

7 – NATIONAL MATTERS

7.1 Finland

National Matters Update by Finland

Finnish Transport Infrastructure Agency has recently launched a pre-study on the possible use of Digital Twin to support fairway maintenance (Figure 1). Two pilot fairways have been selected for this purpose. The first phase of the study will analyse the current situation regarding the availability and quality of data. Relevant data to support the fairway maintenance include:

- Basic fairway and AtoN registry data
- Marine survey data
- AtoN maintenance/fault records
- Regular inspections on AtoNs' structural condition
- Real-time AtoN remote monitoring data
- Real-time and historical environmental data (i.e. meteorological and hydrological data)
- Historical vessel traffic data

The next phase of the study will use machine learning to pilot the maintenance forecast model. The model will be based on the historical data and include algorithms to adapt to the information coming from real-time data sources. It will form the first version of the Digital Twin for fairway maintenance.

The long-term target is that the adaptive maintenance forecast models (i.e. Digital Twins) could be utilized when planning and optimizing the use of the limited fairway maintenance resources.

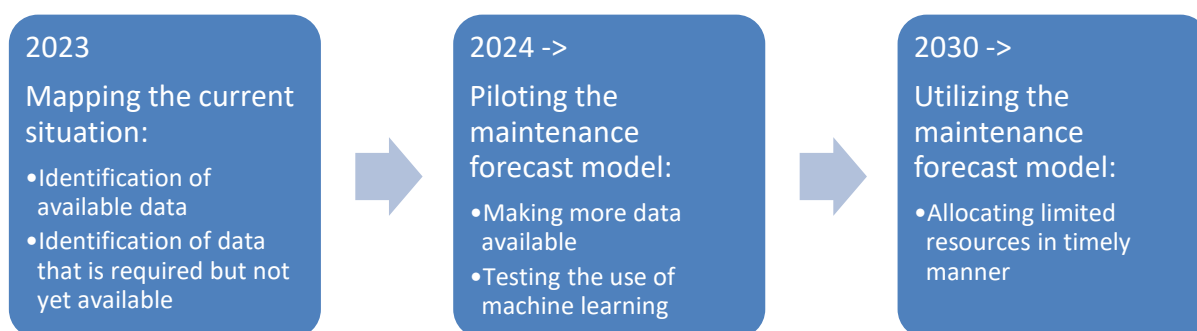


Figure 1. Development of Digital Twins for fairway maintenance, preliminary schedule.