



**Processing of XML based  
financial messages**

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#### **SUMMARY**

This document gives an overview of the Box for SWIFTNet facilities to handle XML based financial messages. It is intended to be read by business managers, system administrators and systems architects. More detailed information on specific topics can be obtained by contacting Intercope through any of the addresses on the final page of the document.

## Introduction

SWIFT has recently defined new XML based messages conforming to the ISO 20022 standard for several financial business areas. Based on to the underlying XML based technology of BOX for SWIFTNet Intercope has implemented these messages for RMA, SEPA, Cash Management and Target 2. Moreover Intercope is in the position to provide these functions for additional message groups (business areas) very easily and efficiently, and in a short time frame. Generally the functions provided for the handling of these messages include:

***Standard BOX for SWIFTNet functions for ISO 20022 messages.***

- Reception of messages from applications and onward transmission to SWIFT.
- Reception of messages from SWIFT and transmission to applications (routing depending on various criteria including message type and / or content).
- Storage of all messages in the Message Warehouse of BOX
- Display and printing of the messages in easy and readable format
- Journals and new application queues
- Message entry, repair and authorization
- Standard search functions
- Sophisticated configurable retrievals
- Customer specific application functionality on request

Due to the underlying BOX for SWIFTNet technology Intercope is in the position to customize these functions for specific message groups (business areas) very efficiently and in short time frames. The main reason for this is that BOX is based to a large extent on XML structured documents. BOX for SWIFTNet has always handled FIN messages based on its own XML message set – which makes rapid support of any new message set from SWIFT straightforward. XML based definitions are also used by BOX for SWIFTNet for many other tasks including message entry panels, validation and routing. In addition the flexible and configurable message processing engine of BOX for SWIFTNet provides an ideal platform to implement application specific functionality for specific message groups, and individual customer requirements to extend the scope of purely message related functionality.

***Rapid support of new message sets from SWIFT.***

The remainder of this document shows via some practical examples how this approach has been successfully applied to date in the following business areas:

***RMA, SEPA, Cash Management and Target2***

- Relationship Management Application (RMA)
- SEPA Message Warehouse
- Cash Management
- Target2

**RMA**

With the advent of SWIFTNet Phase 2, Intercope incorporated a Relationship Management Application (RMA) component as part of BOX for SWIFTNet and was the first vendor to receive SWIFT certification for this application. Within the scope of this application the following XML based messages are processed:

- Authorization  
Authorizes the correspondent to send specific MT messages
- Revocation  
Revokes a previous authorization
- Reject  
Rejects an authorization
- RmaQuery  
Requests information from the Relationship Manager
- RmaAnswer  
Answer to an RMAQuery request

**Authorization.  
Revocation, Reject and  
Query.**

The following picture shows an example of the message entry screen for an authorization message:

*New Authorisation from RI123456 to PTSADES0*

Processing

**Issuer(s) (BIC):** RI123456

**Correspondent(s) (BIC):** PTSADES0

**Request Reference:**  \*

**Comment:**

---

Advanced Processing Control

**Issued Timestamp:**  7 Nov 2006 17:00:00

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FIN Authorization

**Validity:**  From: 7 Nov 2006  To: 7 Dec 2006

**Authorisation:**  Global Permission

Category 1	Category 2	Category 3	Category 4	Category 5	Category 6	Category 7	Category 8
<input type="radio"/> All <input checked="" type="radio"/> Selected <input type="radio"/> All but selected	<input type="radio"/> All <input checked="" type="radio"/> Selected <input type="radio"/> All but selected	<input checked="" type="radio"/> All <input type="radio"/> Selected <input type="radio"/> All but selected	<input type="radio"/> All <input checked="" type="radio"/> Selected <input type="radio"/> All but selected	<input type="radio"/> All <input checked="" type="radio"/> Selected <input type="radio"/> All but selected	<input type="radio"/> All <input checked="" type="radio"/> Selected <input type="radio"/> All but selected	<input type="radio"/> All <input checked="" type="radio"/> Selected <input type="radio"/> All but selected	<input type="radio"/> All <input checked="" type="radio"/> Selected <input type="radio"/> All but selected
101 102 103 104 105 106 107 110 111 112 121 122 190 191 192 195 196 198 199	200 201 202 203 204 205 206 207 210	304 307 308 321 380 381	400 405 410 412 415 420 422 430 450 455 490 491 492 495 496 498 499	500 501 502 503 504 505 506 507 508 509 510 513 514 515 516 517 518 519 524 526	604 643 644 645 646 649 690 691 692 732 695 696 698 699	700 701 705 707 710 711 720 721 730 732 734 740 742 747 750 752 754 756 760 767	800 801 802 810 812 813 820 821 822 823 824 890 891 892 895 896 898 899

