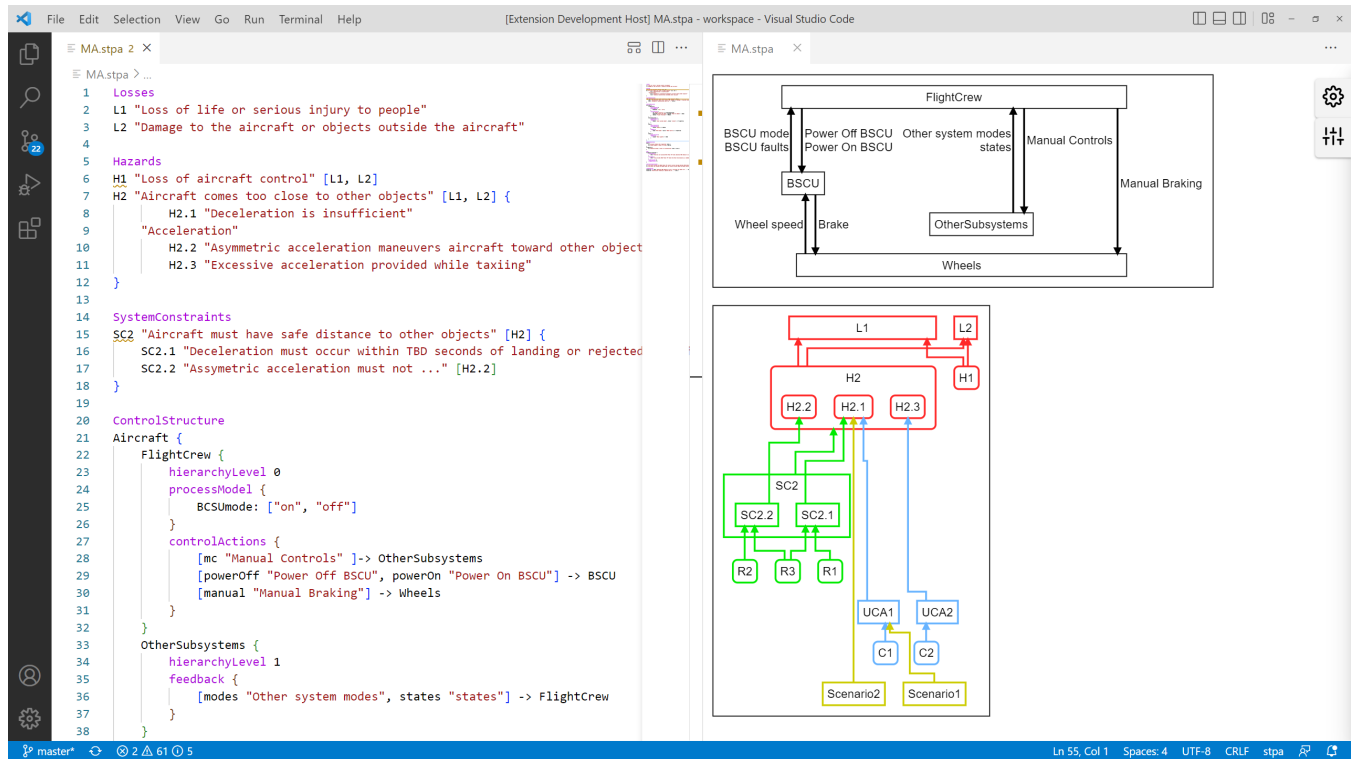


Reevaluation Suggestions in System-Theoretic Process Analysis

System-Theoretic Process Analysis (STPA) is a hazard analysis technique for which a Domain Specific Language (DSL) exists as a VS Code Extension. Based on the definitions in the editor, diagrams are generated automatically and shown alongside the editor. The components of STPA that the user can define in the DSL are connected with each other. However, STPA is not a linear process, meaning components can be changed later. If this happens, the dependent components may have to be updated too. The reevaluation suggestions should help the users to find all components that must be updated.

STPA VS Code Extension



(kieler/stpa (github.com))

Goals

- Develop and implement a concept for an editor guide that provides reevaluation suggestions
- Evaluate the user experience

Scope

Bachelor's Thesis

Related Work/Literature

- N. Leveson, J. P. Thomas, *STPA Handbook*. In MIT Partnership for Systems Approaches to Safety and Security (PSASS), 2018. (http://psas.scripts.mit.edu/home/get_file.php?name=STPA_handbook.pdf)
- J. Petzold, *A Textual Domain Specific Language for System-Theoretic Process Analysis*. Master Thesis, Department of Computer Science, Kiel University, 2022. (<https://rtsys.informatik.uni-kiel.de/~biblio/downloads/theses/jet-mt.pdf>)

Involved Languages/Technologies

- TypeScript (<https://www.typescriptlang.org/>)
- VS Code API (<https://code.visualstudio.com/api/references/vscode-api>)

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