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.

WIęCEJ INFORMACJI

WYZWANIE

2. Poprawa infrastruktury i potencjału instytucji publicznych

DOMENA

Inwentaryzacja, ocena, monitoring zasobów

Zaburzenia ekosystemów leśnych, ryzyka, reagowanie na klęski i katastrofy

Badania i rozwój

RODZAJ ROZWIąZANIA

Modelowanie, systemy wspomagania decyzji, symulacja, optymalizacja

SŁOWA KLUCZOWE

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ROZWIąZANIE CYFROWE

Tak

INNOWACJA

Tak

KRAJ POCHODZENIA

Niemcy

SKALA APLIKACJI

Regionalny

ROK ROZPOCZęCIA I ZAKOńCZENIA

2001 -

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ŹRóDłA I MATERIAłY

STRONA INTERNETOWA

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

STRONA INTERNETOWA PROJEKTU

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PROJEKT

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ZASOBY

RWTH MMI project website / various demo videos

LOGO DOBREJ PRAKTYKI

LOGO ORGANIZACJI

PROJEKT, W RAMACH KTóREGO STWORZONA ZOSTAłA NINIEJSZA FISZKA

Rosewood 4.0

DATA PUBLIKACJI

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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY