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**Tài liệu lưu hành nội bộ**

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# Test plan summary

The purpose of the test plan is to govern the planning and control of the test effort for project testing. It defines the detailed approach that will be followed to test the applications and to deliver a quality product.

This document will provide visibility to the stakeholders in measuring the adequacy of the testing effort employed in testing for CIB-LNAR project. The project aims at migrating agreed applications from the Notes environment to the existing DB Microsoft Office SharePoint Server 2010 (dSPACE 2010), Java (DAP) and PHP environment (dWeb PHP). It started on 1-Aug-2010 and is expected to finish within 2010

The objective of this document is to outline,

* Requirements under the scope and out of scope of testing
* Test approach and strategy, including:
  + Testing phases
  + Roles/responsibilities
  + Test design structure
  + Defect management
  + Test management
  + Test success criteria
  + Deliverables
  + Test types and the relevant testing methods
* Test environment
* Test resources
* Test schedule and milestones

# Testing scope

## In scope

The following table summarizes the possible applications in-scope of CIB-LNAR B1.

| **S. No.** | **Target Application Code** | **Target Application Name** | **Target App Location** | **Complexity** | **Target Platform** |
| --- | --- | --- | --- | --- | --- |
|  | APR-0006 | Accounts Receivable Tracking System | 1-Americas | Medium | dSPACE 2010 |
|  | ADA-0009 | ADAPTS (Account Documentation and Product Tracking System) | 1-Americas | Medium | dSPACE 2010 |
|  | ACM-0002 | Automated CapEx Request | 3-APAC | Medium | dSPACE 2010 |
|  | APR-0012 | Bank Reconciliation & Control | 1-Americas | Simple | dSPACE 2010 |
|  | APR-0016 | Budget Transfer Tool | 2-EMEA | Medium | dSPACE 2010 |
|  | ADA-0043 | CARS Product Trends | 1-Americas | Simple | dSPACE 2010 |
|  | ADA-0051 | CIF & Testkey Requests | 2-EMEA | Medium | dSPACE 2010 |
|  | ACO-0019 | ClientFirst Forward Calendar | 2-EMEA | Complex | DAP |
|  | ADA-0345 | CompCase | 1-Americas | Medium | dSPACE 2010 |
|  | ADA-0075 | Corporate Contributions Rolodex | 1-Americas | Simple | dSPACE 2010 |
|  | APR-0002 | CTAS User Tracking Database | 1-Americas | Medium | dSPACE 2010 |
|  | ADA-0083 | Customer Profile | 1-Americas | Simple | dSPACE 2010 |
|  | ACM-0015 | eSA (elektronische Schüssel Adminstration) | 2-EMEA | Intranet / CMS | dWeb PHP |
|  | ACM-0019 | FETCH Custody | 3-APAC | Medium | dSPACE 2010 |
|  | ADA-0001 | GBD IT/O Project Repository | 1-Americas | Medium | dSPACE 2010 |
|  | ADA-0343 | GE Errors | 2-EMEA | Medium | dSPACE 2010 |
|  | ADA-0045 | GMC Support Tool | 2-EMEA | Simple | dSPACE 2010 |
|  | ADA-0170 | G-NIS | 2-EMEA | Medium | dSPACE 2010 |
|  | APR-0004 | GPS Policies & Procedures | 1-Americas | Simple | dSPACE 2010 |
|  | ACM-0035 | intranet-dbLions | 2-EMEA | Intranet / CMS | dSPACE 2010 |
|  | ADA-0213 | Ledger Tracking System | 1-Americas | Medium | dSPACE 2010 |
|  | ADA-0245 | NY HVPO Procedures | 1-Americas | Simple | dSPACE 2010 |
|  | ADA-0268 | Price Declaring System for bond | 3-APAC | Complex | dSPACE 2010 |
|  | ADA-0279 | QUEST | 1-Americas | Simple | dSPACE 2010 |
|  | APR-0111 | SAIF (Suspicious Activity Information Form) | 1-Americas | Medium | dSPACE 2010 |
|  | ADA-0002 | SRU Tracking | 1-Americas | Medium | dSPACE 2010 |
|  | APR-0001 | Trade Finance Orion GTB Version 4.0 | 2-EMEA | Complex | dSPACE2010 |
|  | ADA-0334 | Workflow Query Management | 2-EMEA | Medium | dSPACE 2010 |

The testing will be based on the following inputs:

* Application SRS and DD
* Lotus Notes source applications: the functions and real data, which is about 35.6 GB

## Out of scope

Any area that is not explicitly listed in section 2.1 as “within scope” is out of scope for this engagement. The areas that are out of scope for this engagement include, but are not limited to, the following:

* Performance Testing (Load, Stress and Performance profiling test)
* User Acceptance Testing (UAT).
* Pre-production testing

# Test approach



Figure : Overall app migration process flow with testing phases, roles and deliverables

## Testing phases

The table below is to define the testing phases in this project:

| **S. No.** | **Testing phases** | **Description** | **Responsibility** |
| --- | --- | --- | --- |
|  | Unit test | Test application software modules | Developers |
|  | Integration test | Verify if application function and data migration solutions can be integrated successfully | Dev leads, Developers |
|  | System test | End-to-end application test | Test team |
|  | Solution test | End-to-end application test environment in DB Singapore | SDC testers |
|  | User Acceptance test | End-to-end application test on DB test environment | DB UAT testers |

## Roles/responsibilities

The below table lists out the parties involved to testing phases (UT, Integration test, System test, UAT) and their roles and responsibilities

| **S. No.** | **Testing phases** | **Roles** | **Responsibilities** | **Location** |
| --- | --- | --- | --- | --- |
|  | Unit test | Dev lead, Developers | Create UT cases and execute UT | Vietnam |
|  | Integration test | Dev lead, Developers | Create integration test plan and build the package | Vietnam |
|  | System test | Test manager | Create test plan, allocate resource | Vietnam |
|  | System test | Test team | Create system test design, test cases and execute test | Vietnam |
|  | Solution test | SDC test team | Data migration with real data & functional test using AVF | DB Singapore |
|  | User Acceptance test | User Adoption and Documentation team | Prepare UAT test cases in AVF (Application Verification Form) document for each application | Vietnam |
|  | User Acceptance test | Regional Leads | Prepare UAT plan, get DB reviewed and approved | DB regions |
|  | User Acceptance test | DB Regional leads | Coordinate UAT activities | DB regions |
|  | User Acceptance test | SDC technical team, FMF teams | Online support (via TV meeting) for UAT testers | Online |
|  | User Acceptance test | DB UAT testers | Execute UAT using AVF | DB regions |

Unit test

* Unit test cases are prepared in Excel document format and unit testing is performed manually by developers
* Application dev lead is responsible to approve Unit test result

Integration test

* Integration testing is performed by application development team on a dedicated server, where the whole application with migrated dummy data is verified before transferring to Test team
* Application dev lead is responsible to approve Integration test result

System test

* System test is in responsibility.
* The system test is performed on application migrated dummy data
* System test result is approved

Solution test

* Solution test is in responsibility Singapore.
* Solution test is performed on fully migrated real data of the application
* Solution test result is approved Lead

User Acceptance test

* User Acceptance test is in responsibility of DB

## Test deliverables

| **S. No.** | **Deliverables** | **Created by** | **Delivered to** |
| --- | --- | --- | --- |
|  | Master test plan | Test manager | PMO, Project team, DB |
|  | Application test detailed schedule | Test team lead | Project team |
|  | UT cases and UT reports | Dev lead, Developers | Project team |
|  | Integration test plan and reports | Dev lead, Developers | Project team, Test team |
|  | System test cases and test execution reports | Test team | Project team, DB |
|  | AVF (UAT test cases) | User Adoption and Documentation team | Project team, DB |
|  | Solution test report | SDC testers | Project team, DB |
|  | UAT results | DB App owner | DB, Project team |
|  | UAT Summary report | DB Regional Lead | PMO, Project team, DB |

## Test design structure

System test design should have the following structure:

* GUI test cases:
  + GUI matrix (form/view look and feel, field layout and data type validation)
  + Browser compatibility
* Function test cases:
  + Workflow cases
  + Roles/Permission cases
  + Function cases mapping to Use cases/Functions/Business rules
* Data migration test cases:
  + Data record number comparison
  + Data fidelity verification
  + Function verification on top of migrated data
* Interface to external systems
* Performance test cases if explicitly requested

System test cases should be prioritized in 3 levels (High, Normal and Low) depending on the importance of the related function/requirement item in the application.

*Refer to 9. Reference (Test case template document)*

## Defect management

At site, the defect management tool is an in-house named DMS ( Defect Management tool)

  
Figure 2: Bug lifecycle

The key metrics of defect management are defect rate (number of defects/application size or effort) and weighted defect rate (weighted defect number/ application size or effort)

| **S. No.** | **Defect severity** | **Weight** | **Description** |
| --- | --- | --- | --- |
|  | Fatal | 10 | A major issue where a large piece of functionality or major system component is completely broken.  There is no workaround and testing cannot continue. |
|  | Serious | 5 | Major function or system component does not work, work incorrectly or is documented incorrectly. |
|  | Medium | 3 | Minor function does not work or works incorrectly or is documented incorrectly. |
|  | Cosmetic | 1 | Very minor defects, not affect the functionalities of the product. |

| **S. No.** | **Defect priority** | **Description** |
| --- | --- | --- |
|  | Immediately | Requires immediate resolution |
|  | High | Must fix as soon as possible as the bug is blocking further progress in this area |
|  | Normal | Should fix soon, before product release/milestone |
|  | Low | Negligible reduction in system value, fix if time permits. |

## Test management

### Test planning & tracking

Depending on application complexity, code package can be developed in 1-3 builds, each of them will have its defined scope.

Test team conduct Interim test, which is for builds, and Test pass, which is for completed software packages. Test pass is in System test phase while Interim test is in Build phase.

Test manager will define number of test passes and test pass duration for each application depending on its complexity.

Test team leads define detail test schedule, which is a part of application development detail schedule. Each of test team will maintain its detail plan, which covers all the apps the team is working on.

The detail schedules are in MS Project file format (.mpp)

in-house management tools such as DMS and Timesheet and various kinds of Excel file templates are used in this project for test tracking purpose.

### Communication

Test manager is a member of PMO, joining daily and weekly roll-calls with relevant project stakeholders in side

Test manager may need to work with DB representative regarding to testing matters to address the issues in relation to both sides.

Test manager and test leads will provide test reports, which include but not limited to:

* Test status summary report (on periodical basis – daily or weekly)
* Test execution report
* Bug statistical and analysis reports

### Metrics

To measure and improve testing process performance, we will base on the following metrics:

* Effort
* Size (application complexity (point) and size (estimated average effort per application))
* Defect rate
* Timeliness

and many other metrics derived from the above.

## Pass/Fail criteria

### System test sucess criteria

The below listed Entry Criteria demonstrate whether the System is eligible for conducting UAT.

* All the inputs of system testing are baselined and approved by relevant stakeholders (Common requirement, ADD, SRS, Design, Notes app, software package, System test cases).
* System testing is over and all known issues (if any) are aware by relevant stakeholders (Dev lead, SDC, Regional leads) and documented in release notes and delivered with the build.
* All planned Test Cases have been executed i.e. 100% functionality is tested.
* At least 95% system test cases have to be passed.
* 100% high priority test cases passed.
* Only Medium and Cosmetic defects can be accepted and will be part of the release notes.
* System test results are prepared. PASS conclusion is stated clearly in the report and approved by Test lead.

### UAT success criteria

prepares Application Verification Form (AVF), which is specific for each migrated application, as a basis for UAT

DB UAT testers will evaluate every functions/items listed in the AVF and make conclusion whether the result is Passed or Failed

The UAT is Passed if

* All AVF items are executed
* No items are evaluated as Poor

On the contrary, it will be Failed

# Test types

As mentioned in section 3.4 Test design structure, there are basically GUI, function and data migration test types for all migrated applications.

Test team also conduct deployment test to verify package deployment guidelines.

There will be Notes Migration test guideline to detail the test design, execution method and pass/fail criteria for each test types and specific for Notes migration project

## GUI and Function testing

*Refer to section 9. Reference (CIB-LNAR Test case template and guideline)*

## Data migration testing

Real data cannot be brought out of DB office, so data migration test will be in two phases: at offshore with dummy data and at SDC with real data. Test successful criteria are different in those phases.

*Refer to section 9. Reference (CIB-LNAR Test case template and guideline)*

## Security testing

Testing how well the system protects against unauthorized internal or external access, wilful damage. The Process to determine that a System protects data and maintains functionality as intended. This can be achieved by doing security focused code reviews and authorization/authentication test, which is a part of function testing.

team will perform the security reviews of the solution. DB will be responsible for the overall security of the infrastructure.

## Performance testing

In case of remarkably high response time of page load, or specific requirement about application performance, test team will measure the response time of identified pages/forms manually and make the corresponding report.

Overall site performance testing will be done by DB.

## BVT or Smoke testing

Build Verification Test cases will be subset of System test cases ensuring that they cover majority of the critical business workflows. For each Test pass (see 3.6.1 Test planning & tracking), BVT test cases will be executed. For Interim test, a subset of BVT that is depending on the build scope will be executed. This will be performed to determine if a new build is in a state for accepting it for test execution by test team.

If there is no issue or only minor issues with BVT, the regular testing scheduled for build will commence.

BVT will differ from application to application; major focus will be around…

* Covering all app use cases and workflow.
* All forms are migrated in the target site.
* All user roles/groups are migrated in the target site.
* User should able to submit the form.

