Great-West Life
Information Services

Investment Accounting System (IAS) - Segregated Funds Financial Services (SFFS)

Test Strategy

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1 Introduction

1.1 Purpose

The purpose of the Test Strategy document for the Investment Accounting System (IAS) Program - SFFS is:

- To define a Test Strategy that will guide the project's testing deliverables through to completion of the SFFS implementation in 2014.
- To outline the testing approach, test objectives, scope and the different types of test execution phases that will be used.
- To identify the target test items, test environments, test tools, test case structure and defect management process.
- To build a common understanding and agreement amongst testing participants and approval from stakeholders.
- To ensure that all functionality and changes introduced into the system are compliant and accurate based on the Business requirements and system specifications

1.2 Project Context and Background

MPower, an investment accounting system provided by CGI, is currently used by the GWL segregated fund and general fund back offices; and IG and Mackenzie mutual fund back offices (the "Stakeholders").

The MPower replacement project became a requirement when CGI indicated that they will soon phase out MPower in favor of their new product – Mvest. The change from MPower to MVest is viewed by the Stakeholders to be so significant that it is a system replacement, not simply a system upgrade. Since the Stakeholders are faced with a mandatory system replacement, they have taken the opportunity to evaluate multiple investment accounting system vendors to see which system will best meet the needs of our organization. There was a desire by all Stakeholders to identify a single solution that met all Stakeholders' needs and provided the best solution from a Power Financial Corp. standpoint.

The Stakeholders have undertaken a formal and rigorous process to identify the replacement system that best meets their business needs from a strategic, financial, operational and technological perspective.

After an extensive and rigorous process which included RFI and RFP stages, a period of test driving the potential systems, performance tests by vendors and information obtained from industry consultants, GWL identified Multifonds (MF) as the vendor with the best fit for the GWL segregated fund and general account back offices and launched a Concept of Operations as the final round of diligence before requesting and obtaining C-Level approval to proceed with the implementation of a new Investment Accounting System.

The Investment Accounting System (IAS) program – SFFS Business Unit implementation will include the following projects:

- Core product implementation
- Integration – Core Product
- Infrastructure
- IRFI Gap Closure

The IAS Core Implementation Project for SFFS is responsible for functionally configuring the Multifonds Fund Accounting application, converting data from the legacy systems (MPower5 and SF01) into the Multifonds system, decommissioning the legacy systems and transitioning the business from legacy processes to the future-state processes.

The IAS Integration Project is responsible for replacing existing interfaces from MPower5 and SF01 to the new Multifonds solution and, where required, developing new interfaces. Some current interfaces may no longer be required and there may

become a need for transitional interfaces required only in the short-term to support successful implementation of the Multifonds solution.

The Investment Accounting System (IAS) Infrastructure Project is responsible for putting in place the hardware, software, storage and network components that will support the new IAS solution. It is also responsible for preparing the IS organization to support the new solution and successfully transitioning the infrastructure to production and maintaining that infrastructure until the close-out of the IAS Program at which time it will be transitioned to business as usual (BAU).

The IAS IRFI Gap Closure Project is responsible for filling any gap created as a result of the decommissioning of the SF01 System.

1.3 Scope

There will be three testing phases for the Investment Accounting System (IAS) – SFFS. The following initiatives will be part of the testing effort for each testing phase:

- **Phase 1 – Configuration**
    - Infrastructure Testing – Non-Production Environments
        - Configuration testing of the new Non-production environments by the Infrastructure Team will include:
            - Hardware
            - Operating System
            - Database
            - Network
            - Authorization
            - Authentication
        - Security Testing
            - Infrastructure Vulnerability Assessment Scan
    - Multifonds Fund Accounting – Release 4.0 Configuration
        - System Configuration
            - System Configuration/Setup will be created by the vendor in conjunction with the Business for the following:
                - Accounting Charts
                - Security Types (GTI's)
                - Operation Codes
                - NAV Codes
                - Fee Codes
                - Currency Codes
                - Industry Codes
                - Tax Tables
                - Valuation Model
                - Country Codes

Monitor (WEM set up)
- Application Parameters
- Setup validation

- Security Groups

- Multifonds Fund Accounting – Release 4.0 Configuration Functional

  - Transaction focused testing of all security types to validate the system configuration meets the Business requirements
  - Security Testing
    - Application Vulnerability Assessment Scan

- **Phase 2 – Functional Core/Gap Closure**

  - Multifonds Fund Accounting – Release 4.1 – Functional Gaps
    - GWL Functional Gaps
      - DEV40 - Mutual Fund Trading
      - DEV63 - Asset Allocation Processing
      - DEV56 - Peer Groups Exception Management
      - DEV23 - Fund of Fund Rate of Return Analysis
      - DEV65 – Automated Distribution Reinvestment
      - DEV64 - Daily Payable Expense
      - DEV68 – WEM Control – Identify Deleted NAV Confirmations
      - DEV51 - User Defined Fields and User Defined Comments
      - DEV09 - Multi-book Accounting
      - DEV62 – Fund ROR and Starting Unit Value
      - DEV48 - Rating Agency Management
      - DEV72 - Check on Duplicate Trades
      - DEV71 - Control on Closed Series
      - DEV70 – Control on Large Security or Shareholder Transaction
      - DEV69 – NAV Reporting

  - Multifonds Fund Accounting - Release 4.1 **–** Security Pricing & WEM
    - Security Pricing
      - Inject Price Files
      - Price Scrubbing / Levels
      - Foreign Fair Value
      - Market Value Validation
      - Price Rollover

    - WEM – Workflow Exception Management
      - WEM Configuration
      - Test WEM Controls
      - WEM HSM

  - Multifonds Fund Accounting – Release 4.1 – NAV Cycle
    - Full Functional test of the NAV Cycle
      - Start of Day (SOD)
      - Final (FNL)

nce testing of the Multifonds Fund Accounting application running on the GWL environments is required

- **Phase 3 – Integration/Reports/Migration/Model Office**
    - Integration Testing – Functional
        - SFFS Interfaces
            - Test planning/execution of SFFS interfaces throughout the agile development cycle
            - Demand Service - TBD
                - Security Request Process
                    - Security Master Info
                        - XIP FO to: SS&CNet, Expertus, Solium
            - Inbound
                - Market Data (Pricing)
                    - Pre NAV/PU End of Day Process
                        - Security Prices
                        - Foreign Exchange Rates
                        - Dividend Announcements
                - SS&CNet
                    - Trade Capture Process
                        - Trade Info
                - Expertus
                    - Trade Capture Process
                        - Trade Info
                - Solium
                    - Trade Capture Process (Possible Manual Load – TBD)
                        - Trade Info
                - XIP FO
                    - Trade Capture Process
                        - Trade Info
                        - Security Master Info
                - CTI
                    - Pre NAV/PU End of Day Process
                        - Transactions
                - MLS
                    - Pre NAV/PU End of Day Process
                        - Transactions
                - Optimus
                    - Pre NAV/PU End of Day Process
                        - Transactions
                - FundServ

y Process
        - Transactions
- InfoBase
    - Post NAV/PU End of Day Process
        - Security Positions
        - GL Balances
        - Security Master info
        - Transactions – Security Trades
        - Fund/Series Values
        - Security Prices
- XIP FO
    - Start of Day Process
        - Security Positions
        - GL Balances (includes Cash)
- IC – FO
    - Start of Day Process
        - Security Positions
        - GL Balances
- SS&C Recon (BO and FO)
    - Start of Day Process
        - Security Positions
        - GL Balances – Cash Positions
- GRDB
    - Post NAV/PU End of Day Process
        - Security Positions
        - Security Master info
- Solium
    - Post NAV/PU End of Day Process (May NOT be required TBD)
        - Security Positions
- SS&C Recon (BO and Custodian)
    - Post NAV/PU End of Day Process
        - Security Positions
        - GL Balances – Cash Positions
        - Cash Transactions
- Internal/External Parties
    - Post NAV/PU End of Day Process
        - Fund/Series Values

ces with downstream systems

- Inbound
  - Deposits /Withdrawals Process
    - Transactions
- Outbound
  - NAV End of Day Process (Valuation after Deposits/Withdrawals)
    - Fund/Series Values
  - Post NAV/PU End of Day Process (Valuation before Deposits/Withdrawals)
    - Fund/Series Values

- IRFI Functional Enhancements

  - IRFI Functional Enhancements are required due to the decommissioning of the SF01 system
  - New IRFI tables/processes to support the move of data/functionality from SF01 to IRFI
  - All IRFI processes that access the new IRFI tables for the SF01 data
  - New functionality to assume SF01 processing – TBD – Scope to be confirmed during Requirements/Analysis phase
    - Forcing of unit values including maintaining a category force indicator
    - London Life zero tax factors
    - Future valuation dates

- InfoCentre SFFS
  - GWL developed InfoCentre SFFS Reports/Extracts/Views

- Data Migration/Conversion

  - Test the migration and reconciliation of funds including all hierarchical dependencies. Start by migrating simple funds, moving to larger scale funds; investigating/fixing/improving from one run to another until a full volume test is achieved.

- Cycle Test – Functional Integration Test
  - Cycle Test Detail Test Planning
  - Functional/Integration testing of all inbound and outbound SFFS interfaces
  - Data Flow and Data Integrity test from Source Systems, Core and Downstream systems
  - Validate the correct interfaces are created with the correct data content for each of the 3 daily NAV cycles
  - Validation of the interfaces files by the Downstream systems

- Infrastructure Testing – Production Environment

testing of the new Production environment by the Infrastructure Team will include:

- Hardware
- Operating System
- Database
- Network
- Authorization
- Authentication

- Disaster Recovery (DR) Test
- Security Testing
    - Infrastructure Vulnerability Assessment Scan

- Model Office
    - Parallel Test – Scope TBD during detail test planning
    - Performance Timing Tests
        - Load of D/W's from IRFI
        - Processing of Available Cash for DEV40 trades (FundSERV, ASL, MSL)
        - End of Day (EOD) NAV including end to end WEM
    - Final Security Testing
        - Infrastructure and Application Vulnerability Assessment Scan

Note:

- Scope items may change during the year due to Business and Project priorities.

1.4 Document Terminology and Acronyms

The following is a list of acronyms used in this document:

- AD – Application Delivery
- BA – Business Analyst
- BAU – Business As Usual
- BRD – Business Requirements Document
- ETL – Extract, Transform and Load
- FIT – Functional Integration Testing
- GRDB – Global Reporting DataBase
- IAS – Investment Accounting System
- PM – Project Manager
- QA – Quality Assurance
- SAN – Systems Analyst
- SD - Software Developer
- SFFS - Segregated Funds Financial Services
- TAS – Tax Allocation System
- UAT – User Acceptance Testing

1.5 References

The following is a list of deliverables that will be used as input or otherwise referenced in the development of this document.

Project Documents:

- Investment Accounting System (IAS) Program – Testing Framework: \\Gwlanfs8\ias program\Testing\Establish Test Strategy and Plan
- Investment Accounting System (IAS) Program – Standard Quality Procedures & Guidelines:

\\Gwlanfs8\ias program\Testing\Establish Test Strategy and Plan

- All RFP Business Requirements Documents are located within the following Folder:

\\Gwlanfs8\ias program\99 RFP Work Stream\RFP Business Requirements Analysis and High Level Design

- All Gap BRD are located on the SharePoint Site - SEG-Net :

- All Integration Requirements Documents are located within the following Folder:

\\Gwlanfs8\ias program\30 Integration Project\30.2 Integration Blueprint

Test Level
Parallel Test (Model Office)
Acceptance Test
Security Testing

1.6 Test Objectives

The general objective of testing is to verify that the system solution meets the stated Business requirements. The specific objectives for each test level are defined below:

Test Level	Responsibility	Objective
Unit Test	Development Teams / Vendor	• To verify each software unit executes according to design specifications, and that it is free of data and logic errors.
Functional Test	Test Team	• To verify the Multifonds Fund Accounting Core Product, Configuration setup/changes, gap closure enhancements, data migration and reports work and process correctly according to Business Requirements.
System Integration	Test Team	• To verify all system interfaces in the system specifications process correctly with the new application and existing applications • To verify that interdependent modules/systems processes work correctly together after the inclusion of the new application and modified code.
Regression Test	Test Team	• To verify the existing code continues to process correctly after the integration of the modified code. • Test Team will determine the extent of regression testing to be performed by analyzing the impact the functional change has on the system.
Non-Functional Test	IS Technical Test Team	• Run automated performance scripts to verify the new application meets the performance requirements.
End-to-End System Test (Cycle Test)	Test Team	• To verify all system changes, system interfaces and data feeds work correctly together and deliver the expected results.

1.7 Test Motivators

Validate all functionality and functional enhancements introduced in the new application work correctly according to the Business Requirements and System Specifications.

Validate all interfaces/data feeds, user interfaces and ETL processes work correctly and deliver the expected results.

Obtain Business Acceptance of the delivered functionality.

