Connectivity Handbook

Part 1 – Communication

For clients of Clearstream Banking Frankfurt

Connectivity Handbook Part 1 – Communication

Clearstream Banking AG, Frankfurt

In the absence of any indication to the contrary, time in this document always means Central European Time (CET).

Contents

1 Introduction

This Connectivity Handbook is composed of three parts, each of which describes one aspect of communication channels between CBF and clients. These handbooks are intended to inform clients of Clearstream Banking Frankfurt ("CBF") about communication and formats within the settlement systems and Asset services of CBF.

The three parts of the Connectivity Handbook are:

- Part 1: Communication processes
- Part 2: ISO 15022 formats (with the exception of custody)
- Part 3: ISO 15022 formats: custody

The Handbook provides an overview of the communication processes and messages supported by CBF. They are the messages that clients use for sending and processing instructions and the messages that CBF uses for reporting to clients. This Handbook concentrates on communication according to the ISO 15022 standard. The information contained in this Handbook applies in conjunction with other CBF publications (the CASCADE Online Handbook, the Xemac® User Manual and the Link Guides).

For information on securities processed under OneClearstream, please refer to the OneClearstream Client Handbook and the related Xact Connectivity Guides.

The applicable version is always the latest version available on our website www.clearstream.com.

CBF reserves the right to revise and update this Handbook at any time in order to document the availability of new products and other improvements to the existing communication services. Clients who have specific questions about the information in this Handbook should contact their Client Services Officer.

2   Communication with CBF

The following four forms of communication are generally available to clients of CBF:

- online via CASCADE-Host;
- through File Transfer (FT) for remote transfer of standardised data formats via the Link Manager;
- via Swift messages through the Swift-FIN network;
- IBM WebSphere MQ (MQ) for the bi-directional transmission of ISO 15022 messages.

Clients using Swift must use the Character Set X in their communication with CBF.

Clients using the automated connectivity channels have more characters at their disposition. The table below shows these additional characters and their related mapping. CBF converts these values towards T2S / the Swift network, especially for CBF outbound.

MQ / FT	Swift network / CBF outbound to T2S / OneClearstream Reporting
à	a
á	a
Ä	a
&	.
é	e
è	e
Ü	u
*	.
;	.
ö	o
%	.
_	.
#	.
'	'
=	.
"	.
@	.
ß	s
ä	a
ü	u
Ö	o

To assure that special characters not included in the Swift character set are kept independent of the used interface or platform, CBF clients should use the escape sequence suggested by CBF.

For example, as the "@" sign is not part of the character set in the Swift FIN network, Swift recommends using the hexadecimal EBCDIC code, preceded by two question marks (??) as an escape sequence ("??7C").

That will work for every free text information in CASCADE instruction types.

Swift and T2S clients can use the escape sequence to provide special characters in their instructions.

The usage of the escape sequence is also suggested to be used in case CBF clients want to avoid the default character transformation also applied by LMP market corporate action transformation process.

CBF can also send CASCADE reports to a permanently allocated printer of the client via the CA spool system. These reports are provided in the form of lists and can also be retrieved via the ClearstreamXact Reporting Service where the CBF File Service download functionality is offered. Clients can also make use of a wide range of web upload functions for different services. In relation to tax services, depositories for various markets can forward beneficiary data for tax refund claims to CBF over the internet. Issuers of warrants and certificates can electronically transmit the issuing terms and conditions as well as term sheets to CBF.

A combination of communication channels is available to CBF clients. For example, clients can send their instructions via Swift, receive standardised reports via File Transfer and make use of the online access provided by CASCADE-Host.

Communication via Swift, MQ or through File Transfer goes both ways:

- Inbound: Client to CBF;
- Outbound: CBF to client.

#	App	Product (Daten-Versand-Produkt)	Shortcut	MT	Swift	MQ	File Transfer
1	BST	Depotbuchbestände / Periodisch Statement of Holdings / periodically	BSTPER	MT535	✓	✓	✓
2	BST	Depotbuchbestände / Einmalig Statement of Holdings / once	BSTEIN	MT535	✓	✓	✓
3	CAS	Business Validation Feedback	BVF	MT548	✓	✓	✓
4	CAS	Settlement Allegment	SETALL	MT578	✓	✓	✓
5	CAS	Statement of Settlement Allegements	STMTSA	MT586	✓	✓	✓
6	CAS	Status Reporting	STAREP	MT548	✓	✓	✓
9	CAS	Settlement Confirmation	SETCON	MT544, MT545, MT546, MT547	✓	✓	✓
12	CAS	Query-Info Auftraege / 05:00 Uhr	QY0500	MT537	✓	✓	✓
13	CAS	Query-Info Auftraege / 06:00 Uhr	QY0600	MT537	✓	✓	✓
14	CAS	Query-Info Auftraege / 07:30 Uhr	QY0730	MT537	✓	✓	✓
15	CAS	Query Info Auftraege / 08:00 Uhr	QY0800	MT537	✓	✓	✓
17	CAS	Query-Info Auftraege / 09:00 Uhr	QY0900	MT537	✓	✓	✓
18	CAS	Query-Info Auftraege / 10:00 Uhr	QY1030	MT537	✓	✓	✓
19	CAS	Query-Info Auftraege / 11:15 Uhr	QY1115	MT537	✓	✓	✓
20	CAS	Query-Info Auftraege / 12:00 Uhr	QY1200	MT537	✓	✓	✓
21	CAS	Query-Info Auftraege / 12:45 Uhr	QY1245	MT537	✓	✓	✓
22	CAS	Query-Info Auftraege / 13:30 Uhr	QY1330	MT537	✓	✓	✓
23	CAS	Query-Info Auftraege / 15:30 Uhr	QY1530	MT537	✓	✓	✓
24	CAS	Query-Info Auftraege / 16:00 Uhr	QY1600	MT537	✓	✓	✓
25	CAS	Query-Info Auftraege / 17:00 Uhr	QY1700	MT537	✓	✓	✓
26	CAS	Query-Info Auftraege / 18:00 Uhr	QY1800	MT537	✓	✓	✓
27	CAS	Query-Info Auftraege / 21:30 Uhr	QY2130	MT537	✓	✓	✓
28	CAS	Query-Info Auftraege / 02:00 Uhr	QY0200	MT537	✓	✓	✓
30	CRS	Business Validation Feedback	BVF	MT510	✓	✓	✓
31	CRS	Feedback Information Registrar	FIREG	MT501	✓	✓	✓
32	CSH	EUR Cash Clearing Report	ECC	MT942	✓	✓	✓
33	CSS	Clearing&Settlement Statement	CSSTMT	MT536	✓	✓	✓
34	KAD	KADI-Informationsdienste	KADINF	MT564, MT566, MT568	✓	✓	✓
35	KAD	KADI-Informationsdienste	KADINF	MT565	✓	✓	
36	KAD	KADI-Zahlstellenservice	KADMEZ	MT564 MT566 MT568	✓	✓	✓
40	LMS	Business Validation Feedback	BVF	MT548	✓	✓	
41	LMS	Processing Information	PROCIN	MT548	✓	✓	✓
42	TAX	Business Validation Feedback	BVF	XML	---	---	✓
43	TAX	Taxbox Forwarding	TAXFOR	XML	---	---	✓
44	XEM	Detailed Allocated Collateral	DEALCO	MT569	✓	✓	✓
45	XEM	Summary Allocated Collateral	SUALCO	MT569	✓	✓	✓
46	XEM	Collateral Management	COLLMA	MT558	✓	✓	
46	XEM	Exposure Management	EXPOMA	MT558	✓	✓	

2.1 Online

CBF clients have online access to the CASCADE settlement platform from 05:00 to 03:00 the next day. Not all functionalities are available after 19:00.

For online access to CASCADE, CBF clients select at least two security officers from their staff to receive administrator access rights. The security officers can then grant the relevant authorisation rights to the users at your institution.

CBF clients have also the option to online access to the CASCADE platform via CASCADE-Host.

Online access via CASCADE-Host is generally possible only in German. Exceptions are the online functionalities for Asset Services (income administration, corporate action events). These are also available in English.

There are two important technical preconditions for access via CASCADE-Host:

- CBF clients must be linked up to the CASCADE platform via a dedicated line (SNA);
- Clients need IBM PC 3270 emulation.

2.2 Swift

CBF offers its clients communication via the Swift network on the basis of the ISO 15022 standard.

2.2.1 Preconditions

If a client decides to communicate with CBF via Swift, the following steps need to be taken and the following preconditions met:

- Register with Swift as a subscriber to the Swift-FIN network. Swift gives each of its subscribers a clear, unambiguous identifier, known as the BIC (Bank Identifier Code);
- Create the necessary infrastructure for accessing the Swift network;
- When applying to CBF for the necessary authorisation to exchange Swift messages with CBF, please refer to the following section on "Authorisation";
- Apply for the Swift messages that the client requires for CBF reporting by using the forms provided on the Clearstream website;
- Set up RMA (Relationship Management Application) with CBF.

2.3 File Transfer (ISO 15022)

CBF also offers an exchange of messages via File Transfer on the basis of the ISO 15022 standard. Through File Transfer the client can send instructions for the settlement of its transactions to CBF and receive status information and reports from CBF about its stock exchange trades and OTC transactions. Detailed specifications for the file structure are described in section 2.6.

2.3.1 Preconditions

The following technical preconditions need to be satisfied for communication via File Transfer:

- A bi-directional certificationneeds to be set up between CBF and the client's in-house system;
- Software needs to be set up and configured on the client's premises in order to transmit and receive data in the correct file format;
- Technical jobs need to be created at Deutsche BörseGroup.

2.4 IBM WebSphere MQ

IBM WebSphere MQ (MQ) can be used alongside the File Transfer and Swift interfaces to communicate in ISO 15022 format with CBF.

To ensure a sufficiently secured connection, the MQ communication channel needs a mutual certification from CBF's and client's side. Furthermore, regulations require a separate certification for CBF's production and the client simulation environment (IMS23).

A detailed description of the MQ parameters and the queue nomenclature are available in the document.

2.5 Requirements for Swift / MQ / FT

2.5.1 Authorisation

For communication via Swift / MQ / FT, CBF creates an authorisation table for each of its clients. This authorisation table shows the authorisation levels for the exchange of messages with CBF as a combination of the sender / recipient of an ISO 15022 message, the client's CASCADE account and the CBF application (CASCADE, CASCADE-RS). CBF assigns a technical account to each communication partner (the sender / recipient of a message).

For clients who communicate directly with CBF to settle their transactions, the technical account is usually identical to their CASCADE account. The holder of a technical account, however, does not necessarily have to be a holder of a CASCADE account or a client of CBF as described below.

The technical sender of a message will be notified by CBF via MT548, if CBF's authorisation check fails.

Technical Sender (sending information / instructions to CBF - CBF Inbound)

For settlement ("CASCADE") messages, a Technical Sender BIC must be established that also serves as T2S Party BIC (BIC11) code.

The BIC11 has a 1:1 relationship to a CBF Account Master. This BIC11 can belong to the client or a third party, if the necessary Power of Attorney is given.

Example:

CBF client account 1234 and technical sender account 5678

→ The instruction for the account 1234 could be sent by the account 5678.

Technical Receiver (CBF sending information - CBF Outbound)

A technical receiver account must be established for CBF reporting. This related BIC11 can belong to the client or a third party, if the necessary Power of Attorney is given. Any CBF Account Master can be set up as a technical receiver account.

Example:

CBF client account 1234 and technical receiver account 5678

$\rightarrow$ Reports for the business on account 1234 are sent to account 5678.

2.5.2 Functionality

The client sends their instructions to CBF as a message or via file transfer. CBF passes an incoming instruction from a client through three validation cycles before processing starts:

- The technical validation cycle checks the accuracy, completeness and consistency of the message structure as well as compliance with the ISO 15022 standard. CBF notifies the client about the result of this validation cycle in an obligatory "Technical Validation Feedback" (TVF) via MQ and File Transfer via an MT599 message.

- Compliance check:

  Deutsche Börse Group is legally required to monitor an official sanction list. A real-time check has been introduced. Clients are informed about the status of their instructions via MT548 messages.

- The business validation cycle checks the consistency of the message contents with regard to subsequent processing by the target system specified in the instruction file (CASCADE, CASCADE-RS). The client can request the result of the "Business Validation Feedback" (BVF) by a separate query. The usual CASCADE error codes appear if there are any faults. An MT548 message is used to transmit the BVF.

Only client instructions that comply with all CBF validation rules are admitted to instruction processing in CASCADE. From forwarding the instruction to T2S up to settlement on T2S, CBF provides information about its status and issues final reports in relation to instructions. The reporting is provided in real-time or batch mode. The client has a number of different options here and can freely choose from a large selection of data transfer times that are available during a business day.
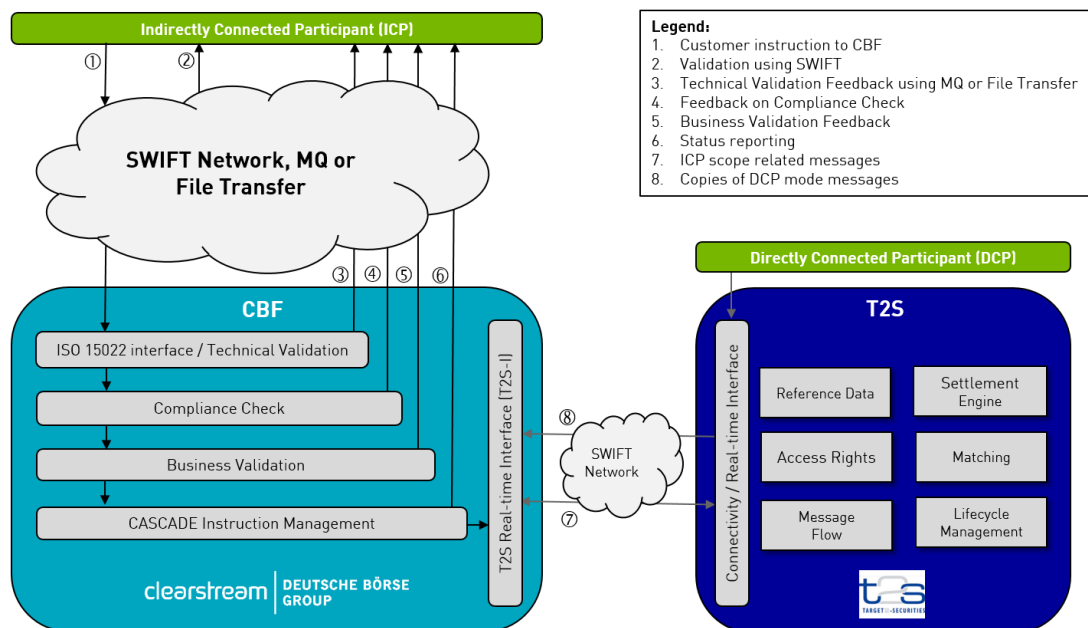

Figure 1: Communication with CBF and T2S via the Swift network

2.5.3   Referencing

Whether or not RELA is included in a client message, the CASCADE instruction is created with the value of the first available reference in the following list stored in the CASCADE field "Auftragsreferenz":

- PREA (MT540-MT543 NEWM)
- PREV
- SEME

If RELA is available and filled with the CASCADE "Auftragsnummer", CBF validates, if there is already an instruction that includes this reference in CASCADE. If no related instruction can be found, a new instruction will be created with this CASCADE "Auftragsnummer". Otherwise, the message will be processed as a modification instruction for the related instruction.

If no CASCADE "Auftragsnummer" ("KP-Nummer") is filled in RELA, the first available reference of the following list will be used to verify if there is already an existing CASCADE instruction with this CASCADE "Auftragsreferenz":

- PREA (MT540-MT543 NEWM)
- PREV
- SEME

If no proper CASCADE instruction has been found, a new instruction with this CASCADE "Auftragsreferenz" will be created. Otherwise, the message will be processed as a modification instruction for the related instruction. If only SEME is present in a message and a valid pending instruction with the value of SEME exists, the message will be rejected by CBF. For more information refer to section 2.5.4.

Non-cleared Stock exchange transactions are processed in an OTC-like mode. For these instructions a CASCADE "Auftragsnummer will be created in the number range 5,000,000 – 7,999,999. As these instructions will be created with the flag "already matched" only one settlement instruction is transmitted to T2S. Out of the initial instruction created by the CBF Stock Exchange Transaction Interface (SETI), T2S generates a deliver and receipt leg. In CASCADE, the delivery and receipt leg will have a separate KP-reference. In addition, the CASCADE delivery (AA01) and receive (AA02) instruction will show the SEME generated by SETI as further reference. There is a concept that defines the generation of the SEME. The structure of the SEME is as follows:

- 1: Clearstream Qualifier "S";
- 2: Leg Type A stands for already matched and is used for delivery or receive instructions;
- 3-8: WKN (alphanumeric);
- 9: Stock exchange code;
- 10-16: Function of Date and Trade Number
  This has a special calculation method:
  - Step 1: Transform input date in YYMMDD format into a number DATE
    - Formula: $DATE(YYMMDD) = (DD-1) + 31 * (MM-1) + 372 * (YY \bmod 20)$
  - Step 2: Generate a second number RESULT out of DATE and TRADE NUMBER
    - Formula: $RESULT = 10.000.000 * DATE + TRADE\ NUMBER$
  - Step 3: Represent RESULT in base 36
    - Represent RESULT in base 36 via 7 coefficients a_0 - a_6 so that:
    - $RESULT = a_0 + a_1 *36 + a_2 *36^2 + a_3 *36^3 + ... + a_6 *36^6$
    - Where each coefficient can take values between 0 and 35: $a_n = 0, ..., 35$
  - Step 4: Fill digits 10 – 16 according to the coefficients from the base 36 representation of RESULT:
    - Define mapping array to derive the character from coefficient a_n
    - Character Set to be used:
      - 0-9 A-Z
      - Where 0-9 are represented as 0-9
      - Where 10, 11, 12, … is represented as A, B, C, …
      - Where 35 is represented as Z.

- Then digits 10 – 16 are mapped as follows (note that coefficient are mapped in backward order, i.e. coefficient a_0 is mapped in the last digit 16, then coefficient a_1 is mapped into digit 15, etc., until coefficient a_6 is mapped into digit 10:
  - Mapping logic: $a_n \Rightarrow$ Value(a_n)
  - Where Value = {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, …, Y, Z}
- Fill digits from coefficients a_n in backward order
  - $a_0 \rightarrow$ Value (a_0) mapped to digit 16
  - $a_1 \rightarrow$ Value (a_1) mapped to digit 15
  - $a_2 \rightarrow$ Value (a_3) mapped to digit 14
  - $a_3 \rightarrow$ Value (a_4) mapped to digit 13
  - $a_4 \rightarrow$ Value (a_5) mapped to digit 12
  - $a_5 \rightarrow$ Value (a_6) mapped to digit 11
  - $a_6 \rightarrow$ Value (a_7) mapped to digit 10

- o Calculation example:
  - Trade Number = 1234567
  - Input Date = 11.04.2032, that is, 320411 in YYMMDD format.
    $\rightarrow$ DATE(320411) = 10 + 3*31 + 12*372 = 10 + 93 + 4464 = 4567
    $\rightarrow$ RESULT = 45671234567
    $= 23 + 4 *36 + 2 *36^2 + 17 *36^3 + 11 *36^4 + 35 *36^5 + 20 *36^6$
    i.e. (a0, a1, a2, a3, a4, a5, a6) = (23, 4, 2, 17, 11, 35, 20)
  - With the array Value = {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, …, Y, Z}
    we have
    - Digit 16 = Value(a0 = 23) = N
    - Digit 15 = Value(a1 = 4) = 4
    - Digit 14 = Value(a2 = 2) = 2
    - Digit 13 = Value(a3 = 17) = H
    - Digit 12 = Value(a4 = 11) = B
    - Digit 11 = Value(a5 = 35) = Z
    - Digit 10 = Value(a6 = 20) = K

- ➢ SEME = **SA581005EKZBH24N**

Figure 2: SEME-SETI concept of SEME Reference

The relevant references are provided through the ISO 15022 reporting, as stated below for CBF instruction types AA01 / AA02 (OTC and non-CCP SE instructions):

Field	MT544-MT547	MT548	MT536	MT537
:20C::COMM	Yes	Yes	Yes	Yes
:20C::CORP	Not applicable	If applicable	If applicable	If applicable
:20C::TRRF	Yes	Yes	Yes	Yes
:20C::MITI	Yes	Yes	Yes	Yes
:20C::PCTI	Yes	Yes	Yes	Yes
:20C::RELA	Yes	Yes	Yes	Yes

The field **:20C::COMM "Common Reference"** is an optional matching criteria. For SETI instructions, it contains the reference of the stock exchange trade number (Trade ID;"Börsengeschäftsnummer") as provided by the stock exchange or the service provider. Based on market members request, the string is defined as following:

- LP (identifier for stock exchange trades)
- Input date (format YYMMDD)
- Trade ID (seven-digit trade number).

The field **:20C::CORP "Corporate Action Event ID"** results from OneCorporateAction processing and is populated on the below logic.

In the case of KADI processed events, the field Corporate Action Event ID (:20C::CORP) contains:

- For events based on the Wertpapier-Service System (WSS) event segment the 3-digit KADI event type code plus the BID
- For interest payments the number is composed of:
  - o   3-digit KADI event type code
  - o   6-digit Wertpapierkennnummer (WKN)
  - o   1-digit serial number
  - o   6-digit due date (YYMMDD) for interest payments.

For LMP securities the Custody corporate action reference (system-generated incrementing serial number) will be displayed.

The field **:20C::TRRF "Deal Reference"** presents the CASCADE instruction reference (KP-reference).

The field **:20C::MITI "Market Infrastructure Transaction Identification"** presents the T2S MITI (Market Infrastructure Transaction Identification).

The field **:20C::PCTI "Processor Transaction Identification "** is a unique identifier, underlying T2S Actor Reference presented is based on the SETI SEME Concept.

The field **:20C::RELA "Related Message Reference"** contains the SEME of the instructed leg following the Swift standard. For SETI instructions RELA contains the value of the field :20C::PCTI "Processor Transaction Identification" for the delivery leg. As SETI instructions will be presented with the flag "already matched", the receive leg contains the value "NONREF".

2.5.4 Validation for release requests

Based on the definition by Swift, all messages transmitted to CBF must have a reference that is assigned by the client to allow the identification of the instruction. Clients using CBF's automated connectivity channels (Swift, MQ or File Transfer) provide their reference via the field "20C: Reference: Sender's Message Reference".

In line with the standards and the services provided by CBF, a hold / release mechanism is available. This mechanism enables clients to temporarily hold an instruction from settlement or to release it when desired. The instruction can be put on hold using MT54x "PREA" messages and released using MT54x "NEWM" or via a modification request using MT530. For the creation of the release request validation, the MT54x "NEWM" must contain the reference of the previously provided message ("PREV", "RELA" or "PREA"). Therefore, instructions (MT54x) transmitted without a "PREV", "RELA" or "PREA" reference but with a reference containing an already used, known or pending "SEME" are rejected. The rejection message "Settlement Status and Processing Advice // Business Validation Feedback" (MT548) contains the error code "KV1308F Instruction already stored".

2.5.5 Communication flow for stock exchange trading

The following diagrams show the process chain of stock exchange instructions and the client's options for communicating with CBF via Swift for the settlement of stock exchange trades.
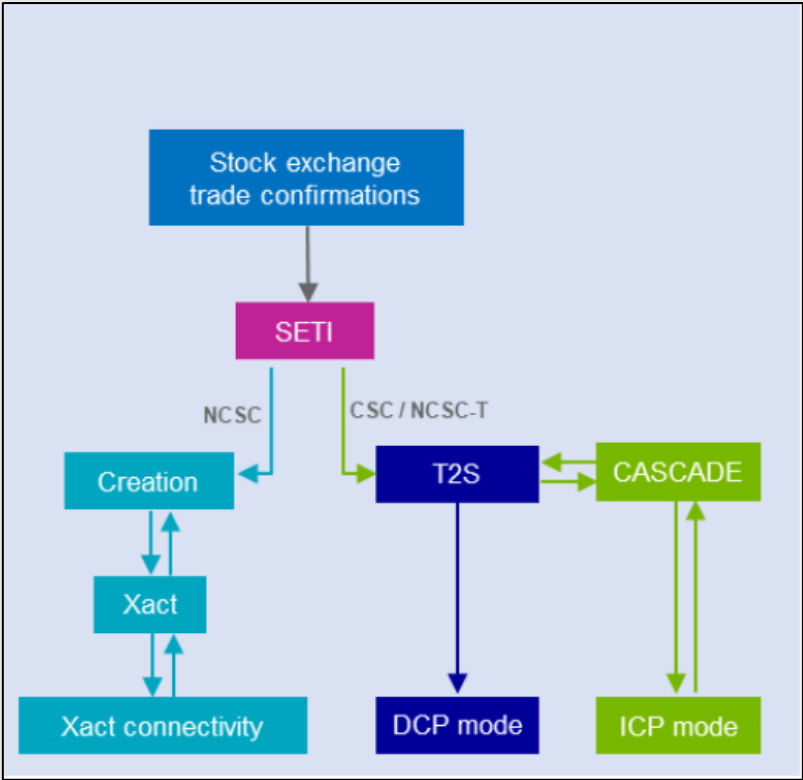
Figure 3: Process chain stock exchange instruction
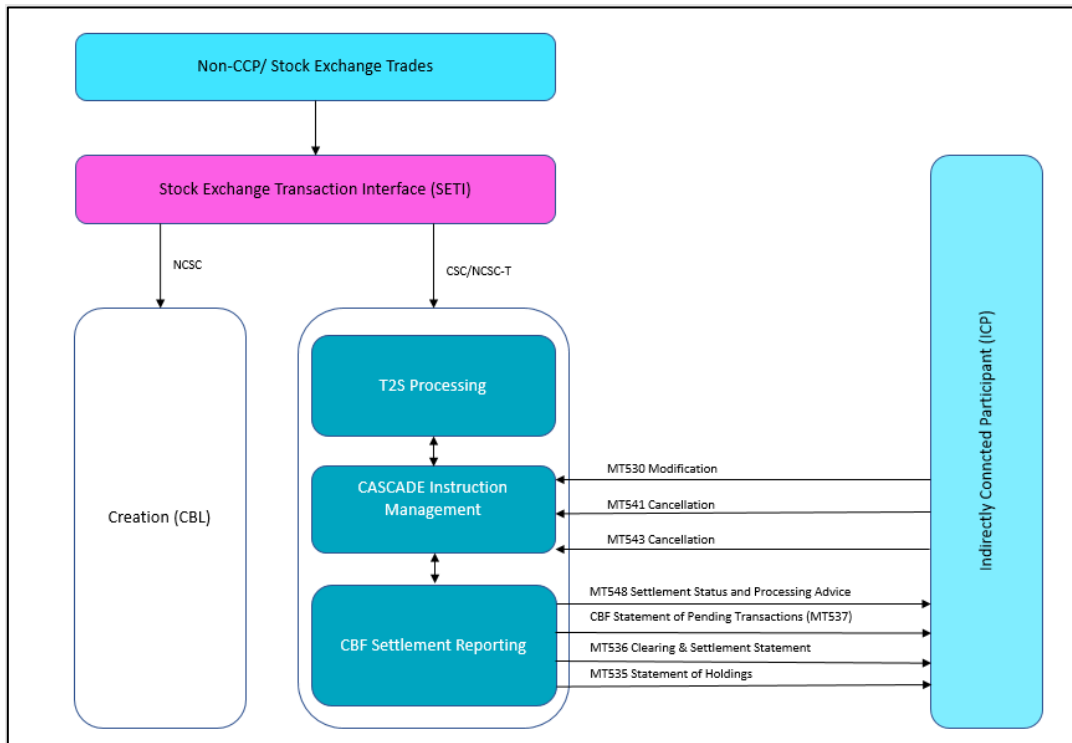
Figure 4: Instruction flow for stock exchange trading

Already matched instructions created for stock exchange trade confirmation for bilateral agreed settlement in CSC and NCSC-T securities are processed in an OTC-like-mode via CASCADE as follows (for more details, please refer to the CBF Client Handbook):

Entry of instructions

Already matched instructions for stock exchange trading platforms (Xetra, Xontro, Xitaro and Tradegate) are automatically created via the SETI Interface.

Processing of instructions

Both, the seller and the buyer, can block or unblock settlement for their instructions, and also mark the instruction for cancellation.

Matching

SETI instructions for stock exchange trades are created with the flag "already matched" and are displayed as "matched" in CASCADE.

Clearing and settlement

Clearing and settlement of stock exchange trades for CSC/NCSC-T eligible securities is carried out via the TARGET2-Securities (T2S) settlement platform. For NCSC and WPR eligible securities, the settlement is executed on CBL Creation platform. Hereby, the CBF-i account (6-series-account) defined for stock exchange settlement is used.

Reporting messages for stock exchange trades in Swift ISO 15022 by CBF are the same like for OTC and are described below.

2.5.6 Communication flow for CASCADE transactions

For the settlement of OTC and SE transactions, CBF supports the following types of messages for communication via File Transfer on the basis of ISO 15022.

