

T2S Liquidity Managers Workshop

Frankfurt, 11th November 2009

**T2S Project Team
European Central Bank**

1. Messaging Standards
2. Liquidity Management in T2S
 - Cash Account Structure
 - A Settlement day (Start of day till End of day)
 - Deadlines: Opening/ Cut-off timelines
 - Liquidity Transfers – Different Options
 - T2S → RTGS
 - RTGS → T2S
 - Internal Transfers
 - Use of liquidity and collateral
 - Provision of intraday liquidity via auto-collateralisation (on flow/ stock/ earmarking)
 - Reimbursement
 - End of day procedure
3. Credit Memorandum Balance (CMB)
 - Description of CMB functionality
 - Proposed changes to URD: Change Request 228
4. Additional Points/ Q & A
5. Appendices

Messaging Standards

T2/ T2S

- Gap Analysis of T2S change requests on T2
- List of expected changes to T2 and T2S (by beginning of 2010)

SWIFT/ ISO

- Evaluation of needed amendments

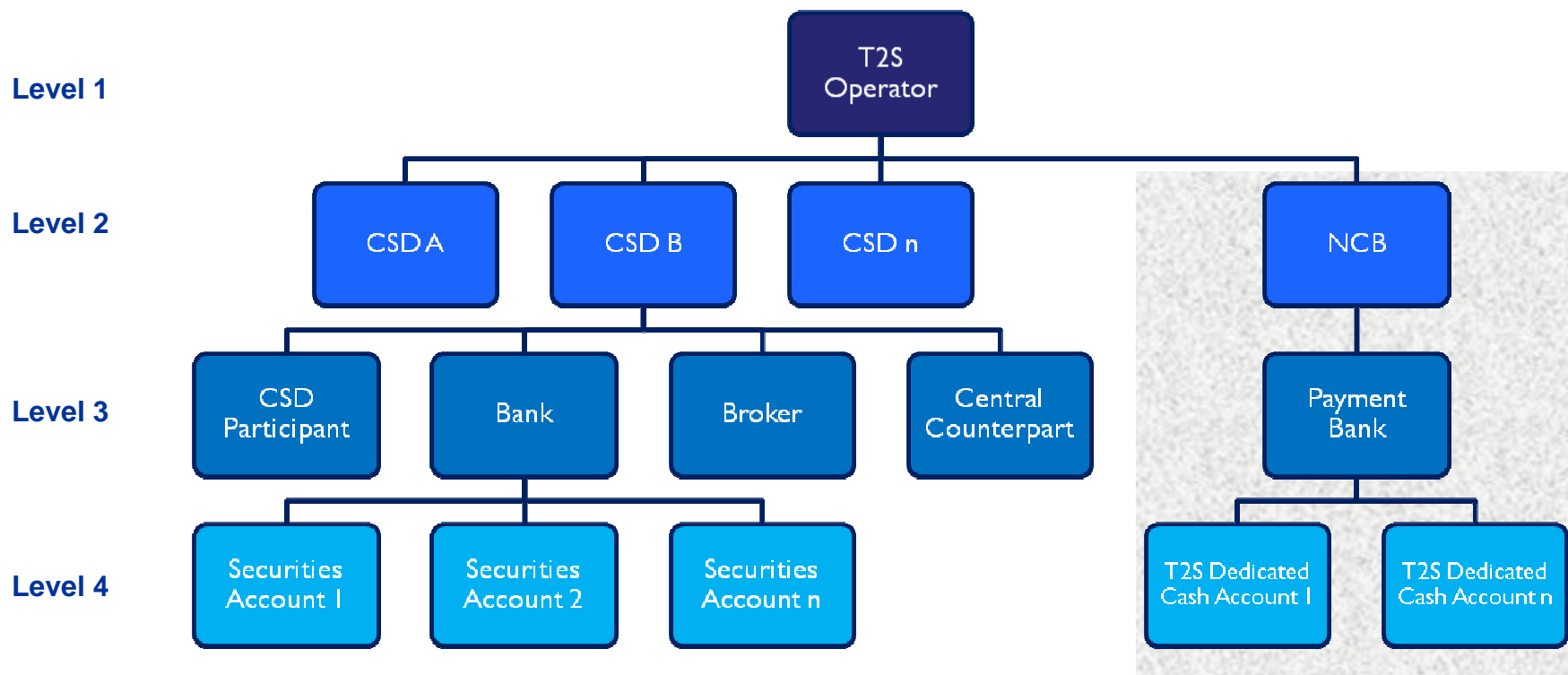
Framework

- Proposal to setup small adhoc workable structures

Liquidity Management in T2S

Set up

Hierarchy of T2S Roles in T2S



Note:

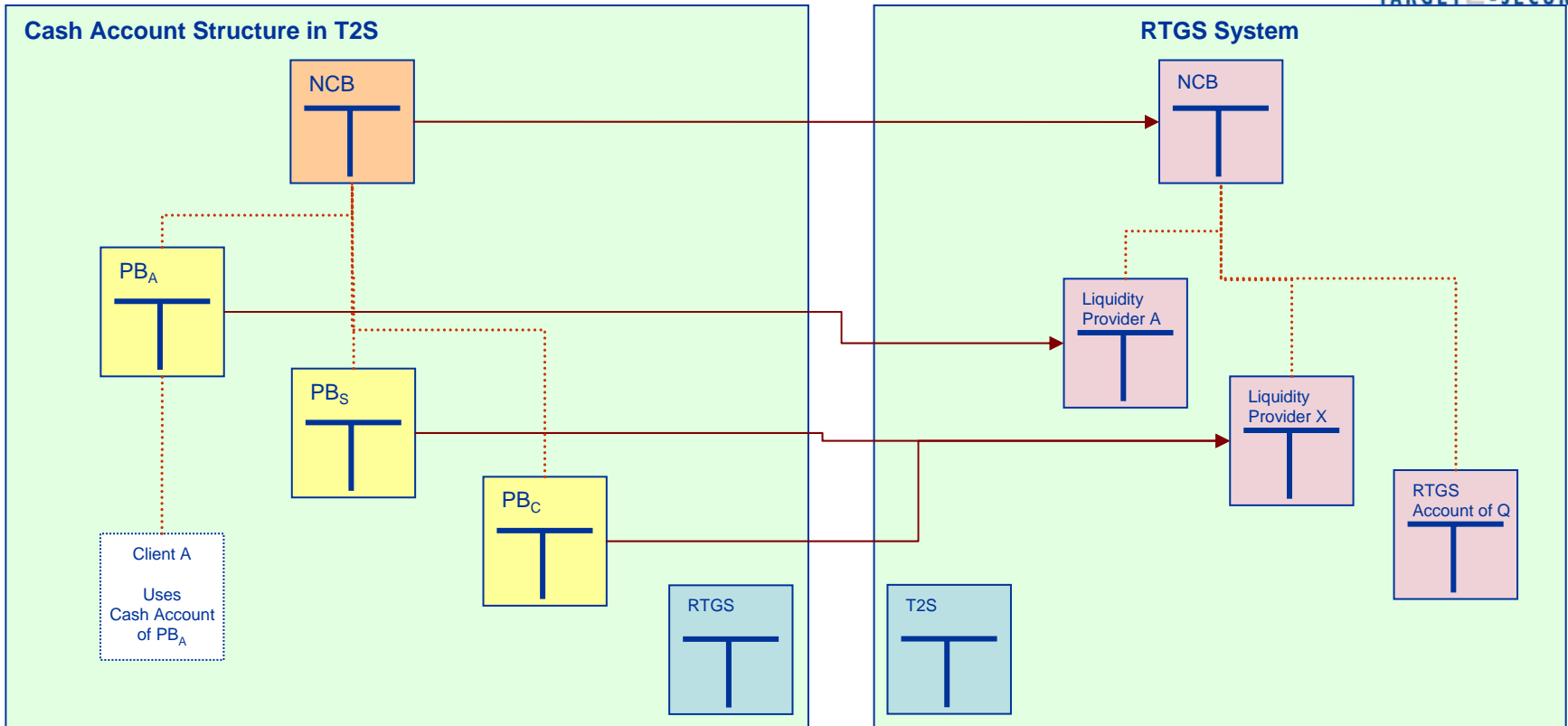
1. A business role of "T2S Party" includes CSD Participants, Banks, CCP, stock exchanges, Brokers, etc
2. A legal entity representing a "settlement bank" is a party in T2S with the role of "T2S party" and the role of a "payment bank"

Cash Account Structure in T2S

- T2S dedicated cash accounts (T2S DCA from now on) will be exclusively a central bank money account opened on the books of an NCB.
- The T2S DCA holder are payment banks or settlement banks or NCB.
- Cash leg of securities settlement will take place in the T2S dedicated cash accounts in euro/non-euro currency in central bank money.
- A T2S DCA holder shall be allowed to hold one or several T2S dedicated cash accounts in the euro/non-euro currency.
- The T2S DCA holder must define in T2S, the RTGS account (in the respective RTGS system) to which the T2S DCA must be linked for the EOD liquidity repatriation.
- Every T2S DCA can exist in one currency only and T2S shall not perform/ facilitate any currency conversion.
- T2S acts as an ancillary system to the RTGS system and a T2S DCA shall start with a balance as 0 at Start of the day and repatriate all the remaining balances at the end of the day



Cash Account Structure



Notation	Description
NCB	National Central Bank
PB _A	Payment Bank
PB _S	Payment Bank (Settlement Bank)
PB _C	Payment Bank (CSD Participant)
Client A	CSD Participant using the services of Payment Bank A

Notation	Description
NCB	National Central Bank
Liquidity Provider A	RTGS Account holder which would receive liquidity at EoD from Payment Bank A in T2S
Liquidity Provider X	RTGS Account holder which would receive liquidity at EoD from Payment Bank S and Payment Bank C in T2S
RTGS Account holder Q	An independent RTGS Account holder in the RTGS system



Liquidity Management in T2S

A Settlement day
Start of day to End of day

Schedule of the Settlement Day in T2S

18:45-19:30	19:30-03:00	03:00-05:00	05:00-18:00	18:00-18:45
Start-of-day	Night-time settlement period	Maintenance Window **	Daytime settlement period	End-of-day period

- Change of Business Date
- Static Data Update
- Instruction Revalidation based on SD maintenance
- Settlement Eligibility
- Liquidity transfers
(preparation for the night-time settlement period, such as arrange funding in the T2S DCA)

- Liquidity Transfers
- Repeat n
Cycle & sequences
End of Cycle reporting
Static Data Update*

Last Cycle:

- Partial Settlement
- Multiple Liquidity Provider reimbursement at end of cycle
- Predefined/Standing Liquidity Transfer Orders
- End of Cycle Reports
- Statement and Reports

- Interface services restricted
- Other services unavailable

- Continuous real time Settlement
- Liquidity transfers
- Partial Settlement window
- Intraday DVP cut-off 16:00
- Intraday FOP/BATM/ Central Bank operations cut off 18:00

- Release of EoD cash restrictions
- EoD intraday credit reimbursement
- EoD Liquidity Transfers (cash sweep) + forced RTGS Liquidity Transfers
- Technical bookings
- Stop settlement
- Recycling and purging
- Securities Accounts consistency check
- Statement and reports

* Static Data updates are accepted throughout the night-time settlement but are implemented at the end of cycle sequences if they impact the settlement process

** There are considerations to align the maintenance window to the maintenance window timeline in T2

Schedule of T2S in parallel to T2

T2S Schedule

18:45-19:30	19:30-03:00	03:00-05:00	05:00-18:00	18:00-18:45
Start-of-day	Night-time settlement period	Maintenance Window	Daytime settlement period	End-of-day period

T2 Schedule

18:45-19:30	19:30-22:00	22:00-01:00	01:00-06:45	06:45-18:00	18:00-18:45
Start-of-day	Night-time settlement period	Maintenance Window	Night-time settlement period	Daytime settlement period	End-of-day period

Liquidity Transfers in T2S

Liquidity Transfer

- A liquidity transfer is an instruction from a cash account holder to transfer a specified amount of money from its cash account to another cash account.

Classification based on direction of flow of liquidity

- Inbound Liquidity Transfers
 - Transfer of liquidity from RTGS Accounts (in RTGS system) to T2S Dedicated Cash Accounts
- Internal Liquidity Transfers
 - Transfer of liquidity between T2S Dedicated Cash Accounts of the same payment bank, or of another party for whom the payment bank acts as liquidity provider
- Outbound Liquidity Transfers
 - Transfer of liquidity from T2S Dedicated Cash Accounts to RTGS Accounts (in RTGS system)

Note: Payment bank and Settlement bank are used synonymously in the context of liquidity management in this presentation

Types of liquidity transfers

- Immediate liquidity transfer orders
 - Liquidity will be transferred immediately after the transfer was instructed*
 - Applicable to transfer of liquidity between RTGS accounts and T2S DCA (or) between two T2S DCA (if these DCA belong to the same payment bank or to another T2S party for whom the payment bank acts as liquidity provider)
- Predefined liquidity transfer orders
 - Liquidity will be transferred at a certain time or business event chosen by the account holder of the account to be debited*.
 - The transfer will be executed only once at a defined time or event
 - Liquidity will be transferred from a T2S DCA to an RTGS account only (Either the specified transfer amount or “All cash” available in the T2S DCA will be transferred)
- Standing liquidity transfer orders
 - Liquidity will be transferred at a certain time or business event chosen by the account holder of the account to be debited*
 - The transfer will be executed on every occurrence of the event until the order is deleted
 - Liquidity will be transferred from a T2S DCA to an RTGS account only (Either the specified transfer amount or “All cash” available in the T2S DCA will be transferred)

* Providing that there is sufficient liquidity available on the account to be debited (or) partial execution is allowed

Handling of liquidity transfers

Liquidity transfers	RTGS A/C to T2S DCA (Inbound)	T2S DCA to RTGS A/C (Outbound)	T2S DCA to T2S DCA (Internal)	Partial Execution	Number of Executions
Immediate liquidity transfer order	YES	YES	YES*	NO**	As many as needed
Predefined liquidity transfer order	NO	YES	NO	YES	Only once per T2S DCA per time/event
Standing liquidity transfer order	NO	YES	NO	YES	One to many at different points in time/events

*) T2S dedicated cash accounts shall be owned either by the same T2S party (or) by another party for whom the payment bank acts as liquidity provider within the same central bank.

***) Partial execution can only take place if the instruction is placed by a T2S Actor (i.e. CSD) acting on behalf of an account owner.

Liquidity Transfers in T2S

RTGS → T2S

Immediate Liquidity Transfer Orders RTGS → T2S

Assumption:

The RTGS system's participant initiates a liquidity transfer from its RTGS Account (in the RTGS system) in favour of a T2S Dedicated Cash Account. After the booking of the Liquidity Transfer within the RTGS System has taken place, regardless of which order type has been initiated by the RTGS System's participant, it must be perceived and processed as an Inbound liquidity transfer in T2S.

Steps in Processing:

I. Validations

Technical validations are performed by the Interface

- T2S Actors are informed in case of a failure in format validations via a rejection of the Liquidity Transfer, based on their message subscription preferences
- After successful validations, the Liquidity Transfer is sent to the Liquidity Operations business module

Business Validations are performed by the Liquidity Operations Module

- the instructing party, T2S dedicated cash accounts are existing and active in Static Data;
- all mandatory fields for liquidity transfers are filled;
- the currency is eligible as T2S settlement currency;
- there is no duplicate submission of the incoming Immediate liquidity transfer;
- T2S Actors are informed about the acceptance/ rejection of the Liquidity Transfer, based on their message subscription preferences

Immediate Liquidity Transfer Orders RTGS → T2S

Assuming validations are successful:

2. Execution in T2S

- A Liquidity Transfer Order is created and sent to the Settlement modules for processing (debit RTGS Dedicated Transit Account - credit T2S Dedicated Cash Account)
- The booking function updates the balances of the accounts involved on a gross basis: the requested RTGS dedicated transit account is debited and the T2S dedicated cash account is credited.
- The status of the LTO is set to “settled”.
- In all cases a status message for settlement is sent to the initiating T2S Actor and other T2S Actors with sufficient privileges as well as the RTGS system (depending on the Message Subscription preferences).

Liquidity Transfers in T2S

T2S → RTGS

Immediate Liquidity Transfer Orders T2S → RTGS

Assumption:

A T2S Dedicated Cash Account holder or another T2S Actor granted with the respective privilege sends an Immediate liquidity transfer to T2S to transfer liquidity from T2S to RTGS.

Steps in Processing:

I. Validations

Technical validations are performed by the Interface

- T2S Actors are informed in case of a failure in format validations via a rejection of the Liquidity Transfer, based on their message subscription preferences
- After successful validations, the Liquidity Transfer is sent to the Liquidity Operations business module

Business Validations are performed by the Liquidity Operations Module

- the instructing party, involved RTGS accounts, T2S dedicated cash accounts are existing and active in Static Data;
 - all mandatory fields for liquidity transfers are filled;
 - the currency is eligible as T2S settlement currency;
 - there is no duplicate submission of the incoming Immediate liquidity transfer;
 - the T2S Actor instructing the Liquidity Transfer has sufficient privileges (e.g. based on a contractual agreement) to instruct on the T2S dedicated cash account to be debited in case the instructing T2S Actor is not the account owner.
-
- T2S Actors are informed about the acceptance/ rejection of the Liquidity Transfer, based on their message subscription preferences

Immediate Liquidity Transfer Orders

T2S → RTGS

Assuming validations are successful:

2. Execution in T2S

- A Liquidity Transfer Order is created and sent to the Settlement modules for processing (debit T2S Dedicated Cash Account - credit RTGS Dedicated Transit Account)
- In the settlement module three different scenarios are possible:
 - **Full execution:**
 - Balances of the accounts involved are updated on a gross basis: the requested T2S Dedicated Cash Account is debited and the RTGS Dedicated Transit Account of the responsible NCB is credited.
 - After the successful booking of the Settlement transaction, the status is set to “settled”
 - The outbound liquidity transfer is sent to the involved RTGS System for subsequent processing.
 - **Partial execution (only possible if the initiator is different to the account holder*):**
 - Balances are updated as for full execution by transferring as much as possible and no further settlement attempt is done for the cash amount which cannot be settled due to unavailable cash in the T2S DCA.
 - The status of the LTO is set to “partially settled”.
 - The outbound liquidity transfer is sent to the involved RTGS System for subsequent processing.
 - **No execution:** If no cash is available on the DCA and no liquidity can be transferred. The resulting status is “unsettled”
- In all cases a status message for settlement, is sent to the initiating T2S Actor and other T2S Actors with sufficient privileges (depending on their Message Subscription preferences) via the Outbound Information Management module.

* A CSD acting on behalf of the account holder

When sending to the RTGS system:

3. Network NAK is received

- The RTGS status of the liquidity transfer is set as “Technical NAK”

When a Network ACK is received:

4. Processing of the RTGS answers

- In addition to the network provider answer, an answer from the RTGS system is expected by T2S to ensure that the Liquidity Transfer has reached its destination and was processed. If T2S receives
 - an RTGS Confirmation, that the Liquidity Transfer has been booked successfully within the RTGS system, the RTGS status of the Liquidity Transfer is updated “RTGS Confirmation”
 - an RTGS Rejection, the RTGS System could not process the Liquidity Transfer within the RTGS system, the RTGS status of the Liquidity Transfer is updated to “RTGS Rejection”
 - Information on the rejection is sent to the T2S Actors (e.g. the NCB) with sufficient privileges (and depending on the Message Subscription preferences).

Predefined/ Standing Liquidity Transfers as Immediate Liquidity Transfer Orders T2S → RTGS

Assumption:

A T2S Dedicated Cash Account holder or another T2S Actor granted with the respective privilege has setup a pre-defined/ standing liquidity transfer in T2S, to transfer liquidity from T2S to RTGS at a scheduled time/ event.

Steps in Processing:

1. Generation at the occurrence of the time/ event

- When the scheduled time event or when the business event occurs, the predefined/ standing liquidity transfer defined in T2S Static data, is transformed as an immediate liquidity transfer from T2S to RTGS

The below steps in processing are same as that in processing of a Immediate liquidity transfer from T2S to RTGS

2. Execution in T2S

3. When sending to the RTGS system: Network NAK is received

4. When a network ACK is received processing of the RTGS answers

Examples of events:

- Corporate Action Rebalancing Liquidity
- Monetary policy Repo operations

Corporate Action Rebalancing Liquidity

Setup

The T2S dedicated cash account holder receiving the cash proceeds of a corporate action sets up a standing liquidity transfer order with

- the RTGS account to which the cash proceeds shall be transferred and
- the business event as Corporate Action rebalancing liquidity (CARL)

Processing

When a settlement instruction for cash corporate action proceeds are to be processed for settlement,

- if the receiver of cash proceeds has setup a automated retransfer of these proceeds via a standing liquidity transfer order with CARL event, then the standing order is generated as an outbound immediate transfer order (i.e. T2S → RTGS)
- the settlement transactions are generated for the settlement instruction and the liquidity transfer
- both the settlement transactions are treated as a collection and settled on an “all-or-none” basis

