WAY4™ UFX Interchange

Contents

Introduction

WAY4™ allows UFX (Universal Financial eXchange) documents to be imported and exported. The current system version supports import and export of financial and authorisation documents, including export of financial documents on online payments into third party billing systems.

Documents are imported by the "com.openwaygroup.pipe.ic.documents_import.jar" (IC Documents Import) pipe. The pipe supports batch file import. During file import, a record corresponding to the imported file itself is generated in the database documents table. Records corresponding to imported documents or batches (if a batch file is imported) refer to the abovementioned record. In case of batch import, records corresponding to imported documents refer to batch records.

Documents are exported by the "com.openwaygroup.pipe.ic.documents_export.jar" (IC Documents Export) pipe. Batch file export is not supported.

A deferred response file can be generated on the results of document import. Document import reports and document processing error data are exported by the "IC Documents Export" pipe with the RESPONSE_MODE=Y parameter (see "Parameters of Pipe "IC Documents Export"). This mode supports batch export of deferred response files.

Chapter 1. Overview of Documents UFX Format

The described document interchange technology is based on use of the UFX format. For more information on aggregates in use, see "File Format".

Document Types

WAY4™ supports interchange of documents of various types. The "Message Class" parameter is used to classify document types (see Table 1).

Table 1. Document types in import/export files (value of element DocFile\FileHeader\FileLabel)

Message Class	Description
PAYMENT	When importing payments
RESPONSE	When exporting response files
DOCUMENT	When importing/exporting financial documents
AUTH	When importing/exporting authorisation documents
ORDER	When exporting standing payment orders
INVOICE	When importing applications to create invoices
ONLINE_PAYMENT	When exporting online payments
BALANCE	When importing documents to change contract balances

Export of Transaction Data

WAY4 allows users to export card and merchant account transaction data.

Transaction data is exported by the "com.openwaygroup.pipe.ic.documents_export.jar" (IC Documents Export) pipe when the MODE parameter is set to "REPORT".

If reversal documents are found in the system for the same date as the original document, data is exported according to the SKIP_REVERSES pipe parameter. If this parameter is set to "Y" (Yes), data for the original and reversal document is not exported. If the parameter is set to "N" (No), or if the dates of the original and reversal documents are not the same, data is exported for both documents.

If adjustment documents are found in the system, data is exported according to pipe parameter SKIP_REVERSES and MERGE_ADJUSTMENTS and document generation dates, as shown in Table 2.

Table 2. Data export when adjustment documents are present

Condition	Original and adjustment document dates are the same	No	No	Yes	No	No	Yes	Yes
	Value of parameter SKIP_REVERSES	Y	N	N	Y	N	N	Y
	Value of parameter MERGE_ADJUSTMENTS	N	N	N	Y	Y	Y	Y/N

Documents	Original	Yes	Yes	No
	Reversal	Yes	No	No
	Adjustment	Yes	No	No
	Partial reversal	No	Yes	No
	Quasi original	No	No	Yes

For example:

The original document is for a transaction for 100 USD and the adjustment is for 40 USD, that is, a transaction for 60 USD, not 100 USD, has been performed.

Depending on original and adjustment document dates and SKIP_REVERSES and MERGE_ADJUSTMENTS parameter values, three document export options are available:

- The original document, a reversal document, and an adjustment document for 60 USD

- The original document and a partial reversal document for 40 USD

- A quasi-original document for 60 USD, that is, a transaction document that only differs from the original document by the transaction amount.

Table 3 shows how amounts are displayed in the fields of exported documents. The following conventions are used in the table:

- RC (Request Category) – document's request/advice category; contents of the *RequetsCategory* field of the "Doc\TransType\TransCode" aggregate. The field can contain one of the following values:

    ▪ "P" (Advice) – advice, including chargeback and representments

    ▪ "R" (Reversal) – reversal advice

    ▪ "J"(Adjustment) – partial reversal advice

- Trans. Amount (TA) – transaction amount; contents of the *Amount* field of the "Doc\Transaction" aggregate

- Settl. Amount (SA) – settlement amount; contents of the *Amount* field of the "Doc\Billing" aggregate

- Reconc. Amount (RA) – reconciliation amount; contents of the *Amount* field of the "Doc\Reconciliation" aggregate

- Account Amount (AA) – amount posted to the account; contents of the *Amount* field of the "Doc\Transaction\Extra" aggregate when the *Type* field of the aggregate contains values "SrcTrn" or "TgtTrn"

- Fee Amount (FA) – fee amount; contents of the *Amount* field of the "Doc\Transaction\Extra" aggregate when the *Type* field of the aggregate contains values "SrcFee" or "TgtFee"

- Custom Fee (CFA) – additional fee amount; contents of the *Amount* field of the "Doc\Transaction\Extra" aggregate when the *Type* field of the aggregate contains values "SrcTrn" or "TgtTrn"

Table 3. Representation of amounts in exported documents (Orig – original document amount, Rev – reversal amount, New – adjusted amount, -Orig – original document amount with the opposite sign)

Field \\ Document	RC	Trans Amount (TA)	Settl. Amount (SA)	Reconc. Amount (RA)	Account Amount (AA)	Fee Amount (FA)	Cust Fee Amount (CFA)
Original	P	Orig TA	Orig SA	Orig RA	Orig AA	Orig FA	Orig CFA
Reversal	R	Orig TA	Orig SA	Orig RA	-Orig AA	-Orig FA	-Orig CFA
Adjustment	P	New TA	New SA	New RA	New AA	New FA	New CFA
Partial reversal	J	Rev TA	Rev SA	Rev RA	Rev AA	Rev FA	Rev CFA
Quasi original	P	New TA	New SA	New RA	New AA	New FA	New CFA

File Generation Features

The "Doc\DocRefSet" aggregate in an XML file is filled in according to the rules presented in Table 4.

