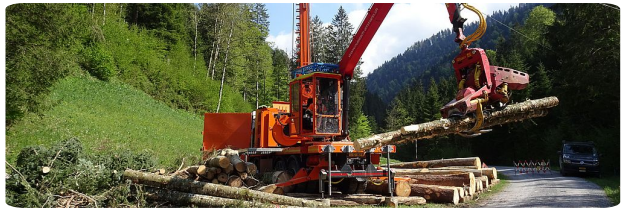
Cable road layout planner



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.

DéTAILS

ORIGINE DU BOIS
Forêt

TYPE DE BOIS
Grume

TYPE DE BOIS CONCERNé
stemwood and full trees

IMPACT SUR L'ENVIRONNEMENT ET LA BIODIVERSITé
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.

EFFET SUR LE REVENU
Improved profitability of logging in steep terrain

POTENTIEL D'EXPLOITATION
For forest owners and forest contractors

HUB
Centre-Est

IMPACT éCONOMIQUE
Reduced installation cost, improved profitability

POTENTIEL DE MOBILISATION
> 100'000 m³ for Switzerland

POTENTIEL DE DURABILITé - VALEUR
Très positif

FACILITé D'IMPLéMENTATION
Very easy

FACILITé D'IMPLéMENTATION - ÉVALUATION
Very Easy

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

TYPE D'éVéNEMENT Où CETTE ICPE A éTé PRéSENTéE
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EFFET SUR L'EMPLOI
Faster and saver skyline layout planing

COûTS D'IMPLéMENTATION (EURO - €)
100

CONNAISSANCES SPéCIFIQUES REQUISES

Knowledge of QGis is necessary

PLUS DE DéTAILS

DéFI CONCERNé

5. Accroître les performances économiques et environnementales de la chaîne logistique forestière

DOMAINE

Getsion forestière, sylviculture, services écosystémiques, résilience

TYPE DE SOLUTION

Conseil, outils de service pour les propriétaires forestiers

MOTS-CLéS

cable road

skyline

QGis plugin

mountain forest

SOLUTION DIGITALE

Oui

INNOVATION

Oui

PAYS D'ORIGINE

Suisse

ECHELLE D'APPLICATION

Continentale

DéBUT ET FIN D'ANNéE

2012 - 2021

INFORMATIONS DE CONTACT

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REFERENCES AND RESOURCES

SITE WEB PRINCIPAL

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

SITE WEB DU PROJET

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

RéFéRENCE DU PROJET

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

RESSOURCES

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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

LOGO DE LA BONNE PRATIQUE

Swiss Federal Institute for Forest, Snow and Landscape Research WSL

LOGO DE L'ORGANISATION PRINCIPALE

Bern University of Applied Sciences

PROJET SOUS LEQUEL CETTE FICHE D'INFORMATION A éTé CRééE

Rosewood 4.0

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