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.

PODROBNOSTI

PôVOD DREVA
Les

DRUH DREVA
Kmeňové drevo

UVAŽOVANý DRUH DREVA
stemwood and full trees

VPLYV NA ŽIVOTNé PROSTREDIE A BIODIVERZITU
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.

DOPAD NA PRíJMY
Improved profitability of logging in steep terrain

POTENCIáL VYUŽITIA
For forest owners and forest contractors

ROZBOčOVAč
Stredovýchodný uzol

EKONOMICKý VPLYV
Reduced installation cost, improved profitability

MOBILZAčNý POTENCIáL
> 100'000 m³ for Switzerland

POTENCIáL UDRŽATEĽNOSTI - HODNOTA
Veľmi pozitívne

UĽAHčENIE IMPLMENTáCIE
Very easy

UĽAHčENIE IMPLMENTáCIE - HODNOTENIE
Very Easy

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

TYP PODUJATIA, NA KTOROM BOL TENTO BPI PREZENTOVANý
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DOPAD NA ZAMESTNANOSť
Faster and saver skyline layout planing

NáKLADY NA IMPLEMENTáCIU (EURO - €)
100

POTREBA ŠPECIFICKýCH ZNALOSTÍ

Knowledge of QGis is necessary

VIAC INFORMáCIí

RIEšENá VýZVA

5. Zlepšenie hospodárskej a environmentálnej výkonnosti dodávateľských reťazcov v lesníctve

DOMAIN

Lesné hospodárstvo/hospodárska úprava lesa, pestovanie lesa, ekosystémové služby, odolonosť

TYP RIEšENIA

Poradenské a servisné nástroje pre vlastníkov lesov

KľúčOVé SLOVá

cable road

skyline

QGis plugin

mountain forest

DIGITALNE RIEšENIE

áno

INOVáCIE

Áno

KRAJINA PôVODU

Švajčiarsko

ROZSAH APLIKáCIE

Continental

ZAČIATOK A KONIEC ROKA

2012 - 2021

KONTAKTNé úDAJE

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REPORTéR

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REFERENCES AND RESOURCES

HLAVNá WEBSTRáNKA

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

PROJEKTOVá WEBSTRáNKA

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

ZDROJE

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REFERENCIA PROJEKTU

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

LOGO NAJLPEŠEJ PRAXE

LOGO HLAVNEJ ORGANIZáCIE

Swiss Federal Institute for Forest, Snow and Landscape Research WSL

Bern University of Applied Sciences

PROJEKT, V RáMCI KTORéHO BOL TENTO INFORMAčNý PREHľAD VYTVORENý

Rosewood 4.0

DáTUM ODOSLANIA

25 okt 2022

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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY