**CEIR Test Strategy**

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1. Introduction

DMC has been at the forefront of supporting the “Ministry of Posts & Telecommunications (MPTC)” and “Ministry of Economy & Finance (MEF)” and “DMC” is a department with in Ministry of Posts and Telecommunications for providing detailed information on different aspects like revenue & traffic assessment of telecommunication and internet businesses service provider (Operators) in Cambodia and other regulatory solution for the overall growth and customer benefit of the country

Purpose of this document is to provide an overview of the test strategy for the CEIR project.

## Objective

Describe Master Test Plan for CEIR Project, to perform comprehensive testing for various subsystem within the CEIR Project. Define Test Strategy for overall CEIR perspective to validate the functionality as per the requirement. Define the scope of testing and quality process to be aligned during testing.

The key objectives for the test strategy are:

* Identify scope of testing
* Define the testing processes.
* Testing approach
* Identify resources

## Reference Documents

This is the list of documents which all will be referred to in corresponding stages, document names are generic as of now, however as and when those documents will be ready and agreed, their specific names will be updated in this section.

|  |  |  |
| --- | --- | --- |
| **Sr No.** | **Document Name** | **Description** |
| 1. | SRS Document | To Refer the detailed requirement for CEIR |
| 2. | HLD Document | To refer the High Level Designs of Requirements for system and various stake holders |

**Table 1- Reference Documents**

1. Test Strategy

## Scope

As part of DMC, Comprehensive testing on the implementation or sustenance is required to ensure the applications are defect free for new functionality. It is also important to consider future trends and application readiness while testing systems – CEIR.

* **Test Life Cycle**: This indicates process of testing to be executed in the define manner. To carry out the test life cycle, different activities mentioned in the life cycle are maintain the quality of application / systems.

### Test Life Cycle

* + - 1. *System Testing*

Validates all functionalities of systems using component test approach, and ensure each application meets the required features & functions, as per the requirements.

Each component’s functionality will be tested thoroughly by providing the input parameters and verifying if the output produced by the components are as per the mentioned requirements. Extensive focus will be paid in the test cases to cover up maximum scenarios. System testing will be executed in the offshore QA environment.

* + - 1. *Show & Tell Approach*

Sterlite will be conducting show & tell sessions with DMC team to demonstrate the delivery. Sterlite will be arranging the show & tell based on delivery. The purpose of the show & tell will be to get early feedback so that same can be addressed and incorporated before UAT. Show & Tell will be conducted in Testbed (LAB) environment from offshore.

* + - 1. *User Acceptance Test*

Conduct Acceptance to determine if the requirements of DMC met in systems. Testing performed by the customer is known as user acceptance testing (UAT), end-user testing. UAT will be conducted on Testbed (LAB) environment as per agreed test case document for the system.

UAT will be executed by DMC team and Sterlite will support.

* + - 1. *Performance Test*

Performance testing will be done on the production environment with operator CDR data as provided by STL and sample file format for various stakeholders as per agreed test case document.

## Test Approach

Test cases would be a set of scenarios and steps to execute them, where in the scenarios would be extracted from various requirement specifications. This is to ensure complete coverage of each requirement and feature without missing any part or it.

Few additional points, giving insight of testing approach to be followed for achieving the quality of:

* Number of Test will be as per the requirement captured in the SRS documents/HLD as part of end-to-end test case scenarios.
* UAT will be done Stakeholder wise and backend module wise. We will start UAT execution with one stakeholder at a time. Below are the list of Stakholder covered for CEIR :

1. Importer
2. Distributor
3. Retailer
4. Custom
5. TRC
6. Lawful Agency
7. Manufacturer
8. Immigration
9. End User
   1. Foreigner (VIP and non VIP)
   2. Cambodian User (VIP and non VIP)
10. ETL
11. GSMA
12. CEIR Admin
13. System Admin
14. Customer Care

Below are the supported process for CEIR admin team for the CEIR System:

1. System Configuration

2. Policy Configuration

3. Alert Management

4. Reporting

### Test Execution

* + - 1. *System Functional UAT*
  1. Agreed Test case of end-to-end system functional using test data for stakeholder. For operator CDRs, the data would be provided by STL. In case any data is not available, dummy data would be used.
  2. It should include all functional requirement inside SRS plus additional function that need to be tested (if any).
  3. System functional UAT will be carried out on Test server with sample data for a few files of one day data for operator CDR and sample data for other stakeholders
     + 1. *Operator Data source wise UAT*

1. Test case of each data source configuration to make sure each process output will meet requirement criteria. Few files (1 to 4 files) will put to process on Test server for verification.
2. When point (a) verification is passed, 7 days data will put for processing on Test server.
3. When point (b) is passed, configuration will be exported to production server and continue process data for 1 month

