



Nasdaq Calypso

Axoni V1 Integration Guide

Version 2.3.0

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Approved

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Document History

Revision	Published	Summary of Changes
1.0	December 2022	First edition for version 2.1.0
2.0	January 2023	Second edition for version 2.2.0
3.0	March 2023	Third edition for version 2.3.0 – Added trade keywords.
4.0	October 2023	Fourth edition – Added support for Undo Termination.

This document describes the Calypso Axoni V1 Interface setup.

NOTE: The Calypso License to use this Calypso Integration Module does not include a license for any third-party data services to which this module can interface. Clients are responsible for contracting with the appropriate third-party data service(s) prior to using this Calypso Integration Module.

IMPORTANT NOTE: For Cloud deployments please contact your application management team as the deployment procedure for Cap Cloud is different

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Overview

1.1 Scope

The Axoni platform allows for all parties on a trade to match and confirm all trade terms upfront and remain synchronized on post-trade events including initial trade confirmation, cash flows, amendments, and corporate actions.

Product scope:

- Equity Swap (Calypso product type) for the first phase and we will extend to portfolio swap later
- Legs choice: Equity/Rate, Basket/Rate
- Swap Type: TotalReturn, Dividend, PriceReturn

Lifecycle:

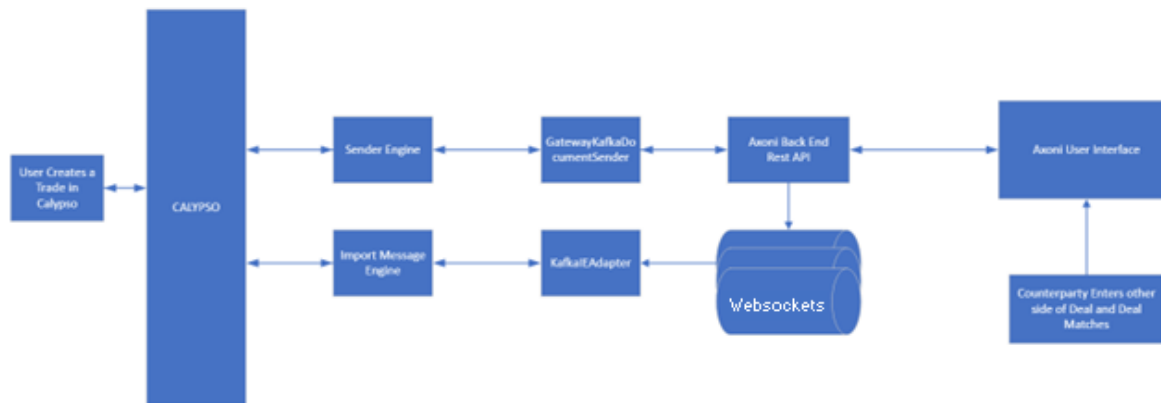
- New trade
- Amendment
- Cancellation
- Termination (Partial / Full)
- Undo Termination
- Trade Increase
- Reset Cashflow - Generated with transfer type PRICE_CHANGE or INTEREST
- Trade Event Cashflow: Fee due to Termination/Increase - Generated with transfer type CAPITALGAIN-TERM or DIV-TERM or INTEREST-TERM
- Adhoc Cashflow - Generated with any other transfer type for fees such as TERMINATION_FEE, PENALTY_FEE
- CA: Dividend Cashflow - Generated with transfer type = DIVIDEND
- CA: Stock Dividend - Generated with new Trade Event with trade attribute TradeClassification: STOCK_DIV
- CA: Split - Single Equity: initial trade terminated and new trade created with TransferType: SPLIT;
- CA: Spin Off - Generated with new Trade Event with trade attribute TradeClassification: SPINOFF

Out of scope: Merger and Ticker Change.

1.2 Axoni Interface overview

Trades are captured into Calypso and messages are created based on message generation process (message setup, Message engine). The messages are then sent to Axoni using the Sender engine.

