Virtueller Wald | Virtual Forest



Applications like forest inventory and forestry planning, planning of fellings, optimization of harvesting and accounting processes, improvements of timber logistic, evaluation of damaging events etc. are expecting a realistic virtual illustration of the real forest. Within this project the preconditions for building up a single central database – the Virtual Forest - describing the extensive area of North Rhine-Westphalia are constructed. This database contains a mathematical description of biological and technical aspects of the real forest in different detailing (e.g. forest and single-tree consideration) and different precision. Apart from available terrestrial data and a digital site classification, developed by the Landesbetrieb Wald und Holz NRW, the Virtual Forest is based on remote sensing data and information derived thereof. It applies newly developed algorithms on well-known data formats: for single tree identification laser data and aerial images are used, tree species classification uses images and area segmentation is based on raster and vector data. Thus, a comprehensive survey ranging from inventory to forest growth to logistics can be provided. The Virtual Forest provides all stored data in a new 4D geo-data infrastructure while using standardised interfaces. All data (basic data, derived data, technical data, etc.) can also be used by third (programmes, users). Furthermore, a meta-data catalogue answers questions as “Which data of a certain area and/or to a specific subject are placed in which format, which exactness and which actuality at what costs at which place?” Appropriate safety concepts secure the data access as well as the data itself. The consequent consideration of the factor “time” transforms the 2D- or rather 3D- into a 4D-GIS based on a 4D geo-data infrastructure – the basis for a “time machine”. This enables the user to look at the forest at different (historical or future) conditions. The Virtual Forest serves as a foundation for abstracts of different economy units, which are from case to case both business and economically profitable, and with it for the management of larger amounts of wood at lower costs.

MORE DETAILS

CHALLENGE ADDRESSED

2.- Improve infrastructures and capacity of public actors

DOMAIN

Inventory, monitoring

Forest disturbances, risks

Research and development

TYPE OF SOLUTION

Modelling, simulation, optimization

KEYWORDS

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DIGITAL SOLUTION

Yes

INNOVATION

Yes

COUNTRY OF ORIGIN

Germany

SCALE OF APPLICATION

Regional/sub-national

START AND END YEAR

2001 -

CONTACT DATA

OWNER OR AUTHOR

RIF Institut für Forschung und Transfer e.V.

contact@rif-ev.de

www.rif-ev.de

REPORTER

InnovaWood asbl

Uwe Kies

office@innovawood.com

REFERENCES AND RESOURCES

MAIN WEBSITE

http://www.virtueller-wald.de/en/the-virtual-forest/

PROJECT WEBSITE

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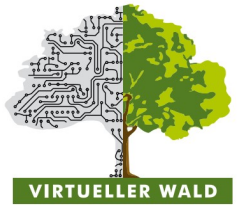
PROJECT REFERENCE

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RESOURCES

RWTH MMI project website / various demo videos

LOGO OF BEST PRACTICE



LOGO OF MAIN ORGANIZATION



PROJECT UNDER WHICH THIS FACTSHEET HAS BEEN CREATED

Rosewood 4.0

POST DATE

18 Nov 2019





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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY

