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CBF July Release 2022

Stock Exchange Transactions Go OTC CSD Migration (Phase 2) and T2S Release 6.0

Customer Simulation Guideline

Updated version – April 2022

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April 2022

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1. Introduction

1.1 General information

Clearstream Banking Frankfurt (CBF) will offer a Customer Simulation period and test cases dedicated to the enhancements developed by CBF for the existing CBF functionality. The functional details about the envisaged changes are available in the following Announcements which might be updated continuously:

- SET-GO Introduction Note Phase 2
- CBF Release November 2021: Information on production launch – Update
- Information on the production launch in June 2022 – T2S Release 6.0
- CASCADE: Instruction references – Reallocation of number ranges

The test case setup by CBF will support the simulation of business cases where specific environment requirements are necessary for the implementation in July 2022. These consider mainly the processing between CBF and T2S when the functionality might impact CBF customers acting in ICP and / or DCP mode.

As the Customer Simulation environment (IMS23) is used simultaneously for other Clearstream testing activities, customers must consider the test requirements. In addition, customers can execute test cases based on their own needs using the IMS23. Customers acting in DCP mode might require additional testing for their procedures with T2S using the T2S Pre-Production Environment (UTEST).

For SET-GO CSD Migration (Phase 2), CBF will offer two migration tests based on snapshot data. In the period from 30 May to 29 June 2022 customers can execute test cases related to the modifications of the above-mentioned functional changes in the CBF software. Customers who would like to execute dedicated test cases were asked to register by latest 18 March 2022.

The participation in the CBF guided simulation is optional and not a prerequisite for admission to production for the launch date of the T2S Release 6.0 and SET-GO CSD Migration (Phase 2).

ECB decided to postpone the T2S Release 6.0 by three weeks (see ECB News). The new launch date of the T2S Release 6.0 and SET-GO CSD Migration (Phase 2) is 4 July 2022.

1.2 Scope of SET-GO CSD Migration (Phase 2)

With the go-live of the SET-GO CSD Migration (Phase 2) on 13 June 2022, the instruction and lifecycle management for non-cleared stock exchange (SE) instructions in CSC / NCSC-T securities will be executed and reported via CASCADE / T2S. The content of today's LION instructions for SE instructions in custody type CSC / NCSC-T will be transformed "OTC-like" using the automated Indirectly Connected Participant (ICP) connectivity tools, that is CASCADE Online functionality (HOST / PC) and / or the automated CBF connectivity channels (SWIFT, MQ, File Transfer (FT)) in ISO 15022. Today's instruction management for customers acting in Directly Connected Participant (DCP) mode remains unchanged.

The Stock Exchange Transaction Interface (SETI) that was introduced in November 2021, will transmit instructions of CSC / NCSC-T securities to T2S. Within SET-GO CSD Migration (Phase 2), the settlement and related reporting for CSC / NCSC-T securities will be offered in ICP and DCP mode, whereas modification requests can be exclusively entered via Clearstream. Non-cleared SE instructions in custody type CSC / NCSC-T will follow the OTC instruction lifecycle of CBF instruction type (AA01 and AA02). Whenever not explicitly explained in the upcoming chapters the lifecycle follows the standard TARGET2-Securities (T2S) process for Clearstream Banking OTC instructions.

In the following "non-cleared stock exchange instructions in collective safe custody (CSC and NCSC-T) securities" will be referred to as "SE instructions (CSC)".

During customer simulation, Clearstream offers a setup that will cover the future functionality used in production for non-cleared stock exchange trades. In general, test cases for stock exchange instructions in custody type CSC and NCSC-T will be supported, that is, such instructions will be forwarded to T2S for instruction and lifecycle management.

Customers acting in DCP mode may receive additional settlement reporting via T2S, if the related report subscription has been enabled. The existing framework will not change, hence no dedicated test cases will be set up for CSC and NCSC-T securities.

Figure 1 depicts the target flow after introduction of SET-GO CSD Migration (Phase 2).

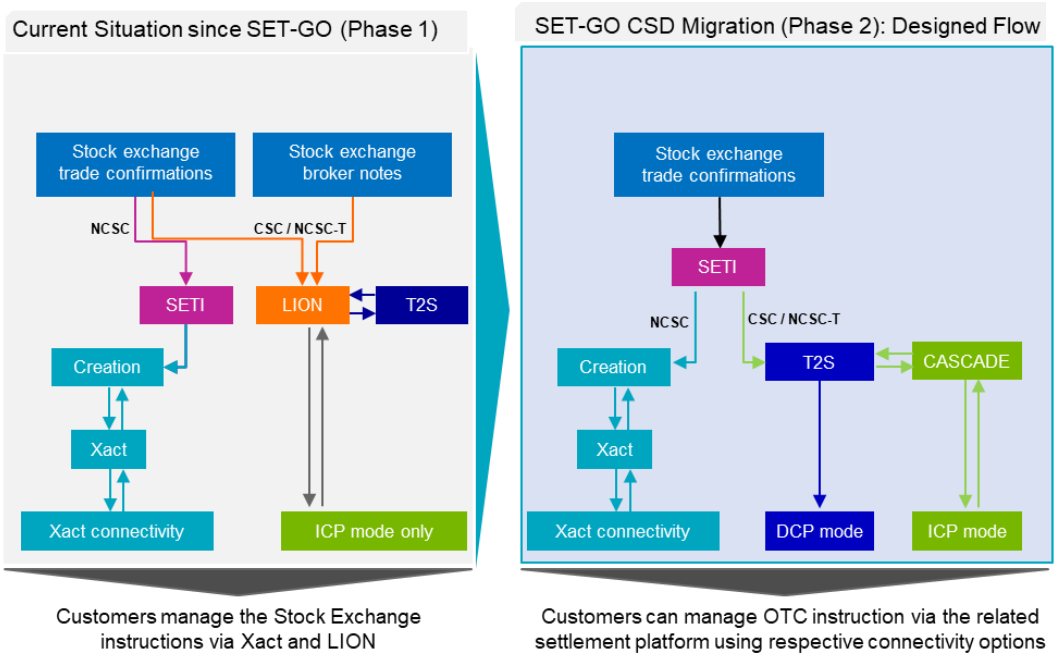

Figure 1: Targeted flow after CSD Migration (Phase 2)

1.3 Scope of T2S Release 6.0

With the T2S Release 6.0, 15 Change Requests (CRs) will be introduced in production. They have already been approved at T2S Steering Level. In addition, the resolution of some T2S Problem Tickets (PBI) will be delivered. CBF regularly reviews the lists of outstanding PBIs provided by T2S. The analysis of the list published mid-January 2022 currently shows six PBIs. Experience shows that until a T2S release is launched, additional tickets can be authorised for implementation. CBF will inform customers in due time if the scope changes with an update of the Information on the production launch in June 2022 – T2S Release 6.0.

Customers acting in DCP mode must use the updated XSD schema defined in SWIFT MyStandards. According to the T2S description, changes in the XSD are triggered for the implementation of the T2S Release 6.0. The final version of the XSD files is available since end of January 2022.

Regarding the readiness to the Eurosystem Single Market Infrastructure Gateway (ESMIG), on 7 July 2021 a central communication for DCPs establishing and maintaining the technical sender or receiver (DiCoAs) was published by the ECB. This documentation provided the main principles for the monitoring of DiCoAs connectivity. However, due to the necessary replanning for ESMIG configuration, the common component "Datawarehouse (DWH)" will be introduced delayed. The envisaged implementation date has been outlined with T2S Release 6.2 in November 2022.

In UTEST, the configuration of the new mandatory access rights were delivered. That is, the new privileges were set up system-wise by T2S, except the common component "Datawarehouse (DWH)". These rights grant access to the new common components that will partially replace the current presentation of the T2S Graphical User Interface (T2S GUI):

TARGET Service	Specific Component	Common Component
T2	CLM	DWH
	RTGS	CRDM
	ECONS	BILL
		BDM
T2S	T2S	DWH
		CRDM
		BILL
		BDM
ECMS	ECMS	BILL
TIPS	TIPS	CRDM
		BILL

Figure 2: T2S component catalogue
Source: T2S Clarification Note "Common Reference Data Management set up for ESMIG interaction"

Based on the roles and privileges concept defined by CBF for customers acting in DCP mode, customers are requested to enable the specific component "T2S", the common component "Common Reference Data Management (CRDM)" and "Business Day Management (BDM)".

On 29 March 2022, CBF allocated three further privileges enabling DCP admin users ("Access Rights Admin./Basic DCP" role) maintaining the rights in UTEST:

- T2S_Access;
- CRDM_Access; and
- BDM_Access.

Currently, "Access Rights Admin./Basic DCP" role has following six privileges:

- ARM_AdministerParty;
- ARM_GrantPrivilege;
- ARM_GrantRole;
- ARQ_GrantedSysPrivilegesListQuery;
- ARQ_GrantObjectPrivilegesListQuery; and
- ARQ_Granted-RolesListQuery.

DCP admin users can distribute relevant rights and roles to their users so that they can also access the new GUIs. In the period between 11 and 27 April 2022, the rights management is requested to be updated allowing a proper start of T2S Release 6.0 in UTEST on 2 May 2022.

Based on the analysis of the T2S Change Request documentation for T2S-0557-SYS "Skip validations on minimum settlement unit (MSU) and settlement unit multiple (SUM) for settlement instructions related to Market Claims and Transformations" the adjustment in the T2S functionality will lead to changes in the customers' instruction management. With the implementation of the June 2022 release, T2S will no longer validate the fields minimum settlement unit (MSU) and settlement unit multiple (SUM) for all instructions provided with the ISO transaction code "CLAI". With this procedure, T2S standardises the settlement rules for CSDs and other T2S Actors. The adjustment means that, in particular for market claims and transformations, the nominal specified in the securities instruction can differ from the security master data stored in T2S. Currently, instructions provided with the ISO transaction code "CLAI" and showing a deviating nominal are rejected by the inbound interfaces.

According to the T2S Service and Transition Plan, T2S will deploy the scope elements for the T2S Release 6.0 in UTEST on Friday, 29 April 2022. Please refer to Appendix 2 for more details regarding the deployment schedule.

The execution in UTEST for T2S Release 6.0 finishes on 14 June 2022. After this date, however, customers can still execute test cases.

1.4 Structure and content of this document

This simulation guideline covers the necessary scope and general framework for organising, preparing, and executing the CBF July Release 2022 with Clearstream. The purpose of the document is to ensure a smooth and efficient transition phase. It provides a common understanding and commitment of all involved stakeholders for the simulation execution, its required timeline, the environment setup, and the content.

The guideline describes how Clearstream supports customer specific SET-GO testing by offering them the Clearstream simulation environments (IMS23 and OCCT) as well as by organising functional Focus Days, when special data setups are needed. In addition, this guideline intends to provide customers with the simulation requirements and to guide them through continuous simulation. Clearstream will provide test cases that will be executed during the migration testing and guided simulation period.

Following the introduction and general topics in Chapter 1:

- Chapter 2 sets out the schedule and the content of each stage planned for the simulation.
- Chapter 3 outlines details on static and dynamic data, snapshot data, information related to CBF and CBF-i account connectivity settings as well as technical connectivity testing.
- Chapter 4 describes the prerequisites for participation in the guided simulation and migration reporting including forms and creation of holdings.
- Chapter 5 provides the customer simulation calendar which gives a chronological overview of the planned test activities and availability of the environments.
- Chapter 6 explains the guided simulation and provides predefined stock exchange trades and test narratives for corporate action events including the Focus Days. In addition, detailed information on the migration test scenarios and related migration reporting is given.
- Chapter 7 describes the free simulation in which customers can execute test cases including regression testing of CSC securities on their demand.
- Chapter 8 and the appendix provide additional material supporting the customer simulation.

2. Scope of Customer Simulation for CBF July Release 2022

In general, the scope of the customer simulation for CBF July Release 2022 entails the following:

- End-to-end testing of SE instructions in custody type CSC and NCSC-T;
- Regression testing of SE instructions in custody type NCSC as well as CASCADE OTC instructions;
- SET-GO migration procedure based on predefined snapshot data;
- Recycling and reinstruction service for CASCADE instructions;
- Taxpayers' Identification Number for Italian bonds;
- Corporate action testing for KADI income and non-income events; and
- Auto-Admission procedures for CBF New Issues.

The customer simulation in CSD Migration (Phase 2) follows a staggered approach. In total, the customer simulation runs over a period of nine weeks, split into two stages:

- Stage 3 starts on 26 April 2022 and ends on 20 May 2022. This test period offers the migration of pending stock exchange instructions in custody type CSC and NCSC-T. During the deployment of the T2S Release 6.0 in the various test environments, the SET-GO migration test procedures will be on hold.
- Stage 4 starts on 23 May 2022 and ends on 29 June 2022. Right at the beginning another migration of pending stock exchange instructions in custody type CSC and NCSC-T will be executed. Afterwards, the end-to-end test as well as regression testing will be offered for lifecycle management of non-cleared SE instructions and OTC instructions settled via T2S supporting the software changes induced by CBF July Release 2022.

Depending on the stage, a different scope for the customer simulation applies. The following two tables indicate the test activities planned for each phase in chronological order:

Stage 3 (26 April – 20 May 2022)		
Test week	**Period**	**Scope**
1	26 April –29 April 2022	Preparation of migration test run 1 for SE instructions (CSC)
2	2 May – 6 May 2022	Slow motion testing of T2S Release 6.0 deployment weekend
3 - 4	9 May – 20 May 2022	Migration test run 1 for SE instructions (CSC)

Table 1: CBF July Release 2022 Customer Simulation Stage 3

Stage 4 (23 May – 29 June 2022)		
Test week	**Period**	**Scope**
1	23 May – 27 May 2022	Migration test run 2 for SE instructions (CSC)
2	30 May – 3 June 2022	End-to-end testing with T7 Regression testing for SE instructions (NCSC)
3 - 5	7 June – 29 June 2022	End-to-end testing with T7, Xontro, and Tradegate Various Focus Days for KADI Corporate Actions, CBF Recycling Services, and Auto-Admission processing Regression testing on customer demand

Table 2: CBF July Release 2022 Customer Simulation Stage 4

The customer simulation for CBF July Release 2022 covers the guided simulation, migration testing, and the free simulation for SE instructions. The different test activities enable customers the verification of the instruction management for CBF instruction types (AA01 / AA02) and CBL internal instructions (41, 51 / 4F, 5F). The focus of the customer simulation is on the testing of settlement instruction procedures allowing a verification of the CBF A2A and U2A connectivity channels. Furthermore, the instruction maintenance via Xact A2A and Xact Web Portal is offered.

