RAILS
New steps forward in railways smart maintenance

The IN2SMART2 experience

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IN2SMART2

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PROJECT QUICK OVERVIEW AND KEY DATA

Official Start of the project: 01/12/2019

Kick off Meeting: 04/12/2019

Project's duration : 36 months

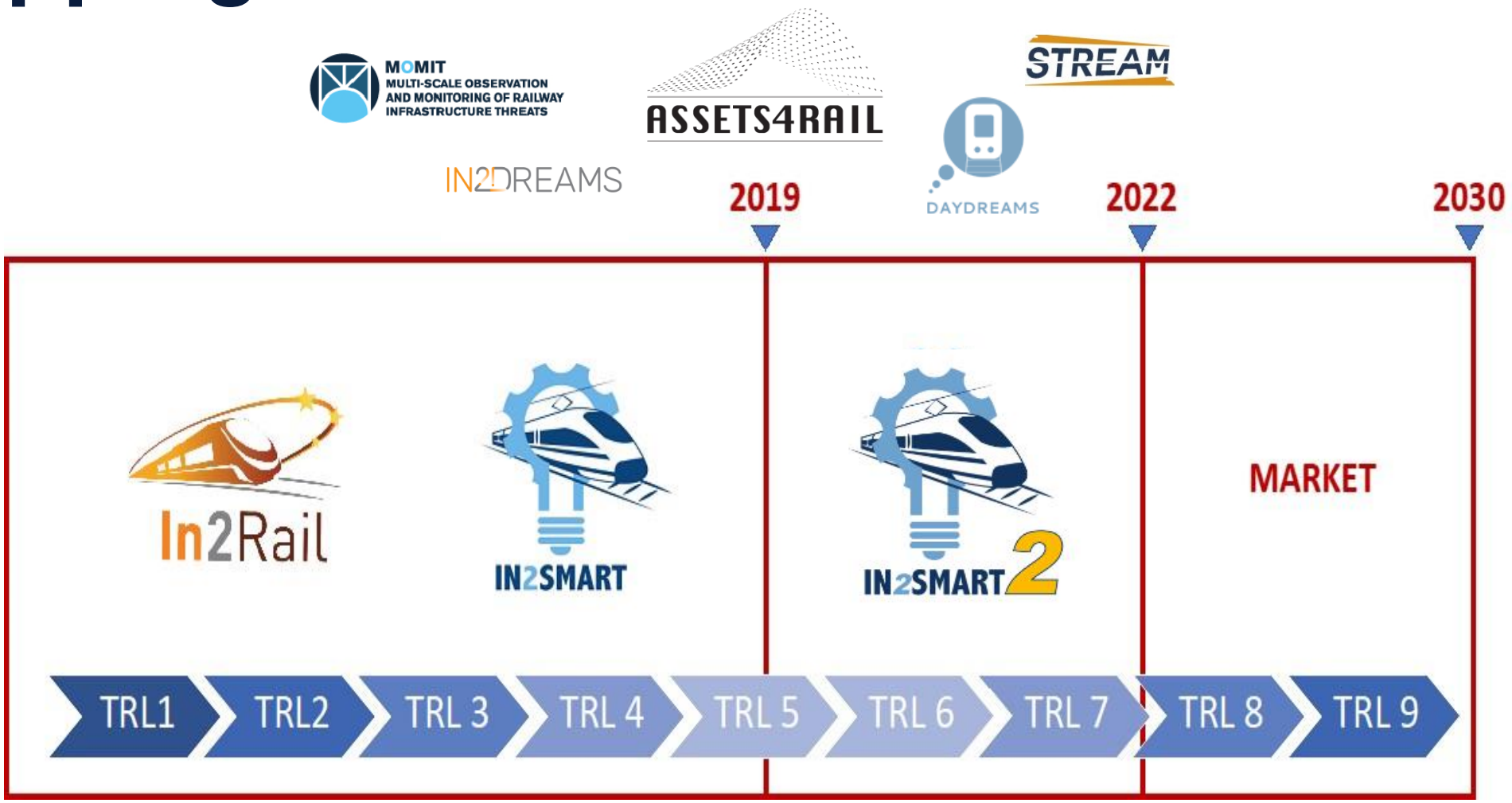
Project's Coordinator : STS

Total Project's budget: 23.091.203,50€

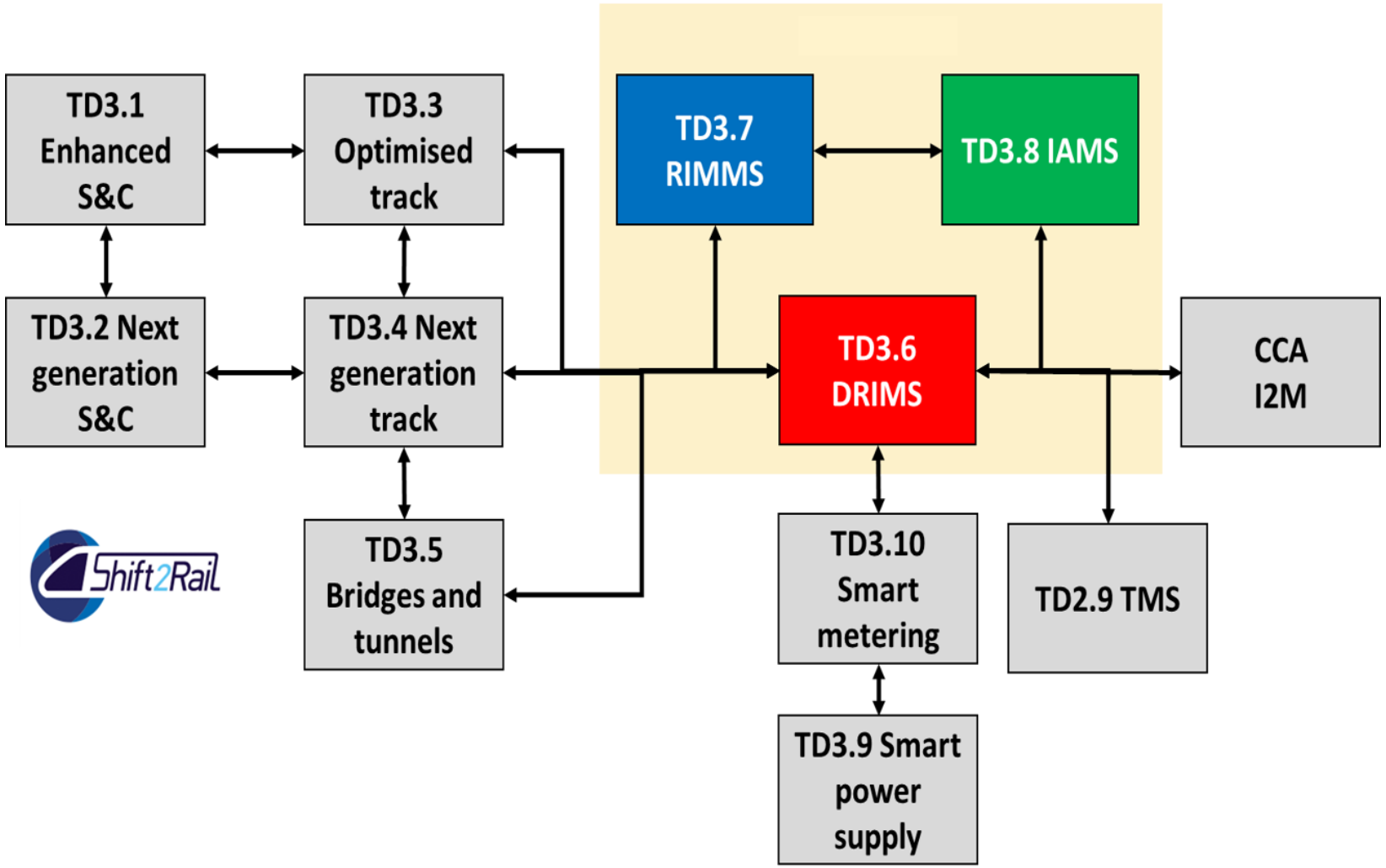
Funded Project's budget: 10.241.024,42€

Final Event will be held in Milan, November 2022

IP3 Asset management projects mapping