*Refer to section 9. Reference (CIB-LNAR Test case template and guideline)*

## Regression testing

Regression testing is the process of testing changes to the application, to make sure that the older functionality still works with the new changes and defect fixing.

*Refer to section 9. Reference (CIB-LNAR Test case template and guideline)*

# Test Environment

Test environment at site is controlled by Migration Factory Technical support team. The team is responsible for setting up test server configuration, training project member and conducting audit to ensure that the test environment is used correctly and effectively.

There are should be following main sets of test environment at site:

* Unit test environment
* Integration test environment
* System test environment

Solution Architect will provide hardware sizing for UAT environment (DAP, dWeb PHP, dSPACE) and design for offshore test environment.

The test environment is described in CIB-LNAR Environment Readiness strategy

# Resources

Project test resource organization and deployment are described in the table below:

| **Type** | **Team structure** | **Role** | **Resource** | **Location** |
| --- | --- | --- | --- | --- |
| Test teams | 1 Test Manager, who is responsible for ultimate testing result of the migrated applications at side  3 test teams, which involve:  1 Test lead, test designers and testers | Test Manager | Quyen, Tran Thuc | , Vietnam |
| Test team lead | 1. Trang, Ha Thu  2. Phuong, Nguyen thi Minh  3. Ha, Le thi Thu |  |
| SDC test team | One test team, including 1 team lead and testers | Team lead | Thanh, Dam Phuong | SDC, Singapore |
| UAT test team | DB resources with assistance |  |  | DB regions |

*Refer to section 9. Reference (CIB-LNAR Project organization chart)*

# Test milestones

## Project milestones

Master testing schedule will follow the CIB-LNAR B1 project master schedule.

The main milestones of project are:

Scope confirmation: 6-Aug-2010

End date: 30-Apr-2011

Main milestones:

* B1 Scope confirmation: 6-Aug-2010
* Planning: 7-Sep-2010
* Development: 15-Nov-2010
* UAT end: 25-Dec-2010
* Roll-out end: 4-Feb-2011
* Warranty end: 8-Apr-2011 (60-day warranty for every applications)

The most important constrain of this project is all B1 applications need to be rolled out within 2010.

## Test milestones

| **S. No.** | **Milestone** | **Completion criteria** | **Date** |
| --- | --- | --- | --- |
|  | Test planning | Master test plan final delivery to DB | 7-Sep-2010 |
|  | System test end | All B1 apps passed system test and delivered to SDC | 15-Nov-2010 |
|  | UAT end | All B1 apps passed UAT and ready for roll-out | 25-Dec-2010 |

# Glossary

|  |  |
| --- | --- |
| Acronym | Description |
| CIB | Corporate & Investment Bank |
| DB | Deutsche Bank |
|  | Software Corporation |
| UAT | User Acceptance Test |
| SRS | Software Requirement Specifications |
| Notes App | Lotus Notes Application |
| AVF | Application Verification form |
| SDC | Singapore Deployment Center |

# Reference

The below table is to list out the auxiliary documents for this plan. Some of them are ready, the others are being developed or will be inherited from others

| **S. No.** | **Document** | | **File** | | **Note** | |
| --- | --- | --- | --- | --- | --- | --- |
|  | | CIB-LNAR Project organization chart | | CIB-LNAR\_Organization Chart-v1.0.pptx | |  |
|  | | CIB-LNAR Project Master plan | | CIB-LNAR\_Migration Plan\_v0.1.5.3.mpp | |  |
|  | | FSoft standard test process and guideline | | Guideline\_Software\_Testing.pdf  Process\_Test.pdf | | CIB-LNAR Unit test, Integration test and System test follow FSoft standard process and Guideline |
|  | | CIB-LNAR Solution test and UAT processes | | CIB-LNAR\_Solution Test Process\_v1.0.docx  CIB-LNAR\_UAT Process\_v1.0.docx | | The processes are specific for this project |
|  | | CIB-LNAR Application Conversion Plan template | | CIB-LNAR\_Prism Tables\_Dev\_Plan\_v0.7.0.mpp | | Quality Gates and Test passes are planned |
|  | | CIB-LNAR Test case template and guideline | | CIB\_LNAR\_[App code]\_[App name]\_Data Migration Test Case\_Template.xlsx  CIB\_LNAR\_TACode\_ApplicationName\_SystemTestCase\_vx.x\_Template\_v3.0.xlsx | | Application test case template (function and data migration) |
|  | | CIB-LNAR Test summary report template | | CIB-LNAR\_Test summary report template.docx | |  |
|  | | AVF | | CIB-LNAR\_App\_Code\_App\_Name\_Application\_Verification\_Form\_Template\_vX.X.docx | | Application verification form |