Please refer to the figure below for an indicative timeline of the environment availability and planned test activities with regards to the CBF July Release 2022 customer simulation. More detailed information can be found in Chapter 5 under "Customer simulation calendar".

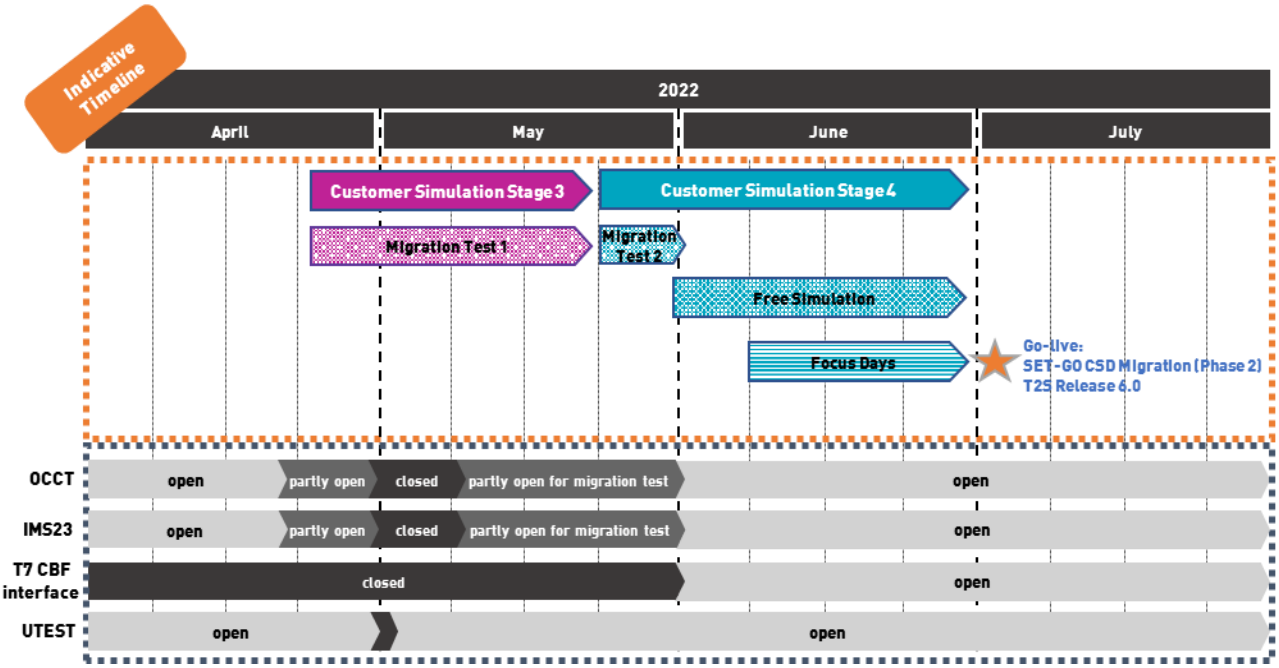

Figure 3: CBF July Release 2022 Customer Simulation timeline overview

3. Preparation testing environments

In preparation for the transition of a release, CBF closes the Customer Simulation environment (IMS23) to internally test the deployment activities, that will be performed during the Release Weekend, step by step. For the Customer Simulation period April to June 2022, the IMS23 will not be available for roll-out activities during the period from 21 April 2022 to 27 May 2022. However, for SET-GO migration activities, CBF will offer the dedicated migration reporting in May 2022.

On 21 April 2022, with the end of day procedures, CBF will close the CASCADE Online functionality (HOST / PC) as well as the automated connectivity channels (SWIFT, MQ and File Transfer (FT)). Customers using:

- The CASCADE Online functionality (HOST / PC) cannot access the IMS23.
- SWIFT will only receive the SWIFT acknowledgement. The messages are held in the SWIFT network and will be not available in the CBF simulation environment. Once CBF opens IMS23, all messages will be processed, and the feedback is sent based on the existing message configuration on 10 May 2022.
- MQ messages cannot be transferred to CBF after CBF has closed its gateway. The messages will remain on the customer side, that is in their queues. If test activities are planned, customers are requested to check their configuration and must ensure sufficient storage capacity by 10 May 2022.
- For any message sent to the IMS23 while the gateway is closed, the system used to monitor the MQ connection will send a warning that the CBF channels and queues are not available during downtimes.
- FT need to consider that the transmitted files will not be processed – not even after the re-opening – in IMS23 and hence no feedback is sent.

On 10 May 2022 after the re-opening of IMS23, SWIFT and MQ messages that are queued will be processed using the updated software modules. Hence, the feedback can be different to the results currently presented in production. The feedback might not be processed at customer side if their software is not compatible with the scope items of the CBF and T2S Release July 2022.

As of 2 May 2022, after the deployment of T2S Release 6.0 in the T2S Pre-Production environment (UTEST), customers acting in DCP mode can start testing considering the modifications driven by ESMIG. These customers need to consider the announced CBF downtime from 21 April 2022 to 27 May 2022 while executing test cases. During this period, T2S outbound messages to CBF will not be processed in IMS23. Hence, if the T2S settlement processing requires a validation by CBF, for such messages the final settlement cannot be achieved. However, the T2S reporting will be provided upon message subscription and will contain the information according to the definition of T2S.

3.1 Getting ready for customer simulation

During the simulation period for the CBF July Release 2022, customers will be able to receive settlement reporting for SE instructions via the different testing environments. For securities in custody type CSC / NCSC-T, the settlement reporting will be offered via the CBF customer simulation environment (IMS23) and the T2S Pre-Production environment (UTEST). As part of the regression testing, the settlement reporting for securities in custody type NCSC will be provided via the CBL testing environment (OCCT). In addition, regression testing for CASCADE OTC instructions in custody type CSC can be executed. Customers acting in DCP mode can also receive the reporting via the T2S Pre-Production environment (UTEST) for ISINs with custody CSC and NCSC-T.

Customers who would like to execute dedicated test cases were asked to register by latest 18 March 2022. The related registration form is available on the Clearstream website under Testing and Simulation.

Migration tests will be offered between 26 April and 17 May 2022 (run 1) as well as in the period 23 May to 25 May 2022 (run 2). During these time frames, CBF prepares IMS23 for the customer simulation activities. Therefore, the environment is available for reporting purposes only (CBF Outbound).

Between 30 May and 29 June 2022, the various simulation environments will be available and participating customers can start to execute test cases and assess possible impacts on their functional and organisational procedures.

For a successful participation in the customer simulation, account and connectivity settings must be available. The static data for accounts and related connectivity settings from the previous simulation period stored in UTEST, IMS23, and OCCT will be reused. Customers that have not participated in the previous customer simulation or require their account / connectivity settings to be verified are requested to contact the CBF Customer Readiness team. Changes had to be communicated via T2S-Support@clearstream.com by 18 March 2022.

Since the introduction of T2S, customers are responsible for the funding of the Dedicated Cash Account (DCA). This procedure applies for production and in UTEST. Allowing a successful settlement of instructions, the CBF customer needs to be prepared to fund the DCA. Liquidity transfers can be arranged using the functionality offered by the respective National Central Bank (NCB). For the testing of stock exchange transactions there are no specific requirements. That is, the procedures used for previous customer simulations can be re-used.

3.2 Snapshot data

The objective of the snapshot is to enable production-like test data. Extracted from LION production environment, this data will be used to set up SE instructions (CSC) for a settlement on CASCADE / T2S via SETI. Instructions with custody type NCSC are out of scope. In addition, the snapshot data does not contain broker notes ("Aufgaben") meaning a trade that is pending at the broker.

Only SE instructions (CSC) of customers participating in migration testing will be used for further processing. This means, the sell side and buy side must be registered for the migration test. CBF will provide the accounts via the "Disclosed Member List". For more information, please refer to Chapter 4.2. "Customer Simulation Registration Form".

Due to the capacity limitations defined for the testing environment UTEST, the snapshot data / volume needs be reduced. CBF selected ISINs for migration testing to reduce the number of instructions extracted from the snapshot date. The ISIN list is available in Chapter 4.3 "Creation of holdings".

The snapshot is taken from the business day:

- 18 March 2022 for pending SE instructions (CSC) end of day and new trade confirmations received from the stock exchange locations at around 22:00. The selected pending instructions will be loaded in LION (IMS23) and transmitted to UTEST on 26 April 2022 for preparation of the migration test run 1. Due to the changes in the T2S recycling period for the deployment of T2S Release 6.0 (UTEST) between April and May 2022, the Intended Settlement Date (ISD) of the stock exchange instructions has to be carried forward to:
    - 11 May 2022 for Input Date 16 March 2022 and before;
    - 13 May 2022 for Input Date 17 March 2022; and
    - 17 May 2022 for Input Date 18 March 2022.
- 22 April 2022 for pending SE instructions (CSC) end of day that were presented by the stock exchange locations between 21 March 2022 and 22 April 2021. As a result, there will be no overlap between the snapshot dates. The selected pending instructions will be loaded in LION (IMS23) and transmitted to UTEST on 23 May 2022 for preparation of the migration test run 2. The ISD of the stock exchange instructions will be carried forward to:
    - 27 May 2022 for Input Date 21 April 2022; and
    - 30 May 2022 for Input Date 22 April 2022.

  The ISD of stock exchange instructions with Input Date of 20 April 2022 and before will not be changed.

Customers are recommended to take a data snapshot of their own production environments as of the same date as CBF. This data can be used to initialise the test environment to be in sync with CBF. Additionally, for the migration testing, static data for securities may have to be enriched.

3.3 CBF and CBF-i account settings in testing environments

For a successful participation in the customer simulation, account settings must be available in T2S Pre-Production environment (UTEST), CBF customer simulation environment (IMS23), and CBL test environment (OCCT). In general, the settings used in the testing environment shall not deviate from production. If customers decide differently, they are requested to reconfirm the settings in the testing environment and are requested to consider the risk that is imposed by executing test cases with deviating static data. The default language of the reports transmitted via the testing environment depends on the settings used in production. Customers cannot change these settings in IMS23.

The related connectivity settings will be reused from the previous simulation periods stored in IMS23 and OCCT. If the account settings in IMS23 or OCCT were requested to be updated, customers could have contacted the CBF Customer Readiness team via T2S-Support@clearstream.com by 18 March 2022.

3.4 CBF customer simulation environment (IMS23): Connectivity channels

For the CBF July Release 2022 Customer Simulation, customers may need a connectivity set up to IMS23 and UTEST. The connectivity setup from the previous simulation period stored in the different testing environments will be reused. This is valid for the settlement and custody reporting.

Customers that have not registered for previous customer simulations or require their connectivity settings to be verified are requested to contact the CBF Customer Readiness team. Changes in the connectivity setup needed to be communicated via T2S-Support@clearstream.com by 18 March 2022.

After the introduction of SET-GO CSD Migration (Phase 2), Reg-Über-Filialen (Branches) are not configured as a settlement participant meaning no CBF settlement reporting service is provided. The lifecycle of the SE instructions (CSC) must be managed by the respective settlement agent of the Branch and can no longer be reported to the Branch itself.

For all stock exchange instructions, the Party Level 1 and 2 concept is used. The Party Level 1 (REAG / DEAG, representing the settlement party) and Party Level 2 (BUYR / SELL, providing details about trading partners) are presented in both legs of the settlement instruction. Therefore, the Reg-Über-Zentrale (Head Office) has to consider that the Branch(es) may require a reporting. If a Branch is interested in participating in the customer simulation, they will need to contact their respective Head Office.

In the Customer Simulation Registration Form for CBF July Release 2022, customers must provide the CBF and CBF-i accounts that will participate in the simulation if they are acting as settlement agent or on their own behalf as account owner (Reg-Über Konzept). Customers being a Branch are requested to liaise with their Head Office to agree on simulation activity. Registration forms provided by Branches cannot be considered by CBF. For further information on the registration form, please refer to Section 4.1.

For the message exchange via the SWIFT network, SWIFT requires the use of Test BICs as technical sender and receiver address within its testing environment. The Test BIC must be registered with the SWIFT network. If customers wish to participate via a Test BIC for the first time, they should allow some time for the preparation of the technical setup by SWIFT, RMA key exchange and connectivity tests.

For a regression test in custody type CSC and NCSC-T, the message exchange via File Transfer (FT) as well as MQ and the production sender / receiver addresses are to be used. Only production addresses are allowed in the CBF connection to T2S.

Technically, CBF customers can send instructions to the CBF customer simulation environment (IMS23) by using the production BIC DAKVDEFFXXX in the header or the CBF Test BIC ZYDGDEF0DOM when they instruct via File Transfer or MQ. Via SWIFT, BIC ZYDGDEF0DOM must always be used. If a customer wants to send an instruction to a test system via File Transfer, the message has to be identified as not being for production. This is done by a TNG trailer at the end of the instruction: ä5: äTNG: üü

The trailer is used for CBF replies to customers, too. This guarantees that CBF test messages can clearly be identified, so that the customer can avoid injections into the customer's production system.

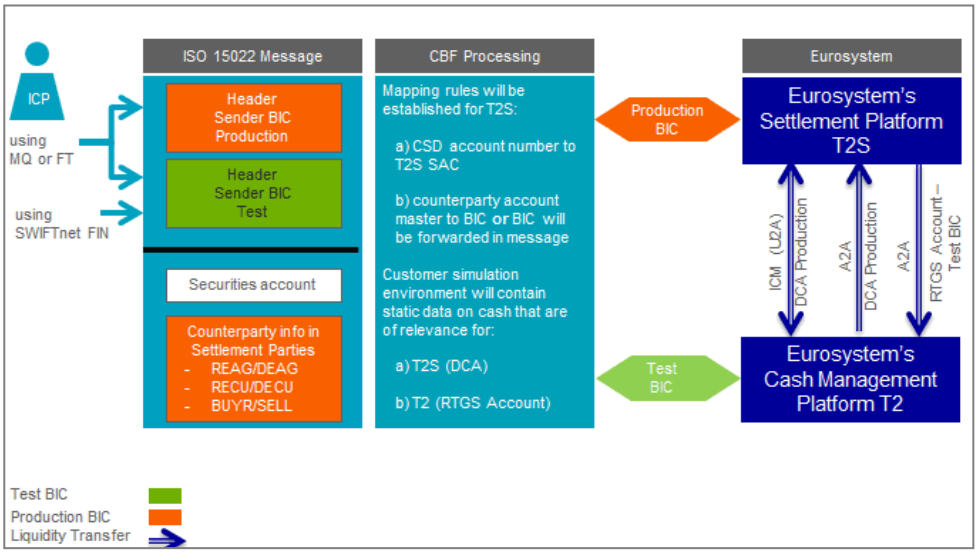

Figure 4: Message flow during the testing

The CBF customer SWIFT addresses used in their messages to CBF is applied by CBF to create the T2S actor reference for DCP eligible instruction types. If the SWIFT address is a Test BIC and linked to an account with T2S Party BIC, this BIC is used when forwarding the messages to the T2S platform.

In order to set up the required connectivity channels, it is required as in production to request the settings in advance. The required order forms are available via the Clearstream website. Please contact the Connectivity Support team (connect@clearstream.com) if connectivity settings in IMS23 needs to be verified.

3.5 CBL test environment (OCCT): Connectivity channels

For the message exchange via the SWIFT network, SWIFT requires the use of Test BICs as technical sender and receiver address within the testing environment. Test BICs used in IMS23 might be different to the Test BICs used in OCCT. The Test BIC must be registered with the SWIFT network. If customers wish to participate via a Test BIC for the first time, they should allow some time for the preparation of the technical setup by SWIFT, RMA key exchange and connectivity tests.

Technically, CBF customers can send instructions to the CBL test environment (OCCT) using the CBL Test BIC ZYAILUL0XXX in the header via A2A connectivity (SWIFT, File Transfer) or U2A connectivity (Xact Web Portal). BICs used in production are different to the ones provided in the test environment. For CBF -i accounts, Test BICs needs to be provided by customers and they need to be linked to the BIC. Customers are requested to check account connectivity settings.

The Xact A2A connectivity setup from the previous simulation period stored in CBL test environment (OCCT) will be reused.

Ensuring a proper instruction maintenance via Xact Web Portal customers are requested to check if the tester have sufficient access and the necessary user rights. For more details about the relevant settlement functionalities, please refer to "Table 7 - Functionalities for instruction maintenance" in Section 6.1.1.

Please contact the Connectivity Support team (connect@clearstream.com) if connectivity settings in OCCT needs to be enriched for the customer simulation.

4. Preparation test execution

4.1 Customer Simulation Registration Form

Customers interested in executing specific test cases for the migration procedures and the new lifecycle management of stock exchange instructions in custody type CSC and NCSC-T are requested to complete the CBF July Release 2022 Customer Simulation Registration Form. CBF will use the "Single Point of Contact (SPOC)" concept. Therefore, customers are requested to define a coordinator for the customer simulation who will receive all relevant information and updates, if necessary. The "SPOC" is kindly asked to inform their test team responsible for customer simulation activities.

Allowing a proper execution of the customer simulation, CBF will request dedicated account information in the Registration Form. Customers need to define on account level whether the account used in customer simulation is the settlement account by a member of a German stock exchange. If the account is flagged as a Reg-Über-Zentrale (Head Office) and / or the testing shall be executed for a Reg-Über-Filiale (Branch) these details need to be specified. In addition, the T7 member id information and / or the participation in Xontro as well as Tradegate needs to be indicated in the registration form.

Test cases may require customer coordination for instruction management and / or the creation of stock exchange trades. For this purpose, CBF offers a "Disclosed Member List" with corresponding SPOC contact details. Interested customers need to fill in the details which require a signature from the SPOC in the registration form. The CBF Customer Readiness team has sent the "Disclosed Member List" to participating customers via T2S-Support@clearstream.com.

Based on the information provided on the registration form, Clearstream will create necessary settings in IMS23, OCCT, and UTEST, if a customer requires an update of the static data for accounts and / or the related connectivity settings.

4.2 SET-GO Migration Reporting Registration Form

Customers interested in receiving the dedicated SET-GO migration reporting during the customer simulation need to register. Based on the information provided in the SET-GO Migration Reporting Registration Form, the migration reporting will be made available via Host Fileservice. Customers should consider informing their data centres about the dedicated migration reporting.

Different to production, during customer simulation the migration reports available on Host Fileservice can only be retrieved via the website of Group Deutsche Boerse. The connectivity media "Direct", "NJE" and "CA-spool" are not supported in simulation but are available for the migration weekend in production.

The SET-GO Migration Reporting Registration Form is available on the Clearstream website and had to be returned for the customer simulation by 4 March 2022, if not already submitted.

4.3 Creation of holdings

Between 18 April and 25 April 2022 as well as 27 and 30 May 2022, CBF will collect the existing holdings of predefined securities from customer accounts and redistribute them via CBF account 4424 to the respective CBF main account (xxxx 000). Positions currently held in the testing accounts will remain and only when no position is in place a holding will be created.

During the customer simulation, securities will be offered that are categorized as "Blue Chips" and hence registered shares are covered. As CASCADE-RS is not involved in this testing, CBF will ensure that the nominal shown is available in "Freier Meldebestand" for registered shares.

Once the holdings are set up, customers acting in ICP mode can verify them via the CASCADE Online functionality (HOST/ PC) or MT535 Statement of Holding, if subscribed in IMS23. In the above-mentioned time frame, customers must not enter test cases nor transmit instructions via an automated connectivity channel towards IMS23 or UTEST. In addition, the CASCADE Online functionality (HOST/ PC) must not be used. This will allow the CBF Customer Readiness team a reconfiguration of IMS23 and preparation of the Focus Days in time.

Customers who are connected to UTEST and receive (settlement) reporting might notice instruction flows between CBF and T2S from setup activities.

The static data for the ISINs selected are based on the settings defined in Wertpapier-Service-System (WSS) stored in IMS23.

For each account participating, holdings are enabled as shown in the table below:

ISIN	Name	Nominal available	Tradeable via
CA0679011084	BARRICK GOLD CORP.	100,000	T7 XFRA
CA2926717083	ENERGY FUELS INC.	10,000	T7 XFRA
DE0005140008	DEUTSCHE BANK AG NA O.N.	10,000	T7 XFRA
DE0005552004	DEUTSCHE POST AG NA O.N.	10,000	T7 XFRA
DE0005557508	DT.TELEKOM AG NA	10,000	T7 XFRA
DE0006231004	INFINEON TECH.AG NA O.N.	10,000	T7 XFRA
DE0006599905	MERCK KGAA O.N.	10,000	TRADEGATE
DE0007100000	DAIMLER AG NA O.N.	10,000	T7 XFRA
DE0007236101	SIEMENS AG NA	10,000	T7 XFRA
DE0007314007	HEIDELBERG.DRUCKMA.O.N.	100,000	T7 XFRA
DE0007664039	VOLKSWAGEN AG VZO O.N.	100,000	T7 XFRA
DE0008232125	LUFTHANSA AG VNA O.N.	10,000	T7 XFRA
DE0008404005	ALLIANZ SE NA O.N.	10,000	T7 XFRA
DE0008430026	MUENCH.RUECKVERS.VNA O.N.	10,000	T7 XFRA
DE0008491002	UNIFONDS	10,000	T7 XFRA
DE000A0D9PT0	MTU AERO ENGINES NA O.N.	10,000	T7 XFRA
DE000A0F5UF5	ISHARES NASDAQ-100 U.ETF	10,000	T7 XFRA
DE000A0KRJ36	ETFS COM.SEC.DZ06/UN.NGAS	100,000	TRADEGATE
DE000A0KRJ51	ETFS COM.SEC.DZ06/UN.SLVR	1,000	TRADEGATE
DE000A0Q8A07	CONCEPT AURELIA GLOBAL	1,000	XONTRO
DE000A0WMPJ6	AIXTRON SE NA O.N.	10,000	T7 XFRA

ISIN	Name	Nominal available	Tradeable via
DE000A169HW2	1,45 IKB DT.IND.BK.MTN 16/22	100,000	T7 XFRA
DE000A182VS4	0,875 VONOVIA FINANCE 16/22 MTN 10.06.G	1,000,000	T7 XFRA
DE000A1ML7J1	VONOVIA SE NA O.N.	10,000	T7 XFRA
DE000A1YCQD2	0,375% STADT HAMBURG LSA A.2/15	100,000	XONTRO
DE000ENAG999	E.ON SE NA O.N.	10,000	T7 XFRA
DE000ETFL102	DK MSCI JAPAN LC	1,000	T7 XFRA
DE000ETFL110	DEKA IBOXX EU.LI.S.D 1-10 UCITS ETF	1,000	T7 XFRA
DE000ETFL128	DEKA IBOXX EU.LI.S.D 1-3 UCITS ETF	10,000	T7 XFRA
DE000HLAG475	HAPAG-LLOYD AG NA O.N.	10,000	T7 XFRA
DE000KSAG888	K+S AG NA O.N.	10,000	T7 XFRA
DE000PAH0038	PORSCHE AUTOM.HLDG VZO	100,000	T7 XFRA
DE000PH93S77	BNP PAR.EHG TURBOS DAX 15579,9997	On demand	T7 XFRA
DE000PH93TC9	BNP PAR.EHG TURBOS DAX 15629,7603	On demand	T7 XFRA
DE000PD1LR02	BNP PAR.EHG X-TUS DAX 15333,4462	On demand	T7 XFRA
DE000PD1LR51	BNP PAR.EHG X-TUS DAX 15383,295	On demand	T7 XFRA
DE000TUAG000	TUI AG NA O.N.	10,000	T7 XFRA
FR0004056851	VALNEVA SE EO -,15	10,000	T7 XFRA
FR0010524777	LYX.MSCI NE ESG FIL.DR D	10,000	T7 XFRA
GB00B03MLX29	ROYAL DUTCH SHELL A EO-07	100,000	T7 XFRA
IT0000072618	INTESA SANPAOLO EO 0,52	10,000	T7 XFRA
IT0004735152	3,433529% B.T.P. 11-26 FLR	10,000	T7 XFRA
IT0005001547	3,75% B.T.P. 14-24	10,000	T7 XFRA
LU0274209237	DB X-TR.MSCI EUR.IDX.DR1C	10,000	TRADEGATE
LU0274211480	DB X-TRACK.DAX ETF(DR)1C	10,000	T7 XFRA, XONTRO
LU0383026803	STUTTGARTER-AKTIEN-FONDS	1,000	T7 XFRA
LU0392494562	LYXOR MSCI WORLD ETF I	10,000	T7 XFRA
LU0603942888	COMST.-SDAX TR UCIT.ETF I	1,000	TRADEGATE
LU0629459743	UBSLFS-MSCI WLD.SR DLAD	10,000	T7 XFRA
NL0010273215	ASML HOLDING EO -,09	1,000	T7 XFRA
US00206R1023	AT + T INC. DL 1	10,000	T7 XFRA
US01609W1027	ALIBABA GR.HLDG SP.ADR 8	10,000	T7 XFRA
US02079K3059	ALPHABET INC.CL.A DL-,001	10,000	T7 XFRA
US02209S1033	ALTRIA GRP INC. DL-,333	10,000	T7 XFRA
US0231351067	AMAZON.COM INC. DL-,01	100,000	T7 XFRA

ISIN	Name	Nominal available	Tradeable via
US0846707026	BERKSH. H.B NEW DL-,00333	10,000	T7 XFRA
US0970231058	BOEING CO. DL 5	10,000	T7 XFRA
US1912161007	COCA-COLA CO. DL-,25	100,000	T7 XFRA
US3682872078	GAZPROM ADR SP./2 RL 5L 5	100,000	T7 XFRA
US4581401001	INTEL CORP. DL-,001	10,000	T7 XFRA
US4592001014	INTL BUS. MACH. DL-,20	10,000	T7 XFRA
US55315J1025	MMC NOR.NICK.PJSC ADR RL1	10,000	T7 XFRA
US64110L1061	NETFLIX INC. DL-,001	10,000	T7 XFRA
US6541061031	NIKE INC. B	10,000	XONTRO
US67066G1040	NVIDIA CORP. DL-,001	10,000	T7 XFRA
US7170811035	PFIZER INC. DL-,05	10,000	T7 XFRA
US72919P2020	PLUG POWER INC. DL-,01	10,000	T7 XFRA, TRADEGATE
US7960502018	SAMSUNG EL./25 GDRS NV PF	10,000	T7 XFRA
US88160R1014	TESLA INC. DL -,001	10,000	T7 XFRA
US8816242098	TEVA PHARMACEUT. SP.ADR	10,000	T7 XFRA
US8825081040	TEXAS INSTR. DL 1	10,000	T7 XFRA
XS1591416679	2,625 % K+S AG ANL.17/23 06.04.G	100,000	T7 XFRA
XS1853998182	4 % OTTO GCKG NTS.18/UNBEFR. 17.07.G	100,000	T7 XFRA
XS1910851242	1,5 % GRENKE FIN. 18/23 MTN 05.10.G	100,000	T7 XFRA
XS2024715794	0,5 % DT.TELEKOM MTN 19/27 05.07.G	100,000	T7 XFRA
XS2084497705	0,625 % FRESE.MED.CARE MTN 19/26 30.11.G	100,000	T7 XFRA

Table 3: List of ISINs in custody type CSC and NCSC-T for the CBF July Release 2022 Customer Simulation

4.4 Processing of stock exchange transactions (CCP / non-CCP)

Upon customer demand, stock exchange trades can be entered for security settlement activities in T2S / CASCADE or Creation. Trades can be set up with an operating Market Identifier Code (MIC) in the trading system. If the flag:

- "XFRA" is used, they are forwarded as non-CCP trades towards the new routing system SETI (NCSC, CSC, and NCSC-T). This flow is part of the SET-GO CSD Migration (Phase 2) customer simulation.
- "XETR" is used, they are processed via CCP and clearing results will be provided to CBF for further processing in CASCADE. This flow has been added for completeness of stock exchange trade flows.

In general, the simulation environment of Eurex Clearing AG (ECAG) for CCP activities will be connected to the CBF customer simulation environment (IMS23). CBF supports the testing of stock exchange trades cleared by the clearing platform (C7 SCS).

Non-cleared stock exchange trades will be transmitted to the CBF customer simulation environment (IMS23) on "CCP Batch Days" only. The batch days defined by ECAG are shown in Chapter 5 "Customer simulation calendar". Non-cleared stock exchange trades will be supported during the Customer Simulation Stage 4 from 30 May 2022.

The figure below depicts the process chain of stock exchange instructions during CBF July Release 2022 Customer Simulation:

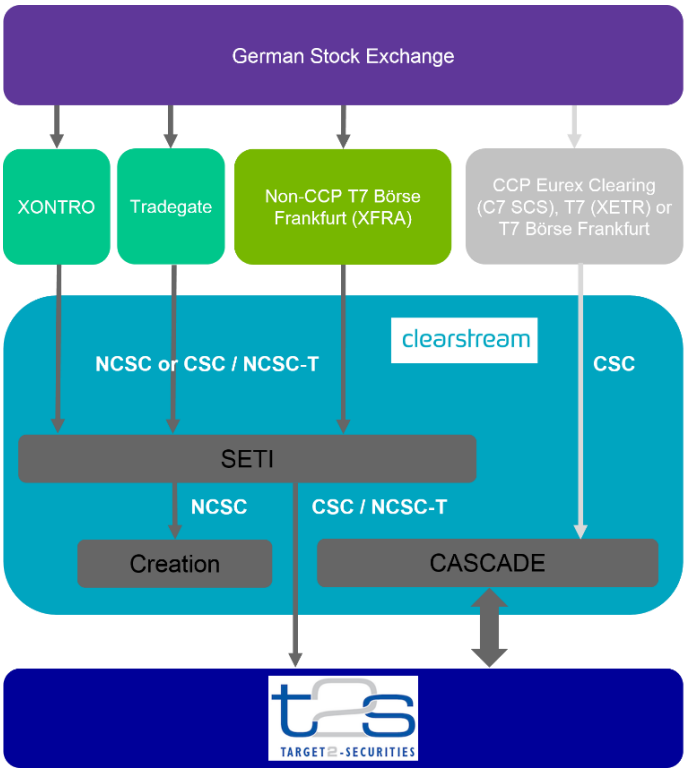

Figure 5 - Process chain stock exchange instructions

4.5 Limitation for pending instructions

During the test execution, each customer participating in the simulation is requested to consider that high volumes of pending instructions in UTEST impacts the performance of all T2S test environments. Therefore, the customer should actively monitor the number of pending instructions and ensure that no more than 500 pending instructions are active in the test system. To determine the number, all instructions must be considered, independent from:

- The status, that is, matched, unmatched, hold or release;
- The business procedure, that is, domestic and cross-border instructions, Stock Exchange trades and instructions resulting from corporate actions;
- The connectivity channel, that is, ICP or DCP mode;
- The test activity conducted with Clearstream Banking (for example One Clearstream).

This limitation applies to all accounts (and sub-accounts) of a customer that are set up in the CBF Customer Simulation environment (IMS23) for testing.

T2S aims to reduce the number of pending trades prior to the deployment of a release in order to minimise the capacity and resources needed for the deployment in UTEST. Therefore, T2S will change the recycling period in the week before the installation. The parameter will be set to one T2S Settlement Day for matched and unmatched instructions. The standard values (five T2S Settlement Days for unmatched instructions and 60 days for matched instructions) will be restored after the successful deployment in UTEST. For the implementation of the T2S Release 6.0, the different recycling period will apply from Monday, 25 April 2022 until Monday, 2 May 2022.

Furthermore, CBF intends to carry out two clean-ups to remove pending instructions for securities in custody type CSC and NCSC-T:

- 20 May 2022 – instructions with an ISD prior 18 May 2022 are cancelled;
- 8 July 2022 – instructions with an ISD prior 1 July 2022 are cancelled.

4.6 KADI services environment settings

The processing of predefined income and non-income events in IMS23 will be executed via KADI. The events (Focus Days) scheduled are limited to the scope defined in this document. CBF asks customers participating in the test to ensure that their internal test system for securities master data will support these ISINs.

The table below lists the event-driven activities related and the related processing during the customer simulation in IMS23:

Event-related activity	General information related to event procedures using KADI
Cancellation period for pending market claims	During the customer simulation, pending market claims are cancelled after ten business days. A reminder is sent after five business days.
Cancellation period for pending transformations	During the customer simulation, pending transformations are not cancelled because the 60 days period is also applicable in UTEST. This time frame exceeds the guided customer simulation period.
Cash proceeds	During the customer simulation, all income events distributed in Euro, for securities where CBF acts in the role as the Issuer-CSD, will be transferred to the existing Custody Default T2S DCA, if not differently defined in the static data for the main / sub account. For securities that are not covered by the CBF Corporate Action Cash Payment model, the liquidity transfer will be initiated in the CBF DD1 cycle using the T2 ASI procedure 3. The cash movements for income events are reported via MT942 "Interim Transaction Report" and MT950 "Statement Message".
Corporate action announcement	Customers will be informed via MT564, if they have requested the related KADI settings in the account master and subscribed for the connectivity settings. The MT564 will be send out to the customers in real-time if the event was subject to a change on a record date or to a cancellation / repayment. The notification will be provided as shown in the event details or highlighted in the customer simulation calendar.
Corporate action confirmation	For income events distributed in Euro and for securities where CBF acts in the role of Issuer-CSD, the confirmation will be provided once the T2S settlement confirmation was received. For securities that are not covered by the CBF Corporate Action Cash Payment model, the confirmation will be provided once the payment authorisation has been provided by the paying agent. Customers will be informed via MT566, if they have requested the related KADI settings in account master and subscribed for the connectivity settings. The corporate action confirmation will be provided on payment date as shown in the event details or in the customer simulation calendar.
Corporate action reporting	Provisioning timings of the corporate action reporting can be found in the IMS23 daily test schedule.
Creation of market claims	The related free of payment (FoP) instructions or payment free of delivery (PFoD) instructions are generated and forwarded to T2S depending on the successful settlement of the underlying transaction. The hold and release status for FoP market claims is set due to the respective account setup.
Creation of reverse market claims	The related free of payment (FoP) instructions as well as payment free of delivery (PFoD) instructions are generated and forwarded to T2S. The hold and release status for FoP reverse market claims is set due to the respective account setup.
Detection period for market claims and transformations	During the customer simulation, the market claims and transformation period is five business days.

Event-related activity	General information related to event procedures using KADI
	Customers acting in DCP mode have to consider that the Transformation Detection Period (TDP) at T2S is defined as 20 business days. Even if customers can set up instructions during the entire T2S Transformation Detection Period of 20 business days, only instructions set up in the first five business days will be transformed by CBF.
Instruction management	Customers can enter settlement instructions on their demand, if they want to test market claims, reverse market claims, or transformations. Based on the compensation rules, instructions require the final settlement; therefore, customers need to agree with their counterparties on the respective instruction details. Customers who wish to settle free of payment (FoP) instructions can set up such instructions against the account "CBF W/KUNDENSIMU CRC (PASSIV), account number 1117 000 / BIC11: DAKVDEFFT77", if no other counterparty is available.
Security positions	Please refer to Section "4.3. Creation of holdings" for an overview of the holdings provided for each registered account as defined in "Table 3 - List of ISINs in custody type CSC and NCSC-T for the CBF July Release 2022 Customer Simulation". Customers must ensure that they have sufficient holdings in the respective ISIN on the registered accounts to successfully participate in the customer simulation.
Taxation	In general, the market tax rate will be applied. However, for German and U.S. taxation the customer specific tax rate is applied.
Usage of OPT-OUT flag and Ex / Cum flag	Market claims and reverse market claims as well as transformations will be processed according to the compensation rules. Customers can still overrule the general record date criteria to generate claims by using the respective flags (opt-out flag / cum flag / ex flag) within their OTC instructions. These flags cannot be set for SE instructions in custody type CSC / NCSC-T. For more details, please refer to the CBF Compensation Handbook.

Table 4: IMS23 system parameters for corporate actions processing in KADI

4.7 Issue Declaration Form

The Issue Declaration Form is a fillable form for the written submission of any issue encountered during the customer simulation period regarding CBF July Release 2022. The form is requested to be sent if a test issue raised by a customer cannot be resolved. If the test issue relates to a test case as described in Chapter 6 "Execution of test cases – guided simulation", please mention it in the description.

The completed declaration form will initiate an investigation of the issue. This procedure aims to avoid misunderstandings and to accelerate the solution process.

Completed Issue Declaration Forms can be sent to T2S-Support@clearstream.com.

5. Customer simulation calendar

Clearstream defined a customer simulation calendar that gives an overview of the testing for each stage of the customer simulation period. The simulation calendar is specified on a daily basis including the dates for:

- Availability of all environments participating in the simulation (IMS23, OCCT, UTEST, T7 Test);
- Availability of the interface between T7 and CBF;
- CCP Simulation business days ("Execution of Batch Days"), trades entered in T7 will be forwarded for settlement processing in Clearstream after the successful execution of the CCP Batch Day;
- Test cases of guided simulation covering the Xontro and Tradegate end-to-end test activities, migration testing, and corporate action events.

Since the simulation calendar is subject to change, customers are kindly requested to ensure they always refer to the most up-to-date version which will be published on the Clearstream website.

The overall test schedule shown below indicates the downtimes already communicated for the CBF customer simulation environment (IMS23), CBL test environment (OCCT), T2S Pre-Production environment (UTEST), and T7 Test. Customers need to align their processing schedules with the test execution run times. There might be additional downtimes, if one of the environments is not available or the testing is limited because of specific measures ensuring a proper test execution. Clearstream will inform customers about such downtimes in due time by email to their contact nominated (SPOC) in the CBF July Release 2022 Customer Simulation Registration Form.

Customer simulation calendar: Stage 3, 26 April - 20 May 2022							
CI*	**Test Day**	**Availability of IMS23**	**Availability of OCCT**	**Availability of T2S Pre-production (UTEST)**	**Availability of T7-CBF Interface**	**CCP Simulation Execution of Batch Day**	**Dedicated Test Case / Focus Day**
	Monday, 25 April 2022						
	Tuesday, 26 April 2022	Inbound: Closed Outbound: Open	Inbound: Closed Outbound: Open	Open	Closed	Not applicable	Start of SET-GO migration test run 1: Loading of SE instructions (CSC) into LION to be migrated with snapshot data of 18 March 2022
	Wednesday, 27 April 2022	Inbound: Closed Outbound: Open	Inbound: Closed Outbound: Open	Open	Closed	CCP Batch Day	MT537 (SE) – CBF Statement of Pending Instructions
	Thursday, 28 April 2022	Inbound: Closed Outbound: Open until 14:00	Inbound: Closed Outbound: Open until 14:00	Open until 14:00	Closed	Not applicable	Cancellation of pending SE instructions (CSC) in LION
	Friday, 29 April 2022	Closed	Closed	Closed	Closed	Not applicable	
	Saturday, 30 April 2022	Weekend					
	Sunday, 1 May 2022	Weekend					
	Monday, 2 May 2022	Closed	Closed	Open	Closed	Not applicable	
	Tuesday, 3 May 2022	Closed	Closed	Open	Closed	CCP Batch Day	
	Wednesday, 4 May 2022	Closed	Closed	Open	Closed	Not applicable	
	Thursday, 5 May 2022	Closed	Closed	Open	Closed	CCP Batch Day	
	Friday, 6 May 2022	Closed	Closed	Open	Closed	Not applicable	
	Saturday, 7 May 2022	Weekend					
	Sunday, 8 May 2022	Weekend					

Customer simulation calendar: Stage 3, 26 April – 20 May 2022							
CI*	Test Day	Availability of IMS23	Availability of OCCT	Availability of T2S Pre-production (UTEST)	Availability of T7-CBF Interface	CCP Simulation Execution of Batch Day	Dedicated Test Case / Focus Day
	Monday, 9 May 2022	Closed	Closed	Open	Closed	Not applicable	
	Tuesday, 10 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	CCP Batch Day	SE instructions (CSC) to be transmitted to T2S LION cancellation reporting (MT537) LC Dedicated migration reporting (report no.1 and 2) via Host Fileservice
	Wednesday, 11 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	CCP Batch Day	Dedicated migration reporting (report no. 3) via Host Fileservice New trade confirmations "Tagesgeschäfte" to be transmitted to T2S LION cancellation reporting (MT537) LG
	Thursday, 12 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	CCP Batch Day	Verification of migration test results
	Friday, 13 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	Not applicable	Verification of migration test results
	Saturday, 14 May 2022	Weekend					
	Sunday, 15 May 2022	Weekend					
	Monday, 16 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	Not applicable	Verification of migration test results
	Tuesday, 17 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	Not applicable	Verification of migration test results
	Wednesday, 18 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	CCP Batch Day	Verification of migration test results
	Thursday, 19 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	CCP Batch Day	Verification of migration test results
	Friday, 20 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	Not applicable	End of customer simulation Stage 3 Clean-up SE instructions in IMS23 and UTEST

Table 5: Customer simulation calendar Stage 3

* CI stands for change indicator. With the April 2022 version of this document, all dates were updated. The CI field is reserved for further changes, if necessary.

Customer simulation calendar: Stage 4, 23 May - 29 June 2022							
CI*	**Test Day**	**Availability of IMS23**	**Availability of OCCT**	**Availability of T2S Pre-production (UTEST)**	**Availability of T7-CBF Interface**	**CCP Simulation Execution of Batch Day**	**Dedicated Test Case / Focus Day**
	Monday, 23 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	CCP Batch Day	Start of SET-GO migration test run 2: Loading of SE instructions (CSC) into LION to be migrated with snapshot data of 22 April 2022 MT537 (SE) – CBF Statement of Pending Instructions
	Tuesday, 24 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	CCP Batch Day	Cancellation of pending instructions (CSC) in LION LION cancellation reporting (MT537) LC SE instructions to be transmitted to T2S Dedicated migration reporting (report no.1 and 2) via Host Fileservice
	Wednesday, 25 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	Not applicable	Dedicated migration reporting (report no. 3) via Host Fileservice and new trade confirmations "Tagesgeschäfte" to be transmitted to T2S LION cancellation reporting (MT537) LG
	Thursday, 26 May 2022	Closed	Closed	Open	Closed	Not applicable	Holiday
	Friday, 27 May 2022	Inbound: Closed Outbound: Open	Open	Open	Closed	Not applicable	Verification of migration test results
	Saturday, 28 May 2022	Weekend					
	Sunday, 29 May 2022	Weekend					
	Monday, 30 May 2022	Open	Open	Open	Open	CCP Batch Day	Verification of migration test results Start of free simulation: End-to-end testing for CSC ISINs with CASCADE using T7 End-to-end regression testing for NCSC ISINs with Creation / ClearstreamXact using T7
	Tuesday, 31 May 2022	Open	Open	Open	Open	CCP Batch Day	
	Wednesday, 1 June 2022	Open	Open	Open	Open	CCP Batch Day	
	Thursday, 2 June 2022	Open	Open	Open	Open	CCP Batch Day	
	Friday, 3 June 2022	Open	Open	Open	Open	CCP Batch Day	Announcement Day DVCA Announcement Day INTR/REDM
	Saturday, 4 June 2022	Weekend					
	Sunday, 5 June 2022	Weekend					

Customer simulation calendar: Stage 4, 23 May - 29 June 2022							
CI*	Test Day	Availability of IMS23	Availability of OCCT	Availability of T2S Pre-production (UTEST)	Availability of T7-CBF Interface	CCP Simulation Execution of Batch Day	Dedicated Test Case / Focus Day
	Monday, 6 June 2022	Closed	Closed	Open	Closed	Not applicable	Holiday
	Tuesday, 7 June 2022	Open	Open	Open	Open	Not applicable	Start of end-to-end testing for CSC ISINs using Xontro and Tradegate Announcement Day BONU Focus Day KUSTA Data Carrier
	Wednesday, 8 June 2022	Open	Open	Open	Open	CCP Batch Day	Ex-Date DVCA Record Date: INTR/REDM Announcement Day CONV Announcement Day MRGR (CSC in NCSC)
	Thursday, 9 June 2022	Open	Open	Open	Open	CCP Batch Day	Record Date DVCA Focus Day INTR/REDM Ex-Date BONU
	Friday, 10 June 2022	Open	Open	Open	Open	Not applicable	Focus Day DVCA Record Date BONU Ex-Date CONV Ex-Date MRGR (CSC in NCSC)
	Saturday, 11 June 2022	Weekend					
	Sunday, 12 June 2022	Weekend					
	Monday, 13 June 2022	Open	Open	Open	Open	CCP Batch Day	Start of CBF Auto-Admission Procedure testing Focus Day BONU Record Date CONV Record Date MRGR (CSC in NCSC)
	Tuesday, 14 June 2022	Open	Open	Open	Open	CCP Batch Day	Focus Day CONV Focus Day MRGR (CSC in NCSC)
	Wednesday, 15 June 2022	Open	Open	Open	Open	Not applicable	T2S: Insolvency testing Announcement Day DVCA Announcement Day INTR/REDM Announcement Day BONU
	Thursday, 16 June 2022	Closed	Closed	Open	Closed	Not applicable	Holiday
	Friday, 17 June 2022	Open	Open	Open	Open	Not applicable	Ex-Date DVCA Record Date: INTR/REDM Announcement Day CONV Announcement Day MRGR (CSC in NCSC)

Customer simulation calendar: Stage 4, 23 May - 29 June 2022							
CI*	Test Day	Availability of IMS23	Availability of OCCT	Availability of T2S Pre-production (UTEST)	Availability of T7-CBF Interface	CCP Simulation Execution of Batch Day	Dedicated Test Case / Focus Day
	Saturday, 18 June 2022	Weekend					
	Sunday, 19 June 2022	Weekend					
	Monday, 20 June 2022	Open	Open	Open	Open	Not applicable	Record Date DVCA Focus Day INTR/REDM Ex-Date BONU
	Tuesday, 21 June 2022	Open	Open	Open	Open	CCP Batch Day	T2S: Penalty testing (scenario 1) Focus Day DVCA Record Date BONU Ex-Date CONV Ex-Date MRGR (CSC in NCSC)
	Wednesday, 22 June 2022	Open	Open	Open	Open	CCP Batch Day	T2S: Penalty testing (scenario 1) Focus Day BONU Record Date CONV Record Date MRGR (CSC in NCSC)
	Thursday, 23 June 2022	Open	Open	Open	Open	Not applicable	Focus Day CONV Focus Day MRGR (CSC in NCSC)
	Friday, 24 June 2022	Open	Open	Open	Open	Not applicable	End of CBF Auto-Admission Procedure testing End of end-to-end testing with Xontro and Tradegate
	Saturday, 25 June 2022	Weekend					
	Sunday, 26 June 2022	Weekend					
	Monday, 27 June 2022	Open	Open	Open	Open	Not applicable	Verification of test results
	Tuesday, 28 June 2022	Open	Open	Open	Open	Not applicable	T2S: Penalty testing (scenario 2) Verification of test results
	Wednesday, 29 June 2022	Open	Open	Open	Open	CCP Batch Day	T2S: Penalty testing (scenario 2) T2S: Reprocessing tool testing End of customer simulation Stage 4 Clean-up SE instructions in IMS23 and UTEST on 8 July 2022

Table 6: Customer simulation calendar Stage 4

* CI stands for change indicator. With the April 2022 version of this document, all dates were updated. The CI field is reserved for further changes, if necessary.

6. Execution of test cases – guided simulation

In production, the implementation of the SET-GO CSD Migration (Phase 2) and of T2S Release 6.0 will take place on the same weekend (2 / 3 July 2022). Customers can test the enhancements of both projects in a joint CBF July Release 2022 guided simulation. The execution of functional tests can be supported in Stage 4 in the period from 30 May to 29 June 2022.

In addition, Clearstream offers a migration test for pending SE instructions (CSC) in Stage 3 and 4, which can be considered as guided simulation.

The focus of the predefined test cases is on the simulation of the settlement instruction procedures allowing a verification of the instruction maintenance using the CBF A2A and U2A connectivity channels.

This chapter provides the detailed test data and steps for a successful test execution.

Allowing a successful settlement, CBF will set up necessary holdings, where applicable. In addition, specific corporate action events are created. Customers need to ensure that the necessary position stay available for corporate action testing in IMS23.

6.1 Instruction management

With SET-GO CSD Migration (Phase 2), SE instructions (CSC) will follow the OTC instruction lifecycle of CBF instruction type AA01 and AA02. The existing OTC functionality offered via CASCADE / T2S will be used also for SE instructions (CSC). The CBF Customer Handbook describes the service offering related to the OTC instruction management.

Once the life cycle management for SE instructions (CSC) has been reported by T2S to Clearstream, the instructions can be modified on customers demand using the CBF A2A and U2A connectivity channels.

6.1.1 Modification request

The instruction maintenance for securities in custody type CSC and NCSC-T consists of several functionalities. Please find below a table providing an overview of offered functionalities during Stage 4.

Functionality	CBF instruction type AA01 / AA02	T2S for Business Type OTC	Clearstream Xact services for CBF accounts
(Multi) Hold Release	Not applicable	Not applicable	U2A
Party Hold Release	A2A and U2A	A2A and U2A	A2A and U2A
T2S Instruction Linking	A2A and U2A	A2A and U2A	A2A and U2A
Transaction Linking (CBL internal instruction)	Not applicable	Not applicable	Not applicable
Partial Settlement	A2A and U2A	A2A and U2A	A2A and U2A
Settlement Priority	A2A and U2A	A2A and U2A	A2A and U2A
Partial Release Request	A2A and U2A	A2A and U2A	A2A and U2A
CBF OTC Recycling and Reinstruction Service	A2A and U2A	Not applicable	Not applicable
Taxpayers' Identification Number	U2A	Not applicable	Not applicable
CBF Passive Matching Service	A2A and U2A	Not applicable	A2A and U2A

Table 7 - Functionalities for instruction maintenance

Allowing a proper instruction of modification requests, customers can retrieve more information about a necessary instruction details for:

- CASCADE Online functionality (HOST / PC) in the CASCADE Handbuch Band 2;
- Xact Web Portal in the User Manual;
- CBF automated connectivity channels in the Connectivity Handbook Part 2; and
- ClearstreamXact A2A in the Xact via SWIFT User Guide.

Additional information for the introduction of the CBF July Release 2022 has been published on Clearstream's website with the following Announcements:

- CBF Release November 2021: Information on production launch – Update;
- MT530 Transaction Processing Command – Service upgrade;
- MT537 Statement of Pending Transactions - Introduction of additional query types; and
- Additional data field "CBF-i Konto" in the KUSTA Data Carrier "CBF customers".

Due to the T2S Release 6.0 postponement, CBF indicated (see Announcement) that already published Announcements will be reassessed and updated if necessary.

6.1.2 CBF OTC Recycling and Reinstruction service

CBF offers the test execution for SE and OTC instructions with custody type CSC that cannot initially accepted by T2S.

During the customer simulation, one security will become T2S eligible and hence the recycling and reinstruction service can be applied for OTC as well as SE instructions (CSC) because they are processed in an OTC-like mode. Furthermore, one specific ISIN will not become T2S eligible so that the termination of recycling period can be tested. As a result, the settlement instructions with this ISIN will be rejected by CASCADE.

The CBF OTC Recycling procedure can be tested with SE instructions and / or OTC instructions as of 30 May 2022 during Stage 4. If the customer intends to create an SE instruction (CSC), test trades are requested to be entered via T7 by the trading member participating in the customer simulation. OTC instructions can be entered in ICP-mode using the various connectivity channels for CASCADE.

Different to production, the Operational Day of IMS23 defines that the reinstruction process can be executed at 10:05, 11:50, 13:30, and 15:25.

Customers wishing to participate in the CBF OTC Recycling test were asked to register via the Customer Simulation Registration Form.

6.1.3 Taxpayers' Identification Number

CBF supports the settlement of domestic and foreign stock exchange tradeable securities. Customers need to consider the country-related product settings and tax requirements. For Italian bonds the Taxpayers' Identification Number (TIN) is applicable.

In general, the CBF account settings from previous testings will be reused. However, for the SET-GO CSD Migration (Phase 2), customers can verify if the Italian tax status must be updated for the instruction management with Italian bonds.

Based on the existing procedure for Italian tax, customers can add the Taxpayers' Identification Number in pending SE instructions (CSC). If the tax status defines non-exempted, a TIN needs to be specified. The TIN can only be entered via CASCADE Online functionality.

The TIN procedure can be tested as of 30 May 2022 during Stage 4. Following Italian securities are in scope:

- IT0000072618 INTESA SANPAOLO EO 0,52
- IT0004735152 3,433529% B.T.P. 11-26 FLR
- IT0005001547 3,75% B.T.P. 14-24

Customers wishing to participate in the TIN procedure test were asked to register via the Customer Simulation Registration Form. The pending instructions in the relevant security need to be entered via T7 by the trading member participating in the customer simulation.

6.1.4 Testing of SEME Concept

The CBF Stock Exchange Transactions Interface (SETI) creates a unique identifier presented as Sender's Message Reference (SEME). The generation of the SEME follows a predefined concept. For more information, please refer to Appendix 5.

Customers are in the position to set up modification requests (MT530) before the reference has been provided in the LIMA settlement reporting to the customers. For verification of the new SEME concept, Clearstream will provide customers with a test tool based on Excel. The tool can be filled with all relevant parameters needed to validate the SEME that is built by customers. Stock exchange instructions (CSC) will be created as "already matched" instruction, that is the "Leg Type" initially starts with "A".

An updated version of the Excel file is available for download on the Clearstream website under Testing and Simulation.

6.2 End-to-end flow with trading location

6.2.1 Script based trading via Xontro

In close collaboration, BrainTrade and CBF will offer a guided customer simulation for the trade execution via Xontro. Based on request of the market members, both entities agreed to offer a mutually test concept for the CBF July Release 2022 Customer Simulation.

In general, the end-to-end test will start with the trade execution via XONTRO using the testing environment IMS27. Via an automated interface, the trade confirmations will be transmitted in a production-like mode to CBF for further processing. The ISINs used are limited to:

- DE000A0Q8A07 CONCEPT AURELIA GLOBAL;
- DE000A1YCQD2 0,375% STADT HAMBURG LSA A.2/15;
- LU0274211480 DB X-TRACK.DAX ETF(DR)1C; and
- US6541061031 NIKE INC. B.

All instruments are in custody type CSC and allow settlement on UTEST. As capacity is reduced compared to production, there is a need to restrict the instructions presented. Therefore, customers must take into account that tests beyond the agreed scope cannot be supported and these trades will not be processed.

The testing is planned to be executed in Stage 4 between 7 June and 24 June 2022. During this time frame dedicated tests will be offered. These test steps are integrated in the customer simulation calendar defined in Chapter 5.

The test concept was being detailed by BrainTrade and CBF. The details of the test concept were updated by BrainTrade in March 2022 and can be found on the BrainTrade website. The following cornerstones are defined for CBF customers being a member of Xontro:

- Creation of orders for pre-defined ISINs using the existing XONTRO interface ("Fix-Anschluss");
- Price fixing ("Kursfeststellung") by XONTRO for pre-defined ISINs;
- Transmission of order executions ("Orderausführungsbestätigungen") and real-time trades via XONTRO; and
- Transmission of trade confirmations ("Geschäftsbestätigungen") towards CBF customer simulation environment (IMS23) based on an agreed test schedule.

BrainTrade enabled the framework for execution of trades, whereas CBF will ensure that the trade confirmations are processed in the future OTC-like mode via SETI. The settlement flows of the related instructions will be managed by CBF. Enabling the settlement of these SE instructions (CSC), CBF will validate the settlement accounts for trading members and the related broker accounts, the setup of ISINs and holdings. Therefore, a close

alignment in the communication towards the market participants has been considered in the test plans of both entities.

Customers wishing to participate in this dedicated end-to-end test were requested to register using the Customer Simulation Registration Form by 18 March 2022. For more information on the form, please refer to Chapter 4.1.

