Software Engineering Seminar (WS 2015)

Environmental/Goal Change and Control Update

Description
In the context of reactive systems, it is usual to have requirements change, or environments change. In those situations, it is desirable that any updates that are necessary to comply with the new situation are made robustly, and ideally in a hot-swap mode, that is, without noticeable downtime. This may be further complicated by conflicting specifications of old and new requirements.

There have been two main branches of thought towards solving this problem. The first approach [1, 2] entails producing an initial system that contains “safe” states for which change is planned ahead. Changes are only realised when on these states.

The second line of research [3, 4] entails extensions to specification logics that allow for update objectives. However, no automated procedure for system update have been put forth yet.

The student is expected to produce a report detailing each approach and pointing out both strengths and weaknesses for each one.

References


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