

Railway Vegetation Management Tool (IVEG)



In order to ensure safe railway operation, SBB Infrastructure, a division of Swiss Federal Railways (SBB), makes use of modern GIS applications to monitor and manage the vegetation along all of SBB's railway lines.

Safe railway operation depends on the continuous monitoring and clearing of vegetation along railway lines. SBB Infrastructure uses a special Railway Vegetation Management Tool (IVEG) to monitor and manage the clearance of vegetation along the railways in its network.

Completely digitized workflow

Vegetation status assessments have so far been carried out without the support of mobile digital tools. The data gathered in the field needs to be evaluated in time-consuming office processes. This work, including cost accounting, is now to be simplified by the introduction of a completely digitized process that is based on a newly developed web application, a mobile app for iPad and remote sensing data that were gathered and evaluated expressly for the system in order to enable the detection of any encroachment of vegetation on the structure gauge.

All of the information at a glance

Both of the GIS applications display the relevant data in their spatial context so that it can be used more efficiently by SBB specialists. Appropriate background maps are also available. The tool's operators in the field use the mobile app to record current states of vegetation growth or encroachment and use this information to propose suitable measures whenever

Client

Swiss Federal Railways (SBB), IT;
Infrastructure and Natural Hazards
(Project IVEG)

Facts

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Project Country Switzerland

Contact persons

Jürg Mannes
juerg.mannes@ebp.ch

Alex Graf
alex.graf@ebp.ch

necessary. In order to ensure their ability to continue using the application in the absence of wireless reception, the mobile app is also capable of operating in offline mode. After their synchronization, the data are immediately available in the web application to all authorized users.



Planning projects and awarding contracts

Based on their status assessments and the measures they deem appropriate, SBB specialists decide which measures are to be carried out at which locations in the current year. In doing so, they take into account the urgency of the measures and the available resources, as well as other factors. The work is then completed by the subcontractors they commission to do the work. The web application supports the tendering process, project monitoring and subcontractor coordination via suitable functions and a link to SAP.

Project services provided by EBP

In the context of the project, EBP is acting as a consultant to SBB in all matters relating to the GIS architecture. Working together with SBB, we are currently developing the new web application for the railway vegetation management tool and realizing the interfaces to all accompanying systems. The applications are based on Esri ArcGIS. The components include ArcGIS JavaScript API, AngularJS and Bootstrap. The data are stored in an Oracle database, and FME is used for the interfaces. The system is to be operated in SBB's geographic data infrastructure.