**Measurement plan**

Admission system

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# **Revision**

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| --- | --- | --- | --- | --- |
| **No** | **Version** | **Update date** | **Author** | **Content** |
| 1 | 1.0 | 11/11/2013 | Huynh Trong Khang | Create document |
| 2 | 1.1 | 16/11/2013 | Le Ngoc Chau | Update template |

Table 1: Revision history

# **Introduction**

The primary purpose of measurement is to provide insight into software processes and products so that AS is better able to make decisions and manage the achievement of goals. This report proposes some plan that can help AS integrate a measurement process with their overall software process

## Purpose

Measurement is often equated with collecting and reporting data and focuses on presenting the numbers. The primary purpose of this report is to focus measurement more on setting goals, analyzing data with respect to software issues and manage project, and using the data to make decisions.

The objectives of this report are to:

* Provide some guidelines that can be used to improve our team (AS)
* Ties measurement to AS goals and objectives;
* Defines measurement consistently, clearly, and accurately;
* Collects and analyzes data to measure progress towards goals`
* Evolves and improves as the process matures.

## Scope

This plan addresses all the activities for software development projects including planning, requirement analysis, project tracking, quality assurance, configuration management, design, and coding related procedures. The result of these measurements will be reported every week to team and mentor. The team focuses measure in Schedule, Moral and satisfaction.

## Definitions, Acronyms, and Abbreviation

|  |  |
| --- | --- |
| **Acronyms** | **Description** |
| AS | Admission system, which is name of team |
| GQM | Goal Question Metric |
| Measurement | The size or extent of something, especially in comparison with a known standard. |
| Metric | A calculated or composite indicator based on two or more measures.  A quantified measure of the degree to which a system, component or process possesses given attributes. |

Table 2: Definitions, Acronyms and Abbreviation

## References

* Concept of Operation
* SRS Document.
* Software Development Plan

# **Overview**

This is software measurement plan contains following information:

* **Measurement Goals**: The goals of the measurement program relative to the project in term of achievement, improvement and quality.
* **Metrics** : the metrics that are to be synthesized at regulated intervals on the project to support the goals
* **Measurement process:** provide the step by step to team to act for exactly and easy to implement collect and validate history data as well as improve process

**Time and role**: this is table provide role to each members responsible for the metric to collect weekly, monthly or each release

# **Mesurement Process**

## Process model

## Introduction



## Description

|  |  |
| --- | --- |
| **Define goal** | **Identify goal, issues which project need be measured** |
| Establish measurement  Plan | Make planning for measure project |
| Analysis goal | Goal is defined at phase 1, analysis goal, if goal isn’t clear  understand, continuous analysis goal |
| Define question | After analysis, define question relate to goal |
| Define metrics | Define metrics which engineer need measure to response the  question after phase |
| Define criteria | Propose criteria to evaluate metrics |
| Collect data | After defined measures by GQM, collect data about measures |
| Analysis data | Analysis data that is collected |
| Evaluate measurement | Evaluate all measures to monitor project |
| Measurement Repository | Store all documents & data that collected |

Table 3: Description

# **Strength and weakness**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Measure** | **Strengh** | **Weaknesses** |
| 1 | Schedule | - Organize the work and resources  over time to complete the work.  - Making effective use of resources.  - Easily communicate with all project stakeholders. | - Frequency tracking, control and update schedule’s plan.  - Collect historical data to make an accuracy plan. |
| 2 | Productivity | - Increase product value.  - Improve processes.  - Benchmark organization’s capabilities.  - Assess current productivity.  - Understand what might contribute to productivity increase.  - Monitor the increase as we make changes | - Measuring Productivity is difficult. |
| 3 | Budget | - Focus on a specific project.  - Account for income and/or expense.  - Use spreadsheets to build a budget that contains the costs associated with all of the resources you will need  - Align your budget with business needs  - Track your performance to budget and note any variances  - Use budget and financial analysis tools to ensure that your project is valuable to the business | - Collect historical data to make an accuracy plan. |
| 4 | Earned  Value | - The best schedule and cost tracking  mechanism available for traditional methodologies. | - Hard to apply for agile  methodologies.  - To implement EVM you need to have a   WBS broken into work packages associated with specific deliverables   A baseline schedule and budget   An effort logging system to track work performed against  tasks |
| 5 | Quality | - Quality data helps guide our actions. | - Gathering, analyzing  Requirements Checklist.  - Hard to collect Quality  Data. |
| 6 | Risk | - Provide risk information to decision makers that will assist in making informed project decisions.   * Use a technique such as risk exposure to understand overall project risk. | - Can’t “manage” every  risk.  - Be sure to document your  risks correctly. |
| 7 | Change | - To communicate openly and honestly with your stakeholders.  - Measure the changes so you can quantify the impact of the changes to the project. | - Establish the tools,  processes, metrics at project start |
| 8 | Customer  Satisfaction | - Satisfy and delight the customer  - Generate profit business | - Hard to trust data |
| 9 | Team Morale | - Keep valued, skilled employees on the  project and in the company.  - Maintain or improve productivity  - Reduce turnover and the cost of retraining.  - Cultivate good communication and rapport  - Create “good” work environment. | - Motivation is different for different people.  - Rapport is based on trust and respect. |