Inbound (client to CBF)	
Message type	**Description**
MT540 Receive Free of Payment	Matching instruction from the client to CBF for the settlement of an OTC transaction free of payment
MT541 Receive Against Payment	Matching instruction from the client to CBF for the settlement of a transaction against payment.
MT542 Deliver Free of Payment	Delivery instruction from the client to CBF for the settlement of an OTC transaction free of payment.
MT543 Deliver Against Payment	Delivery instruction from the client to CBF for the settlement of a transaction against payment.
MT530 Transaction Processing Command	Clients can: • Hold and release instructions; • Partially release instructions; • Set a match error; • Change priority; • Link instructions or modify linkages; • Change the partial settlement flag. Each MT530 triggers only one change. Multiple modifications within one MT530 will be rejected. Details are available in the Connectivity Handbook Part 2.
MT598 Header and trailer message	Message type to indicate the beginning (header) and end (trailer) of a message block. Only used for FT.

Outbound (CBF to client)	
Message type	**Description**
MT535 Statement of Holdings	Report from CBF to clients about the holdings in the client's securities accounts in CASCADE.
MT536 Clearing & Settlement Statement	Report from CBF to clients regarding all settled transactions that have led to a change in the holdings (credits and debits) in the client's CASCADE accounts. The SE trades are included.
MT537 CBF Statement of Pending Transactions	Message from CBF to clients regarding the status of pending transactions at a certain time.
MT586 Statement of Settlement Allegement	Message with details of pending settlement allegement from CBF to clients
MT544 Receive Free of Payment Confirmation	Message from CBF to clients confirming a credit in securities free of payment.
MT545 Receive Against Payment Confirmation	Message from CBF to clients confirming a credit in securities and a debit in cash.
MT546 Deliver Free of Payment Confirmation	Message from CBF to clients confirming a debit in securities free of payment.
MT547 Deliver Against Payment Confirmation	Message from CBF to clients confirming a debit in securities and a credit in cash.
MT548 Business Validation Feedback	Business feedback message on the validation result for an instruction sent by a client.
MT548 Lifecycle Information	Message from CBF to inform clients of the status of an instruction within the settlement process. Details of the status characteristics of the MT548 message can be found in Part 2 of the Connectivity Handbook.
MT578 Settlement Allegement	Message from CBF to inform the client about instructions from the counterparty that are to be matched.
MT598 Header or trailer message	Message indicating the beginning (header) and end (trailer) of a message block. Only used for FT.
MT599 Technical Validation Feedback	Message used within the Technical Validation File for technical feedback in response to an instruction submitted by clients. Only used for FT and MQ.

2.5.7 Data transfer times for CASCADE transactions

The following table provides an overview of the times when CBF selects information on the settlement process for an OTC or a SE transaction and sends it to the client. Instructions sent by File Transfer must reach CBF no later than 15 minutes before the start of the cycle intended for settlement (batch cycle) or 15 minutes before the end of the settlement cycle (continuous settlement). Instructions that reach CBF later than this are processed on a best effort basis.

As stock exchange trades are treated in an "OTC-lik-mode", the reporting for stock exchange trades (MT530, MT540-MT543 CANC, MT548 and MT537) is also covered within this reporting.

The times given in the table below apply to domestic transactions where both parties settle their transactions via CASCADE accounts. The data transfer times for cross-border transactions with T2S Out-CSDs, particularly the acceptance deadlines for entering instructions, may be different, depending on the type of technical link between CBF and the depositories in other countries. Details concerning the data transfer times and acceptance deadlines for the settlement of cross-border transactions can be found on our website in the respective Link Guides.

Swift message type	Data transfer times and acceptance deadlines
MT535 Statement of Holdings	CASCADE generates and transmits the MT535 message once a day at around 19:30, at the end of daytime processing (end of RTS / Cont). The type of positions selection the client has chosen is taken into account: Daily statements of positions or changes to the positions and / or statements of positions mid-month, at the end of a month, at the end of a quarter or at the end of a year. In complete statements CBF only reports positions with a balance different to zero. In delta statements only on the day, where the position changed to balance zero, the zero balance will be reported Clients also have the option of sending a one-time request for information on their positions at a certain value date which lies no more than 23 business days in the past.
MT536 Clearing & Settlement Statement	CBF prepares the MT536 message following the settlement cycles in CASCADE. For complete statements, CBF offers the following data transfer times, which are identical with the times when the data is created. The data is collected until the next transmission to the client. Transmission time are: • 06:00; • 08:00 - 17:00 (hourly); • 18:45 (depending on the T2S business event EODP); • 23:00; and • 02:00.
MT537 CBF Statement of Pending Transactions	The client can select up to 16 times when CBF will generate and immediately transmit the MT537 message on the basis of the selection criteria preselected by the client. Transmission times are: • During Night-Time Settlement (NTS) at 21:30 and 02:00 • Within the Real-Time Settlement (RTS) at 05:00, 06:00, 07:30, 08:00, 09:00, at around 10:30, 11:15, 12:00, 12:45, 13:30, 15:30, 16:00, 17:00, 18:00, 21:30 and around 02:00.
MT540 Receive Free of Payment	Any instruction or transmission provided to CBF will be immediatley processed and forwarded to the T2S settlement platform. The processing on T2S is based on the T2S Operational Day.
MT541 Receive Against Payment	
MT542 Deliver Free of Payment	
MT543 Deliver Against Payment	

Swift message type	Data transfer times and acceptance deadlines
MT544 Receive Free of Payment Confirmation	CBF sends the client confirmations of in real-time via Swift and MQ. At the following times the MT54x settlement confirmations will be sent for FT. Transmission times are: • During the Night-Time Settlement (NTS): 23:00 and 02:00 • Within the Real-Time Settlement (RTS) at 05:00, 06:00, 07:30, 08:00, 09:00, at around 10:30, 11:15, 12:00, 12:45, 13:30, 15:30, 16:00, 17:00 • During the completion of the business day at around 18:30.
MT545 Receive Against Payment Confirmation	
MT546 Deliver Free of Payment Confirmation	
MT547 Deliver Against Payment Confirmation	
MT548 Lifecycle Information	Information about the lifecycle of an instruction is sent to clients in real-time via Swift and MQ.
MT578 Settlement Allegement	Information about the counterparty's instructions is sent to clients in real-time via Swift and MQ.
MT586 Statement of settlement allegement	Information about the lifecycle of an instruction is sent to clients in real-time via Swift and MQ. At the following times the MT586 will be sent via FT: • During the Night-Time Settlement (NTS): 23:00 and 02:00 • Within the Real-Time Settlement (RTS) at 05:00, 06:00, 07:30, 08:00, 09:00, at around 10:30, 11:15, 12:00 , 12:45, 13:30, 15:30, 16:00, 17:00, 18:00 • During the completion of the business day at around 19:45.
Technical Validation Feedback – MT598 / MT599	The Technical Validation Feedback message is generated after receipt and technical validation of an instruction and is sent to the client immediately. Only used for FT.

2.5.8 Communication flow for registered shares kept in collective safe custody

For the special requirements for securities transactions in registered shares kept in collective safe custody, CBF also offers its clients services according to ISO 15022.

Swift message type	Use by CBF
MT542 Deliver Free of Payment	Message sent by clients to CBF concerning the following transactions: • Transfer of holdings from registered positions to unregistered positions by the instructing party or seller. • Internal securities account transfer with change of client reference. • Transfer of registered positions in securities account The description of formats in Part 2 of the Connectivity Handbook concerning the MT542 message already lists the special requirements for registered shares and CASCADE-RS and will hence not be repeated here.
MT544, MT546 Settlement Confirmation	Message from CBF to clients to confirm an instruction sent as an MT542 message to transfer holdings or a securities account. The corresponding descriptions of formats can be found in Part 2 of the Connectivity Handbook.
MT500 Instruction to Register	Instruction sent by the client (buyer bank or receiving bank in a securities transaction) to re-register a shareholder in the share ledger. Or instruction sent by clients to CBF to register shareholders in the share ledger for the first time (for example, when bearer shares are converted into registered shares). After validation, CBF forwards the MT500 instruction to the issuer or share ledger manager.
MT501 Confirmation of Registration or Modification	The MT501 message is the confirmation from the issuer or the share ledger manager, to the client, forwarded by CBF, regarding a registration or re-registration instruction (MT500) or a modification instruction (MT519).
MT510 Registration Status and Processing Advice	Message sent by CBF to clients concerning a previously sent MT500 or MT519 instruction. The confirmation or rejection of the instruction is provided by CBF after its validation in CASCADE / CASCADE-RS.
MT519 Modification of Client Details	Instruction sent by the client (depository) to CBF to modify a shareholder's data in the share ledger. After validation, CBF forwards the instruction to the issuer or share ledger manager.

2.5.9 Data transfer times for registered shares kept in collective safe custody

The following table provides an overview of the data transfer times and acceptance deadlines for communication within the framework of the special CBF services for registered shares kept in collective safe custody.

Swift message type	Data transfer times and acceptance deadlines
MT542 Deliver Free of Payment	The transmission of an MT542 message to CBF for a transfer of holdings from the registered positions to the unregistered positions or for a securities account transfer must take place no later than 15 minutes before the start of the batch cycle intended for settlement, or no later than 15 minutes before the end of the continuous settlement cycle intended for settlement.
MT544, MT546 Settlement Confirmation	The settlement confirmation that CBF sends in response to an MT542 instruction from the client is sent out after the transaction has been settled (for details see section 2.2.7). The MT546 confirmation is sent to the sender of the position, the MT544 is sent to the receiver as a confirmation of the automatically set up receipt (MT540). For more information regarding the CASCADE-RS account transfer, refer to CASCADE Handbuch 2.
MT500 Instruction to Register	There are no special requirements for the transmission of the MT500 message to CBF as far as data transfer times and acceptance deadlines are concerned. The German Stock Corporation Act (Section 67,4 (1) AktG) requires the buyer bank or receiving bank in a securities transaction to re-register a shareholder who acquires registered shares in the share ledger in good time after the purchase or acquisition.
MT501 Confirmation of Registration	Upon receipt, CBF immediately sends the client the confirmation from the issuer or share ledger manager in response to a registration or re-registration instruction (MT500) or an instruction to modify the shareholder data (MT519).
MT510 Registration Status and Processing Advice	The confirmation or rejection of the instruction (MT500 or MT519) by CBF takes places immediately after it has been entered in CASCADE / CASCADE-RS and validated and for the processing on T2S. CBF generates and submits position transfer instructions to T2S as part of the allocation runs.
MT519 Modification of Client Details	There are no special requirements for the transmission of the MT519 message to CBF as far as data transfer times and acceptance deadlines are concerned. The German Stock Corporation Act (section 67,4(1) AktG) requires the depository to arrange for the shareholder data to be modified in good time.

2.5.10 Assset services

CBF offers its clients Asset services for the securities positions that it holds on their behalf:

Income services include the settlement, payment and collection of income payments (interest and dividends), repayments, redemption payments and commission.

Non-income services include the settlement of mandatory corporate action events (such as rights allocation and exchange of shares) as well as voluntary corporate action events (such as tender offers).

Under defined conditions, CBF carries out settlement (compensation) for transactions where the securities are traded "cum", that is, with a claim (such as a coupon), and delivered "ex", that is, without a claim.

In the field of taxation, CBF offers services for various markets to clients residing in Germany and clients outside Germany.

CBF clients have access to pre-advice information on forthcoming AGMs / EGMs and can benefit from proxy voting services, such as the exercise of voting rights.

For collective-safe-custody (CSC) securities, CBF supports its clients with the optional Swift services by providing positions-related pre-advice of income and non-income events as well as of AGMs / EGMs. Settlement information (cash entries and movements in securities) is also provided. Additional services are available to CBF clients who use the Swift MT564 service, allowing them to send instructions (MT565) in relation to voluntary events, for example, or to buy and sell subscription rights through CBF.

Further information on Asset services processing can be found in the OneClearstream Client Handbook. Specific details for Asset services by KADI can be found in the CBF Client Handbook and Connectivity Handbook Part 3.

The following message types are offered in Corporate Action Reporting via Swift, MQ or File Transfer on the basis of ISO 15022. The message types include the:

- Corporate Action Notification (MT564);
- Corporate Action Confirmation (MT566);
- Corporate Action Status and Processing Advice (MT567); and
- Corporate Action Narrative (MT568).

CBF also provides clients with confirmations of settled transactions for corporate payments that are processed through settlement transactions (PFoDs). The following message types are offered regarding corporate payment transactions:

- MT545 – Receive Against Payment Confirmation;
- MT547 – Deliver Against Payment Confirmation.

Transmission times

The messages from Corporate Action File Transfer ISO 15022 Reporting are transmitted each time they are generated in KADI.

2.5.11 Collateral Management – Xemac®

CBF offers several collateral management services via CBF connectivity channels and the collateral management system Xemac.

Clients have the option to send Claim Adjustment Requests via MT527 Swift format. This is in addition to the entry of claim adjustments on the Xemac GUI.

Clients can subscribe to the products "Exposure Management" and "Collateral Management", in order to receive MT558 messages reporting adjustments to their Xemac exposures and associated securities movements.

CBF also offers the option of ordering the MT569 Triparty Collateral and Exposure Statement, which is generated and transmitted after daytime processing.

The MT569 message is available separately for the party taking the collateral and the party providing the collateral and is offered in two versions: a summary and a detailed report. The summary contains information on the client's Xemac exposures, while the detailed report contains the allocated positions for each exposure.

2.6 Specific requirements for File Transfer

CBF also offers the exchange of messages via File Transfer on the basis of the ISO 15022 standard. Through File Transfer the client can send instructions for the settlement of its transactions to CBF and receive status information and reports from CBF about its stock exchange trades and OTC transactions.

2.6.1 Requirements for communication via File Transfer

The following diagram shows the structure of a file in ISO 15022 format for communication between CBF and the client.
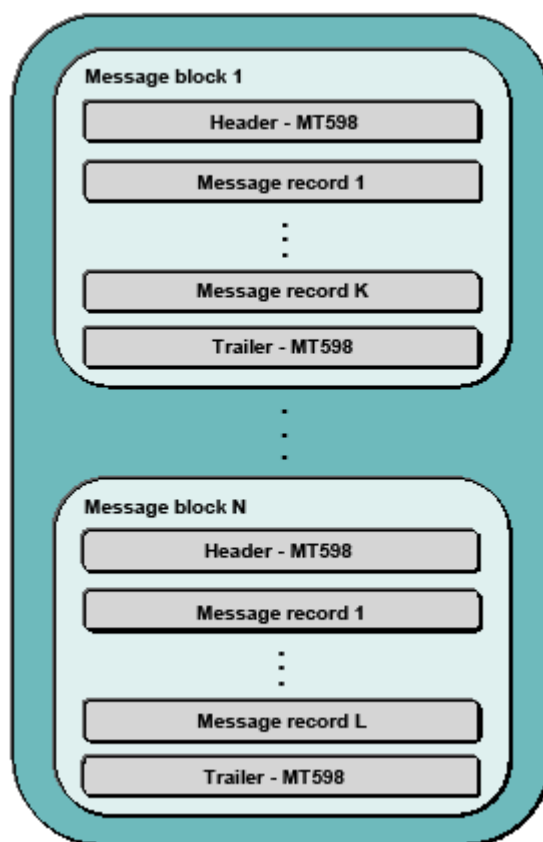

Figure 5: ISO 15022 file for communication between CBF and clients

The following requirements must be met for sending instructions to CBF via File Transfer:

- A file must consist of at least one message block.

- Each message block starts with a header message and ends with a trailer message, MT598. The header and the trailer have the format of an MT598 message.

- The number of message records between the header and the trailer is between zero and any number. In the case of an inbound message (client to CBF), a message record represents an instruction from the client. In the case of an outbound message (CBF to the client), it represents a status message, confirmation of settlement or other report information. The message types to be used (for example, MT543) depend on the transaction and are described in the previous chapters. The formats of the messages are identical to those used in communication via the Swift network. They are described in parts 2 and 3 of the Connectivity Handbook.

- A message record sent by File Transfer must contain the start of the message (header: basic header and application header, user header optional), the body of the message (text block) and the end of the message (trailer). Details can be found in the Swift handbook (Swift User Hand-book, Standards, and General Information).

- Only messages that are intended for the same target application can be transmitted in a message block (CASCADE for stock exchange trades and OTC transactions, CASCADE-RS for special services for registered shares).

- The message blocks must be unambiguous and numbered in ascending order (in relation to the technical sender, the date of transmission and the target application). The individual messages in a file block must be given a sequential message number in ascending order.

2.6.2 Validation process

An instruction file sent by the client passes through a two-stage validation process before the instructions can be processed by the target application on the CASCADE platform, assuming that the result is positive:

Technical validation

The result of this validation process is the Technical Validation Feedback, which has to be sent to the client regardless of whether the result is positive or negative. For each message block sent by the client, the file contains a corresponding message block with a header and a trailer in the form of an MT598 message. In between the header and the trailer there is feedback in the form of an MT599 message on each individual record in the client's message.

The header indicates whether the file contains technical feedback or business feedback. Furthermore, both the header and the feedback contain a status indicating the result of the technical validation process for each message record sent by the client.

If at least one message record in the message block passes all technical validation tests, the header in the message block has the ACK status (ACK = acknowledged). The NAK status (NAK = not acknowledged) appears in the header if either all message records in the message block have been found to contain technical errors or if CBF has rejected the message block in its entirety.

If a message block is rejected in its entirety, the technical validation file only contains the header with the NAK status and the trailer. The reason for the rejection can be found in field 77E (narrative) of the header.

The individual MT599 messages in a message block of the technical feedback will have the ACK status if the result of the technical validation process was positive and the NAK status if the result of the technical validation process was negative. The reason for the failure is given in field 79 (narrative).

The following table lists the major technical validation tests that CBF carries out to validate an instruction file sent by a client:

No.	Validation step
1	Presence of the header and the trailer for a message block with matching sender address, transmission date and message block number
2	The transmission date is no date in the future and no more than one business day in the past.
3	The target application of the CASCADE platform indicated in the header is valid.
4	The sender is authorised for File Transfer.
5	Validation of the message block's authenticity on the basis of field 20 in the header.
6	The message block is numbered in ascending order in relation to the sender, the date of transmission and the target application.
7	The check sum in the trailer of a message block corresponds to the number of message records in the message block.
8	A message block does not contain any message records for test and production.
9	In all message records of a message block the Swift address is identical with the Swift address in the header and in the trailer.
10	Sequential message number in ascending order within a message block.
11	Structure of a message record, consisting of header, message and trailer.
12	The basic header of a message record contains the message ID, consisting of the session number and the sequence number.
13	The application header of a message record contains the sender's Swift address. All message records in a message block have the same sender address.
14	Validation of compliance with the ISO 15022 standard: mandatory fields, sequences, data types, field lengths and Swift character set

Business validation

After the general technical validation process, an instruction file is subjected to further business validation tests whose contents and scope depend on the target platform indicated in the header of the instruction file (CASCADE, CASCADE-RS, Xemac). The client can choose to have the result of this business validation process sent as a business validation file.

For each message block of the instruction file, the file contains a corresponding message block with the MT598 message as the header and the trailer. An indicator in the header identifies the feedback file as a business feedback. Within a message block the MT548 message is sent as a business feedback for each instruction sent by the client.

In terms of its format, its status code and error code, the MT548 message is identical with the description of formats in Part 2 of the Connectivity Handbook. (For the scope of the validation rules please refer to the description of field "24B – Reason Code").

2.6.3   Process for handling errors

Handling of technical errors

If CBF has declined to process instructions any further after technical validation, a client is sent information through the following channels:

- The Technical Validation Feedback is mandatory and has to be sent as the result of the technical validation process. In addition to negative information, it also contains positive information.

- Client Services provides clients with direct information regarding rejected instructions if a complete message block has been rejected.

Message blocks or message records rejected by CBF must be sent to CBF for a second time after the client has rectified the errors. The message block number must then be increased.

In certain error situations, CBF offers its clients a simplified process for handling errors where it suffices to send CBF the instruction file for a second time with its condition unchanged, i.e. not corrected (with the message blocks and message records that have tested positive and negative and with no change in the numbers of the message blocks). In order for this procedure to apply, the CBF client needs to be admitted to it (the "emergency identifier" is set).

This simplified procedure is possible in the following error situations:

- The transmission date in the header of a message block is more than one business day in the past.

- The number of the message block is not in ascending order.

- The numbers of the message records in a message block are not in ascending order and / or sequential.

- The check sum in the trailer of a message block does not corresponds to the number of message records sent in the message block.

If one of the above-mentioned errors occurs, the client is informed directly by Client Services and, if an emergency identifier has been set in the master data, the client is asked whether the simplified procedure is to apply. In order for the emergency procedure to apply in a specific case, the client sends a corresponding instruction to Client Services in a brief message (for example, by fax) and sends the instruction file to CBF for a second time. The instructions that were previously rejected are then processed.

Handling of operational errors

If CBF has declined to process instructions any further after business validation, a client is sent information through the following channels:

- The Business Validation Feedback is an optional feedback sent as a result of the business validation process and contains positive and / or negative messages.
- CBF's online MAMJ (Message Journal) application allows the client to monitor the receipt and further processing of the instruction files sent to CBF. MAMJ offers various selection options for accessing transmitted message blocks and the message records that they contain, together with their processing status and the error code.

Message blocks or message records rejected by CBF must be sent to CBF for a second time after the client has rectified the errors. The message block number must be updated.

2.6.4 Description of formats – header / trailer

When communication takes place via File Transfer, each message block in a file is identified by a header and a trailer. Message type MT598 is used for the header and the trailer. The general format of the MT598 message for instruction files sent to CBF and the validation feedback files, status messages and reports returned by CBF is explained below. The following format descriptions are based on the original Swift manuals written in English. This is to avoid confusing terminology. Concrete examples of headers and trailers can be found in the following sections.

Description of the MT598 message format when used as a header

Day	Status	Field name	Format
20	M	Reference number of the transaction	14x
		The reference number has the following sub-fields:	
		• Receiver's / sender's account	4n
		• Date (YYMMTT)	6n
		• Transfer number	4n
		The "Receiver's / sender's account" field is to identify the receiver / sender on CBF side.	
		The "Transfer number" field is a definite, continuous number to identify the transfer.	
12	M	Sub-message type	
		• MT number	3!n
		The field contains the value "001" which identifies the header message.	
77E	M	Description of the original message. The sub-fields of this field are identified by four digit characteristics. A diagonal stroke must precede the name of each characteristic, and there must always be a blank between the name and the contents of the characteristic.	73x [n*78x]
		The following sub-fields are available:	
		/TRNA –ccc–aaa –ffff	
		• ccc – Cycle, for example:	20x
		○ 001 – Inbound	
		○ 010 – Outbound Techn. Val. Feedback	
		○ 011 – Outbound Business Val. Feedback	
		○ 650 – Outbound Statement of Holdings	
		○ 750 – Outbound CBF Statement of Pending Transactions / SE-Trades	
		For the complete list of possible values see Connectivity Handbook part 2.	
		• aaa – Application (BST, CAS, CSS, KAD, CRS)	
		• ffff – Function Code, for example:	
		○ 0105 – Business Validation Feedback	
		○ 0103 - Positive Technical Validation Feedback. At least one message was successfully processed within the file block.	
		○ 0104 - Negative Technical Validation Feedback. No message in the file block could be processed.	
		○ 0200 – Lifecycle Reporting CASCADE instructions	
		○ 0201 – Pending Transactions	
		○ 0202 – Statement of Holdings	
		○ 0203 – Clearing & Settlement Statement	
		For the complete list of possible values, see Connectivity Handbook part 2.	
		/ERRT error text and /OMSG original message (analogous to MT599)	

The Technical Validation File, the Business Validation File and the client's instruction file are distinguished on the basis of the characteristics of "Cycle" and "Function Code" in field 77E.

As a message block number (transfer number), the validation files use the same number as the one used by the client in the client's instruction file. If the client sends a message block number 3 in the instruction file that it sends to CBF, the same message block number 3 will be returned in the technical feedback and in the business feedback.

Description of the MT598 message format when used as a trailer

Day	Status	Field name	Format
20	M	Reference number of the transaction	14x
		The reference number has the following sub-fields:	
		• Receiver's / sender's account	4n
		• Date (YYMMTT)	6n
		• Transfer number	4n
		The purpose of the "Receiver's / sender's account" field is to allow CBF to identify the receiver / sender.	
		The "Transfer number" field is a definite, continuous number to identify the transfer.	
12	M	Sub-message type	
		• MT number	3!n
		The field contains the value "099" which identifies the trailer message.	
77E	M	Description of the original message	73x
			[n*78x]
		The sub-field of this field is identified by four-digit characteristics. A diagonal stroke must precede the name of each characteristic, and there must always be a blank between the name and the contents of the characteristic.	
		The following sub-field is available:	
		• /NOMS Number of messages	6n

In field 77E, the trailer contains the number of message records transmitted in the message block (including the header) as a check sum. The trailer is not counted.

The following tables provide an overview of the contents of the MT598 message when used as a header and a trailer in messages that the client sends to CBF (inbound) and that CBF sends to the client (outbound).

MT598 - Header			
DAY	(m = mandatory / o = optional)	Client (inbound)	CBF (outbound)
20	m	Transaction reference number: • Sender's account • Date (YYMMTT) • Transfer number	Transaction reference number: • Sender's account • Date (YYMMTT) • Transfer number
12	m	Sub-message type MT number 001 defines the header	Sub-message type MT number 001 defines the header
77E	m	Description of the original message. /TRNA Transfer name Cycle 001 Application Function Code 0001	Description of the original message. /TRNA Transfer name Cycle 010 Application Function Code (/ERRT and /OMSG)

MT598 -Trailer			
DAY	(m = mandatory / o = optional)	Client (inbound)	CBF (outbound)
20	m	Transaction reference number: • Sender's account • Date (YYMMTT) • Transfer number	Transaction reference number: • Sender's account • Date (YYMMTT) • Transfer number
12	m	Sub-message type MT number 099 defines the trailer.	Sub-message type MT number 099 defines the trailer.
77E	m	Description of the original message. /NOMS Number of messages	Description of the original message. /NOMS Number of messages

2.6.5   Description of the MT599 format

The MT599 message is the technical feedback in response to a single instruction from the client. CBF sends it to the client in a message block of the Technical Validation Feedback.

Day	Status	Field name	Format
20	M	Transaction Reference Number (NAK or ACK + time stamp=date and time)	16x
21	O	Related Reference	16x
79	M	Narrative	35*50x

Field 20 contains the result of the technical validation of the client's instruction. In the case of an error, field 79 contains a reason and there is the option of repeating the client's instruction. Two examples for a positive and a negative result are given below.

Example 1: Negative Technical Validation Feedback

{:F01**DUMMYXX0AXXX**0000000002}

{:O5991555010723**DAKVDEFFADOM**00000000020607231556N}

{:{108:CASR16080674687A}}

{:

:20:**NAK**068135543250

:21:1234567890

:79:/ERRT "Description(Swift Message Type Not Accepted)Position…"

/OMSG "original message"

}

(DUMMYXX0AXXX = receiver's address, DAKVDEFFADOM = sender's address / CBF)

Field 20 contains the abbreviation "NAK" (not acknowledged) to identify a negative message. Field 79 contains the "ERRT" code followed by the reason for the failure or the error code. The "OMSG" code is followed by the client's original instruction.

Example 2: Positive Technical Validation Feedback

{:F01DUMMYXX0AXXX0000000002}

{:O5991555010723DAKVDEFFADOM00000000020607231556N}

{:{108:CASR16080674687A}}

{:

:20:**ACK**068135543250

:21:1234567890

:79:/OMSG "original message"

}

Field 20 contains the abbreviation "ACK" (not acknowledged) to identify a positive message. Field 79 contains the "OMSG" code, followed by the client's original instruction.

2.6.6 Example: instruction file from client to CBF

Here is an example of the header and of the trailer in the client's instruction file.

MT598 as header

Message block: ISO 15022 – Message Fields and Contents	Explanation	
{1:F01DUMMYXX0AXXX0000000001} {2:I598DAKVDEFFADOMN} {3:{108:client's reference}} (optional block)	Header message 1: F=(Finance) one digit 01=(Service identifier) two digits 12-digit Swift sender's address four digit no. (0000) - numeric six digit numeric sequence no. 2: I=(Input) 598=Message type Swift address CBF N=priority "normal" 3: 108: client's reference is an optional field – the client will be sent its input in the response file.	**Header message**
{4:	Start of text blocks	
:20:99990607231234	Reference of transfer 9999=4 digits numeric techn. sender's account 060723=sending date (YYMMTT) 1234=4-digit numeric File Transfer block no.	
:12:001	Indicator for header 001 (constant value)	
:77E:/TRNA 001-CAS-0001	Additional information "/TRNA "=6 digit constant value 001=3 digit numeric (constant value) "-"=hyphen (constant value) CAS=3-digit alphabetical application (CAS=CASCADE) "-"=hyphen (constant value) 0001=4 digit numeric (constant value)	
-}	End of text blocks	
{5:{TNG:}} – (optional block)	Trailer block "TNG:"=Indicator for a test message, otherwise this field is optional and no plausibility check will be done.	