2 Test Approach

Technique Objective:	To verify the Multifonds Fund Accounting Core Product, configuration setup/changes, gap closure enhancements, data migration and reports work and process correctly according to Business Requirements.
Technique/Strategy:	The QA test team from the Core Implementation project will functionally test the application & code changes for the Core Product, configuration setup/changes, gap closure enhancements, data migration and reports in the GWL test environments. The QA test team from the IRFI Gap Closure project will functionally test the IRFI application & code changes required to fill the gap created by the decommissioning of the SF01 system. Detail Test Plan (s) will contain all planned and reviewed test scenarios and test cases that will be executed for each testing phase.
Required Tools:	ClearQuest will be used as the defect management tool for all systems. Any results which vary from the expected result will be logged as a defect.
Success Criteria:	Successful completion of all planned test cases with no outstanding Severity 1 or 2 defects.
Special Considerations:	

2.1 Standard Quality Procedures & Guidelines

The test effort for all three phases of the Investment Accounting System (IAS) Program – SFFS Business Unit implementation will follow the QA procedures as outlined in the Investment Account System (IAS) Program Standard Quality Procedures & Guidelines:

IAS Program
Standard Test Procec

2.2 Conducting Tests

2.2.1 Unit Testing

Technique Objective:	To validate that each software module executes according to design specifications and is free of any logic defects.

2.2.2 Functional Testing

2.2.3 System

Integration Test

Technique Objective:	To verify all system interfaces in the system specifications process correctly with the new application and existing applications To verify that interdependent modules/systems processes work correctly together after the inclusion of the new application and modified code.
Technique/Strategy:	The QA test team from the Integration project will functionally test all new interfaces from/to the Core Product and validate the data flow from/to the existing applications in the GWL test environments.
Required Tools:	ClearQuest will be used as the defect management tool for all systems. Any results which vary from the expected result will be logged as a defect.
Success Criteria:	Successful completion of all planned test cases with no outstanding Severit or 2 defects.
Special Considerations:	

2.2.4 Regression Testing

Technique Objective:	To verify the existing code continues to process correctly after the integratio of the modified code.
Technique/Strategy:	Regression testing will be combined with the functional/integration testing performed by the QA Test Team (s). The QA Test Team (s) will determine the extent of regression testing to be performed by analyzing the impact of the functional change to ensure the existing code (after the integration of the modified code) continues to work correctly and deliver the expected results. The analysis of the impact of the functional change will include the SAN, SD and BA if required.
Required Tools:	ClearQuest will be used as the defect management tool for all systems. Any results which vary from the expected result will be logged as a defect.
Success Criteria:	Successful completion of all planned test cases with No outstanding Severity 1 or 2 defects.
Special Considerations:	

2.2.5 End-to-End System Testing (Cycle Test)

Technique Objective:	To
Technique/Strategy:	A Th
Required Tools:	Cl
Success Criteria:	Su
Special Considerations:	

2.2.6 Parallel Testing (Model Office)

Technique Objective:	To

Technique Objective:	To verify the processing of a number of business process cycles using the same sub-set of data on both the new and old systems; produce the same results.
Technique/Strategy:	A series of Business process cycles will be executed on the same subset of data on both the new and old systems. Test results will be validated on both the new and old systems to verify the same results are obtained.
Required Tools:	ClearQuest will be used as the defect management tool for all systems. Any results which vary from the expected result will be logged as a defect.
Success Criteria:	Successful completion of all planned test cases with No outstanding Severity or 2 defects.
Special Considerations:	

Technique Objective:	To
Technique/Strategy:	Te
Required Tools:	Te
Success Criteria:	On
Special Considerations:	

2.2.7 User Acceptance Testing

Technique Objective:	To establish business acceptance of the solution and verify the solution works correctly and delivers the expected results from the business perspective.
Technique/Strategy:	User Acceptance Testing (UAT) will be performed by the Business. The Business will review and approve all the completed detail test plans and test results from all the functional and system integration testing performed through the three phases of the SFFS implementation. The End-to-End and Parallel testing will be the final part of the User Acceptance Testing. End-to-End and Parallel (UAT) test plans will be created/executed by the Business and contain all the test scenarios/cases (test sets/conditions) required to be executed successfully to obtain business acceptance.
Required Tools:	ClearQuest will be used as the defect management tool for all systems. Any results which vary from the expected result will be logged as a defect.
Success Criteria:	Successful completion of all the End-to-End (UAT) planned test cases and approval of all functional and system integration completed test plans and test results.
Special Considerations:	