Table 4: Strength and weakness

# **Goal – Question - Metrics**

## 4.1 Schedule:

|  |  |
| --- | --- |
| **GOAL** | **KEEP SCHEDULE IS NOT DELAYED MORE THAN 10% HIGHER THAN PLANNED.** |
| Question | What is the schedule status? |
| Measure | Actual task completed/estimated |
| Metrics |  Actual task completed   Total of task in plan |
| Data Collection | Detailed Plan |
| Criteria | Less than 10%: very bad  From 10% to 50%: bad  From 50% to 80%: normal  From 80% to 90%: good  100%: very good |
| Description | To help to improve staff’s effort to build product faster and easier. |

Table 5: Schedule

## 4.2. Productivity:

|  |  |
| --- | --- |
| **GOAL** | **KEEP PRODUCTIVITY.** |
| Question | Is productivity of the team good?  How to measure productivity? |
| Measure |  (Number of tasks completed in one week/ Total tasks in one week)\*100%   Size/effort. |
| Metrics | - Number of tasks completed in one week.  - Total tasks in one week.  - Size of product.  - Total effort of team. |
| Data Collection | Report  Time log |
| Criteria | More than 90%: Good  More than 80%: Normal  Less than 80%: Bad |
| Description | Maintain productivity of team (improve if possible) |

Table 6: Productivity

## 4.3. Budget:

|  |  |
| --- | --- |
| **GOALS** | **BETTER CONTROL ON BUDGET SPEND.** |
| Question | At now over budget or not? |
| Measure | Total cost have used/Total cost in plan |
| Metrics |  Total cost have used   Total cost in plan |
| Data Collection |  Detail plan   report |
| Criteria | More than 1: Bad  More than 0 and less than 1: Good |
| Description | To help us to control total project cost does not exceed too far from the initial  budget. |

|  |  |
| --- | --- |
| **GOALS** | **TO KNOW THE NET INCOME FROM AN INVESTMENT.** |
| Question | How much it really costs to earn the reported value? |
| Measure | Cost Performance Index = BCWP / ACWP |
| Metrics |  BCWP – Budgeted cost of work performed   ACWP – Actual cost of work performed |
| Data Collection | Detail plan  Weekly report |
| Criteria | CPI >1: Under Budget  CPI =1: On Budget  CPI <1: Over Budget |
| Description | N/A |

Table 7: Budget

## 4.4 Quality:

|  |  |
| --- | --- |
| **GOAL** | **KEEP THE GOOD QUALITY OF PRODUCT.** |
| Question | What is the status of defects? |
| Measure | Number of Defects found/ All testcase/ Release |
| Metrics |  Number of Defect found   All test case   Release |
| Data Collection | Testing Report |
| Criteria | Less than 0.5 agree : bad  More than 0.5 and less than 0.7 agree: normal  More than 0.9 agree: good |
| Description | To help us to know the rate of defect released for customers |

|  |  |
| --- | --- |
| **GOAL** | **THIS IS RATE FEATURE PASSED IN TOTAL FEATURES OF**  **PROJECT WHEN END TEST PHASE.** |
| Question | How to know the rate of feature to be passed in the project? |
| Measure | Number of features passed/Total features |
| Metrics |  A feature is passed when tester report it passed all related test cases.  All features in SRS |
| Data Collection | Testing Report |
| Criteria | Less than 0.5 agree : bad  More than 0.5 and less than 0.7 agree: normal  More than 0.9 agree: good |
| Description | To help us to know the rate of feature to be passed in the project |

