

# 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.

## DETALLES

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### ORIGEN DE LA MADERA

Bosque

### TIPO DE MADERA

Madera en rollo

### TIPO DE MADERA AFECTADA

stemwood and full trees

### IMPACTO EN EL MEDIO AMBIENTE Y LA BIODIVERSIDAD

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.

### EFECTO SOBRE LOS INGRESOS

Improved profitability of logging in steep terrain

### POTENCIAL DE EXPLOTACIÓN

For forest owners and forest contractors

### HUB

Eje Centro-Este

### IMPACTO ECONÓMICO

Reduced installation cost, improved profitability

### POTENCIAL DE MOVILIZACIÓN

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

### POTENCIAL DE SOSTENIBILIDAD - VALOR

Muy positivo

### FACILIDAD DE APLICACIÓN

Very easy

### FACILIDAD DE IMPLEMENTACIÓN - EVALUACIÓN

Very Easy

### PREREQUISITOS CLAVE

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

### TIPO DE EVENTO EN EL QUE SE HA PRESENTADO ESTA IFS

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### EFECTO SOBRE EL EMPLEO

Faster and saver skyline layout planing

### COSTES DE IMPLEMENTACIÓN (EURO - €)

100

## CONOCIMIENTOS ESPECÍFICOS NECESARIOS

Knowledge of QGis is necessary

## Más DETALLES

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### RETO ABORDADO

5. Mejorar el rendimiento económico y medioambiental de las cadenas de suministro forestal

### PALABRAS CLAVE

cable road  
skyline  
Qgis plugin  
mountain forest

### PAÍS DE ORIGEN

Suiza

### DOMINIO

Gestión forestal, silvicultura, servicios ecosistémicos, resiliencia

### SOLUCIÓN DIGITAL

Sí

### ESCALA DE APLICACIÓN

Continental

### TIPO DE SOLUCIÓN

Herramientas de asesoramiento y servicios para propietarios forestales

### INNOVACIÓN

Si

### AÑO DE INICIO Y FIN

2012 - 2021

## DATOS DE CONTACTO

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### PROPIETARIO O AUTOR

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## REFERENCES AND RESOURCES

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### SITIO WEB PRINCIPAL

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

### SITIO WEB DEL PROYECTO

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

### REFERENCIA DEL PROYECTO

### RECURSOS

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Bont, L. G., Moll, P. E., Ramstein, L., Frutig, F., Heinemann, 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](https://www.dora.lib4ri.ch/wsl/islandora/object/wsl%3A30255/datastream/PDF/Bont-2022-Tensile_forces_and_defl)

LOGO DE LA BUENA PRÁCTICA



Swiss Federal Institute for Forest, Snow and Landscape Research WSL

LOGOTIPO DE LA ORGANIZACIÓN PRINCIPAL



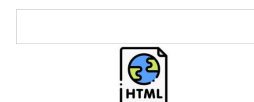
Bern University of Applied Sciences

PROYECTO BAJO EL QUE SE HA CREADO ESTA FICHA

Rosewood 4.0

FECHA DE MENSAJE

25 Oct 2022



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 862681

A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY

