

ABSTRACT

Existing Assurance Case modeling tools still face limitations in terms of efficiency and user-friendliness, particularly in automating diagram creation. To address these issues, this study designed the interface of the Assurance Case Playground (ACP) using the Goal-Directed Design (GDD) method to meet users' needs and goals. The design was then evaluated using a combination of the System Usability Scale (SUS) and the Think-Aloud Protocol (TAP).

The evaluation results showed a SUS score of 80.75 with a grade of B, classified as "Excellent," indicating a high level of usability. TAP testing revealed that most participants successfully completed the predefined task scenarios and gave positive feedback on the clean interface layout, icon clarity, readability, and more. Despite some areas for improvement, users were still able to use the modeling tool effectively.

These findings demonstrate that applying the GDD method is effective in producing an ACP interface design that meets user needs and supports users in creating Assurance Case diagrams quickly and efficiently.

Keywords: *assurance case, goal-directed design , system usability scale, think aloud protocol, user interface design, modelling tool.*