# System-wide Approach to Asset Management

## Background

Railway infrastructure asset base:

❖ geographically dispersed
❖ very diverse (age, type)

Asset management decisions based on the **whole-system** view and **whole lifecycle** values can offer a means for achieving the most benefits in terms of infrastructure outputs

## Objective

Development of the framework for construction of the **multi-asset system** lifecycle **model** that can predict:

❖ the **state of the infrastructure system** based on:
  • states of individual assets
  • availability of resources
  • interactions between asset maintenance activities
  • availability of access to infrastructure
❖ the **impact on railway performance**:
  • infrastructure dependability
  • train services interruption
  • costs
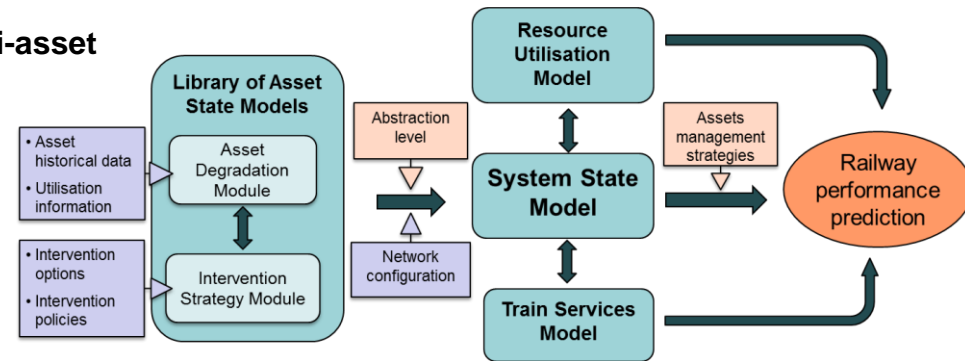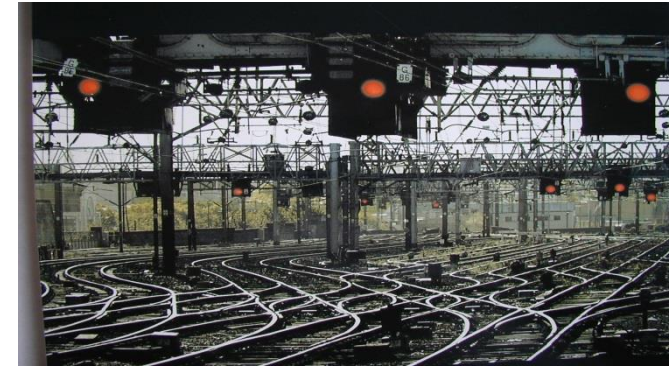
## Methodology

❖ **Petri net** modelling technique

❖ **Monte Carlo** simulations







Total Downtime of Infrastructure Elements