

AI FACTORY RAILWAY: PROGNOSTICS AND HEALTH MANAGEMENT OF CATENARY FOR CLIMATE CHANGE ADAPTATION

AIFR-PHMCC

Ramin Karim, Amit Patwardhan

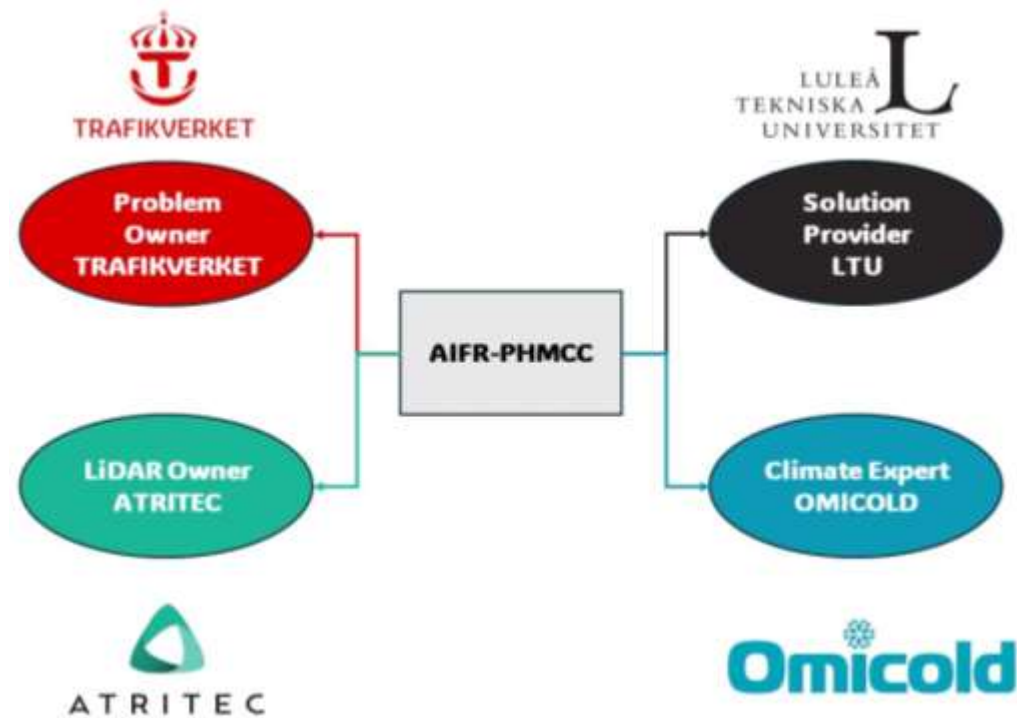
Nyttor och effekter

The expected benefits of this project are to develop and demonstrate an innovative and scalable platform for Prognostics and Health Management (PHM) of catenary through Digital Twin (DT) and further develop business models for implementation of operation and maintenance in railway infrastructure.

The short-term effects of this project are increased knowledge and awareness of climate change's impact on railway catenary, capabilities to encounter climate change using PHM and DT using a scalable platform, and development of innovative business models for implementation of performance-based operation and maintenance. The long-term effects of this project are increased knowledge and awareness of climate change's impact on societal, organizational, and government level, expanding innovation platform and solutions that are scalable at horizontal (spatial) and vertical (other assets) dimensions, and strengthening of collaborations at national and international levels.