|  |  |
| --- | --- |
| **GOAL** | **THIS IS RATE QUALITY ATTRIBUTES PASSED OF PROJECT**  **WHEN END TEST PHASE.** |
| Question | How to know the rate quality attributes passed of project? |
| Measure | Number of quality attributes passed/Total quality attributes |
| Metrics |  Number of quality attributes passed when collect data at test phase.   Total quality attributes of project |
| Data Collection | Testing Report |
| Criteria | Less than 0.5 agree : bad  More than 0.5 and less than 0.7 agree: normal  More than 0.9 agree: good |
| Description | To help us to know the rate quality attributes passed of project |

|  |  |
| --- | --- |
| **GOAL** | **KEEP THE GOOD QUALITY OF PRODUCT.** |
| Question | Current reality of defects like? |
| Measure | Total defects found – defects removed |
| Metrics |  Total defects found   defects removed |
| Data Collection | Testing Report |
| Criteria | More than 10: Very bad.  More than 5: Bad  As 5: Normal  Less than 5: Good |
| Description | To help us to know the status of defects if they were removed or not |

Table 8: Quality

## 4.5 Earned Value

|  |  |
| --- | --- |
| **GOAL** | **COMPARE EARNED VALUE WITH EFFORT ACTUAL.** |
| Question | How to compare the earned value with the effort spent reality? |
| Measure | Budgeted cost of work performed = percent of work completed \* budgeted cost  of work schedule. |
| Metrics |  BCWS – Budgeted cost of work schedule   Percent of work completed |
| Data Collection | Detail plan  Weekly report |
| Criteria | EV> AC: Under Budget  EV = AC: On Budget  EV <AC: Over Budget  CV greater than 0 is good (under budget). |
| Description | N/A |

Table 9: Earned Value

## 4.6 Customer satisfaction:

|  |  |
| --- | --- |
| **GOAL** | **KEEP THE SATISFACTION OF CUSTOMERS.** |
| Question |  Is our product useful to customer?   Do customers have satisfy with attitude of develop team? |
| Measure | Mark points / Total points |
| Metrics |  Mark points   Total points |
| Data Collection | Survey |
| Criteria | Less than 50% agree : bad  More than 50% and less than 80 agree: normal  More than 80% agree: good |
| Description | To help us to maintain and improve satisfaction of customers |

Table 10: Customer satisfaction

## 4.7 Team morale:

|  |  |
| --- | --- |
| **GOAL** | **KEEP THE GREAT MORAL STRENGTH OF TEAM MEMBERS.** |
| Question |  Do employee have satisfy with project team?   Do team member is still enjoying with project? |
| Measure | Mark points / Total points |
| Metrics |  Mark points   Total points |
| Data Collection | Survey |
| Criteria | Less than 50% agree : bad  More than 50% and less than 80 agree: normal  More than 80% agree: good |
| Description | To help us to maintain and improve team moral, therefore improve productivity |

Table 11: Team morale

## 4.8 Risk and Change:

|  |  |
| --- | --- |
| **GOAL** | **MINIMIZE IMPACTS OF RISK (MITIGATE IMPACT OF RISKS).** |
| Question | How do we control risk well? |
| Measure | Resolved Risk / Identified Risk |
| Metrics |  Resolved Risk   Identified Risk |
| Data Collection |  Weekly report   Risk mitigation and change log |
| Criteria | Less than 50% agree : bad  More than 50% and less than 80 agree: normal  More than 80% agree: good |
| Description | To help us to know the status of risks if they resolved or not |

|  |  |
| --- | --- |
| **GOAL** | **CONTROL CHANGE AND RISK.** |
| Question | How to control changes and risk in project? |
| Measure | Resolved Risk / Identified Risk |
| Metrics |  Total changes to be removed.   Total changes to be defined in project.   Total risks to be removed   Total risks to be defined in project. |
| Data Collection | Risk mitigation and change  log |
| Criteria | Less than 50% agree : bad  More than 50% and less than 80 agree: normal  More than 80% agree: good |
| Description | To help us to know the status of changes and risks if they removed or not |

Table 12: Risk and change

# **Tool**

|  |  |  |
| --- | --- | --- |
| **NO** | **NAME** | **DESCRIPTION** |
| 1 | Microsoft office | Using to store data and make report |
| 2 | Visual studio | Using to collect data. |