Project Database of ICP Forests

PROJECT DESCRIPTION

PROJECT INFORMATION

Project title:	**AI for climate-adapted forest restructuring**
Project ID:	234
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PROJECT DESCRIPTION

Forests have a major impact on our climate and at the same time represent an economic factor. For the effective and efficient use of the resource forest, there is no way around digitalization. This is where the project comes in and develops a solution:

- With the goal of making the best possible use of the forest as a resource on the basis of data, the first step is data acquisition and data preparation.
- On this data basis, we want to provide smart services in order to be able to determine a data-based evaluation of the current and future CO2 sink potentials of existing forest areas.
- We want to leverage these potentials with data-based decision support for optimized use and conversion of the forest resource.

The medium-term goal is a service that optimizes and documents active CO2 reductions, and whose documentation is certified and recognized by official bodies.

The project can be divided into two phases: The objective of phase 1 is to provide a consistent database through the fusion of existing data (remote sensing data, forest structure data, soil data, climate data, etc.), to generate training data for the AI methods and thus to train the AI for tree-specific parameters (tree species and condition). For the implementation of the associated complex processes for data preparation and evaluation, an infrastructure is set up that is scaled for working with very large data volumes and for the execution of very computationally intensive algorithms. The forest-specific data basis generated in this way will be made available via standardized interfaces through the platform. The results from phase 1 thus provide a consistent database on which to build innovative services for optimized use and sustainable conversion of the forest resource.

In phase 2, the built-up database will be further extended and put into value via innovative services. The goal is to evaluate and improve AI methods for the recognition of tree-specific parameters, and to design and develop smart services for data-based decision support for forest managers and forest owners. The technological basis creates, for example, the possibilities for implementing political support measures to promote and/or reward CO2 storage. The conception and development of a smart service for the determination of current and future CO2 sink potentials of forest areas is planned, its documentation will be certified and accepted by official authorities.