Aktörskonstellation

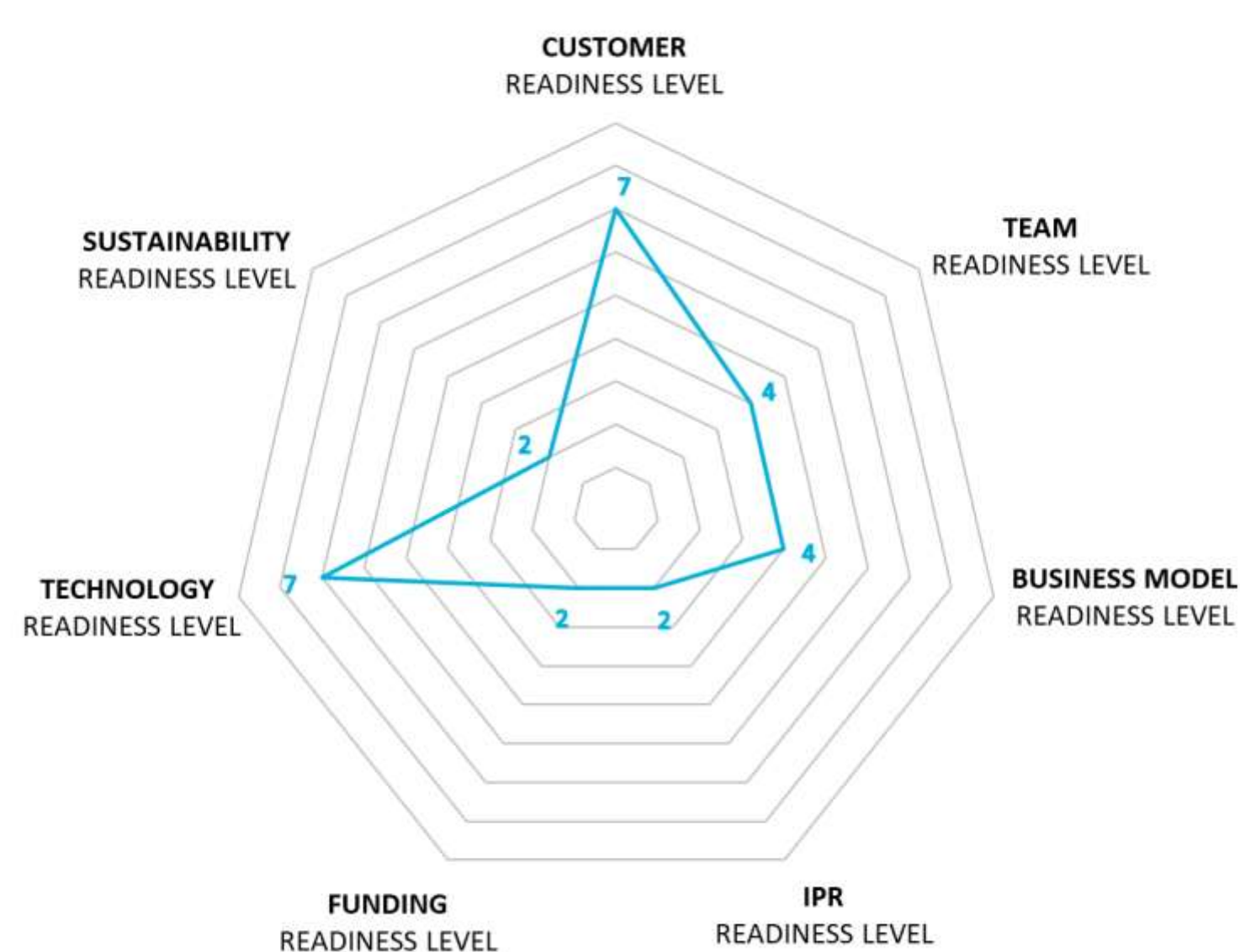
The project consortium consists of the following actors:



Leveranser

- An architecture for data sharing and information logistics has been developed with an advanced technology platform for data integration.
- A demonstrator of PHM of catenary and AI platform for improved analytics for climate adaptation of railway catenary through DT has been developed.
- Academic diploma at licentiate level.
- Dissemination of findings and results through academic journals and conferences.

Innovationsstatus



The technology platform has been developed in collaboration with the data providers and information consumers while addressing the issues of both. Other aspects reflect the ongoing research, validation of technology and feasibility of the approach.