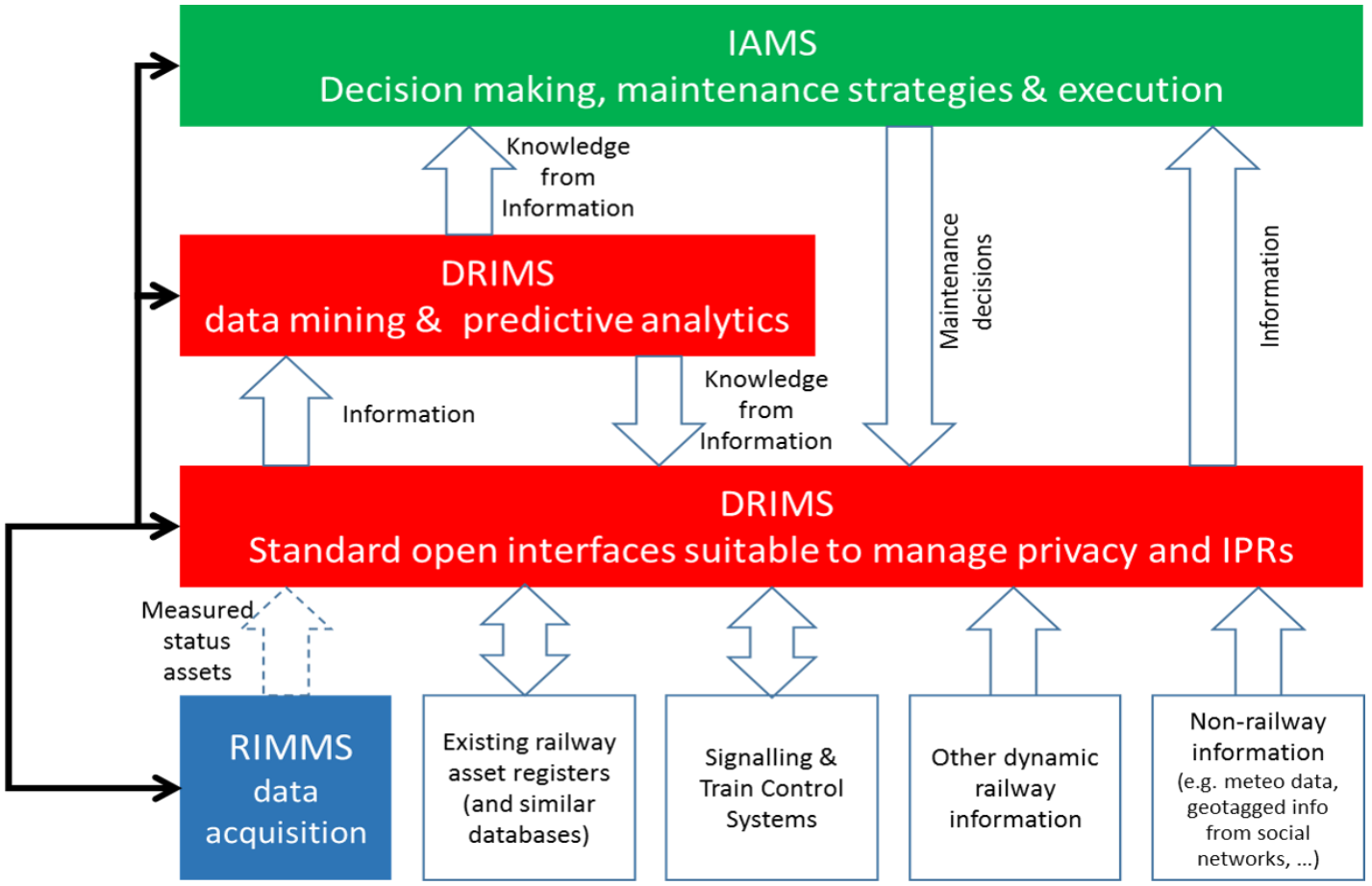


Introducing Asset Management TDs

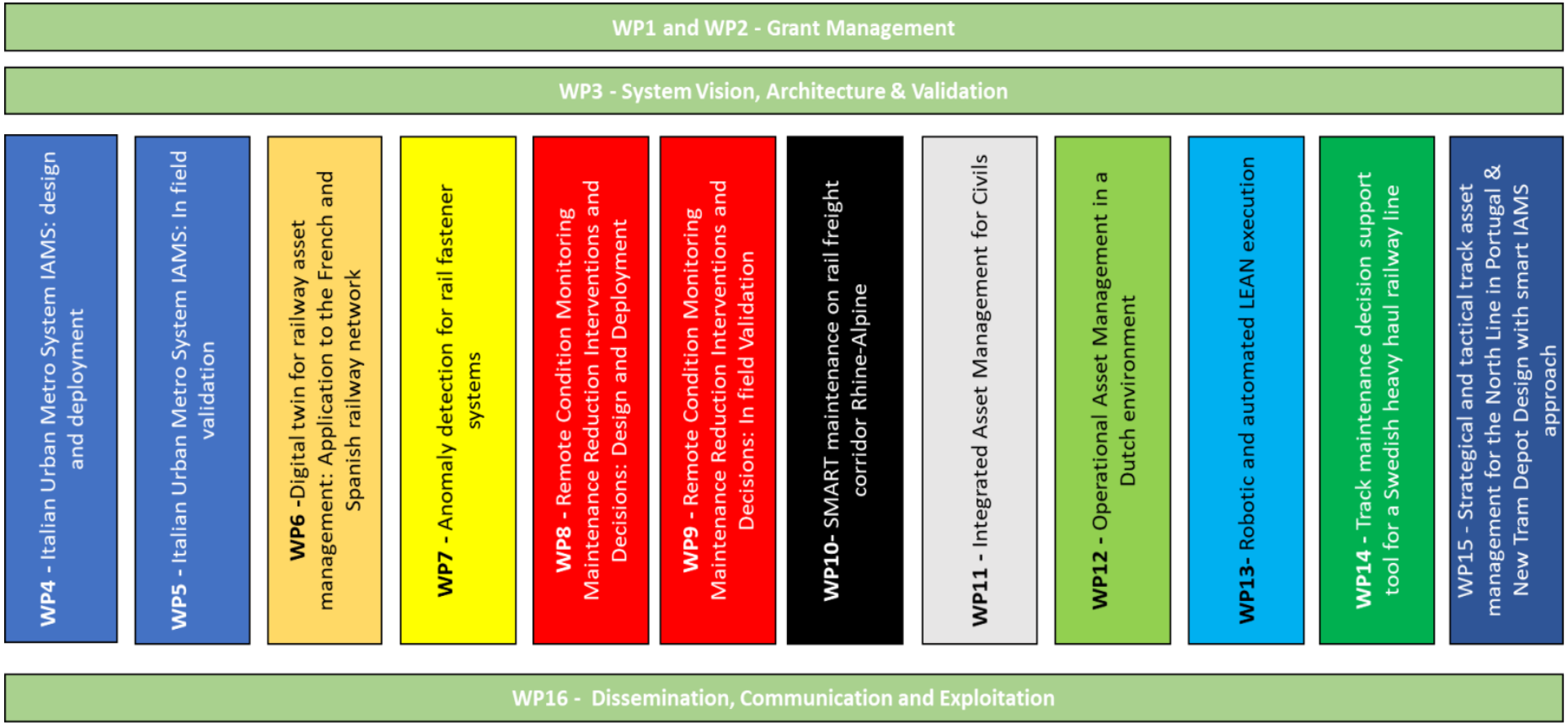


Introducing Asset Management TDs

TD3.7 Railway Information Measuring and Monitoring System (RIMMS) focuses on asset status data collection (measuring and monitoring), processing and data aggregation producing data and information on the status of assets;
TD3.6 Dynamic Railway Information Management System (DRIMS) focuses on interfaces with external systems; maintenance-related data management and data mining and data analytics; asset degradation modelling covering