Instructions

*You will find instructions and help text to assist you in providing information throughout the template. You can complete the relevant sections of the template as they apply to your digital solutions. Please note that you can ignore those sections that are not relevant to your initiative.*

Name of the Template

*Solution Testing Plan*

Location in the Playbook

*Phase* [*Implementation Planning*](https://unicef.sharepoint.com/sites/ICTD-Playbook/SitePages/Implementation-Planning.aspx)

Purpose of the Template

*To define your overall scope of testing that need to be conducted and the parties that will be involved.*

Who is responsible for completing this template?

*The T4D focal point in close collaboration with the Programme lead is responsible for completing this template.*

How to use this Template?

*Use the* [*Guide to Testing Methodologies*](https://unicef.sharepoint.com/sites/ICTD-Playbook/SitePages/Implementation-Planning-Testing-Methodologies.aspx) *to familiarise yourself with the various tests that may need to be conducted, based on your technology solution. At this stage, key sections of the Acceptance Test Plan that can be completed are:*

* *Overall Scope of Testing - A description of the test phases that are required, who will be responsible for their execution and over what time frame.*
* *Test Environments - A list of all the environments and the test phases that will be conducted on them.*

#### Solution Testing Plan

General Initiative Information

|  |  |
| --- | --- |
| **Initiative Name**  An easy to understand name for your initiative. We recommend using descriptive names that describe what your initiative does. | *e.g. Birth & Civil Registration & Vital Statistics (CRVS) System - Country Y* |
| **UNICEF Office supporting the Initiative**  Enter the name of the country or field office location leading on the initiative. | *e.g. Country Y: Capital* |
| **Initiative Start Date**  Enter a date that marks the beginning or initiation of activities. This could be the first meeting with government partners, development of a concept note, inclusion in work plan, etc. |  |
| **Target Completion Date**  An estimated end date for the Initiative. This could refer to the end of a programme cycle, humanitarian response plan, hand-over to government, etc. |  |
| **Initiative Focal Point Contact**  Name, Title, E-mail (generally the Programme lead) | *e.g. Jane Doe,*  *Child Protection Specialist,* [*jdoe@unicef.org*](mailto:jdoe@unicef.org) |
| **Team Members**  Name, Title, E-mail. | *e.g. John Smith, T4D Specialist,* [*jsmith@unicef.org*](mailto:jsmith@unicef.org)  *Ann Robinson, Health Specialist,* [*arobinson@unicef.org*](mailto:arobinson@unicef.org) |
| **Phase of the Initiative**  The phases of an initiative represent the full lifecycle of T4D solutions from inception to completion or discontinuation. | [*Implementation Planning*](https://unicef.sharepoint.com/sites/ICTD-Playbook/SitePages/Implementation-Planning.aspx) |
| **Link to the INVENT entry**  URL to the initiative entry on INVENT |  |

References

*<Provide references to relevant documents for testing: System Requirements Specification etc.>*

Testing Phases

*Define what types of tests will be conducted on the solution and who will conduct these tests. Included below are a list of recommended test phases for you to choose from. For the tests that are not in scope, please mark them as Not Applicable.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Testing Type** | **Description** | **Responsible Tester** | **Testing Dates** |
| Unit and Integration Tests | Software components are tested in isolation and together during development (during sprint in Agile). | Developer |  |
| System Test | Software is tested to confirm fulfilment of functional requirements, including integration with other systems (during sprint in Agile).  System test also provides an opportunity to test in the field and get valuable feedback from real users. | Testing Team |  |
| User Acceptance Test | End-users test defined scenarios to prove that the system is fit for purpose.  **Part of Acceptance Tests** | End-Users |  |
| Performance Test | An evaluation of the overall performance of the system and validates that the system meets the expected response times, including load, stress and volume tests.  **Part of Acceptance Tests** | Specialised performance tester (observed by Testing Team) |  |
| Security Test | Testing to ensure that the application has no loopholes or vulnerabilities which could lead to data loss or cyber-security threats. Includes authentication, authorization, integrity and availability.  A **penetration test** is a simulated cyber attack against your computer system to check for exploitable vulnerabilities.  **Part of Acceptance Tests** | Experienced developer or accredited cyber security tester (particularly for pen testing) |  |
| Failover / Recovery Test | Evaluates that the application terminates gracefully in case of any failure and the data is recovered appropriately and extra resources can be allocated to move operations to back-up systems.  **Part of Acceptance Tests** | Experienced developer or specialist |  |
| Compatibility Test | Evaluates that the application is compatible with other hardware (e.g. mobile device, desktop) and software e.g. browsers and operating systems.  **Part of Acceptance Tests** | Experienced developer |  |

Test Environments

*A* ***test environment*** *is a combination of hardware, software,* [*data*](https://www.enov8.com/blog/incorporating-data-compliance-in-devops/)*, and configuration that’s required to execute test cases. You have to be sure to configure the testing environments to mimic production scenarios. Define what test environments you need for each testing activity. A minimum set of suggested environments is included below:*

|  |  |  |  |
| --- | --- | --- | --- |
| Environment Type | Description | Tests completed in environment | Environment Ready Date |
| *Development* | *Contains everything needed to build and deploy software, including the processes and programming tools used to create the software product.* | *Unit*  *Integration* |  |
| *Test* | *Environment in which the solution is tested by testing teams and end-users.* | *System Test*  *User Acceptance Test* |  |
| *Staging* | *A staging or pre-production environment is an environment for testing that exactly resembles a production environment. The primary use of a staging environment is to test all the installation/configuration/migration scripts and procedures before they're applied to a production environment.* | *Performance*  *Security* |  |
| *Production* | *“Live” environment that hosts the software product that will be used and managed by real end-users with real data.* | *None* |  |

