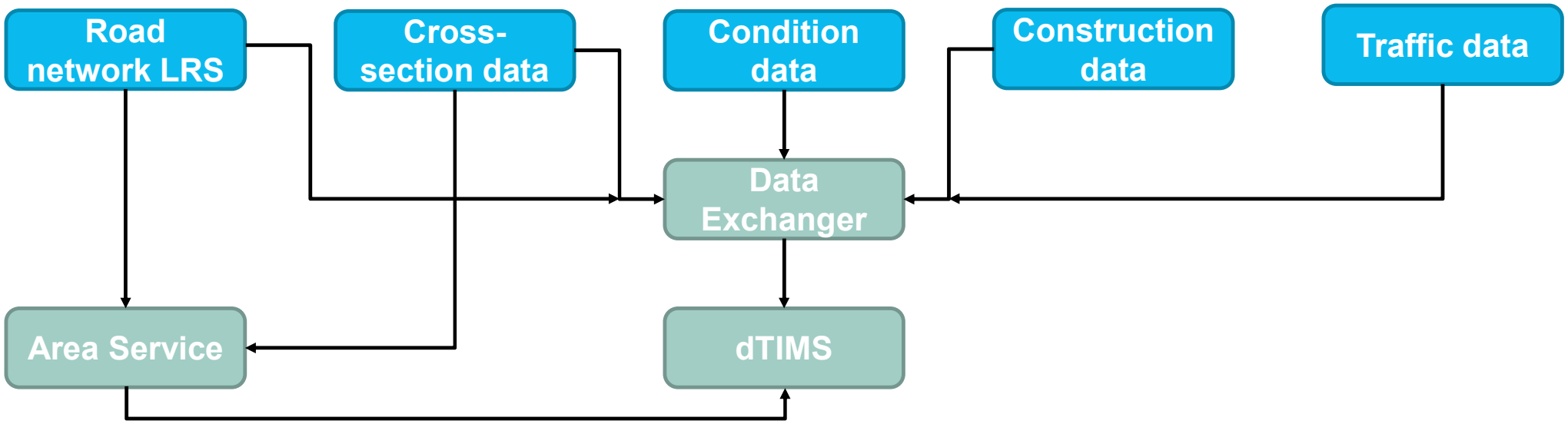
Wednesday January 10th from 3:00-6:00pm

Vejdirektoratet

Background

- 21 IT-systems for managing different asset classes in DRD
- Many of the systems developed in-house and is becoming obsolete
- Needed a common IT-system for all asset classes
- Needed a common approach to asset management (ISO 55000)
- First assets to be aligned was pavements and bridges and Deighton won a tender with the IT-system dTIMS
- Current approach to pavement management was implemented in dTIMS in 2023, which gives the basis for development

Data and IT-systems surrounding dTIMS



Construction data

Approximately 150.000 records in the register and more than 15.000 errors detected

A project regarding data governance and cleaning of the data in the register is initiated. Further there is no IT-relation between this register, the LRS and cross section data, so this link should be established, and data should be updated accordingly

Road network LRS

Cross-section data

Condition data

Traffic data

Area Service

dTIMS

Data Exchanger

Condition data

Condition is primarily determined by visual surveys and the parameter estimated remaining life is accountable for most of the budget.

A project regarding the use of condition data from measuring vehicles is initiated. The surface condition is obtained from an ARAN vehicle with LCMS2 laser mounted and the bearing capacity is obtained from a TSD operated by ARRB systems.

Road network LRS

Cross-section data

Construction data

Traffic data

Area Service

dTIMS

Data Exchanger

Cross-section data

Carriageways is the smallest element in our cross-section data, but with data being measured in individual lanes a project regarding lanes as a cross-section element was initiated

The division of carriageways into individual lanes will also make it possible to optimize the renewal of a single lane

Road network LRS

Condition data

Construction data

Traffic data

Area Service

dTIMS

Data Exchanger

dTIMS (pavement management)

Our current system was developed 30 years ago with hard coded degradation curves and optimization approach. Through the years some changes was made but never documented

A project is initiated to provide a road map for the development of pavement management in the Danish Road Directorate

- Road network LRS
- Cross-section data
- Construction data
- Traffic data
- Area Service
- Condition data
- Data Exchanger

dTIMS (asset management)

One of the 21 asset management system in DRD is Stribeman (Road marking manager) this will be the first new asset to be implemented in dTIMS

A project was initiated to implement road markings in dTIMS to get the first experience with another asset class. Does is fit in our road model, does it comply with the optimization criteria, can we link the assets to optimize project planning?

- Road network LRS
- Cross-section data
- Construction data
- Traffic data
- Area Service
- Condition data
- Data Exchanger