

Table : Project Cycle Descriptive Statistics

|  |  |  |
| --- | --- | --- |
|  | Column in sheet | Comments |
| Project ID | Element |  |
| Project Name |  |  |
| Begin Date |  | This attribute is already included in fact sheet. |
| End Date |  | This attribute is already included in fact sheet. |
| Total Effort [hours] |  | This attribute is already included in fact sheet. |
| Number of Team Members |  | This attribute is already included in fact sheet. |
| Phases used |  | This attribute is already included in fact sheet. |
| Number of WBS leaf elements |  | Do we need to include this attribute in data quality sheet or fact sheet? |

Data quality Time Log

|  |  |  |
| --- | --- | --- |
|  | Column in sheet | comments |
| Number of time log records | number\_of\_time\_records |  |
| Benford Score | benford\_score\_in\_time |  |
| Number of Interrupts | number\_of\_interrupt\_in\_time |  |
| Number of Interrupts with comment |  | All text messeges are included in “text” table. It is difficult to extract comments for interrupts from this table so far. |
| Null time in delta minutes | number\_of\_null\_in\_time | I extract the total number of records which have null data in time log delta minutes, time log interrupt minutes, time log start date, and time log end date. |
| Zero time in delta minutes | number\_of\_zero\_in\_time | I added new attribute which is zero time in time log delta minutes |
| Negative time in delta minutes | number\_of\_negative\_in\_time | I extract the total number of records which have negative data in time log delta minutes, and time log interrupt minutes. |
| Start/End time in future | number\_of\_future\_date\_in\_time |  |
| start/end date Illegal year | number\_of\_illedal\_year\_in\_time |  |
| Start/end date illegal month | number\_of\_illegal\_month\_in\_time | I added new attribute which is illegal month data in time log start date, and time log end date. |
| start/end date Illegal day | number\_of\_illegal\_day\_in\_time |  |
| Start/end date illegal hour | number\_of\_illegal\_hour\_in\_time | I added new attribute which is illegal hour data in time log start date, and time log end date. |
| Start/end date illegal minute | number\_of\_illegal\_minute\_in\_time | I added new attribute which is illegal minutes data in time log start date, and time log end date. |
| start/end date Illegal second | number\_of\_illegal\_second\_in\_time |  |
| Delta time excessive ( exceeds day) |  | Do we need to extract this attribute by individual or by time log? |
| Delta time excessive ( exceeds 180 min) without interrupt |  | Do we need to extract this attribute by individual or by time log? |
| Total time in excessive length entries |  | Exceeds day? Or exceeds 180 min? |
| Overlapping records for an individual | number\_of\_overlap\_records |  |
| Total time in overlapping records | total\_overlap\_time | I regard this attribute as the total overlapping time, not total delta time in time log which have time overlapping. |
|  |  |  |
| Total valid time log records |  |  |
| Total invalid time log records |  | What is the difference between invalid time and questionable time? |
| Total questionable time log records |  |  |

Data quality Defect Log

|  |  |  |
| --- | --- | --- |
|  | Column in sheet | comments |
| Number of Defect log records | number\_of\_defect\_records |  |
| Benford Score | benford\_score\_in\_defect |  |
| Missing data xxx |  |  |
| Null time in delta minutes | number\_of\_null\_in\_defect | I extract the total number of records which have null data in defect fix time minutes, defect removed phase key, defect injected phase key, and defect type key. |
| Negative time in delta minutes | number\_of\_negative\_in\_deffixtime |  |
| Start/End time in future | number\_of\_future\_date\_in\_defect |  |
| start/end date Illegal year in | number\_of\_illegal\_year\_in\_defect |  |
| Start/end date illegal month | number\_of\_illegal\_month\_in\_defect | I added new attribute which is illegal month data in defect found date. |
| start/end date Illegal day | number\_of\_illegal\_day\_in\_defect |  |
| Start/end date illegal hour | number\_of\_illegal\_hour\_in\_defect | I added new attribute which is illegal hour data in defect found date. |
| Start/end date illegal minute | number\_of\_illegal\_minute\_in\_defect | I added new attribute which is illegal minute data in defect found date. |
| start/end date Illegal second | number\_of\_illegal\_second\_in\_defect |  |
|  |  |  |
|  |  |  |
| Total valid defect log records |  |  |
| Total invalid defect log records | number\_of\_inaccuracy\_records\_in\_defect |  |

Data quality Size Log

|  |  |  |
| --- | --- | --- |
|  | Column in sheet | comments |
| Number of Size records | number\_of\_size\_records |  |
| Valid Planned Size |  |  |
| Valid Actual size |  |  |
| Bad size data | |  |
| Empty Planned SIze | number\_of\_no\_plan\_records\_in\_size |  |
| Negative Planned Size | number\_of\_negative\_in\_size |  |
| Empty Actual Size | number\_of\_no\_actual\_records\_in\_size |  |
| Negative Actual Size | number\_of\_negative\_in\_size |  |
|  |  |  |
| Total valid size records |  |  |
| Total invalid size records | number\_of\_inaccuracy\_records\_in\_size |  |

