

Validation Report

Validation is used to confirm that the requirements which have been created align with the system being created for the stakeholders. The validation process ensures the requirements capture stakeholder needs. One way this can happen early in the requirements process is including the stakeholders in the verification process for the stakeholder requirements. This gives them a chance to confirm the requirements meet their expectations, or to give feedback on how they could be modified, or if they do not belong at all. At that point, the client needs to be updated on the feedback. Validation happens at more than one point during the requirements process, but this needs to be stressed as early as possible so no resources are committed to implementing the requirements which would need to be modified later, possibly causing complications for other portions of the overall system which were dependent. The how of the validation process depends on what best fits the situation, but the most common means are reviews, simulations, and prototyping. These will depend on many factors such as what previous steps have been made (it would be a bad idea to build a prototype if there has been no previous validation at all) and the availability of the stakeholders. Different levels of validation may be necessary, such as running the requirements by the stakeholders and explaining the developer's understanding of what they want, then creating a model or prototype to visually explain the requirement. This is because the stakeholder may say one thing, but actually mean something else in practice.

As mentioned, some of the validation methods are reviews and inspections, prototyping, and acceptance tests. Reviews and inspections are a useful first step in the validation process because not too much more than the creation of the requirements themselves need to be made. Allowing the corresponding stakeholders to look over the requirements themselves before they are implemented into some other validation process, such as prototyping can save time for the developers and also for the client, so they aren't needing to look through multiple prototypes, which could potentially differ greatly based off of the accuracy of the requirement being validated. Prototyping is useful as a visual aid to go along with the logic being described in the requirement being validated. For each requirement included in the prototype, the stakeholder can see its design or function, rather than try to form a mental comprehension of what the requirement is describing. Acceptance tests are another form of validation which when planning, need to be broken down into sections and scope. When the low-level scope has been completed and the results are satisfactory, then the more complex scenarios can be tested. The acceptance test plan can be described by these attributes: Introduction, Acceptance Test Category, Operation Environment, Test Case ID, Test Title, Test Objective, Test Procedure, Test Schedule, and Resources. These tests can reach one of the three conclusions which are: Completely accepted as delivered, accept the system with specified modifications (to then, upon completion, another iteration of the acceptance test), or not accepted at all.

Behavioral requirements, by definition, are closely involving the stakeholders and their interactions with the system, so the validation process will most easily target these types of requirements. When a stakeholder is met with a functional requirement, a lot of technical concepts are involved, usually making them more difficult to validate in an early iteration prototype or test. Behavioral requirements, usually described by use cases, are easier to validate early on in the development process due to their self-evident explanations given from the methods described earlier.

Memo: Throughout the requirements gathering process between myself and TSPA, they have been in contact through every iteration (activity) and have either confirmed or provided a modification to be made, which was then later confirmed. Upon completion of the current set of requirements, as of 4/21/2020, a comprehensive list of requirements, rules, and constraints were sent to Jessica Wright, an administrator of TSPA to provide a second round of validation. The kind words provided in regard to the requirements were that they were "...perfect from our understanding of what is proposed to be created". From here, these requirements are to be processed into development, and upon completion of each release, will confirm again that in practice, they are as what was expected.

Regarding the specified needs, safety was taken into high consideration throughout the creation and validation of every requirement, business rule, and constraint. The next portion with respect to these needs would be the consideration to not only mesh seamlessly with day-to-day operations, but to also enhance the experience for each stakeholder. These considerations were at the pinnacle of every decision made in order to abide by engineering ethics and guidelines.