POSTER SESSION

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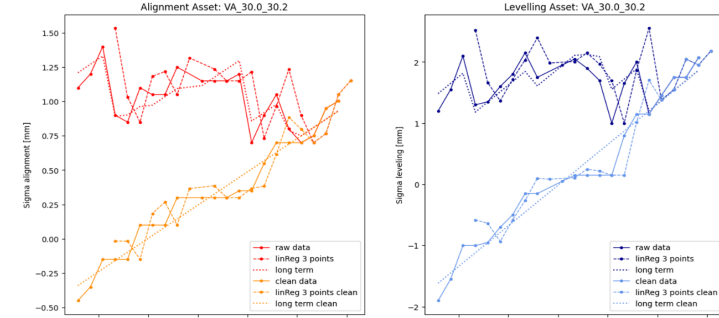
Strategical and tactical asset management for the North Line in Portugal

AIM OF THE PLANNING TOOL

The tool presented in this paper attempts to bridge the gap between the top management level of a company and maintenance planning, by providing a way to support strategic decisions with a clear evaluation of what would be required at the tactical level. The tool will enable the infrastructure manager to estimate the consequences of strategic decisions.
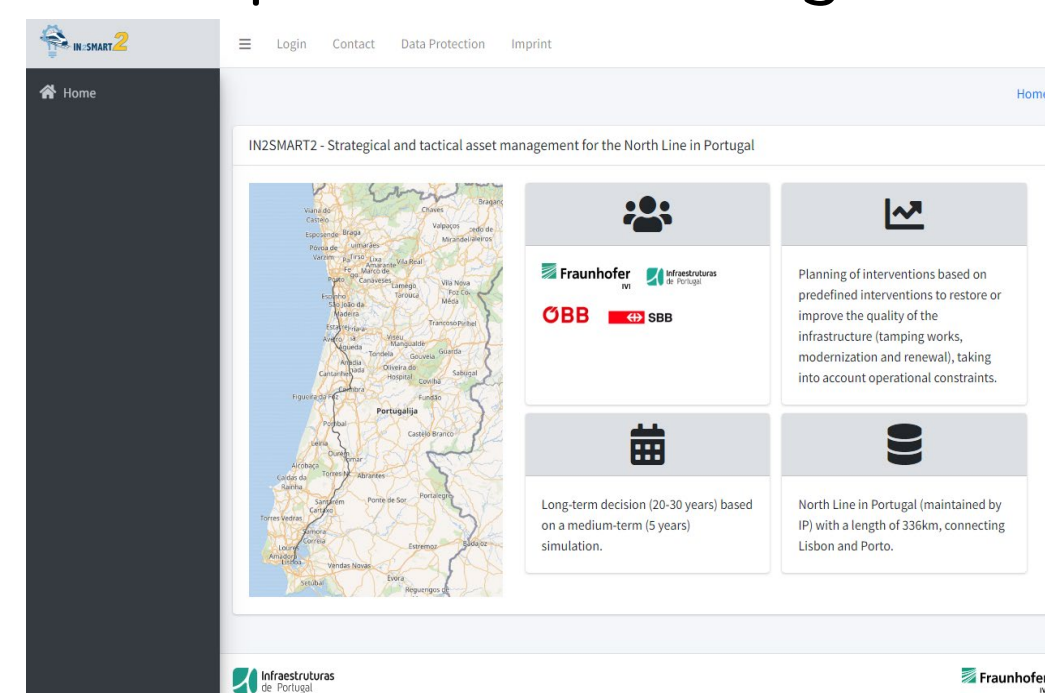
It supports the user to answer questions like "If we have a reduction of the total budget of 10% are we still able to reach the requested quality level?".

SYSTEM ARCHITECTURE

To develop a strategic decision support tool a simulation-based ansatz on the tactical planning level has been chosen.

DATA REQUIREMENTS

The database provided by IP contains the minimum requirements to be able to use the tool and consists of:

- Asset register (description of existing track assets)
- Inspection data (inspection data time series)
- Maintenance & renewal records
- Intervention database (details and rules how the interventions should be planned)
- Operational constraints (track availability, speed limits, etc. to be respected)