MT598 as a trailer

Message block: ISO 15022 – Message Fields and Contents	Explanation	
{1:F01DUMMYXX0AXXX0000000533} {2:I598DAKVDEFFADOMN} {3:{108:client's reference}} (optional block)	Trailer blocks see above "MT598 as a header"	**Trailer block**
{4:	Start of text blocks	
:20:99990607231234	Reference of transfer see above "MT598 as a header"	
:12:099	Trailer-indicator 099 (constant value)	
:77E:/NOMS 000532	Additional information "/NOMS " =6-digit constant value 000532=6-digit numeric (no. of messages minus one – as the trailer will not be counted)	
-}	End of text blocks	
{5:{TNG:}} – (optional block)	Trailer block	

Examples of message records of type MT541-MT543 for sending instructions can be found in the chapter on the relevant format description.

2.6.7 Example: Technical validation feedback from CBF

The Technical Validation file consists of message blocks with a header and a trailer in the MT598 format and the technical feedback in MT599 format in response to the individual instructions sent by the client. Some examples of the technical feedback are given below.

Example 1: Fully negative Technical Validation Feedback

Message block: ISO 15022 – Message Fields and Contents	Explanation	
{:F01DUMMYXX0AXXX0000000001} {:O5981555010723DAKVDEFFADOM**0000000001060723**1556N} {:{108:sender's reference}}	Header blocks	**Header message**
{:	Start of text blocks	
:20:70010607231234	Reference of transfer	
:12:001	Indicator for header	
:77E:/TRNA 010-CAS-0104 /ERRT Swift address not equal in all messages	Additional information	
-}	End of text blocks	
{:F01DUMMYXX0AXXX0000000002} {:O5991555010723DAKVDEFFADOM00000000020607231556N} {:{108: sender's reference}}	Header blocks	**MT599 message**
{:	Start of text blocks	
:20:**NAK**068135543250	Text block MT599	
:21:1234567890		
:79:/**ERRT Invalid Qualifier for field with tag 20** /OMSG "original message"		
-}	End of text blocks	
…	…	**MT599 messages**
{:F01DUMMYXX0AXXX0000000533} {:O5981555010723DAKVDEFFADOM00000005330607231556N} {:{108: sender's reference}}	Header blocks	**Trailer message**
{:	Start of text blocks	
:20:70010607231234	Reference of transfer	
:12:099	Trailer indicator	
:77E: /NOMS 000533	Additional information	
-}	End of text blocks	

Example 2: MAMJ view of negative technical feedback (header only)

```
TRAN: MAMJ FC: FU SB: 21.07.2006##00:00#23:59##CAS#F######

 CBF-VOLLANZEIGE                I N F O R M A T I O N              SEITE: 1

 DATUM    : 21.07.2006                  SCHNITTSTELLE  : FILE-TRANSFER
 ANWENDUNG: CLEARING & SETTLEMENT STMT.  EINGANG/AUSGANG: A
 SNT/000 INFORMATION VERSENDET / ---

  {:       F01DUMMYXX0AXXX0000000001}
  {:       O5980532060804DAKVDEFFADOM0000000010608040533N}
  {: {108: CAS2020732250406}}
  {:
     :20:  70040607210001
     :12:  001
     :77E: /TRNA 010-CAS-0104
           /ERRT original message
           -}
-- ID-KZ: 7999260001 -- PW:         ------ B79075QJ -- 21/07/06 -- 14:38:27
 AE0100I   Keine weiteren Daten vorhanden
 PF3:Rücksprung  PF4:Abbruch
```

Example 3: MAMJ view of positive technical feedback (header only)

```
TRAN: MAMJ FC: FU SB: 21.07.2006##00:00#23:59##CAS#F######

 CBF-VOLLANZEIGE                I N F O R M A T I O N              SEITE: 1

 DATUM     : 21.07.2006                 SCHNITTSTELLE  : FILE-TRANSFER
 ANWENDUNG: CLEARING & SETTLEMENT STMT.  EINGANG/AUSGANG: A
 SNT/000 INFORMATION VERSENDET / ---

  {:       F01DUMMYXX0AXXX0000000001}
  {:       O5980532060804DAKVDEFFADOM0000000001608040531N}
  {: {108: CAS2020732250406}}
  {:
     :20:  70040607210001
     :12:  001
     :77E: /TRNA 010-CAS-0103
           -}
-- ID-KZ: 7999260001 -- PW:         ------ B79075QJ -- 21/07/06 -- 14:38:27
 AE0100I   Keine weiteren Daten vorhanden
 PF3:Rücksprung  PF4:Abbruch
```

2.6.8 Example: Business Validation Feedback from CBF

The Business Validation file consists of message blocks with a header and a trailer in MT598 format and the business feedback in MT548 format in response to individual instructions sent by the client. Examples of the header and the trailer from CBF's online MAMJ (Message Journal) display are shown below. For examples of the MT548 message, see part 2 of the Connectivity Handbook.

MT598 as header

```
:        F01DUMMYXXXAXXX0000000001}
{:       O5980532060804DAKVDEFFADOM00000000010608040533N}
{: {108: CAS2160532336239}}
{:
    :20:  20070608040001
    :12:  001
    :77E: /TRNA 011-CAS-0105
          -}
```

MT598 as trailer

```
{:       F01DUMMYXXXAXXX0000000012}
{:       O5980532060804DAKVDEFFADOM00000000110608040533N}
{: {108: CAS2160532340351}}
{:
    :20:  20070608040001
    :12:  099
    :77E: /NOMS 000011
          -}
```

2.6.9 Example: MT535 statement of holdings file

Message block: ISO 15022 – Message Fields and Contents	Explanation	
{:F01DUMMYXXXAXXX1234000001} {:O5981555010723DAKVDEFFADOM12340000010107231556N} {:{108:BSTR16080674687A}}	Header blocks	**Header message**
{:	Start of text blocks	
:20:70010107231234	Transfer reference	
:12:001	Header indicator	
:77E:/TRNA 650-BST-0202	Additional information	
-}	End of text block	
{:F01DUMMYXXXAXXX1234000002} {:O5351555010723DAKVDEFFADOM12340000020107231556N} {:{108: BSTR160806746877 }}	Header blocks	**MT535 message**
{:	Start of text block	
...	Text block MT535	
-}	End of text block	
  ...	...	**Further MT535 messages**
{:F01DUMMYXXXAXXX1234000533} {:O5981555010723DAKVDEFFADOM12340005330107231556N} {:{108: BSTR160806746879 }}	Header blocks	**Trailer message**
{:	Start of text block	
:20:70010107231234	Transfer reference	
:12:099	Trailer indicator	
:77E: /NOMS 000533	Additional information	
-}	End of text block	

2.6.10   Example: MT536 – Clearing & Settlement Statement

Message block: ISO 15022 – Message Fields and Contents	Explanation	
{:F01DUMMYXXXAXXX1234000001} {:O5981555010723DAKVDEFFADOM12340000010107231556N} {:{108: CSSR07340295948A }}	Header blocks	Header message
{:	Start of text block	
:20:70010107231234	Transfer reference	
:12:001	Header indicator	
:77E:/TRNA 050-CSS-0203	Additional information	
-}	End of text block	
{:F01DUMMYXXXAXXX1234000002} {:O5361555010723DAKVDEFFADOM12340000020107231556N} {:{108: CSSR073402959482 }}	Header blocks	MT536 message
{:	Start of text block	
...	Text block MT536	
-}	End of text block	
  ...	...	Further MT536 messages
{:F01DUMMYXXXAXXX1234000533} {:O5981555010723DAKVDEFFADOM12340005330107231556N} {:{108: CSSR073402959489 }}	Header blocks	Trailer message
{:	Start of text block	
:20:70010107231234	Transfer reference	
:12:099	Trailer indicator	
:77E: /NOMS 000533	Additional information	
-}	End of text block	

2.6.11 Asset Services by KADI

The messages are grouped in logical files (blocks) for each function code or message type (see table below). Each logical block starts with a header message and ends with a trailer message, MT598. After each KADI reporting generation cycle a physical file is sent that can contain several blocks.

Description of the MT598 header, Corporate Action Reporting File Transfer on the basis of ISO 15022

{:F01DUMMYXXXAXXXbbbb000001} {:O5981555010723DAKVDEFFADOM00000000010607231556N} {:{108:KADF194512345678}}	Header blocks	Header message
{:	Start of text blocks	
:20:12340607231234	Reference of transfer	
:12:001	Indicator for header	
:77E:/TRNA **ccc**-KAD-dddd	Additional information[1]	
-}	End of text blocks	

Field 77E will have the following contents (depending on the corresponding message)

Corporate Action Message Type	Explanation 77E:
MT564 Corporate Action Notification	77E:/TRNA ccc-KAD-**0411**
MT566 Corporate Action Notification	77E:/TRNA ccc-KAD-**0401**
MT568 Corporate Action Narrative	77E:/TRNA ccc-KAD-**0415**

Description of the MT598 trailer, Corporate Action Reporting File Transfer on the basis of ISO 15022

File block: ISO 15022 Message Fields and Contents	Explanation
{1:F01DUMMYXXXAXXXbbbb0000002} {2: O5981555010723DAKVDEFFADOM**0000000001060723**1556N } {3:{108:KADF…}} (optional block)	Trailer blocks
{4:	Start of text blocks
:20:99990607231234	Reference of transfer
:12:099	Trailer indicator 099 (constant)
:77E:/NOMS 000002	Additional Information "/NOMS " =6-digit constant 000532=6-digit numeric (no. of messages minus one – as the trailer will not be counted)
-}	End of text blocks
{5:{TNG:}} – (optional block)	Trailer block

Further information in connection with AGMs / EGMs previously sent via the Swift-MERVA connection (MT568 user definable text for KADI and MT599 user definable text for other custody information) is not offered via File Transfer.

