A-STPA (Automated STPA)

A-STPA is an open tool to help transform STPA (Systems-Theoretic Process Analysis) to an executable STPA which automates the activities of STPA.

Context: A-STPA is an open-source tool based on the Eclipse platform which is developed as a student project in the software engineering programme of the University of Stuttgart. The student project started in April 2013 and will finish in February 2014. Our team consisted of 9 students and 3 teaching assistants.

Research Objectives

The overall objective of our research is to better understand hazard analysis with STPA and improve its application in practice. In this paper, we concentrate on providing tool support to make using STPA more efficient. Hence, the goal is to develop tool support to automate the STPA approach as far as possible.

Main Functions of A-STPA

- Edit the fundamentals of the analysis
- Link the conducted information during step 1 to the other components in the next steps such as the hazards link to the accidents and safety constraints which are derived from the hazards.
- Draw the control structure diagram
- Edit tables such as the control actions table, unsafe control action table and causal factors table
- Augment the control structure diagram with a process model
- Export and import the STPA hazard analysis results

A-STPA Structure

A-STPA User Interfaces/Views

A-STPA Website

http://www.iste.uni-stuttgart.de/se/werkzeuge/a-stpa.html

A-STPA is developed by:

Students Team: Aliaksei Babkovich, Lukas Balzer, Adam Grahovac, Jarkko Heidenwag, Benedikt Markt, Jaqueline Patzek, Sebastian Sieber, Fabian Toth and Patrick Wickenhaeuser

Supervisors: Ivan Bogicevic, Daniel Kulesz and Jasmin Ramadani

Customer& Contact Person: Asim Abdulkhaleq