

REQUIREMENT DEVELOPMENT PROCESS

Văn Lang Admissions

# Revision Table

|  |  |  |  |
| --- | --- | --- | --- |
| Author | Date | Reason for changes | Version |
| Hai Tran | 1/11/2016 | Initial the document | 1.0 |
|  |  |  |  |

Contents

[Revision Table 1](#_Toc471983455)

[1. Process 3](#_Toc471983456)

[1.1. Process purpose 3](#_Toc471983457)

[1.2. Process activities / steps 3](#_Toc471983458)

[1.3. Activities description 5](#_Toc471983459)

[2. Role and responsibility 6](#_Toc471983460)

[3. Tools and methods 7](#_Toc471983461)

[4. Goal, question, metric: 7](#_Toc471983462)

[4.1. Goal: 7](#_Toc471983463)

[4.2. Question: 8](#_Toc471983464)

[4.3. Metrics: 8](#_Toc471983465)

# Process

## Process purpose

Software Requirements is a field within software engineering that deals with establishing the needs of stakeholders that are to be solved by software. The IEEE Standard Glossary of Software Engineering Terminology defines a requirement as:

* A condition or capability needed by a user to solve a problem or achieve an objective.
* A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed document.
* A documented representation of a condition or capability as in 1 or 2.

The activities related to working with software requirements can broadly be broken up into Elicitation, Analysis, Specification, and Management.

## C:\Users\haitr\Downloads\requirement.pngProcess activities / steps

## Activities description

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Phase | Objective | Input | Output | Activities |
| Elicitation | Understand business workflow, customer needs, constraints of proposed system | 1.Customer needs | 1.Business workflow doc  2.Propose system function | 1.Contact stakeholder and meeting  2.Discover and elicit high level requirement |
| Analysis | Analyze customer requirements to offer solutions for proposed system | 1.Business workflow doc  2.Propose system function | 1.Propose system prototype | 1.Obtain project scope approval  2.Add/Modify/Delete requirement  3.Collect detailed requirement  4.Revise detail requirement |
| Specification | Specify the requirement into user and developer requirement to implement easier | 1.Propose system prototype | 1.Con-Ops  2.SRS  3.URD  4.Use case document | 1.Prioritize requirements |
| Validation | Validate with stakeholder(customer) to make sure the requirement is correct | 1.Con-Ops  2.SRS  3.URD  4.Use case document | 1.Con-Ops  (validated)  2.SRS(validated)  3.URD(validated)  4.Use case document  (validated) | 1.Document and revise requirement  2.Present document with customer |

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# Role and responsibility

|  |  |  |
| --- | --- | --- |
| Role | Responsibility | Assign to |
| Requirement Leader | * Make and manage phase plan * Set up meeting schedule with stakeholder * Prepare template to use in phase * Summarize and release phase document |  |
| Requirement Engineer | * Agree and apply method, technique to use in phase * Communicate, explore, gather Customer’s requirement * Define perspective of requirement, make prototype * Write document * Prioritize and validate requirement (complete, consistent) * Convert the user Req. to software Req. |  |
| Stakeholder (customer) | * Meet with team to provide and communicate requirement * Validate the document |  |
| Developer | * Involve in Specification to provide idea of Software function, help team understand better |  |
| Architect | * Involve in Specification to provide idea, help team understand better * Ensure the requirement match with scope * Identify the conflict of hardware, software, system |  |

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# Tools and methods

|  |  |  |
| --- | --- | --- |
| Phase | Method used | Supported tool |
| Elicitation | * Interview * Questionnaire * Brainstorm |  |
| Analysis | * Prioritize * Use workflow, scenarios * Use dataflow diagram, state diagram * Prototyping (proposed system) * Conduct trade-off | Draw.io |
| Specification | * Prototyping * Use UML Lang, flowcharts, swim lane * Use Use-cases | UML Language program |
| Validation | * Inspection * Review: walkthrough * Prototype | Checklist |

# Goal, question, metric:

## Goal:

Goals are defined in term of purpose, perspective.

* Purpose: To analyze requirements to understand it and develop it.
* Perspective: Examines the requirement change from the point of view of the customer.

## Question:

The question for requirement development process:

* What data should be collected?
* What kind of the program that stakeholder want to develop?
* Is the data that give by customer clearly?
* How to collect data from customer?
* The data from the customer enough to build the software?

## Metrics:

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Formula | Purpose | Reference value |
| Unambiguous | Q =Nui / Nr | Percentage of requirement that have been interpreted by all reviewer | 0 = Ambiguous requirement  1 = Unambiguous requirement |
| Correct | Q = Nc / Nr | Percentage of all requirement that are valid | 0 = Incorrect  1 = Correct |
| Complete | Q = Nu / Ni \* Ns | The number of functions currently specified | Closer to one, the more complete |
| Understandable | Q = Nur / Nr | The number of requirements that are understood by all users and reviewers | 0 = No requirement understood  1 = All requirements understood |

* Nui: the number of requirement for which all reviewers presented identical interpretations
* Nr: total number of requirement
* Ni: the stimulates input of the function
* Ns: the stage input of the function
* Nur: the current unique functions requirement