Scenario

- Prior to the start of night time settlement, different liquidity providers can fund liquidity to a T2S dedicated cash account holder
- T2S dedicated cash account holder can use this liquidity for its settlement purposes during night time cycles
- At the end of night time settlement, the remaining cash is reimbursed to its different liquidity providers using the setup (order link set) in static data

Setup in T2S static data

T2S dedicated cash account holder sets up

- multiple standing liquidity transfer orders without a transfer amount and with the RTGS account of its designated liquidity provider
- order link set with references to the multiple standing liquidity transfer orders and the sequence of execution. [The main liquidity provider is setup as the last one (in the order link set) to be refunded]

Processing (at the end of night time settlement)

- T2S validates if a T2S dedicated cash account holder has opted for a multiple liquidity provider reimbursement facility via the above setup
- If set up, then T2S aims at reimbursing each liquidity provider up to the maximum amount of cash lent before starting to reimburse the next in sequence
- T2S executes each of the reimbursements as outbound immediate transfer order from T2S → RTGS

Liquidity Transfers within T2S

Immediate Liquidity Transfer Orders within T2S

Assumption:

A T2S Dedicated Cash Account holder or another T2S Actor granted with the respective privilege sends an Immediate liquidity transfer to T2S to transfer liquidity from one T2S dedicated cash account to another.

Steps in Processing:

I. Validations

Technical validations are performed by the Interface,

- T2S Actors are informed in case of a failure in format validations via a rejection of the Liquidity Transfer, based on their message subscription preferences
- After successful validations, the Liquidity Transfer is sent to the Liquidity Operations business module

Business Validations are performed by the Liquidity Operations Module

- the instructing party, T2S dedicated cash accounts are existing and active in Static Data;
 - all mandatory fields for liquidity transfers are filled;
 - the currency is eligible as T2S settlement currency;
 - there is no duplicate submission of the incoming Immediate liquidity transfer;
 - the T2S Actor instructing the Liquidity Transfer has sufficient privileges (e.g. based on a contractual agreement) to instruct on the T2S dedicated cash account to be debited in case the instructing T2S Actor is not the account owner.
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- T2S Actors are informed about the acceptance/ rejection of the Liquidity Transfer, based on their message subscription preferences

Immediate Liquidity Transfer Orders within T2S

Assuming validations are successful:

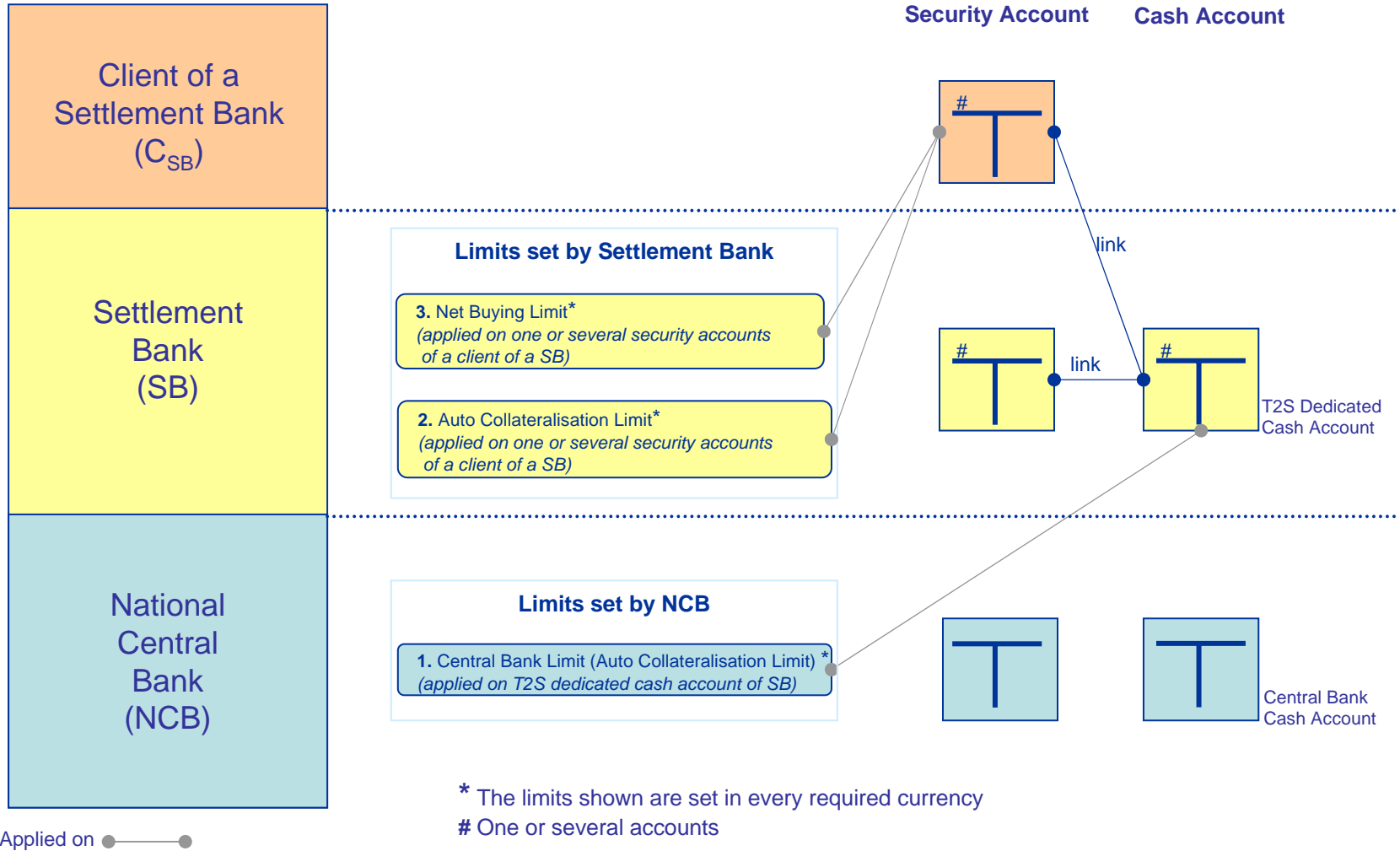
2. Execution in T2S

- A Liquidity Transfer Order is created and sent to the Settlement modules for processing (debit T2S Dedicated Cash Account - credit T2S Dedicated Cash Account)
- In the settlement module three different scenarios are possible:
 - **Full execution:**
 - Balances of the accounts involved are updated on a gross basis for the full transfer amount: the requested T2S Dedicated Cash Account is debited and the other T2S Dedicated Cash Account is credited.
 - After the successful booking of the Settlement transaction, the status is set to “settled”
 - **Partial execution (only possible if the initiator is different to the account holder*):**
 - Balances are updated as for full execution by transferring as much as possible and no further settlement attempt is done for the cash amount which cannot be settled due to unavailable cash in the source T2S DCA.
 - The status of the Liquidity Transfer is set to “partially settled”.
 - **No execution:** If no cash is available on the source T2S DCA and no liquidity can be transferred. The resulting status is ”unsettled”
- In all cases a status message for settlement, is sent to the initiating T2S Actor and other T2S Actors with sufficient privileges (depending on their Message Subscription preferences) via the Outbound information management module.

* A CSD acting on behalf of the account holder

Limit Management & Auto Collateralisation in T2S

Setup for Limits



Note: In general, limit groups are possible

Controlling the use of cash in T2S

- In order to control the use of cash available on a party's T2S DCA a treasurer can:
 - Define the below limits to limit the use of cash on a T2S DCA,
 - ✓ Net buying limit
 - ✓ Auto-collateralisation limit
 - Reservation/ Blocking of cash for specific instructions
 - ✓ Amount of cash reserved/ blocked cannot be used to settle instructions, unless the instruction being settled refers to the initial reservation/ blocking instruction.
- An NCB may control its party's T2S DCA by
 - limiting the use of auto-collateralisation (via the central bank limit for auto-collateralisation) to cover lack of cash on the T2S dedicated cash account.

1. Central Bank Limit (Auto-Collateralisation limit set by the Central Bank):

(T2S.08.520) Each national central bank shall be able to limit the net amount of intraday credit that an eligible settlement bank can obtain in T2S. The limit on the net amount of intraday credit that such an eligible settlement bank can obtain through auto-collateralisation is referred as auto-collateralisation limit set by a central bank. This limit is set on the level of one or a group of T2S Dedicated cash account(s) of a Settlement Bank.

(T2S.10.083) T2S shall allow an authorised T2S system user of an NCB to assign one and only one limit to a settlement/payment bank for auto-collateralisation. The limit shall apply to all T2S dedicated cash accounts of that settlement/payment bank. Therefore, T2S shall require the NCB to maintain the limit at the party level.

2. Auto Collateralisation Limit:

(T2S.08.760) For each securities account associated with one of its T2S dedicated cash accounts, a payment bank shall be able (via setting in static data) to limit the amount of intraday credit that can be obtained through auto-collateralisation, so as to facilitate the settlement of instructions pertaining to the relevant securities account. This limit is referred to as an “auto-collateralisation limit set by a payment/settlement bank per currency”. T2S shall also enable each payment bank to set a common auto-collateralisation limit for several securities accounts.

3. Net Buying Limit:

(T2S.06.140) T2S shall enable each settlement/payment bank to set in T2S a net buying limit for transactions settled on its T2S dedicated cash account(s). To that end, the payment bank is required to define in T2S static data the net buying limit that applies per securities account or per group of securities accounts for which it provides cash settlement services. When several securities accounts are linked to the same T2S dedicated cash account, the payment bank holding the relevant T2S dedicated cash account shall be able to define a common net buying limit for one, several or all relevant securities accounts. Alternatively, when several securities accounts are linked to the same T2S dedicated cash account, the payment bank holding the relevant T2S dedicated cash account shall be able to define different net buying limits for each of the relevant securities accounts.

4. Limit group:

(T2S.10.080) T2S shall use limit groups to link one or more parties in T2S to a limit. T2S shall require the input of the limit group when an authorised T2S system user defines a limit.

(T2S.10.086) T2S shall allow an authorised T2S system user of a settlement/payment bank with a T2S dedicated cash account to assign a T2S party of a CSD to an auto-collateralisation limit. T2S shall also enable an authorised T2S system user of the settlement/payment bank to assign T2S parties from multiple CSDs to a single limit group provided the parties have the same primary BIC.

Auto Collateralisation

- Auto Collateralisation is an intraday credit operation in central bank money that is triggered when the buyer has insufficient funds (or securities) to settle securities transactions.
- An Intraday credit provision is always collateralised in T2S
 - Either with securities already held by the buyer via **collateral-on-stock** or
 - Through **collateral-on-flow** via the eligible securities that are being purchased.
- A buyer (i.e. liquidity receiver) has the facility to earmark an account/ positions to be used for collateral-on-stock per currency
 - **Earmarking of a securities position** is the process of defining that a specified quantity of a security in one securities account is only eligible for specific type of transactions or processes. For example, a bank can earmark a securities position in its securities account for use as eligible collateral.
 - **Earmarking of a securities account** is the process of defining that all the positions held in a specific securities account can be used for a specific purpose (e.g. as collateral)

Provision of intraday liquidity via auto-collateralisation, to a Settlement Bank

Auto-collateralisation triggers and validations

During the securities settlement processing, auto-collateralisation is triggered in case of:

- Insufficient cash (to establish a new intraday credit operation);
- Insufficient securities (to perform a dynamic reimbursement or an automated substitution if possible).

In the case of **insufficient cash** the following validations are performed:

- Eligibility of the T2S Party (i.e. Settlement Bank) to collateralisation by its NCB;
- Value of the requested collateral amount, resorting preferably to
 - Auto-collateralisation on flow
 - use of credited security position which are earmarked and eligible in that currency for collateral purpose
 - complemented if necessary with auto-collateralisation on stock
- Checks the collateral value against the auto-collateralisation limits (set by the relevant NCB or the payment/settlement bank) applicable to the relevant securities account or T2S Dedicated cash account.
- Close links do not exist

Auto-collateralisation triggers and validations

In the case of **insufficient securities** the following steps are performed:

- Check if the reverse collateral settlement transaction(s) (flagged as "Hold") can fill in the considered lack if settled;
- Attempts a **dynamic reimbursement** with
 - the cash available on the T2S Dedicated cash account
 - complemented, if necessary, with the incoming positive cash flow.
- If the available cash is insufficient to perform the dynamic reimbursement, the module attempts an **automatic substitution** with available collateral.

Auto-collateralisation & Reimbursement processing

The booking processes performs the following steps:

The new auto-collateralisation module creates the necessary collateral instructions/transactions and settles them with the original settlement instructions (+ reverse instructions in case of insufficient securities)

For the case of insufficient cash:

- New reverse instructions/transactions (on hold by cash provider) are created (i.e. reimbursement transactions)
- Status updates and relevant internal matching is performed
- T2S parties, NCB and CMS is informed about the settlement of the original instructions, auto-collateral instructions and reverse collateral instructions according to their message subscription

End of day procedure

After the 18:00 cut-off processing, the end of day processing is conducted in 4 steps, triggered by the Scheduler

1. End-of-day release of unused cash restrictions
2. End-of-day release of auto-collateralised positions and execution of forced RTGS transfers if needed
3. End-of-day liquidity transfer (cash sweep)
4. Stop collection creation (technically stop creating all input to the settlement engine).

1: End-of-day release of unused cash restrictions

- All cash restrictions (blocked, reserved) cash are released for the current business day
- New settlement restrictions are created for the next business day, to enable the recycling of cash restrictions
- Status messages are sent to T2S Actors, depending on their Messages Subscription preferences, about the above actions

2: Release of a/c positions and forced liquidity transfers

The amount of outstanding intraday credit is validated and three cases are possible on the DCA:

1. No pending intraday credit
2. The cash on the T2S Dedicated Cash Account is sufficient to fully reimburse the pending intraday credit
3. There is insufficient or no cash on the T2S Dedicated Cash Account to reimburse the pending intraday credit.

