

GUIDE

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**Australian Government**

**Australian Taxation Office**

# SUPERSTREAM

## Rollover V2 Conformance Testing Guide

A guide to the rollover v2 conformance testing process for funds and solution providers

VERSION 1.0 FINAL



**UNCLASSIFIED**



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## VERSION CONTROL

Version	Release date	Description of changes
V0.1	13.04.2016	Initial draft for internal review
V0.7	21.04.2016	Updated draft for internal review
V0.75	09.05.2016	Updates to sections 1-3 and appendices for internal review
V0.76	30.05.2016	Updates from external review and feedback.
V0.81	15.06.2016	Updates from additional external feedback and restructure.
V1.0	28.06.2016	Create final version.

## ENDORSEMENT

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# 1 INTRODUCTION

## 1.1 PURPOSE

The SuperStream *Data and Payment Standards Rollover Message Implementation Guide (MIG) v1.0* was published in July 2013. Version 2.0 (v2.0) of the specification, constituting a major release of the Standard, was published in December 2015.

The purpose of this document is to provide testing guidance for software developers when undertaking conformance testing against the SuperStream Rollover MIG version 2.0.

The testing timetable will mirror the functional release schedule for the areas of functionality defined in the Rollover MIG v2.0:

### **Fund transactions**

- a. Initiate Rollover Request transactions (IRR)
- b. Initiate Rollover Error Response transactions (IRER)
- c. Rollover Transaction Request (RTR)
- d. Rollover Request Outcome Response (RTOR)
- e. Version testing (version 1 & version 2) can be done in parallel

### **Government transactions**

- f. Unclaimed Superannuation Money (USM)
- g. Unclaimed Superannuation Money Outcome Response (USMOR)
- h. Electronic Portability Form (EPF)
- i. Version testing of EPF version 1 & version 2
- j. Section 20C Notice to be added in a later version**
- k. Section 20C Notice Error Response to be added in a later version**

## 1.2 AUDIENCE

The audience for this document is any fund, software developer and solution providers that will be developing or extending their software to make it compliant with the Superannuation Data and Payment Standard 2012 ([The 'Standard'](#)).

This document has been written for an audience expected to be familiar with the following:

- o XBRL – [www.xbrl.org](http://www.xbrl.org)
- o ebMS3.0/AS4 - [www.oasis-open.org/standards](http://www.oasis-open.org/standards)
- o SuperStream program – [www.ato.gov.au/datastandards](http://www.ato.gov.au/datastandards)
- o SBR Program – [www.sbr.gov.au](http://www.sbr.gov.au).

## 1.3 DOCUMENT CONTENT

The document provides sample test cases for execution by Software Developers as part of a self-certification process up to and including peer to peer testing. This document contains a list of test cases to assist in validating the following:

- AS4 ebMS message conformance and testing supporting Superstream business to business exchange of data
- The application code complies with the business rules defined in the corresponding Message Implementation Guide (MIG) for the transaction.
- The application code generates an XBRL message instance that complies with the XBRL Definitional and Report Taxonomies and associated Schematron rules.
- The application code correctly processes a message received including exception handling.
- Versioning scenario testing (v1 & v2)

## 1.4 DOCUMENT STRUCTURE

The detailed content of this document is divided into the following four major sections and an overview of the content of each is provided below:

- Section 2 Conformance testing
- Section 3 Message level conformance and Interoperability testing
- Section 4 Rollover v2 test cases
- Section 5 Peer-to-Peer test scenarios
- Appendix A Interoperability Test Case Detail
- Appendix B Versioning Scenarios

### 1.4.1 Section 2 - Conformance testing

This section focuses on the different solution scenarios and the many components involved in the messaging implementations that will be developed by funds, gateways and solution providers to support SuperStream Rollover MIG v2.

An overview of integration testing, interoperability and peer-to-peer testing is provided for both fund and government transactions.

### 1.4.2 Section 3 – Message level conformance and Interoperability testing

This section provides a summary of the test cases and conformance criteria that will test the interoperability within a rollover transaction sequence.

### 1.4.3 Section 4 - Rollover V2 test cases

This section gives an overview of rollover v2 testing requirements and lists the test cases that form the basic requirement for integration testing, gateway interoperability and peer-to-peer testing for both funds and government.

#### 1.4.4 Section 5 - Peer-to-peer (P2P) test scenarios

##### **Fund to Fund transactions (B2B)**

The tables in this section provide a catalogue of the rollover v2 tests and then specify the detailed messaging steps involved in each of the peer-to peer test sequences listed for IRR and RTR messages and for the corresponding IRER and RTOR response messages.

##### **Government to Fund transactions (G2B)**

The tables in this section provide a catalogue of the rollover v2 tests and the steps involved in each of the peer to peer test sequences listed for USM and EPF

#### 1.5 OTHER RELATED DOCUMENTS

This document is to be used in conjunction with these related documents:

- Data and Payment Standards Rollover Message Implementation Guide v2.0
- Supporting XBRL reporting taxonomy
- Data and Payment Standards Terms and Definitions (***Draft Schedule 2***)
- Data and Payment Standards Payment Definitions (***Draft Schedule 3***)
- Data and Payment Standards Message Orchestration and Profiles (***Draft Schedule 5***)
- Data and Payment Standards Error Code Management (***Draft Schedule 6***)
- SuperTICK User Guide v2.0
- Fund Validation Service (FVS) User Guide v 3.1
- Business Response Messaging Framework User Guide Final v1.1
- Rollover Transition Guide

## 2 CONFORMANCE TESTING

The test conformance process encompasses the following key principles:

### 2.1 GENERAL

General principles are as follows:

- The scope of the test conformance suite includes integration testing, interoperability testing and peer to peer testing for both business and government transactions.
- The test scope for SuperStream encompasses business-to-business AS4 ebMS message exchange and payload (XBRL) testing and also government-to-business USM and EPF.
- The testing also makes reference to the ATO enabling services, which are as follows:
  - SuperTICK – SBR within the ATO own this service which is referenced as part of the data standard
  - FVS – SBR within the ATO own this service which is referenced as part of the data standard
- B2B test use cases are initiated from fund registry systems, therefore processes will vary to capture the required set of data to support a rollover transaction. The test cases defined in this document will provide a generic set of steps to support these activities. It is the responsibility of the fund to capture data in their specific process.
- To streamline testing the following rules apply to registry system testing:
  - If multiple funds use a common registry system, a single pass through for a chosen fund would constitute a pass for all other funds associated with the registry system.
  - In a more complex environment, that contains multiple registry systems with various funds, at least one fund within each registry system should be tested as best practice.
  - One Unique Superannuation Identifier (USI) (product) for each fund is the minimum requirement for testing. Funds are not expected to test all products within their systems.

### 2.2 INTEGRATION TEST CASES

Integration test cases are the responsibility of each solution implementation team.

A checklist of integration test cases is provided in section 3 and represents the minimum requirement. The full extent of integration testing will need to be agreed between each fund and their solution provider/s.

## 3 MESSAGE LEVEL CONFORMANCE AND INTEROPERABILITY CHECKLISTS

### 3.1 Interoperability test case summary

This section lists the types of test cases for interoperability testing. The checklist below provides a summary of the functional requirements for test cases that will test the interoperability within a rollover transaction sequence. Interoperability test cases are listed in detail in section 4 and in Appendix A.

1. Fund Gateway to Fund Gateway
  - 1.1 Transport Layer connectivity
  - 1.2 Message Service Handler (MSH) Layer connectivity
  - 1.3 Application Layer connectivity – all gateways
  
2. Fund Gateway to / from ATO
  - 2.1 Transport Layer connectivity
  - 2.2 Message Service Handler (MSH) Layer connectivity
  - 2.3 Application Layer connectivity

### 3.2 PEER TO PEER TEST CASE SUMMARY

This section provides a summary of the Rollover peer-to-peer test case scenarios for fund to fund testing and ATO to fund testing.