Table 4. Rules for filling in aggregate "Doc\DocRefSet"

Contents of field ParmCode	Contents of field Value
DRN	Internal document ID (during export)
OrigDRN	Identifier of the original document in a document chain (during export)
PrevDRN	Identifier of the previous document in a document chain (during export)
SummDRN	Identifier used to link financial documents (during export), e.g. when funds are transferred between accounts.
SRN	Source Registration Number
IRN	Issuer Reference Number
RRN	Retrieval Reference Number
ARN	Acquirer Reference Number
TRN	Document identifier assigned by the payment system
AuthCode	Authorisation Code

The "Doc\Transaction(Billing,Reconciliation)\Extra" aggregate is filled in according to the rules presented in Table 5.

Table 5. Rules for filling in aggregate "Doc\Transaction(Billing,Reconciliation)\Extra"

Contents of field Type	Value
AddInfo	Contents of the ADD_INFO field of the document (see the example of aggregate ADD_INFO below)
CustomAddInfo	Additional information about a document, returned by the function CUST_GET_DOC_ADD_DATA.

Contents of field Type	Value
SrcFee	Fee charged to the source contract (source fee). During export, the fee is determined by the value of the FEE_TYPE export pipe parameter (see "Parameters of Pipe "IC Documents Export").
TgtFee	Fee charged to the target contract (target fee). During export, determined by the value of the FEE_TYPE export pipe parameter.
SrcTrn	Posting amount in the source contract currency (source amount), that is, the value of the S_AMOUNT macrotransaction field
TgtTrn	Posting amount in the target contract currency (target amount), that is, value of the T_AMOUNT macrotransaction field
Auth	Amount blocked as a result of the authorisation
ReturnFee	Fee returned to the target contract after chargeback
MiscFee	Miscellaneous fee charged to the target contract
SrcAddFee	Additional fee charged to the source contract (custom fee). During exported, determined by the value of the CUSTOM_FEE_CODES parameter of the export pipe.
TgtAddFee	Additional fee charged to the target contract (custom fee). During exported, determined by the value of the CUSTOM_FEE_CODES parameter of the export pipe.

An example of the ADD_INFO aggregate:

```
<Extra>
     <Type>AddInfo</Type>
     <AddData>
          <Parm>
               <ParmCode>TAG_1</ParmCode>
               <Value>VAL_1</Value>
          </Parm>
          <Parm>
               <ParmCode>TAG_2</ParmCode>
               <Value>VAL_2</Value>
          </Parm>
          <Parm>
               <ParmCode>TAG_3</ParmCode>
               <Value>VAL_3</Value>
          </Parm>
     </AddData>
</Extra>
```

Addenda

XML addenda (additional document information) may be presented in any format, but must have their own root element in the "Doc\Addendums\Info" aggregate.

Addenda stored in the WAY4 internal format are sent in files in the following form:

```
<Buffers>
     <SeqN></SeqN>
     <BufLength></BufLength>
     <Buf1></Buf1>
     <Buf2></Buf2>
     <Buf3></Buf3>
     <Buf4></Buf4>
     <Buf5></Buf5>
     <Buf6></Buf6>
     <Buf7></Buf7>
     <Buf8></Buf8>
     <Buf9></Buf9>
     <Buf10></Buf10>
     <Buf11></Buf11>
     <Buf12></Buf12>
</Buffers>
```

Note that if the ADDENDUM_DOC table buffer is empty, the corresponding field (<BufN>) is absent from the outgoing file.

Table 6. Addendum types

Code	Value	Format
AI	Passenger Transport	WAY4
CA	Car Rental	WAY4
LG	Lodging	WAY4
FL	Fleet Service	WAY4
PH	Purchasing Header	WAY4
PD	Purchasing Detail	WAY4
AD	Trip Leg	WAY4
CH	Chip	WAY4
DT	Doc Tags (not actual now)	WAY4
LI	Loyality Info	WAY4
GA	Billing	WAY4
GX	Billing	WAY4 XML
XA	VISA XML	VISA XML
MX	Municipal Payments	XML

Code	Value	Format
GS	General Service Data	WAY4 XML
TX	Taxes Data	XML

Secondary Documents

Note that if the "LocalDt" field is filled in for an imported secondary document, the "ChainDtls\OrigTransDate" field must also be filled in, and if the "TransType\TransCondition" field is filled in, the "TransType\OrigTransCondition" field must also be filled in.

Using Tags

UFX documents contain fields that are important for document processing and need to be imported, but do not have corresponding fields in the DOC table of the WAY4 database.

The import pipe places the contents of such fields in field DOC.ADD_INFO in the form of tags (see Table 7).

Table 7. List of UFX document fields represented by tags in the ADD_INFO field of documents

UFX element	Tag name
Doc\Destination\CBSCode	R_RBS_MEMBER_ID
Doc\Destination\Client\ClientInfo\ClientNumber	CLIENT_IDT
Doc\Destination\Client\ClientInfo\RegNumber	R_CLI_REG_NUM
Doc\Destination\Client\ClientInfo\ShortName	R_CLI_SHORT_NAME
Doc\Destination\Client\ClientInfo\FirstName	R_CLI_FIRST_NAME
Doc\Destination\Client\ClientInfo\LastName	R_CLI_LAST_NAME
Doc\Destination\Client\ClientInfo\MiddleName	R_CLI_MIDDLE_NAME
Doc\Destination\CBSNumber	R_REQ_RBS_NUMBER
Doc\Originator\CBSNumber	R_SRC_RBS_NUMBER
Doc\Originator\MemberId	OSRC_MEMBER
Doc\Originator\Product\Channel	OSRC_CHANNEL
FileHeader\OriginalFileHeader\FileLabel	R_FILE_LABEL
FileTrailer\LoadingStatus	R_FILE_LOADING_STATUS
DocBatch\BatchTrailer\LoadingStatus	R_BATCH_LOADING_STATUS
Doc\Status\RespCode	R_RESPONSE_CODE
Doc\Status\RespText	R_RESPONSE_TEXT
Doc\Status\RespAppId	R_RESPONSE_APP_ID

In WAY4, there are fields that must be exported but for which there are no corresponding fields in UFX documents.

The export pipe places the contents of such fields and tags specified in the ADD_INFO field of documents to the "Doc\Transaction\Extra" aggregate (see Table 8). The *Type* field of the aggregate will contain the "AddInfo" value.

Table 8. List of database fields shown in the "Doc\Transaction\Extra" aggregate

Tag name	Database field
VALUE_DATE	DOC.POSTING_DATE+SERVICE_APPROVED.VALUE_DAYS

Chapter 2. Pipe Parameters

Parameters of Pipe "IC Documents Export"

⚠️ If the specification provides two parameters with the same name, the only difference being that one of them has the prefix ONL, the prefixed parameter is used when exporting online payments.

Parameter	Values	Parameter Description
ADD_SORT_ORDER	Field names, characters "||",","	Additional condition for sorting out documents in a file. The default parameter value is "doc.id". ⚠️ It is strongly recommended to use "doc.id" as first field in parameter. For example: ADD_SORT_ORDER=lpad(doc.ID,18,'0')||lpad(mtr.ID,18,'0'); or ADD_SORT_ORDER=lpad(doc.ID,18,'0')||mtr.request_cat;
ADDENDUM_FILTER*	Condition fragment	WHERE condition fragment added to the SELECT operator to select addenda, e.g. by status
ADDENDUM_TYPES*	'<type>','<type>', ...	Addendum types. The default value is 'CH','GA','GX','MX' (see Table 6. Addendum types).
APPLY_SIGN_TO_EXTRA_AMOUNTS	Y/N	When the parameter is set to "Y", a sign corresponding to the transaction amount will be added to the amounts specified in fields *SrcTrn* and *TgtTrn* (see Table 5 in section "File Generation Features"). The default parameter value is "N". In MODE=REPORT mode, the value of the parameter is considered to be "Y".
BASE_CH_JOIN	Condition fragment	WHERE condition fragment added to the SELECT operator to select authorization records from the CREDIT_HISTORY table. This parameter is used in EXPORT_CH_DATA = "Y" mode. The default parameter value is "left outer join credit_history CHI on chi.DOC_ID = doc.ID and chi.acnt_contract_oid = tcn.id and chi.credit_status='A'". When this value is set, data about authorizations with the "Active" status will be exported, i.e. about authorizations for which a financial document has not yet been found or processed.

Parameter	Values	Parameter Description
CASH_CARD_MAX	card number	Card number that is the upper limit of a card number range. If a card number is within this range, a payment is considered a cash payment. This parameter is used to export online payments.
CASH_CARD_MIN	card number	Card number that is the lower limit of a card number range. If a card number is within this range, a payment is considered a cash payment. This parameter is used to export online payments.
CBS_NUMBER_FROM_MAIN	Y/N	When the parameter is set to "Y", the identifier of the main contract in the banking system (value of the contract's RBS NUMBER field) will be exported to the *CBSNumber* field of the "Doc\Originator" or "Doc\Destination" aggregate. The parameter should be specified when MODE is set to "REPORT". The default parameter value is "N".
CH_FIELD_TYPE	Field names, "||" characters, SQL request	Determines what code should be used for blocked amounts. The code will be exported in the "SubType" field of the "Doc\Reconciliation\Extra" aggregate. The default value is credit_history.CREDIT_TYPE. The parameter should be used when EXPORT_CH_DATA is set to "Y".
CH_FILTER	Condition fragment	Fragment of the WHERE condition added to the SELECT operator for selecting CREDIT_HISTORY table records that comprise a blocked amount. The default value is "credit_status = 'A' and credit_type = 'P'". This parameter should be used when EXPORT_CH_DATA is set to "Y".
CHANGE_OUTWARD_STATUS	Y/N	When this parameter is set to "Y", the "To be sent" document outward status will be changed to "Sent". ⚠ Use the "Y" value only if the Outward Status = "To be sent" select condition is used in the FILTER pipe parameter. The default value is "N".
CHANGE_SERVICE_STATUS	Y/N	Parameter determining whether the service status in the ADD_SERVICE table must be changed after export or not. The default parameter value is "Y". This parameter is used to export online payments.

Parameter	Values	Parameter Description
COMMIT_INTERVAL*	Numeric	Number of applications that will be processed before executing the "commit" SQL operator. The default value is "1000".
CONV_FEE_COLLECTION_CODE	Y/N	When the value of the parameter is set to "Y", for "Fee Collection" or "Funds Disbursement" documents, the fourth character of the message code will be replaced with "-". The default value is – "N". It is recommended to specify the "Y" value in Host-to-Host mode.
CREATE_EMPTY_FILES	Y/N	Parameter determining whether empty files will be created if no data has been exported for certain groups. The parameter is only used when the GROUP_LIST parameter is specified. The default parameter value is "N" (that is, empty files are not created).
CREATE_FIN_DOC	Y/N	Parameter determining whether it is necessary to create a financial document summing up payments included in the file. If the parameter value is "Y", parameter CHANGE_OUTWARD_STATUS must be set to "Y". The default parameter value is "N". This parameter is used to export online payments.
CREATE_ORIGINAL_DOC*	Y/N	When this parameter is set to "Y", exported messages will also be written to the ORIGINAL_DOC table. FileHeader information is always written to this table. The default parameter value is "N".
CUSTOM_FEE_CODES	'<code1>', '<code2>',…	List of custom fee codes taken into consideration when values of fields *SrcAddFee* and *TgtAddFee* of the "Doc\Billing\Extra" aggregate are determined. The parameter should be specified when MODE is set to "REPORT".
DEFAULT_AID		Default value of the "Originator\InstInfo\Institution" field of exported file records. This value is used if addendum field 32 is absent. This parameter is used to export online payments.

Parameter	Values	Parameter Description
DETAIL_ORDER	Y/N	When the value of this parameter is "Y", a payment order for merchant reimbursement is exported, with details per transaction, in the form of a batch: <DocBatch><BatchHeader>Payment order</BatchHeader><DocList> List of financial documents for retail operations</DocList>...</DocBatch>. This parameter is only used for merchant contracts with a Main/Sub hierarchy. The default value is "N".
DETAILED_TRANS_CODE*	Y/N	When this parameter is set to "Y", the Doc\TransType\TransCode aggregate will contain the FinCategory, RequestCategory, ServiceClass, and TransTypeCode, elements, as well as (if USE_TRANS_TYPE_IDT="Y") the TransTypeIDT element. Otherwise, the "MsgClass" element will be present in this aggregate. For affiliate interfaces, use the "N" value. The default value is "N".
DFLT_SENDER_FOR_RESPONSE*		Default value of the "Sender" field in the "FileHeader" aggregate. Use this parameter if the "Receiver" field is absent from the incoming file header.
DOC_SOURCE_HINT or ONLDOC_SOURCE_HINT	SELECT operator parameter	Hint added to the SELECT operator. This parameter is only used when working with the Oracle DBMS. Its use must be coordinated with OpenWay specialists.
EXACT_NUMBERING	Y/N	If this parameter's value is "Y", files are numbered within the combination of file type (see the MESSAGE CLASS parameter), sender and receiver. The default value is "N".
EXCLUDE_FEE_CODES	,FEECODE$_1$,FEECODE$_2$,...,FEECODE$_N$, FEECODE$_i$ can be an empty string (exclude fee_code = null). For example: ,A,B,, means exclude fees meeting the condition: fee_code is equal to 'A','B' or has an empty value (null)	Fee codes excluded from an exported file. Used when GET_FEE_FROM_GL=Y/N, FEE_TYPE=FULL/DETAILED/BYTYPE.
EXPORT_ADDENDUMS*	Y/N	When this parameter is set to "Y", document addenda from the ADDENDUM_DOC table will be exported. The default value is "N".

Parameter	Values	Parameter Description
EXPORT_CUST_ADD_INFO	Y/N	When the parameter value is "Y", a document will be exported together with Custom Add Info that is put in the element Doc\Transaction\Extra\. The default value is "N".
EXPORT_CH_DATA	Y/N	When the parameter is set to "Y", blocked amounts will be exported from the CREDIT_HISTORY table to the "Amount" field of the "Doc\Reconciliation\Extra" aggregate. The aggregate type will be set to "Auth". The default value is "N". The parameter is used during export of authorisation documents. In H2H mode (interface with affiliates), the value of the parameter is set to "N".
EXPORT_MESSAGES*	Y/N	If the parameter is set to "Y" and the RETURN_CODE field of a document contains a non-null value, messages generated in table PROCESS_MESS during document processing will be exported to the RespText element of the Status aggregate. Messages are exported in the order of their registration in the database. The default value is "N". It is recommended that value "Y" be used in response mode.
EXPORT_MTR_DATA	Y/N	When this parameter is set to "N", data will not be exported from the M_TRANSACTION table and the tables linked to it. This parameter is used to export documents without macrotransactions to improve system performance. The default parameter value is "Y".
FEE_FILTER	Condition fragment	WHERE condition fragment added to a SELECT operator to filter fees. Used when GET_FEE_FROM_GL=N, FEE_TYPE=DETAILED. ⚠ Cannot be used when MODE=REPORT, MERGE_ADJUSTMENTS=Y. In this case, use the parameters INCLUDE_FEE_CODES and EXCLUDE_FEE_CODES.

Parameter	Values	Parameter Description
FEE_TYPE	DOC, MTR, FULL, BYTYPE	This parameter specifies the data source for filling in the SrcFee and TgtFee fields: "DOC" – DOC table. "MTR" – M_TRANSACTION table. "FULL" – ENTRY table (for GET_FEE_FROM_GL=N) or GL_TRACE table (for GET_FEE_FROM_GL=Y). "BYTYPE" – if the value of the parameter GET_FEE_FROM_GL is "Y", fees will be exported grouped by the values of the ENTRY_ROLE field of the GL_TRACE table; the "BYTYPE" value is not used for GET_FEE_FROM_GL=N. The default value is "MTR".
FETCH_SIZE		The parameter affects the export procedure's performance, determining which portions the JDBC driver extracts from the database. The default value is "300".
FILE_CODING*	Acceptable in XML	File coding. The default value is UTF-8 (UNICODE v2).
FILE_INFO_FILTER*		WHERE condition fragment added, if necessary, to the SELECT operator to select imported files by FILE_INFO during response generation
FILE_NAME_EXT or ONL_FILE_NAME_EXT	Field names connected by the "||" character, constant	Value used to add information to file names (see the outgoing file name format). Use this parameter if record grouping (see parameters GROUP_FILE_BY, ONL_GROUP_FILE_BY) does not consider their sender/recipient.
FILE_RECEIVER	Field names connected by the "||" character, constant	File receiver ID to be used in the file header and file name. The default value is "doc.TARGET_MEMBER_ID".
FILE_SENDER	Field names connected by the "||" character, constant	File sender ID to be used in the file header and file name. The default value is "doc.SEND_MEMBER_ID".

Parameter	Values	Parameter Description
FILTER or ONL_FILTER	Condition fragment	WHERE condition fragment added to the SELECT operator to select documents to be exported. The following aliases may be used for documents not related to online payments: DOC, MTR (M_TRANSACTION), CHI (credit_history); TCN,SCN (target and source acnt_contract); TFI,SFI (target and source f_i). The following aliases may be used for online payments to specify to what tables a field belongs: doc – for table DOC ad – for table ADDENDUM_DOC st – for table ADD_SERVICE_TYPE sr – for table ADD_SERVICE
GET_FEE_FROM_GL	Y/N	When the value of this parameter is "Y", fees (the SrcFee and TgtFee fields) will be exported from the GL_TRACE table. The default value is "N".
GL_FEE_FILTER	Condition fragment	WHERE condition fragment added to a SELECT operator to filter fees. Used when GET_FEE_FROM_GL=Y, FEE_TYPE=DETAILED/BYTYPE/FULL. ⚠ Cannot be used when MODE=REPORT, MERGE_ADJUSTMENTS=Y. In this case, use the parameters INCLUDE_FEE_CODES and EXCLUDE_FEE_CODES.
GROUP_FILE_BY or ONL_GROUP_FILE_BY	Fields names, characters "||",","	Parameter used to group exported records into files. Expression (field or concatenation of fields) that determines the rule for grouping payments in a file. Parameter values must not contain characters not allowed in file names. Concatenation of fields is represented with the "||" character (two vertical lines). Examples of the parameter values used for online payments export: 1) st.CODE 2) st.CODE||d.SOURCE_NUMBER 3) st.CODE||d.TRANS_CURR

Parameter	Values	Parameter Description
GROUP_LIST	Format: <GF>:<Sender>,<Receiver>,<subDir>,<fnExt>;...	List of allowed grouping values for creating empty files. Format fields: <GF> – result of calculating the parameter GROUP_FILE_BY or ONL_GROUP_FILE_BY. <Sender> – value of the "Sender" field (in the file header and name) for the specified <GF>. If not specified, value "Empty" is used by default. <Receiver> – value of the "Receiver" field (in the file header and name) for the specified <GF>. <subDir> – subdirectory for placing the file for the specified <GF> (similar to parameters SUB_DIR and ONL_SUB_DIR). <fnExt> – extention of the name of the file for the specified <GF> (similar to parameters FILE_NAME_EXT and ONL_FILE_NAME_EXT). Note that empty files are created at the end of pipe operation. If the parameter is specified incorrectly, such files may be not created or created partially. In this case, no additional messages are generated, and it is considered that the pipe operation has ended normally.
INCLUDE_FEE_CODES	,$FEECODE_1$,$FEECODE_2$,...,$FEECODE_N$, $FEECODE_i$ can be an empty string (include fee_code = null). For example: ,A,B,, means include fees meeting the condition: fee_code is equal to 'A','B' or has an empty value (null)	Fee codes included in an exported file. Used when GET_FEE_FROM_GL=Y/N, FEE_TYPE=FULL/DETAILED/BYTYPE.

Parameter	Values	Parameter Description
INCREMENTAL_EXPORT	Y/N	When this parameter is set to "Y", only documents (within a specified select condition) not exported by a specified pipe will be exported. This value is used when documents are selected by value other than Outward Status. The default value is "N". Note that the value INCREMENTAL_EXPORT=Y is incompatible with the value SKIP_REVERSES=Y and/or MERGE_ADJUSTMENTS=Y. If parameter values are incompatible, an error message will be displayed when the pipe is started.
INSIDE_TIMEZONE	Y/N	When the parameter is set to "Y", documents are only exported for financial institutions from the same time zone as the current financial institution. The parameter should be specified when MODE is set to "REPORT". The default parameter value is "N".
MERGE_ADJUSTMENTS	Y/N	Determines how adjustment documents are exported: "Y" – two transactions are exported: for the original amount and for the adjustment amount "N" – three transactions are exported: for the original amount, for the original amount reversal, and for a new amount (see Table 2 in section "Export of Transaction Data"). The parameter should be specified when MODE is set to "REPORT". The default parameter value is "N".
MESSAGE_CLASS	Capital Latin letters	Type of documents in the file (see Table 1). This parameter is used to check uniqueness during import. Default parameters values: DOCUMENT – for exported documents files RESPONSE – for response files ⚠ This parameter may only be used or changed with the approval of the system vendor.
MESSAGE_FILTER*	Condition fragment	WHERE condition fragment added to the SELECT operator to select messages exported for a document from the PROCESS_MESS table when the EXPORT_MESSAGES parameter is set to "Y". The default value is "MESSAGE_TYPE in ('E','W')".

Parameter	Values	Parameter Description
MODE		When the parameter is set to the "H2H" value, the pipe operates in Host-to-Host mode (interface with affiliates). The mode is used to ensure exchange of financial documents between banks directly without an intermediate party. When the "REPORT" is set, the pipe operates in card and merchant account data export mode.
NUM_DOCS_PER_FILE	Numeric	Maximum number of documents in a file
ON_CLOSED_DAY	Y/N	It is recommended that this parameter be used in time zone mode. When the parameter is set to "Y", documents are only exported if they are processed during a closed banking day. The parameter should be specified when MODE is set to "REPORT". The default parameter value is "N".
ONL_SOURCE_MSG_CODE		Sender message code. The encoding is specified in the "Full → Configuration Setup → Transaction Types → Transactions - All → [Msg Types]" dictionary. This parameter must be used if CREATE_FIN_DOC=Y. This parameter is used to export online payments.
ONL_SOURCE_NUMBER		Source contract number for the final financial document. This parameter must be used if CREATE_FIN_DOC=Y. This parameter is used to export online payments.
ONL_TARGET_NUMBER		Target contract number for the final financial document. This parameter must be used if CREATE_FIN_DOC=Y. This parameter is used to export online payments.
output_directory*		Directory for outgoing files. @INTERCHANGE_PATH@\WAY4_OUT – for exported documents files @INTERCHANGE_PATH@\WAY4_RESP – for response files It is recommended that the specified values be not changed.
PAN_FOR_TOKEN_ONUS	Y/N	If this parameter's value is "Y", when exporting information about On-Us transactions, the card number (PAN) will be exported in the ContractNumber element, not the token number with PayPass (MasterCard) or PayWave (Visa) technology. The parameter's default value is "N".

Parameter	Values	Parameter Description
PAN_MASK	<template>	Card number mask template in format <N1><S><N2>, where N1 is the number of digits shown at the beginning of a number, N2 is the number of digits shown at the end of a number, and S is the character replacing the remaining digits. An example: template "1*4" will display card numbers in the following form: 9***********9999, where 9 is the corresponding card number digit. This parameter is used to export online payments.
PER_DAY_NUMBERING	Y/N	When this parameter is set to "Y", files being exported will be numbered by the counter with consideration of the current date; when this parameter is set to "N", continuous numbering will be used. The parameter's default value is "Y".
RAW_ADD_INFO*	Y/N	When this parameter is set to "Y", contents of the ADD_INFO document field will not be formatted during export. Otherwise, it will be exported as an xml parameter array (tag-value). It is recommended that the default parameter ("N") be used.
RESPONSE_MODE*	Y/N	When the parameter is set to "Y", the pipe operates in response export mode. The default parameter value is "N".
SERVICE_TYPES	'<code>','<code>'…	List of codes of exported payments. Codes from the "Additional Online Services" dictionary (Full → Configuration Setup → Merchant Device Setup → Additional Online Services) are used. This parameter is used to export online payments.
SKIP_DOCUMENTS	<Y/N><Y/N><Y/N>	Determines types of exported documents. First character: when "Y" is specified, documents for which entries have not been generated will not be exported. Second character: when "Y" is specified, transactions processed through dispute accounts will not be exported. Third character: when "Y" is specified, adjustment documents for which no original document has been found will not be exported. The parameter should be specified when MODE is set to "REPORT". The default parameter value is "NNY".

Parameter	Values	Parameter Description
SKIP_REVERSES	Y/N	When this parameter is set to "Y", reversed documents will be filtered during export: an original document and a reversal document will not be exported if they are registered on the same date. When MODE=REPORT, the default value of the parameter is "Y"; when MODE=H2H, the default value is "N".
SUB_DIR or ONL_SUB_DIR	Field names connected by the "||" character, constant	If this parameter is used, files will be exported to the specified subdirectory in the directory specified by the "output_directory" parameter.
TAGS_IN_SOURCE_DTLS	Y/N	When the parameter value is "Y", data from the document tags "TRANS_LOCATION", "MC_ASSIGNED_ID", "MERCH_URL" and "POSTAL_CODE" are exported, respectively, to the Location, AssignedID, WEBSite and PostalCode fields of the Doc\SourceDtls\ aggregate. When the value is "N", these tags are exported to AddInfo fields of the Doc\Transaction\Extra aggregate (see Table 5 in section "File Generation Features"). The default value is "Y".
TO_TRANSIT	Y/N	When the parameter value is "Y", data contained in the TARGET_MEMBER_ID field of the DOC table are exported to the Destination\TransitId field; otherwise, to the Destination\MemberId field. The default value is "N".
USE_EXT_FILE_COUNTER	Y/N	When this parameter is set to "Y", the mechanism for numbering files being exported changes to rule out the possibility of duplicating file numbers when the pipe is run in parallel. The parameter's default value is "N". This value is not recommended when running the pipe in parallel. The first time this parameter is set to "Y", file numbering starts from the beginning.
USE_MERCHANT_NAME	Y/N	When the parameter value is "Y", data in the TRANS_DETAILS field of the DOC table are exported to the Doc\SourceDtls\MerchantName field; when the value is "N", data are exported to the Doc\Description field. The default value is "Y".

