



Linear infrastructure efficiency improvement by automated learning and optimized predictive maintenance techniques

INFRALERT Deliverable D6.3

Summary Sheet

DELIVERABLE TITLE:

D6.3 Report on a tool for strategic decision assessment

WORK PACKAGE:

WP6. Smart operation and maintenance decision support

- **T6.6** Compilation of a tool for the assessment of strategic decisions

Deliverable Leader:

FHG

Contributing Partners:

CEM

EXECUTIVE SUMMARY:

INFRALERT is a European Horizon 2020 project whose aim is to develop an expert-based information system to support and automate linear asset infrastructure management from measurement to maintenance. This enfoldes the collection, storage and analysis of inspection data, the deduction of interventions to keep the performance of transport networks in optimal condition, and the optimal planning of maintenance interventions. The results also facilitate the assessment of new construction strategic decisions.

For this purpose, in WP6 a concept for condition- and risk-based maintenance and interventions planning is developed, which will be used within a framework for the smart decision support. Furthermore, in Tasks 6.3 and 6.4 planning tools to support decision making in tactical and operational levels are developed. As a by-product of these decision support tools it will be possible to compile a tool for applying strategies for the decision making of new construction projects and maintenance policies in long-term scenarios.

In this document we provide a theoretical framework for strategic planning which is based on the eIMS and its components, in particular on the module for tactical planning and for Life Cycle Cost analysis. As a summary, the strategic framework is as follows:

- Starting point are the existing, developed tools for tactical planning and the LCC analysis model.
- The 5-year tactical planning can be applied – separately or even in a rolling time horizon - to compare a selected set of predefined parameters (so-called policy), e.g. yearly budget allocations, quality thresholds, which are input parameters for the tactical model.
- The resulting KPIs in the long-term can be compared to each other per defined policy in order to select the "optimal" one.

We applied and explained this framework exemplarily on three concrete practical use cases for strategic planning. For each of the example scenarios we described the use of the eIMS to support long-term,

strategic decision-making.

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