6.2.2 Script based trading via Tradegate

In close collaboration, Tradegate and CBF will offer a guided customer simulation for the trade execution via Tradegate. Based on request of the market members, both entities agreed to offer a mutually test concept for the CBF July Release 2022 Customer Simulation.

Via an automated interface, the trade confirmations will be transmitted in a production-like mode to CBF for further processing. The ISINs used are limited to:

- DE000A0KRJ36 ETFS COM.SEC.DZ06/UN.NGAS;
- DE000A0KRJ51 ETFS COM.SEC.DZ06/UN.SLVR;
- DE0006599905 MERCK KGAA O.N.;
- LU0274209237 DB X-TR.MSCI EUR.IDX.DR1C;
- LU0603942888 COMST.-SDAX TR UCIT.ETF I; and
- US72919P2020 PLUG POWER INC. DL-,01.

All instruments are in custody type CSC and allow settlement on UTEST. As capacity is reduced compared to production, there is a need to restrict the instructions presented. Therefore, customers must take into account that tests beyond the agreed scope cannot be supported and these trades will not be processed.

The testing is planned to be executed in Stage 4 between 7 June and 24 June 2022. During this time frame, dedicated tests will be offered. These test steps are integrated in the customer simulation calendar defined in Chapter 5.

The test concept was detailed by Tradegate and CBF. For further instructions CBF customers are advised to contact Support@tradegate.de and are reachable on the telephone number +49 30 89606393.

Tradegate will enable the framework for execution of trades, whereas CBF will ensure that the trade confirmations are processed in the future OTC-like mode via SETI. The settlement flows of the related instructions will be managed by CBF. Enabling the settlement of these SE instructions (CSC), CBF will validate the settlement accounts for trading members and the setup of ISINs as well as holdings. The trade confirmations will be entered with Eingeber "1370". However, in SE instructions created by SETI the information is not provided any longer.

For each trade, Tradegate will act as counterparty (buyer / seller) with account "1031" using the settlement account "1116". In addition, it has been defined that Tradegate will present in their trade confirmations the Market Identification Code (MIC) with one of the following codes: XGAT, XGRM or empty.

A close alignment in the communication towards the market participants has been considered in the test plans of both entities.

Customers wishing to participate in this dedicated end-to-end test were requested to register using the Customer Simulation Registration Form by 18 March 2022. For more information on the form, please refer to Chapter 4.1.

6.3 Migration testing

The objective of this test scenario is to enable customers to modify and delete pending SE instructions (CSC) that have been copied from production. In general, all settlement functionality and settlement reporting can be used to validate the future processing for SE instructions (CSC) via T2S / CASCADE. The scope of the settlement functionality can be found in Section 6.1.1, Table 7.

The snapshot data may contain ISINs that are defined for corporate action events (Focus Days). Hence, customers need to decide whether they would like to consider these pending instructions as potential test case or bilaterally cancel the instruction prior to the notification date of the event. To keep balances for the corporate action events, instructions can be set on hold by the customers.

6.3.1 General information

The aim of the migration test is to simulate the migration activities of Clearstream with regards to SET-GO CSD Migration (Phase 2). For more information on the transition weekend defined for production, please refer to the SET-GO Migration Guide that is aimed to be published by Clearstream end-April 2022.

Customers wishing to participate in the migration testing need to complete the Customer Simulation Registration Form (see Section 4.1). In order to retrieve the dedicated migration reporting, the SET-GO Migration Reporting Registration Form needs to be submitted, if not already submitted (see Section 4.2).

For migration testing, customers need to consider that the static data for accounts shall be in a production like stage. Customers were requested to verify the settings by 18 March 2022.

Different to the transition weekend defined for production, the migration tests will be executed during business days in slow motion. Two separate runs are scheduled for the migration testing:

- 26 April 2022 to 17 May 2022 (run 1); and
- 23 May 2022 to 25 May 2022 (run 2).

SE instructions (CSC) will be migrated production-like with predefined data resulting from the snapshot date of 18 March 2022 for run 1 and 22 April 2022 for run 2. To be in sync with CBF, customers are recommended to consider taking a data snapshot of their own production environments as of the same date and use the filter criteria defined by CBF. For more information, please refer to Section 3.2 "Snapshot data".

Migration testing is conducted in the following steps:

1. Predefined snapshot data containing the pending instructions SE ("Restanten") in custody type CSC and NCSC-T is loaded into LION (IMS23). These instruction details will be transmitted to UTEST where T2S will start the instruction lifecycle. That is, for each instruction a new Market Infrastructure Transaction Identification (MITI) number is created.
2. Once the test data are enabled in IMS23 and UTEST, MT537 "CBF Statement of Pending Transactions" is transmitted to customers, if the report configuration is set up.
3. The migration will start with a cancellation of pending LION instructions at UTEST. Once this step is completed, CBF will prepare the further migration.
4. Production-like, the pre-migration reports (number 1 and 2) are created and can be retrieved via Host Fileservice, if registered. For more details on the specification of the reports, please refer to Section 6.3.4 "Migration reporting".
5. Pending SE instructions ("Restanten") are presented to SETI and forwarded to T2S. The lifecycle of SE instructions in OTC-like mode is started after the instructions have been accepted by the settlement platform. On customer demand, the pending SE instructions can be maintained via CBF automated connectivity channels and CASCADE Online functionality (HOST / PC).
6. After successful migration, the snapshot data of new trade confirmations ("Tagesgeschäfte") is presented to SETI and forwarded to T2S. The lifecycle of SE instructions in OTC-like mode is started after the instructions have been accepted by the settlement platform. Like in Step 5, the pending SE instructions can be maintained CBF automated connectivity channels and CASCADE Online functionality (HOST / PC).
7. Production-like, the post-migration report (Number 3) is created and can be retrieved via Host Fileservice, if registered. For more details on the specification of the reports, please refer to Section 6.3.4 "Migration reporting".
8. The LION settlement reporting informing about the cancellation of pending SE instructions ("Restanten") in custody type CSC and NCSC-T is created. MT537 "CBF Statement of Pending Transactions" is transmitted to customers, if the report configuration is set up.

For more information regarding the schedule of the migration testing (run 1 and run 2), please refer to Chapter 5 "Customer simulation calendar".

In sum the migration tests encompass the following activities:

- Simulate production-like days as planned during the actual SET-GO Migration weekend;
- Verify the migration of pending SE instructions ("Restanten") in custody type CSC and NCSC-T; and
- Receive / retrieve the migration related reporting.

The migration testing will allow the presentation of the related migration reporting via Host Fileservice as well as the settlement reporting via LION to customers participating. While the reporting schedule for the migration reporting is explicitly defined, the UTEST operational day (T2S standardised schedule) applies. In addition, the IMS23 schedule for the distribution of settlement reporting remains unchanged. Please find more information about the daily test schedule in IMS23 which will be available on the Clearstream website under Testing and Simulation.

The test instructions resulting from the migration are not intended to complete the settlement lifecycle. If customers aim to achieve a successful settlement and there is a lack of securities, they need to contact the CBF Customer Readiness team via T2S-Support@clearstream.com. Support will be given on a best effort basis.

6.3.2 Pending instructions ("Restanten")

The customer simulation includes the migration process in which all selected pending SE instructions ("Restanten") in custody type CSC and NCSC-T are being cancelled in LION (instruction type AA10) and will be reinstructed as already matched instruction to T2S. This applies also for pending instructions, which have been unilaterally cancelled. Migrated instructions will be displayed in CASCADE using the CBF instruction type AA01 / AA02.

Only if the customer and counterparty are registered for the migration testing, SE instructions (CSC) can be considered. The snapshot data will be taken from production and provided in IMS23 (LION) for migration testing activities. The data is retrieved on 18 March 2022 for the first migration testing (run 1) and on 22 April 2022 for the second migration testing (run 2). For more information about the snapshots, please refer to Section 3.2 "Snapshot data".

6.3.3 New trade confirmations ("Tagesgeschäfte")

In general, the new trade confirmations ("Tagesgeschäfte") will be processed via SETI. They are available as new pending instructions in T2S (UTEST) and displayed in CASCADE (IMS23). Any newly created instructions will follow the T2S business validation to be introduced with T2S Release 6.0 and are presented for settlement, if applicable.

The new trade confirmations ("Tagesgeschäfte") of the migration tests are based on the corresponding production data taken from the snapshot day of 18 March 2022 and 22 April 2022 respectively. For the selection criteria, please refer to Section 3.2 "Snapshot data".

6.3.4 Customer reporting

Migration reporting

During customer simulation, CBF will offer a dedicated migration reporting via Host Fileservice. This reporting reflecting the status of the pending SE instructions (CSC) can be retrieved by customers registered via the Host Fileservice website. Different to production, during customer simulation the migration reports available on Host Fileservice can only be retrieved via the website. Access is available under:

www.deutsche-boerse.com / Logins / More Logins / Market Data + Services / Host file service

or via direct link:

https://deutsche-boerse.com/dbg/app/open/hostfileservice?lang=en

For customers that already have access to the Host Fileservice, there is no action required as credentials remain unchanged. Customers having no access need to contact secuadmin@deutsche-boerse.com.

All customers registered will receive up to three migration reports providing a comprehensive overview regarding the status of their SE instructions. Please find more information about the migration reports in the table below:

#	Report purpose	Availablity	Header English	Header German	System
1	The list contains all pending SE instructions (CSC) that are selected for the migration process. These instructions have already been cancelled in LION and will be forwarded to T2S.	Immediately after LION migration	List of to be migrated trades	Liste der zu migrierenden Geschaefte	LION
2	The list contains all pending SE instructions (CSC) that have **not** been selected for the migration process. The lifecycle of these instructions ends with the cancellation in LION. They will not be forwarded into the new OTC-like process.	Immediately after LION migration	List of not migrated trades	Liste der nicht migrierten Geschaefte	LION
3	The list contains those SE instructions (CSC) from the report 1 that have either been rejected by SETI or they are in SETI recycling process. An error code is displayed for each instruction documenting the reason for the rejection.	After SETI migration	List of not successfully migrated trades	Liste der nicht erfolgreich migrierten Geschaefte	LION / SETI

Table 8: Dedicated migration reporting

All three migration reports will be provided as defined in the customer simulation calendar via Host Fileservice. Please see Appendix 4 for detailed examples of the migration reports. For more information on the migration reporting for the SET-GO CSD Migration (Phase 2) go-live, please refer to the relevant SET-GO Customer Migration Guide which is planned to be published end-April 2022.

LION reporting

During the migration testing planned for Stage 4, the standard LION reports will be available via the various CBF connectivity channels (SWIFT, MQ, File Transfer (FT)). Customers will receive LION reporting upon the message subscription created in IMS23. Like in production, customers are requested to check if the existing message configuration allow a reporting of cancelled instructions during the migration test. Customers shall consider that only MT537 "Statement of Pending Transactions" will contain information about dedicated cancellation status. The cancellation codes displayed in MT537 are "LC – LOESCHUNG DURCH CBF" and "LG – LOESCHUNG DURCH CBF VOM VORTAG".

Once the selected pending SE instructions (CSC) has been cancelled the instructions are marked for the final deletion in LION. The schedule below defines the cancellation codes displayed in MT537 that is provided for migration run 1 and run 2.

SET-GO Migration run	LION Cancellation Code LC – LOESCHUNG DURCH CBF	LION Cancellation Code LG – LOESCHUNG DURCH CBF VOM VORTAG	No further LION reporting as of
1	10 May 2022	11 May 2022	12 May 2022
2	24 May 2022	25 May 2022	26 May 2022

Table 9: LION reporting schedule

6.4 Corporate actions

During guided customer simulation period, Clearstream offers its customers test cases on focus days for corporate actions. These test cases require special preparation and therefore cannot be offered on a daily basis. Customers must decide about their active participation in one or more of these focus days. The participation in the test cases will be enabled if the Customer Simulation Registration Form for CBF July Release 2022 was provided by the latest on 18 March 2022.

The corporate action test cases are designed to show the harmonised processing for OTC and SE instructions using KADI. Clearstream will prepare non-income and income events for testing related to instructions resulting from corporate actions, market claims, the transmission of Corporate Action Announcement (MT564) and the related Corporate Action Confirmation (MT566), if applicable. New announcements and updates are sent in real time.

Allowing customers a verification of the existing KADI functionality and testing of corporate action processing, Clearstream will set up several event types. For a successful test, pending instructions in the relevant security need to be entered via T7 by the trading member participating in the customer simulation. In Stage 4, the following event types will be offered twice:

- Interest payment (INTR);
- Redemption (REDM);
- Dividend payment (DVCA);
- Bonus shares (BONU); and
- Conversion (CONV).

In addition, the corporate action testing will be supplemented with reorganisation events, in which the underlying CSC security is transformed to a NCSC security. The transformation is processed by cancellation of the underlying pending matched instruction and creation of a new instruction with changed ISIN and / or nominal. Two mergers (MRGR) with securities proceeds are offered, if trades have been entered via T7 by the trading member participating in the customer simulation.

The KADI test case following the new T2S rules introduced with Release 6.0 does not need any updated account setup. For both test scenarios, the holdings created for the SET-GO CSD Migration (Phase 2) can be used.

As of Monday, 4 July 2022, T2S will accept customer settlement instructions with ISO transaction code "CLAI" specifying a nominal deferring from the security master data stored in T2S. Between 30 May and 29 June 2022, customers wishing to test the new T2S validation can send market claims or transformations (of market claims) instructions with ISO transaction code "CLAI" and with nominals deferring from the T2S master data for any of the non-income corporate actions (BONU, CONV, MRGR with resulting CSD security). Settlement instructions can be entered in ICP mode via all CBF connectivity channels (A2A and U2A) or in DCP mode.

Whereas instructions with ISO transaction code "CLAI" and a differing nominal to T2S master data will be accepted by T2S, instructions with any other T2S eligible ISO transaction code will be rejected. Customers wishing to receive a rejection as a negative test of the new rule can enter settlement instructions with a preferred ISO transaction code different to "CLAI" and with a nominal deferring from the T2S master data. The rejection will show one of the following error messages:

- Customers acting in ICP mode receive the error messages from the inbound interfaces:

  KV0604F - Nominal must be a multiple of the smallest denomination //
  The nominal must be a multiple of the smallest denomination; and

  KV6103F - Nominal is less than the minimum transfer unit //
  Nominal is less than the minimum transfer unit.