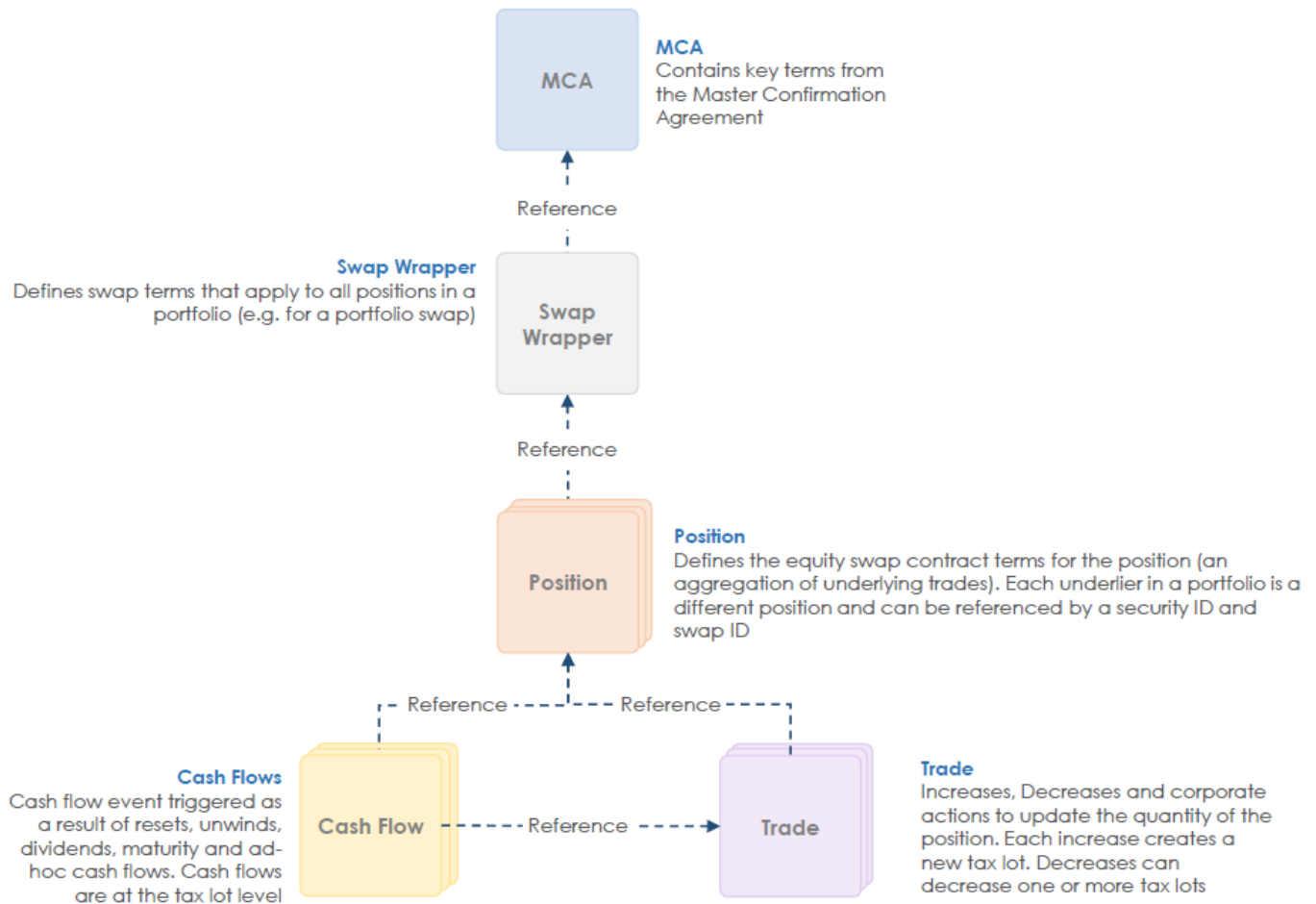
AXONI acknowledgements are integrated into Calypso using the scheduled task AXONI_STATUS_REQUEST and processed using the Axoni engine.



In case of non matched status, you can connect to the Axoni Web UI for investigation.
Please note that Websockets is not available.

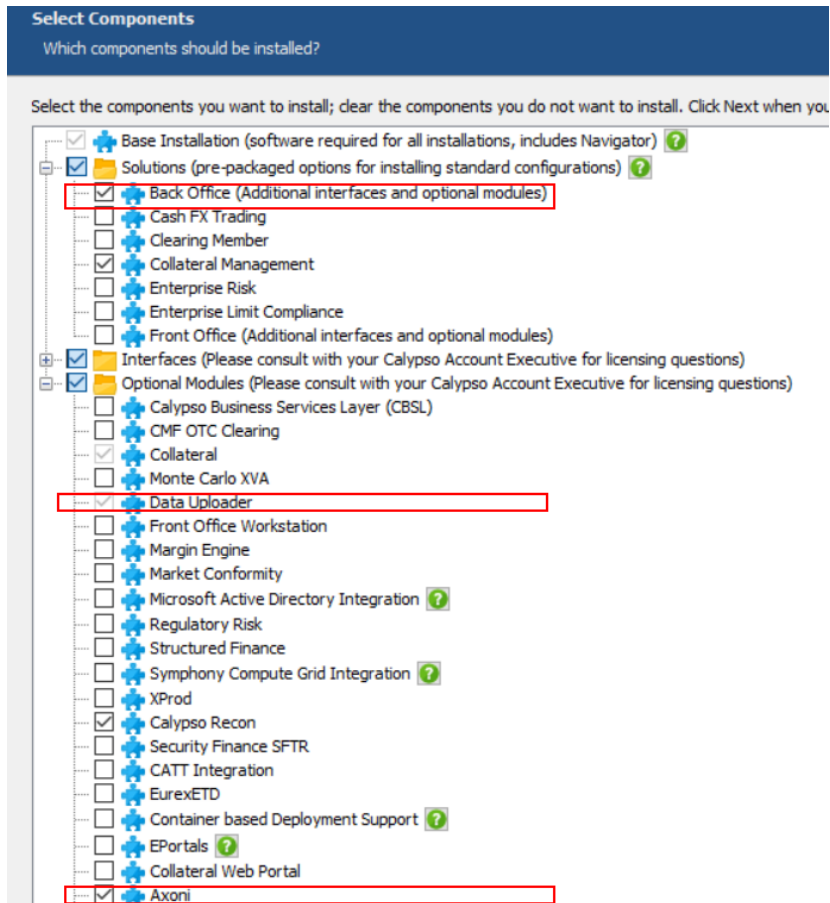
1.3 Axoni Equity Swap Data Model

All swaps incorporate the same data model regardless of swap type (portfolio, TRS, or CFD)



Installation

Axoni is installed as part of the Calypso Installer when you select the Axoni optional module.



[NOTE: Axoni requires the Data Uploader module and the Back Office solution to be installed as well]

Calypso Installer

► Please refer to the Calypso Installation Guide for complete details.

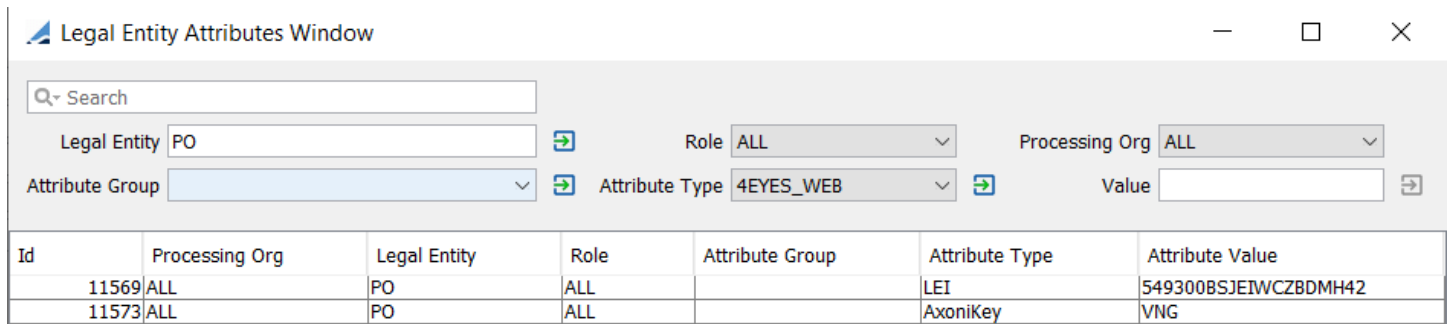
Database Upgrade

When you run Execute SQL as part of your installation, the data files will be already loaded.

Setup Requirements

3.1 Legal Entity Attributes

Processing Org



Legal Entity Attributes Window

Search:

Legal Entity: Role: Processing Org:

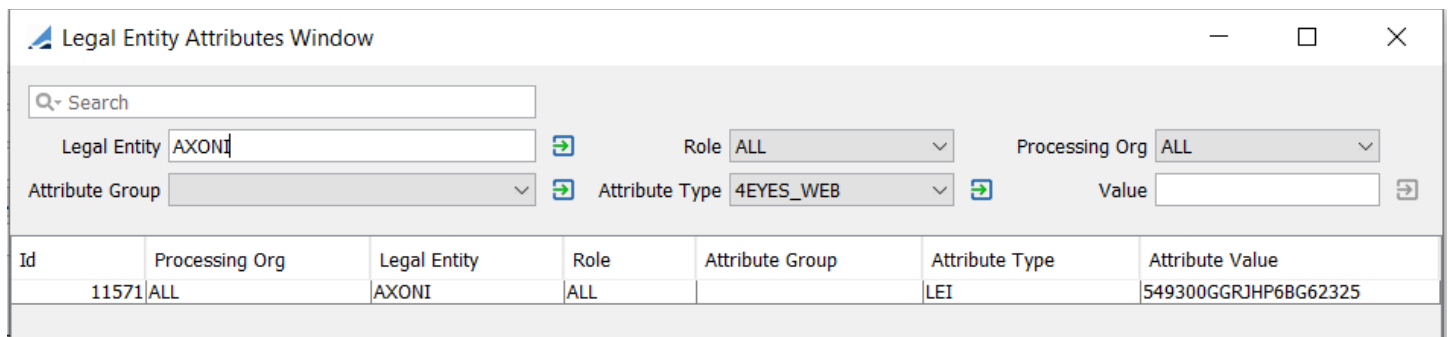
Attribute Group: Attribute Type: Value:

Id	Processing Org	Legal Entity	Role	Attribute Group	Attribute Type	Attribute Value
11569	ALL	PO	ALL		LEI	549300BSJEIWCZBDMH42
11573	ALL	PO	ALL		AxoniKey	VNG

LEI – Legal entity identifier

AxoniKey – Key name to post to Veris API.

Counterparty



Legal Entity Attributes Window

Search:

Legal Entity: Role: Processing Org:

Attribute Group: Attribute Type: Value:

Id	Processing Org	Legal Entity	Role	Attribute Group	Attribute Type	Attribute Value
11571	ALL	AXONI	ALL		LEI	549300GGRJHP68G62325

LEI – Legal entity identifier

3.2 Domain Values

addressMethod and gateway:

Value = AXONI

Name:	addressMethod
Value:	AXONI
Comment:	

Name:	gateway
Value:	AXONI
Comment:	Axoni Interface for EqD Reconciliation

jsonFormatType and formatType:

Value = AXONI

Name:	jsonFormatType
Value:	AXONI
Comment:	

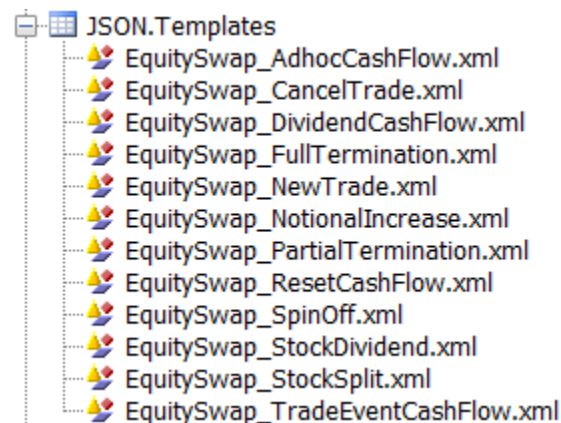
Name:	formatType
Value:	AXONI
Comment:	json format for AXONI Interface

messageType

AXONI_OUTGOING

AXONI_INCOMING

Templates:



3.3 Static Data Filters

Static Data Filter Window [17221205/EQDCMD_V1/]

Name	isAXONI_Trade		
External Ref.			
Comment			
Groups	ANY		
Criteria...			
Attribute	Criteria		Filter Value(s)
IN Static Data Filter	NOT_IN	Add	isAXONI_Increase,isAXONI_PartialTermination,isAXONI_FullTermination,isAXONI_StockDividend,isAXONI_StockSplit,isAXONI_SpinOff
Trade Action	NOT_IN	Add	UNDO

The UNDO action should be configured in the trade workflow on TERMINATED – UNDO – VERIFIED with rule Retract.

Name	isAXONI_Increase		
External Ref.			
Comment			
Groups	ANY		
Criteria...			Simulate
Attribute	Criteria		Filter Value(s)
KEYWORD.TransferReason	IN	Add	NotionalIncrease
Trade Action	NOT_IN	Add	AMEND

Static Data Filter Window [17220901/AXONI17_RPM1/]

Name	isAXONI_FullTermination		
External Ref.			
Comment			
Groups	ANY		
Criteria...			Simulate
Attribute	Criteria		Filter Value(s)
KEYWORD.TerminationType	IN	Add	FullTermination

Static Data Filter Window [17220901/AXONI17_RPM1/]

Name: isAXONI_PartialTermination

External Ref.:

Comment:

Groups: ANY

Criteria... Simulate

Attribute	Criteria		Filter Value(s)
KEYWORD.TransferType	IN	Add	PartialTermination
Trade Action	NOT_IN	Add	AMEND

Static Data Filter Window [17220803/V17_WEBDRAFT/Admin]

Name: isAXONI_ResetCashFlow

External Ref.:

Comment:

Groups: ANY

Criteria... Simulate

Attribute	Criteria		Filter Value(s)
Xfer Type	IN	Add	PRICE_CHANGE,INTEREST

Static Data Filter Window [17221101/EQDCMD_V1/]

Name: isAXONI_TradeEventCashflow

External Ref.:

Comment:

Groups: ANY

Criteria... Simulate

Attribute	Criteria		Filter Value(s)
Xfer Type	IN	Add	CAPITALGAIN-TERM,DIV-TERM,INTEREST-TERM

Static Data Filter Window [17220901/EQDCMD_V1/]

Name: isAXONI_CashDividend

External Ref.:

Comment:

Groups: ANY

Criteria... Simulate

Attribute	Criteria		Filter Value(s)
Xfer Type	IN	Add	DIVIDEND

Static Data Filter Window [17221101/EQDCMD_V1/]

Name: isAXONI_AdhocCashFlow

External Ref.:

Comment:

Groups: ANY

Criteria... Simulate

Attribute	Criteria	Filter Value(s)
IN Static Data Filter	NOT_IN	Add isAXONI_CashDividend,isAXONI_ResetCashFlow,isAXONI_TradeEventCashflow

Static Data Filter Window [17220901/EQDCMD_V1/]

Name: isAXONI_StockDividend

External Ref.:

Comment:

Groups: ANY

Criteria... Simulate

Attribute	Criteria	Filter Value(s)
KEYWORD.TradeClassification	IN	Add STOCK_DIV

Static Data Filter Window [17221205/EQDCMD_V1/]

Name: isAXONI_StockSplit

External Ref.:

Comment:

Groups: ANY

Criteria... Simulate

Attribute	Criteria	Filter Value(s)
KEYWORD.TransferType	IN	Add SPLIT

Static Data Filter Window [17220901/EQDCMD_V1/]

Name: isAXONI_SpinOff

External Ref.:

Comment:

Groups: ANY

Criteria... Simulate

Attribute	Criteria	Filter Value(s)
KEYWORD.TradeClassification	IN	Add SPINOFF

3.4 Message Setup

Generation for new trade, trade amendment

Edit		Browse	
Product Type	EquityLinkedSwap	Language	English
Event Type	VERIFIED_TRADE	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	EquitySwap_NewTrade.xml
Receiver	ALL	SD Filter	isAXONI_Trade
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Me...	

Generation for cancellation

Edit		Browse	
Product Type	EquityLinkedSwap	Language	English
Event Type	CANCELED_TRADE	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	EquitySwap_CancelTrade.xml
Receiver	ALL	SD Filter	isAXONI_Trade
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Me...	

Generation for Full Termination

Product Type	EquityLinkedSwap	Language	English
Event Type	TERMINATED_TRADE	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	AXONI
PO Contact Type	Default	Template	EquitySwap_Termination.xml
Receiver	ALL	SD Filter	isAXONI_FullTermination
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Message	

Generation for Partial Termination

Product Type	EquityLinkedSwap	Language	English
Event Type	VERIFIED_TRADE	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	AXONI
PO Contact Type	Default	Template	EquitySwap_Termination.xml
Receiver	ALL	SD Filter	isAXONI_PartialTermination
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Message	

Generation for Reset Cash Flow

Edit
Browse

Product Type	EquityLinkedSwap	Language	English
Event Type	VERIFIED_PAYMENT	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	EquitySwap_ResetCashFlow.xml
Receiver	ALL	SD Filter	isAXONI_ResetCashFlow
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping			

☐ Matching
☐ Inactive
☐ Do not Send Me...

Product Type
EquityLinkedSwap
Event Type
VERIFIED_RECEIPT
Message Type
AXONI_OUTGOING
Processing Org
ALL
PO Contact Type
Default
Receiver
ALL
Receiver Role
CounterParty
Rec Contact Type
Default
Grouping

Language
English
Address Type
AXONI
Gateway
AXONI
Format Type
JSON
Template
EquitySwap_ResetCashFlow.xml
SD Filter
isAXONI_ResetCashFlow
Audit Filter

☐ Matching
☐ Inactive
☐ Do not Send Me...

Generation for Trade Event Cash Flow

Edit
Browse

Product Type	EquityLinkedSwap	Language	English (United Kingdom)
Event Type	VERIFIED_PAYMENT	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	Swap_TradeEventCashFlow.xml
Receiver	ALL	SD Filter	isAXONI_TradeEventCashflow
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping			

☐ Matching
☐ Inactive
☐ Do not Send Me...

Product Type	EquityLinkedSwap	Language	English (United Kingdom)
Event Type	VERIFIED_RECEIPT	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	Swap_TradeEventCashFlow.xml
Receiver	ALL	SD Filter	isAXONI_TradeEventCashflow
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Me...	

Generation for Adhoc Cash Flow

Product Type	EquityLinkedSwap	Language	English (United Kingdom)
Event Type	VERIFIED_PAYMENT	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	:equitySwap_AdhocCashFlow.xml
Receiver	ALL	SD Filter	isAXONI_AdhocCashFlow
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Me...	

Product Type	EquityLinkedSwap	Language	English (United Kingdom)
Event Type	VERIFIED_RECEIPT	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	:equitySwap_AdhocCashFlow.xml
Receiver	ALL	SD Filter	isAXONI_AdhocCashFlow
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Me...	

Generation for Cash Dividend

Product Type	EquityLinkedSwap	Language	English (United Kingdom)
Event Type	VERIFIED_PAYMENT	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	itySwap_DividendCashFlow.xml
Receiver	ALL	SD Filter	isAXONI_CashDividend
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Me...	

Product Type	EquityLinkedSwap	Language	English (United Kingdom)
Event Type	VERIFIED_RECEIPT	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	itySwap_DividendCashFlow.xml
Receiver	ALL	SD Filter	isAXONI_CashDividend
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Me...	

Generation for Stock Dividend

Product Type	EquityLinkedSwap	Language	English (United Kingdom)
Event Type	VERIFIED_TRADE	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	EquitySwap_StockDividend.xml
Receiver	ALL	SD Filter	isAXONI_StockDividend
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Me...	

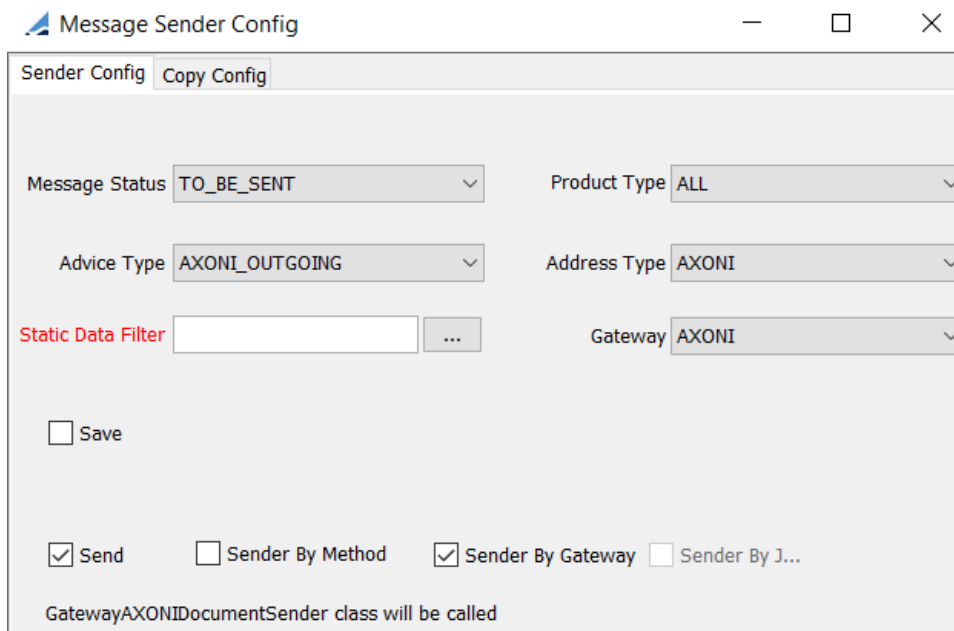
Generation for Stock Split Single Equity

Product Type	EquityLinkedSwap	Language	English
Event Type	VERIFIED_TRADE	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	EquitySwap_StockSplit.xml
Receiver	ALL	SD Filter	isAXONI_StockSplit
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Me...	

Generation for Spin Off Single Equity

Product Type	EquityLinkedSwap	Language	English (United Kingdom)
Event Type	VERIFIED_TRADE	Address Type	AXONI
Message Type	AXONI_OUTGOING	Gateway	AXONI
Processing Org	ALL	Format Type	JSON
PO Contact Type	Default	Template	EquitySwap_SpinOff.xml
Receiver	ALL	SD Filter	isAXONI_SpinOff
Receiver Role	CounterParty	Audit Filter	
Rec Contact Type	Default		
Grouping		☐ Matching	☐ Inactive
		☐ Do not Send Me...	

3.5 Message Sender Configuration



The screenshot shows a 'Message Sender Config' window with the following fields and options:

- Sender Config** (selected tab) and **Copy Config** (disabled tab)
- Message Status**: TO_BE_SENT (dropdown)
- Product Type**: ALL (dropdown)
- Advice Type**: AXONI_OUTGOING (dropdown)
- Address Type**: AXONI (dropdown)
- Static Data Filter**: (empty text box with a dropdown arrow)
- Gateway**: AXONI (dropdown)
- Save**: (checkbox, unchecked)
- Send**: (checkbox, checked)
- Sender By Method**: (checkbox, unchecked)
- Sender By Gateway**: (checkbox, checked)
- Sender By J...**: (checkbox, unchecked)
- Gateway**: AXONIDocumentSender class will be called

3.6 Calypso Mapping Window

You need to configure the following mapping.

Axoni/DateRoll

Example:

Name:	Axoni/DateRoll
Interface Value:	FOLLOWING
Calypso Value:	FOLLOWING

Axoni/DayCount

Example:

Name:	Axoni/DayCount
Interface Value:	30E/360
Calypso Value:	30/360

Axoni/RateIndex

Example:

Name:	Axoni/RateIndex
Interface Value:	USD-LIBOR-BBA
Calypso Value:	USD/LIBOR/3M/LIBOR01

Axoni/Frequency

Example:

Name:	Axoni/Frequency
Interface Value:	91 Days
Calypso Value:	91D

Axoni/Holidays

Example:

Name:	Axoni/Holidays
Interface Value:	GBLO
Calypso Value:	LON

Axoni/RollDay

Example:

Name:	Axoni/RollDay
Interface Value:	EOM
Calypso Value:	31

Axoni/Exchange

Example:

Name:	Axoni/Exchange
Interface Value:	XNYS
Calypso Value:	NYSE

Axoni/TenorMaturityType

Example:

Name:	Axoni/TenorMaturityType
Interface Value:	DAY
Calypso Value:	D

Axoni/SecurityCode

You can map a security code to a priority.

Example:

Name:	Axoni/SecurityCode
Interface Value:	TICKER
Calypso Value:	1

Name:	Axoni/SecurityCode
Interface Value:	ISIN
Calypso Value:	2

3.7 Axoni Properties

Please review <calypso_home>/client/resources/calypso_axoni_config.properties.sample and copy to <calypso_home>/tools/calypso-templates/resources/calypso_axoni_config.properties.

You need to whitelist the IP addresses with Axoni.

```
#This section indicates the connectivity details
axoni.host.ip=api.vng.testnet.veris.axoni.com
axoni.host.port=
axoni.host.protocol=https
axoni.host.destinationpath=/contract/api/ingestData
axoni.user.name=
axoni.user.password=

#Axoni Rest Endpoint - this is used for retrieving the status of the trades.
#This endpoint will be used by Axoni Engine for status updates via Scheduled Task along with the status
parameter
axoni.host.status.destinationpath=/contract/aggs/common/ferdinandContract/allTradesSearch
```

```
axoni.host.status.parameter=tradeExecutionId

#This indicates the OAuth2 details
axoni.oauth2.enabled=false
axoni.oauth2.ip=axoni-consumer.okta.com
axoni.oauth2.port=
axoni.oauth2.protocol=https
axoni.oauth2.accessToken.destinationpath=/oauth2/ausles7ld2sslf3b0697/v1/token
axoni.oauth2.grantType=client_credentials
axoni.oauth2.scope=axapi
axoni.oauth2.clientId=0oa21ciih9KMuVsWx697
axoni.oauth2.clientSecret=Qr12NRK0nCYLtOD5nGkpy2wcJu7Rvs5veDF7yI3K
axoni.oauth2.validateToken.destinationpath=/oauth2/ausles7ld2sslf3b0697/v1/introspect
axoni.oauth2.validateToken.parameter=token

#This section indicates the proxy server details if the connection to Axoni needs to be established via Proxy
proxyhost.ip=
proxyhost.port=
proxy.user=
proxy.password=

#logMessages    messageFileDir Comment
#false N/A      No debug file will be created
#true  Empty    Debug file will be generated at default location <UserHome>/Calypso/Axoni like it is happening
               right now
#true  Given    The given location will be validated for access-permission, if it is valid file will be generated
               at the given location ELSE it will generate a file at default location at <UserHome>/Calypso/Axoni
logMessages=true
messageFileDir=C:\\interfaces\\axoni\\test

axoni.host.status.parameter=tradeExecutionId instead of SwapID.
axoni.host.ip = <Change to IP or hostname provided by Axoni>
axoni.host.port = <Change to port provided by Axoni>
axoni.oauth2.ip = <Change to IP or Hostname of the Authorization server provided by Axoni>
axoni.oauth2.grantType = <Change to grantType provided by Axoni>
axoni.oauth2.clientId = <Change to ClientId provided by Axoni>
axoni.oauth2.clientSecret = <Change to ClientSecret provided by Axoni>
axoni.oauth2.scope = <Change to Scope provided by Axoni>
```

You can also use a proxy server instead of a direct connection using the following properties:

```
proxyhost.ip=
proxyhost.port=
proxy.user=
proxy.password=
```

3.8 Axoni Engine

The Axoni engine is used to get status updates i.e. Confirmation status - Confirmed, matched or unmatched)). It subscribes to PSEventAxoni events with event filter AxoniEngineEventFilter and config = axoni (for the calypso_axoni_config.properties file that contains the connection details).

The scheduled task AXONI_STATUS_REQUEST generates the PSEventAxoni events.

Engine Configuration

Unable to edit a running engine. Displaying in read-only mode.

Engine Name: ? AxoniEngine Engine ID: 421021 Engine Class: com.calypso.tk.engine.AxoniEngine Display Name: ? Axoni Engine Application Type: EngineServer Description: Persisted Event Configuration: PSEventAccountBilling PSEventAxoni Event Filters: AllTransfersKnownEventFilter AxoniEngineEventFilter Engine Manager Configuration: engineserver	Max Queue Size: ? Max Batch Size: ? Number of Threads: ? Event Pool Policy: ? AxoniEngine Pricing Environment: ? Save settle position changes: ? 	Configuration attributes <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>STARTUP</td><td></td></tr> <tr><td>TIMEOUT_RESTART</td><td></td></tr> <tr><td>USE_BOOK_PRICING_ENV</td><td></td></tr> <tr><td>VALUATION_TIMES</td><td></td></tr> <tr><td>VALUATION_TIMEZONES</td><td></td></tr> <tr><td>VERSION_CHECK</td><td></td></tr> <tr><td>XFER_CHECK_FIRST</td><td></td></tr> <tr><td>XFER_NEVER_BV</td><td></td></tr> <tr><td>XFER_NEXT_EVENT</td><td></td></tr> <tr><td>XFER_PAST_GENERATION</td><td></td></tr> <tr><td>XFER_POS_AGGREGATION_NAME</td><td></td></tr> <tr><td>XFER_USE_AUTOMATIC_ACCOUNT</td><td></td></tr> <tr><td>XFER_USE_POS_AGGREGATION_ONLY</td><td></td></tr> <tr><td>XFER_USE_REVERSE</td><td></td></tr> <tr><td>adapterConfig</td><td></td></tr> <tr><td>config</td><td>axoni</td></tr> <tr><td>tcid</td><td></td></tr> </table>	STARTUP		TIMEOUT_RESTART		USE_BOOK_PRICING_ENV		VALUATION_TIMES		VALUATION_TIMEZONES		VERSION_CHECK		XFER_CHECK_FIRST		XFER_NEVER_BV		XFER_NEXT_EVENT		XFER_PAST_GENERATION		XFER_POS_AGGREGATION_NAME		XFER_USE_AUTOMATIC_ACCOUNT		XFER_USE_POS_AGGREGATION_ONLY		XFER_USE_REVERSE		adapterConfig		config	axoni	tcid	
STARTUP																																				
TIMEOUT_RESTART																																				
USE_BOOK_PRICING_ENV																																				
VALUATION_TIMES																																				
VALUATION_TIMEZONES																																				
VERSION_CHECK																																				
XFER_CHECK_FIRST																																				
XFER_NEVER_BV																																				
XFER_NEXT_EVENT																																				
XFER_PAST_GENERATION																																				
XFER_POS_AGGREGATION_NAME																																				
XFER_USE_AUTOMATIC_ACCOUNT																																				
XFER_USE_POS_AGGREGATION_ONLY																																				
XFER_USE_REVERSE																																				
adapterConfig																																				
config	axoni																																			
tcid																																				

[Go Back](#)

Outgoing Messages

4.1 Message Generation Overview

Depending on the lifecycle event, the following objects are submitted. These messages are generated by the Message engine and submitted by the Sender engine.

Please refer to Calypso Messages documentation for details on setting up the Message engine and Sender engine.

Lifecycle event	Swap	Position	Trade	Cash Flow	Comment
New MCA					
New (Initial) Trade	X	X	X		
Trade Cancellation	X	X	X		
Trade Amendment	X	X	X		
Trade Full Termination	X	X	X		
Trade Partial Termination		X	X		
Trade Increase		X	X		
Reset CF				X	Generated with transfer type PRICE_CHANGE or INTEREST
Trade Event CF: Fee due to				X	Generated with transfer type

Lifecycle event	Swap	Position	Trade	Cash Flow	Comment
Termination / Increase					CAPITALGAIN-TERM or DIV-TERM or INTEREST-TERM
Adhoc CF				X	Generated with any other transfer type for fees such as TERMINATION_FEE, PENALTY_FEE
CA: Dividend CF				X	Generated with transfer type = DIVIDEND
CA: Stock Dividend			X		Generated with new Trade Event with trade attribute TradeClassification: STOCK_DIV
CA: Split		X	X		Single Equity: initial trade terminated and new trade created with TransferType: SPLIT
CA: Spin Off			X		Generated with new Trade Event with trade attribute TradeClassification: SPINOFF

4.1.1 On Trade Event

On VERIFIED_TRADE, we will generate message for initial trade, amendment and partial Termination 'NewTrade' template will be used for new trade and for amendment (correction/modification) 'Termination' template will be used for partial termination, stock dividend, stock split and spin off.

On CANCELED_TRADE: we will generate message to cancel the trade.

On TERMINATED_TRADE, we will generate message for increase and decrease.

On RATE_RESET, we will generate message for reset cashflow.

Trade Keywords

You can set the following trade keywords on the trades:

- AxoniAccount
- AxoniClientDirection
- AxonilsClient
- AxoniMCAId
- AxoniLongformDocID

AxoniAccount populates the field "account" and AxoniClientDirection populates the field "clientDirection" if AxonilsClient = true.

If AxoniMCAId is set, field confirmationType = MCA, otherwise confirmationType = Long Form and longformDocID is populated with trade keyword AxoniLongformDocID.

4.1.2 On Transfer Event

On a VERIFIED_RECEIPT and VERIFIED_PAYMENT of Transfer Type = PRICE_CHANGE or INTEREST, we will generate message for Reset;

On a VERIFIED_RECEIPT and VERIFIED_PAYMENT of Transfer Type = CAPITALGAIN-TERM or DIV-TERM or INTEREST-TERM, we will generate message for TradeEventCashFlow;

On a VERIFIED_RECEIPT and VERIFIED_PAYMENT of Transfer Type = TERMINATION_FEE or INCREASE_FEE or PENALTY_FEE or any other fee type that is set in the domain defaultTerminationFeeType, we will generate message for AdhocCashFlow;

On a VERIFIED_RECEIPT and VERIFIED_PAYMENT of Transfer Type = DIVIDEND, we will generate message for Cash dividend;

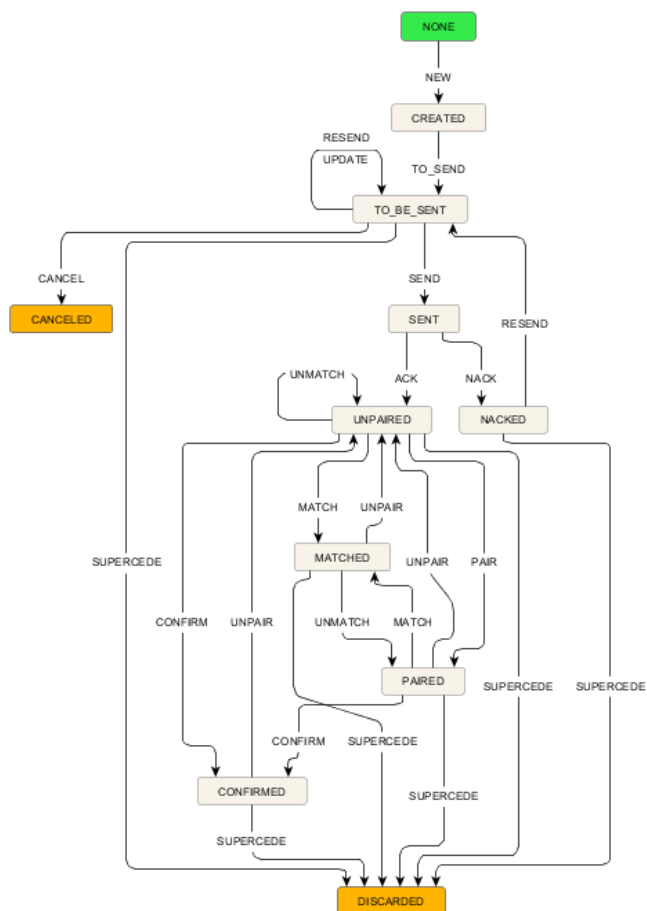
On a VERIFIED_RECEIPT and VERIFIED_PAYMENT for any other Transfer Type, we will generate message for Adhoc Cash Flow according to the SD filter.

4.2 Outgoing Workflow

Message type: AXONI_OUTGOING

From AXONI perspective, statuses can be:

- Unpaired, Paired (from pairing perspective)
- Unmatched, Matched, Confirmed (from reconciliation perspective)
- Confirmed means there is an active MCA or a long form paper (to be referenced in the JSON payload)



You can import the workflow using <calypso home>/client/resources/AXONI_OUTGOING.wf.

Example for new trade:

Back Office Window for Trade 43403 / Internal Ref. 43403

BO Trade Browser (43403)											
Trade Id ID 43403 SDI Transfers Messages Postings CREs Tasks Diary											
Messages											
Report Data View Export Window											
Filter	MESSAGE_ID	MESSAGE_TYPE	ORIGINAL_DATE	MESSAGE_DATE	Receiver	Receiver.Role	ADDRESS_METHOD	Receiver.Contact Type	Msg Status	SUB_ACTION	TEMPLATE_NAME
	178019	AXONI_OUTGOING	10/7/22 9:11:56.443 AM EDT		AXONI	CounterParty	AXONI	Default	UNPAIRED	NONE	EquitySwap_NewTrade.xml

 JSON Message Viewer

Advice Document Id: 174019 BOMessage Id: 178019

```

{
  "key": "VNG",
  "transactions": [
    {
      "dataType": "swap",
      "swapId": "43403",
      "swapStartDate": "2022-10-07",
      "transactionType": "**",
      "leiPair": [
        "549300BSJEIWCZBDMH42",
        "549300GGRJHP6BG62325"
      ],
      "owner": "549300BSJEIWCZBDMH42",
      "swapType": "Single Name",
      "account": "549300BSJEIWCZBDMH42",
      "businessDayConvention": "MODFOLLOWING",
      "client": "549300BSJEIWCZBDMH42",
      "clientDirection": "Long",
      "compound": "N",
      "compoundInterestElection": "Not applicable",
      "confirmationType": "MCA",
      "mcaId": "ISDA2004CreditSovereignLatinAmerican",
      "dayCountConvention": "ACT/360",
      "dividendPayElection": "DividendPaymentDate",
      "dividendPaymentDelay": "2",
      "earlyTerminationDate": ""
    }
  ]
}

```

<

>

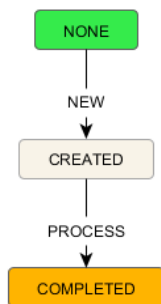
Export JSON Message

Close

Incoming Messages Process

The system will update AXONI_OUTGOING message status with Axoni interface status and will set trade attribute AXONI_STATUS with same value.

5.1 Incoming Workflow



You can import the workflow using <calypso home>/client/resources/AXONI_INCOMING.wf.

While integrating ACK/NACK response from AXONI, the system will create a BOMessage with message type AXONI_INCOMING, message is in status CREATED.

This BOMessage will be indexed with the outgoing AXONI_OUTGOING message.

5.2 Scheduled Task AXONI_STATUS_REQUEST

AXONI acknowledgements are integrated into Calypso using the scheduled task AXONI_STATUS_REQUEST and processed using the Axoni engine.

Task Description

Task Type: AXONI_STATUS_REQUEST

External Reference: Axoni Matching Status

Comments: Axoni Matching Status

Description: Axoni Matching Status

Execution Parameters

Attempts: 1

Retry After: 0 minutes

Expected Execution Time (SLA): 2 minutes

JVM Settings: -Xms512m -Xmx1024m

Log Settings: ...

Task Notification Options

☐ Send Emails
 ☐ Publish Business Events
 To User:

Common Attributes

Task ID	3501
Processing Org	
Trade Filter	AXONI_MATCHING
Filter Set	
Pricing Environment	
Timezone	America/New_York
Valuation Time Hour	
Valuation Time Minute	
Undo Time Hour	0
Undo Time Minute	0
Valuation Date Offset	
From Days	0
To Days	0
Pricer Measures	
Business Holidays	

Example:

AXONI_INCOMING has matching status as CONFIRMED.

JSON Message Viewer

Advice Document Id: 174026 BOMessage Id: 178026

```

{
  "result": [
    {
      "account": "549300BSJEIWCZBDMH42",
      "activeStatus": "ACTIVE",
      "address": "0xed8784c6ab00dfd87b3e5786638861f195337b58",
      "affirmCreateDate": null,
      "block_num": "92926",
      "block_time": "1665150424",
      "company": "VNG",
      "effectiveDate": "2022-10-07",
      "groupId": "093C5EB1DA922BFE20F81DF437B7FDD8",
      "initialPrice": "100",
      "isAffirmCreatedByCpty": null,
      "isSuppressed": null,
      "linkTradeRole": null,
      "longParty": "549300BSJEIWCZBDMH42",
      "matchingStatus": "CONFIRMED",
      "moreDataThanReturned": "false",
      "msg_index": "0",
      "numAmendments": "0",
      "numExceptions": "0",
      "numberOfSecurities": "660",
      "owner": "549300BSJEIWCZBDMH42",
      "pairingStatus": "PAIRED",
      "secondaryMatchingStatus": "MATCHED",
      "shortParty": "549300GGRJHP6BG62325",
      "spread": "0.002",
    }
  ]
}

```

Export JSON Message Close

The AXONI_OUTGOING message turns to CONFIRMED status and new AXONI_INCOMING message is created.

Back Office Window for Trade 43403 / Internal Ref. 43403

BO Trade Browser (43403) x

Trade ID ID 43403 ... SDI Transfers Messages Postings CREs Tasks Diary

Messages

Report Data View Export Window

MESSAGE_ID	MESSAGE_TYPE	ORIGINAL_DATE	MESSAGE_DATE	Receiver	Receiver.Role	ADDRESS_METHOD	Receiver.Contact Type	Msg Status
178019	AXONI_OUTGOING	10/7/22 9:11:56.443 AM EDT		AXONI	CounterParty	AXONI	Default	CONFIRMED
178020	AXONI_INCOMING	10/7/22 9:12:02.566 AM EDT				AXONI		COMPLETED