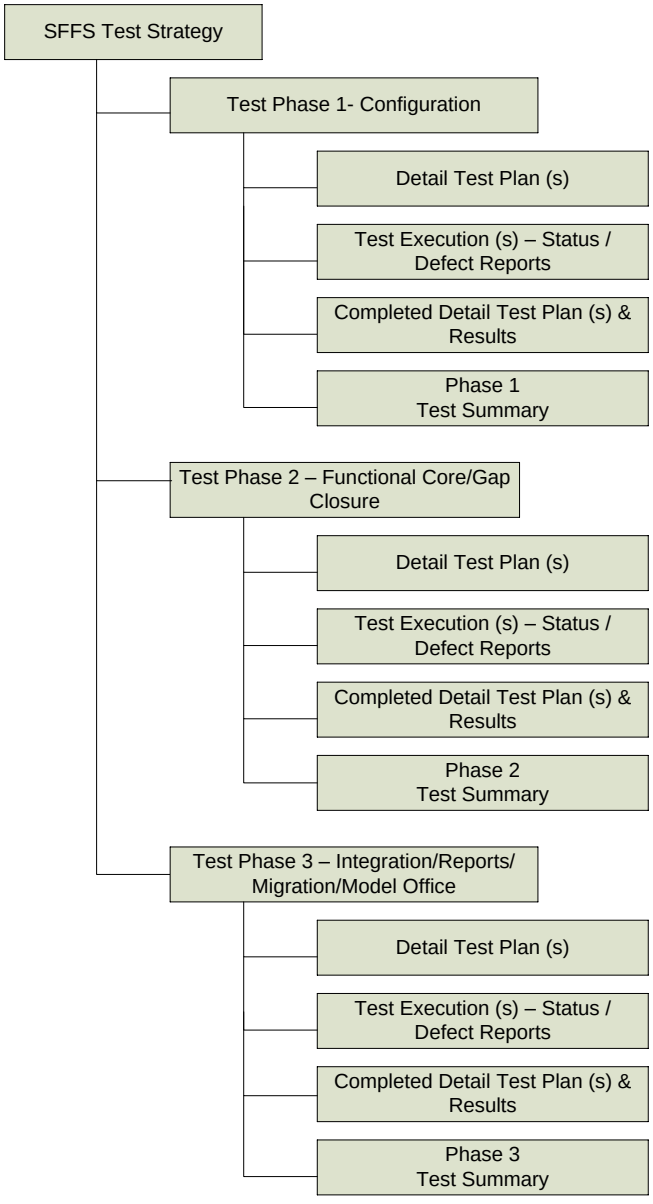
2.2.8 Security Testing

Technique Objective:	To verify there are no critical security vulnerabilities with either the infrastructure assets and/or the application that could compromise the integrity of business processes or allow unauthorized access to secure sensitive data.

2.3 Test Deliverables - SFFS

- This is a

- Test Strategy - SFFS
- Test Deliverables by Test Phase
    - Detailed Test Plan (s) – Test Scenarios/Cases (Test Sets/Conditions)
    - Test Managements Reports
        - Weekly Dashboard/Status Report
        - Defect Reports
    - Completed Detailed Test Plan (s) and Test Results
    - Test Summary Report



2.4 High Level Test Schedule

Below is the high-level test schedule for the Investment Accounting

Test Activity	Mar	Apr
Test Strategy - SFFS	TBD	
Phase 1 - Infrastructure		
Phase 1 – MF Rel 4.0 – Configuration Test Plan		
Phase 1 – MF Rel 4.0 – configuration Test Execution		
Phase 1 – MF Rel 4.0 – Functional Test Planning		
Phase 1 – MF Rel 4.0 – Functional Test Execution		
Phase 2 – Rel 4.1 – Dev Test Planning		
Phase 2 – Rel 4.1 – Dev Test Execution		
Phase 2 – Rel 4.1 – Pricing & WEM Test Planning		
Phase 2 – Rel 4.1 – Pricing & WEM Test Execution		
Phase 2 – Rel 4.1 – NAV Cycle Test Planning		
Phase 2 – Rel 4.1 – NAV Cycle Test Execution		
Phase 3 – Integration – Testing throughout Agile Development & FIT		
IRFI System Testing		
IRFI Integration Testing		
IRFI UAT/End-User Testing		
IRFI Implementation		
Info Center Reporting		
Phase 3 – Data Migration – Test Planning		
Phase 3 – Data Migration – Test Execution		
Cycle Test – Test Planning		

Cycle Test – Test Execution												TBD	TBD	TBD	
Phase 3 – Model Office – Test Planning													TBD	TBD	
Infrastructure Testing - Prod													TBD	TBD	
Phase 3 – Model Office – Test Execution														TBD	TBD
Implementation –SFFS															TBD

3 Environmental Needs

3.1 Base System Hardware

The following table sets forth the system resources for the test effort.

