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| PS2Win |
| Verification & Validation Process |
| Keep Your Time |

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| João Girão;João Martins  23-03-2013 |

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Table 1: List of Contributors

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| **Revision History** | | | | | |
| **Date** | **Description** | **Author** | **Version** | **Approvers** | **State** |
| 23-03-2013 | First Draft | João Martins  &  João Girão | 0.1 |  | Draft |
| 24-03-2013 | Updating Document, change state and create Templates | João Girão | 0.2 |  | Ready for Revision |
| 27-03-2013 | Document reviewed | Mário Oliveira | 0.2 |  | Ready for Revision |
| 06-04-2013 | Several Changes | João Martins | 0.3 |  | Draft |
| Ready for Revision |
| 06-04-2013 | Document reviewed | Mário Oliveira | 0.3 |  | Ready for Revision |
| 06-04-2013 | Changing State | João Girão | 0.3 |  | Ready for Approval |
| 07-04-2013 | Approval |  | 0.3 | Rui Ganhoto | Ready for Approval |
| 10-04-2013 | Editing Document | João Girão | 0.4 |  | Draft |
| 11-04-2013 | Ready for Revision |
| 15-04-2013 | Document reviewed | Mário Oliveira | 0.4 |  | Ready for Revision |
| 15-04-2013 | Changing State | João Girão | 0.4 |  | Ready for Approval |
| 17-04-2013 | Suggestion of some changes. Some questions arose. |  | 0.4 | Carla Machado | Ready for Approval |
| 20-04-2013 | Changing small details | João Martins | 0.5 |  | Draft |
| Ready for Revision |
| 20-04-2013 | Document reviewed | Mário Oliveira | 0.5 |  | Ready for Revision |
| 21-04-2013 | Change document and state | João Girão | 0.5 |  | Ready for Approval |

Table 2: Version history

# Purpose

The Verification and Validation Process purpose is to confirm that each software work product properly reflects the specified requirements and to confirm that the requirements for a specific intended use of the software work product are fulfilled.

# Inputs and Outputs

# Inputs

Requirements list;

Source Code;

Architectural and Design Diagrams;

# Outputs

In the Test Plan is specified acceptance test. This plan will be detail in a Test Plan Report generated by the EA software.

Acceptance Test Report specifies the tests results.

* 1. **Activities**
* **Verification**:
  + Several testers may be assigned by the Project Manager and Quality Manager;
  + Design Verification:
    - The design is correct and consistent with requirements;
    - The design implements proper sequence of events, inputs, outputs, interfaces, logic flow;
    - Selected design can be derived from requirements;
  + Code Verification:
    - The code is traceable to design and requirements, testable, correct, and compliant with requirements and coding standards;
    - The code implements proper event sequence, consistent interfaces, correct data and control flow;
    - Use Code inspection for one important section;
  + Integration Verification:
    - The software components and units of each software item have been completely and correctly integrated into the software item;
  + Document Verification:
    - Based on Document Management Process and Review Process.
* **Validation**:
  + Several testers may be assigned by the Program Manager and Quality Manager;
  + Prepare the test specification for analyzing test results;
  + Ensure that these test specifications reflect the particular requirements for the specific intended use.
  + Test software product for its ability to isolate and minimize the effect of errors;
  + Validate that the software product satisfies its intended use;
  + Test the software product as appropriate in selected areas of the target environment;
* **Software Testing Strategy:**
  + **Acceptance Test:** requirements established as part of software requirements analysis are validated against the software that has been constructed;
    - Create test case;
      * Include acceptance test in Enterprise Architect tool.
    - Acceptance Test results are specified in Verification and Validation phase;
    - If the Acceptance Test fails: each tester should create a report failure based on the Failure Test Report Template (Failure Test Report Template);
    - Create test case and functional requirements relationships in the Enterprise Architect tool;
  + **Integration Test:** focus on the design and the construction of the software architecture;
    - These kind of tests may be applied or not, depending on the project;
    - After design and architectural phase:
      * Create a new integration plan;

OR

* + - * Update the test plan.
  + **Unit Test:** concentrates on the source code and are implemented and performed by the developers.

# Tools

For documentation Microsoft Office will be used.

Enterprise Architect Software.

# Related Processes

This process has a strong connection with Project Assessment and Control Process, Review Process, Document Management Process and Requirements Analysis Process.

# Measures

* Percentage of passed and failed tests;
  + Acceptance Tests;
  + Integration Tests;
* Tests number planned, executed and passed;
* Number of Unit Tests;