Case 1: No action is taken

Case 2: The reverse settlement transactions are released to settlement

Disclaimer: This scenario is based on current assumptions still to be finalised with T2/CCBM2

End of Day Liquidity Transfer

Release of a/c positions and forced liquidity transfers

Case 3: Insufficient or no cash on the T2S DCA to reimburse the pending intraday credit:

- Validation for available cash via cash rebalancing from another DCA of the same T2S Actor (if exceeding liquidity available, creation of internal Liquidity Transfers transaction)
- Release of the associated reverse (unwind) Settlement Transactions previously created
- Creation of a Forced RTGS transfer
- For positions that will not be released (amount of intraday credit that cannot be reimbursed out of T2S) FOP transactions are created transfer the collateral to the NCB regular collateral securities account.

All transactions are linked and settled simultaneously

In all cases information messages are sent to the initiating T2S Actor and other T2S Actors with sufficient privileges. (depending on the Message Subscription preferences).

Disclaimer: This scenario is based on current assumptions still to be finalised with T2/CCBM2

End of Day Liquidity Transfer

End-of-day liquidity transfer (cash sweep) + stop collection creation

3: End of Day Liquidity Transfer (Cash Sweep)

- Liquidity Transfers are created for all T2S Dedicated Cash Accounts with non-zero cash balances.
- These Liquidity Transfers are settled in T2S and sent to the RTGS system according to the procedure described in the scenario T2S → RTGS Liquidity Transfer, including ACK/NAK and RTGS confirmation
- In all cases information messages are sent to the initiating T2S Actor and other T2S Actors with sufficient privileges. (depending on the Message Subscription preferences).

4: Stop Collection Creation

- technically the creation of input to the settlement engine is stopped for the business day

Disclaimer: This scenario is based on current assumptions still to be finalised with T2/CCBM2

Credit Memorandum Balance (CMB)

Functionality for Settlement Banks in T2S - CMB

- Background
- Credit memorandum balance functionality
 - What is in the URD/ What is not
 - Proposed structure of CMB in T2S
- Change Request 228
- Summary

During the AG meeting on 15/16 June the topic “Functionality for settlement banks in T2S” was discussed, describing **the possibility for settlement banks to provide secured liquidity to their clients in T2S, with the limit/limit utilisation and collateralisation** administered and monitored by T2S automatically.

- 2 Workshops were held on the topic in summer 2009
- Detailed impact analysis on URD was performed
- CR finalised and presented to URM-SG
- Feedback from URM subgroup received
- Legal Assessment is completed
- Cost / Impact analysis is in progress

Why liquidity provision from settlement banks is important

Certain participants operate their own securities accounts in the CSD, but use a Settlement Bank to provide liquidity. There are various reasons why they do this:

- Some participants are not eligible to open accounts with the central bank.
- Some participants may be eligible to open accounts at the central bank, but do not have access to central bank credit facilities.
- Some participants simply prefer to out-source cash settlement to specialist liquidity providers.

Settlement Banks therefore provide intra day liquidity to other participants for securities settlement. This liquidity provision could be secured, in accordance with their contractual relationship.

The CMB functionality will help settlement banks to better control their risk

What is in the URD

Current T2S functionality for settlement banks:

- A settlement bank can allow a client to use liquidity from the settlement bank's DCA
- A settlement bank can use the client's collateral to obtain credit from an NCB (subject to client's agreement)
- A settlement bank can set a auto collateralisation limit per client on the securities account or a group of securities account (depending on ownership)
- The collateral will be moved between the client and the NCB with the cash proceeds being credited to the DCA of the settlement bank.

What is not in the URD

Current T2S functionality does not support:

- Automatic collateralisation between clients and their settlement banks and associated functions (automatic substitution etc.)
- Settlement banks defining what collateral they will accept and set haircuts (dirty prices are transmitted to T2S)
- Credit line based on external guarantee/unsecured credit
- Certainty that the Settlement Bank will get the collateral provided by the client to the NCB

Collateralisation of intraday credit in T2S, between a settlement bank and its clients

CMB would be based on current technical functionality for secured liquidity provision from NCBs by extending its use to provide client collateralisation between settlement banks and their clients.

Functionality used for CMB:

- auto-collateralisation on stock and flow
- dynamic reimbursements
- automatic substitution of securities if needed for delivery
- reimbursement procedure
- possibility to define eligibility/haircut prices of securities/close links
- setting and modification of limits
- eligible collateral received from clients can be used by the settlement bank to obtain NCB liquidity
- query functionality for the monitoring of limit usage by Settlement banks and their clients (even in the case of client defaults)

Existing functionality is simply reused for the relationship between settlement bank and client.

Features of a new **Credit Memorandum Balance (CMB)** in T2S

- The CMB is not a cash account, but only a limit monitoring tool for use by client and settlement bank.
- Cash postings on the Dedicated Cash Account (DCA) of the settlement bank for a client will simultaneously update CMB of the client.
- A settlement bank can set up CMB for each client, linked to one of the settlement bank's DCAs.
- Current functionality to identify eligible collateral per currency, haircuts, prices and close links can be reused, as defined for non EUR central banks.
- Each settlement bank provides prices for collateral securities after application of haircuts; these prices apply to all its clients
- A settlement bank can set limits for its clients
 - **External guarantee limit** - Cap on the amount of credit granted by a settlement bank (generally secured outside T2S)
 - **Auto-collateralisation limit** - cap on the amount of credit extended against securities by a settlement bank in T2S (Client-collateralisation limit)
 - **Unsecured credit limit** - cap on the amount of credit granted by a settlement bank (generally unsecured outside T2S).
- Settlement bank and client can monitor limit usage via the CMB by using queries.
- Limit utilisation is reset to 0 at the end of the day.

Change Request 228

CR 228: Definition of Limits

Definition of limits on the level of the payment/ settlement bank and the client in T2S:

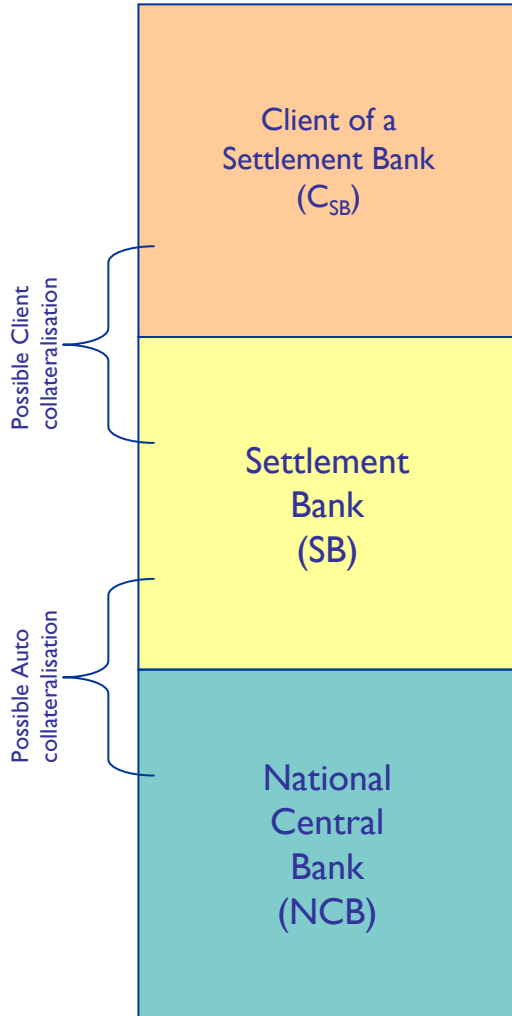
- external guarantee limit
- auto-collateralisation limit (existing)
- unsecured credit limit

The limit utilisation will be reset to zero at the end of the day.