System Resources		
Resource	**Quantity**	**Name and Type**
Presentation Layer Server	1	- GWIASAPU1 (Dev, FIT, UAT & Support) - IBM x3650 M4, 3.46Ghz, dual sockets, single 8 Core CPU - Memory: 96GB - Disk: 146 GB mirrored
Reporting Server	1	- GWIASAPU2 (Dev, FIT, UAT & Support) - IBM x3650 M4, 3.46Ghz, dual sockets, single 8 Core CPU - Memory: 96GB - Disk: 146 GB
Presentation Layer Server	1	- GWIASAPP1 (Prod) - IBM x3650 M4, 3.46Ghz, dual sockets, single 8 Core CPU - Memory: 96GB - Disk: 146 GB mirrored
Presentation Layer Server	1	- GWIASAPP2 (Prod) - IBM x3650 M4, 3.46Ghz, dual sockets, single 8 Core CPU - Memory: 96GB - Disk: 146 GB mirrored
Reporting Server	1	- GWIASAPP3 (Prod) - IBM x3650 M4, 3.46Ghz, dual sockets, single 8 Core CPU - Memory: 96GB - Disk: 146 GB
Reporting Server	1	- GWIASAPP4 (Prod) - IBM x3650 M4,

System R	
Resource	**Qua**
Integration Server	
Application/Database Servers	
Storage	
Central File Share Server	
SQL Transition DB Server	
SQL WEB Server Tool	
MOVEIT Central Server	
MOVEIT DMZ	

3.2 Base System Software

The following base software elements are

required in the test environment for this *Test Strategy*.

Software Element Name	Version	Type and Other Notes
Client Tier		
Internet Explorer	7 or 8	
Windows	7	
Java applet	SUN JRE 1.6.0_20	
Middle Tier – Presentation Server		
Windows Server	2008 R2	
Weblogic Suite	10.3.5	
Middle Tier – Reporting Server		
Business Intelligence Publisher		
Weblogic Server Enterprise Edition		
Middle Tier – Integration Server		
Ab Initio Co>Operating System	3.0.4	
Database Server		
Oracle Server Database Enterprise Ed	11g R2 11.2.0.3	
Oracle Diagnostics Pack		
Oracle Partitioning		
Multifonds	4.0	
Backup Software (UNIX & Windows)		Networker
Networker Backup Agents		25 Pack Networker licenses for Windows and UNIX

3.3 Test Environment Configuration

The following Test Environment Configurations needs to be provided and supported for this project.

- DEV – Development (DEV1, DEV2)
- FIT – Integration (FIT1)
- UAT – User Acceptance (UAT1, UAT2, UAT3, UAT4)

3.4 Tools

The following tools will be used for this project

Defect Tracking
Project Management

4 Business Acceptance Criteria

4.1 Acceptance Test Strategy

The successful execution of the different levels of testing for each test phase will prove that the application can be deployed to Production.

UAT (User Acceptance testing) will establish business acceptance of the application and verify the application works correctly and delivers the expected results from the Business perspective.

The Business will review and approve the all detailed test plans and test results obtained during the different levels of testing performed by the test team (s) for all three phases.

The Model Office Testing will consist of the End-to-End and Parallel Testing. The Model Office testing will be the final part of the User Acceptance Testing. End-to-End and Parallel (UAT) test plans will be created/executed by the Business and contain all the test scenarios/cases (test sets/conditions) needed to be executed to successfully to obtain business acceptance.

5 Risks, Dependencies, Assumptions, and Constraints

5.1 Risks

All project risks are documented and managed at a project/program level.

The following risks associated with testing should also be highlighted:

Risk	Probability	Impact	Mitigation Strategy	Contingency
Risk that testing resources are not 100% allocated to the projects will impact project schedule	H	H	Full time resources internal/external can be requested. Monitor shared resources workload against schedule.	Additional external resources can be engaged to meet project timelines.
Risk that delays encountered in the testing phase of one project may impact the testing schedule of the other projects	M	H	Monitor all projects testing schedule to analysis the impacts of a delay to the other projects and take required actions to minimize the impacts.	Escalate any issues causing delays to remediate quickly and minimize the impacts to other projects.
Risk that delays in acquiring the infrastructure components for the non-Prod environments may impact the testing schedule	H	H	Multifonds Release 4.0 and Pre-Release 4.1 testing will be performed on a vendor hosted test environment	
Risk that a high number of vendor defects and/or extended defect turnaround time may impact testing schedule	M	H	Monitor Vendor's defect tracking systems on a regular basis for defect resolution updates	Escalate any delays in defect resolution that will impact the testing schedule

