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.

DETAILS

HERKUNFT DES HOLZES

Wald

ART DES HOLZES

Stammholz

ART DES BETROFFENEN HOLZES

stemwood and full trees

AUSWIRKUNGEN AUF UMWELT UND BIODIVERSITäT

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.

EINKOMMENSEFFEKT

Improved profitability of logging in steep terrain

VERWERTUNGSPOTENZIAL

For forest owners and forest contractors

NABE

Drehscheibe Mitte-Ost

WIRTSCHAFTLICHE AUSWIRKUNGEN

Reduced installation cost, improved profitability

MOBILISIERUNGSPOTENZIAL

> 100'000 m³ for Switzerland

POTENZIAL FüR NACHHALTIGKEIT - WERT

Sehr positiv

LEICHTE IMPLEMENTIERUNG

Very easy

LEICHTE IMPLEMENTIERUNG - BEWERTUNG

Very Easy

WICHTIGE VORAUSSETZUNGEN

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

ART DER VERANSTALTUNG, AUF DER DIESE BPI VORGESTELLT WURDE

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ARBEITSPLATZEFFEKT

Faster and saver skyline layout planing

KOSTEN DER IMPLEMENTIERUNG (EURO - €)

100

SPEZIFISCHES WISSEN ERFORDERLICH

Knowledge of QGis is necessary

MEHR DETAILS

ANGESPROCHENE HERAUSFORDERUNG

5. Verbesserung der wirtschaftlichen und ökologischen Leistung der forstwirtschaftlichen Forstlieferketten

DOMäNE

Waldmanagement, Waldbau, Ökosystemleistungen, Resilienz

ART DER LöSUNG

Beratungs- und Servicetools für Waldbesitzer

SCHLüSSELWöRTER

cable road

skyline

QGis plugin

mountain forest

DIGITALE LöSUNG

Ja

INNOVATION

Ja

HERKUNFTSLAND

Schweiz

UMFANG DER ANWENDUNG

Kontinental

ANFANGS- UND ENDJAHR

2012 - 2021

KONTAKTDATEN

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

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REFERENCES AND RESOURCES

HAUPT-WEBSITE

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

PROJEKT-WEBSITE

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

PROJEKT-REFERENZ

RESSOURCEN

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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 DER BEST PRACTICE

Swiss Federal Institute for Forest, Snow and Landscape Research WSL

LOGO DER HAUPTORGANISATION

Bern University of Applied Sciences

PROJEKT, IN DESSEN RAHMEN DIESES FACTSHEET ERSTELLT WURDE

Rosewood 4.0

BEITRAGSDATUM

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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY

cesefor
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