Use Ctrl-Click and Shift-Click to edit MT lists

**Message entry.**

## SEPA Message Handling

***Message creation, repair, authorization and reconciliation.***

One BOX for SWIFTNet customer built a system to process transactions related to the Single Euro Payment Area (SEPA) using IBM Websphere Information Extender (WTX) to bulk / debulk and transform these messages. In this context BOX for SWIFTNet is deployed to manually create, repair and authorize SEPA messages and as a SEPA message warehouse: all transactions received and sent are forwarded to BOX for SWIFTNet and stored in the BOX message database including meta information about related bulks and files. Access to this data is provided by configurable journals for specific files, bulks and transactions and the messages themselves can be viewed in structured screens as well as in XML format. The main functions provided by this SEPA message application are:

- Manual message creation
- Manual message repair
- Correlation of SEPA files (e.g. CVG / ICF)
- Retrieval for all SEPA messages
- Reconciliation of bulk files and transactions

Within the scope of this SEPA message warehouse the following files and transactions are processed:

***Comprehensive journals for files and transactions.***

- Cancelled credit files (CCF)  
Journal for Cancelled credit files (received from EBA)
- Exception file header data  
This journal is used for error detection in the file header.
- Exception handling bulk header data  
This journal is used for error detection in the bulk header
- Exception handling transaction data  
This journal is used for error detection in the transaction data
- IPOS outbound 004  
Journal for outgoing PACS 004 messages in IPOS
- IPOS outbound 008  
Journal for outgoing PACS 008 messages in IPOS
- IPOS repair 004  
Journal for repaired outgoing PACS 004 messages in IPOS
- IPOS repair 008  
Journal for repaired outgoing PACS 008 messages in IPOS
- Input credit files (ICF)  
Journal for ICF files (file data)
- Input credit pacs004 bulks (ICF)  
Journal for bulks in ICF files containing pacs 004 transactions (bulk data)
- Input credit pacs004 transactions (ICF)  
Journal for transactions in ICF files containing pacs 004 transactions (transaction data)
- Input credit pacs006 bulks (ICF)  
Journal for bulks in ICF files containing pacs 006 transactions (bulk data)
- Input credit pacs006 transactions (ICF)  
Journal for transactions in ICF files containing pacs 006 transactions (transaction data)

- Input credit pacs008 bulks (ICF)  
Journal for bulks in ICF files containing pacs 008 transactions (bulk data)
- Input credit pacs008 transactions (ICF)  
Journal for transactions in ICF files containing pacs 008 transactions (transaction data)
- Manually Created Tx's  
Journal of manually (i.e. in BOX) created transactions
- Settled credit files  
Journal for SCF files (file data)
- Settled credit pacs004 bulks (SCF)  
Journal for bulks in SCF files containing pacs 004 transactions (bulk data)
- Input credit pacs004 transactions (SCF)  
Journal for bulks in SCF files containing pacs 004 transactions (bulk data)
- Input credit pacs008 bulks (SCF)  
Journal for transactions in SCF files containing pacs 004 transactions (transaction data)

The following example shows a journal excerpt of the SEPA message Warehouse component of BOX for SWIFTNET for settled credit pacs008 transactions. In the table that follows below the meaning of all the columns available in this screen is explained:

### Settled credit pacs008 transactions (SCF)

BOX Time	TransactionID	BulkID	FileID	Txid	InstrId	IntrBkSttlmDt	IntrBkSttlmAmt	DbtrAcctIBAN	DbtrNm	CdtrAcctIBAN	CdtrNm	AppStat	StatUpTm
11/16/08 5:08:47 PM	13	2	3	TRXID07A718A8008	A	7/19/07							
11/16/08 5:08:47 PM	12	2	3	TRXID07A718A8007	A	7/19/07							
11/16/08 5:08:47 PM	11	2	3	TRXID07A718C8008	A	7/19/07							

Column	Description
BOX Time	BOX creation time
TransactionID	Transaction ID (generated by BOX)
FileID	Filed ID (generated by BOX)
BulkID	Bulk ID (generated by BOX)
Txid	From the transaction
InstrId	From the transaction
IntrBkSttlmDt	From the bulk of the transaction
IntrBkSttlmAmt	From the transaction
DbtrAgt	From the transaction
DbtrAcctIBAN	From the transaction
DbtrNm	From the transaction
CdtrAgt	From the transaction
CdtrAcctIBAN	From the transaction
CdtrNm	From the transaction
AppStat	Status updated by Back office Application
StatUpTm	Time of this update

**Cash Management**

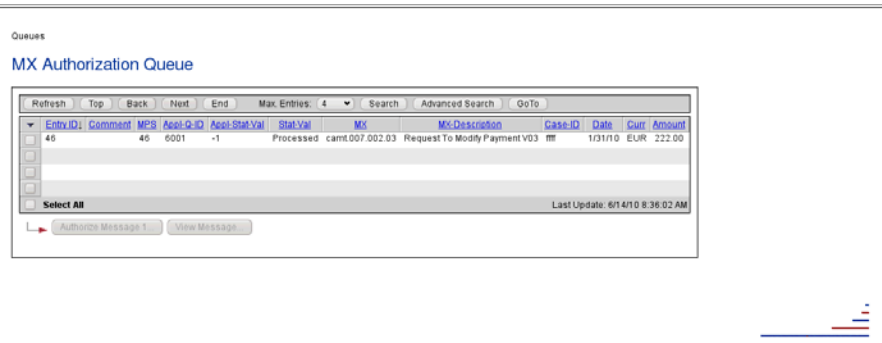
At the request of a large customer the following MX messages for cash management were implemented:

At the request of a large customer the following MX messages for cash management were implemented:

**Supported message types.**

camt.007.002.03	RequestToModifyPaymentV03
camt.026.001.03	UnableToApplyV03
camt.027.001.03	ClaimNonReceiptV03
camt.028.001.03	AdditionalPaymentInformationV03
camt.029.001.03	ResolutionOfInvestigationV03
camt.030.001.03	NotificationOfCaseAssignmentV03
camt.031.001.03	RejectInvestigationV03
camt.032.001.02	CancelCaseAssignmentV02
camt.033.001.03	RequestForDuplicateV03
camt.034.001.03	DuplicateV03
camt.035.001.02	ProprietaryFormatInvestigationV02
camt.036.001.02	DebitAuthorisationResponseV02
camt.037.001.03	DebitAuthorisationRequestV03
camt.038.001.02	CaseStatusReportRequestV02
camt.039.001.03	CaseStatusReportV03
camt.055.001.01	CustomerPaymentCancellationRequestV01
camt.056.001.01	FIToFIPayemtCancellationRequestV01

BOX for SWIFTNet enables a user to manually generate, repair and authorize these messages. Configurable journals and application queues allow messages to be found easily using a variety of search criteria and in a specific processing state. The following picture shows an example of a retrieved application queue containing messages awaiting authorization:



Messages can be visualized in structured screens as well as in XML format. New and modified messages are verified in real time for syntactical correctness, and validation errors are immediately highlighted as shown in the following example:

### Real-time syntax check.

New: FI To FI Customer Credit Transfer V01(pacs.008.001.01)

Check Fields OK Cancel

#### Validation Error

Path	Error Description
/Bulk Information/Interbank Settlement Date	Value must have format 'YYYY-MM-DD'
/Credit Transfer Transaction Information/Payment Identification/End To End Identification	Min. Length is equal to 1.
/Credit Transfer Transaction Information/Payment Identification/Identification	Value must match the pattern "[A-Za-z0-9][+*?@- / (){} , ; ! \$"
/Credit Transfer Transaction Information/Interbank Settlement Amount	Currency must match the pattern "EUR\$". Amount must be a number greater than 0
/Credit Transfer Transaction Information/Debtor Name	Min. Length is equal to 1.
/Credit Transfer Transaction Information/Debtor Account Identification/DAN	Value must match the pattern "[a-zA-Z](2,2)(0-9)(2,2)(a-zA-Z0-9)(1,30)\$"
/Credit Transfer Transaction Information/Debtor Agent/Financial Institution Identification/BIC	Value must match the pattern "[A-Z](6,6)[A-Z0-9][A-Z0-9](3,3)(0,1)\$"
/Credit Transfer Transaction Information/Creditor Agent/Financial Institution Identification/BIC	Value must match the pattern "[A-Z](6,6)[A-Z0-9][A-Z0-9](3,3)(0,1)\$"
/Credit Transfer Transaction Information/Creditor Name	Min. Length is equal to 1.
/Credit Transfer Transaction Information/Creditor Account Identification/DAN	Value must match the pattern "[a-zA-Z](2,2)(0-9)(2,2)(a-zA-Z0-9)(1,30)\$"

[Collapse All] [Expand All] [All Mandatory Data]

[ - ] [MD]

BOX Creation/Modification: FI To FI Customer Credit Transfer V01(pacs.008.001.01):

[ - ] [MD]

**Bulk Information:**

Interbank Settlement Date:  [Error!]

[ - ] [MD]

**Credit Transfer Transaction Information:**

[ - ] [MD]

**Payment Identification:**

Instruction Identification:

End To End Identification:  [Error!]

Identification:  [Error!]

[ - ] [MD]

**Payment Type Information:**

[ - ] [MD]

**Service Level:**

Code:

Local Instrument

Done

## Target2

For yet another customer the processing of ISO 20022 messages related to Target2 has been implemented. The main functions supported for this project include:

- Manual message creation
- Manual message repair
- Upload of messages from an external repository
- Message transmission via SWIFT to Target2
- Visualisation and Routing of received return message
- Processing of proprietary header information

***Visualisation and routing.***

## Summary

Box for SWIFTNet has been designed from the outset to support all types of SWIFT messages, both FIN and XML. Intercope has implemented ISO 20022 messages so far for RMA, SEPA, Cash Management and Target 2.

### ***XML-based technology.***

Thanks to the underlying XML-based technology of BOX for SWIFTNet Intercope is in the position to support further message groups (business areas) very easily and efficiently, and in a short time frame

In addition the flexible and configurable message processing engine of BOX for SWIFTNet provides an ideal platform to implement specific functionality for specific message groups extending the scope of purely message related functions.

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