5.2 Dependencies

Dependency between	Potential Impact of Dependency	Owners
Test case creation is dependent on requirements/specifications being completed on time.	Delay the	
Test execution is dependent on code being written/modified and unit tested by GWL and the vendor respectively		
Test execution schedule is based on the vendor's software release schedule		

5.3 Assumptions

Assumption to be proven	Impact of Assumption being incorrect
Test Resources will be available to start at the beginning of the scheduled testing activities and be assigned through to the end of testing activities for each project	Delay testing schedule.
One Portfolio QA will be resourced to manage the test effort on all projects	Possible inconsisten between projects an potential lo of any testi synergies

Assumption to be proven	Impact of Assumption being incorrect	Owners
	between projects	

5.4 Constraints

Constraint on	Impact Constraint has on test effort	Owners
Production Support Issues	Delay testing schedule.	

6 Sign-off – version 1.3

I have confirmed that the planned Test Strategy described in this document will meet the required needs and addresses any potential risks. The level and types of testing to be completed will be satisfactory in ensuring the required functionality works as per defined requirements. I agree with the test approach identified by the test expert assigned to this work.

Approvals

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- Scott Hunter, Business SME/Tester
- Murray Hutchinson, Business SME/Tester
- Lindy Naturkach, Business SME/Tester
- Kendra Pries, Business SME/Tester
- Guy Carriere, Business SME/Tester
- Rajdeep Mahal, Quality Assurance Analyst

Integration Project:
- Pervaiz, Aftab, Project Manager
- Marcela Sussi, Systems Analyst
- Scott Cochrane, Systems Analyst
- Marina Ferguson, Systems Analyst
- Doris Wiebe, Systems Analyst
- Gurmukh Roopra, Systems Analyst
- George Poritsanos, Systems Analyst
- Kristen Hokke, Systems Analyst
- Jay Bauerlein, Software Developer
- Dean Norrie, Software Developer
- Delvin Klimack, Software Developer
- Mark Fleck, Software Developer
- Devadev Annadurai, Software Developer
- Sivaramakrishna Thondapi, Software

Developer

- Lalit Tankala, Software Developer
- Ihor Hluszok, Senior Systems Architect
- Alex Wiebe, Systems Architect
- Dean Bartlett, Quality Assurance Analyst
- Sreya Chakravarty, Quality Assurance Analyst

IRFI Gap Closure Project:

- Mary Coghlin, Project Manager
- Lynda Hughes, Lead Analyst
- Terri Sinclair, Lead Developer
- Donna Coombs, Business SME/Tester
- Tonia Montoya, Business SME/Tester

Internal Audit:

- Ken Fanstone, AVP Internal Audit
- Wade Bo-Maguire, Manager, Internal Audit Systems
- Sushma Uniyal, Associate Mgr, Internal Audit Systems
- Karyn Masson, Associate Audit Manager
- Laura Wetton, Assistant Audit Manager

Appendix A: Testing Checklists

Security

Application Security Standard

Manitoba Public Insurance

This standard outlines how software applications must adequately protect the use and management of the Enterprise's information. The controls within this standard apply to all new project initiatives, whether they are interactive or batch in nature and regardless of their ownership (business vs infrastructure) or design (in-house built vs purchased).

Application Security Standard		Applied?			COMMENTS
		Yes	No	N/A	
Standards for Testing					
1.	All software must be comprehensively tested prior to being placed into production, by persons other than the designers/developers of the system.	☒	☐	☐	
2.	All data must be scrubbed to remove any personally-identifiable information before begin used in test environments	☐	☐	☒	Production data will be used for testing but no personal information is included. Approval to use production data for testing has been obtained in the Investment Accounting System (IAS) Program – Testing Framework document.
3.	All code must be subjected to a peer review to assist in identifying potential security weaknesses.	☐	☐	☒	
4.	Applications which expose client/corporate confidential data or which have a high sensitivity to breaches of confidentiality, integrity or availability must be tested for application-layer vulnerabilities.	☐	☐	☒	
5.	Tests including expected and actual results must be formally documented and any defects must be tracked and resolved.	☒	☐	☐	

1 800-665-2410

Hearing Impaired Line: (204) 985-8832

☐ Driver's Licence

☐ Identification Card

Declaration of Guarantor for Proof of Identity

Please print in black or blue ink and print this form single-sided.