both degradation modelling driven by data and domain knowledge and the enhancement of existing models using data/new insights;
TD3.8 Intelligent Asset Management Strategies (IAMS) concentrates on decision making (based also but not only on TD3.6 input); validation and implementation of degradation models based on the combination of traditional and data driven degradation models and embedding them in the operational maintenance process based upon domain knowledge; system modelling; strategies and human decision support; automated execution of work.



In2Smart2 Structure



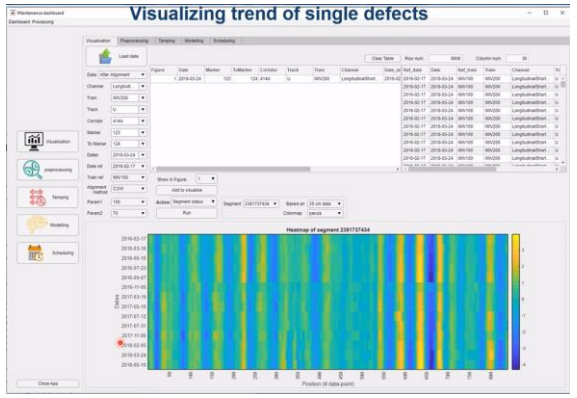
Contributions presented to Innovation Days 2021

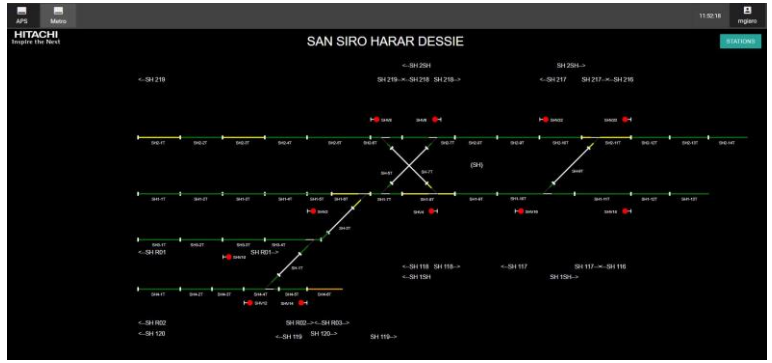
- WP5: HMI for Track circuits and Wheels maintenance
- WP6: Digital twin for railway asset management
- WP7: Rail fastener anomaly detection
- WP11: Life Cycle Engineering for bridges
- WP11: Track Quality and On Track Machine Decision Support Tool
- WP14: Track maintenance decision support tool for a Swedish heavy haul railway line
- WP15: Smart Depot Design using Digital Twin

You can find the complete IN2SMART2 intervention at this link (starting from 00:46:00)

Asset Maintenance in IN2SMART2

- Data collection from both legacy and new generation assets
- Installation of dedicated monitoring devices
- Development of advanced ML models for anomaly detection and prediction
- Customized and context aware HMI





WP5: Intelligent Asset Management System

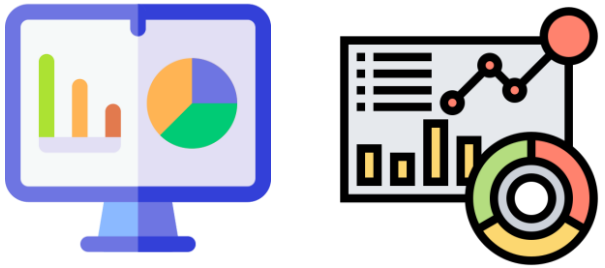
Objectives

Provide asset status monitoring and prediction

Minimize maintenance costs

Optimize the use of resources

Maximize network availability and reliability



HMI for final users

Assets involved:

- Track Circuits
- WIM/WILD System (wheel load and impact detection)
- On-Board Systems

Thank You