- Customers acting in DCP mode receive a rejection from T2S indicating reason codes

  MUNO - the indication MVSQ606 - The Settlement Quantity of the Settlement Instruction is neither a multiple of Settlement Unit Multiple nor a Deviating Settlement Unit; and

  MINO - the message MVSQ604 - The Settlement Quantity of the Settlement Instruction is lower than the Minimum Settlement Unit.

For the receipt of the rejection (MT548) out of the negative test, correct Connectivity customer settings need to be in place.

All Focus Days will be executed based on the conditions outlined in Section 4.6 "KADI services environment settings". On the following pages, event-driven details are defined for all offered corporate event types.

6.4.1 Test narratives for test cycle 1

Focus Day	Interest payment (CBF in its role as Issuer CSD)
Event type	TA110 – Mandatory event
SWIFT event ID	INTR
ISIN	DE000A169HW2
Security description	1,45 IKB DT.IND.BK.MTN 16/22
Instrument type	Bond
Notification date	3 June 2022
Payment details	Interest rate: 0.5%; payment will be executed in Euro upon receipt of funds.
Record date	8 June 2022
Value / payment date	9 June 2022
Event-specific details	The cash distribution will be initiated on record date and forwarded to T2S approximately at 09:30 on payment date.

Focus Day	Final redemption (CBF in its role as Issuer CSD)
Event type	TA130 – Mandatory event
SWIFT event ID	REDM
ISIN	DE000A169HW2
Security description	1,45 IKB DT.IND.BK.MTN 16/22
Instrument type	Bond
Notification date	3 June 2022
Payment details	Redemption amount 100%; payment will be executed in Euro upon receipt of funds.
Record date	8 June 2022
Maturity date	9 June 2022
Value / payment date	9 June 2022
Event-specific details	The cash distribution will be initiated on record date and forwarded to T2S approximately at 09:30 on payment date. The security withdrawal will be initiated after successful cash distribution. The test case will support the transformation procedure.

Focus Day	Dividend payment (CBF in its role as Issuer CSD)
Event type	TA120 – Mandatory event
SWIFT event ID	DVCA
ISIN	DE000TUAG000
Security description	TUI AG NA O.N.
Instrument type	Equity
Notification date	3 June 2022
Payment details	Dividend amount: 0.51€; payment will be executed in EUR upon receipt of funds.
Ex-date	8 June 2022
Record date	9 June 2022
Value / payment date	10 June 2022
Event-specific details	The cash distribution will be initiated on record date and forwarded to T2S approximately at 09:30 on payment date. The test case will support the market claim and reverse market claim procedure and will be subject to German withholding tax.

Focus Day	Bonus shares (CBF in its role as Issuer CSD)
Event type	TA211 – Mandatory event
SWIFT event ID	BONU
ISIN	DE000A0WMPJ6
Security description	AIXTRON SE NA O.N.
Instrument type	Equity
Notification date	7 June 2022
Issuance details	Ratio 1:1
Ex-date	9 June 2022
Record date	10 June 2022
Value / payment date	13 June 2022
Event-specific details	The security distribution will be initiated on record date and forwarded to the T2S on the end of business day. The test case will support the market claim and reverse market claim procedure.

Focus Day	Conversion (CBF in its role as Issuer CSD)
Event type	TA232 – Mandatory event
SWIFT event ID	CONV
ISIN	DE0008491002
Security description	UNIFONDS
Instrument type	Equity
Notification date	8 June 2022
Issuance details	Ratio 1:1
Ex-date	10 June 2022
Record date	13 June 2022
Value / payment date	14 June 2022
Event-specific details	Transformation to DE000A0F5UF5 The security distribution will be initiated on record date and forwarded to the T2S on the end of business day. The test case will support the transformation procedure.

6.4.2 Test narratives for test cycle 2

Focus Day	Interest payment (CBF in its role as Issuer CSD)
Event type	TA110 – Mandatory event
SWIFT event ID	INTR
ISIN	DE000A182VS4
Security description	0,875 VONOVIA FINANCE 16/22MTN 10.06.G
Instrument type	Bond
Notification date	15 June 2022
Payment details	Interest rate: 0.5%; payment will be executed in Euro upon receipt of funds.
Record date	17 June 2022
Value / payment date	20 June 2022
Event-specific details	The cash distribution will be initiated on record date and forwarded to T2S approximately at 09:30 on payment date.

Focus Day	Final redemption (CBF in its role as Issuer CSD)
Event type	TA130 – Mandatory event
SWIFT event ID	REDM
ISIN	DE000A182VS4
Security description	0,875 VONOVIA FINANCE 16/22MTN 10.06.G
Instrument type	Bond
Notification date	15 June 2022
Payment details	Redemption amount 100%; payment will be executed in Euro upon receipt of funds.
Record date	17 June 2022
Maturity date	20 June 2022
Value / payment date	20 June 2022
Event-specific details	The cash distribution will be initiated on record date and forwarded to T2S approximately at 09:30 on payment date. The security withdrawal will be initiated after successful cash distribution. The test case will support the transformation procedure.

Focus Day	Dividend payment (CBF in its role as Issuer CSD)
Event type	TA120 – Mandatory event
SWIFT event ID	DVCA
ISIN	DE000HLAG475
Security description	HAPAG-LLOYD AG NA O.N.
Instrument type	Equity
Notification date	15 June 2022
Payment details	Dividend amount: 0.51€; payment will be executed in EUR upon receipt of funds.
Ex-date	17 June 2022
Record date	20 June 2022
Value / payment date	21 June 2022
Event-specific details	The cash distribution will be initiated on record date and forwarded to T2S approximately at 09:30 on payment date. The test case will support the market and reverse market claim procedure and will be subject to German withholding tax.

Focus Day	Bonus shares (CBF in its role as Issuer CSD)
Event type	TA211 – Mandatory event
SWIFT event ID	BONU
ISIN	DE000A0D9PT0
Security description	MTU AERO ENGINES NA O.N.
Instrument type	Equity
Notification date	15 June 2022
Issuance details	Ratio 1:1
Ex-date	20 June 2022
Record date	21 June 2022
Value / payment date	22 June 2022
Event-specific details	The security distribution will be initiated on record date and forwarded to the T2S on the end of business day. The test case will support the market and reverse market claim procedure.

Focus Day	Conversion (CBF in its role as Issuer CSD)
Event type	TA232 – Mandatory event
SWIFT event ID	CONV
ISIN	DE000ETFL102
Security description	DK MSCI JAPAN LC
Instrument type	Equity
Notification date	17 June 2022
Issuance details	Ratio 1:1
Ex-date	21 June 2022
Record date	22 June 2022
Value / payment date	23 June 2022
Event-specific details	Transformation to DE000A0F5UF5 The security distribution will be initiated on record date and forwarded to the T2S on the end of business day. The test case will support the transformation procedure.

6.4.3 Transformation for reorganisation events

Focus Day	Merger (CBF in its role as Issuer CSD)
Event type	TA232 – Mandatory event
SWIFT event ID	MRGR
ISIN	DE000ETFL110
Security description	DEKA IBOXX EU.LI.S.D 1-10 UCITS ETF
Instrument type	Equity
Notification date	8 June 2022
Issuance details	Ratio 1:1
Ex-date	10 June 2022
Record date	13 June 2022
Value / payment date	14 June 2022
Event-specific details	Transformation to LU0271695388 The security distribution will be initiated on record date and forwarded to the NCCIP CBF-i account on the end of business day. The test case will support the transformation procedure. Pending SE trades in the underlying security need to be entered via T7 by the trading member participating in the customer simulation:

Focus Day	Merger (CBF in its role as Issuer CSD)
Event type	TA232 – Mandatory event
SWIFT event ID	MRGR
ISIN	DE000ETFL128
Security description	DEKA IBOXX EU.LI.S.D 1-3 UCITS ETF
Instrument type	Equity
Notification date	17 June 2022
Issuance details	Ratio 1:1
Ex-date	21 June 2022
Record date	22 June 2022
Value / payment date	23 June 2022
Event-specific details	Transformation to LU0390221256 The security distribution will be initiated on record date and forwarded to the NCCIP CBF-i account on the end of business day. The test case will support the transformation procedure. Pending SE trades in the underlying security need to be entered via T7 by the trading member participating in the customer simulation:

6.5 Auto-Admission procedures for CBF New Issues

The CBF Auto-Admission service is designed to support issuers and their agent. In the "Auto-Admission Report" securities are listed for which an OTC instruction has been created by the customer and / or Stock Exchange trade confirmations have been received but Clearstream has not made the underlying securities eligible. Clearstream will enable newly issued securities and make the ISINs eligible on T2S.

During the customer simulation, only issuer and their agents using the Auto-Admission service in production can register for a regression testing. At present, the CBF service is designed for the business types OTC instructions that have been created by the customer and / or Stock Exchange trade confirmations, for which Clearstream has still not made the underlying securities eligible.

If the customer intends to create an SE instruction (CSC), test trades are requested to be entered via T7 by the trading member participating in the customer simulation. OTC instructions can be entered in ICP-mode using the various connectivity channels for CASCADE. Different to production, the Operational Day of IMS23 defines that OTC and SE instructions can be issued in the morning of a testing day. The test execution will be supported between 13 June 2022 and 24 June 2022. Therefore, customers are advised to agree with the CBF Customer Readiness team on the Trade Date for SE instruction and Intended Settlement Date (ISD) for OTC instructions.

Customers wishing to participate in the Auto-Admission procedures test are asked to register via the Customer Simulation Registration Form. CBF will support the test execution for one ISIN in each business type. On customer demand, further ISINs can be set up on best effort basis.

6.6 KUSTA Data Carrier

A new data field "CBF-i Konto" will be added in the KUSTA Data Carrier "CBF Customers" as well as in the customer account master file ("Internet File"). The field will be added with number 20 at the end of the file. It will show the alphanumeric five-digit Creation account used for the settlement of the customer's stock exchange trades in NCSC securities. More information regarding the functional enhancement can be found in the following Announcement: Additional data field "CBF-i Konto" in the KUSTA Data Carrier "CBF customers".

In order to allow customers a verification of the future format and structure, the following test files will be available on the website under Testing and Simulation on 7 June 2022:

- KUSTA Data Carrier "CBF Customers" – Full Mode;
- KUSTA Data Carrier "CBF Customers" – Delta Mode; and
- Internet File containing information for "CBF Customers".

The test files will be protected by a password which interested customers can request by email via T2S-Support@clearstream.com until 20 May 2022. CBF will sent the password to the nominated SPOC on 31 May 2022.

Each test file will be created according to the requirements for dedicated test scenarios. Therefore, each file contains specific data. The files must be viewed independently, that is, the data is neither harmonised nor compatible.

The content of these files does not represent the data stored in the CBF Customer Simulation environment (IMS23). A modification of customer data in this environment would lead to inconsistencies and would have a negative impact on further customer test activities. Therefore, customers must not compare the data shown in IMS23 with the test data in the files.

7. Execution of test cases – free simulation

In contrast to the guided simulation, customers can perform test cases on their demand during the free simulation using T7. In general, the free simulation is not limited to the simulation activities for the project SET-GO. Customers are encouraged to analyse which additional test cases have to be executed to confirm their readiness by considering their specific business setup and corresponding usage of CBF and CBL services. The guided test cases defined by CBF may have to be enriched that the readiness for the SET-GO Migration CSD (Phase 2) is given. CBF suggests customers acting as Settlement Agent and / or Head Office to execute a minimum number of basic test cases (regression) for stock exchange instructions in custody type NCSC. In addition, it is recommended to these customers to consider a wider focus of operational or organisational procedures during the simulation for example, liquidity management, as the processing via SET-GO might also impact these aspects.

Customers wishing to test the T2S Release 6.0 CRs with no new CBF software modifications, but with a potential impact on their own systems and processes can send test instructions on their demand.

7.1 Instruction management

Clearstream offers the free simulation to provide customers with the opportunity to test the interaction of their applications with CBF and CBL. Customers can actively enter test trades via T7 to verify the stock exchange instruction management for SE instructions (CSC) via CASCADE Online functionality (HOST / PC) and / or CBF automated connectivity channels. The standard reporting will be provided via connectivity channels (SWIFT, MQ, File Transfer (FT)) in IMS23. Customers acting in DCP mode can also receive the reporting via the T2S Pre-Production environment (UTEST).

Customers have the option to enter and modify instructions with references from the revised number range in IMS23. The current referencing for LION transactions will be decommissioned. In the future, CASCADE instruction references will be assigned for instructions resulting from stock exchange trades. More details can be found in the following Announcement: Instruction references – Reallocation of number ranges. Customers can execute test cases on their demand.

If test cases for securities need to be executed in IMS23, UTEST or OCCT that are not mentioned in this document, security holdings can be created by CBF Customer Readiness team on customer's request on best effort basis. The position will be enabled on the settlement account which has been defined in the Customer Simulation Registration Form. If it will be necessary to create holdings, customers are requested to provide their requests a week prior to the aimed test execution day. This will allow CBF to check and validate if the position can be set up. CBF will inform customers about the result of the investigation. If the holding can be set up, it will be created using Clearstream's customer simulation account (4424 or 64424). CBF will advise on the ISD.

7.2 Scope

The free simulation meaning end-to-end test will be offered from 30 May 2022 via T7 during Stage 4. On the same date, regression tests for stock exchange instructions in custody type NCSC can be performed. Customers can enter test trades via T7 to verify instruction management for SE instructions (NCSC) via Xact Web Portal or ClearstreamXact A2A. The CBF Customer Readiness team selected two securities, AU0000000RE0 (OROCOBRE LTD) and CNE100000296 (BYD CO. LTD H), for this purpose. In these two securities, holdings (nominal 100,000) will be created by the SET-GO Customer Readiness team, if no balance is recorded in the settlement account. The same applies to the cash balances in Euro, where 1,000,000 will be credited.

Furthermore, the IMS23 / UTEST is opened for instructions presented by C7 SCS and can be used to enter domestic and cross-border test instructions on customer demand. Customers are responsible for the creation, preparation, and execution of these test cases.

The service offering is based on the following guiding principles:

- No volume tests are allowed.
- Customers have to execute test trades via T7 test environment.
- Customers are responsible that the holdings in predefined ISINs will remain. This is requested to ensure a successful participating in Focus Days.

