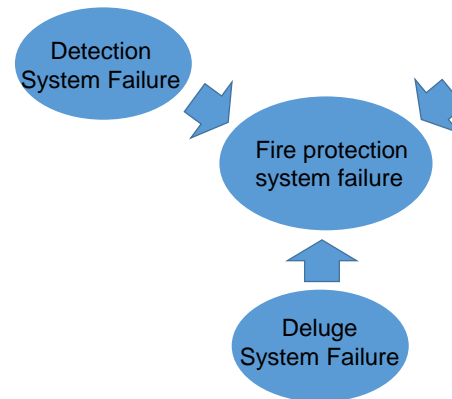# Underground Railway Station Fire Model

Background

Underground station fires have the potential to lead to hazardous situations. Automatic detection, suppression and alarm systems help reduce the risk of a large station fire.
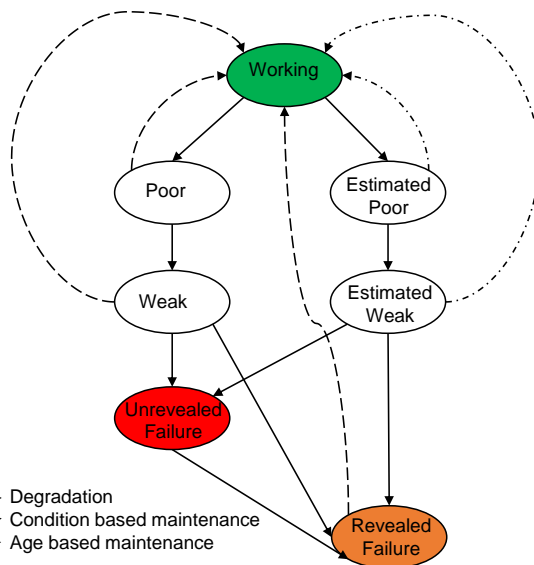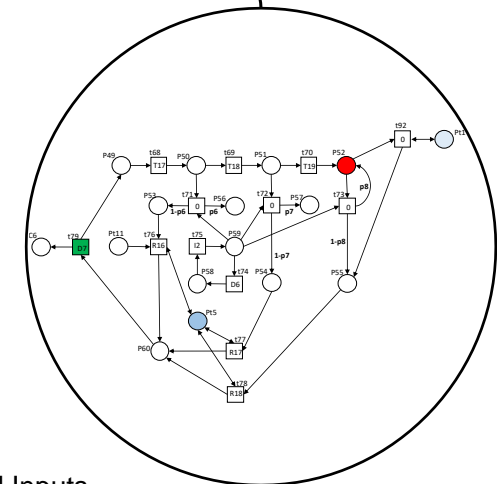
Objective

Develop a model to predict the likelihood of the undetected failures of automatic fire detection, suppression and alarm systems.

The model is split into three modules: Detection system, Alarm system and Deluge system.

Within each system the individual components are modelled.

Components with revealed and unrevealed conditions are included

Model Inputs

- Estimated distributions for component state changes
- Maintenance intervals
- Inspection intervals

Model Outputs

- Probability of protection system failure within a required time interval
- Cost of interventions