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1. Introduction

This Test Plan Project [TPP] defines the detailed test activities for

|  |  |
| --- | --- |
| **Project** | DigitalEasy |
| **IT Product or service** | Integrated features: Survey, Ask me, Quizzy, Examine, Onboarding make meetings, workshops, and team training sessions are productive, enjoyable. |

1. Test planning
   1. Project test scope

The test item(s) are all software units that are changed within the project.

The risks from project risk management that have an influence on testing are respected accordingly.

|  |  |  |
| --- | --- | --- |
| **No.** | **Module** | **Features** |
| 1 | Survey | Create Survey, collect and analyze people's opinions |
| 2 | Poll | Create Poll, access and collect people's opinions |
| 3 | Word cloud | Create Word cloud, access and collect people's opinions |
| 4 | Q&A | Put questions and view questions of other associate  Create QA events with a range time for associates raise their questions |
| 5 | Quizzy | Create multiple choice questions, is a game-based learning platform that makes it fun to learn |
| 6 | Examine | Create Examine and Save Result |
| 7 | Onboarding | Guided tours for new Joiners |
| 8 | Homepage |  |

* 1. Overall schedule of the testing tasks

General approach for the test and defined steps:

* Test planning, test definition of test cases and test preparation
* Delivery of test pre-requisites
* Implementation of technical solution in a laboratory/test environment
* Test execution in test environment with test documentation
* Bug fixing and re-testing (if necessary)
* Implementation of technical solution in the pilot location
* Test execution in each pilot location with test documentation
* Bug fixing and re-testing (if necessary)
* Go Live test and sign off
  1. Tasks and responsibilities

|  |  |  |
| --- | --- | --- |
| Role | Department/ Name employee(s) | Summary of tasks and responsibilities |
| PM | Nguyen Duc Trung (SX/BSV2-EA) | Project management, execute and create all documents for Small IT Activities |
| Technical Architecture | Duong Thanh Nhan (SX/BSV2-EA) | Consulting Dev Team how to set up development environment, handling and implement all Architecture design, migration. |
| Scrum Master | Bui Quoc Thai (SX/BSV2-EA) | * Driving and monitoring tasks * Supporting build and deploy all components to productive enviroment |
| Developer | Hang Xuong Hoan (SX/BSV2-EA) | Developing UX with Angular, Spring Boot backend |
| Tester | Nguyen Son Kiet (SX/BSV2-EA), Nguyen Thi Phuong Thao (SX/BSV2-EA), Lee Tea Kyung (SX/BSV2-EA) | Create test cases, test plan, test report and executing test part |
| Supporter | Do Vu Nhan (SX/BSV3-EA) | QG support |

1. Evaluation of test items concerning risk

All test items are evaluated concerning their risk. These must be adapted to current project activities. Then the items to be tested must be selected according to their risk.

1. Test preparation activities

The following chapter describes in detail the test procedure for the specified test project, test level or test type, i.e., based on the identified features of the test item(s) to be tested, the constraints for the testing, and identified risks and their elimination, reduction or mitigation recommendations.

* 1. Test levels

CDQ0302 defines several mandatory test levels. Within CI they are named differently. See below for a mapping table.

|  |  |  |
| --- | --- | --- |
| Abbreviation | Naming used within CI | Naming in CDQ0302 |
| UT | Unit test | - |
| CT | Component test | Unit verification |
| IT | Integration test | Software and system integration test |
| ST | System test | Qualification test |
| UAT | User acceptance test | - |
| GLT | Go live test | - |

The following sub-sections specify the main attributes of the test levels in this project.

* + 1. Optional test level: Unit Test

|  |  |
| --- | --- |
| **Responsibility of test level activities** | Developers |
| **Goal** | Verify the correctness and functionality of individual units or components of a software system in isolation |
| **Test object** | The individual functions, methods, or classes |
| **Type of test environment** | Development environment |
| **Physical test environment** |  |
| **Test types** | Unit Test |
| **Tester group** | SX/BSV-VN |
| **Entry criteria** | The code is available for testing and compiled without any compilation errors |
| **Exit criteria** | Unit test cases associated with the unit under test have been executed. |

* + 1. Mandatory test level: Integration Test

|  |  |
| --- | --- |
| **Responsibility of test level activities** | Tester |
| **Goal** | Combination of multiple components, modules or subsystems works as specified in product requirements |
| **Test object** | Test the interactions and integration between different components or modules of a software system |
| **Type of test environment** | Quality assurance system |
| **Physical test environment** |  |
| **Test type** | Integration Test |
| **Tester group** | SX/BSV-VN |
| **Entry criteria** | Unit test and component test are completed |
| **Exit criteria** | Validate the interactions and interfaces between different components, modules, or systems when they are combined and integrated together. |

* + 1. Mandatory test level: System test

|  |  |
| --- | --- |
| **Responsibility of test level activities** | Tester |
| **Goal** | Verify and validate the entire software system against the specified requirements, ensuring the functionality works reliably and meets the stakeholders' expectations |
| **Test object** | Test the entire system architecture, functionality, end-to-end behaviour and interactions. |
| **Type of test environment** | Production-like quality assurance system |
| **Physical test environment** |  |
| **Test type** | System Integration Test |
| **Tester group** | SX/BSV-VN ​ |
| **Entry criteria** | Integration testing is completed |
| **Exit criteria** | The entire software system is verified, defects found during system testing are reported & resolved appropriately. |

