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| GENUS INNOVATION LIMITED |
| Estimation Procedure |
| PRCD\_ESTMAT |
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| **Genus** |
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| This procedure demonstrates a consensus based methodology for arriving at effort estimates. |

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# Overview

This procedure demonstrates a past project data based methodology for arriving at effort estimates.

# Objective

To estimate the project efforts against each requirement.

# Scope

This procedure applies to all Projects in Genus.

# Inputs

* Functional Specifications.

# Entry Criteria/Triggers

* Completion of Requirements Development
* Approved Change Requests
* Project Monitoring and Control activities
* The practitioners have undergone QMS trainings with focus on performing their processes.

# Tasks

| Sr. No | Task | Owner/Role |
| --- | --- | --- |
|  | **Prepare for Estimation** |  |
|  | Identify and select participants, called as estimators, from all functional teams (Firmware, Hardware & PCB, Mechanical). These may include Developers, Functional Head/s or Testers. | Project Manager |
|  | Send the developed requirements to the identified participants for estimation. | Project Manager |
|  | **Perform Estimation** |  |
|  | Identify previously executed projects that are similar in scope, lifecycle and size to the current project. Use Projects Report in GIL.ef[[1]](#footnote-1) to fetch their actual efforts by phase. | Estimator/s |
|  | Calculate phase wise averages of actual efforts of the projects identified above using template “Final Estimations” (TMPL\_ESTFNL). | Estimator/s |
|  | Identify differences that can affect project efforts, in requirements, scope, manufacturing constraints, costing constraints, staffing etc between the current project and the projects identified above.  Arrive at the effort impact of each of the above differences on the project efforts. For potentially large differences, use “Wideband Delphi” estimation method (Refer Guidelines below).  Use template “Final Estimations” (TMPL\_ESTFNL) for all the above steps | Estimator/s |
|  | Distribute the total difference into project phases in the same ratio as in the past projects identified for estimation above. | Estimator/s |
|  | Consolidate all estimations for project planning. Use template “Final Estimations” (TMPL\_ESTFNL) for all the above steps. | Project Manager |

\* Improvements/Suggestions are solicited on “Process Improvement Proposals Database”.  
\*For details on the Roles and Responsibilities of the practitioners, Refer "Roles and Responsibility" document in the QMS.

# Verification

* Project Manager verifies the estimates with respect to project needs.
* Review of the process and its work products by PPQA members.
* Review of the process and its work products by Senior Management.

# Guidelines

Refer "Configuration Management and Release Procedure" (PRCD\_CONFIG) for Access Rights, location of work products, naming convention and types of controls.

## Wideband Delphi

### Purpose

A project team generates estimates. It is a repeatable process for estimation. Using it, a project team can generate a consensus on estimates for the completion of the project.

### Tasks

* Choosing the team- The project manager selects the estimation team and a moderator. The team should consist of two to seven project team members. The team should include representatives from every engineering group that will be involved in the development of the work product being estimated.
* Kickoff meeting- The moderator prepares the team and leads a discussion to brainstorm assumptions, and decide on the units of estimation.
* Individual preparation- After the kickoff meeting, each team member individually generates the initial estimates for each task in the WBS, documenting any missing assumptions.
* Estimation session- The moderator leads the team through a series of iterative steps to gain consensus on the estimates. At the start of the iteration, the moderator charts the estimates on the whiteboard so the estimators can see the range of estimates. The team resolves issues and revises estimates without revealing specific numbers. The cycle repeats until either resultant variance <= 20% or pre-defined 3 rounds have been completed.
* Assembling tasks- The project manager works with the team to collect the estimates from the team members at the end of the meeting and compiles the final estimates, and assumptions.

Reviewing results- The project manager reviews the final task list with the estimation team.

# Applicable Measurements

NA

# Exit Criteria/Outputs

* Final Complexity and Effort Estimates

1. https://gil.einframe.com [↑](#footnote-ref-1)