Acceptance Testing

*In this section document the scope of testing required to formally accept the technology solution from the technology services provider.*

Test Scope

*<Describe all the features that need to be tested to complete acceptance, including basic functionalities, security features etc.)>*

*e.g.*

***User Acceptance Tests***

* *All Birth Registration Use Cases*
* *All Death Registration Use Cases*

***Performance Tests***

* *Load testing with max no. of registration agents (expected response times with high numbers of concurrent users)*
* *Load testing of the public online registration portal (expected response times with high numbers of concurrent users)*
* *Stress testing of birth registration record search (expected behaviour with multiple users performing the same transaction on the same data)*

***Security Tests***

* *Cyber-security penetration testing*

Testing Approach

*<Describe the approach to test in this phase, including details on how the testing is performed>*

*e.g.*

***User Acceptance Testing (conducted between 01/04/2021 - 30/04/2021)***

***Lab****: Civil Registration users will be invited to execute the UAT test cases related to their functions from the National Civil Registration offices:*

* *The users will first receive training on the use of the application and the test procedure.*
* *Users will then be asked to run through the test cases, observed and supported by the testing team.*
* *Defects will be verified by the testing team, who will write them up as described by the users.*
* *2 full cycles of the tests will be completed (with defect fixes between cycles), followed by a smaller set of regression tests.*

***Field****: Civil Registration users will test the same UAT test cases in their normal working environment:*

* *All lab tests conducted by users will pass before moving to the field tests*
* *Users will run through the test cases on their own devices and in their normal office environment, observed by a testing team member.*
* *Defects will be verified by the testing team, who will write them up as described by the users*
* *2 full cycles of the tests will be completed, with defect fixes between cycles*

***Performance Tests (conducted between 01/04/2021 - 30/04/2021))***

* *Contractor ABC will conduct the performance tests over the weekend using load testing and performance measurement tools.*

***Security Testing***

* *CREST certified cyber security testing Contractor DEF will conduct a full suite of attacks and produce a full vulnerability report by 29/04/2021.*
* *The development team will then have 2 weeks to respond to identified risks and a 2nd round of testing will be conducted during 16-17/05/2021.*

Test Details

*<Describe the testing environment details for all Acceptance Tests>*

|  |  |  |  |
| --- | --- | --- | --- |
| **Tests** | **Environment** | **Application Configuration** | **Test Data** |
| *e.g. UAT* | *Test* | *R1.0* | *UAT\_Test Data\_1.0* |
| *Performance* | *Staging* | *R1.0* | *Perf\_Load Data\_1.0* |
| *Security* | *Production* | *R1.0* | *UAT\_Test Data\_1.0* |

Entry Criteria

*<Describe all the entry criteria for Acceptance Testing to begin>.*

*The following tests must already have been completed with the corresponding level of coverage / test success:*

|  |  |  |
| --- | --- | --- |
| **Test** | **Coverage** | **Test Success** |
| *e.g.*  *System Test* | *3 cycles of >98% test cases executed*  *1 set of regression test scripts executed* | *Not greater than:*  *0 high severity defects*  *2 medium severity defects (with resolution plan)*  *5 low severity defects* |

Test Cases

*<List the series of tests to be conducted referring to the Use Cases identified in the Analysis and Design Phase>*

*See* [*Test Case template.*](https://unicef.sharepoint.com/:x:/r/sites/ICTD-Playbook/Library/5.2.2-Template-Test%20Case.xlsx?d=wd0e09306653e428b85ffcfdc99c0a03e&csf=1&web=1&e=5QiY5i)

Exit Criteria

*<Mention all the exit criteria for Acceptance Testing to end>.*

|  |  |  |
| --- | --- | --- |
| **Test** | **Coverage** | **Test Success** |
| *e.g.*  *UAT* | *2 cycles of >98% test cases executed*  *1 set of regression test scripts executed* | *Not greater than:*  *0 high severity defects*  *0 medium severity defects*  *3 low severity defects (with resolution plan)* |
| *Performance Test* | *All performance tests run x 2* | *Load tests:*  *> 90% of expected response times for public scenarios*  *> 100% of expected response times for civil registration staff*  *System responsive with loads up to 200% expected peak load.* |
| *Security Test* | *2 full cycles of pen testing* | *All critical and major vulnerabilities resolved.* |

Resources

*<Mention the names of all the members who will be a part of the Acceptance Testing phase with their roles>*

|  |  |  |
| --- | --- | --- |
| **Test** | **Name** | **Role** |
| *e.g.*  *UAT* | 1. *Smith* | *Registration Agent (lab and field tests - community)* |
| *UAT* | 1. *Brown* | *Registrar (lab and field tests - registration office)* |
| *UAT* | 1. *Jones* | *Test Support (lab)* |

Defect Management and Resolution

*<Mention what tools have to be used for defect logging, test management>.*

* *All defects will be tracked and managed in the JIRA system. At a minimum, defects should be logged with the following details:*
* *Unique number*
* *Title*
* *Tester Name (who identified the bug)*
* *Testing Date (when was the bud identified?)*
* *Test Case*
* *Test Data*
* *Defect Description*
  + *What the user did*
  + *what was expected to happen*
  + *what did happen.*
* *Screenshots*
* *Device*
  + *Model*
  + *OS*
  + *Browser*
  + *Version*
* *Severity*
* *(Status)*
* *(Software version of fix)*