Possibilities for limits set-up will be on the level of the:

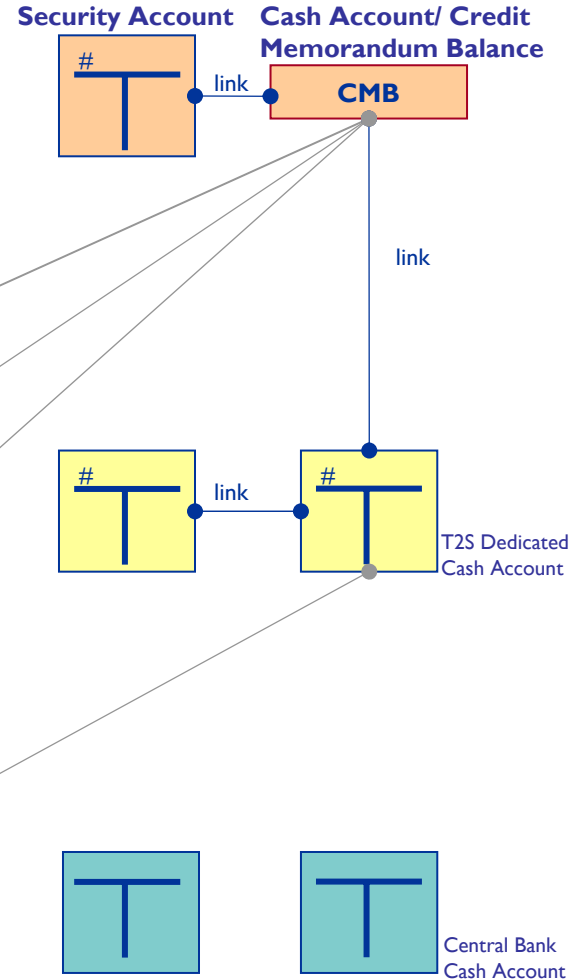
- T2S Dedicated Cash Account, and
- the CMB (which is in effect a group of one or more securities accounts)

Setup for Limits (New Scenario: with CMB)



- ### Limits set by Settlement Bank
- 4. Credit Line (Unsecured)*
(applied on DCA/CMB of a client of a SB)
 - 3. Auto Collateralisation (Secured) Limit*
*[also called client-collateralisation limit]
(applied on DCA/CMB of a client of a SB)*
 - 2. External Guarantee Limit*
(applied on DCA/CMB of a client of a SB)

- ### Limits set by NCB
- 1. Central Bank Limit*
*[also called auto-collateralisation limit]
(applied on T2S dedicated cash account of SB)*



Applied on ● — ●

* The limits shown are set in every required currency

One or several accounts

CR 228: Set-up for Static Data

Automatic set-up of a CMB, hereby authorising a T2S Actor to use the T2S Dedicated Cash Account for securities settlement:

- through linking of a new securities account to an eligible DCA
- based on a valid from date for the link
- assignment of a default DCA, if a securities account is linked to more than one DCA

Set-up of limits upon authorising clients to use a T2S Dedicated Cash Account

Set-up of auto-collateralisation eligibility of the securities accounts, securities, for a combination of currency and central bank and/or payment/settlement bank

Each national central bank shall open one securities account per payment/settlement bank, to hold the collateral when providing intraday liquidity.
(and vice versa for the payment/settlement bank)

CR 228: Provision Check

Consistency validation against static data & no blocking from settlement exists

Provision check for securities position & DCA

- Provision check for securities position (and possible automatic substitution)
- Provision check on DCA and auto-collateralisation eligibility with NCB + limit headroom
- T2S Party check (same T2S Party for securities and DCA)
 - If same T2S Party and settlement not possible, notify to exit settlement
 - If settlement possible (sufficient cash/sufficient headroom for a/c) and
 - **Same T2S Party:** Exit and continue settlement
 - **Different T2S Party:** (CMB case) Continue next step of Provision Check

Provision Check related to CMB

- Check for sufficient headroom against External Guarantee Limit on CMB
 - ✓ **Yes:** Exit provision check and continue with settlement
 - ✓ **No:** Continue provision check (for residual amount)
- Check for sufficient headroom against Auto (client)-collateralisation Limit headroom & Eligibility
 - ✓ **Available Headroom:** Exit provision check and continue with settlement
 - ✓ **No headroom or not eligible:** Continue Provision check
- Check for sufficient headroom against Unsecured Credit Line
 - ✓ **Yes:** Exit provision check and continue with settlement
 - ✓ **No:** Notify to exit settlement

CR 228: Auto-Collateralisation

T2S will trigger **auto-collateralisation** with central banks in case of lack of cash on the T2S dedicated cash account of the payment/settlement bank to which the settlement instruction is referring

T2S will trigger auto-collateralisation (i.e. **client-collateralisation**) with a payment/settlement bank in case of insufficient headroom of external guarantee on the credit memorandum balance of a client of the payment/settlement bank (i.e. owner of the securities account) to which the settlement instruction is referring. Unsecured credit limit headroom is also considered during the triggering process.

- In the process of auto-collateralisation (or client-collateralisation), T2S shall
 - **select** the list of collaterals based on the principles of
 - ✓ Collateral on flow
 - ✓ Collateral on stock (based on the earmarked securities position/ securities account)
 - ✓ Avoid close-links
 - ✓ Use latest price available for the list of eligible collateral
 - **generate**
 - ✓ auto-collateralisation transactions and
 - ✓ reverse auto-collateralisation transactions “on-hold” by the credit provider, as reimbursement transactions and
 - **settle** the auto-collateralisation transactions on an “all-or-none” basis with the underlying settlement transactions

CR 228: Reimbursement of intraday credit between the NCB and Payment/ Settlement Bank

The reimbursements of the auto-collateralisation operations are created on hold, corresponding to the exact reverse operation of auto-collateralisation

- Intraday reimbursements
 - **Insufficient cash and/or insufficient securities:** T2S performs **dynamic reimbursements** and **automatic substitutions** in case securities used as collateral should be needed for the settlement of another transaction.
 - The Payment/ Settlement banks can release the reimbursement instructions that are on hold in T2S (securities are returned and limit utilisation is updated)
 - If the auto-collateralisation limit is modified during the day below utilisation, T2S will not initiate any further auto-collateralisation operations (client-collateralisation) & trigger relevant reimbursement of intraday credit with reserved priority
 - Reimbursement of auto-collateralisation operations by Payment/Settlement Banks instructing T2S with the amount of liquidity to reimburse.
- End of Day reimbursements
 - Automatic reimbursement triggered by T2S at the end of the day for intraday credit between the NCB and Payment/Settlement Bank

