

The Derivatives Service Bureau (DSB)

FIX Certification Test

Proprietary Information

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Preface

Change History

Date	Change	Version	Author	Revision Details
18 July 2017	Creation	1.0	Sheryl Tan	Initial Version

1 Introduction

1.1 Document Purpose

This document intends to provide a comprehensive guide on the FIX Client Certification by using the FIX Conductor interface. The FIX certification process is designed to ensure that users connecting the DSB via FIX are fully integrated in a robust manner. Successful completion of the DSB's FIX Client Certification is an important milestone in being on-boarded into the DSB's production environment. The client can rerun the certification test until completion of all the required test cases. The FIX Conductor has a Reset Certification feature which will be discussed on the FIX Conductor section.

1.2 Intended Audience

Clients who use FIX that needs certification via FIX Conductor interface.

1.3 Scope

This document focuses on the use of FIX Conductor to setup the connectivity and test the functionality of the FIX Client.

1.4 Contact Information

Please direct your questions or concerns on the FIX Conductor via email to technical.support@anna-dsb.com

1.5 Functional Summary

The FIX Conductor interface provides a real time testing service for the FIX Client certification. It consists of several test cases to check the connectivity (i.e. Logon and Heartbeat) and functionality (i.e. create, search, subscribe) of the FIX Client. It has error code test to simulate the output of the Security Request Result (560) for invalid request or system unavailable.

Result of the test cases can be viewed on the client's Test Dashboard. The client needs to pass all of the required test cases in order to obtain the certification. Once the client has completed successfully, a certification report is made available for the client and the DSB Technical Support.

The DSB Technical Support Admin has a dashboard to verify that a client has successfully completed the test. The client can contact the DSB Technical Support Team for any issues that may arise while completing the test.

1.6 Document Structure

This document contains the following section:

Section Number	Title	Description
Section 1	Introduction	A brief introduction to this document providing background to the purpose of the document and the FIX Conductor
Section 2	Site Preparation	Provides details of the tasks required before connectivity can take place
Section 3	FIX Conductor	Documents the overview, test suites and messages of the FIX Conductor

2 Site Preparation

2.1 FIX Conductor Setup

2.1.1 Register New Client

Once a client approaches the DSB seeking FIX connectivity to the DSB production environment, the DSB Technical Support Admin will register the new client so that authorized users can access the FIX Conductor.

Client's Name, company email address and services (FIX_4.4 or FIX_5.0) to be used by the client will be based on the Onboarding Form submitted by the client.

2.2 FIX Client Setup

Clients need to undertake the following preparation to connect to the DSB's FIX Conductor interface:

- Select the FIX version to use: DSB FIX interface supports FIX5.0SP2 as well as FIX 4.4
- DSB operations will provide the following connectivity parameters as part of the client registration details for access to the FIX conductor:
 - Company identifiers (CompID); These are used throughout the FIX messages and commonly configured in the FIX engine
 - IP addresses of the DSB FIX Conductor
- Make any network/firewall configuration changes required to connect to the DSB FIX Conductor.
- Verify that the DSB IP FIX Conductor addresses/port numbers are open and visible from any machine that needs to connect to the FIX service.
- Configure the local FIX engine with the DSB FIX Conductor Hostname, Port, CompID accordingly.

There are 2 types of Interface that the client needs to configure:

2.2.1 Proxy Interface

This is required for testing the Create, Search, Subscribe and Session Level Test Suites. FIX Client will connect to the FIX Conductor which in turn will connect to the DSB FIX servers to validate the FIX messages.

2.2.2 Simulated Interface

FIX Client will run in simulated mode to simulate the errors of the different test scenarios.

This is used for Error Codes Test Suite which is required for the client to complete the certification.

3 FIX Conductor

3.1 Login

Client enters the Username and Password to login and access the dashboard.

3.2 Dashboard

3.2.1 Certification Progress

Certification progress can be viewed at a glance on the client dashboard.

To begin the certification, client needs to click the “Begin Certifying” button on the dashboard.

The green bar displays the % progress of the certification. Client needs to finish all the required test cases to complete the certification.

Client has an option to choose “Practice” mode under Additional Actions to check the test cases.

Certification Progress				
Service	Next Step	Progress	Last Activity	Additional Actions
FIX_44	Begin Certifying	0%	(No activity)	Practice Save Report
FIX_50	Continue Certifying	31%	SU1 - User subscribes to OTC product definitions for Rates failed by sheryl on 14-Jul-17 10:17 AM	Practice Save Report

Certification Report can be generated via “Save Report”. Results of all the test cases are saved on this report.

Certification Progress				
Service	Next Step	Progress	Last Activity	Additional Actions
FIX_44	Begin Certifying	0%	(No activity)	Practice Save Report
FIX_50	Continue Certifying	13%	SE1 - User requests OTC product definition for a Rate ISIN failed by sheryl on 18-Jul-17 06:20 AM	Practice Save Report

3.2.2 Interfaces and Sessions

The DSB Technical Support Admin will set the interface and session of the client based on the preferred FIX version that the client will use and certify. Sender CompID, Target CompID and Port will be sent to the client.

Interfaces and Sessions					
Service	Specs	Interface	SenderCompID	TargetCompID	Port
FIX_44_client2	DSB_FIX44	FIX44_client2_P			
	DSB_FIX44	FIX_44_client2_S			


3.2.3 Profile and Questionnaire Progress

Client needs to answer the questionnaire at the start of the certification and % Progress of the questionnaire will reflect on this tab. The client can go back and edit his answers by clicking the “Edit Answers” or he can “Reset Progress” to go back from the start of the Questionnaire. Client can also edit the User Profile and Client Profile in this tab.

Profile and Questionnaire Progress			
Information	Details	Progress	Additional Actions
Questionnaire	General information questions	<div><div></div></div> 100%	View Progress Edit Answers Reset Progress
User Profile	sheryl	<div><div></div></div> 70%	Edit User Profile
Client Profile	DSB	<div><div></div></div> 30%	Edit Client Profile

Sample Questionnaire:

Client ticks on the asset class for each test suites. All marked asset classes will reflect as “Required” test cases on the Test Runner dashboard.



Questionnaire - Create an ISIN

Please select the asset classes for which you want to create ISIN

☐ Commodities
 ☐ Credit
 ☐ Equities
 ☐ Foreign Exchange
 ☐ Rates

[Previous](#)
[Submit](#)

3.2.4 Test Runner

Client needs to click the “Begin Certifying” or “Continue Certifying” button next to a service name on the user dashboard to begin or continue the certification.

Certification Progress				
Service	Next Step	Progress	Last Activity	Additional Actions
FIX_44	Begin Certifying	<div><div></div></div> 0%	(No activity)	Practice Save Report

To start with the test cases, the client needs to enter the name and version of the FIX on the Application Details field as shown below.

[Back to User page](#)

Sessions

Interface	SenderCompID	TargetCompID	Port	Actions
FIX44_client2_P				
FIX_44_client2_S				

Please provide the name and version of the application you're using to certify:

[Enter Application Details](#)

Application Details

Please enter information below, concerning the application for which you will be using to certify. (Or recertify, if you have already completed this certification for another application.)

Application Name:

Application Version:

Close Save changes

The test dashboard shows test suites broken down into test cases, with the option to run test as well as when the test was last run, required or optional test case, and the result of the test. Client has an option to reset certification which is located at the top right side of the Test dashboard.

FIX Conductor - FIX_44 Certification

Progress: 0%

Reset Certification

Back to User page

This service connects to DSB's UAT environment using FIX 4.4

FixClient 1.0 Certification for Client DSB

Sessions

Interface	SenderCompID	TargetCompID	Port	Actions
FIX44_Proxy				
FIX44_Simulated				Edit Session

Test Suite	Test Case	Last Run	Required	Result
Create	CR1 - User creates ISIN for Rates	Run Test	Required	untested
	CR2 - User creates ISIN for Foreign Exchange	Run Test	Optional	untested
	CR3 - User creates ISIN for Credit	Run Test	Optional	untested
	CR4 - User creates ISIN for Equity	Run Test	Optional	untested
	CR5 - User creates ISIN for Commodities	Run Test	Optional	untested

To access the test cases, click on the “Run Test” button next to a test case.

Test Suite	Test Case	Last Run	Required	Result
Create	CR1 - User creates ISIN for Rates	Run Test	Required	untested

3.3 Test Suite

3.3.1 Session Level

There are 2 session level tests that are required to complete the certification.

SL1 - Logon and Heartbeat

Objective: Client sends a logon and waits for a logon response from the server. The client sends a heartbeat and wait for a heartbeat in response.

ANNA

ISIN NUMBERS THE WORLD

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SL1 - Logon and Heartbeat

SL2 - Reconnect after abnormal disconnect

Test Runner

SessionLevel

Stop Test

Test Name: Logon and Heartbeat messages are checked for

Objective: Client sends a logon and waits for a logon response from the server. The client then sends a heartbeat and waits for a heartbeat in response

Please connect and logon to the FIX session

To proceed with the test, client needs to login to FIX Client so that the FIX Conductor can check the connectivity (35=A Logon) and heartbeat (35=0 Heartbeat).

```
8=FIX.4.4^A9=126^A35=A^A34=1^A49=SenderCompID^A50=SenderSubID^A52=20170616-
09:11:00.327^A56=TargetCompID^A57=TargetSubID^A98=0^A108=30^A141=Y^A553=Username^A5
54= password^A10=100^A
```

```
8=FIX.4.4^A9=85^A35=A^A34=1^A49= SenderCompID ^A50= SenderSubID ^A52=20170616-
09:10:57.269^A56= TargetCompID^A57=TargetSubID^A98=0^A108=30^A141=Y^A10=063^A
```

```
8=FIX.4.4^A9=67^A35=0^A34=2^A49= SenderCompID^A50=SenderSubID ^A52=20170616-
09:11:31.286^A56= A56=TargetCompID^A57=TargetSubID ^A10=225^A
```

```
8=FIX.4.4^A9=67^A35=0^A34=2^A49= SenderCompID ^A50= SenderSubID ^A52=20170616-
09:11:27.563^A56= A56=TargetCompID^A57=TargetSubID ^A10=228^A
```

FIX Conductor will check the session connection and heartbeat response to pass this test case.

Test Runner
SessionLevel

Test Name: Logon and Heartbeat messages are checked for

Objective: Client sends a logon and waits for a logon response from the server. The client then sends a heartbeat and waits for a heartbeat in response

Please connect and logon to the FIX session

Logon (Reset Sequence Numbers)

Client logon received, waiting for logon response from server.

Logon (Reset Sequence Numbers)

Server logon received, session is connected.

Logon received, session is connected. Waiting for heartbeats. Please allow up to 30 seconds...

Heartbeat

Heartbeat

Test passed!

A - Logon

Show All Message Fields

Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	132	132
MsgType (35)		A - Logon
MsgSeqNum (34)		1
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170718-07:49:48.208
TargetCompID (56)		
TargetSubID (57)		
EncryptMethod (98)	0 - NoneOther	0 - NoneOther
HeartBInt (108)	30	30
ResetSeqNumFlag (141)		Y - YesResetSequenceNumbers
Username (553)		

Test Console

The test passed

SL2 - Reconnect after abnormal disconnect

Objective: Client disconnects without sending a logout and then re-establishes connection and logs on

Client needs to disconnect on FIX Client without sending a logout.

The screenshot shows the ANNA Test Runner interface. On the left, a sidebar lists test steps: 'SL1 - Logon and Heartbeat' and 'SL2 - Reconnect after abnormal disconnect'. The main area is titled 'Test Runner' with a 'SessionLevel' indicator and a 'Stop Test' button. The test steps are listed below:

- Test Name: A reconnect after an abnormal disconnect is checked for
- Objective: Client disconnects without sending a logout and then reestablishes connection and logs on
- Connection Established. Please disconnect without logout
- Waiting for 10 seconds...

Once disconnected, client needs to relogin on FIX Client. The FIX Conductor will check the connectivity and heartbeat.

The screenshot shows the ANNA Test Runner interface with the 'A - Logon' step selected. The test steps are listed below:

- Test Name: A reconnect after an abnormal disconnect is checked for
- Objective: Client disconnects without sending a logout and then reestablishes connection and logs on
- Connection Established. Please disconnect without logout
- Waiting for 10 seconds...
- Connection has been abnormally disconnected. Please reconnect.
- Please connect and logon to the FIX session
- Logon (Reset Sequence Numbers)
- Client logon received, waiting for logon response from server.
- Logon (Reset Sequence Numbers)
- Server logon received, session is connected.
- Connection established successfully.
- Waiting for a heartbeat...
- Heartbeat
- Test passed!

The 'Test Console' shows the following results:

Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	91	91
MsgType (35)		A - Logon
MsgSeqNum (34)		1
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170718-08:06:49.289
TargetCompID (56)		
TargetSubID (57)		
EncryptMethod (98)	0 - NoneOther	0 - NoneOther
HeartBtInt (108)	30	30
ResetSeqNumFlag (141)		Y - YesResetSequenceNumbers
DefaultAppVerID (1137)	9	9
Checksum (10)	165	165

3.3.2 Create ISIN

Client needs to create an ISIN per Asset Class to test the scenarios below. Once ISIN has been created, the FIX Conductor will display the result of the test.

CASE 1: Test Passed

The FIX Conductor will request client to create an ISIN for the specific asset class.

The screenshot shows the ANNA Test Runner interface. On the left, a sidebar lists test cases: CR1 - User creates ISIN for Rates, CR2 - User creates ISIN for Foreign Exchange, CR3 - User creates ISIN for Credit, CR4 - User creates ISIN for Equity, and CR5 - User creates ISIN for Commodities. The main area is titled 'Test Runner' and shows a test plan for 'A new ISIN is requested for Rates'. The objective is 'Client submits a Security Definition Request with OTC product definitions for Rates for which the client gets a new ISIN'. A yellow highlighted step says 'Please send a Security Definition Request (35=c) to create a new ISIN for Rates'. A 'Stop Test' button is visible.

The following is a snapshot of the SecurityDefinitionRequest message (35=c) in the FIX log.

```
8=FIXT.1.1^A9=354^A35=c^A34=77^A49=SenderCompID^A50=SenderSubID^A52=20170718-08:44:11.031^A56=TargetCompID^A57=TargetSubID^A55=[N/A]^A320=DREQ3^A321=1^A1184=247^A1185={
  "Header": {
    "AssetClass": "Rates",
    "InstrumentType": "Swap",
    "UseCase": "Fixed_Fixed",
    "Level": "InstRefDataReporting"
  },
  "Attributes": {
    "NotionalCurrency": "EUR",
    "ExpiryDate": "2027-02-08",
    "NotionalSchedule": "Constant"
  }
}^A10=226^A
```

The FIX Conductor will check for the Security Definition Request (35=c) for the new ISIN created.

The screenshot shows the ANNA Test Runner interface with the test plan for 'A new ISIN is requested for Rates'. The test steps are: 'Please send a Security Definition Request (35=c) to create a new ISIN for Rates', 'SecurityDefinitionRequest', 'Evaluating: SecurityDefinitionRequest', 'Waiting for server to respond with a Security Definition', 'SecurityDefinition', 'Evaluating: SecurityDefinition', 'Evaluating: SecurityDefinition', 'Waiting for a heartbeat', 'Heartbeat', and 'Test passed!'. A 'Test Console' at the bottom shows 'The test passed'. On the right, a table titled 'c - SecurityDefinitionRequest' shows the message fields and their values.

Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	354	354
MsgType (35)		c - SecurityDefinitionRequest
MsgSeqNum (34)		77
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170718-08:44:11.031
TargetCompID (56)		
TargetSubID (57)		
Symbol (55)		[N/A]
SecurityXMLLen (1184)		247
SecurityXML (1185)		{ "Header": { "AssetClass": "Rates", "InstrumentType": "Swap", "UseCase": "Fixed_Fixed", "Level": "InstRefDataReporting" }, "Attributes": { "NotionalCurrency": "EUR", "ExpiryDate": "2027-02-08", "NotionalSchedule": "Constant" } }

Client can validate the details of the ISIN submitted on the SecurityXML (1185) or Request Product Payload.

c - SecurityDefinitionRequest		
<input checked="" type="checkbox"/> Show All Message Fields		
Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	354	354
MsgType (35)		c - SecurityDefinitionRequest
MsgSeqNum (34)		77
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170718-08:44:11.031
TargetCompID (56)		
TargetSubID (57)		
Symbol (55)		[N/A]
SecurityXMLLen (1184)		247
SecurityXML (1185)		{ "Header": { "AssetClass": "Rates", "InstrumentType": "Swap", "UseCase": "Fixed_Fixed", "Level": "InstRefDataReporting" }, "Attributes": { "NotionalCurrency": "EUR", "ExpiryDate": "2027-02-08", "NotionalSchedule": "Constant" } }
SecurityReqID (320)	DREQ3	DREQ3
SecurityRequestType (321)	1 - RequestSecurityIdentityForSpecifications	1 - RequestSecurityIdentityForSpecifications
Checksum (10)	226	226
SecurityRequestType		

The table below provides an explanation of the sample content:

Field	Description	Comment
Begin String (8)	FIX 5.0: Always set to: FIXT.1.1 FIX 4.4: Always set to: FIX4.4	
Body Length (9)	Message length, in bytes, forward to the CheckSum field. Always the second field of the message.	
MsgType (35)	c = SecurityDefinitionRequest Request (or create) the ISIN for an OTC derivative financial instrument as identified by its unique attributes	
MsgSeqNum (34)	Integer message sequence number	
SenderCompID(49) ↔ TargetCompID(56)	Client ↔ DSB	Client Comp ID Configured for each client The DSB comp ID

SenderSubID(49) ↔ TargetSubID(57)	Subclient ↔ UAT	Client Sub Comp Configured for each client ↔ The DSB Sub Comp ID is configured for each environment (i.e.: Demo / UAT / Prod)
SendingTime (52)	Time of message transmission	
Symbol (55)	Use: "[N/A]"	
SecurityXMLLen (1184)	Length of JSON record payload	
SecurityXML(1185)	Request Product payload	{ "Header": { "AssetClass": "Rates", "InstrumentType": "Swap", "UseCase": "Fixed_Fixed", "Level": "InstRefDataReporting" }, "Attributes": { "NotionalCurrency": "EUR", "ExpiryDate": "2027-02-08", "NotionalSchedule": "Constant" } }
SecurityReqID (320)	Identifies the request ID	
SecurityRequestType (321)	0 = Request Security Identity And Specifications 1 = Request Security Identity For Specifications Provided	
Checksum(10)	As per FIX specification	

FIX Conductor will wait for the server to respond with a Security Definition (35=d).

The following is a sample of a SecurityDefinition message (35=d).

```
8=FIXT.1.1^A9=780^A35=d^A34=77^A49=TargetCompID^A50=TargetSubID^A52=20170718-
08:44:11.378^A56=SenderCompID^A57=SenderSubID^A22=4^A48=EZ17PHMRHS16^A55=[N/A]^A60=
2017071808:44:11.378^A320=DREQ3^A560=0^A1184=620^A1185={ "Header": { "AssetClass": "Rat
es", "InstrumentType": "Swap", "UseCase": "Fixed_Fixed", "Level": "InstRefDataReporting" }
, "Attributes": { "NotionalCurrency": "EUR", "ExpiryDate": "2027-02-
08", "NotionalSchedule": "Constant" }, "ISIN": { "ISIN": "EZ17PHMRHS16", "Status": "New" }, "T
emplateVersion": 1, "Derived": { "CommodityDerivativeIndicator": "FALSE", "UnderlyingAsse
tType": "Fixed - Fixed", "DeliveryType": "PHYS", "SingleorMultiCurrency": "Single
Currency", "IssuerorOperatoroftheTradingVenueIdentifier": "NA", "PriceMultiplier": 1, "F
ullName": "Rates Swap Fixed_Fixed EUR 20270208", "ShortName": "NA/Swap Fxd Fxd EUR
20270208", "ClassificationType": "SRDCSP" } }^A1938=1^A10=165^A
```

Simultaneously, FIX Conductor will display the details of the SecurityDefinition (35=d) message. The ISIN created will reflect on the SecurityXML (1185) which is the Record Payload.

d - SecurityDefinition		
<input checked="" type="checkbox"/> Show All Message Fields		
Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	780	780
MsgType (35)		d - SecurityDefinition
MsgSeqNum (34)		77
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170718-08:44:11.378
TargetCompID (56)		
TargetSubID (57)		
SecurityIDSource (22)		4 - ISINNumber
SecurityID (48)		EZ17PHMRHS16
Symbol (55)		[N/A]
SecurityXMLLen (1184)		620
SecurityXML (1185)		{ "Header": { "AssetClass": "Rates", "InstrumentType": "Swap", "UseCase": "Fixed_Fixed", "Level": "InstRefDataReporting", "Attributes": { "NotionalCurrency": "EUR", "ExpiryDate": "2027-02-08", "NotionalSchedule": "Constant", "ISIN": "EZ17PHMRHS16", "Status": "New", "TemplateVersion": 1, "Derived": { "CommodityDerivativeIndicator": "FALSE", "UnderlyingAssetType": "Fixed - Fixed", "DeliveryType": "PHYS", "SingleorMultiCurrency": "Single Currency", "IssuerorOperatoroftheTradingVenueIdentifier": "NA", "PriceMultiplier": 1, "FullName": "Rates Swap Fixed_Fixed EUR 20270208", "ShortName": "NA/Swap Fxd Fxd EUR 20270208", "ClassificationType": "SRDCSP" } } } }
AssetClass (1938)		1 - Interest Rate
TransactTime (60)		20170718-08:44:11.378
SecurityReqID (320)	DREQ3	DREQ3
SecurityRequestResult (560)	0 - ValidRequest	0 - ValidRequest
AssetClass (1938)		1 - Interest Rate
Checksum (10)	165	165

The table below provides an explanation of the sample content:

Field	Description	Comment
SecurityXML(1185)	Record Payload	{ "Header": { "AssetClass": "Rates", "InstrumentType": "Swap", "UseCase": "Fixed_Fixed", "Level": "InstRefDataReporting", "Attributes": { "NotionalCurrency": "EUR", "ExpiryDate": "2027-02-08", "NotionalSchedule": "Constant", "ISIN": "EZ17PHMRHS16", "Status": "New", "TemplateVersion": 1, "Derived": { "CommodityDerivativeIndicator": "FALSE", "UnderlyingAssetType": "Fixed - Fixed", "DeliveryType": "PHYS", "SingleorMultiCurrency": "Single Currency", "IssuerorOperatoroftheTradingVenueIdentifier": "NA", "PriceMultiplier": 1, "FullName": "Rates Swap Fixed_Fixed EUR 20270208", "ShortName": "NA/Swap Fxd Fxd EUR 20270208", "ClassificationType": "SRDCSP" } } } }

		20270208", "ClassificationType": "SRD CSP"}}
AssetClass (1938)	Filter the request to products of a single asset class 1 = Interest rate 2 = Currency (Foreign Exchange) 3 = Credit 4 = Equity 5 = Commodity	
TransactTime (60)	Time of transaction	
SecurityRequestResult (560)	0 = Valid request 1 = Invalid or unsupported request 2 = No Instruments found that match selection criteria 3 = Not authorized to retrieve instrument data 4 = Instrument data temporarily unavailable	

CASE 2: Test Failed

Client sends an ISIN for Credit instead of Commodity Asset Class which the FIX Conductor is expecting.

The following is a snapshot of the SecurityDefinitionRequest message (35=c) in the FIX log.

```
8=FIXT.1.1^A9=543^A35=c^A34=163^A49=SenderCompID^A50=SenderSubID^A52=20170718-09:26:38.335^A56=TargetCompID^A57=TargetSubID^A55=[N/A]^A320=DREQ5^A321=1^A1184=435^A1185={
  "Header": {
    "AssetClass": "Credit",
    "InstrumentType": "Option",
    "UseCase": "Index_Swaption",
    "Level": "InstRefDataReporting"
  },
  "Attributes": {
    "NotionalCurrency": "XBB",
    "ExpiryDate": "2027-02-08",
    "UnderlyingInstrumentISIN": "EZ1234567890",
    "OptionType": "OPTL",
    "OptionExerciseStyle": "BERM",
    "ValuationMethodorTrigger": "Vanilla"
  }
}
```

}^A10=173^A

Asset Type failed due to asset class mismatch. The FIX Conductor was expecting for Commodity but ISIN for Credit asset class was created.

Test Runner

Test Name: A new ISIN is requested for Commodity

Objective: Client submits a Security Definition Request with OTC product definitions for a Commodity for which the client gets a new ISIN

Please send a Security Definition Request (35=c) to create a new ISIN for a Commodity

SecurityDefinitionRequest

Evaluating: SecurityDefinitionRequest

Waiting for server to respond with a Security Definition

SecurityDefinition

Evaluating: SecurityDefinition

AssetClass mismatch: The expectation evaluated to 5 - Credit & 8 - Commodity

Field	Expected	Value
BeginSeqNum (3)	1	1
EndSeqNum (4)	100	100
MsgType (8)	8 - SECURITYDEFINITION	8
MsgSeqNum (35)	100	100
SenderCompID (49)		20170718-10
SenderSubID (50)		20170718-10-357
TargetCompID (51)		20170718-10-357
TargetSubID (52)		20170718-10-357
SecurityDefinition (35)	8 - Commodity	8 - Commodity
SecurityID (48)	EZ6Q50YC2WS6	EZ6Q50YC2WS6
SecurityType (49)	20170718-10-357	20170718-10-357
SecuritySubID (50)	20170718-10-357	20170718-10-357
SecuritySource (51)	20170718-10-357	20170718-10-357
SecuritySource (52)	20170718-10-357	20170718-10-357
SecuritySource (53)	20170718-10-357	20170718-10-357
SecuritySource (54)	20170718-10-357	20170718-10-357
SecuritySource (55)	20170718-10-357	20170718-10-357
SecuritySource (56)	20170718-10-357	20170718-10-357
SecuritySource (57)	20170718-10-357	20170718-10-357
SecuritySource (58)	20170718-10-357	20170718-10-357
SecuritySource (59)	20170718-10-357	20170718-10-357
SecuritySource (60)	20170718-10-357	20170718-10-357
SecuritySource (61)	20170718-10-357	20170718-10-357
SecuritySource (62)	20170718-10-357	20170718-10-357
SecuritySource (63)	20170718-10-357	20170718-10-357
SecuritySource (64)	20170718-10-357	20170718-10-357
SecuritySource (65)	20170718-10-357	20170718-10-357
SecuritySource (66)	20170718-10-357	20170718-10-357
SecuritySource (67)	20170718-10-357	20170718-10-357
SecuritySource (68)	20170718-10-357	20170718-10-357
SecuritySource (69)	20170718-10-357	20170718-10-357
SecuritySource (70)	20170718-10-357	20170718-10-357
SecuritySource (71)	20170718-10-357	20170718-10-357
SecuritySource (72)	20170718-10-357	20170718-10-357
SecuritySource (73)	20170718-10-357	20170718-10-357
SecuritySource (74)	20170718-10-357	20170718-10-357
SecuritySource (75)	20170718-10-357	20170718-10-357
SecuritySource (76)	20170718-10-357	20170718-10-357
SecuritySource (77)	20170718-10-357	20170718-10-357
SecuritySource (78)	20170718-10-357	20170718-10-357
SecuritySource (79)	20170718-10-357	20170718-10-357
SecuritySource (80)	20170718-10-357	20170718-10-357
SecuritySource (81)	20170718-10-357	20170718-10-357
SecuritySource (82)	20170718-10-357	20170718-10-357
SecuritySource (83)	20170718-10-357	20170718-10-357
SecuritySource (84)	20170718-10-357	20170718-10-357
SecuritySource (85)	20170718-10-357	20170718-10-357
SecuritySource (86)	20170718-10-357	20170718-10-357
SecuritySource (87)	20170718-10-357	20170718-10-357
SecuritySource (88)	20170718-10-357	20170718-10-357
SecuritySource (89)	20170718-10-357	20170718-10-357
SecuritySource (90)	20170718-10-357	20170718-10-357
SecuritySource (91)	20170718-10-357	20170718-10-357
SecuritySource (92)	20170718-10-357	20170718-10-357
SecuritySource (93)	20170718-10-357	20170718-10-357
SecuritySource (94)	20170718-10-357	20170718-10-357
SecuritySource (95)	20170718-10-357	20170718-10-357
SecuritySource (96)	20170718-10-357	20170718-10-357
SecuritySource (97)	20170718-10-357	20170718-10-357
SecuritySource (98)	20170718-10-357	20170718-10-357
SecuritySource (99)	20170718-10-357	20170718-10-357
SecuritySource (100)	20170718-10-357	20170718-10-357

3.3.3 Search ISIN

Client submits an ISIN per asset class to request the OTC product definition for an ISIN.

CASE 1: Test Passed

The client needs to send the ISIN provided in the FIX Conductor.

Test Runner

Test Name: OTC product definitions are requested for a Rate's ISIN

Objective: Client submits a Security Definition Request with SecurityID set as the Rate's ISIN. Server replies with the ISIN's OTC product definitions

Please send a Security Definition Request (35=c) with Rate's ISIN to find its corresponding properties

Please send tag 321 (SecurityRequestType) = 0, tag 48 (SecurityID) = EZ6Q50YC2WS6 and tag 22 (SecurityIDSource) = 4

The following is a sample of a SecurityDefinitionRequest message (35=c) having an ISIN.

```
8=FIXT.1.1^A9=106^A35=c^A34=271^A49=SenderCompID^A50=SenderSubID^A52=20170718-10:17:20.357^A56=TargetCompID^A57=TargetSubID^A22=4^A48=EZ6Q50YC2WS6^A320=DREQ17^A321=0^A10=228^A
```

The FIX Conductor will check for the Security Definition Request (35=c).

Test Runner

Test Name: OTC product definitions are requested for a Rate's ISIN

Objective: Client submits a Security Definition Request with SecurityID set as the Rate's ISIN. Server replies with the ISIN's OTC product definitions

Please send a Security Definition Request (35=c) with Rate's ISIN to find its corresponding properties

Please send tag 321 (SecurityRequestType) = 0, tag 48 (SecurityID) = EZ6Q50YC2WS6 and tag 22 (SecurityIDSource) = 4

SecurityDefinitionRequest

Evaluating: SecurityDefinitionRequest

Waiting for server to respond with a Security Definition

SecurityDefinition

Evaluating: SecurityDefinition

Evaluating: SecurityDefinition

Is the asset class received equal to 1 (Interest Rates)?

Waiting for a heartbeat

Heartbeat

Test passed!

Test Console

The test passed

c - SecurityDefinitionRequest

Show All Message Fields

Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	106	106
MsgType (35)		c - SecurityDefinitionRequest
MsgSeqNum (34)		271
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170718-10:17:20.357
TargetCompID (56)		
TargetSubID (57)		
SecurityIDSource (22)		4 - ISINNumber
SecurityID (48)		EZ6Q50YC2WS6
SecurityRequestType (321)	0 - RequestSecurityIdentityAndSpecifications	0 - RequestSecurityIdentityAndSpecifications
CheckSum (10)	228	228
SecurityRequestType		

The FIX Conductor will wait for the server to respond with a Security Definition (35=d).


```
8=FIXT.1.1^A9=930^A35=d^A34=275^A49=DSB^A50=UAT^A52=20170718-
10:17:20.160^A56=ITIVITI^A57=IT^A22=4^A48=EZ6Q50YC2WS6^A55=[N/A]^A60=20170718-
10:17:20.160^A320=DREQ17^A560=0^A1184=768^A1185={"Header":{"AssetClass":"Rates","In
strumentType":"Swap","UseCase":"Inflation_Swap","Level":"InstRefDataReporting"},"At
tributes":{"NotionalCurrency":"SEK","ExpiryDate":"2027-12-10","ReferenceRate":"HKD-
CPI","ReferenceRateTermValue":-
73800066,"ReferenceRateTermUnit":"YEAR","NotionalSchedule":"Custom"},"ISIN":{"ISIN"
:"EZ6Q50YC2WS6","Status":"New"},"TemplateVersion":1,"Derived":{"ISOResponseRate":"
CPI","CommodityDerivativeIndicator":"FALSE","UnderlyingAssetType":"Inflation Rate
Index","DeliveryType":"PHYS","SingleorMultiCurrency":"Single
Currency","IssuerorOperatoroftheTradingVenueIdentifier":"NA","PriceMultiplier":1,"F
ullName":"Rates Swap Inflation_Swap HKD-CPI -73800066 YEAR
20271210","ShortName":"NA/Swap Infl Idx SEK
20271210","ClassificationType":"SRGYSF"}}^A1938=1^A10=203^A
```

Client can verify the product definition on the SecurityDefinition details in the FIX Conductor. The test passed since the asset class of the ISIN submitted matched the expected asset class.

d - SecurityDefinition		
<input checked="" type="checkbox"/> Show All Message Fields		
Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	930	930
MsgType (35)		d - SecurityDefinition
MsgSeqNum (34)		275
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170718-10:17:20.160
TargetCompID (56)		
TargetSubID (57)		
SecurityIDSource (22)		4 - ISINNumber
SecurityID (48)		EZ6Q50YC2WS6
Symbol (55)		[N/A]
SecurityXMLLen (1184)		768
SecurityXML (1185)		<pre>{ "Header": { "AssetClass": "Rates", "InstrumentType": "Swap", "UseCase": "Inflation_Swap", "Level": "InstRefDataReporting", "Asset": { "NotionalCurrency": "SEK", "ExpiryDate": "2027-12-10", "ReferenceRate": "HKD-CPI", "ReferenceRateTermValue": "-73800066", "ReferenceRateTermUnit": "YEAR", "NotionalSchedule": "Custom", "ISIN": "EZ6Q50YC2WS6", "Status": "New", "TemplateVersion": 1, "Derived": { "ISOResourceRate": "CPI", "CommodityDerivativeIndicator": "FALSE", "UnderlyingAssetType": "Inflation Rate Index", "DeliveryType": "PHYS", "SingleorMultiCurrency": "Single Currency", "IssuerorOperatoroftheTradingVenueIdentifier": "NA", "PriceMultiplier": 1, "FullName": "Rates Swap Inflation_Swap HKD-CPI -73800066 YEAR 20271210", "ShortName": "NA/Swap Infl Idx SEK 20271210", "ClassificationType": "SRGYSP" } } } }</pre>
AssetClass (1938)		1 - Interest Rate
TransactTime (60)		20170718-10:17:20.160
SecurityReqID (320)	DREQ17	DREQ17

CASE 2: Test Failed

Client inputs an ISIN except the Security ID listed in the FIX Conductor.



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Test Runner Stop Test

Search

- SE1 - User requests OTC product definition for a Rate ISIN
- SE2 - User requests OTC product definition for a Foreign Exchange ISIN
- SE3 - User requests OTC product definition for a Credit ISIN
- SE4 - User requests OTC product definition for an Equity ISIN
- SE5 - User requests OTC product definition for a Commodity ISIN

Test Name: OTC product definitions are requested for a Foreign Exchange's ISIN

Objective: Client submits a Security Definition Request with SecurityID set as the Foreign Exchange's ISIN. Server replies with the ISIN's OTC product definitions

Please send a Security Definition Request (35=c) with Foreign Exchange's ISIN to find its corresponding properties

Please send tag 321 (SecurityRequestType) = 0, tag 48 (SecurityID) = EZ7FSPZ06BB1 and tag 22 (SecurityIDSource) = 4

The following is a sample of a SecurityDefinitionRequest message (35=c) having an ISIN.

```
8=FIXT.1.1^A9=106^A35=c^A34=320^A49=SenderCompID^A50=SenderSubID^A52=20170718-10:41:25.525^A56=TargetCompID^A57=TargetSubID^A22=4^A48=EZVQJ3CLCHH3^A320=DREQ18^A321=0^A10=254^A
```

The Test failed due to security ID did not match.

Test Runner

Test Name: OTC product definitions are requested for a Foreign Exchange's ISIN

Objective: Client submits a Security Definition Request with SecurityID set as the Foreign Exchange's ISIN. Server replies with the ISIN's OTC product definitions

Please send a Security Definition Request (35=c) with Foreign Exchange's ISIN to find its corresponding properties

Please send tag 321 (SecurityRequestType) = 0, tag 48 (SecurityID) = EZ7FSPZ06BB1 and tag 22 (SecurityIDSource) = 4

SecurityDefinitionRequest

Evaluating: SecurityDefinitionRequest

Test Console

Expectation SecurityID = \$securityid failed. The expectation evaluated to EZVQJ3CLCH43 = EZ7FSPZ06BB1

c - SecurityDefinitionRequest

Field	Expected	Value
BeginString (8)		FIXT.1.1
BodyLength (9)		108
MsgType (35)		c - SecurityDefinitionRequest
MsgSeqNum (34)		320
SenderCompID (49)		ITWIT
SenderSubID (50)		IT
SendingTime (52)		20170718-10:41:25.528
TargetCompID (55)		DSB
TargetSubID (57)		UAT
SecurityIDSource (22)	4 - ISINNumber	4 - ISINNumber
SecurityID (48)	EZ7FSPZ06BB1	EZVQJ3CLCH43
SecurityMsgID (320)		DSREQ18
SecurityRequestType (321)	0 - RequestSecurityIdentifyAndSpecifications	
Checksum (10)		254

3.3.4 Subscribe

Client needs to subscribe to Asset Class and send SubscriptionRequestType listed in the FIX Conductor.

CASE 1: Test Passed

Client should subscribe to Rates Asset Class (1938=1) and send SubscriptionRequestType (263=0).

Test Runner

Subscribe

Test Name: Subscription request is made for Rates

Objective: Client submits a Security List Request with AssetClass set as Rates

Please submit a Security List Request (35=x) to subscribe to OTC product definitions for ISINs of Rates

Please send tag 559 (SecurityListRequestType) = 2 (Single asset class), with tag 1938 (AssetClass) = 1 and tag 263 (SubscriptionRequestType) = 0

The table below provides an explanation of the sample content:

Name	Data Type	Tag	Rq	Description
SecurityListRequestType	Int	559	Y	2= Product: Filter the request to products of a single asset class 4 = All Securities (that were created today, i.e. since midnight).
AssetClass	String	1938	N	Filter the request to products of a single asset class 1 = Interest rate 2 = Currency (Foreign Exchange) 3 = Credit 4 = Equity 5 = Commodity
SubscriptionRequestType	Char	263	Y	0 = Snapshot 1 = Snapshot + updates 2 = Unsubscribe

The following is a sample of a SecurityListRequest message (35=x). The request is for a snapshot of Rates asset class.

```
8=FIXT.1.1^A9=98^A35=x^A34=348^A49=SenderCompID^A50=SenderSubID^A52=20170718-
10:55:06.757^A56=TargetCompID^A57=TargetSubID^A263=0^A320=LREQ19^A559=2^A1938=1^A10
=143^A
```

The following is a sample of a SecurityList message (35=y).

```
8=FIXT.1.1^A9=2286^A35=y^A34=352^A49=TargetCompID^A50=TargetSubID^A52=20170718-
10:55:08.765^A56=SenderCompID^A57=SenderSubID^A60=20170718-
10:55:08.764^A320=LREQ19^A393=3^A560=0^A146=3^A55=[N/A]^A48=EZ95C0ZXR6B5^A22=4^A193
8=1^A1184=620^A1185={"Header":{"AssetClass":"Rates","InstrumentType":"Swap","UseCas
e":"Fixed_Fixed","Level":"InstRefDataReporting"},"Attributes":{"NotionalCurrency":"
EUR","ExpiryDate":"2027-02-
07","NotionalSchedule":"Constant"},"ISIN":{"ISIN":"EZ95C0ZXR6B5","Status":"New"},"T
emplateVersion":1,"Derived":{"CommodityDerivativeIndicator":"FALSE","UnderlyingAsse
tType":"Fixed - Fixed","DeliveryType":"PHYS","SingleorMultiCurrency":"Single
Currency","IssuerorOperatoroftheTradingVenueIdentifier":"NA","PriceMultiplier":1,"F
ullName":"Rates Swap Fixed_Fixed EUR 20270207","ShortName":"NA/Swap Fxd Fxd EUR
20270207","ClassificationType":"SRDCSP"}}^A55=[N/A]^A48=EZ17PHMRHS16^A22=4^A1938=1^
A1184=620^A1185={"Header":{"AssetClass":"Rates","InstrumentType":"Swap","UseCase":"
Fixed_Fixed","Level":"InstRefDataReporting"},"Attributes":{"NotionalCurrency":"EUR"
,"ExpiryDate":"2027-02-
08","NotionalSchedule":"Constant"},"ISIN":{"ISIN":"EZ17PHMRHS16","Status":"New"},"T
emplateVersion":1,"Derived":{"CommodityDerivativeIndicator":"FALSE","UnderlyingAsse
tType":"Fixed - Fixed","DeliveryType":"PHYS","SingleorMultiCurrency":"Single
Currency","IssuerorOperatoroftheTradingVenueIdentifier":"NA","PriceMultiplier":1,"F
ullName":"Rates Swap Fixed_Fixed EUR 20270208","ShortName":"NA/Swap Fxd Fxd EUR
20270208","ClassificationType":"SRDCSP"}}^A55=[N/A]^A48=EZ6Q50YC2WS6^A22=4^A1938=1^
A1184=768^A1185={"Header":{"AssetClass":"Rates","InstrumentType":"Swap","UseCase":"
Inflation_Swap","Level":"InstRefDataReporting"},"Attributes":{"NotionalCurrency":"S
EK","ExpiryDate":"2027-12-10","ReferenceRate":"HKD-CPI","ReferenceRateTermValue":-
73800066,"ReferenceRateTermUnit":"YEAR","NotionalSchedule":"Custom"},"ISIN":{"ISIN"
:"EZ6Q50YC2WS6","Status":"New"},"TemplateVersion":1,"Derived":{"ISOReferenceRate":"
CPI","CommodityDerivativeIndicator":"FALSE","UnderlyingAssetType":"Inflation Rate
Index","DeliveryType":"PHYS","SingleorMultiCurrency":"Single
Currency","IssuerorOperatoroftheTradingVenueIdentifier":"NA","PriceMultiplier":1,"F
ullName":"Rates Swap Inflation_Swap HKD-CPI -73800066 YEAR
20271210","ShortName":"NA/Swap Infl Idx SEK
20271210","ClassificationType":"SRGYSP"}}^A10=000^A
```

Client needs to Unsubscribe (SubscriptionRequestType 263=2) to OTC product definition for Rates to proceed on the next test case.

The screenshot shows the ANNA Test Runner interface. On the left, a sidebar lists test scenarios: SU1 (Rates), SU2 (Foreign Exchanges), SU3 (Credits), SU4 (Equities), SU5 (Commodities), and SU6 (all asset types). The main area is titled 'Test Runner' with a 'Subscribe' button and a 'Stop Test' button. The test steps are as follows:

- Test Name: Subscription request is made for Rates
- Objective: Client submits a Security List Request with AssetClass set as Rates
- Please submit a Security List Request (35=x) to subscribe to OTC product definitions for ISINs of Rates
- Please send tag 559 (SecurityListRequestType) = 2 (Single asset class), with tag 1938 (AssetClass) = 1 and tag 263 (SubscriptionRequestType) = 0
- SecurityListRequest (Show Details)
- Evaluating: SecurityListRequest (Show Details)
- Evaluating: SecurityListRequest (Show Details)
- Waiting for server to respond with a Security List
- SecurityList (Show Details)
- Evaluating: SecurityList (Show Details)
- Evaluating: SecurityList (Show Details)
- Please submit a Security List Request (35=x) to unsubscribe to OTC product definitions for ISINs of Rates
- Please send tag 559 (SecurityListRequestType) = 2 (Single asset class), with tag 1938 (AssetClass) = 1 and tag 263 (SubscriptionRequestType) = 2

The following is a sample of a SecurityListRequest message (35=x) with SubscriptionRequestType (263=2).

```
8=FIXT.1.1^A9=98^A35=x^A34=369^A49=SenderCompID^A50=SenderSubID^A52=20170718-11:05:19.049^A56=TargetCompID^A57=TargetSubID^A263=2^A320=LREQ20^A559=2^A1938=1^A10=134^A
```

The Test Console shows that the test passed.


The screenshot shows the ANNA Test Runner interface with a failed test run. The test steps are similar to the previous one, but the final step is 'Test passed!'. The 'Test Console' at the bottom shows 'The test passed' with a green checkmark. On the right, a detailed view of the 'SecurityListRequest' message is shown:

Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	98	98
MsgType (35)		= SecurityListRequest
MsgSeqNum (4)		350
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170718-11:05:19.049
TargetCompID (56)		
TargetSubID (57)		
SubscriptionRequestType (263)	2 - DisablePreviousSnapshot	2 - DisablePreviousSnapshot
SecurityMsgID (320)	LREQ20	LREQ20
SecurityListRequestType (559)	2 - Product	2 - Product
AssetClass (1938)	1 - Interest Rate	1 - Interest Rate
CheckSum (10)	134	134
SecurityListRequestType		

CASE 2: Test Failed

If the Client subscribes to any Asset Class and SubscriptionRequestType that are not listed in the FIX Conductor, the test will fail.

In this example, the client should send Foreign Exchange Asset Class (1938=2) with Snapshot SubscriptionRequestType (263=0).



SU1 - User subscribes to OTC product definitions for Rates

SU2 - User subscribes to OTC product definitions for Foreign Exchanges

SU3 - User subscribes to OTC product definitions for Credits

SU4 - User subscribes to OTC product definitions for Equities

Test Runner


Subscribe Stop Test

- Test Name: Subscription request is made for Foreign Exchanges
- Objective: Client submits a Security List Request with AssetClass set as Foreign Exchange
- Please submit a Security List Request (35=x) to subscribe to OTC product definitions for ISINs of Foreign Exchanges
- Please send tag 559 (SecurityListRequestType) = 2 (Single asset class), with tag 1938 (AssetClass) = 2 and tag 263 (SubscriptionRequestType) = 0**

The following is a sample of a SecurityListRequest message (35=x) with tag 1938=3 (Credit) and 263=1 (Snapshot+Updates).

```
8=FIXT.1.1^A9=98^A35=x^A34=405^A49=SenderCompID^A50=SenderSubID^A52=20170718-11:22:51.363^A56=TargetCompID^A57=TargetSubID^A263=1^A320=LREQ21^A559=2^A1938=3^A10=121^A
```

The Test Console shows that the test failed due to SubscriptionRequestType and AssetClass mismatch.



SU1 - User subscribes to OTC product definitions for Rates

SU2 - User subscribes to OTC product definitions for Foreign Exchanges

SU3 - User subscribes to OTC product definitions for Credits

SU4 - User subscribes to OTC product definitions for Equities

Test Runner

Subscribe Start Test

- Test Name: Subscription request is made for Foreign Exchanges
- Objective: Client submits a Security List Request with AssetClass set as Foreign Exchange
- Please submit a Security List Request (35=x) to subscribe to OTC product definitions for ISINs of Foreign Exchanges
- Please send tag 559 (SecurityListRequestType) = 2 (Single asset class), with tag 1938 (AssetClass) = 2 and tag 263 (SubscriptionRequestType) = 0
- SecurityListRequest** New Details

x - SecurityListRequest

Show All Message Fields

Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	95	95
MsgType (35)		x - SecurityListRequest
MsgSeqNum (34)		0
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170718-12:55:37.483
TargetCompID (56)		
TargetSubID (57)		
SubscriptionRequestType (263)	0 - Snapshot	1 - SnapshotAndUpdates
SecurityListRequestID (220)	LREQ21	LREQ21
SecurityListRequestType (559)	2 - Product	2 - Product
AssetClass (1938)	3 - Credit	3 - Credit
CheckSum (10)	238	238
SecurityListRequestType		

Test Console

Expectation SubscriptionRequestType = \$clientSubscriptionRequestType failed. The expectation evaluated to 1 - SnapshotAndUpdates = 0 - Snapshot

x - SecurityListRequest		
<input checked="" type="checkbox"/> Show All Message Fields		
Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	95	95
MsgType (35)		x - SecurityListRequest
MsgSeqNum (34)		6
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170718-12:55:37.453
TargetCompID (56)		
TargetSubID (57)		
SubscriptionRequestType (263)	0 - Snapshot	1 - SnapshotAndUpdates
SecurityReqID (320)	LREQ1	LREQ1
SecurityListRequestType (559)	2 - Product	2 - Product
AssetClass (1938)		3 - Credit
Checksum (10)	236	236
SecurityListRequestType		

3.3.5 Error Codes

Client needs to connect on Simulated mode to test the output of the error codes.

CR6 - User submits a malformed payload

Objective: Client submits a Security Definition Request with invalid OTC product definitions

In this case, client needs to submit an invalid OTC product definition.

Test Runner
ErrorCodes

CR6 - User submits a malformed payload

CR7 - Unauthorized user attempts to create an ISIN

CR8 - User requests for a new ISIN when the system is unavailable

SE6 - User requests OTC product definition for a non-existent ISIN

SU7 - User attempts to subscribe to OTC product definitions by submitting invalid message

SU8 - User attempts to subscribe to OTC product definitions when the system is unavailable

Please connect and login to the FIX session <==>

Logon (Reset Sequence Numbers) Show Details

Client logon received, waiting for logon response from server.

Logon (Reset Sequence Numbers) Show Details

Server logon received, session is connected.

Test Name: A new ISIN is requested for invalid product definitions

Objective: Client submits a Security Definition Request with invalid OTC product definitions

Please send a Security Definition Request (35=c) to attempt to create a new ISIN

The following is a snapshot of Security Definition Request with invalid asset class.

Test Runner
ErrorCodes

CR6 - User submits a malformed payload

CR7 - Unauthorized user attempts to create an ISIN

CR8 - User requests for a new ISIN when the system is unavailable

SE6 - User requests OTC product definition for a non-existent ISIN

SU7 - User attempts to subscribe to OTC product definitions by submitting invalid message

SU8 - User attempts to subscribe to OTC product definitions when the system is unavailable

Please connect and login to the FIX session <==>

Logon (Reset Sequence Numbers) Show Details

Client logon received, waiting for logon response from server.

Logon (Reset Sequence Numbers) Show Details

Server logon received, session is connected.

Test Name: A new ISIN is requested for invalid product definitions

Objective: Client submits a Security Definition Request with invalid OTC product definitions

Please send a Security Definition Request (35=c) to attempt to create a new ISIN

SecurityDefinitionRequest

Evaluating: SecurityDefinitionRequest

Waiting for server to respond

SecurityDefinition

Waiting for a heartbeat...

Heartbeat

Test passed!

c - SecurityDefinitionRequest

Show All Message Fields

Field	Expected	Value
BeginString (8)	FIXT.1.1	FIXT.1.1
BodyLength (9)	542	542
MsgType (35)		c - SecurityDefinitionRequest
MsgSeqNum (34)		11
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170710-11:40:28.790
TargetCompID (55)		
TargetSubID (57)		
Symbol (58)		[N/A]
SecurityMsgLen (1104)		421
SecurityMsg (1105)		{ "Header": { "AssetClass": "IR", "InstrumentType": "Bond", "Underlier": { "Initiation_Basis": "Level", "InitiationDataReporting": "NoInitiation", "NationalCurrency": "USD", "CopyDate": "2016-12-01", "ReferenceDate": "2016-01-01", "ReferenceRateTermValue": "73000000", "ReferenceRateTermUnit": "YEAR", "NationalSchedule": "Custom" } } }
SecurityReqID (202)	DRS01	DRS01
SecurityRequestType (321)	1 - RequestSecurityIdentityForSpecifications	1 - RequestSecurityIdentityForSpecifications
CheckSum (10)	000	000
SecurityRequestType		

Test Console

The test passed

Security Request Result (560) shows Invalid or Unsupported Request due to invalid asset class "IR".

d - SecurityDefinition


☒ Show All Message Fields

Field	Value
BeginString (8)	FIXT.1.1
BodyLength (9)	133
MsgType (35)	d - SecurityDefinition
SenderCompID (49)	
TargetCompID (56)	
MsgSeqNum (34)	126
SendingTime (52)	20170718-12:37:24.264
SecurityReqID (320)	DREQ7
Text (58)	Error parsing json data inside security XML.
SecurityRequestResult (560)	1 - InvalidOrUnsupportedRequest
Checksum (10)	172

CR7 - Unauthorized user attempts to create an ISIN

Objective: Unauthorized client submits a Security Definition Request for which the client gets an error

Client creates a new ISIN but is not authorized to submit a Security Definition Request.



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✓ CR6 - User submits a malformed payload

CR7 - Unauthorized user attempts to create an ISIN

CR8 - User requests for a new ISIN when the system is unavailable

SE6 - User requests OTC product definition for a non-existent ISIN

Test Runner

ErrorCodes Stop Test

- Test Name: A new ISIN is requested for by an unauthorized user
- Objective: Unauthorized client submits a Security Definition Request for which the client gets an error
- Please send a Security Definition Request (35=c) to attempt to create a new ISIN

Security Request Result (560) shows that the client is not authorized to retrieve Instrument Data.

Test Runner

Test Name: A new ISIN is requested for by an unauthorized user

Objective: Unauthorized client submits a Security Definition Request for which the client gets an error

Please send a Security Definition Request (35-c) to attempt to create a new ISIN

→ SecurityDefinitionRequest [Show Details](#)

✓ Evaluating: SecurityDefinitionRequest [Show Details](#)

Waiting for server to respond

✗ SecurityDefinition [Show Details](#)

Waiting for a heartbeat...

→ Heartbeat [Show Details](#)

Test passed!

d - SecurityDefinition

Show All Message Fields

Field	Value
BeginString (8)	FIXT.1.1
BodyLength (9)	111
MsgType (35)	d - SecurityDefinition
SenderCompID (49)	
TargetCompID (56)	
MsgSeqNum (34)	37
SendingTime (52)	20170718-11:55:00.758
SecurityReqID (320)	DREQ2
Text (58)	Insufficient privileges
SecurityRequestResult (560)	3 - NotAuthorizedToRetrieveInstrumentData
Checksum (10)	154

Test Console

✓ The test passed

Information of the Security Request Result(560) is available in Text(58) attribute.

d - SecurityDefinition	
<input checked="" type="checkbox"/> Show All Message Fields	
Field	Value
BeginString (8)	FIXT.1.1
BodyLength (9)	111
MsgType (35)	d - SecurityDefinition
SenderCompID (49)	
TargetCompID (56)	
MsgSeqNum (34)	37
SendingTime (52)	20170718-11:55:00.758
SecurityReqID (320)	DREQ2
Text (58)	Insufficient privileges
SecurityRequestResult (560)	3 - NotAuthorizedToRetrieveInstrumentData
Checksum (10)	147

CR8 - User requests for a new ISIN when the system is unavailable

Objective: Client submits a Security Definition Request when the system is unavailable for which the client gets an error

Client sends a request for an ISIN assuming the system is unavailable.

ISIN NUMBERS THE WORLD
DSB | Derivatives Service Bureau

- ✓ CR6 - User submits a malformed payload
- ✓ CR7 - Unauthorized user attempts to create an ISIN
- CR8 - User requests for a new ISIN when the system is unavailable
- SE8 - User requests OTC product definition for a non-existent ISIN

Test Runner

ErrorCodes

[Stop Test](#)

- Test Name: A new ISIN is requested for when the system is unavailable
- Objective: Client submits a Security Definition Request when the system is unavailable for which the client gets an error
- Please send a Security Definition Request (35=c) to attempt to create a new ISIN

Security Request Result (560) shows that the Instrument data temporarily unavailable (4).

ISIN NUMBERS THE WORLD
DSB | Derivatives Service Bureau

- ✓ CR6 - User submits a malformed payload
- ✓ CR7 - Unauthorized user attempts to create an ISIN
- ✓ CR8 - User requests for a new ISIN when the system is unavailable
- SE8 - User requests OTC product definition for a non-existent ISIN
- BUT - User attempts to subscribe to OTC product definition by submitting invalid message
- BUT - User attempts to subscribe to OTC product definition when the system is unavailable

Test Runner

[Continue to Next Test](#)

ErrorCodes

- Test Name: A new ISIN is requested for when the system is unavailable
- Objective: Client submits a Security Definition Request when the system is unavailable for which the client gets an error
- Please send a Security Definition Request (35=c) to attempt to create a new ISIN

- SecurityDefinitionRequest [Show Details](#)
- Evaluating: SecurityDefinitionRequest [Show Details](#)
- Waiting for server to respond
- SecurityDefinition [Show Details](#)
- Waiting for a heartbeat
- Heartbeat [Show Details](#)
- Test passed!

d - SecurityDefinition

[Show All Message Fields](#)

Field	Value
BeginString (8)	FIXT.1.1
BodyLength (9)	84
MsgType (35)	d - SecurityDefinition
SenderCompID (49)	
TargetCompID (56)	
MsgSeqNum (34)	87
SendingTime (52)	20170718-12:54:24.970
SecurityReqID (320)	DREQ09
SecurityRequestResult (560)	4 - InstrumentDataTemporarilyUnavailable
Checksum (10)	130

Test Console

✓ The test passed

d - SecurityDefinition	
<input checked="" type="checkbox"/> Show All Message Fields	
Field	Value
BeginString (8)	FIXT.1.1
BodyLength (9)	85
MsgType (35)	d - SecurityDefinition
SenderCompID (49)	
TargetCompID (56)	
MsgSeqNum (34)	143
SendingTime (52)	20170718-12:45:24.439
SecurityReqID (320)	DREQ09
SecurityRequestResult (560)	4 - InstrumentDataTemporarilyUnavailable
Checksum (10)	185

SE6 - User requests OTC product definition for a non-existent ISIN

Objective: Client submits a Security Definition Request with SecurityID set as a non-existing ISIN.

Client sends an invalid (non-existing) ISIN.

The screenshot shows the ANNA Test Runner interface. On the left, a sidebar lists test steps: CR6 (User submits a malformed payload), CR7 (Unauthorized user attempts to create an ISIN), CR8 (User requests for a new ISIN when the system is unavailable), and SE6 (User requests OTC product definition for a non-existent ISIN). The main area displays the test configuration for SE6:

- Test Name:** OTC product definitions are requested for a non-existent ISIN
- Objective:** Client submits a Security Definition Request with SecurityID set as a non-existing ISIN. Server replies with an error
- Test Step:** Please send a Security Definition Request (35=c) with a non-existent ISIN

Security Request Result (560) shows No Instrument Found (2) due to non-existing ISIN.

The screenshot shows the ANNA Test Runner interface displaying the test results for SE6. The test has passed. The results are shown in a table titled "d - SecurityDefinition".

Field	Value
BeginString (8)	FIXT.1.1
BodyLength (9)	104
MsgType (35)	4 - SecurityDefinition
SenderCompID (48)	
TargetCompID (55)	
MsgSeqNum (4)	62
SendingTime (52)	20170718-12:10:11.438
SecurityReqID (320)	DRB04
Text (58)	Object not found
SecurityRequestResult (560)	2 - NoInstrumentFound
Checksum (10)	063

The "Text (58)" and "SecurityRequestResult (560)" fields are highlighted with a red box, indicating the error message and result code.

Information of the Security Request Result(560) is available in Text(58) attribute.

d - SecurityDefinition


☒ Show All Message Fields

Field	Value
BeginString (8)	FIXT.1.1
BodyLength (9)	106
MsgType (35)	d - SecurityDefinition
SenderCompID (49)	
TargetCompID (56)	
MsgSeqNum (34)	150
SendingTime (52)	20170718-12:48:28.189
SecurityReqID (320)	DREQ10
Text (58)	Object not found
SecurityRequestResult (560)	2 - NoInstrumentsFound
Checksum (10)	191

SU7 - User attempts to subscribe to OTC product definitions by submitting invalid message

Objective: Client submits a Security List Request with invalid values for which the client gets an error

Client can send any Security List Request to test this error code.



ISIN NUMBERS THE WORLD
DSB | Derivatives Service Bureau

✓ CR6 - User submits a malformed payload

✓ CR7 - Unauthorized user attempts to create an ISIN

✓ CR8 - User requests for a new ISIN when the system is unavailable

✗ SE6 - User requests OTC product definition for a non-existent ISIN

SU7 - User attempts to subscribe to OTC product definitions by submitting invalid message

Test Runner

ErrorCodes Stop Test

- Test Name: Subscription request is made using invalid values
- Objective: Client submits a Security List Request with invalid values for which the client gets an error
- Please send a Security List Request (35=x) to subscribe to OTC product definitions for ISINs**

Security Request Result (560) shows Invalid or Unsupported Request (1).

y - SecurityList

☒ Show All Message Fields

Field	Value
BeginString (8)	FIXT.1.1
BodyLength (9)	84
MsgType (35)	y - SecurityList
SenderCompID (49)	
TargetCompID (56)	
MsgSeqNum (34)	81
SendingTime (52)	20170718-12:15:45.116
SecurityReqID (320)	LREQ5
SecurityRequestResult (560)	1 - InvalidOrUnsupportedRequest
Checksum (10)	151

SU8 - User attempts to subscribe to OTC product definitions when the system is unavailable

Objective: Client submits a Security List Request when the system is unavailable for which the client gets an error

Client subscribes to any asset class to test this scenario.

- CR6 - User submits a reformed payload
- CR7 - Unauthorized user attempts to create an ISIN
- CR8 - User requests for a new ISIN when the system is unavailable
- RES - User requests OTC product definition for a non-existent ISIN
- SU7 - User attempts to subscribe to OTC product definitions by submitting invalid message
- SU8 - User attempts to subscribe to OTC product definitions when the system is unavailable

Test Runner

Error Codes

Continue to Next Test

Test Name: Subscription request is made when the system is unavailable

Objective: Client submits a Security List Request when the system is unavailable for which the client gets an error

Please send a Security List Request (35-x) to subscribe to OTC product definitions for ISINs

SecurityListRequest [Hide Details](#)

Waiting for server to respond

SecurityList [Show Details](#)

Waiting for a heartbeat

Heartbeat [Show Details](#)

Test passed!

x - SecurityListRequest

☒ Show All Message Fields

Field	Expected	Value
BeginString (8)	FIX.4.4	FIX.4.4
BodyLength (9)	110	110
MsgType (35)		x - SecurityListRequest
MsgSeqNum (34)		9
SenderCompID (49)		
SenderSubID (50)		
SendingTime (52)		20170728-12:40:23.387
TargetCompID (56)		
TargetSubID (57)		
SubscriptionRequestType (263)		0 - Snapshot
SecurityReqID (320)	LREQ1	LREQ1
SecurityListRequestType (559)	2 - Product	2 - Product
AssetClass (1936)		1 - Interest Rate
Checksum (10)	164	164

Security Request Result (560) shows Instrument Data Temporarily Unavailable (4).

y - SecurityList	
<input checked="" type="checkbox"/> Show All Message Fields	
Field	Value
BeginString (8)	FIXT.1.1
BodyLength (9)	85
MsgType (35)	y - SecurityList
SenderCompID (49)	
TargetCompID (56)	
MsgSeqNum (34)	101
SendingTime (52)	20170718-12:25:21.557
SecurityReqID (320)	LREQ6
SecurityRequestResult (560)	4 - InstrumentDataTemporarilyUnavailable
Checksum (10)	201

3.4 Certification Report

Upon completion of the required test cases, a certification report will be generated for all the test suites with the status of each test case.

Complete Certification Wizard

Select Completion Options

All required tests for this Service have been completed. Please select an option to proceed.

☐ Finalize and Submit
Finalization will send a certification completion report to responsible parties, and certification for this Service will be completed.

☐ Continue Certification
Continuing will allow certification to continue. You can complete optional tests, and re-run already-passed tests.

Cancel

Submit

- Finalize and Submit – Certification for the service is completed and Certification Report is made available to the DSB Technical Support Admin and the client.
- Continue Certification – This will allow the client to continue optional test cases and rerun passed test cases.

The following is a sample of the Certification Report with the details of the Test Cases, Date Run, User and Result of the Test Cases.



Test	Run	User	Result
SL1 - Login and Heartbeat	2017-07-27 06:00:07.457		PASSED
SL2 - Reconnect after abnormal disconnect	2017-07-21 10:04:03.925		PASSED
CR1 - User creates ISIN for Rates	2017-07-21 09:41:22.659		FAILED
CR2 - User creates ISIN for Foreign Exchange	2017-07-21 09:46:35.835		PASSED
CR3 - User creates ISIN for Credit	Never run		
CR4 - User creates ISIN for Equity	Never run		
CR5 - User creates ISIN for Commodities	Never run		
SE1 - User requests OTC product definition for a Rate	2017-07-21 09:52:34.682		PASSED
SE2 - User requests OTC product definition for a Foreign Exchange ISIN	Never run		
SE3 - User requests OTC product definition for a Credit ISIN	Never run		
SE4 - User requests OTC product definition for an Equity ISIN	Never run		
SE5 - User requests OTC product definition for a Commodity ISIN	Never run		
SU1 - User subscribes to OTC product definitions for Rates	2017-07-21 09:56:36.833		PASSED
SU2 - User subscribes to OTC product definitions for Foreign Exchanges	Never run		
SU3 - User subscribes to OTC product definitions for Credits	Never run		
SU4 - User subscribes to OTC product definitions for Equities	Never run		
SU5 - User subscribes to OTC product definitions for Commodities	Never run		
SU6 - User subscribes to OTC product definitions for all asset types	Never run		
CR6 - User submits a malformed payload	2017-07-26 08:31:29.657		PASSED
CR7 - Unauthorized user attempts to create an ISIN	2017-07-26 08:46:20.257		PASSED
CR8 - User requests for a new ISIN when the system is unavailable	2017-07-21 10:09:56.945		PASSED
SE6 - User requests OTC product definition for a non-existent ISIN	2017-07-28 12:44:28.836		FAILED
SU7 - User attempts to subscribe to OTC product definitions by submitting invalid message	2017-07-28 12:46:06.347		FAILED
SU8 - User attempts to subscribe to OTC product definitions when the system is unavailable	2017-07-28 12:46:49.032		PASSED