Discussion on STPA validation, replicability and analyst bias

2021 MIT STAMP/STPA Workshop

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DAAD
STPA validation, replicability and analyst bias
Previous work and context

Main take-aways:
- Safety & Security tend to be intertwined
- Path for legal framework change indicated
- Process Models & Contraints: easily simulated
- **Assumptions** are essential to ensure **validity** of the analysis
STPA validation, replicability and analyst bias

Analyst bias

STPA includes input from the from both method- and topic-expert’s perspectives and experiences

Beware of the possibility of analyst bias

STPA validation, replicability and analyst bias
Replicability study

for our application “STPA applied for Safety, Security and Privacy Issues in Smart Airport Terminal New Concepts”

A Master’s student in our institute with similar background was given:

- **Introduction**: our STPA approach and Uniform Terminal Areas (UTAs)
- **Materials**: tutorials and examples of STPA and on our case study
- **Goal**: develop an STPA analysis for safety, security and privacy issues in the use of biometrics for processing of passengers at airport terminals with UTAs
- **Flow up**: Discussion of questions and review of the various development steps for ca. 4 months
STPA validation, replicability and analyst bias
Replicability study

Relatively similar:
• control actions and constraints
• causal scenarios

Valuable intel obtained:
• different ways to model system and interactions
• levels of detail
• some different assumptions
• implied assumptions identified
• Original analysis enhanced
• Next step: Expert interviews
We can infer from this experience that:

For a different group of analysts to **properly replicate an STPA analysis** and its results. They have to **understand the assumptions behind** the analysis!

- Avoid **analyst bias** though clear assumptions
- **Validity** of the results is enhanced with assumptions
- Either public or confidential projects
- Essential also for **leading indicators**
Thank you!

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