

# 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.

## DETALJER

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### VEDENS URSPRUNG

Skog

### TRÄTYP

Rundvirke

### TYP AV TRÄ

stemwood and full trees

### PÅVERKAN PÅ MILJÖ & BIOLOGISK MÅNGFALD

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.

### EKONOMISK EFFEKT

Improved profitability of logging in steep terrain

### KOMMERSIELL POTENTIAL

For forest owners and forest contractors

### NAV

Centrala och östra navet

### EKONOMISK PÅVERKAN

Reduced installation cost, improved profitability

### MOBILISERINGSPOTENTIAL

> 100'000 m<sup>3</sup> for Switzerland

### HÅLLBARHETS POTENTIAL - VÄRDE

Mycket positiv

### ENKEL IMPLEMENTERING

Very easy

### ENKEL IMPLEMENTERING - UTVÄRDERING

Very Easy

### NYCKEL FÖRUTSÄTTNINGAR

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

### TYP AV EVENEMANG DÄR DENNA BPI HAR PRESENTERATS

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### EFFEKT ANTAL ANSTÄLLDA

Faster and saver skyline layout planing

### KOSTNADER FÖR IMPLEMENTERING (EURO - €)

100

## SPECIFIKA KUNSKAPSBEHOV

Knowledge of QGis is necessary

## MER INFORMATION

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### UTMANING SOM ADRESSERAS

5. Förbättra ekonomisk och miljömässig prestanda för skogsförsörjningskedjor

### DOMÄN

Skogsförvaltning, skogskjötsel, ekosystemtjänster

### TYPE AV LÖSNING

Rådgivning og serviceverktyg för skogsägare

### NYCKELORD

cable road

skyline

QGis plugin

mountain forest

### DIGITAL LÖSNING

Ja

### INNOVASION

Ja

### UPPHOVSLAND

Schweiz

### POTENTIAL

kontinental

### START OCH SLUTÅR

2012 - 2021

## KONTAKT INFORMATION

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### ÄGARE ELLER FÖRFATTARE

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### RAPPORTÖR

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## REFERENCES AND RESOURCES

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### HEMSIDA (HUVUDSIDA)

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

### PROJEKTETS HEMSIDA

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

### PROJEKTRREFERENS

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

### RESURSER

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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](https://www.dora.lib4ri.ch/wsl/islandora/object/wsl%3A30255/datastream/PDF/Bont-2022-Tensile_forces_and_defl)

## LOGO FÖR BEST PRACTICE

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Swiss Federal Institute for Forest,  
Snow and Landscape Research WSL

## LOGO, HUVUDORGANISATION

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Bern University  
of Applied Sciences

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## PROJEKT SOM DETTA FACTSHEET SKAPATS INOM

Rosewood 4.0

## DATUM FÖR INLÄGG

25 okt 2022

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## A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY

