PROGNOSTICS AND HEALTH MANAGEMENT OF CATENARY FOR CLIMATE CHANGE ADAPTATION

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Nyttor och effekter

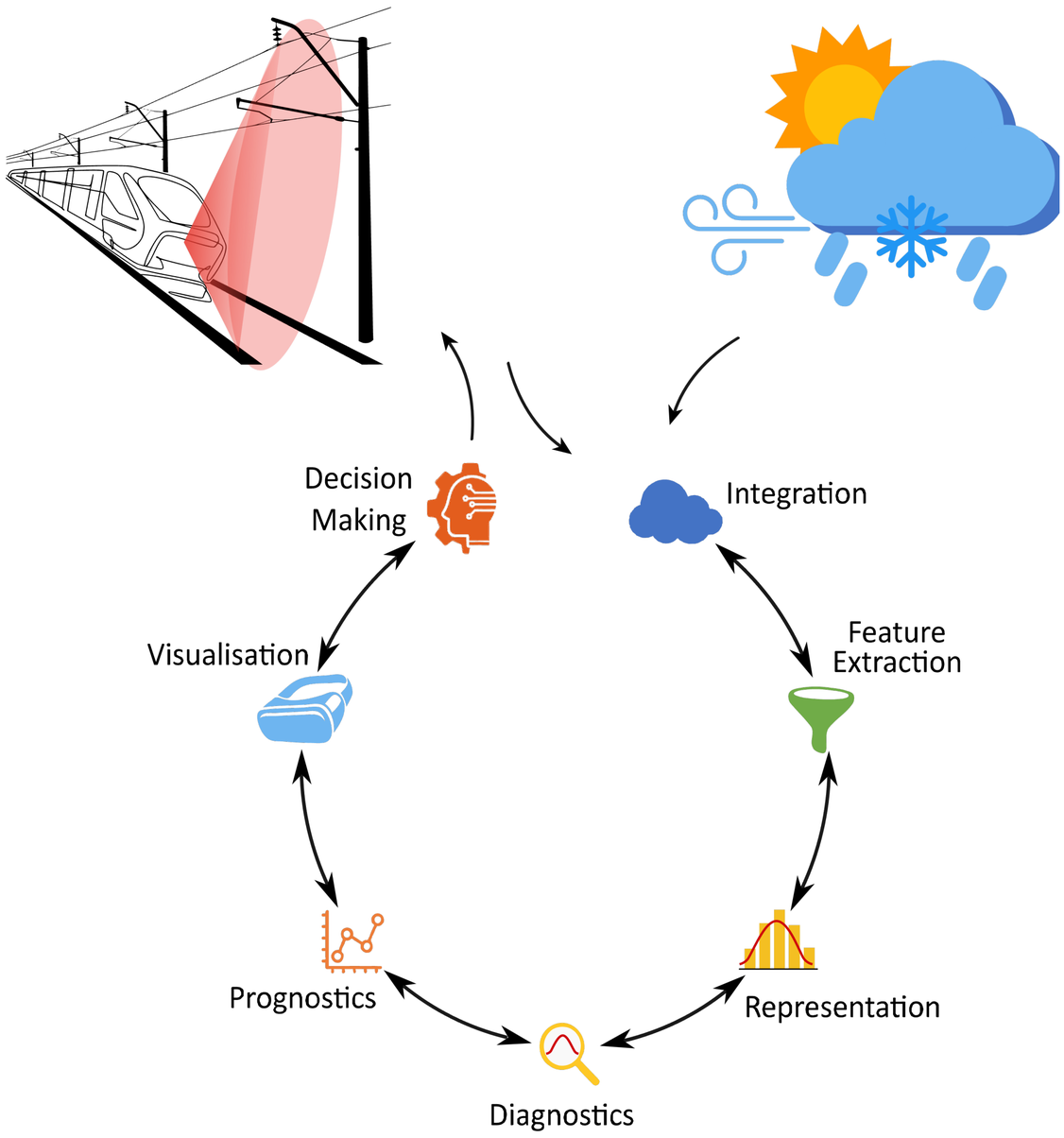
The innovation of this project is the methodology to develop Digital Twins using System-of-Systems approach. This methodology is being tested for Prognostics and Health Management of railway overhead catenary to address climate change adaptation. The beneficiaries of the project are the railway stakeholders, i.e. infrastructure manager, operators and commuters. At a larger scale, the System-of-Systems approach will enable digital transformation in many industries.

