I. Introduction

The mismatch between the Use Case Diagram and the Use Case Scenario is a significant issue in the software development process. This discrepancy can occur due to differences in interpretation within an artifact and a lack of validity and reliability between the software developers and client needs. This research is part of a series of activities in a software development phase regarding identifying a Causal Loop variable named Idvar4CL, which is also used as a case study. In the software development process documentation, the Use Case Scenario formation has shown inconsistencies in the rules for forming it with the Use Case Diagram. In creating the Use Case Scenario, alignment between the Requirement Elicitation and the Use Case Diagram is essential to ensure that the resulting software meets client needs [1].

In the formation of Use Case Scenarios, an activity will first be carried out to identify needs through a Requirement Elicitation activity by creating a series of questionnaires or interviews. The results of this Requirement Elicitation can serve as a reference in identifying Requirement Specifications [2]. Additionally, Functional Requirements and Non-Functional Requirements are identified as a reference in creating Use Case Diagrams and Use Case Scenarios [3].

The relationship between Functional Requirements and Use Case Diagrams will be measured to ensure client needs are aligned with the development stages undertaken [3] [4]. Before carrying out alignment measurements, Text Pre-Processing activities will be carried out on the Use Case Scenario and Use Case Diagram [5]. The process of measuring alignment between Use Case Scenarios and Use Case Diagrams can be done using semantic text [5].

This research aims to create a tabulation of Use Case Scenarios based on the Use Case Diagram through a semantic text process. To achieve this goal, several specific activities generate new insights and contributions in the development of applications for this case study, namely:

- Conducting data analysis on Functional Requirements and Use Case Diagrams.
- Developing a Use Case Scenario resulting in tabulated formats containing information: identifier, steps, and conditions.
- Measuring the validity and reliability levels for the generated artefacts using a value range from 0 to 1.
- The assessment results from the artefact creation are used to improve the coherence of the relationships between artefacts in the Requirement Specification.