

COM 6854: Verification and Testing

Exercise Sheet 3

Exercise 1: The Regent Court building of the University of Sheffield has 4 floors that are connected by an elevator. Give a simplistic model of this elevator using three components:

1. the cabin that can either be sent up or down,
2. doors that can either be opened or closed,
3. the controller that opens and closes doors and moves the cabin up and down.

The environment is of course somewhat neglected...

Give a LTS for each component and a set of reasonable synchronisation vectors for the compound system. How can you verify that the following system properties hold on the compound LTS?

1. No door is ever open when the cabin is at a different floor.
2. The cabin cannot move while a door is open.

Discuss in detail how these properties should be evaluated on the LTS.