No description of the MT564, MT566 and MT568 report has been given as this corresponds to the existing Corporate Action Reporting Swift ISO 15022 format.[2]

---

[1] Cycle **ccc** depends on the time of generation in KADI. Function code dddd corresponds to one of the said message types (see table below).

[2] For the corresponding description of formats please refer to the [Connectivity Handbook](#).

2.6.12   CBF formats

In addition to communication in the ISO 15022 formats, CBF uses its own CBF formats for File Transfer to clients.

KUSTA data carrier

The KUSTA data carrier (KUSTA = master client data) contains basic information for CBF clients that they need in order to send instructions via CASCADE to the T2S settlement platform. This includes the account information of CBF clients that is needed in order to enter the name of the counterparty when entering the instruction, information on stock exchange participants and the basic data of dedicated CSD participants; in general, these CSDs are not directly connected to T2S. When the beneficiary or the original instructing party send instructions for processing and settlement, this information is fundamental in order to forward and process these instructions regarding securities transactions.

The KUSTA data carrier also provides the master data of brokers and other parties that are not clients of CBF. Here it should be noted that Clearstream Banking is not the owner of this data and does not therefore guarantee its completeness or accuracy.

The scope of the data made available for each account and client is determined by consent to publication. The data carrier can be sent to CBF's domestic clients and / or non-German CSD clients at the end of each month, every quarter, daily or on a certain date in response to a one-time request.

The record structure and the format of the KUSTA data carrier is described in the KUSTA Data Carrier User Manual available on the Clearstream website.

2.7   Specific processing for compliance check

CBF offers a dedicated functionality for technical and business validation procedures. These procedures are described in section 2.5.2 Requirement for Swift / MQ / FT – Functionality and in section 2.6.2 Specific requirements for File Transfer – Validation process.

CBF conducts a compliance check for all inbound instructions provided by clients. This check will be conducted irrespectively of the connectivity mode, that is, CASCADE Online Functionality (HOST), Indirectly Connected Participant mode or Directly Connected Participants mode.

Once an instruction has been either technically validated by CBF or was transmitted as a copy from T2S to CBF, the instruction is provided for scanning. To keep clients informed about the status of their instructions, the pending status will be reported via ICP mode using MT548 Settlement Status and Processing Advice – Validation Feedback.

The status will be reported in:

Sequence A – General Information
Subsequence A2 – Status
25D::IPRC//PPRC

Subsequence A2a – Reason
24B::PPRC//NARR
70D::REAS//YOUR INSTRUCTION IS AWAITING VALIDATION

After successful completion of the compliance check, instructions will follow the standard lifecycle reporting. For clients not subscribed to the MT548, this notification is also included in all other connectivity reporting provided in ICP mode.

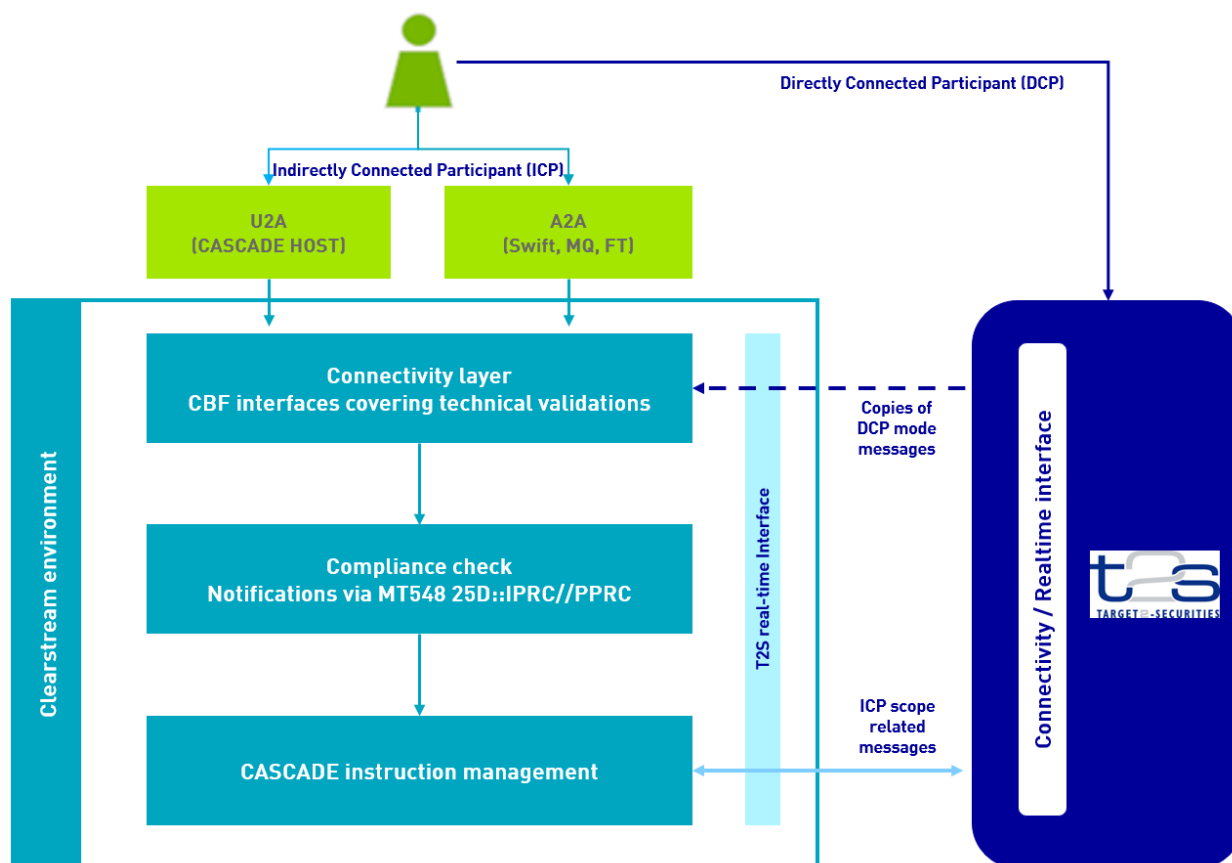The picture below illustrates the related processing chain:

Figure 6: Instruction monitoring following the compliance procedure

2.8   Reporting functionality via ClearstreamXact CBF File Service

Clients can use varios reporting options via the ClearstreamXact CBF File Service through Xact Web Portal, including print reporting:

- CASCADE Reporting;
- CASCADE-RS;
- Kapitaldienste (KADI);
- Taxbox;
- Vaults; and
- Xemac.

The use of the ClearstreamXact CBF File Service is mandatory for all clients using the print reporting functionality. In addition to the optional reporting mentioned above, balance confirmations for CBF accounts and year-end statements for CBF and CBF-i accounts are electronically available via Xact Web Portal.

Based on the present range of services, the files are prepared at the CBF account master level (4 digits; XXX) of the defined technical receiver. In Xact Web Portal, files are selected by specifying the CBF main account (7 digits; XXX 0000).

The ClearstreamXact CBF File Service can only be provided if access to Xact Web Portal has been granted, the functional role "CBF File Service - Download" has been ordered and the desired files have been selected in Order form 22 Registration for CBF Fileservice via ClearstreamXact for download.

For detailed information, please refer to the Xact Web Portal Manual.

3   Contacts

The CBF and Deutsche Börse Systems Client Services teams are available to answer any questions clients may have regarding the technical link to CBF and for general support.

Client Services Connectivity Frankfurt

Services:
- Advice (selection of communication channel, reports etc.)
- Setup of message types, reports etc.
- Setup for File Transfer
- Setup for Swift communication
- Setup for the CA spool
- General support for Swift, File Transfer and the CA spool

Contact:
Tel.   +49–(0) 69–211– 1 15 90
Fax   +49–(0) 69–211– 61 15 90
Email connect@clearstream.com

Availability:
Monday to Friday, 08:00 – 18:00

Client Services Deutsche Börse Systems

Services:
- Ordering a dedicated line, a virtual private network (VPN) and support for these services
- Physical access to CASCADE Online
- General support for CASCADE Online
- IBM WebSphere MQ

Contact:
Tel.   +49–(0) 69–211– 1 17 30
Fax   +49–(0) 69–211– 61 17 30
Email connect@clearstream.com

Availability:
Monday to Friday, 08:00 – 18:00

4   Appendix

4.1   Overview of the header types in File Transfer (ISO 15022)

The following table provides an overview of the possible types of "Cycle" (generation cycle), "Application" (CASCADE application) and "Function Code" in the header (MT598) of the message blocks of ISO 15022 files transmitted between CBF and its clients (see also section 2.3.13) and allocates the possible message types.

Message block header (types of MT598) in File Transfer (ISO 15022)			
Message type	Application	Function code	Cycle[3]
Client instruction (MT540-MT543)	CAS CRS	0001	001
Technical Validation Feedback (MT599)	CAS CRS	0103 (positive), 0104 (negative)	010
Business Validation Feedback MT548	CAS	0105	011
Statement of Holdings (MT535)	BST	0202	650
Clearing & Settlement Statement (MT536)	CSS	0203	100 200 250 300 350 380 400 500 580 600 650 700 750 800
CBF Statement of Pending Transactions	CAS	0201	041 (05:00) 061 (06:00) 071 (07:30)
Settlement Confirmations (MT544-MT547)	CAS	0200	101 (08:00)

---

[3] The cycle indicates the earliest point in time.

Message block header (types of MT598) in File Transfer (ISO 15022)			
Message type	Application	Function code	Cycle[3]
Receive Free of Payment Information (MT548) Matching Information (MT548) Processing Information (MT548) Cancellation Information (MT548) Settlement Allegement (MT578) Statement of Settlement Allegement [MT586]			151 (09:00) 201 (10:30) 251 (11:15) 301 (12:00) 351 (12:45) 401 (13:30) 451 (15:30) 501 (16:00) 551 (17:00) 601 (18:00) 651 (21:30) 801 (02:00)