Aktörskonstellation

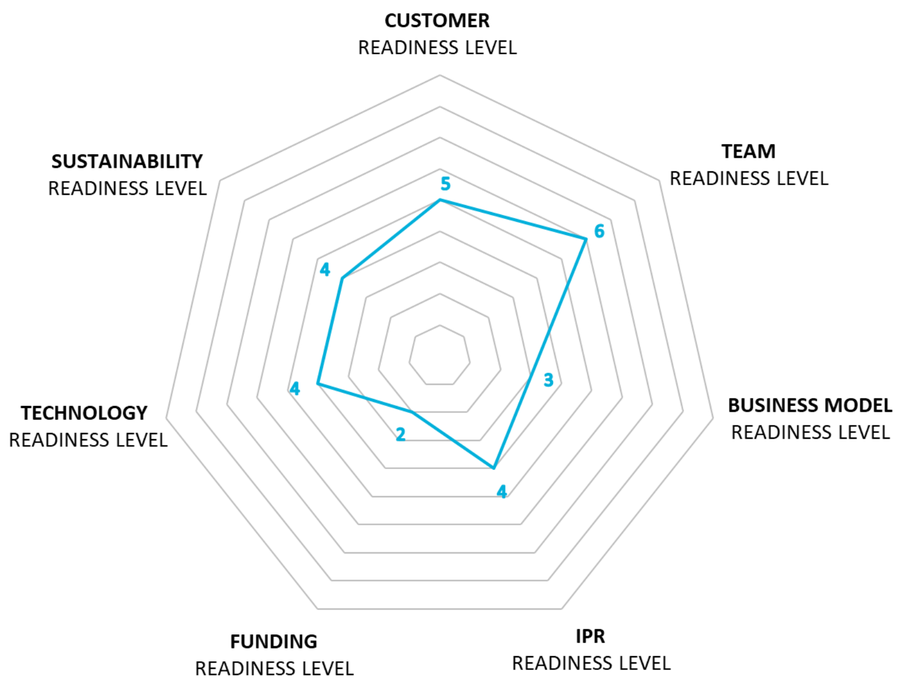
This project depends on the contribution of railway infrastructure owners, organisations involved in data acquisition, organisations with expertise in management of infrastructure in cold environments and experts in operation and maintenance as well as digitisation, digitalisation, and digital transformation.

Leveranser

Under the project, improvements in extraction and representation of the catenary infrastructure and a framework for development of Digital Twins incorporating a System-of-Systems have been achieved. The current and future work focuses on the amalgamation of catenary structural information, climate patterns, and weather forecasts as data sources, Physics aware methods for assessing risk, and to develop a decision support methodology.



Innovationsstatus



Optimal yet overlooked approach towards sustainability is through extension of the usable life of assets, life extension is the core of this project. The team has high competence and background in development of digital technologies applied towards operation and maintenance, and requirements for business development. The requirements from the problem owners and service providers are well understood. Possible approaches towards integration of the project outcomes with current business models are being evaluated.

Vidareutveckling och implementering

This project will culminate in demonstrations showcasing not only the data integration but also the developed methodology, which can be considered as higher value outcome of this project.

Most organisations today have large amount of data. This is driven by understanding the importance of data for developing information and system knowledge, enabled by Information and Communication Technologies (ICT). However, integration of various distinct datasets and appropriate digital technologies is the current challenge for the organisations. The approach creates a mechanism for developing decision support tools, therby paving the path for multiple opportunities for the future.

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