Parameter	Values	Parameter Description
USE_TRANS_TYPE_IDT	Y/N	When this parameter is set to "Y" and DETAILED_TRANS_CODE="Y", the TransTypeIDT element will be exported in the Doc\TransType\TransCode aggregate. The parameter's default value is "N".

ⓘ In the RESPONSE_MODE=Y mode, only pipe parameters marked with the "∗" character are used.

⚠ When the PER_DAY_NUMBERING parameter value is "Y", the counter can only be reset("Full → Core Banking Interface → CBS. File Management → UFX Reset Outward File Counter" menu item) before the pipe is run for the first time in a calendar day; otherwise file numbering will be started from the beginning which may cause numeration conflicts. When the PER_DAY_NUMBERING parameter value is "N", counter reset is forbidden.

Parameters of Pipe "IC Documents Import"

Parameter	Values	Parameter Description
APPROVE_BATCHES	Y/N	Determines whether imported batches must be approved. The default parameter value is "Y" (batches are approved).
COMMIT_INTERVAL	Numeric	Number of applications that will be processed before executing the "commit" SQL operator. The default value is "100".
CONV_FEE_COLLECTION_C ODE	Y/N	When the value of the parameter is set to "Y", for "Fee Collection" or "Funds Disbursement" documents, the fourth character of the message code will be replaced with "I" if its value is "-". The default value is – "N". It is recommended to specify the "Y" value in Host-to-Host mode.
CREATE_ORIGINAL_DOC	Y/N	When this parameter is set to "Y", information on imported documents is also written to the ADDENDUM_DOC table. FileHeader information is always written to this table. The default parameter value is "N".
error_dir		Directory for incoming files in which errors were found during import. It is recommended that the default value @INTERCHANGE_PATH@\WAY4_ERR not be changed.

Parameter	Values	Parameter Description
FF_CODES_MAP	<scheme>/N	Scheme for converting message codes. This parameter is only used if the value of the MODE parameter is "H2H" and only for possible fast funds messages (see the description of the FF_SRC_CH_LIST parameter). The parameter's value contains a scheme with variants for converting message codes in the following format: <OldMessageCode>:<NewMessageCode>,<RequestCategory>; Conversion variants separated by semicolons are written in a string. If the code of a received message is equal to <OldMessageCode> for one of the conversion variants in the scheme, it will be replaced with the same variant's <NewMessageCode>, and <RequestCategory> is specified as the value of the "REQUEST_CAT" tag in the document's ADD_INFO field. When the value of this parameter is "N", conversion is not performed. The default value is "DpP--2X-:NpP--2S-,P;DpR--2X-:NpP--2S-,R;". ⚠ It is recommended to use this parameter only for converting financial messages about fast funds into notifications.
FF_SRC_CH_LIST	<CH1,CH2,…, CHn> ALL NONE	List of channels from which fast funds messages may be received. This parameter is only used if the value of the MODE parameter is "H2H". When messages are received from channels in the list, these messages must be checked and converted according to the value of the FF_CODES_MAP parameter. Channel codes (see the section "Message Channels" Dictionary" of the document WAY4 Dictionaries") separated by commas can be specified as the parameter's value. When the parameter's value is "ALL", messages from all channels will be checked and converted according to the value of the FF_CODES_MAP parameter. When the parameter's value is "NONE", conversion is not performed. The default value is "W,V".
FILE_CODING	Acceptable in XML	File coding. The default value is UTF-8 (UNICODE v2).
FILE_MASK		Mask for selecting files. The default value is "*.xml".

Parameter	Values	Parameter Description
FROM_TRANSIT	Y/N	If "Y" is set (default value), doc.SOURCE_MEMBER_ID is filled in from the Originator\TransitId field; otherwise from the Originator\MemberId field.
IC_CHANNEL	Character	Source Channel code specified in an imported document. The default value is "m".
IMPORT_ADDENDUMS	Y, N, C	This parameter specifies whether additional document parameters (addendums) can be imported into the ADDENDUM_DOC table: "N" – addendums are not imported. "Y" – addendums will be imported and the record in the ADDENDUM_DOC table will have the "Waiting" status. "C" – addendums will be imported and the record in the ADDENDUM_DOC table will have the "Closed" status. The default value is "N".
MODE		When the parameter is set to the "H2H" value, the pipe operates in Host-to-Host mode (interface with affiliates). The mode is used to ensure exchange of financial documents between banks directly without an intermediate party.
PROCESSING_SUSPENDED	Y/N	When this parameter is set to "Y", documents corresponding to imported files and batches are assigned the "Suspended" status after import. The default parameter value is "N".
processed_dir		Directory for incoming imported files. It is recommended that the default value @INTERCHANGE_PATH@\WAY4_ARCH not be changed.
SET_TGT_FEE	Y/N	When the parameter value is "Y", data from the Amount field of the Doc\Transaction\Extra aggregate will be imported to the document's *Target Fee Amount* field if "TgtFee" is specified in this aggregate's Type field. The default value is "N".
source_dir		Directory for incoming files. It is recommended that the default value @INTERCHANGE_PATH@\WAY4_INC not be changed.
TO_TRANSIT	Y/N	If "Y" is set (default value), doc.REC_MEMBER_ID is filled in from the Destination\MemberId or Destination\TransitId field; otherwise, it is not filled in or filled in from the Originator\MemberId field.

