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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 |

* 1. Overall schedule of the testing tasks

The detailed schedule for the tasks of this Small IT Activity is documented and assigned by Project Management.

* 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 Thi Phuong Thao (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: Component Test

|  |  |
| --- | --- |
| **Responsibility of test level activities** | Project Team, tester |
| **Goal** | Verify the Single test items or user stories work as specified in specification in isolation |
| **Test object** | The individual software component or single module |
| **Type of test environment** | Testing environment |
| **Physical test environment** | * Operating System: Win 10 64-bit, Android and iOS. * Hardware: Laptop, Mobile |
| **Test type** | Functional Test |
| **Tester group** | SX/BSV-VN Project Team |
| **Entry criteria** | The component under test should be available, stable clearly defined and accessible |
| **Exit criteria** | All planned component test cases have been executed and passed. Defects or issues identified during testing have been tracked. |

* + 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** | * Operating System: Win 10 64-bit, Android and iOS. * Hardware: Laptop, Mobile |
| **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** | * Operating System: Win 10 64-bit, Android and iOS. * Hardware: Laptop, Mobile |
| **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. Mandatory test level: Confirmation testing

|  |  |
| --- | --- |
| **Responsibility of test level activities** | Tester |
| **Goal** | Confirmation testing confirms that an original defect has been successfully fixed. |
| **Test object** | The individual software component or single module |
| **Type of test environment** | Production-like quality assurance system |
| **Physical test environment** | * Operating System: Win 10 64-bit, Android and iOS. * Hardware: Laptop, Mobile |
| **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. Mandatory test level: Regression testing

|  |  |
| --- | --- |
| **Responsibility of test level activities** | Tester |
| **Goal** | Regression testing confirms that no adverse consequences have been caused by a change, including a fix that has already been confirmation tested. |
| **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** | * Operating System: Win 10 64-bit, Android and iOS. * Hardware: Laptop, Mobile |
| **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. |

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: Firefox, Microsoft Edge, Chrome
* Network
* Document: User guide
  1. Rules for go live

Every test level has got its individual entry and exit criteria (see section 4.1). When all test levels are finished successfully, it can be evaluated if go live shall be approved. (nên 90%)

* 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, Excel | Test plan |  |  |
| Microsoft Excel | Test case creation | - | - |
| Microsoft Excel | Test case tracking |  |  |
| 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. |

|  |  |  |  |
| --- | --- | --- | --- |
| Severity | Description | Max Number of Allowed Issues per Sprint  (Depending on System Size) | |
| **For Entry Into UAT** | **For Exit Out of UAT** |
| **Critical** | - The module/product crashes or the bug causes non-recoverable conditions, database or file corruption, program hangs requiring reboot  - Application or service does not work as intended; impossible to use the application or a main function of the application; critical functionality lost  - Blocks development and/or testing work (new build, with fix, needed immediately) | 0  Showstopper - tester cannot proceed with any tests | 0 |
| **Major** | - Major system component are unusable due to failure or incorrect functionality, prevents other areas of the app from being tested, etc.  - Operation is significantly impacted; User is possibly leading to creating future problems.  - Can have a work around, but the work around is inconvenient or difficult  - Incorrect functionality of component or process. | 0  Tester cannot proceed with any tests in a functional area | 0 |
| **Normal** | - Spelling or grammatical mistakes in the User Interface  - Unfriendly behavior that is hindering, but workable, for the user or service  - There is a simple work around for the bug | 7  Does not stop testing - but limits it  e.g. data validation wrong | 5 |
| **Minor** | - Problems in the UI, other than spelling and grammatical mistakes; e.g. font sizes, placement of controls (edit boxes, list boxes, etc.) that are not hindering. | 7 | 5 |

Table 8: Classification of defects

* 1. Test results

All tests must be accepted according to the definitions for QG0 (see "Test levels" table). For the test completion report, the results of all tests and the test acceptance form from QG4/QG4 agile and QG5 should be available in written form.

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 |
|  | Requirement | [DigitalEasy \_Requirements](https://bosch.sharepoint.com/:x:/r/sites/msteams_3371535/_layouts/15/Doc.aspx?action=edit&sourcedoc=%7B67e10805-a73d-415a-9335-c9ee5ef07b3a%7D&wdOrigin=TEAMS-ELECTRON.teamsSdk.openFilePreview&wdExp=TEAMS-CONTROL&web=1) |