TACTICAL PLANNING

Preparation steps:
- Simulation of asset degradation
- Determination of the associated degradation level
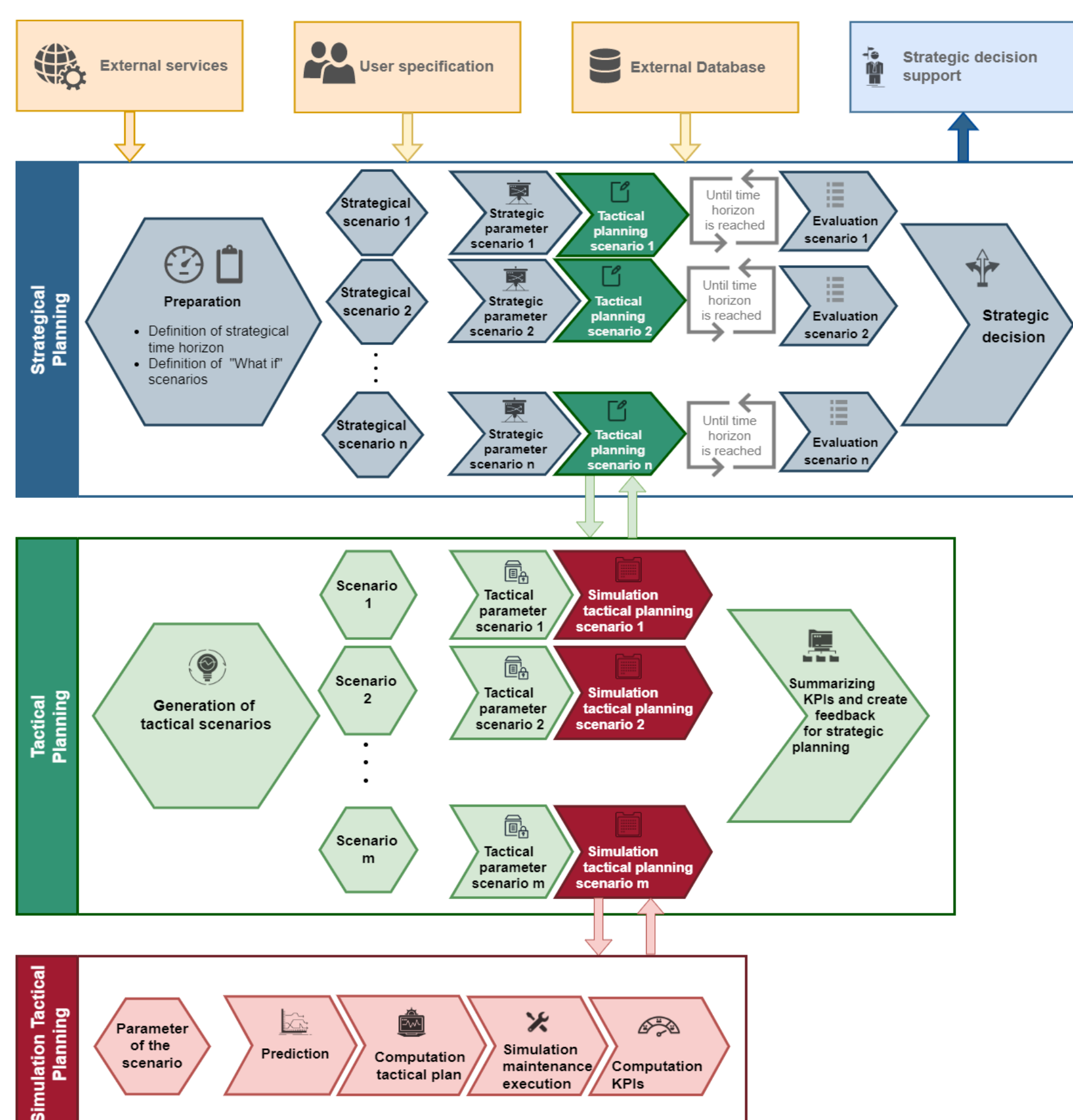- Analysis of the track geometry parameter after tamping

Based on this investigations and further parameters of the intervention types itself like cost per km, production rate per day and working hours the tactical plan can be computed and its execution simulated.

STRATEGICAL PLANNING

To assess the long-term effects of strategic decisions, several tactical planning processes are carried out in succession. Consequently, tactical planning parameters are derived based on the chosen strategic scenario.

General information

Simulation horizon	20.0 years
Total costs for maintenance	439156592.42 €
Time used for maintenance	837.41 days
Percentage of segments in a good status	36.73 %
Percentage of segments in a satisfactory status	71.9 %
Percentage of segments where attention is required	48.98 %
Percentage of segments in an unsatisfactory status	14.29 %

KPI's per intervention Type

Intervention type	Costs	Time used for maintenance
Tamping (TRE 5)	72664792.42 €	600.0 days
Asset renewal (TRIA)	193543000.0 €	139.79 days
Asset modernization (TMDA)	172948800.0 €	97.62 days

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