Cable road layout planner

Seilaplan

Seilaplan is a tool that supports the design of cable roads for timber harvesting. It works as a QGis-Plugin.

Starting point of the calculation are terrain data (digital elevation model or field measurement data in CSV format), machine and cable road properties.
The program calculates the skyline tensile forces, the skyline sag, support saddle forces. By knowing the rope forces, critical constructions can be avoided. This increases the safety at work.

Seilaplan includes an optimization algorithm that proposes the height and location of the supports. The load path of the skyline together with the terrain profile are displayed graphically and a construction manual is generated. Coordinates and saddle height of the supports can be saved as CSV and KML data so that they are electronically available for further planning steps.

The planning of cable road layout goes much faster. The calculated routing takes advantage of the natural terrain shapes and helps to reduce overall harvesting costs in mountainous regions and steep terrain.

DETALII

SURSA DE LEMN

Pădure

TIPUL DE LEMN

Lemn masiv

TIPUL DE LEMN îN CAUZă

stemwood and full trees

IMPACTUL ASUPRA MEDIULUI șI BIODIVERSITățII

The cost reduction will allow new, poorly accessible areas to be developed and additional timber to be harvested.
This has a positive effect on the protective function of the forest in the mountains and it promotes adaptation to climate change.

EFECT ASUPRA VENITURILOR

Improved profitability of logging in steep terrain

POTENțIAL DE EXPLOATARE

For forest owners and forest contractors

HUB

Hub central-est

IMPACT ECONOMIC

Reduced installation cost, improved profitability

POTENțIALUL DE MOBILIZARE

> 100'000 m³ for Switzerland

POTENțIAL DE SUSTENABILITATE - VALOARE

Foarte pozitiv

FACILITATEA DE IMPLEMENTARE

Very easy

FACILITATEA DE IMPLEMENTARE - EVALUARE

Very Easy

CONDIțII CHEIE PREALABILE

Terrain data must be available or collected along the planned line.

TIPUL DE EVENIMENT LA CARE A FOST PREZENTAT ACEST IPB

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EFECT ASUPRA LOCURILOR DE MUNCă

Faster and saver skyline layout planing

COSTURI PENTRU IMPLEMENTARE (EURO - €)

100

CUNOȘTINȚE SPECIFICE NECESARE

Knowledge of QGis is necessary

MAI MULTE DETALII

PROVOCARE ABORDATă

5. Îmbunătățirea performanțelor economice și de mediu ale lanțurilor de aprovizionare cu păduri

DOMAIN

Managementul pădurilor, silvicultura, servicii ecosistemice, reziliență

TIP DE SOLUțIE

Instrumente de consiliere și servicii pentru proprietarii de păduri

CUVINTE CHEIE

cable road

skyline

QGis plugin

mountain forest

SOLUțIE DIGITALă

Da

INOVAțIE

Da

ȚARA DE ORIGINE

Elveţia

SCARA DE APLICARE

Continental

ANUL DE îNCEPUT șI DE SFâRșIT

2012 - 2021

DATE DE CONTACT

PROPRIETAR SAU AUTOR

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REFERENCES AND RESOURCES

PAGINă WEB

https://www.wsl.ch/en/index.html

WEBSITE PROJECT

https://seilaplan.wsl.ch/en/index.html

REFERINță PROIECT

Bont, L. G., Moll, P. E., Ramstein, L., Frutig, F., Heinimann, H. R., & Schweier, J. (2022).

RESURSE

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SEILAPLAN, a QGIS plugin for cable road layout design. Croat J For Eng. Bont, L. G., Ramstein, L., Frutig, F., & Schweier, J. (2022). Tensile forces and deflections on skylines of cable yarders: comparison of measurements with close-to-catenary predictions. International Journal of Forest Engineering, 1-22. https://www.dora.lib4ri.ch/wsl/islandora/object/wsl%3A30255/datastream/PDF/Bont-2022-Tensile_forces_and_defl

DESPRE EXEMPLUL DE BUNă PRACTICă

A PRINCIPALEI ORGANIZAțII

Swiss Federal Institute for Forest, Snow and Landscape Research WSL

Bern University of Applied Sciences

PROIECTUL îN CADRUL CăRUIA A FOST CREATă ACEASTă FIșă INFORMATIVă

Rosewood 4.0

DATA POSTăRII

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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY

Centro de Servicios y Promoción Forestal y de su Industria de Castilla y León