Chapter 3. File Format

Files are generated in the XML format. All aggregates and simple fields are XML elements. The main file element should be named "DocFile".

The incoming file format is described using the XSD schema graphic representation.

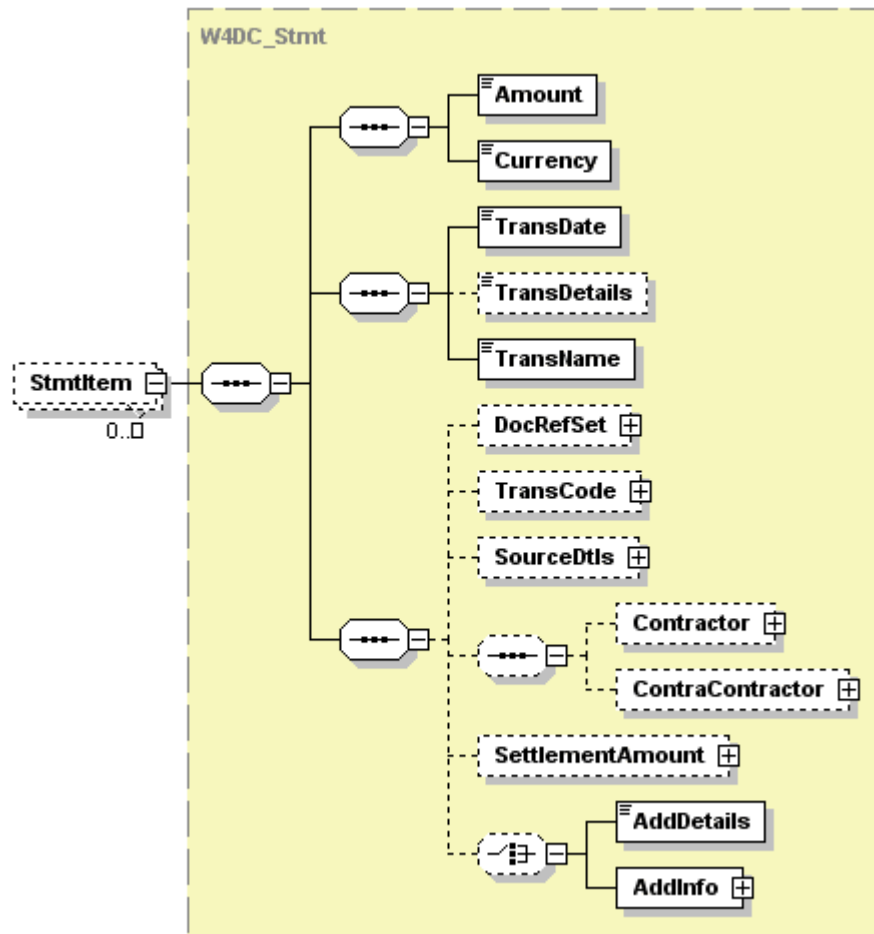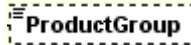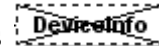An example of this representation is shown in Fig. 1.

Fig. 1. Xsd schema graphic representation

The following conventions are used in the graphic representation:

- Mandatory structure elements are shown as solid line boxes

- Optional elements are shown as dashed line boxes

- Elements reserved for future use are shown as crossed boxes

The symbol means that all elements it connects must be included into the higher-ranking element in the same order they are shown in the schema.

The symbol means that the higher-ranking element contains one of the elements connected with the use of this symbol.

Every element in the schema contains a hyperlink to its description.

An element of the "Any" type contains an XML structure whose format is undefined.

Symbols X...Y next to an element mean that it may contain X to Y subelements, where □ means that the number of subelements is unlimited.

Recommended structure of an incoming file name:

#	Field	Format	Comments
1.	File Name Prefix		"IIC_Documents"
2.	Delimiter		"_" (underscore)
3.	File Sender		File sender code
4.	File Receiver		File receiver code
5.	File Creation Date	yyyyMMdd	File creation date
6.	Delimiter		"_" (underscore)
7.	File Number		File sequential number. During import, the following file header parameters are used to check files for uniqueness: CreationDate, FileSeqNumber, FileLabel, Sender, Receiver.
8.	File Name Extension		Additional information
9.	Delimiter		Delimiter character "."
10.	File Extension		"xml"

Structure of an outgoing file name:

#	Field	Format	Usage	Comments
1.	File Name Prefix		M	"OIC_Documents"
2.	Delimiter		M	"_" (underscore)
3.	File Sender		M	Determined by the FILE_SENDER export pipe parameter (see "Parameters of Pipe "IC Documents Export")
4.	File Receiver		M	Determined by the FILE_RECEIVER export pipe parameter
5.	File Creation Date	yyyyMMdd	M	File creation date
6.	Delimiter		M	"_" (underscore)
7.	File Number	Numeric	M	File sequential number within the day
8.	File Name Extension		O	Determined by the FILE_NAME_EXT export pipe parameter
9.	Delimiter		M	Delimiter character "."
10.	File Extension		M	"xml"

Format of a name of a deferred response outgoing file: R_<name of incoming file>.

File schema see in the xml_doc_schema.chm file.