ABSTRACT

An assurance case is a means of facilitating communication, analysis and information exchange between stackholders involved in the system security and application development process, depending on its purpose and context. There are several frameworks that can be used when creating assurance cases, one of which is the Structured Assurance Case Metamodel Notation (SACMN), which has a more expressive notation than other frameworks. When creating an assurance case, it is necessary to consider the ArgumentGroup, where all elements are categorised as a group. The SACMN ArgumentGroup has been represented visually using dotted lines and there are still shortcomings in the process of understanding assurance cases and their visualisation. Thus, the opacity- based graphical highlighting technique is an alternative in visually representing the ArgumentGroup by manipulating the opacity on the notation of relevant or irrelevant elements. Therefore, this research was conducted with the aim of observing users in terms of speed, effectiveness and accuracy in answering statements with perceived usefulness, perceived ease of use of ArgumentGroup in SACMN applications and development of existing SACMN applications. Based on the research conducted, it can be seen that the results of the questionnaire testing in relation to the user statements of ArgumentGroup in terms of perceived usefulness and perceived ease of use have a value of 0.705 and 0.727, which are included in the reliable category as a valid questionnaire. With a rel iable and valid questionnaire, the results obtained from users using opacity highlights have better scores than dotted lines and can be categorised as successful for adoption as a visual representation of ArgumentGroup SACMN with the highest scores of 25 and 20.

Keywords: Assurance Case, Opacity, Structured Assurance Case Metamodel Notation, ArgumentGroup.