

# The 3<sup>rd</sup> STAMP Workshop in Japan

## Title

CAST Analysis for Psychological Safety of a Software Maintenance Project Team

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## Abstract

As indicated in Google's Aristotle project and Anzeneering of modern agile, psychological safety is considered important in software development projects and processes. In this presentation, we will introduce an example of CAST analysis to recover psychological safety in a software maintenance project team, where the key stakeholder organizations are the subcontract company in addition to the orderer and the primary contractor. In the domain of this case, multiple maintenance projects are executed concurrently. When the primary contractor send the work request to the subcontractor, the primary contractor carefully investigated the influence of the maintenance work and clearly specify the parts to be added and modified in the project. In this case, unexpected modifications outside of the specified range were made in the deliverables, and the deliverables were delivered from the subcontract company without testing the unintendedly modified parts. In the first survey conducted in response to this unintended event, a conclusion was reported that it was caused by a simple lack of skill and knowledge in the subcontractor. As a result, the trust from the primary contractor to the subcontractor collapsed, psychological safety among the stakeholder organizations of the project was compromised. The top project leader questioned such investigation results, and he modeled the situation with STAMP and analyzed it with CAST to recover psychological safety. The CAST analysis revealed that the checking mechanism that should originally function was not functioning due to inappropriate assumptions of stakeholders including the primary contractor side, and the trust relationship between the primary contractor and the subcontractor was restored.

## Keywords

- (1) Process improvement
- (2) System theory
- (3) Accident model
- (4) Tacit knowledge
- (5) Consensus building