Applicant's Information (must be completed in the presence of the guarantor)

Legal Surname: Row

Legal Given Name(s): Danny

Physical Address (no PO Box #s): 72 Donald

Apt. #:

City, Town or Village: winnipeg

Postal Code: R3C1L7

Date of Birth: (mm/dd/yyyy) 1960/02/02

Manitoba Drivers Licence Number CH-AK-RP-K151P4

I certify that I am the individual named above, and that my date of birth and residential address are as stated above, and the signature below is my signature.

I consent to Manitoba Public Insurance collecting the information about me set out under the Applicant's Information section from my guarantor and such other personal information about me from my guarantor or other third parties as necessary to verify my eligibility for the driver's licence or identification card.

Applicant's Signature

If Applicant under 18 years of age
Legal Guardian(s) Signature:

Choosing an Eligible Guarantor

Your guarantor ***must***:

1. Be a Canadian citizen residing in Canada
2. Have known you for at least two years
3. Meet the occupation or offices criteria exactly as described
4. Fully complete the Declaration of Guarantor section on the reverse side of this document

WARNING to all applicants and guarantors – Any false statement, misrepresentation or concealment of any material fact on this form, or on any other document presented in support of this application, may be grounds for criminal prosecution.

The personal information contained in this form is collected under the authority of section 12 or 150.5 of *The Drivers and Vehicles Act* and under the authority of section 36(b) (information relates directly and is necessary for a program operated by Manitoba Public Insurance) of *The Freedom of Information and Protection of Privacy Act*. The personal information is used to administer the driver's licence or identification card records.

If you have any questions about the collection of your personal information, please contact the Manitoba Public Insurance Contact Centre at (204) 985-7000.

Declaration of Guarantor (must be fully completed)

Surname:_____ Given Name: _____

Name of Firm/Organization:_____ Official Title: _____

Business Telephone:_____ Home Telephone: _____

Business Address: _____

Knowledge of Applicant (# of Years): _____

*__IMPORTANT*__ You must have at least __**TWO**__ years knowledge of the applicant to be an eligible guarantor.

Place a check mark beside the applicable occupation or office and provide the additional information if requested

1. Dentist*
2. Medical Doctor*
3. Chiropractor*
4. Judge
5. Justice of the Peace
6. Royal Canadian Mounted Police Officer:
   Unit Name _____
   Detachment _____
   Badge # _____
7. Provincial / Municipal Police Force Officer:
   Unit Name _____
   Detachment _____
   Badge # _____
8. Military Police Officer:
   Unit Name _____
   Detachment _____
   Badge # _____
9. Military Commanding Officer:
   Unit Name _____
   Detachment _____
   Badge # _____
10. Lawyer*
11. Mayor, reeve or other chief elected official of municipality: City/ Municipality _____
12. Minister of religion authorized under the laws of Manitoba to perform marriages or authorized to do so under the laws of another province or territory in Canada:
    Name of Religious Organization _____
    _____
13. Notary Public
14. Optometrist
15. Pharmacist*: Licence # _____
16. Postmaster - as designated by the Canada Post Corporation Act
17. Principal of a primary or secondary school:
    School Division _____
    School Name _____
18. Teacher of a primary or secondary school:
    School Division _____
    School Name _____
19. Professional Accountant – CPA
20. Professional Engineer
21. Senior administrator of a university or community college:
    University or college name _____
    _____
22. Teacher at a university or community college:
    University or college name _____
    _____
23. Veterinarian*
24. Chief of a band, as defined in the *Indian Act* (Canada): Name of First Nation, Tribal Council or Community _____
    _____
25. Membership clerk of a band, as defined in the *Indian Act* (Canada): Name of First Nation, Tribal Council or Community _____
26. Member of Parliament
27. Member of the Legislative Assembly or Provincial Parliament of another province or territory of Canada
28. Federal penitentiary warden:
    Name of Institution _____
29. Social Worker*
30. Nurse practitioner*
31. Parole Officer
    Employer Name _____
32. Probation Officer
33. Corrections Officer – Name of Institution

*(Must be registered or licensed in Canada)

I declare that I am actively employed or engaged in Canada in the occupation or office indicated above, and that I am a Canadian citizen. To the best of my knowledge and belief, all of the statements made in this application are true, and the signature shown is a true representation of the applicant's signature.
I have known the applicant for at least **TWO** years.

I authorize Manitoba Public Insurance to take such steps as it considers necessary to verify my authority to act as a qualified guarantor, and to collect my personal information for that purpose. I authorize my employer, my professional association, or my governing body (as the case may be) to disclose such personal information to Manitoba Public Insurance as is necessary to confirm my qualification to act as a guarantor.

Guarantor's Signature: _____

Date: _____ Signed at (City/Province): _____