Data quality Task Log

|  |  |  |  |
| --- | --- | --- | --- |
|  | Column in sheet | | comments |
| Number of Task records |  | |  |
| Valid Planned time |  | |  |
| Benford for fix times |  | |  |
| Valid Actual time |  | |  |
| Null planned time | | |  |
| Null start date/time | | | number\_of\_no\_start\_date\_in\_task |
| Null completion date/time | | | number\_of\_no\_completion\_date\_in\_task |
| Illegal start date | |  | number\_of\_future\_date\_in\_task  number\_of\_illegal\_year\_in\_task  number\_of\_illegal\_month\_in\_task  number\_of\_illegal\_day\_in\_task  number\_of\_illegal\_hour\_in\_task  number\_of\_illegal\_minute\_in\_task  number\_of\_illegal\_second\_in\_task |
| Illegal end date | |  | number\_of\_future\_date\_in\_task  number\_of\_illegal\_year\_in\_task  number\_of\_illegal\_month\_in\_task  number\_of\_illegal\_day\_in\_task  number\_of\_illegal\_hour\_in\_task  number\_of\_illegal\_minute\_in\_task  number\_of\_illegal\_second\_in\_task |
| Time stamp and phase in defect does not match time log | |  |  |
|  | |  |  |
| Total valid task records | |  |  |
| Total invalid task records | |  |  |

Consistency checks

|  |  |
| --- | --- |
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Much of this is not redundant.

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| 1 |  | Commitment dates recorded |  |
| 2 |  | Estimated product effort was recorded |  |
| 3 |  | Estimated product size was recorded |  |
| 4 |  | Actual Size of finished products was recorded |  |
| 5 |  | **Estimated** **Size** follows approximately a log-normal distribution, at least mounded \*experimental\* |  |
| 6 |  | **Actual** **Size** Reco  **Actual** **Size** follows approximately a log-normal distribution |  |
| 7 |  | Defect Find/Fix shape  Data approximately follows approximately a log-normal distribution |  |
| 8 |  | **Effort** Logs have *total records*  *Effort Logs overlapping time for individual* |  |
| 9 |  | Use the **leading digit Benford** and analysis to estimate the percent of data recorded in real-time.  Use second digit Benford |  |
| 10 |  | Did team members record their **effort time data** as they performed the work. Use the **trailing digit** and analysis to estimate the percent of data recorded in real-time. |  |
| 11 |  | Personal defect data was recorded in all removal phases |  |
|  |  | Tasks are marked as completed when completed  Count of all removal tasks  Count of all removal tasks with defects removed  Ratio of removal tasks with removal |  |
| 13 |  | **Completed** tasks have **logged** time,  Count of all completed tasks  Count of completed tasks without logged time |  |
| 14 |  | Defect find and fix time less than total effort log phase time |  |
| 15 |  | Personal **defect** find and fix data was recorded accurately, verify with defect data logs (Use Benford 1st and second digit) |  |
| 16 |  | Personal **defect** find and fix data was recorded accurately, verify with defect data logs (Use Trainilg Digit) |  |
| 17 |  | Defect and Time Log data are consistent, defect time stamp consistent with task and phase |  |
| 18 |  | Defect data is complete (all relevant fields completed) |  |

Schedule deviation at complete

Effort deviation at complete

Scope deviation at complete

Wish list

Component plan and actual defect projections and actuals

Component plan and actual date

Component baseline and actual date

Fraction of components completed before commit date (weight by size and/or effort)

% development effort in unit test

% total effort in all test

|  |
| --- |
| Recovery plans implemented as needed estimate to complete beyond 10% threshold triggers replan |
| *Team rebalanced work as needed,  weeks in plan, measure of imbalance (person weeks to complete?) weeks exceeding a threshold,weeks with replan* |
| team replans as necessary, weeks exceeding 10% schedule overruns triggers replan |
| New work was estimated and added to the plan |
| *Plan* for quality, Planned **AFR** |
| *Plan* for quality, Planned **A/Dev** |
| *Plan* for quality, Planned **App/Tot** |
| *Plan* for quality, Planned **Dev/Tot** |
| *Plan* for quality, Planned Fail**/Tot** |
| *Execute* for quality, Actual **AFR** |
| *Execute* for quality, Actual **App/Dev** |
| *Execute* for quality, Actual **Dev/Tot** |
| *Execute* for quality, Actual **Test/Tot** |
| Custom **Rate** Planning Parameters are used |
| Custom **Time in Phase** Planning Parameters are used |
| slope of yield by global phase |
| slope of injection rate by global phase |
| slope of yield by component phase |
| slope of injection rate by component phase |
|  |
| Custom **Defect Removal Yield** Planning Parameters are used |
| Custom **Defect Injection Rate** Planning Parameters are used |
| The team conducted weekly meetings |
| ressonable estimation, slope of effort estimation |
| follow defined process, **R^2 Aggregate Phase Effort correlation** |
| follow defined process, **R^2 Task Effort correlation** |
| quantitatively understand injection process, **R^2 Defect injection correlation** |
| quantitatively follow predictable quality removal process, **R^2 Defect removal correlation** |
| component, quantitatively understand injection process, **R^2 Defect injection correlation** |
| component, quantitatively follow predictable quality removal process, **R^2 Defect removal correlation** |
| The team plan has the basic phases required of a competent process (requirements, design, implementation, test, inspections, and reviews) (100 (yes) or 0 (no) |
| The team planned adequate time for effective appraisal phases (reviews and inspections). |
| The team actually performed the appraisal phases (reviews and inspections). |