* + 1. Optional test level: User acceptance test

|  |  |
| --- | --- |
| **Responsibility of test level activities** | Project team |
| **Goal** | Determine whether the software system meets the requirements and expectations of end-users, customers |
| **Test object** | Validating the system's usability, functionality, and overall user satisfaction. |
| **Type of test environment** | Production-like quality assurance system |
| **Physical test environment** |  |
| **Test type** | Test as user perspective |
| **Tester group** | SX/BSV-VN |
| **Entry criteria** | System Testing is completed. Test environment is set up and stable. |
| **Exit criteria** | The system's usability, functionality, and overall performance are acceptable. |

* + 1. Optional test level: Go live test

|  |  |
| --- | --- |
| **Responsibility of test level activities** | Project team (Deployment team, testing team) |
| **Goal** | Validate that the software system is ready for deployment into the production environment without any critical issues or disruptions |
| **Test object** | The complete & final software system, including all integrated components, modules, interfaces, databases, and external dependencies. |
| **Type of test environment** | Production environment |
| **Physical test environment** |  |
| **Test type** | Progression testing, Regression testing, Sanity checking |
| **Tester group** | SX/BSV-VN |
| **Entry criteria** | System Testing and User Acceptance Testing are completed. |
| **Exit criteria** | The software system demonstrates stability and reliability during go-live testing, operating without major failures or crashes. |

* 1. Test case execution types

Progression testing, re-testing and regression testing must be executed.

* 1. Test case design techniques

The test designed based on experience-based techniques. Exploratory test been performed by process owners based on their experience to understand the most important areas of the module requirements.

* 1. Test environments

The test environments listed here are used within the present project.

* Browser: Chrome, Microsoft Edge
* Network
* Document: User guide
  1. Rules for go live
* 100% Test Scripts executed
* 90% pass rate of Test Scripts
* No open Critical and High severity defects
* All remaining defects are either cancelled or documented as Change Requests for a future release
* All expected and actual results are captured and documented with the test script
* All test metrics collected based on reports from daily and Weekly Status reports
* All defects logged in Defect Tracker/Spreadsheet
* Test environments clean up completed and a new back up of the environment
  1. Test tools

The table below defines the test tools (test management tools, automation tools etc.) used in the different test levels, and the member of the test project responsible for specifying the tool requirements and for coordinating the tool provisioning.

| **Tool** | **Details** | **Responsible** | **Test level** |
| --- | --- | --- | --- |
| Microsoft Word | Test plan |  |  |
| Microsoft Excel | Test case creation | - | - |
| Microsoft Excel | Test case tracking |  |  |
| Azure | Defect management |  |  |
| Microsoft Excel | Test reporting |  |  |

* 1. Test work results

The test work results specified in the ‘Test process documentation’ must be delivered. All results of the test executions need to be traceable to the origin of the test case and possibly to found defects.

* 1. Work breakdown structure

The test activities within the test scope and test strategy defined in this plan, including capacities, milestones, and dependencies are specified in the overall project plan.

* 1. Resources and budget

Resources and budget are to be planned and monitored for each test level.

All resources required for the tests are included in the overall resource planning (like the test case designers and product architects).

1. Test case execution
   1. Test case repository

The retention period of test cases must be ensured corresponding to

* To internal / external regulations
* Legal requirements
  1. Incident and defect tracking

For each defect, a measure to solve it or to document its acceptance must be defined. Any necessary additional tests for the affected CRs correction are carried out within the re-testing coordination of modules owners and process designers.

| **Error classes** | | **Description** |
| --- | --- | --- |
| 1  (High) | Serious error/ defect | Functions that are affected by such errors are very important for the user and are used frequently.  → go live is not possible |
| 2  (Medium) | Moderate error/ defect | Functions that are affected by such errors are important for the user but are not used frequently, or they are used frequently but are not overly important.  → go live is possible, but defective functions are unusable,   high additional operating expenses. |
| 3  (Low) | Minor error/ defect | The system works in spite of these errors.  → go live is possible using workaround with reasonable additional expenses. |

Table 8: Classification of defects

1. Test report

* Include information about all testing cycles to ensure that the stakeholders get a proper and clear picture of the efforts of the testing team.
* Ensure that the information is to the point and can be easily digested.
* Include evaluation metrics, such as schedule slippage, test efficiency, effort ratio, schedule variance, expenses of defect identification, test case adequacy, test case effectiveness, etc.

1. About this document
   1. References

|  |  |  |
| --- | --- | --- |
| **Acronym** | **Document** | **Link** |
|  | Project charter | [DigitalEasy\_Project charter](https://bosch.sharepoint.com/:p:/r/sites/msteams_3371535/_layouts/15/Doc.aspx?sourcedoc=%7B06124211-80A9-4BD8-BE8F-60232695D582%7D&file=101_DigitalEasy_v1.0.1_Project_charter.pptx&wdLOR=c80F667EE-314E-4184-970C-1C89E4DD28F4&action=edit&mobileredirect=true) |
|  | Test Plan Project | This document |