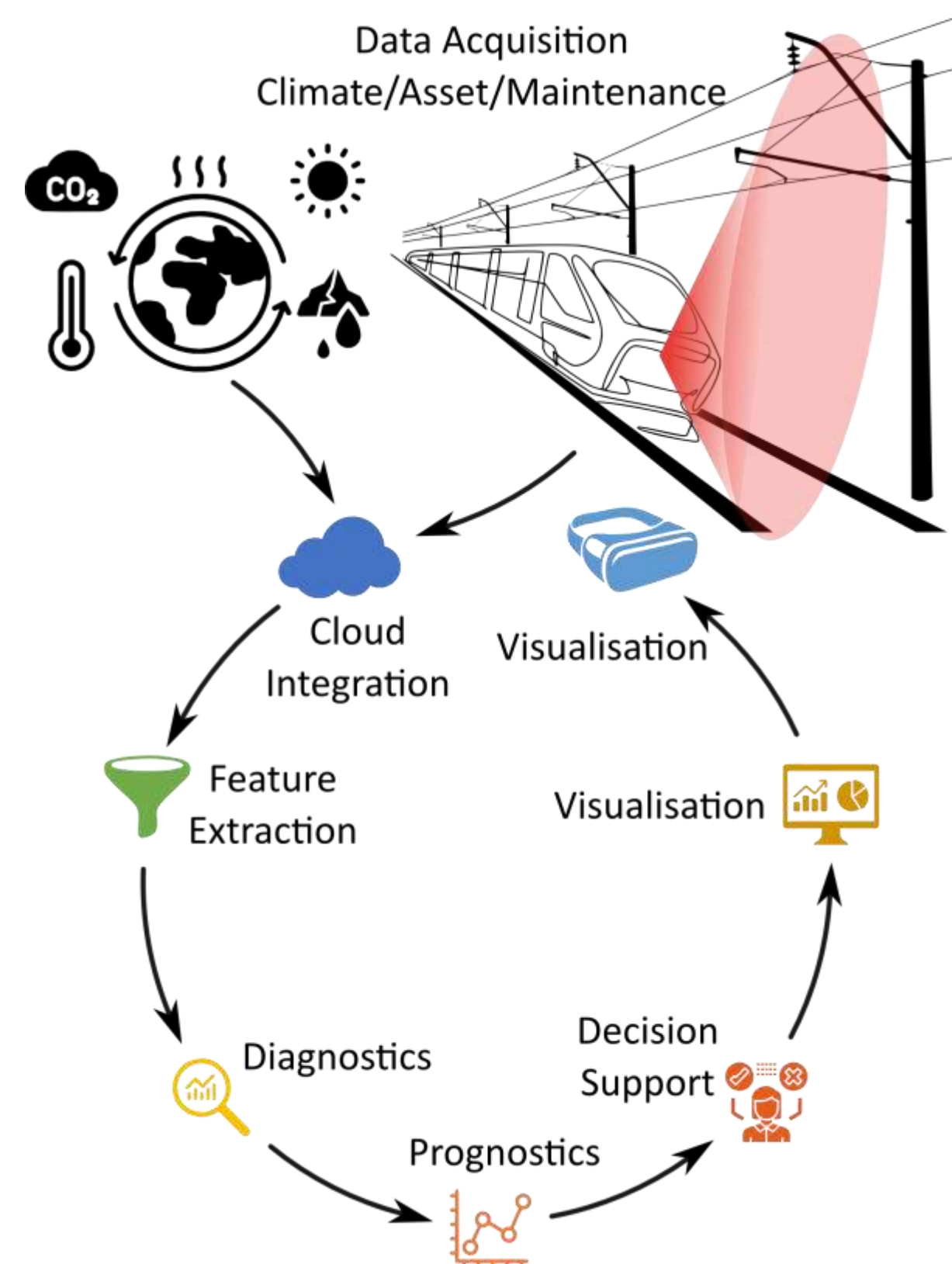
Data ↔ Knowledge ↔ Context

Catenary



Data Acquisition

Climate/Asset/Maintenance



Vidareutveckling och implementering

- Validation and verification of upscaled solution at Trafikverket
- Innovative business model for the developed solution needs to be designed, developed, and deployed in the context of railway operation and maintenance
- Adaption of the regulatory framework to enable the implementation of developed solution
- Dissemination of findings and results to academia and practitioners
- Ph.D. dissemination is planned on 21st November 2024

Med stöd från

VINNOVA
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FORMAS

Strategiska
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Infra
Sweden