- Instruction maintenance for trades in non-cleared stock exchange trades will be offered. The modification of instructions can be requested using CASCADE functionality for CSC / NCSC-T securities or via ClearstreamXact for NCSC securities.
- CBF does not monitor the execution of test cases created for free simulation. Customers are responsible for organising the scope of their testing in their organisation.

8. Contacts

The following team at Clearstream will answer your questions regarding the Clearstream environment used for the SET-GO or T2S Release 6.0 test execution and necessary set up requirements. In addition, any questions regarding SET-GO specific functions and procedures for the migration of stock exchange instruction in OTC-like mode can be addressed.

All issues encountered by customers with Clearstream or related SET-GO functionality during the simulation should be reported to the email below. For this reason, Clearstream asks its customers to use the "Issue Declaration Form" which will be published on the Clearstream website under Testing and Simulation. Clearstream collects all raised items, analyses them, and reverts back to customers.

CBF Customer Readiness team

Email: T2S-Support@clearstream.com

Glossary

Acronym or abbreviation	Description
AA01 / AA02	CBF instruction types for business types OTC and non-CCP trades
A2A	Application to application
BIC	Bank identifier code
CBF	Clearstream Banking Frankfurt (CSD)
CBF-i	CBF international 6-series account
CBL	Clearstream Banking Luxembourg (ICSD)
CRDM	Common Reference Data Management
CCP	Central counter party
CSC	Collective safe custody
CSD	Central Securities Depository
DCA	Dedicated Cash Account
DCP	Direct Connected Participant
CR	Change request
ECAG	Eurex Clearing AG
ECB	European Central Bank
EoD	End of day
ESMIG	Eurosystem Single Market Infrastructure Gateway
FoP	Free of payment
FT	File Transfer
ICP	Indirect Connected Participant
ICSD	International Central Securities Depository
IMS23	CBF simulation environment
IMS27	CBF pre-production environment
ISD	Intended Settlement Date
ISIN	International Securities Identification Number
KADI	Kapitaldienste
LION	Lieferfreigabe Online
MIC	Market Identifier Code
MITI	Market Infrastructure Transaction Identification
MT	Message type
NCSC	Non-collective safe custody in accordance with German depository law
NCSC-T	Non-collective safe custody ISINs eligible for settlement in T2S
OCCT	CBL test environment
OTC	Over the counter
PBI	T2S Problem Ticket
PFoD	Payment free of delivery instruction
SCS	Securities clearing service
SE	Stock exchange
SE instructions (CSC)	Stock exchange instructions with custody type CSC and NCSC-T
SEME	Sender's Message Reference
SETI	Stock Exchange Transaction Interface
SET-GO	Stock Exchange Transactions Go OTC
SPOC	Single Point Of Contact
SWIFT	Society for Worldwide Interbank Financial Telecommunication
T2S	TARGET-2 Securities
T7	Trading system for Eurex and Xetra market including local exchanges
TDP	Transformation Detection Period
U2A	User to application
UTEST	T2S pre-production environment
WKN	Wertpapierkennnummer

Appendix 1 – Daily test schedules

CBF customer simulation environment (IMS23)

Please find more information about the daily test schedule in IMS23 on the Clearstream website. The document will be updated in April 2022.

Appendix 2 - T2S Deployment Schedule

T2S Deployment Packages

With Announcement Information on the production launch in June 2022 – T2S Release 6.0, CBF outlined the scope elements of the upcoming T2S Release in July 2022. The announcement summarises the related T2S Change Requests (Overview CRs Version 1.0) and resolution of Problem Tickets (Version 1.0). The description shows if CBF customers acting in ICP and / or DCP mode might be impacted.

The table below shows the software deployment dates for the related T2S CRs and PBIs that might have an impact on CBF customers acting in ICP and/or DCP mode. During the preparation of the test cases, customers can consider that all T2S software components will be available with the start of the CBF customer simulation period:

Related number	CR / PBI	Package	Deployment to UTEST	Detailed test coverage in UTEST
T2S-0557-SYS	CR	1	29.04.2022	Planned
T2S-0611-SYS	CR	1	29.04.2022	Planned
T2S-0699-SYS	CR	1	29.04.2022	Planned
T2S-0700-SYS	CR	1	29.04.2022	Planned
T2S-0701-SYS	CR	1	29.04.2022	Planned
T2S-0705-SYS	CR	1	29.04.2022	Planned
T2S-0706-SYS	CR	1	29.04.2022	Planned
T2S-0707-SYS	CR	1	29.04.2022	Planned
T2S-0722-SYS	CR	1	29.04.2022	Planned
T2S-0726-SYS	CR	1	29.04.2022	Planned
T2S-0739-SYS	CR	1	29.04.2022	Planned
T2S-0741-SYS	CR	1	29.04.2022	Planned
T2S-0742-SYS	CR	1	29.04.2022	Planned
T2S-0750-SYS	CR	1	29.04.2022	Planned
T2S-0758-SYS	CR	1	29.04.2022	Planned
T2S-0760-SYS	CR	1	24.04.2022	Planned
PBI 216431	Problem	6 – 10	The latest Service Transition Plan defines that in UTEST the packages 6-10 are planned for release defects only. A package can be introduced on 29 April, 13, 20 and 27 May and on 3 June 2022. Once T2S detailed the planning, CBF will update this table accordingly.	
PBI 216464	Problem	6 – 10		
PBI 218144	Problem	6 – 10		
PBI 218996	Problem	6 – 10		
PBI 219233	Problem	6 – 10		
PBI 219549	Problem	6 – 10		

Table 10 – T2S software deployment date for CRs and PBIs in UTEST

Appendix 3 - Domestic OTC settlement instructions

CASCADE Instruction Type AA01 and AA02

The following table provides general information for OTC settlement instructions (AA01 / AA02). Customers need to consider that for non-cleared SE instructions the initial creation is done by SETI:

<table>
<tr><td colspan="6">General information for settlement Domestic OTC free of payment and against payment Euro instructions in NTS cycles and RTS (OTC DFoP / RFoP, PFoD debit / credit, DvP / RvP Euro and DwP / RwP Euro)</td></tr>
<tr><td colspan="4">Instruction entry</td><td>Reporting type</td><td>Report, if ordered by customers for IMS23</td><td>Send date / online availability</td></tr>
<tr><td>Type</td><td>CASCADE -HOST / PC</td><td>ISO 15022 (ICP)</td><td>ISO 20022 (DCP)</td><td rowspan="10">ISO 15022 (ICP)</td><td>MT548 (Status reporting)</td><td>Real-time</td></tr>
<tr><td rowspan="3">DFoP/ DvP (DwP)</td><td rowspan="3">KVEE-WE/ OTC - enter delivery

KVEK / OTC – unverified instructio ns – verify</td><td rowspan="3">MT542/ MT543</td><td rowspan="3">sese.023 DELI with FREE or with APMT and CRDT</td><td>MT545 - MT547 (Deliver / Receive Free confirmation - Deliver / Receive against payment confirmation</td><td>Real-time</td></tr>
<tr><td>MT578 (Settlement Allegement)</td><td>Real-time</td></tr>
<tr><td>MT535 (Statement of Holdings)</td><td>End of Day (EoD)</td></tr>
<tr><td rowspan="4">RFoP/ RvP (RwP)</td><td rowspan="4">KVEE-MI / OTC – enter receipt

KVEK / OTC – unverified instructio ns – verify

PFoD debit as RvP with nominal = 0

PFoD credit as DvP with nominal = 0</td><td rowspan="4">MT540/ MT541

see DvP (PFoD DELI / RvP (PFoD RECE)</td><td rowspan="4">sese.023 RECE with FREE or with APMT and DBIT

see DvP / RvP</td><td>MT536 (Statement of settled Transactions / Clearing & Settlement Statement (C&S Statement)</td><td>End of Day (EoD): complete or at predefined sending times (Delta)</td></tr>
<tr><td>MT537 (Pending CASCADE OTC instructions)</td><td>Daytime: hourly
Night-time: At predefined times or events</td></tr>
<tr><td>MT586 (Statement of Allegements)</td><td>Daytime: hourly
Night-time: at predefined times or events</td></tr>
<tr><td>CASCADE HOST

CASCADE-PC</td><td>KVDU-ID (movements) KVBA-BB (Positions per ISIN) KVAI (Pending verified instructions)

movements / positions - movements – booked movements - final positions OTC-pending instructions</td><td>CASCADE Online opening hours</td></tr>
<tr><td>ISO 20022 (DCP)</td><td colspan="2">See Connectivity Handbook DCP</td></tr>
</table>

Table 11 – OTC instruction flow

Appendix 4 – Examples of the migration reports

List of to be migrated trades (J_26M000) – Layout of SET-GO ICSD Migration (Phase 1) remains unchanged

CLEARSTREAM BANKING AG — ESCHBORN, 06.04.2021
MERGENTHALERALLEE 61 — TELEFON +49-69-211-11177
TELEFAX +49-69-211-611177

TEST EXAMPLE LIMITED
ONE EXAMPLE SQUARE
GB LONDON E12 34AB
BANK-NUMMER: 3 456 BIC: ABCDE12XXX

CURR. DATE: 06.04.2021

PAGE : 1

LIST OF TO BE MIGRATED TRADES
THE CANCELLATION IS DONE BY CBF
CURRENCY : EUR
CTDY. TYPE: AKV PURCHASE

SEC.CD	TR-DATE	NOMINAL	ORIG-NOM	CASH AMOUNT	CP-A
TR.NO	BRKR	VAL/SET-D	PART-NOM	INFO	ERROR-NO
KYG875721485		14.05.14	240	240	651,95	7086
276673	7501	16.05.14	13	LV XE TB		

	NUMBER	NOMINAL	CASH AMOUNT
TOTAL	1	13	651,95

DRAFT

Description of fields:

- NOMINALE / NOMINAL: remaining to be settled
- TEIL-NOM / PART-NOM: pending partial release (LION "Bemerkung": TB)
- URSPR-NOM / ORIG-NOM: always filled with original quantity
- Cancellation request for one leg only will be flagged with LION "Bemerkung":
- LK ("Löschung durch Käufer")
- LV ("Löschung durch Verkäufer")

List of not migrated trades (J_26M000) - Layout of SET-GO ICSD Migration (Phase 1) remains unchanged

CLEARSTREAM BANKING AG ESCHBORN, 06.04.2021
MERGENTHALERALLEE 61 TELEFON +49-69-211-11177
TELEFAX +49-69-211-611177

TEST EXAMPLE LIMITED
ONE EXAMPLE SQUARE
GB LONDON E12 34AB
BANK-NUMMER: 3 456 BIC: ABCDE12XXX

CURR. DATE: 06.04.2021

PAGE : 1

LIST OF NOT MIGRATED TRADES
DELETED BY BOTH COUNTERPARTS OR CANCELLED
CURRENCY : EUR
CTDY. TYPE: AKV PURCHASE

SEC.CD	TR-DATE	NOMINAL	ORIG-NOM	CASH AMOUNT CP-A
TR.NO BRKR	VAL/SET-D	PART-NOM	INFO	ERROR-NO
CA74386V1004	28.03.12	600	600	5.312,04 2099
250265 2099	02.04.12		LB VZ	

	NUMBER	NOMINAL	CASH AMOUNT
TOTAL	1	600	5.312,04

DRAFT

Description of fields:

- NOMINALE / NOMINAL: remaining to be settled
- TEIL-NOM / PART-NOM: pending partial release
- URSPR-NOM / ORIG-NOM: always filled with original quantity
- LION "Bemerkung":
  - LB ("Löschung beidseitig")
  - LT ("Löschung beidseitig Vortag")
  - ST ("Storno")

List of not successfully migrated trades (J_26P000) - Layout of SET-GO ICSD Migration (Phase 1) remains unchanged

CLEARSTREAM BANKING AG ESCHBORN, 06.04.2021
MERGENTHALERALLEE 61 TELEFON +49-69-211-11177
TELEFAX +49-69-211-611177

TEST EXAMPLE LIMITED
ONE EXAMPLE SQUARE
GB LONDON E12 34AB
BANK-NUMMER: 3 456 BIC: ABCDE12XXX

CURR. DATE: 06.04.2021

PAGE : 1

LIST OF NOT SUCCESSFULLY MIGRATED TRADES
FINALLY REJECTED OR IN RECYCLING
CURRENCY : EUR
CTDY. TYPE: AKV PURCHASE

SEC.CD	TR-DATE	NOMINAL	ORIG-NOM	CASH AMOUNT CP-A
TR.NO BRKR	VAL/SET-D	PART-NOM	INFO	ERROR-NO
KYG875721485	14.05.14	240	240	651,95 7086
276673 7501	16.05.14	13	LV XE TB	SE1010F

	NUMBER	NOMINAL	CASH AMOUNT
TOTAL	1	13	651,95

DRAFT

Description of fields:

- NOMINALE / NOMINAL: remaining to be settled
- TEIL-NOM / PART-NOM: pending partial release
- URSPR-NOM / ORIG-NOM: always filled with original quantity

A list with the respective error and information codes will be provided in the SET-GO Migration Guide CSD Migration (Phase 2).

Appendix 5 – SEME Concept

Composition of Sender's Message Reference ("SEME")

This section defines the calculation of "Function of Date and Trade Number" (digit 10-16):

The input parameters for the calculation of digits 10-16 are:

- Input date in YYMMDD format
- Trade Number in *nnnnnnn* format (7-digit number)

Step 1: Transform input date in YYMMDD format into a number DATE

- Formula: DATE(YYMMDD) = (DD-1) + 31 * (MM-1) + 372 * (YY modulo 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 =→ 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 → Value (a_0) mapped to digit 16

– a_1 → Value (a_1) mapped to digit 15

– a_2 → Value (a_3) mapped to digit 14

– a_3 → Value (a_4) mapped to digit 13

– a_4 → Value (a_5) mapped to digit 12

– a_5 → Value (a_6) mapped to digit 11

– a_6 → Value (a_7) mapped to digit 10

Calculation example:

Trade Number = 1234567

Input Date = 11.04.2032, that is, 320411 in YYMMDD format.

⇒ DATE(320411) = 10 + 3*31 + 12*372 = 10 + 93 + 4464 = 4567

⇒ 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 = „SD581005EKZBH24N“

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