## Risks & Dependencies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No** | **Risk** | **Probability** | **Impact** | **Contingency Plan** |
| 1 | Remote connectivity loss | Low | Medium | Onsite Testbed (Lab) environment need to be accessible from offshore to provide support to onsite team as and when required during UAT phase. |
| 2 | Integration issues | High | High | Involve respective customer's 3rd party and Sterlite team to resolve problem. Provide viable workaround and carry on with next task. |
| 3 | Configuration issues | High | High | Involve QA & Installation team based on issue in hand. Provide viable workaround and carry on with next task. |
| 4 | Non-availability of Test Data | High | Medium | Test data is required to execute test cycle. In case, data are not available then need DMC team support to arrange test data. |

**Table 2 - Risk & Dependencies**

1. Test Case Template & Tracker

Please refer the test case template shared seperately for stakeholders.

**Defect Tracker:**

Below is a sample report, which could be provided during UAT,

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Status** | **Operator Name** | **Critical/Blocker** | **Major** | **Minor** | **Grand Total** |
| **Open** |  | 0 | 0 | 0 | 0 |
| **In progress** |  | 0 | 0 | 0 | 0 |
| **Resolved** |  | 0 | 0 | 0 | 0 |
| **Closed** |  | 0 | 0 | 0 | 0 |
| **Re-opened** |  | 0 | 0 | 0 | 0 |
| **Rejected** |  | 0 | 0 | 0 | 0 |
| **Total** |  | 0 | 0 | 0 | 0 |

**Figure 1 - Sample Test report**

1. Classification of issues / Defects

Following standard will be used by all involved parties to identify the issues found during Testing. The issues identified during testing can be categorized as following types.

|  |  |
| --- | --- |
| **Type** | **Description** |
| Development | Issues related to development or code |
| Environment | Issues identified due to the environment setup |
| Configuration | Issues related to the configuration of parameters |
| Integration | Issues related to the integration, like missing parameters in the request from one component to other |
| Data | Issues identified due to insufficient data or invalid data |
| Enhancement | Issues not covered as part of scope but could be required from business point of view |

**Table 4 - Issue Classification**

Further these issue types can be classified on different level of severity as mentioned below:

## Defect Severity

**Critical/Blocker Issues**

The defect affects critical functionality or critical data. It does not have a workaround. Example: Unsuccessful data process, complete failure of a feature.

**Major**

The defect affects major functionality or major data. It has a workaround but is not obvious and is difficult. Example: A feature is not functional from one module but the task is doable if 10 complicated indirect steps are followed in another module/s.

**Minor**

The defect affects minor functionality or non-critical data. It has an easy workaround. Example: A minor feature that is not functional in one module but the same task is easily doable from another module.

## Defect Status

Below table classifies different status of the defect

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Status** | **Description** |
| 1 | Open | Once the defect is reported its status would remain open |
| 2 | In-progress | As soon as work is started to find root cause and its resolution the defect status changes to in progress |
| 3 | Resolved | With acceptance of development and support team bug is fixed with its root cause and solution delivery it’s marked as resolved |
| 4 | Closed | Post re-testing if solution is acceptable then testing team will mark bug as closed |
| 5 | Re-opened | After re-testing if the testing team does not find given fix/ resolution satisfactory then bug can be re-opened with reason and expectation |
| 6 | Rejected | If the development team disagrees to the reported issue then it can be marked as rejected |

**Table 5 - Defect Status**

1. Acronyms

Following is the glossary of terms and definitions used in this Test Strategy.

|  |  |  |
| --- | --- | --- |
| **Sr.No.** | **Acronym** | **Description** |
| 1. | SRS | Solution Requirement Specification |
| 2. | HLD | High Level Design |
| 3. | UAT | User Acceptance Test |

**Table 6 - Acronyms**

1. UAT Sign off Matrix

Find below sign off matrix basis on which UAT sign off will be carried out.

| **DMC** | **Signature** | **Sterlite** | **Signature** |
| --- | --- | --- | --- |
| Mr. Oum Sophal  (Operations Manager) |  | Mr Atul Sharma  (Tech Lead) |  |
| Mr Dina Yoeurn  (Product Owner) |  | Ms. Neeti Suryavanshi  (Project Manager) |  |
| Mr. Pradeep Sharma  (Development Manager) |  | Mr. Sarju Garg  (Sr. Solution Architect) |  |
| Mr. Rajneesh Katoch  (Project Manager) |  | Mr. Shyam Sunder Garg  (Sr. Project Manager) |  |