Overview

This project consists of two files:

1. **`verification.xml`** – used for formal verification.
2. **`optimization.xml`** – used for strategy synthesis and SFF optimization.

Verification

We included a **deadlock condition** in **`verification.xml`** that stops the system after **200 minutes** to limit state space exploration. To reproduce the results presented in **Table 1** of the paper:

1. Open **`verification.xml`** in Uppaal.
2. Run the provided queries to obtain verification results.

Optimization

`optimization.xml` is the modified version of **`verification.xml`**. To perform **strategy synthesis and fault detection analysis**, we introduce some adjustments in the **`verification.xml`** model that are necessary for the working of Stratego:

- Deadlock condition removed.
- Transitions marked as uncontrollable if they are not directly controlled by Stratego.
- Random weights assigned to locations without invariants or untriggered transitions.

Running Optimization

1. Open `optimization.xml` in Uppaal Stratego.
2. Run the strategy query to synthesize a strategy.
3. Analyze the results for detected and undetected faults, both with and without strategy.