#### Fund to Fund scenarios

1. Fund to Fund (B2B) sending IRR
  - 1.1 XBRL message construction
  - 1.2 ebMS message transmission
2. Fund to Fund (B2B) receiving IRR
  - 2.1 ebMS message receipt
  - 2.2 XBRL message deconstruction
  - 2.3 IRR processed and either RTR or IRER generated
3. Fund to Fund (B2B) sending IRER
  - 3.1 Error response generated
  - 3.2 XML message construction
  - 3.3 ebMS message transmission
4. Fund to Fund (B2B) receiving IRER
  - 4.1 ebMS message receipt
  - 4.2 XML message deconstruction
  - 4.3 Error response message processed
5. Fund to Fund (B2B) sending RTR
  - 5.1 XBRL message construction
  - 5.2 ebMS message transmission



6. Fund to Fund (B2B) receiving RTR
  - 6.1 ebMS message receipt
  - 6.2 XBRL message deconstruction
  - 6.3 RTR processed to registry and outcome response generated
7. Fund to Fund (B2B) sending RTOR
  - 7.1 Outcome response generated
  - 7.2 XML message construction
  - 7.3 ebMS message transmission
8. Fund to Fund (B2B) receiving RTOR
  - 8.1 ebMS message receipt
  - 8.2 XML message deconstruction
  - 8.3 Error or outcome response processed

**ATO to Fund scenarios**

9. Government to Fund (G2B) – ATO sending USM
  - 9.1 XBRL message construction
  - 9.2 ebMS message transmission
10. Government to Fund (G2B) - Fund receiving USM
  - 10.1 ebMS message receipt
  - 10.2 XBRL message deconstruction
  - 10.3 Unclaimed Superannuation Money processed and outcome generated
11. Government to Fund (G2B) – Fund sending USMOR
  - 11.1 Error response generated
  - 11.2 XML message construction
  - 11.3 ebMS message transmission
12. Government to Fund (G2B) - ATO receiving USMOR
  - 12.1 ebMS message receipt
  - 12.2 XML message deconstruction
  - 12.3 Error or outcome response processed
13. Government to Fund (G2B) - ATO sending EPF
  - 13.1 XBRL message construction
  - 13.2 ebMS message transmission
14. Government to Fund (G2B) - Fund receiving EPF
  - 14.1 ebMS message receipt
  - 14.2 XBRL message deconstruction
  - 14.3 EPF processed

## 4 ROLLOVER VERSION 2 TEST CASES

### 4.1 ROLLOVER VERSION 2 TESTING OVERVIEW

This section gives an overview of rollover testing and lists the test cases that form the basic requirement for integration, interoperability and peer-to-peer testing for both fund and government transactions.

### 4.2 B2B (FUND TO FUND) TEST CASES

B2B (Fund to Fund) peer to peer tests - send and receive the following:

1. Initiate Rollover Request (IRR)
  - 1.1. Single member IRR message successfully
  - 1.2. Multiple member IRR message successfully (optional to send, mandatory to test receiving)
  - 1.3. Valid message with Other Details tuples populated with agreed value
  - 1.4. Valid message with Record Count populated
2. Initiate Rollover Error Response (IRER)
  - 2.1. IRER Business error - member doesn't exist
  - 2.2. IRER message with Context ID included (optional to send, mandatory to receive)
3. Rollover Transaction Request (RTR)
  - 3.1. Valid single member rollover for processing (validate all figures based on rollover transaction)
  - 3.2. Multiple member RTR message successfully (optional to send, mandatory to test receiving)
  - 3.3. Valid member rollover with no TFN processed
  - 3.4. Valid member rollover with Other Details tuple populated
  - 3.5. Valid member rollover with Record Count populated
4. Rollover Transaction Outcome Response (RTOR)
  - 4.1. Rollover processed successfully
  - 4.2. Business error: member not found (member level refund)
  - 4.3. Business error: Roll over message but no money paid - document level response with no refund
  - 4.4. Business error resulting in document level refund
  - 4.5. RTOR with Context ID included (optional to send, mandatory to receive)
5. Version 1 & Version 2 scenarios
  - 5.1. Version scenario 1 - Both Fund A and Fund B are v1 and v2 compliant - all messages sent in v2
  - 5.2. Version scenario 1A - Incorrect Scenario - Both funds v2 compliant, but RTR sent in v1
  - 5.3. Version scenario 3 - Fund A v1 and Fund B v2 - fund A moves to v2 post sending IRR

- 5.4. Version scenario 4 – Response message scenarios - linked messages for the following combinations result in messages being sent in v1
  - 5.4.1. Fund A v1 and Fund B v1
  - 5.4.2. Fund A v2 and Fund B v1
  - 5.4.3. Fund A v1 and Fund B v2

### **4.3 G2B (ATO TO FUND) TEST CASES**

G2B (ATO to Fund) peer to peer tests - send and receive the following:

6. Unclaimed Superannuation Money (USM) - from ATO to Fund
  - 6.1. Valid single member USM rollover for processing
  - 6.2. Valid multiple member USM rollovers for processing
  - 6.3. Valid member USM rollover with no TFN processed
  - 6.4. Valid member USM rollover with Other Details tuple populated
  - 6.5. Valid member USM message with all fields populated that will be sent in a normal message
  - 6.6. Valid member USM message with only the minimum number of mandatory fields populated
  - 6.7. Valid member USM message with Record Count populated
7. Unclaimed Superannuation Money Outcome Response (USMOR) - from Fund to ATO
  - 7.1. USM rollover processed successfully
  - 7.2. Business error: member doesn't exist (member level refund)
  - 7.3. Business error: Roll over message but no money paid. OOB response
  - 7.4. Business error resulting in document level refund
  - 7.5. USMOR with Context ID included (mandatory to send and receive)
8. Electronic Portability Form (EPF) - from ATO to Fund
  - 8.1. Single member EPF message successfully
  - 8.2. EPF message with Other Details tuples populated with agreed value
  - 8.3. EPF message with Record Count populated
  - 8.4. ATO sends EPF v1 and Fund is v1
  - 8.5. ATO sends EPF v1 and Fund is v2 (INCORRECT)
  - 8.6. ATO sends EPF v2 and Fund is v2
  - 8.7. ATO sends EPF v2 and Fund is v1 (INCORRECT)

## 4.4 INTEGRATION TEST CASES

This section gives an overview of test cases that should form the basis of application integration testing for funds.

### Integration testing checklist

1. Fund and Service Provider/s testing sending messages
  - 1.1. FVS call
  - 1.2. SuperTICK call
  - 1.3. XBRL message construction
  - 1.4. ebMS message transmission
2. Fund and Service Provider/s testing receiving messages
  - 2.1. ebMS message receipt
  - 2.2. XBRL message deconstruction
  - 2.3. Process rollover into registry system and generate response
3. Fund and Service Provider/s testing sending responses
  - 3.1. Error or outcome messages generated
  - 3.2. XML message construction
  - 3.3. ebMS message transmission
4. Fund and Service Provider/s testing receiving responses
  - 4.1. ebMS message receipt
  - 4.2. XML response message deconstruction
  - 4.3. Error or outcome message processed
5. Government and Service Provider/s testing sending:
  - 5.1. FVS call
  - 5.2. XBRL message construction
  - 5.3. ebMS message transmission
6. Government and Service Provider/s testing receiving responses
  - 6.1. ebMS message receipt
  - 6.2. XML response message deconstruction
  - 6.3. Error or outcome message processed

### Message structure and content tests

1. Presence of fields
  - 1.1. Mandatory fields present
  - 1.2. Conditional and dependent fields present if required
2. Values
  - 2.1. Values according to taxonomy
  - 2.2. Cross field validations
  - 2.3. Other business rules – fund
3. XBRL
  - 3.1. Message correctly formed

### 3.2. Message internally consistent – context and data

#### 4. XML (responses)

- 4.1. Message correctly formed
- 4.2. Message internally consistent – parameters and event items
- 4.3. Refund parameters match the Business Response Messaging Framework

#### 5. ebMS

- 5.1. Header and wrapper correct
- 5.2. Transmission and receipt successful
- 5.3. Response messages correctly packaged
- 5.4. Response message transmission and receipt successful

## 4.5 TEST DATA

Sample message instances will be available separately to this document.

## 4.6 GATEWAY INTEROPERABILITY TEST SCENARIO CATALOGUE

This section gives an overview of tests required as part of interoperability testing between gateway to gateway and gateway to government.

Gateways can commence peer to peer testing prior to completing interoperability as long as they have completed interoperability with other gateway participants in the peer group. Prior to production it is required that all gateways have successfully completed testing with one another.

Refer to Appendix A for further detail of the tests listed below.

B2B – Existing gateways			
Test number	v1	v2	Description
INTERB1.1	✓	✓	Send a RTR message with correct data
INTERB1.2	✓	✓	Send a RTOR message (if applicable to gateway)
INTERB1.3	Optional	Optional	Repeat above test with mismatched payload (if applicable to gateway)
INTERB1.4	✓	✓	Send an IRR message with correct data
INTERB1.5	✓	✓	Send an IRER message with correct data
INTERB1.6*	✓	✓	Fund A v2 and Fund B v1 - incorrect versioning - IRR sent by fund A to fund B in v2. <b>*See Note 1 below.</b>

**Note 1: INTERB1.6: This test may not be able to be initiated by some gateways for interoperability testing because of the structure of their interaction with their funds. In those cases, the B2B fund to fund versioning test cases will cover this scenario.**

G2B – ATO to existing gateways			
Test number	v1	v2	Description* <span style="float: right;">* See Note 2 below.</span>
<b>Transport and MSH layer testing</b>			
INTERG1.1	✓	✓	Establish https connection between endpoints <b>Note:</b> ATO has already established connectivity for EPF, however for USM, connection also needs to go the other way (because of USMOR) so tests are to be repeated
INTERG1.2	✓	✓	Send a simplified message from the sender MSH to the receiver MSH
INTERG1.3	✓	✓	Send a simplified message from the sender MSH to the receiver MSH with PayloadInfo part properties configured for a particular source / target fund combination
INTERG1.4	✓	✓	Test message signing and signature validation
INTERG1.5	✓	✓	Test message compression
INTERG1.6	✓	✓	Multiple payloads - non compressed
INTERG1.7	✓	✓	Multiple payloads – compressed

**Note 2: These low-level G2B test cases provide a checklist of message structure requirements and do not need to be performed separately if not appropriate. A single well-formed, signed, compressed message as specified in tests INTERG1.8, INTERG1.9 and INTERG1.10 will automatically provide a test of these requirements.**

<b>G2B – ATO to existing gateways</b>			
<b>Test number</b>	<b>v1</b>	<b>v2</b>	<b>Description</b>
<b>Application layer testing</b>			
INTERG1.8		✓	Send a USM Rollover message with correct data
INTERG1.9		✓	Send a USM Rollover Outcome Response message with correct data
INTERG1.10	✓	✓	Send an Electronic Portability Form message with correct data
INTERG1.11		✓	BIP4 - check routing is consistent with BIP4
INTERG1.12	✓	✓	ATO sends EPF v1 and Fund B is v1
INTERG1.13	✓	✓	ATO sends EPF v1 and Fund B is v2 (INCORRECT)
INTERG1.14	✓	✓	ATO sends EPF v2 and Fund B is v2
INTERG1.15	✓	✓	ATO sends EPF v2 and Fund B is v1 (INCORRECT)

## 4.7 PEER TO PEER TEST SCENARIO CATALOGUE

The following test case scenarios are the minimum test scenarios required for Peer to Peer testing. It is the responsibility of the trustee to ensure these tests are completed successfully for each solution, regardless of whether the fund or their service provider conducts the test.

### 4.7.1 Peer to Peer Test Case Scenarios – B2B

Each test case should be performed by Funds taking on both a sending and a receiving role. i.e. Fund A sending to Fund B, and then repeated with Fund B sending to Fund A.

Each test requires checking of both sending and receiving solution correctness – refer to the test cases in section 5 for further detail.

**Note 1: The response pattern used by the responding party may be any of Error, Partial or Progressive. The receiving party for a response must be able to process all response pattern types.**

**Note 2: Payment reconciliation cannot be tested in a testing environment as no actual payments are created.**

Initiate Rollover Request (IRR)			
Test number	V1	V2	Description
IRR1.1	✓	✓	Valid single member IRR message
IRR1.2	✓	✓	Valid multiple member IRR message Note: it is optional to send a multiple member IRR but all funds must test that they can receive a multiple member IRR
IRR1.3		✓	Valid IRR message with Other Details tuple populated with an agreed value between peers <b>Note: optional to send, mandatory to receive</b>
IRR1.4		✓	Valid IRR message with Record Count populated

Initiate Rollover Error Response (IRER)			
Test number	V1	V2	Description
IRER2.1	✓	✓	IRER Business error - member doesn't exist, SUPER.GEN.GEN.21 - Member not found with supplied information
IRER2.2		✓	IRER message with Context ID included <b>Note: optional to send, mandatory to receive</b>

Rollover Transaction Request (RTR)			
Test number	V1	V2	Description
RTR3.1	✓	✓	Valid single member RTR message
RTR3.2	✓	✓	Valid multiple member RTR message successfully <b>Note: optional to send, mandatory to receive</b>
RTR3.3	Optional	Optional	Valid member rollover with no TFN processed (using Member ID)
RTR3.4		✓	Valid member rollover with Other Details tuple populated <b>Note: optional to send, mandatory to receive</b>
RTR3.5		✓	Valid member rollover with Record Count populated



Rollover Transaction Outcome Response (RTOR)			
Test number	V1	V2	Description
RTOR4.1	✓	✓	Rollover response processed successfully
RTOR4.2	✓	✓	Business error: - Member level refund because member doesn't exist, SUPER.GEN.GEN.21 - Member not found with supplied information
RTOR4.3		✓	RTOR with Context ID included <b>Note: optional to send, mandatory to receive</b>

Versioning Scenarios			
Test number	V1	V2	Description
VS5.1	✓	✓	Both Fund A and Fund B are v1 and v2 compliant – all messages sent in v2
VS5.2	✓	✓	Incorrect Scenario - Both funds v2 compliant, but RTR sent in v1
VS5.3	✓	✓	Fund A v1 and Fund B v2 - fund A moves to v2 post sending IRR
VS5.4	✓	✓	Response message scenarios – linked messages for the following combinations result in messages being sent in v1 Fund A v1 and Fund B v1 Fund A v2 and Fund B v1 Fund A v1 and Fund B v2

#### 4.7.2 Peer to peer test case catalogue – G2B

Unclaimed Superannuation Money (USM) – from ATO to Fund			
Test number	V1	V2	Description
USM6.1		✓	Valid single member USM rollover
USM6.2		✓	Valid multiple member USM rollovers
USM6.3		✓	Valid member USM rollover with no TFN, including Member ID
USM6.4		✓	Valid member USM rollover with Other Details tuple populated
USM6.5		✓	Valid member USM message with all fields populated that will be sent in a normal message
USM6.6		✓	Valid member USM message with only the minimum number of mandatory fields populated
USM6.7		✓	Valid member USM message with Record Count populated

Unclaimed Superannuation Money Outcome Response (USMOR) – from Fund to ATO			
Test number	V1	V2	Description
USMOR7.1		✓	USM rollover response processed successfully
USMOR7.2		✓	Business error: - Member level refund because member doesn't exist, SUPER.GEN.GEN.21 - Member not found with supplied information
USMOR7.3		✓	USMOR with Context ID included <b>Note: mandatory to send and receive</b>

Electronic Portability Form (EPF)			
Test number	V1	V2	Description
EPF8.1	✓	✓	Valid Single member EPF message
EPF8.2		✓	Valid EPF message with Other Details tuples populated with agreed value <b>Note: optional to send, mandatory to receive</b>
EPF8.3		✓	Valid EPF message with Record Count populated
EPF8.4	✓	✓	ATO sends EPF v1 and Fund is v1
EPF8.5	✓	✓	ATO sends EPF v1 and Fund is v2 (INCORRECT)
EPF8.6	✓	✓	ATO sends EPF v2 and Fund is v2
EPF8.7	✓	✓	ATO sends EPF v2 and Fund is v1 (INCORRECT)

## 5 PEER TO PEER TEST CASES

### 5.1 SEND AND RECEIVE IRR AND IRER

#### 5.1.1 IRR test cases

IRR1.1 Valid single member IRR message			
Fund A		Fund B	
IRR1.1.FNDA.01	Fund A Send IRR		
		IRR1.1.FNDB.01	Fund B Receive IRR
		IRR1.1.FNDB.02	Fund B Send RTR
IRR1.1.FNDA.02	Fund A Receive RTR		
IRR1.1.FNDA.03	Fund A Send RTOR		
		IRR1.1.FNDB.03	Fund B Receive RTOR

IRR1.2 Valid multiple member IRR message			
<b>Note: it is optional to send a multiple member IRR but all funds must test that they can receive a multiple member IRR</b>			
Fund A		Fund B	
IRR1.2.FNDA.01	Fund A Send IRR		
		IRR1.2.FNDB.01	Fund B Receive IRR
		IRR1.2.FNDB.02	Fund B Send RTR
IRR1.2.FNDA.02	Fund A Receives RTR		
IRR1.2.FNDA.03	Fund A Send RTOR		
		IRR1.2.FNDB.03	Fund B Receive RTOR

IRR1.3 Valid IRR message with Other Details tuple populated with an agreed value between peers			
<b>Note: optional to send, mandatory to receive</b>			
Fund A		Fund B	
IRR1.3.FNDA.01	Fund A Send IRR		
		IRR1.3.FNDB.01	Fund B Receive IRR
		IRR1.3.FNDB.02	Fund B Send RTR
IRR1.3.FNDA.02	Fund A Receives RTR		
IRR1.3.FNDA.03	Fund A Send RTOR		
		IRR1.3.FNDB.03	Fund B Receive RTOR

IRR1.4 Valid IRR message with Record Count populated			
Fund A		Fund B	
IRR1.4.FNDA.01	Fund A Send IRR		
		IRR1.4.FNDB.01	Fund B Receive IRR
		IRR1.4.FNDB.02	Fund B Send RTR
IRR1.4.FNDA.02	Fund A Receives RTR		
IRR1.4.FNDA.03	Fund A Send RTOR		
		IRR1.4.FNDB.03	Fund B Receive RTOR

**5.1.2 IRER test cases**

<b>IRER2.1 IRER Business error - member doesn't exist, SUPER.GEN.GEN.21 - Member not found with supplied information</b>			
<b>Fund A</b>		<b>Fund B</b>	
IRER2.1.FNDA.01	Fund A Send IRR		
		IRER2.1.FNDB.01	Fund B Receive IRR
		IRER2.1.FNDB.02	Fund B Send IRER
IRER2.1.FNDA.02	Fund A Receive IRER		

<b>IRER2.2 IRER message with Context ID included</b>			
<b>Note: optional to send, mandatory to receive</b>			
<b>Fund A</b>		<b>Fund B</b>	
IRER2.2.FNDA.01	Fund A Send IRR		
		IRER2.2.FNDB.01	Fund B Receive IRR
		IRER2.2.FNDB.02	Fund B Send IRER
IRER2.2.FNDA.02	Fund A Receive IRER		

## 5.2 SEND AND RECEIVE RTR AND RTOR

### 5.2.1 RTR Test cases

<b>RTR3.1</b> Valid single member RTR message			
<b>Fund A</b>		<b>Fund B</b>	
RTR3.1.FNDA.01	Fund A Send RTR		
		RTR3.1.FNDB.01	Fund B Receive RTR
		RTR3.1.FNDB.02	Fund B Send RTOR
RTR3.1.FNDA.02	Fund A Receive RTOR		

<b>RTR3.2</b> Valid multiple member RTR message successfully <b>Note: optional to send, mandatory to receive</b>			
<b>Fund A</b>		<b>Fund B</b>	
RTR3.2.FNDA.01	Fund A Send RTR		
		RTR3.2.FNDB.01	Fund B Receive RTR
		RTR3.2.FNDB.02	Fund B Send RTOR
RTR3.2.FNDA.02	Fund A Receive RTOR		

<b>RTR3.3</b> Valid member rollover with no TFN processed (using Member ID)			
<b>Fund A</b>		<b>Fund B</b>	
RTR3.3.FNDA.01	Fund A Send RTR		
		RTR3.3.FNDB.01	Fund B Receive RTR
		RTR3.3.FNDB.02	Fund B Send RTOR
RTR3.3.FNDA.02	Fund A Receive RTOR		

<b>RTR3.4</b> Valid member rollover transaction, Other Details tuples provided <b>Note: optional to send, mandatory to receive</b>			
<b>Fund A</b>		<b>Fund B</b>	
RTR3.4.FNDA.01	Fund A Send RTR		
		RTR3.4.FNDB.01	Fund B Receive RTR
		RTR3.4.FNDB.02	Fund B Send RTOR
RTR3.4.FNDA.02	Fund A Receive RTOR		

<b>RTR3.5</b> Valid member rollover transaction, Record count populated			
<b>Fund A</b>		<b>Fund B</b>	
RTR3.5.FNDA.01	Fund A Send RTR		
		RTR3.5.FNDB.01	Fund B Receive RTR
		RTR3.5.FNDB.02	Fund B Send RTOR
RTR3.5.FNDA.02	Fund A Receive RTOR		

### 5.2.2 RTOR test cases

RTOR4.1 Rollover processed successfully			
Fund A		Fund B	
RTOR4.1.FNDA.01	Fund A Receive RTR		
		RTOR4.1.FNDB.01	Fund B Send RTR
		RTOR4.1.FNDB.02	Fund B Send RTOR
RTOR4.1.FNDA.02	Fund A Receive RTOR		

RTOR4.2 Business error: - Member level refund because member doesn't exist, SUPER.GEN.GEN.21 - Member not found with supplied information			
Fund A		Fund B	
RTOR4.2.FNDA.01	Fund A Receive RTR		
		RTOR4.2.FNDB.01	Fund B Send RTR
		RTOR4.2.FNDB.02	Fund B Send RTOR
RTOR4.2.FNDA.02	Fund A Receive RTOR		

RTOR4.3 RTOR with Context ID included Note: optional to send, mandatory to receive			
Fund A		Fund B	
RTOR4.3.FNDA.01	Fund A Receive RTR		
		RTOR4.3.FNDB.01	Fund B Send RTR
		RTOR4.3.FNDB.02	Fund B Send RTOR
RTOR4.3.FNDA.02	Fund A Receive RTOR		

### 5.3 VERSION 1 & VERSION 2 TEST CASES

Refer to Appendix B for versioning scenario diagrams.

<b>VS5.1 Both Fund A and Fund B are v1 and v2 compliant – all messages sent in v2</b>			
<b>Fund A</b>		<b>Fund B</b>	
VS5.1.FNDA.01	Fund A Send IRR V2		
		VS5.1.FNDB.01	Fund B Receive IRR V2
		VS5.1.FNDB.02	Fund B Send RTR V2
VS5.1.FNDA.02	Fund A Receive RTR V2		
VS5.1.FNDA.03	Fund A Send RTOR v2		
		VS5.1.FNDB.03	Fund B Receive RTOR v2

<b>VS5.2 Incorrect Scenario - Both funds v2 compliant, but RTR sent in v1</b>			
<b>Fund A</b>		<b>Fund B</b>	
VS5.2.FNDA.01	Fund A Send IRR V2		
		VS5.2.FNDB.01	Fund B Receive IRR V2
		VS5.2.FNDB.02	Fund B Send RTR V1
VS5.2.FNDA.02	Fund A Receive RTR V1		
VS5.2.FNDA.03	Fund A Send RTOR v1		
		VS5.2.FNDB.03	Fund B Receive RTOR v1

<b>VS5.3 Fund A v1 and Fund B v2 - fund A moves to v2 post sending IRR</b>			
<b>Fund A</b>		<b>Fund B</b>	
VS5.3.FNDA.01	Fund A Send IRR V1		
		VS5.3.FNDB.01	Fund B Receive IRR V1
		VS5.3.FNDB.02	Fund B Send RTR V2
VS5.3.FNDA.02	Fund A Receive RTR V2		
VS5.3.FNDA.03	Fund A Send RTOR v2		
		VS5.3.FNDB.03	Fund B Receive RTOR v2

<b>VS5.4 Combination of versions: Response message scenarios – linked messages for the following combinations result in messages being sent in v1: Fund A V1 &amp; Fund B V1; Fund A V2 and Fund B V1; Fund A V1 &amp; Fund B V2</b>			
<b>Fund A</b>		<b>Fund B</b>	
VS5.4.FNDA.01	Fund A Send RTR V1		
		VS5.4.FNDB.01	Fund B Receive RTR V1
		VS5.4.FNDB.02	Fund B Send RTOR V1
VS5.4.FNDA.01	Fund A Receive RTOR V1		

## 5.4 SEND AND RECEIVE USM AND USMOR MESSAGES

### 5.4.1 USM test cases

<b>USM6.1</b> Valid single member USM rollover			
<b>ATO</b>		<b>Fund A</b>	
USM6.1.ATO.01	ATO Send USM		
		USM6.1.FNDA.01	Fund A receive USM
		USM6.1.FNDA.02	Fund A Send USMOR
USM6.1.ATO.02	ATO Receive USMOR		

<b>USM6.2</b> Valid multiple member USM rollovers			
<b>ATO</b>		<b>Fund A</b>	
USM6.2.ATO.01	ATO Send USM		
		USM6.2.FNDA.01	Fund A receive USM
		USM6.2.FNDA.02	Fund A Send USMOR
USM6.2.ATO.02	ATO Receive USMOR		

<b>USM6.3</b> Valid member USM rollover with no TFN, including Member ID			
<b>ATO</b>		<b>Fund A</b>	
USM6.3.ATO.01	ATO Send USM		
		USM6.3.FNDA.01	Fund Receive USM
		USM6.3.FNDA.02	Fund Send USMOR
USM6.3.ATO.02	ATO Receive USMOR		

<b>USM6.4</b> Valid member USM rollover with Other Details tuple populated			
<b>ATO</b>		<b>Fund A</b>	
USM6.4.ATO.01	ATO Send USM		
		USM6.4.FNDA.01	Fund Receive USM
		USM6.4.FNDA.02	Fund Send USMOR
USM6.4.ATO.02	ATO Receive USMOR		

<b>USM6.5</b> Valid member USM message with all fields populated that will be sent in a normal message			
<b>ATO</b>		<b>Fund A</b>	
USM6.5.ATO.01	ATO Send USM		
		USM6.5.FNDA.01	Fund Receive USM
		USM6.5.FNDA.02	Fund Send USMOR
USM6.5.ATO.02	ATO Receive USMOR		

<b>USM6.6</b> Valid member USM message with only the minimum number of mandatory fields populated			
<b>ATO</b>		<b>Fund A</b>	
USM6.6.ATO.01	ATO Send USM		
		USM6.6.FNDA.01	Fund Receive USM
		USM6.6.FNDA.02	Fund Send USMOR
USM6.6.ATO.02	ATO Receive USMOR		



<b>USM6.7 Valid member USM message with Record Count populated</b>			
<b>ATO</b>		<b>Fund A</b>	
USM6.7.ATO.01	ATO Send USM		
		USM6.7.FNDA.01	Fund Receive USM
		USM6.7.FNDA.02	Fund Send USMOR
USM6.7.ATO.02	ATO Receive USMOR		

### 5.4.2 USMOR test cases

<b>USMOR7.1 USM rollover processed successfully</b>			
<b>ATO</b>		<b>Fund A</b>	
USMOR7.1.ATO.01	ATO Send USM		
		USMOR7.1.FNDA.01	Fund A Receive USM
		USMOR7.1.FNDA.02	Fund A Send USMOR
USMOR7.1.ATO.02	ATO Receive USMOR		

<b>USMOR7.2 Business error: - Member level refund because member doesn't exist, SUPER.GEN.GEN.21 - Member not found with supplied information</b>			
<b>ATO</b>		<b>Fund A</b>	
USMOR7.2.ATO.01	ATO Send USM		
		USMOR7.2.FNDA.01	Fund A Receive USM
		USMOR7.2.FNDA.02	Fund A Send USMOR
USMOR7.2.ATO.02	ATO Receive USMOR		

<b>USMOR7.3 USMOR with Context ID included</b>			
<b>Note: mandatory to send and receive</b>			
<b>ATO</b>		<b>Fund A</b>	
USMOR7.3.ATO.01	ATO Send USM		
		USMOR7.3.FNDA.01	Fund A Receive USM
		USMOR7.3.FNDA.02	Fund A Send USMOR
USMOR7.3.ATO.01	ATO Receive USMOR		

## 5.5 SEND AND RECEIVE EPF

### 5.5.1 EPF test cases

EPF8.1 Valid Single member EPF message			
ATO		Fund A	
EPF8.1.ATO.01	ATO Send EPF	EPF8.1.FNDA.01	Fund A Receive EPF

EPF.8.2 Valid EPF message with Other Details tuples populated with agreed value (OPTIONAL)			
ATO		Fund A	
EPF8.2.ATO.01	ATO Send EPF	EPF8.2.FNDA.01	Fund A Receive EPF

EPF 8.3 Valid EPF message with Record Count populated			
ATO		Fund A	
EPF8.3.ATO.01	ATO Send EPF	EPF8.3.FNDA.01	Fund A Receive EPF

EPF 8.4 ATO sends EPF v1 and Fund is v1			
ATO		Fund A	
EPF8.4.ATO.01	ATO Send EPF v1	EPF8.3.FNDA.01	Fund A Receive EPF v1

EPF 8.5 ATO sends EPF v1 and Fund is v2 (INCORRECT)			
ATO		Fund A	
EPF8.5.ATO.01	ATO Send EPF v1	EPF8.5.FNDA.01	Fund A does not receive EPF

EPF 8.6 ATO sends EPF v2 and Fund is v2			
ATO		Fund A	
EPF8.6.ATO.01	ATO Send EPF v2	EPF8.6.FNDA.01	Fund A Receive EPF v2

EPF 8.7 ATO sends EPF v2 and Fund is v1 (INCORRECT)			
ATO		Fund A	
EPF8.7.ATO.01	ATO Send EPF v2	EPF8.7.FNDA.01	Fund A does not receive EPF

## APPENDIX A – INTEROPERABILITY TEST CASE DETAIL

Test number	v1	v2	Test	Action	Description	Expected Results
			<b>B2B – Existing gateways</b>			
INTERB1.1	✓	✓	Send a RTR message with correct data	Sender application generates a RTR payload that is sent as an AS4/ebMS3 message via the MSH to the receiver MSH which passes it onto the receiver application for processing	Tests the chain of communications links between sender and receiver application layers. Also tests the formatting and validation code of each application layer (if applicable to that gateway)	Receiver application should have received and processed a RTR message  eb:To and eb:From set correctly,
INTERB1.2	✓	✓	Send a RTOR message (if applicable to gateway)	As above plus the Receiver replies with a RTOR message which the Sender of the original message processes	Tests the generation, sending, receiving, routing, validation (if provided by the gateway) of rollover transaction request & outcome response messages	Originators of RTR message should receive appropriate RTOR message
INTERB1.3	Optional	Optional	Repeat above test with mismatched payload (if applicable to gateway)	Exercise a negative scenario where payloadInfo part properties contain a target fund ABN/USI that is serviced by the destination gateway but where the XBRL payload data does not match the target fund ABN/USI provided in the PayloadInfo part properties.	Tests behaviour of application layer in regard to how it deals with mismatched payload and payloadInfo part properties data	Receiver should send an RTOR back to the sender with an error explaining that the mismatch.
INTERB1.4	✓	✓	Send an IRR message with correct data	Sender application generates an IRR payload that is sent as an AS4/ebMS3 message via the MSH to the receiver MSH which passes it onto the receiver application for processing	Tests the chain of communications links between sender and receiver application layers. Also tests the formatting and validation code of each application layer (if applicable to that gateway)	Receiver application should have received and processed a IRR message
INTERB1.5	✓	✓	Send an IRER message with correct data	As above plus the Receiver replies with a IRER message which the Sender	Tests the generation, sending, receiving, routing, validation (if provided by the	Originators of IRR message should receive appropriate IRER message

Test number	v1	v2	Test	Action	Description	Expected Results
				of the original message processes	gateway) of initiate rollover request & outcome response messages	
INTERB1.6	✓	✓	Fund A v2 and Fund B v1 - incorrect versioning - IRR sent by fund A to fund B in v2	Sender application generates an IRR in v2, however receiving fund is still on v1 so sending solution gateway rejects and does not send the message.	Tests that incorrect version does not get sent to receiving application	Receiver application does not receive IRR
			<b>G2B</b>			
INTERG1.1	✓	✓	Establish https connection between endpoints <b>Note:</b> ATO has already established connectivity for EPF, however for USM, connection also needs to go the other way (because of USMOR) so tests are to be repeated	Use telnet, wget or curl etc., to establish that appropriate ports are open. Curl can be used to submit a file containing an ebMS3 message and should display the signal message reply	The two parties performing the interoperability testing exchange endpoint URLs, certificates and username and password. Each party configures their ebMS3 / AS4 MSH to register the other party. It is recommended that any messages received by the MSH during this phase should not be submitted to the application for processing	Both parties have configured their infrastructure to allow the flow of ebbs messages from the internet to their MSH. It is not required that any signal message returned to the sender is a success message
INTERG1.2	✓	✓	Send a simplified message from the sender MSH to the receiver MSH	Sender MSH pushes uncompressed, unsigned, single payload message with arbitrary payload contents using Username/Password authentication. Receiving MSH should receive the message if no MSH errors. Sender reviews signal message response. Receiver reviews received message, ignoring payload	A simple message with any payload is sent from each party to the other party. This test verifies that to/from PartyId header fields have been set correctly and that the sender and receiver have been configured correctly to send and receive messages to and from the other party. The payload included with the message is ignored by the other party	Sender should receive a success receipt. Receiver should receive message without error. Note: as the payload is arbitrary this may cause failures in your application layer if it is connected to the MSH at this time. In this phase of testing it is expected that you will ignore application layer failures

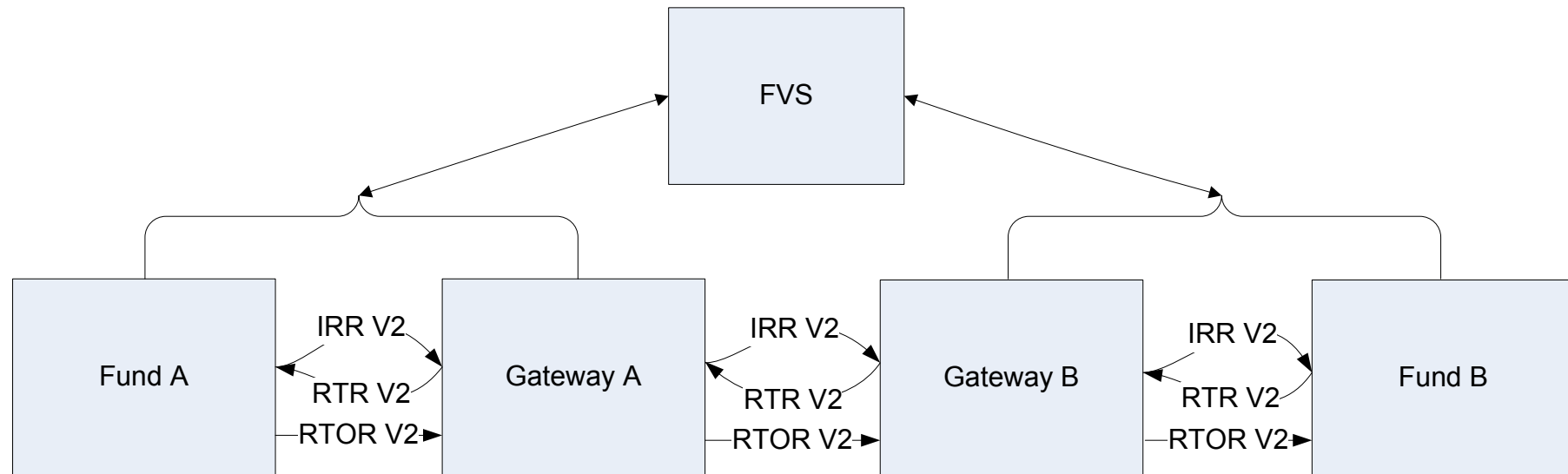
Test number	v1	v2	Test	Action	Description	Expected Results
					Any complexities in relation to certificates used for signing, compression etc., are eliminated by this simple test. It will, however, be necessary to have the SSL certificate configured to allow https to work	
INTERG1.3	✓	✓	Send a simplified message from the sender MSH to the receiver MSH with PayloadInfo part properties configured for a particular source / target fund combination	As above plus the receiver checks that the received message has PayloadInfo part properties correctly configured for a target fund that their application knows about. This is just a manual check as the MSH is not required to perform this type of validation of application layer entities	Parties must communicate to each other the desired target ABN and target USI that they would like in the payload info part properties. Proper values are not strictly required for this test but setting them correctly during this test means that they will not need to be changed in subsequent tests where they are required to match particular entities in application layer	As above with manual verification that the target/source ABN/USI values in the partinfo properties are as requested
INTERG1.4	✓	✓	Test message signing and signature validation	As above plus configure MSH to sign messages targeted at the partner you are testing with and validate the signature of messages received from that partner	Tests that message signing and validation works for positive scenarios	Messages should be signed and be successfully validated
				As above plus configure an incorrect certificate for outgoing messages. Send a message and confirm that receiver responds with a SOAP fault	Tests that message validation fails for negative scenarios	Messages should be signed and fail validation
INTERG1.5	✓	✓	Test message compression	As above plus message compression turned on	Tests the sender/receiver MSH's message compression/decompression functionality	Payload should be compressed across the wire but be uncompressed by the receiving MSH and make an uncompressed payload available to the application

Test number	v1	v2	Test	Action	Description	Expected Results
INTERG1.6	✓	✓	Multiple payloads - non compressed	As above, no compression but with more than one payload.	Tests support for multiple signed, uncompressed payloads.	Multiple payloads should be received without any ebms errors. Any application layer on the receiving end should receive uncompressed payloads.
INTERG1.7	✓	✓	Multiple payloads – compressed	As above but with compressed payloads.	Tests support for multiple signed, compressed payloads.	Both parties have configured their infrastructure to allow the flow of ebbs messages from the internet to their MSH. It is not required that any signal message returned to the sender is a success message
INTERG1.8		✓	Send a USM Rollover message with correct data	ATO generates a USM payload that is sent as an AS4/ebMS3 message via the MSH to the receiver MSH which passes it onto the receiver application for processing.	Tests the chain of communications links between ATO and receiver application layers. Also tests the formatting and validation code of each application layer (if applicable to that gateway)	Receiver application should have received and processed a USM message
INTERG1.9		✓	Send a USM Rollover Outcome Response message with correct data	As above plus the Receiver replies with a USMOR message which the ATO processes	Tests the generation, sending, receiving, routing, validation (if provided by the gateway) of USM and USMOR	ATO should receive appropriate USMOR message
INTERG1.10	✓	✓	Send an Electronic Portability Form message with correct data	ATO generates a RTR payload that is sent as an AS4/ebMS3 message via the MSH to the receiver MSH which passes it onto the receiver application for processing.		
INTERG1.11		✓	BIP4 - check routing is consistent with BIP4	Check To and From values	Values are ABN of message sending and receiving parties	To and From values are correctly set
INTERG1.12	✓	✓	ATO sends EPF v1 and Fund B is v1	Check gateway is correctly filtering messages according to sender and	Sender and receiver implementation versions are compatible so message	Message is transmitted.

Test number	v1	v2	Test	Action	Description	Expected Results
				receiver version.	should be sent.	
INTERG1.13	✓	✓	ATO sends EPF v1 and Fund B is v2 (INCORRECT)	Check gateway is correctly filtering messages according to sender and receiver version.	Sender and receiver implementation versions are not compatible so message should not be sent.	Message is not sent.
INTERG1.14	✓	✓	ATO sends EPF v2 and Fund B is v2	Check gateway is correctly filtering messages according to sender and receiver version.	Sender and receiver implementation versions are compatible so message should be sent.	Message is transmitted.
INTERG1.15	✓	✓	ATO sends EPF v2 and Fund B is v1 (INCORRECT)	Check gateway is correctly filtering messages according to sender and receiver version.	Sender and receiver implementation versions are not compatible so message should not be sent.	Message is not sent.

## APPENDIX B – VERSIONING SCENARIOS

### VS5.1 - Both Fund A and Fund B are v1 and v2 compliant – all messages sent in v2

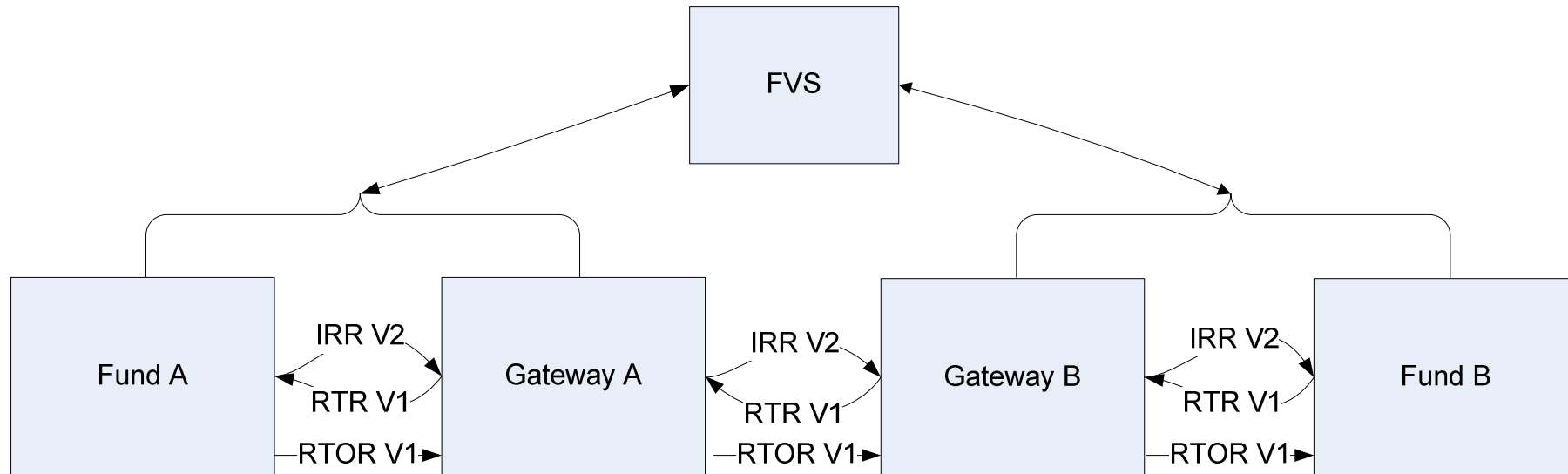


#### Notes:

- FVS will be called either by the Funds or the Gateways, depending on the agreement between the Fund and Gateway. The obligation is on the sending solution to send in the correct version.
- Fund B would use the FVS to determine which version to send the RTR in, because IRR and RTR are not linked
- Fund A would use the Service Value in the RTR to determine what value to send the RTOR in.



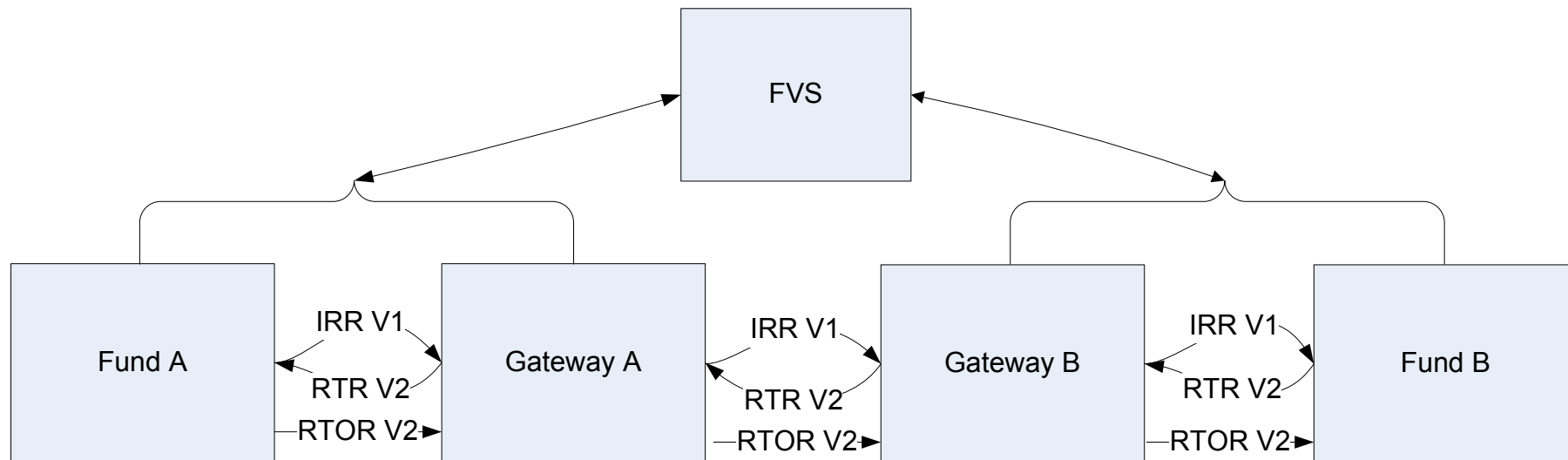
**VS5.2 - Incorrect Scenario - Both funds v2 compliant, but RTR sent in v1**



**Notes:**

- RTR should have been sent in v2 because it is the highest/latest version that is available to both the sender and receiver.
- Trustee decision to accept or reject (If it is sent in v1 in error, trustee would most likely process providing it is before v1 is closed out). Any error handling to be done out of band – no new error or warning message will be created.
- The RTOR is sent in v1 because Fund A would use the Service Value in the RTR to determine what version to send the RTOR in.

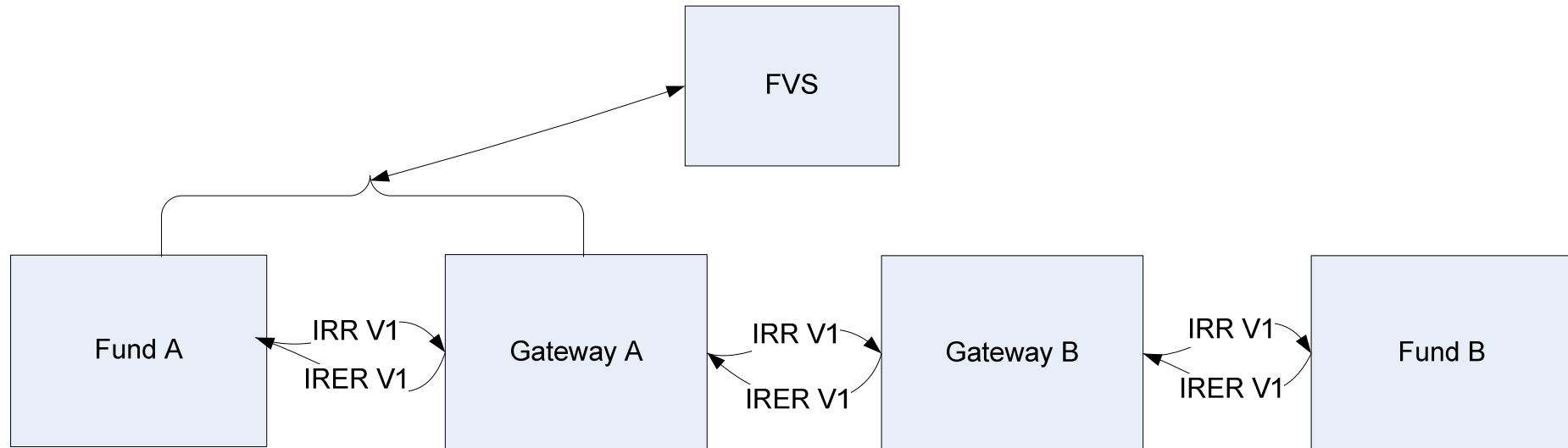
**VS5.3 Fund A v1 and Fund B v2 - fund A moves to v2 post sending IRR**



**Notes:**

- RTR is sent in V2 because it is sent in the highest version that both Fund A and Fund B can accept.
- RTR does not need to be in the same version as the IRR because the transactions are not linked.
- Fund B would use the FVS to determine the version the RTR is sent in
- Fund A would use the Service Action to determine the version the RTOR is sent in.

**VS5.4 Combination of versions: Response message scenarios – linked messages in v1:**



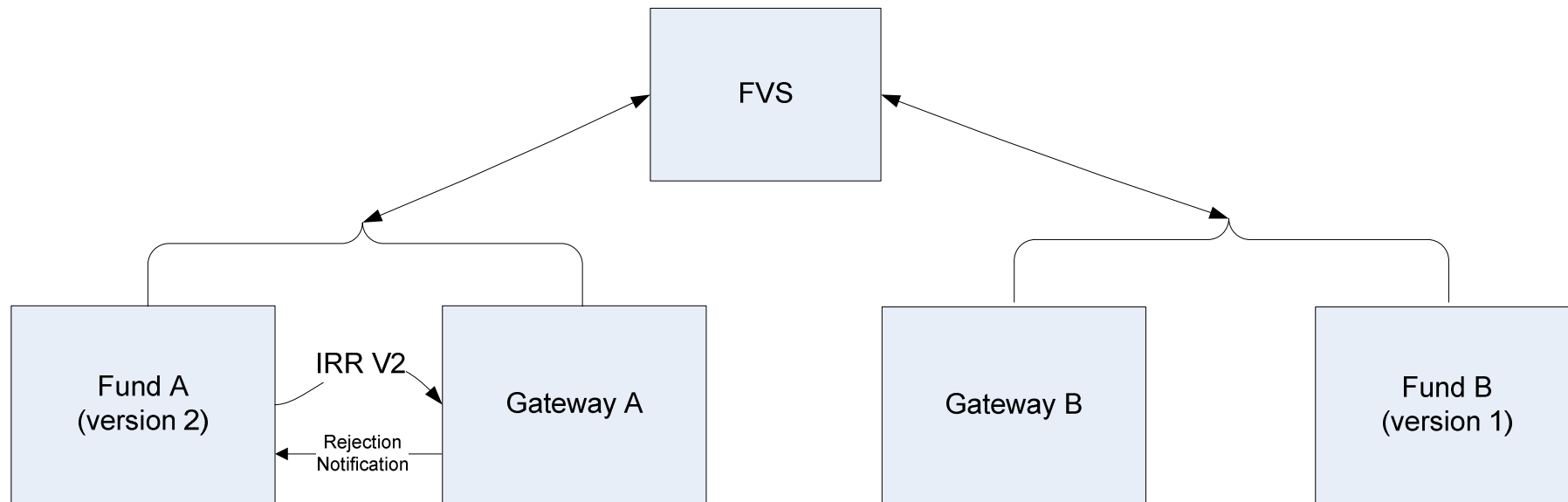
All the combinations below would result in the same mapping:

- Fund A V1 & Fund B V1;
- Fund A V2 and Fund B V1;
- Fund A V1 & Fund B V2

**Notes:**

- Fund A would use the FVS to determine which version to send the IRR
- Fund B would use the Service Value in both cases to determine the version the IRER/RTOR is sent in

**INTERB1.6 - Fund A v2 and Fund B v1 - incorrect versioning - IRR sent by fund A to fund B in v2:**



**Notes**

- IRR should be sent in V1 as Fund B is not ready to accept V2.
- Gateway would most likely reject the message because that Service Value won't be registered as a valid Service Value.
- Depending on the agreement between the Fund and the Gateway, the validation should be done at Gateway A (as part of the sending solution) and rejected by Gateway A. Gateway B should still have validations in place in the event that Gateway A doesn't reject for some reason.