PROJECT

SMART NOISE

Holistic evaluation and analysis process for optimized LifeCycle management of noise barriers

Holistischer Bewertungs- und Analyseprozess für optimiertes LifeCycle-Management von Lärmschutzwänden

Funding: National (Austria)
Duration: Sep 2018 - Apr 2021
Status: Ongoing

Objectives:
The maintenance of noise protection walls is an essential task in the context asset management. A systematic approach for the collection and assessment of constructive and acoustic characteristics enables an objective and sustainable maintenance planning and an adequate selection procedure for maintenance treatments. Although, basics for the assessment of noise protection walls are partially available in Austria, an optimized life-cycle management solution has not been applied in a comprehensive and systematic way until yet. Since 2005, noise protection wall materials are being defined through CE identification. In addition, the proper assessment regulations can be taken from the Austrian standards ÖNORM and the actual RVS and RVE guidelines. Thus, the main objective of SMART NOISE is the development and practical testing of a holistic assessment procedure as a part of asset management for an optimized life-cycle management of noise protection walls, which are constructed of different materials (especially timber elements).

In this context, different models and modules (catalogue of distress pictures, treatment catalogue, performance prediction models, etc.) will be developed, embedded into appropriate procedures (LCA, LCCA, etc.) and applied in practice on test-sections using a prototype approach. The results of SMART NOISE can be summarized as follows:

- Presentation and assessment of basics.
- Catalogue of distress pictures and explanations.
- Performance indicators.
- Catalogue of maintenance treatments.
- Performance prediction models.
- Models to describe the effects on users and operation.
- Selection of adequate procedures for the life-cycle assessment.
- Combination of procedures and models to a holistic assessment process.
- Development of an executable algorithm based on the holistic assessment process as a part of an asset management system (prototype SMART NOISE LSW).
- Application of the system on test-sections with noise protection walls of timber materials.

Because of the integration of this asset category into an objective and life-cycle related decision process SMART NOISE leads to a technology leap in the context asset management enhancement of traffic infrastructure assets.

Parent Programmes:
MQTF - Mobility of the Future

Institute type: Public institution
Institute name: FFG - Die Österreichische Forschungsförderungsgesellschaft
Funding type: Public (national/regional/local)
Other programmes: VIF 2017

Lead Organisation:
Pms-Consult, Ingenieurbüro für Verkehrswesen und Infrastrukturplanung Gmbh
Partner Organisations:

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Technologies:

- Noise Reduction Devices for road and rail noise

Development phase: Research/Invention

STRIA Roadmaps: Infrastructure

Transport mode: Multimodal transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Societal/Economic issues, Environmental/Emissions

Geo-spatial type: Infrastructure Node