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.

DETALHES

ORIGEM DA MADEIRA

Floresta

TIPO DE MADEIRA

Tronco

TIPO DE MADEIRA EM CAUSA

stemwood and full trees

IMPACTE NO AMBIENTE E BIODIVERSIDADE

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.

IMPACTE NAS RECEITAS

Improved profitability of logging in steep terrain

POTENCIAL DE EXPLORAçãO

For forest owners and forest contractors

HUB

Centro-Oriente Hub

IMPACTE ECONOMICO

Reduced installation cost, improved profitability

POTENCIAL DE MOBILIZAçãO

> 100'000 m³ for Switzerland

SUSTENTABILIDADE POTENCIAL - VALOR

Muito positivo

FACILIDADE DE IMPLEMENTAçãO

Very easy

FACILIDADE DE IMPLEMENTAçãO

Very Easy

PRE-REQUISITOS CHAVE

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

TIPO DE EVENTO EM QUE ESTE BPI TEM SIDO APRESENTADO

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IMPACTE NO EMPREGO

Faster and saver skyline layout planing

CUSTOS DE IMPLEMENTAçãO (EURO - EUR)

100

CONHECIMENTOS ESPECIFICOS NECESSáRIOS

Knowledge of QGis is necessary

MAIS DETALHES

DESAFIO ABORDADO

5. Melhorar o desempenho económico e ambiental das cadeias de abastecimento florestal

DOMíNIO

Gestão florestal, silvicultura, serviços do ecosistema, resiliencia

TIPO DE SOLUçãO

Ferramentas de consultoria e prestação de serviços a proprientários florestais

PALAVRAS-CHAVE

cable road

skyline

QGis plugin

mountain forest

SOLUçãO DIGITAL

Sim

INOVAçãO

Sim

PAíS DE ORIGEM

Suíça

ESCALA DE APLICAçãO

Continental

ANO DE INíCIO E FIM

2012 - 2021

DADOS DE CONTACTO

PROPRIETáRIO OU AUTOR

Swiss Federal Institute for Forest Research WSL

Leo Bont

leo.bont@wsl.ch

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

REPóRTER

BFH Berne University of Applied Sciences

Thuer Peter

peter.thuer@bfh.ch

REFERENCES AND RESOURCES

WEBSITE PRINCIPAL

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

WEBSITE DO PROJETO

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

RECURSOS

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REFERêNCIA AO PROJETO

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

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

LOGOTIPO DA BOA PRáTICA

Swiss Federal Institute for Forest, Snow and Landscape Research WSL

LOGOTIPO DA ORGANIZAçãO PRINCIPAL

Bern University of Applied Sciences

PROJETO NO âMBITO DO QUAL A FOLHA DE DIVULGAçãO FOI CRIADA

Rosewood 4.0

DATA DE ENTRADA

25 Out 2022

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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY