Reuters TOF Integration Guide

Version 11.0

First edition — July 2009

This user guide covers the mapping for Reuters Ticket Output Feed (TOF) using Reuters Deal Tracker Server (DTS) and Reuters TOF Simulator.

Revision date	Edition number	Comment
July 2009	First edition	First edition for version 11.0

Contents

Section 1. Installation and Setup

1.1 Service Registration

In the file `resources/service.properties`, add TOFServer to the services line, as show below (this is a one-line command).

```
optional=BloombergReferenceServer,CalibrationReferenceServer,AutoTest,HyperSurfaceServer,SwapswireReferenceServer,MarkITServer,IntexMappingsServer,CLSServer,GSCCSimulatorServer,StructuringServer,MatchingServer,DashBoardServer,XProdReferenceServer,QueryService,TOFServer
```

[NOTE: Do not remove any out-of-the-box service from that line]

1.2 System Setup

Download the tofrel.jar from the Calypso download website and unzip it. It contains the following files:

- `jars/tof.jar`
- `sql/TOFSchemaBase.xml`
- `sql/TOFSchemaData.xml`

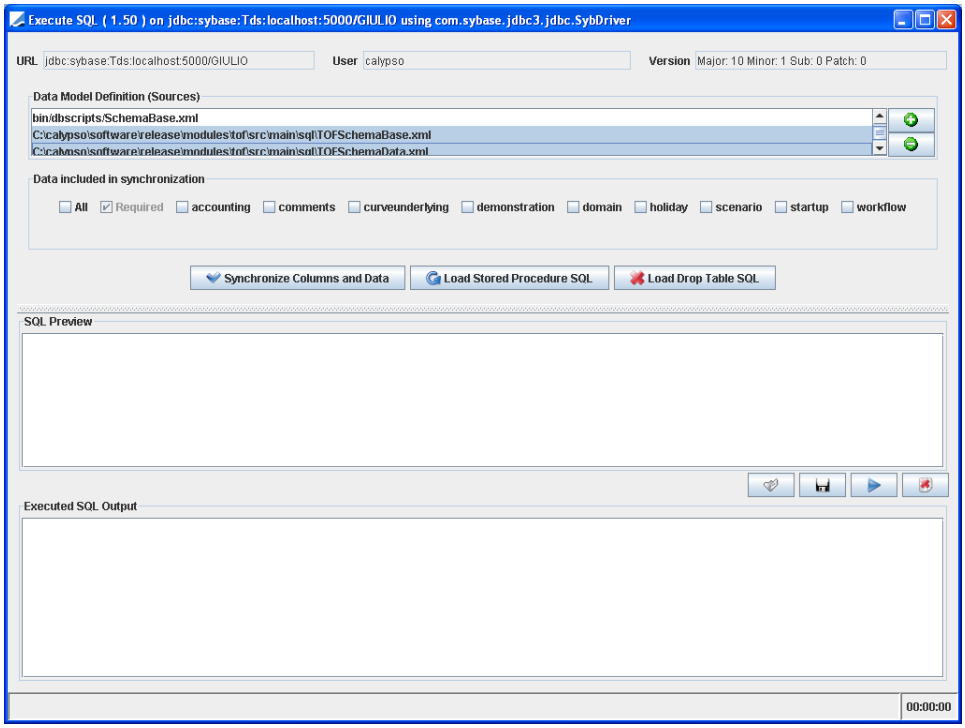
Add the following jars to your CLASSPATH:

- `tof.jar`

Synchronize your database with the TOF data.

Run ExecuteSQL and add the following files to SchemaData.xml and SchemaBase.xml:

- `sql/TOFSchemaBase.xml`
- `sql/TOFSchemaData.xml`



- Click **Add** to add the files. Select the files from their location.
- Click **Synchronize Columns and Data**.
- Click  .

This will set up tables for TOF messages, properties, as well as DTS specific configuration and state.

You can now restart the Data Server.

1.3 Main Entry Configuration

Add the following menu items to Main Entry using Main Entry Configurator:

- Name : DTS Configuration Window
  Action: `tof.DTSConfigFrame`
- Name: TOF Properties Window
  Action: `tof.TOFPropertiesWindow`
- Name: TOF Mapping Window
  Action: `tof.mapping.TOFMappingWindow`
- Name: TOF Monitor Window
  Action: `tof.TOFMonitorWindow`

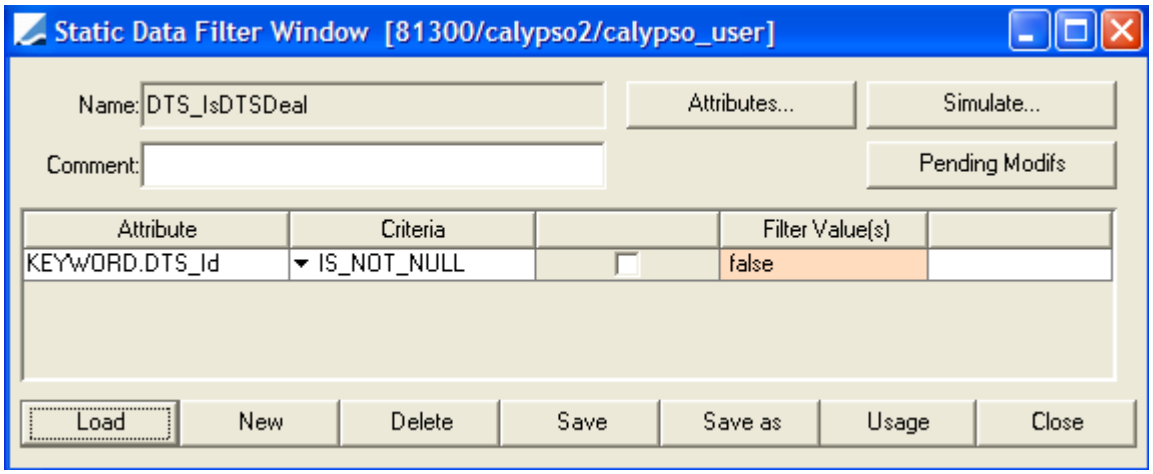
1.4 Workflow Setup

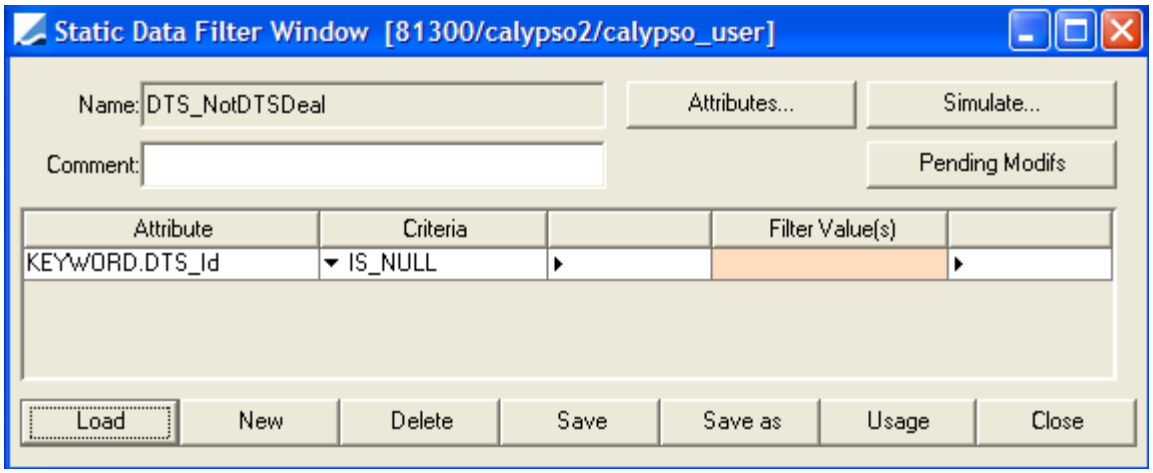
Following is an example of how to set up the DTS Mapper workflow.

1.4.1 Static Data Filters

Create the following static data filters: DTS_IsDTSDeal and DTS_NotDTSDeal.

Choose Main Entry > Configuration > Filters > Static Data Filter (action: `refdata.StaticDataFilterWindow`).





1.4.2 Trade Workflow Rules

Use the following trade workflow rules. Add the rules in the workflow configuration if needed.

Choose Main Entry > Configuration > Workflow > Workflow Configuration (action: `refdata.WorkFlowJFrame`).

In the Workflow Configuration application, choose Domains > Trade > Add Rule, and add the following rules.

Rule	Description
CheckTOFMapping	Returns False if there is a problem with the TOF to Calypso data mapping. If there is a problem, you can view the details using the TOF Message Monitor Window. Returns True otherwise.
TOFContraUpdate	Returns True if the trade has been cancelled because of a Reuters DTS contra deal. If so, it updates the tof_message table with trade_id = -1 for the contra deal. Returns False otherwise.

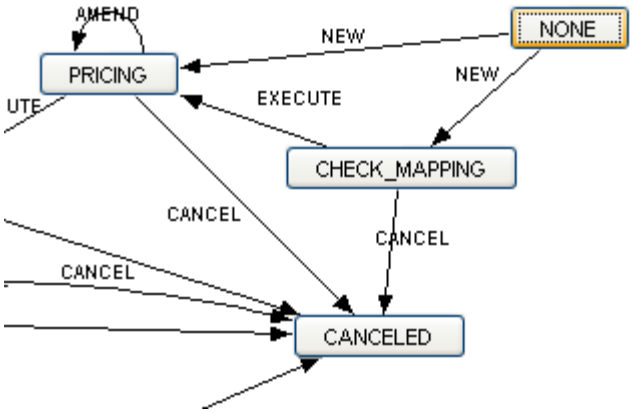
1.4.3 Workflow Example

Following are examples of where to add the rules and filters in the workflow.

Choose Main Entry > Configuration > Workflow > Workflow Configuration (action: `refdata.WorkFlowJFrame`), and add the following steps.

- ALLOCATED — CANCEL — CANCELED Trade Workflow Rule: TOFContraUpdate
- AWAIT_TTM — CANCEL — CANCELED Trade Workflow Rule: TOFContraUpdate
- CHECK_MAPPING — CANCEL — CANCELED Trade Workflow Rule: TOFContraUpdate Filter: DTS_IsDTSDeal
- CHECK_MAPPING — EXECUTE — PRICING Trade Workflow Rule: CheckTOFMapping Filter: DTS_IsDTSDeal
- NONE — NEW — CHECK_MAPPING Filter: DTS_IsDTSDeal Trade Workflow Rule: FXLinked
- NONE — NEW — PRICING Filter: DTS_NotDTSDeal Trade Workflow Rule: FXLinked
- PENDING — CANCEL — CANCELED Trade Workflow Rule: TOFContraUpdate
- PRICING — CANCEL — CANCELED Trade Workflow Rule: TOFContraUpdate
- VERIFIED — CANCEL — CANCELED Trade Workflow Rule: TOFContraUpdate

The trade workflow for FX Spot, FX Forward, and FX Swap deals that originated from DTS is as follows:



DTS deals will go from NONE to CHECK_MAPPING to PRICING. Non-DTS deals will go from NONE directly to

The following workflow rules are performed for DTS deals:

- CheckTOFMapping will indicate whether there were any problems with the mapping from a DTS deal to a Calypso trade. If there were mapping errors, then the error messages will be displayed in the DTS Mapper Monitor Window. CheckTOFMapping is performed on action EXECUTE, going from CHECK_MAPPING to PRICING.
- TOFContraUpdate will check if a deal has been cancelled because there is a contra deal to that deal. If there is a contra deal, then the original deal is cancelled and the (DTS deal id) x (Calypso trade id) mapping table is updated to reflect the cancellation. TOFContraUpdate is performed on all CANCEL actions, regardless of start and resulting status.

1.5 Installing the Reuters Deal Tracker Server

The Reuters Deal Tracker Server (DTS) takes in deals from Reuters and EBS dealing systems, and combines them into one deal feed. Please refer to the appropriate Reuters Deal Tracker Server installation and/or user guide for help with Reuters DTS.

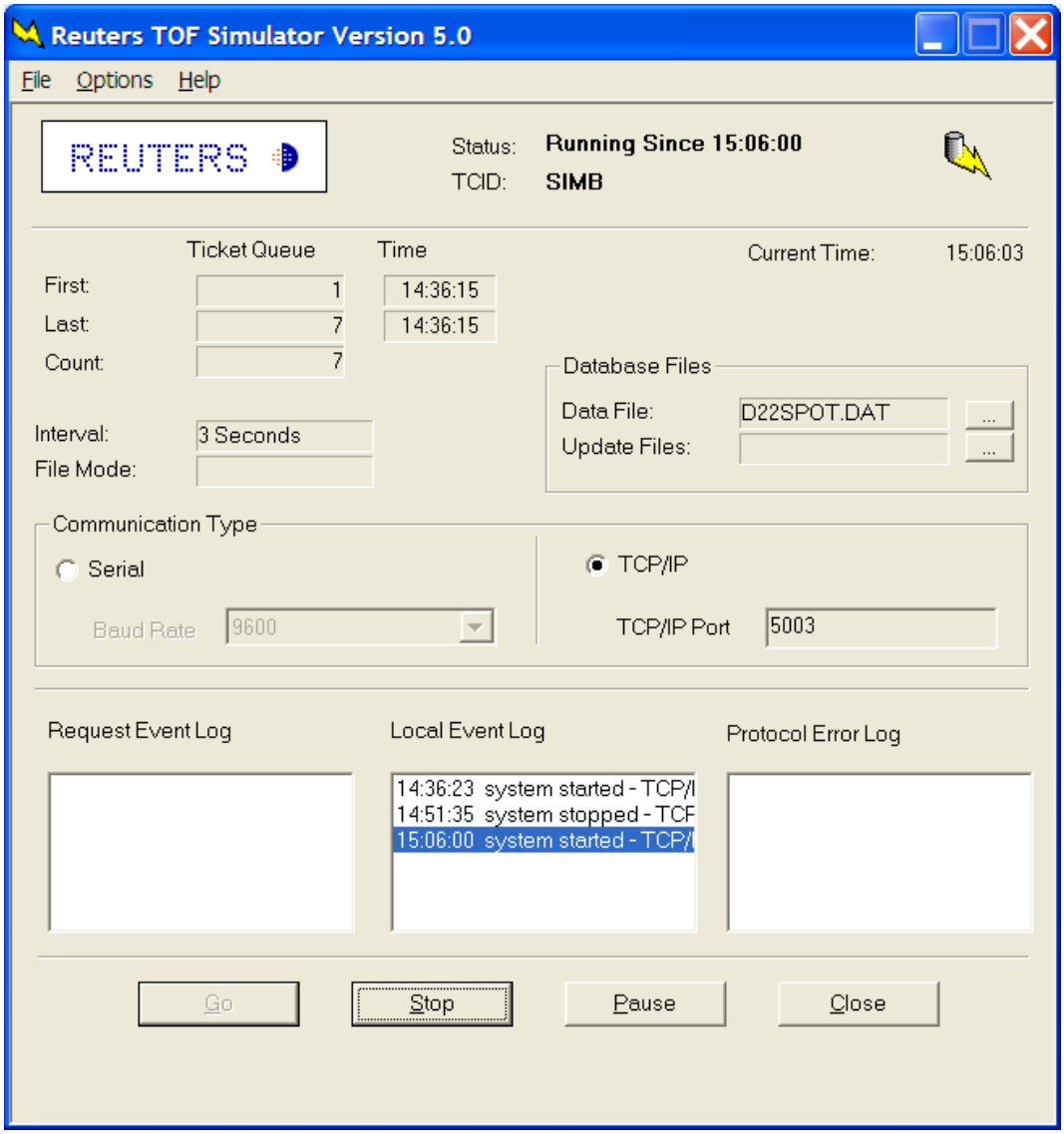
1.6 Installing the Reuters TOF Simulator

The TOF Simulator is provided by Reuters for testing the Ticket Output Feed protocol. If needed, refer to the *Reuters Ticket Output Feed Simulator User Guide*.

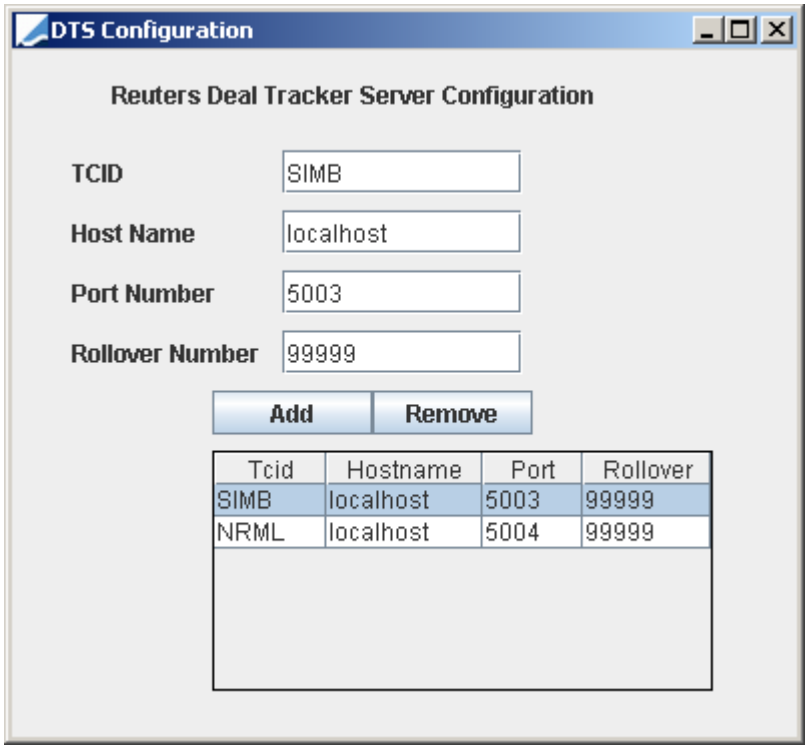
First install TOF Simulator version 5.0. See *TOF Simulator 5_0 UG100.doc* for configuration.

You might want to set TCPTOFVerificationLevel=0 in configuration file `TOFSim.ini` for easy access.

Start the simulator:


Reuters TOF Simulator Version 5.0
File
Options
Help
REUTERS
Status:
Running Since 15:06:00
TCID:
SIMB
Ticket Queue
Time
Current Time:
15:06:03
First:
1
14:36:15
Last:
7
14:36:15
Count:
7
Database Files
Data File:
D22SPOT.DAT
Update Files:
Interval:
3 Seconds
File Mode:
Communication Type
Serial
Baud Rate
9600
TCP/IP
TCP/IP Port
5003
Request Event Log
Local Event Log
Protocol Error Log
14:36:23 system started - TCP/I
14:51:35 system stopped - TCF
15:06:00 system started - TCP/
Go
Stop
Pause
Close

1.7 Setting the DTS Configuration



Each dealing server is identified by a unique TCID. Each dealing server is associated with its own configuration like host name, port number and rollover number.

- Enter the correct TCID, host name, port number and rollover number for the Reuters Deal Tracker Server.
- The TCID should be unique
- The host name and port number should be unique for each TCID.
- The Rollover number is the number when the ticket numbering starts over. For example, if you enter 655535 as the Rollover number, the ticket id after 655535 is 000001.

  (If you are testing against the TOF Simulator, then enter the correct host name and port number for your TOF Simulator connection instead, and enter the TCID for the test data file that you are using.

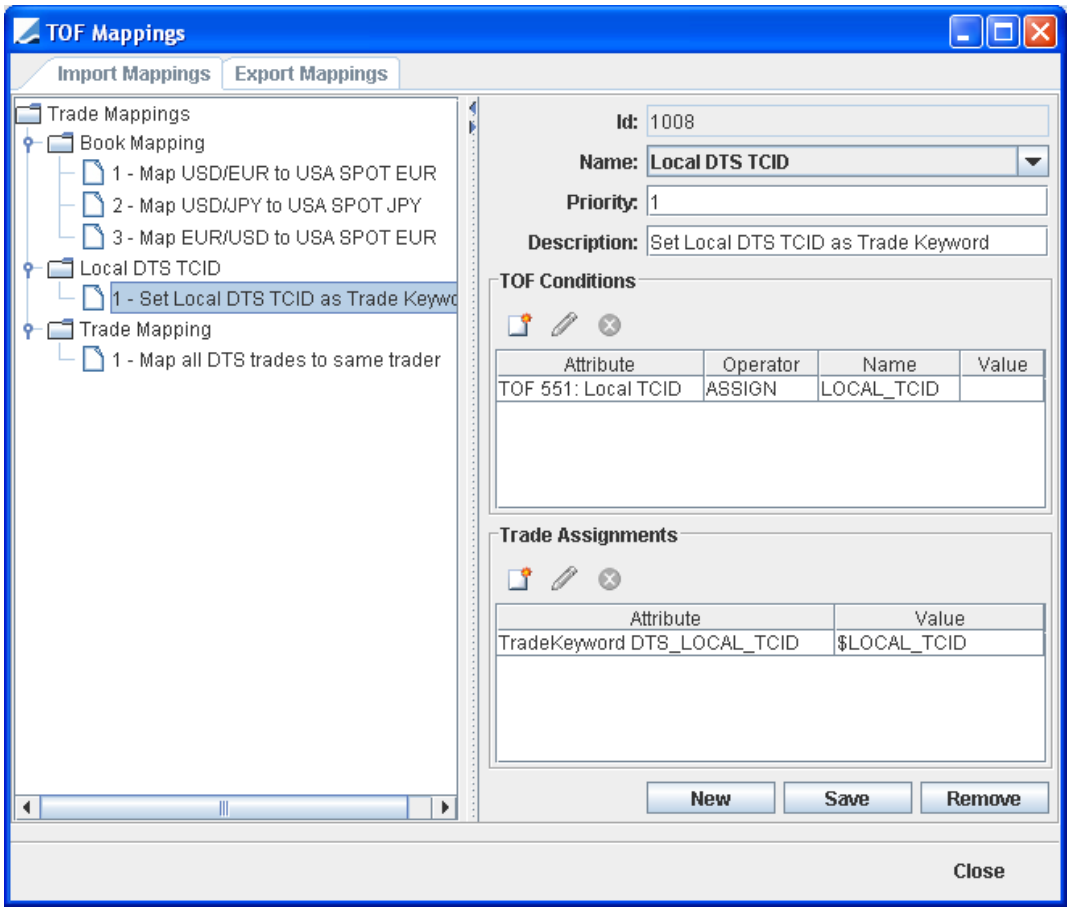
1.8 Adjusting the TOF Properties

Mapping Threads is the number of simultaneous mapping threads. Since Trade mapping takes longer than retrieving the data from the DTS server(s), it's a good idea to allocate multiple threads. 5 is the default.

The other properties are used mainly in retrieving the Pricing environment and connecting to real-time feed, if applicable.

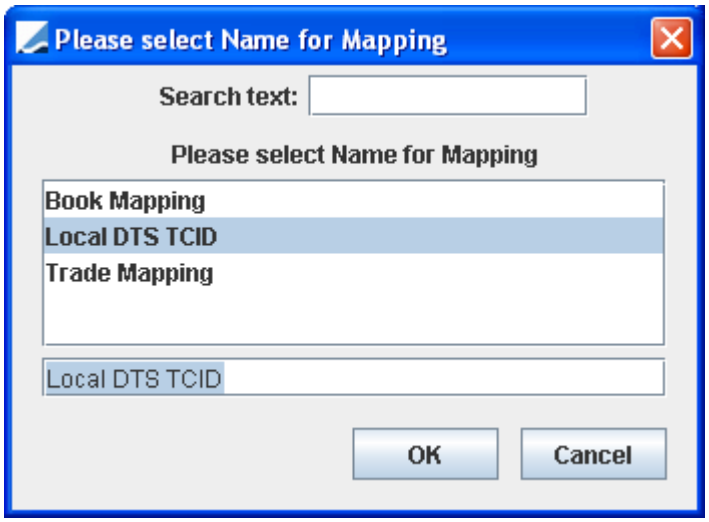
1.9 Defining TOF Mapping

The TOF Mapping Window allows you to specify mapping rules between TOF and Calypso trades. As such, you can select conditions on one or more TOF fields to specify a Book, a CounterParty, a Broker, and a Trader.

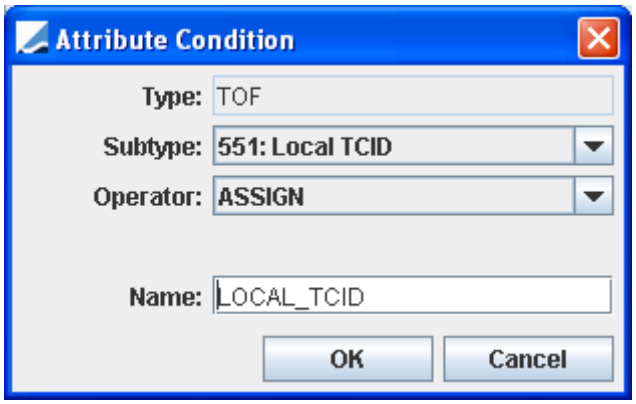


In the screenshot above, you see the mapping named “Local DTS TCID”. Simply put, the logic is that whatever value TOF Field 551 contains is assigned to variable named LOCAL_TCID. This variable is then applied as Trade Keyword DTS_LOCAL_TCID.

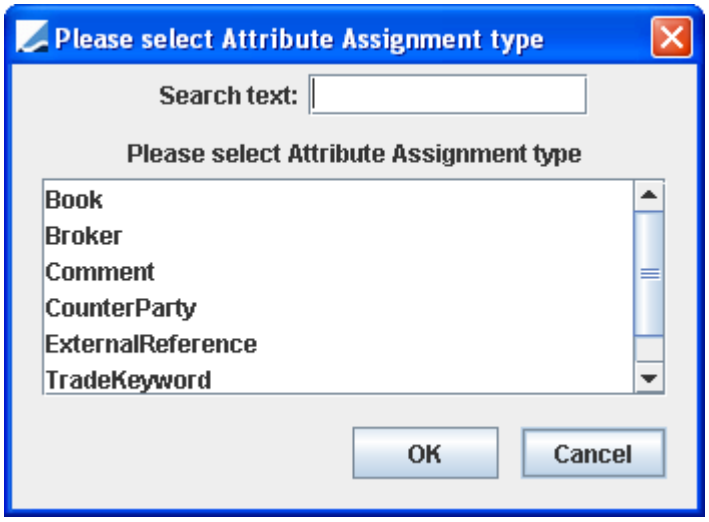
The first thing when the window is first opened is to create a new mapping, so click **New**.



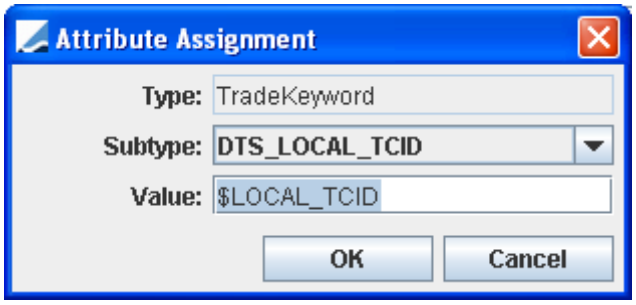
Now, add the TOF condition. Click on the “New Condition” icon:



Set the variable 551_LOCAL_TCID as a trade keyword. Click on the “New Assignment” icon:

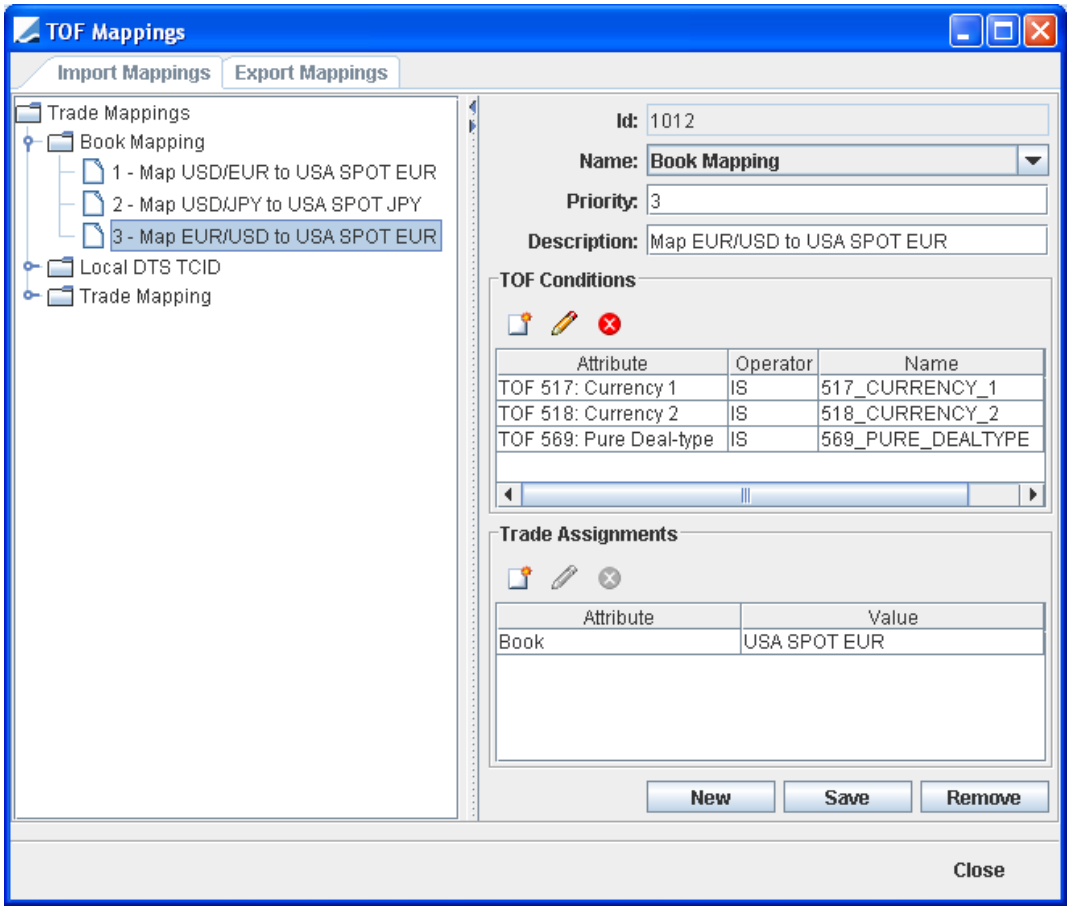


Select “TradeKeyword”:



The subtype here is actually the trade keyword as defined in the domain values. You willl notice that the value references the variable named “LOCAL_TCID” in the condition by prepending a “$” to the variable name. If, instead, you simply type in “LOCAL_TCID” without the “$” symbol, you would be setting the trade keyword DTS_LOCAL_TCID to the constant “LOCAL_TCID”. Whereas “$LOCAL_TCID” means that the trade keyword is set to the value of of variable “LOCAL_TCID”.

Of course, multiple conditions can be set in a mapping, and in order for the assignment(s) to be applied, all the conditions must be met. It is also perfectly acceptable to have multiple mappings with the same name.



In this case, Book Mapping has three different mappings with priorities 1, 2, and 3. The mapping with priority 1 will be attempted first. If all conditions are met, that particular mapping is applied and the trade is assigned book "USA SPOT EUR". If, however, all conditions are *not* met, then the mapping with priority 2 will be tried, and so on.

If none of the mappings with name "Book Mapping" can be applied, an error will be attached to the TOF Message. In other words, it is a good idea to have a catch-all mapping with priority, say, 99, that ensures that you will be setting some default BOOK if none of the other criteria match.

1.10 Setting Access Permissions for the DTS Mapper Monitor

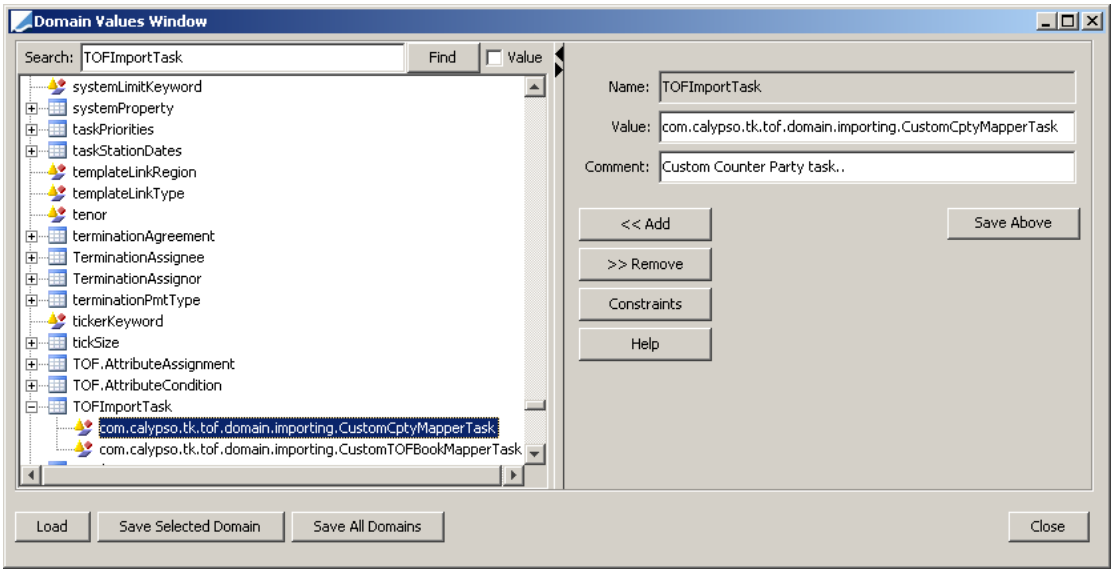
The following access permissions can be set in Main Entry > Configuration > User Access Control > Access Permissions. Refer to the *Calypso Security User Guide* for information on setting access permissions.

Permission	Description
ViewTOFMonitor	Permission to open the TOF Message Monitor.
AllowTOFMessageAmendments	Permission to make trade amendments in the TOF Messages.

1.11 Custom Mapping

This feature is provided for clients that need custom mapping apart from what is provided out-of-box. In order to add the custom mapping the following needs to be done:

- The custom task needs to implement the interface `com.calypso.tk.tof.domain.mapping.TOFImportTask`.
- Add the class name to the domain name "TOFImportTask"



Section 2. Execution

2.1 Starting the Reuters TOF Simulator (Testing only)

For TOF simulator under version 5.0 only – Not needed for version 5.0 and above, it uses the TCP/IP connection.

The Reuters TOF Simulator needs to be started only if you are using it for testing purposes.

Using a DOS `command.com` window, go to the directory where the Reuters TOF Simulator is installed (for example `C:\TOFS`), and start the Reuters TOF Simulator as shown below:

```
cd C:\TOFS
tofs
```

Note that you can specify "tofs -r" when starting the simulator, if you do not need to test the extra TOF field id 599.

Log all messages. Refer to the "l" command in the *Reuters Ticket Output Feed Simulator User Guide*.

Select a data file. Refer to the "d" command in the *Reuters Ticket Output Feed Simulator User Guide*.

Start the simulator. Refer to the "g" command in the *Reuters Ticket Output Feed Simulator User Guide*.

2.2 Running the SerialToSocket Connection Utility (Testing only)

For TOF simulator under version 5.0 only – Not needed for version 5.0 and above, it uses the TCP/IP connection.

If you are testing against the Reuters TOF Simulator, you must start this utility to communicate with the TOF Simulator using a serial connection and communicate with the DTSEngine using a socket connection.

To run SerialToSocket, type the following at the Windows command line (this is a one-line command):

```
java -classpath .\build;.\build\calypsofx;.\jars\comm.jar
com.calypso.tk.util.dts.SerialToSocket -serialPortName COM2 -socketPortNumber 1980
```

(Alternatively, the above command can be placed into a .bat file and then run the .bat file instead.)

COM2 is the name of the serial port that the SerialToSocket utility will use to connect to the Reuters TOF Simulator. Change this as needed for your configuration.

1980 is the socket port number that the SerialToSocket utility will use to listen for connection requests from the DTS Mapper. Change this as needed for your configuration.

Note that when stopping the SerialToSocket utility, you may need to type 'Ctrl-C' at the Windows prompt.

[**NOTE**: the testing utility, SerialToSocket, is meant for testing against the TOF Simulator only. It is not robust and will not handle errors gracefully. It must be started before starting the DTS Mapper, and it must also be stopped before stopping the DTS Mapper]

2.3 Starting the Reuters Deal Tracker Server (Live feed)

Follow the instructions from Reuters. Note that you do not need to start either the TOF Simulator or the SerialToSocket utility when using the Reuters DTS Server live feed.

2.4 Running the DTS Engine

You can start the DTS Engine using `com.calypso.apps.startup.StartDTSEngine`.

There are two modes in which the DTS Engine can be started.

- Command Line or Non GUI mode.
- GUI Mode – DTS Monitoring window.

When the DTS Engine starts, it does the following:

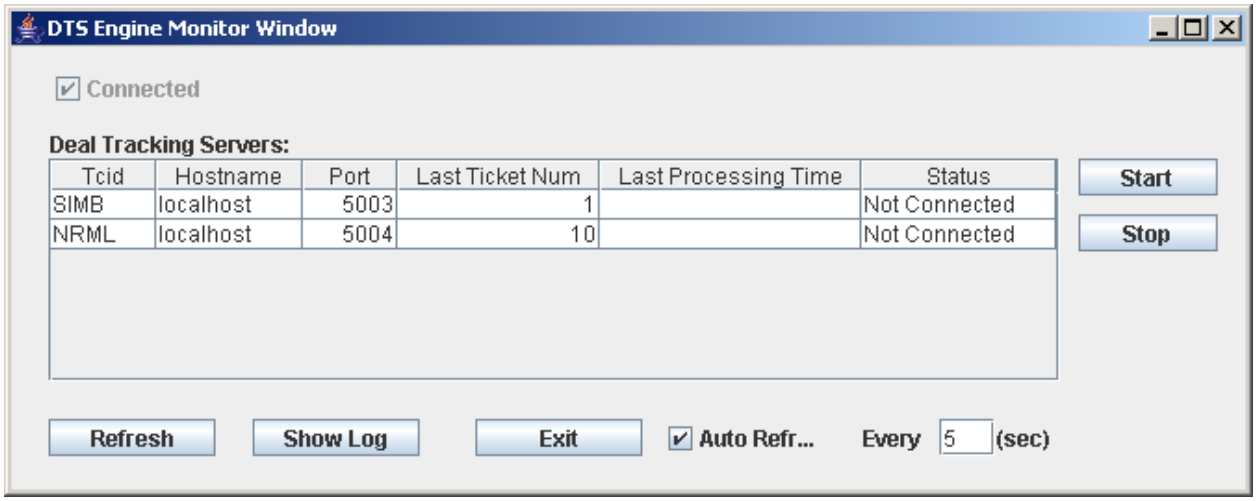
- Connects to the Calypso Data Server.
- Finds all Reuters DTS deals that have been retrieved from the DTS server and stored into the Calypso database with only mapping errors are reprocessed and mapped to Calypso Trades.

In Non-GUI Mode

- Retrieves all the configured DTS Connections and tries to connect to the respective Reuters DTS servers.
- Restores the state of the previous DTS Engine session. That is, the DTS Engine remembers the last deals that it retrieved from the DTS server for each TCID, and starts retrieving deals from the DTS server after those deals. The DTS Engine also requests that the DTS server alert the DTS Engine whenever there is a new deal added to the DTS server.
- After a deal has been retrieved from the DTS server, the DTS Engine checks the deal for validity (that is, for correct formatting and to make sure all expected data fields have been sent by the DTS server). If the deal is not valid, DTS Engine reconstructs the last deal and requests it again from DTS Server.
- If the DTS deal is valid, the DTS Engine maps the deal to a corresponding Calypso trade. If the DTS deal is not valid, the DTS Engine flags that it could not be mapped. The user must then check the deal in DTS Monitor window directly and fix any problems before the DTS Engine can retrieve it and try to map it again.

In GUI Mode

The following DTS Engine monitor window is opened.



- The window displays all the possible DTS connections based on the DTS configurations. By default all the connections are in status ‘Not Connected’
- The user has to select a specific DTS Connection and click on the ‘Start’ button. The engine will attempt to connect to the DTS Server.
- The following information is displayed on then monitor window.
  - Tcid of the DTS Server
  - Host name of the DTS Server
  - Port number of the DTS Server
  - Last Ticket Number processed by the DTS Engine
  - “Last Processing time” is the time at which the last message from the DTS Server was processed
  - Status – “Connected” – Indicates the DTS Connection is live. “Not Connected” –Iindicates the connection was terminated or never started.
- The user can click on the “Stop” button to terminate a specific DTS connection.

- If the user clicks on the “Exit” button or closes the monitor window, the system will terminate all the active DTS connections and close the monitor window.
- Once the user selects a particular DTS Connection and click on the ‘Start’ button, the engine restores the state of the previous DTS Engine session. That is, the DTS Engine remembers the last deals that it retrieved from the DTS server for each TCID, and starts retrieving deals from the DTS server after those deals. The DTS Engine also requests that the DTS server alert the DTS Engine whenever there is a new deal added to the DTS server.
- After a deal has been retrieved from the DTS server, the DTS Engine checks the deal for validity (that is, for correct formatting and to make sure all expected data fields have been sent by the DTS server). If the deal is not valid, DTS Engine reconstructs the last deal and requests it again from DTS Server.
- If the DTS deal is valid, the DTS Engine maps the deal to a corresponding Calypso trade. If the DTS deal is not valid, the DTS Engine flags that it could not be mapped. The user must then check the deal in DTS Monitor window directly and fix any problems before the DTS Engine can retrieve it and try to map it again.

[**NOTE**: You can only run ONE instance of the DTS Engine at a time]

2.5 Using the TOF Message Monitor

Open the TOF Message Monitor.

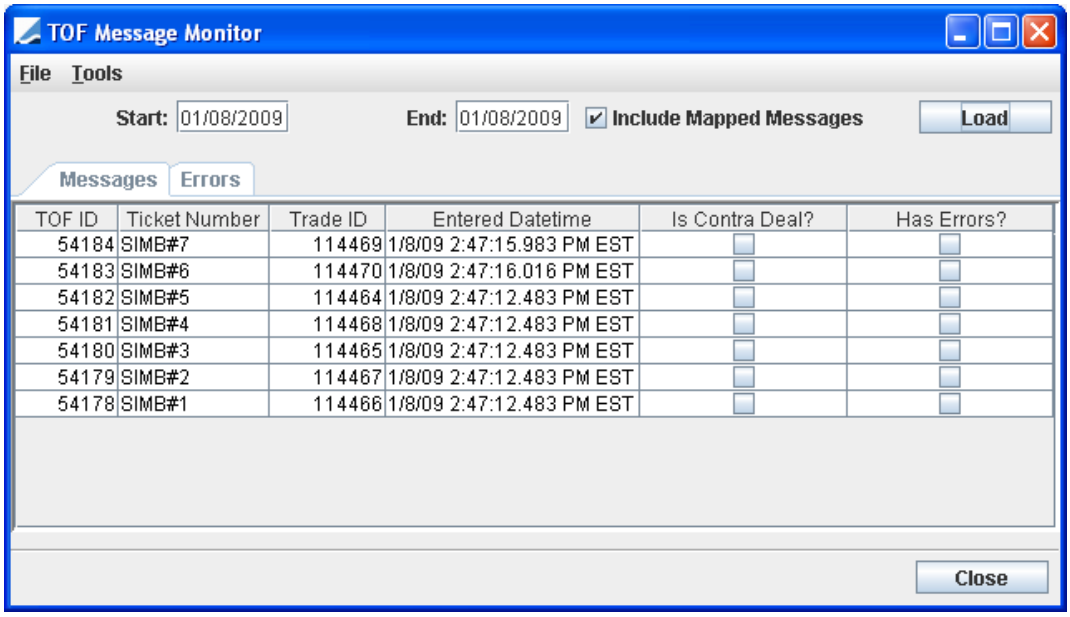
2.5.1 Loading TOF Messages

The Messages tab shows the TOF message info. Note that information for all TOF messages are displayed, whether the deal was mapped to a Calypso trade or not.

TOF messages that have a trade id > 0 are deals that have been mapped to a Calypso trade. There may or may not have been mapping errors.

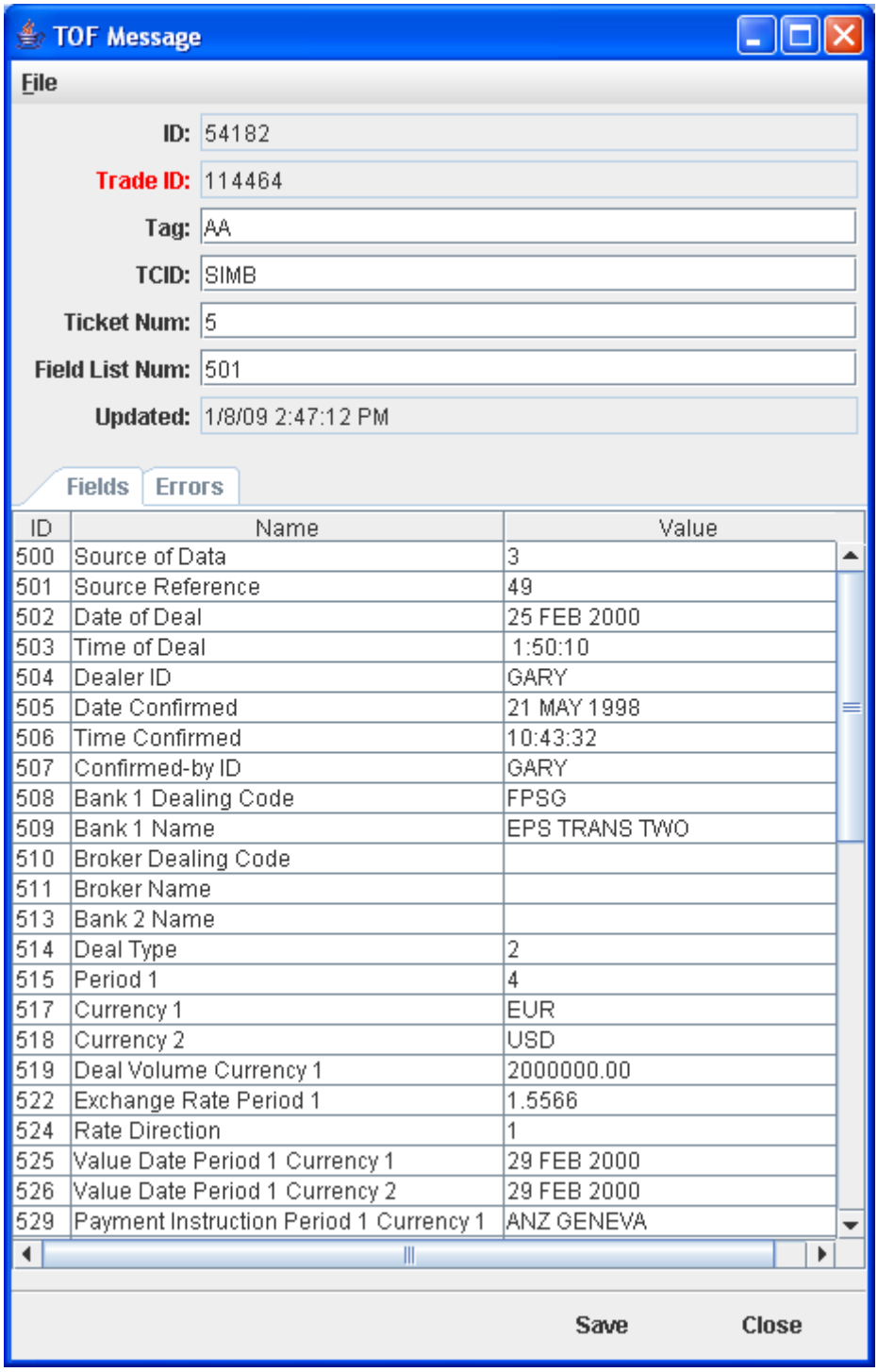
A TOF message with trade id = -1 is a contra deal, and thus does not need to be mapped to a Calypso trade. Instead, the original deal for which this deal is a contra will be cancelled.

A TOF Message that with no trade Id is a deal that either has not been mapped yet or the mapping was attempted but either there was not enough information to do so or there was an error in the data transmission from DTS for that deal.

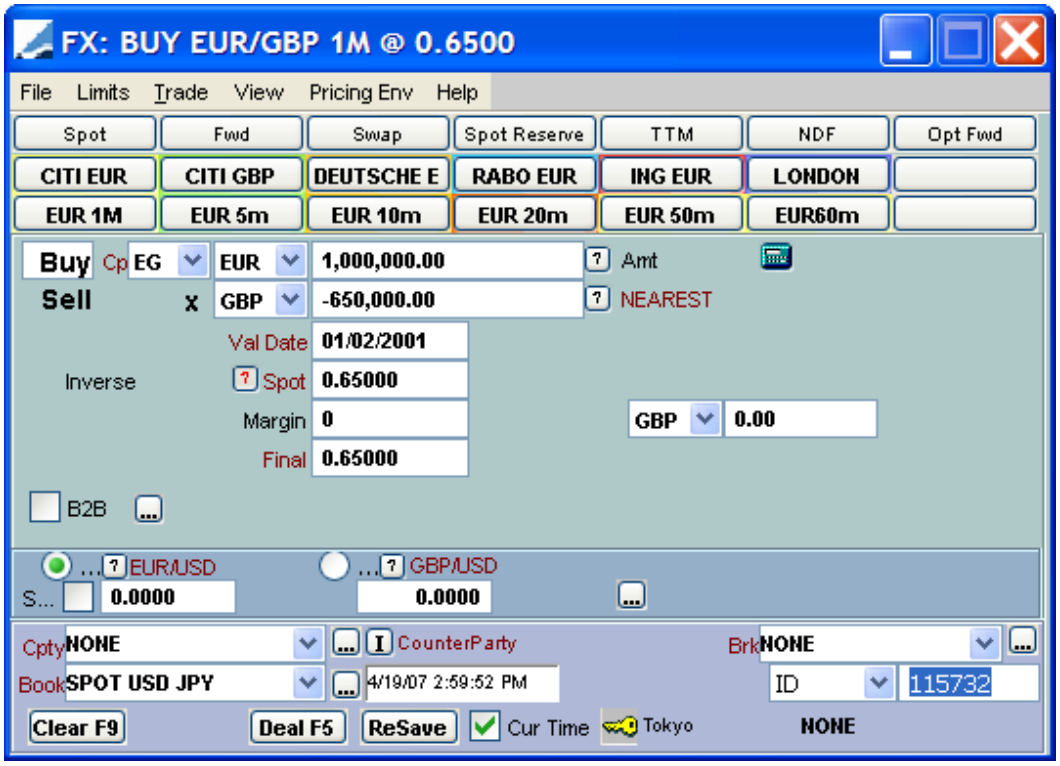


» Select start and end dates and click **Load** to load DTS deal info.

You can double-click on a TOF message to get the full details.

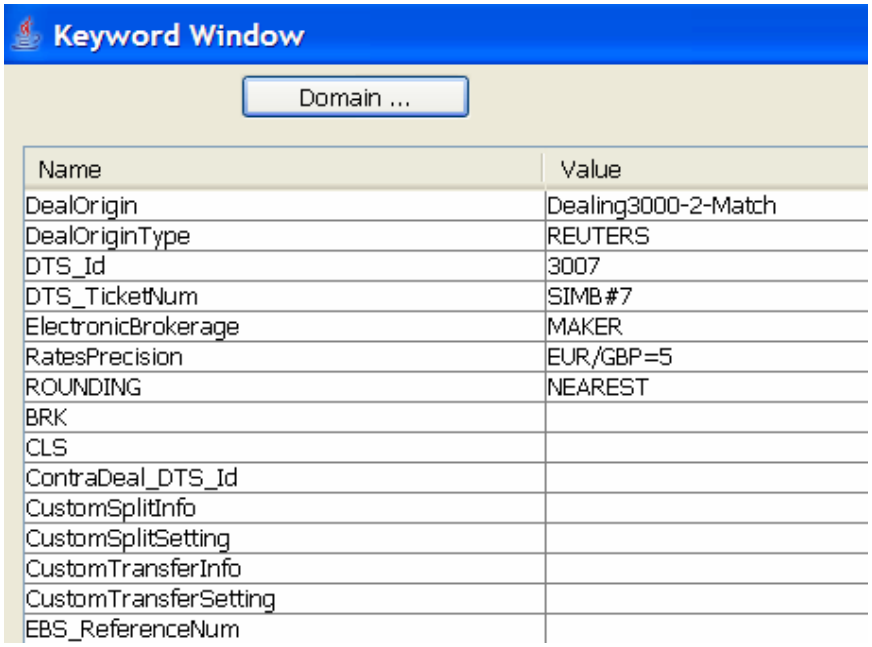


If the TOF Message has been mapped to a Calypso Trade, you can double-click on the ID label or open the trade directly from the monitor via the popup menu “Show Trade”.



Trade Keywords

The trade keywords are set as follows (File > Keywords):



Name	Value
DealOrigin	Dealing3000-2-Match
DealOriginType	REUTERS
DTS_Id	3007
DTS_TicketNum	SIMB#7
ElectronicBrokerage	MAKER
RatesPrecision	EUR/GBP=5
ROUNDING	NEAREST
BRK	
CLS	
ContraDeal_DTS_Id	
CustomSplitInfo	
CustomSplitSetting	
CustomTransferInfo	
CustomTransferSetting	
EBS_ReferenceNum	

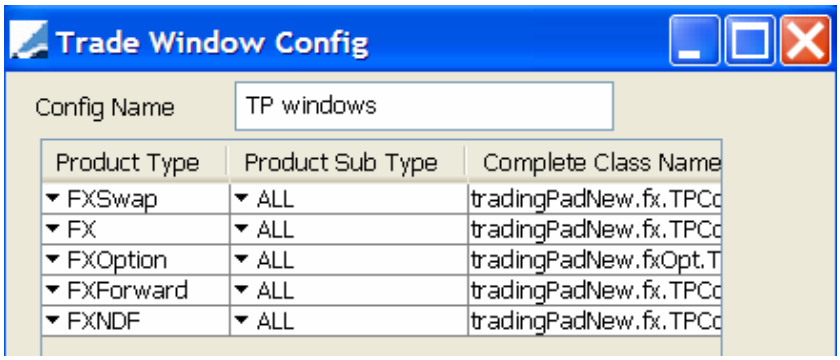
The trade keywords below may be used within trades mapped from DTS deals:

- DTS_Id — The ID assigned by the DTS Mapper to the raw DTS deal after it has been read by the DTS Mapper and before it has been mapped.
- DTS_LOCAL_TCID – Local TCID.

- DTS_TicketNum — The TCID and ticket number of the DTS deal from the originating dealing system, such as from the Reuters or EBS dealing system.
- DealOrigin — See TOF field 500.
- DealOriginType — See TOF field 500.
- EBS_ReferenceNum — See TOF field 562.
- ContraDeal_DTS_Id — See TOF field 567.
- ElectronicBrokerage — See TOF field 540.
- Broker — See TOF field 540.

Trade Window Configuration

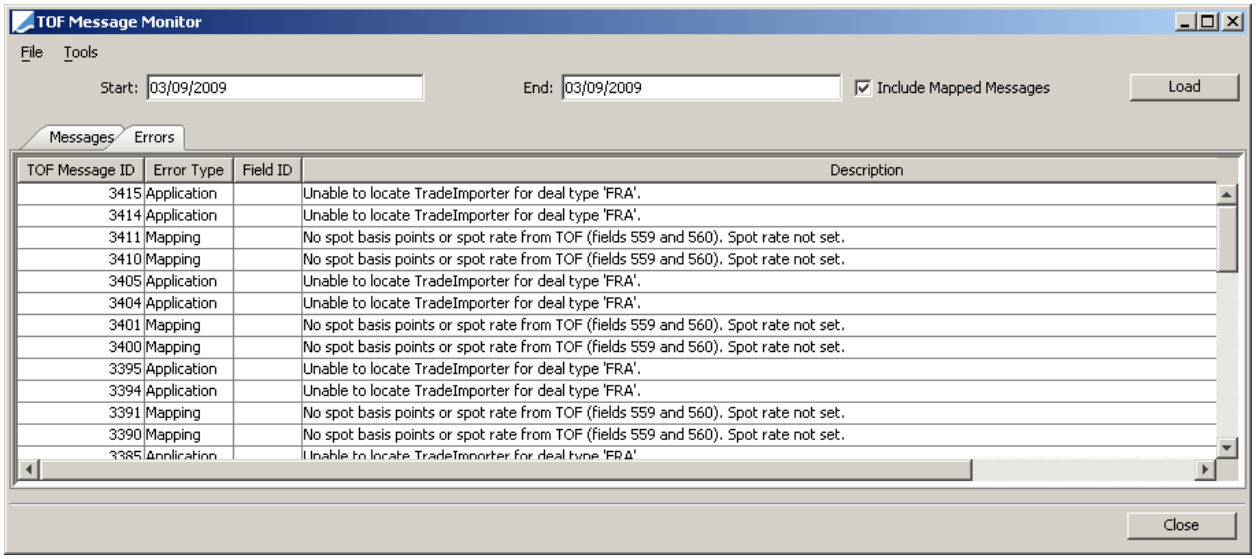
In order to open a trade from the DTS Mapper Monitor window by double clicking a row, you need to have the proper Trade Window Configuration (Main Entry > Configuration > User Access Control > Trade Window).



The Trade Window Config must be set in the User Defaults.

2.5.2 Viewing Mapping Errors

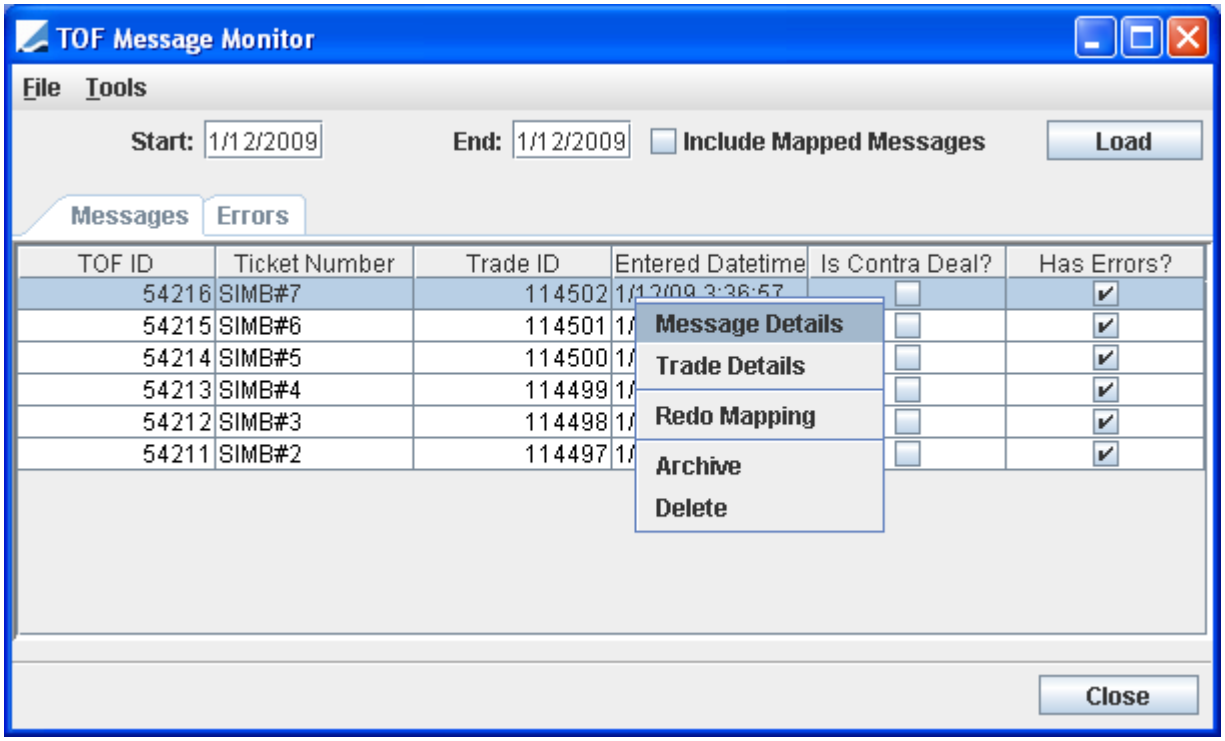
You can view mapping errors in the Mapping Errors panel.



Error Recovery for DTS Deals

A DTS deal that was mapped to a Calypso trade and that had mapping errors will stay in the CHECK_MAPPING status until the user indicates that all mapping errors for the deal have been fixed. Mapping errors are displayed in the Mapping Errors tab of the TOF Message Monitor.

The user can archive or delete a TOF message by choosing “Archive” or “Delete” from the popup menu.

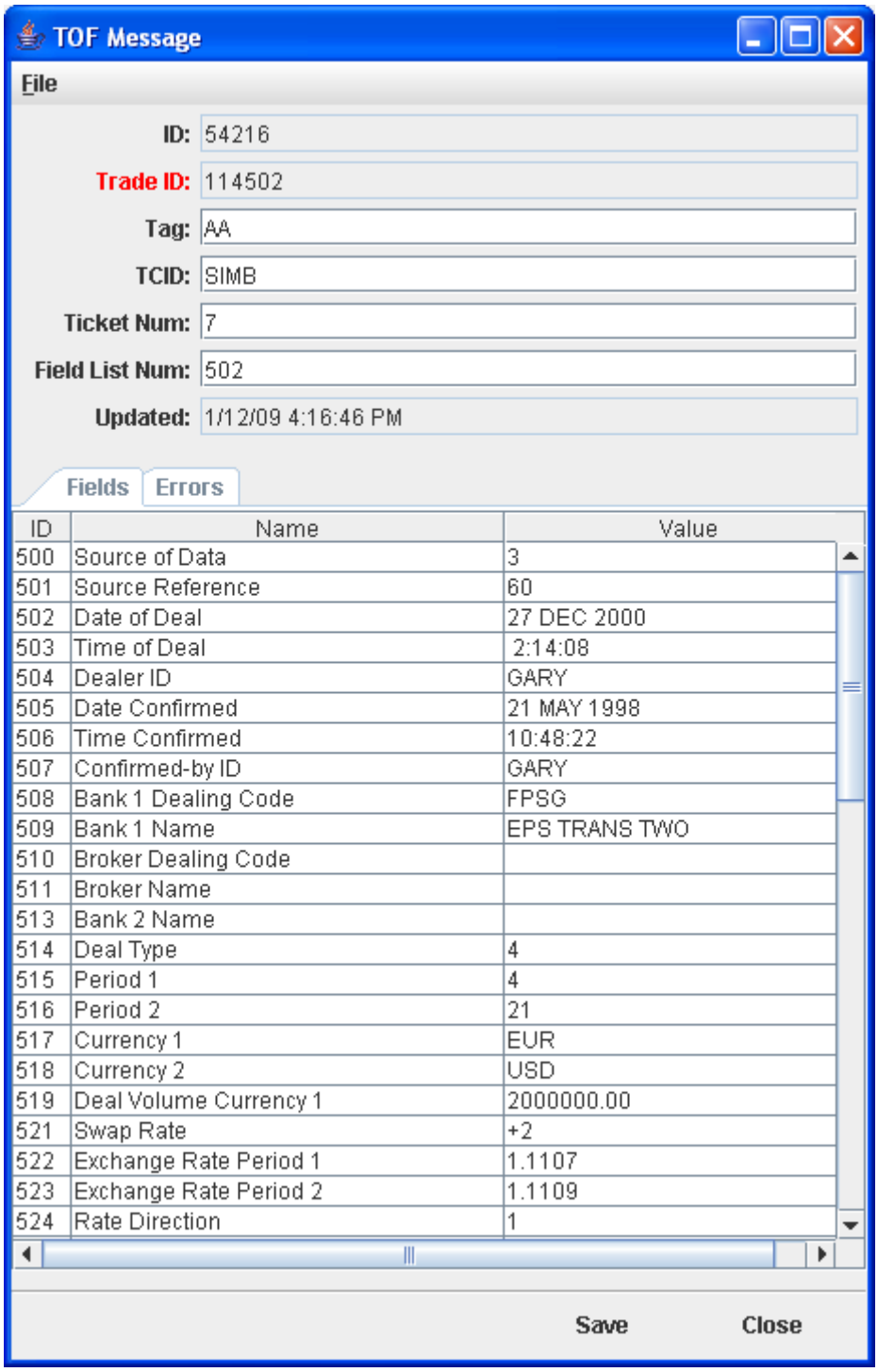


The user can fix the mapping configuration and redo the mapping by clicking on the “Redo Mapping” option. The system will apply the same set of rules that were applied while importing the first time.

If the TOF message was already mapped to a Calypso trade, the trade will be amended. The appropriate workflow rules must be setup for moving the trade from CHECK_MAPPING to the next status for the action AMEND.

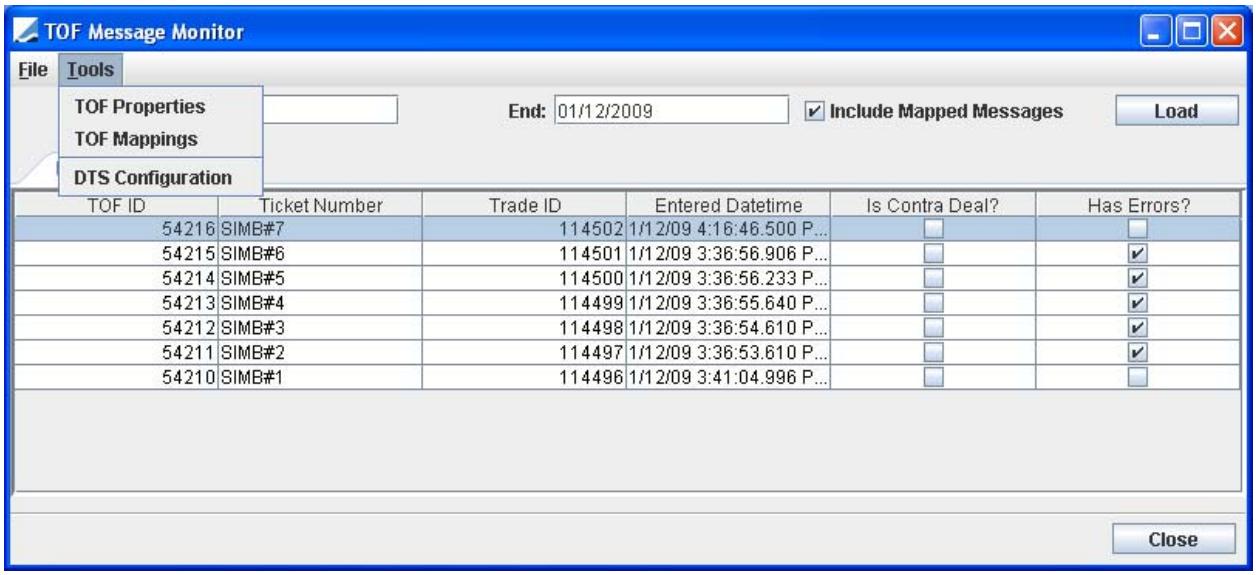
Since mapped deals that had mapping errors stay in the CHECK_MAPPING status, users can also view the trades that had mapping errors using the Operations Task Monitor in Main Entry and filtering for trades in the CHECK_MAPPING status.

Double click one of the messages to open the window:



Here, you can modify the field values directly and persist the changes. Note that you can both “Save” and “Save As New”. If you “Save”, what you are really doing is the same as “Redo Mapping” from the TOF Message Monitor. “Save As New” will reset the TOF ID and Trade ID so you will be saving a new TOF Message (and potentially a new Trade) in the system.

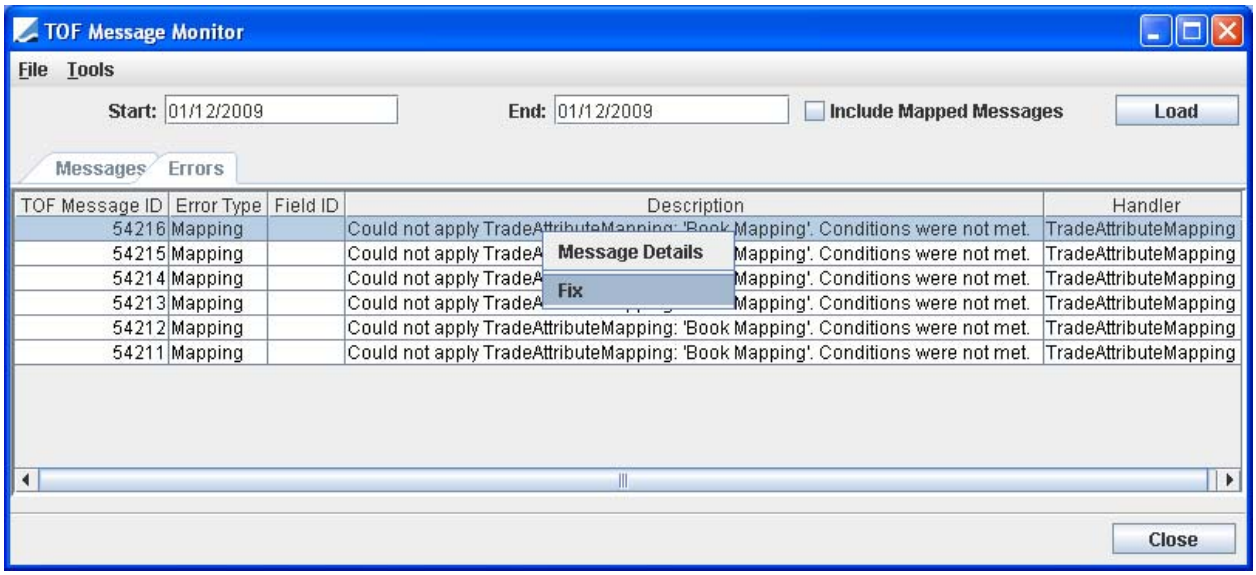
For convenience, you can also save the Message to a text file and load a message from a text file.



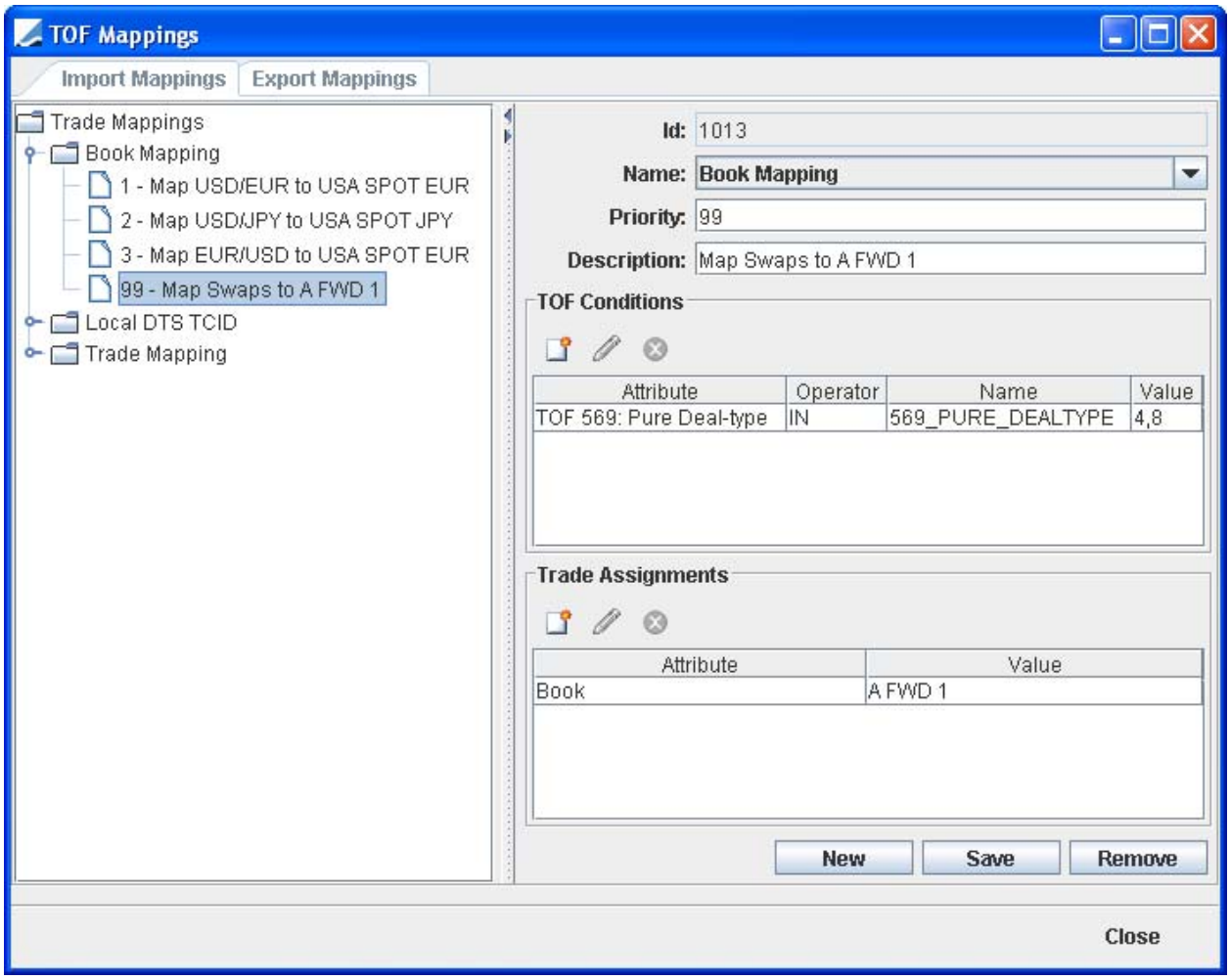
The following menu items are available from the Tools menu:

- “TOF Properties” opens the TOF Properties window
- “TOF Mappings” opens the same TOF Mapping Window shown above
- “DTS Configuration” allows you to customize the DTS configuration

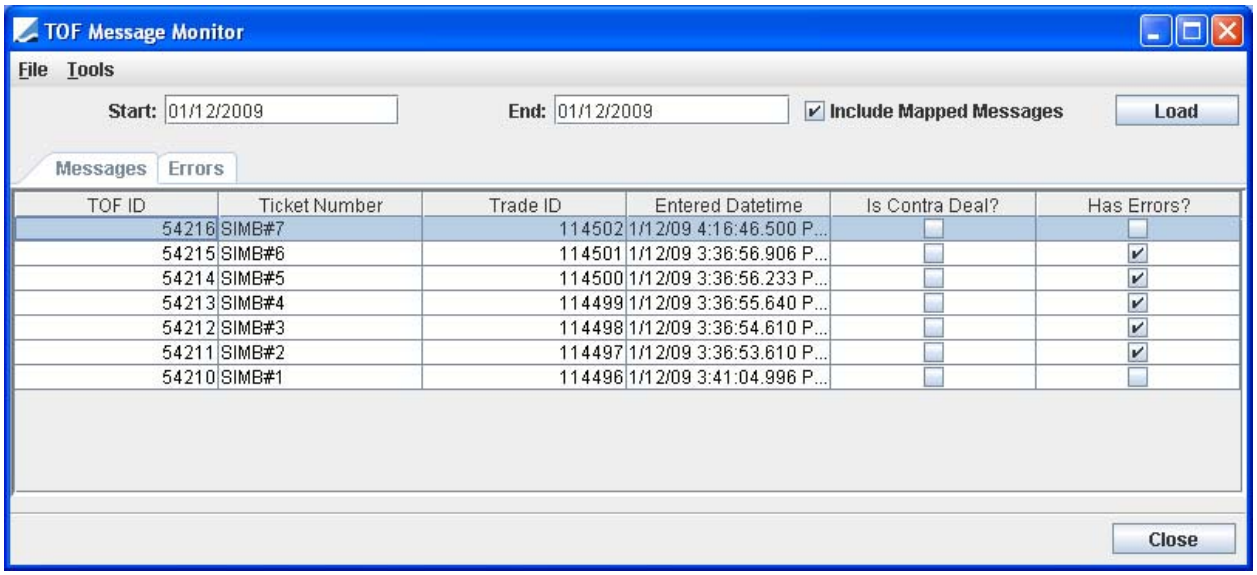
From the TOF Message Monitor, right-click on the error:



Select “Fix” and it should send you directly to the TOF Mapping Window if the error is due to TradeAttribute mapping issues. In the example below, add the proper mapping so FXSwaps can be mapped to a book:



Save the mapping. From the monitor, right-click on TOF message 54216 and select “Redo Mapping”. The trade is remapped and can move through the workflow and disappear from the monitor. Of course, you can select “Included Mapped Messages” flag to see it again:



Section 3. Mapping Details

The table below shows the mapping between TOF deals and Calypso deals.

TOF field id (fid)	Field Title	Deal Type	Calypso Field	Comments
500	Source of Data		Trade Keyword = DealOrigin Value = Reuters, EBS Trade Keyword = DealOriginType Value = value from TOF field 500	Source of Data = 1,2,3 → DealOrigin = Reuters. Source of Data = 4,5,6, ' ' (a single space) → DealOrigin = EBS.
501	Source reference		Trade.externalReference Used in conjuction with fid 539.	For Reuters, this contains the id of the deal within Reuters.
502	Date of Deal		Trade.enteredDate (with fid 503)	
503	Time of Deal		Trade.enteredDate (with fid 502)	
504	DealerID		Trade.traderName	
505	Date Confirmed		Trade.tradeDate (with fid 506)	
506	Time Confirmed		Trade.tradeDate (with fid 505)	
507	Confirmed By ID		Not mapped.	
508	Bank1 Dealing Code		Used in conjunction with fid 509.	Use 4-character Dealing Code to map to Calypso counterparty. Use LegalEntityId.Attribute.
509	Bank 1 Name		Trade.legalEntityId, Trade.role=CounterParty Used in conjunction with fid 508.	If no matching counterparty is found, set Cpty to "NONE". Add error message "Error: no matching cpty: <Bank1 Dealing Code + Bank 1 Name>". Note that this field is used for information purposes only. We use fid 508 to map to the Calypso counterparty.
510	Broker Dealing Code		Used to determine broker legal entity, if brokerage fee must be calculated. Used in conjunction with fids 511 and 540.	Same as above for Bank1 mapping.
511	Broker Name		Used in conjunction with fids 510 and 540. (Trade.fees Add fee with type=BRK, role=Broker, and LegalEntityId)	Same as above for Bank1 mapping. Where is the data for brokerage fee in the feed?
512	Reason for Sending (CIF)	NA	NA.	
513	Bank 2 Name		Not mapped.	

TOF field id (fid)	Field Title	Deal Type	Calypso Field	Comments
514	Deal Type		Used to determine sign of trade quantity. Used in conjunction with fid 519.	For FX Spot and FX Forward: Buy=Buy quoting ccy. Amt for buy is +ve, sell is –ve. Sell=Sell quoting ccy. For FX Swap: BuyAndSell=Buy quoting ccy on near leg, sell quoting ccy on far leg. SellAndBuy=Sell quoting ccy on near leg, buy quoting ccy on far leg.
515	Period 1		Not mapped.	Can compare calculated date with ccy1 dt and ccy2 dt ? Can use to determine val Date (=trade date + period 1) ?
516	Period 2	swap	Not mapped.	Can compare calculated date with ccy1 dt and ccy2 dt ? Can use to determine fwd date (= trade date + period 2) ?
517	Currency 1		Used in conjunction with fid 518 to determine CurrencyPair.	For now assume Swift code is same as Calypso code.
518	Currency 2		Used in conjunction with fid 517 to determine CurrencyPair.	Use CurrencyUtil.getCurrencyPair(ccy1, ccy2) to get Ccy pair.
519	Deal volume ccy1		Trade.quantity. +ve if buy ccy1 Used in conjunction with fid 514.	
520	Deposit Rate	NA	NA.	
521	Swap Rate	swap	Not mapped.	
522	Exchange Rate 1		Trade.negociatedPrice	
523	Exchange Rate 2	swap	FXSwap.fwdRateNegociated	
524	Rate Direction		Trade.negociatedPriceType	What happens if Rate Direction = INVERSE? Currently, this field is not mapped. If INVERSE, then we add a warning message to the trade. See WS QuoteTypeMapping. If ccyPr.isDirect set to divide else set to Multiply. Also see fid 573, if this is an FX Forward or FX Swap.
525	Value Date Period 1 Ccy 1		Trade.settleDate is the later of fid 525 and fid 526.	How do these dates relate to Val Dt date for the deal?

TOF field id (fid)	Field Title	Deal Type	Calypso Field	Comments
526	Value Date Period 1 Ccy 2		If (fid 525) != (fid 526), set Trade.alternateDate to be the earlier of fid 525 and fid 526.	How do these dates relate to Val Dt date for the deal?
527	Value Date Period 2 Ccy 1	swap	FXSwap.forwardDate is the later of fid 527 and fid 528.	How do these dates relate to Fwd Dt date for the deal?
528	Value Date Period 2 Ccy 2	swap	If (fid 527) != (fid 528), set FXSwap.alternateForwardDate to be the earlier of fid 527 and fid 528.	How do these dates relate to Fwd Dt date for the deal?
529	Pmt Instruction P1 Ccy1		Not mapped.	
530	Pmt Instruction P1 Ccy2		Not mapped.	
531	Pmt Instruction P2 Ccy1	swap	Not mapped.	
532	Pmt Instruction P2 Ccy2	swap	Not mapped.	
533	Oldest Deal Identifier	db	Not mapped.	
534	Oldest Deal Date	db	Not mapped.	
535	Oldest Deal Time	db	Not mapped.	
536	Latest Deal Identifier	db	Not mapped.	
537	Latest Deal Date	db	Not mapped.	
538	Latest Deal Time	db	Not mapped.	
539	Secondary Source reference		Trade.externalReference Used in conjunction with fid 501.	Also see fid 501.
540	Method of deal		Used in conjunction with fids 510 and 511. Trade Keyword = ElectronicBrokerage Value = TAKER|ACCEPTOR|NONE If ElectronicBrokerage = TAKER, then also set: Trade Keyword = Broker Value = broker legal entity code (see fid 510)	
541	Rate Ccy 1 against USD		Not mapped.	This is spot split rate. Not mapped because it may be incorrect.
542	Rate Ccy 2 against USD		Not mapped.	This is spot split rate. Not mapped because it may be incorrect.

TOF field id (fid)	Field Title	Deal Type	Calypso Field	Comments
543	Rate Base Ccy against USD		Not mapped.	How does Calypso handle EUR/CHF with JPY as base ccy?
544	Base Ccy		Not mapped.	See above.
545	Calc volume Period 1 Ccy2		If there is data, then map it to Trade.alternateAmount	If fid 545 has data, then use it to calculate tradePrice as follows: Trade.tradePrice = Trade.alternateAmount / Trade.quantity
546	Calc volume Period 2 Ccy2	swap	If there is data, then map it to FXSwap.forwardAmount. If there is no data, then calculate FXSwap.forwardAmount.	If fid 546 does not have data, then we calculate forwardAmount as follows: FXSwap.forwardAmount = FXSwap.forwardQuantity / FXSwap.fwdRateNegociated or FXSwap.forwardAmount = FXSwap.forwardQuantity * FXSwap.fwdRateNegociated as appropriate, depending on whether currency pair is direct. Also see fids 523 and 547.
547	Calc volume Period 2 Ccy1	swap	FXSwap.forwardQuantity If blank set to fid 519.	EUR/JPY.
548	Conversion text	NA	NA.	
549	Dealer Name		Not mapped.	
550	Confirmed By Name		Not mapped.	
551	Local TCID		Trade keyword DTS_LOCAL_TCID.	
552	Review reference number		Not mapped.	
553	Comment Text		Trade.comment	
554	FRA Fixing Date	NA	NA.	
555	FRA Settlement	NA	NA.	
556	FRA Maturity Date	NA	NA.	
557	IMM Indicator	NA	NA.	
558	Dealing 2000 Version number	db	Not mapped.	

TOF field id (fid)	Field Title	Deal Type	Calypso Field	Comments
559	Outright Pts Premium Rate	fwd	Points are not saved in Trade.	Trade.negociatedPrice = Spot + Points = (fid 560) + (fid 559) Set Trade.tradePrice according to RateConvention.
560	Spot Basis Rate	fwd	If there is data, save it in FXForward.SpotRate	If there is no data, then calculate SpotRate as follows: FXForward.SpotRate = Trade.negociatedPrice - Points
561	User defined Title 1		Not mapped.	
562	User defined data 1		For EBS. Trade Keyword = EBS_ReferenceNum Value = value from TOF field 562	
563	User defined Title 2		Not mapped.	
564	User defined data 2		Not mapped.	
565	User defined Title 3		Not mapped.	
566	User defined data 3		Not mapped.	
567	ID of original for Contra		Keyword = ContraDeal_DTS_Id. Value = ID of the Calypso trade for which this deal is a contra.	We will keep a mapping table of: (TOF deal ids) x (Calypso deal ids).
568	ID of previous for next		Not mapped.	
569	Deal Type		Create product type according to Deal Type: 2 = FX Spot 4 = FX Forward 8 = FX Swap	
570	Volumne of interest	NA	NA.	
571	Days elapsed during deal	swap	Not mapped.	
572	Year Length		Not mapped.	
573	Price convention	fwd, swap	Not mapped.	For FX Forward and FX Swap only. Is this the convention for the rate in the feed? Also see fid 524.
574	Interest message	NA	NA.	
575	SWIFT-BIC Ccy1 P1		Not mapped.	

TOF field id (fid)	Field Title	Deal Type	Calypso Field	Comments
576	SWIFT-BIC Ccy2 P1		Not mapped.	
577	SWIFT-BIC Ccy1 P2	swap	Not mapped.	
578	SWIFT-BIC Ccy2 P2	swap	Not mapped.	
579	D2000-2 Credit Reduction	spot	Not mapped.	
580	D2000-2 Credit Reduction	spot	Not mapped.	
581	Base CCy2		Not mapped.	
582	Base CCy3		Not mapped.	
583	Rate Base Ccy2 vs US		Not mapped.	
584	Rate Base Ccy3 vs US		Not mapped.	

Deal Type

- <blank> — Applies to all deal types (FX Spot, FX Forward, FX Swap)
- spot — FX Spot only
- fwd — FX Forward (= FX Outright) only
- swap — FX Swap only
- db — Database status only
- NA — Not Applicable to any of FX Spot, FX Forward, FX Swap, or DB status

Settlement Currency and Trade Currency

Quoting currency of the currency pair.

Trade Price

Trade.tradePrice = Trade.alternateAmount / Trade.quantity

If there is no Trade.alternateAmount, then Trade.tradePrice = Trade.quantity / Trade.negociatedPrice or

Trade.tradePrice = Trade.quantity * Trade.negociatedPrice depending on whether currency pair is direct or not.

Forward Rate

FXSwap.fwdRate = FXSwap.fwdAmount / FXSwap.fwdQuantity.

EBS Interoffice Deals

EBS interoffice deals are not subject to brokerage. The user must maintain a filter called “IS_INTER_OFFICE” that lists all the counterparties which are considered interoffice.