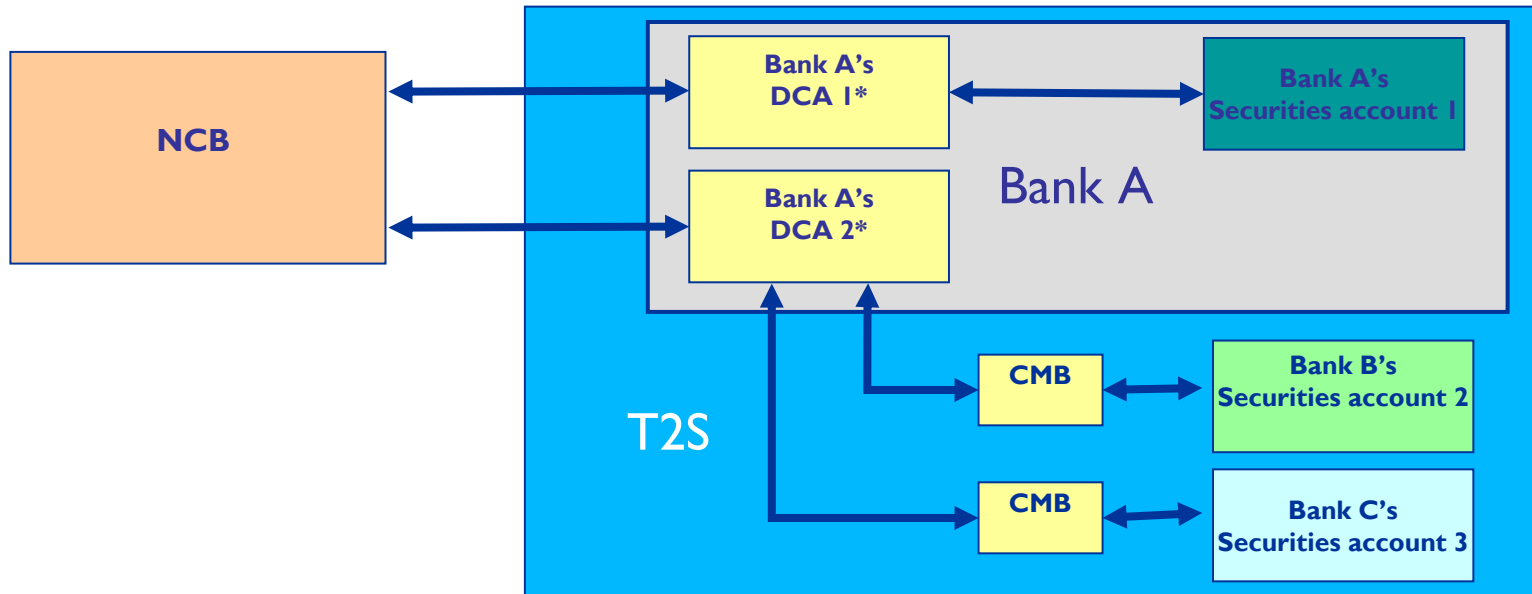
CR 228: Reimbursement of intraday credit between the Payment/ Settlement Bank and Client

The reimbursements of the auto-collateralisation operations are created on hold, corresponding to the exact reverse operation of auto-collateralisation

- Intraday reimbursements between the settlement bank and client
 - **Insufficient cash and/or insufficient securities:** T2S performs **dynamic reimbursements** and **automatic substitutions** in case securities used as collateral should be needed for the settlement of an other transaction.
 - The Payment/Settlement Banks can release the reimbursement instructions that are on hold in T2S (securities are returned and limit utilisation is updated)
 - If the auto-collateralisation limit is modified during the day below utilisation, T2S will not initiate any further auto-collateralisation operations (client-collateralisation)
- End of Day reimbursements between the settlement bank and client
 - There is no automatic reimbursement triggered by T2S at the end of the day for intraday credit between the settlement bank and client

CR 228: CMB Monitoring tools

Settlement bank can monitor limit usage, collateral received, collateral value, etc.



NCB
Can query on Bank A:

- Cash forecast
- Collateral value on stock
- Outstanding auto-collateralisation
- Overall Liquidity, postings, balances
- Limits, Limit utilisation, Limit Journal
- etc.

Settlement Bank A
Can query own and clients:

- Cash forecast (DCA)
- Collateral value on stock
- Outstanding auto-collateralisation
- Overall Liquidity, postings, balances
- Limits, Limit utilisation, Limit Journal etc.

Clients of Settlement Bank A (B & C):
query only own

- Collateral value on stock
- Outstanding auto-collateralisation
- Limits, Limit utilisation, Limit Journal
- etc.

*Only one of many possibilities to set-up a link between the DCA & securities account depicted

Summary

- It is more efficient to perform limit monitoring functions in the settlement system.
- With CMB T2S does not create the possibility for settlement banks to extend credit, it just allows settlement banks to collateralise it automatically.
- CMB aims at increasing flexibility to CSDs to define their service offering.
- CMB is based on existing functionality, that is reused for the relationship between a settlement bank and its client.

Additional Points

1. Have the opening hours of T2 and T2S been synchronised or not ? Especially, when does the T2S daytime phase start ? T2 = 7.00
T2S: Daytime phase starts at 5.00
T2: Daytime phase starts at 7:00
It is not required that the RTGS system is available for the functioning of T2S
2. How does the NTP for T2S work, is it a closed batch, which does not allow intervention , or can interventions be made (unblocking of deliveries, or possible liquidity transfers (automated by the bank) between the RTGS and the T2S DCA
The NTP will consist of at least 2 cycles, each cycle is closed and does not allow intervention, however intervention is possible in between the cycles.
3. When is the deadline for "normal" settlements in T2S (e.g. 16.00) until when can long can "secured money market transactions" be settled after that.
The deadline for money market transactions is currently foreseen for 18:00, the DVP cut-off is foreseen for 16:00
4. Can a predefined liquidity sweep be implemented at the end of DVP settlements, as not all banks do bilaterally agreed treasury management transactions and would need their cash in T2
Yes. It is possible to define a predefined liquidity sweep at the end of DVP settlements to transfer cash from T2S to RTGS. It is possible to transfer a specific amount of liquidity or transfer all the remaining cash from the DCA (Note: If cash is to be exchanged to another T2S dedicated cash account, then it can be via money market transactions or internal liquidity transfers)
5. For the point "cash forecast" the meeting should highlight: How custody payments will be settled in T2S?
 - A) main paying agent business = debit in CeBM which results in
 - B) credits on the accounts holding the positions.
 - C) Are CSDs planning to settle custody payments via the RTGS accounts, or via the T2S DCA.
 - From Issuers to (I)CSD participants, Payments should be made through the Issuer (I)CSD, using the same Payment mechanism as for other cash transactions through the Issuer (I)CSD.
 - Cash forecast provides the projections for the current settlement day and the following settlement day based on the pending settlement instructions at a status group base (accepted, matched, unsettled, ineligible)
 - It is assumed that cash distribution of corporate actions will take place in T2S and not outside of the CSD/T2S environment

6. CASH FORECAST: How does this look in T2S? Will it support A2A?

T2S provides Cash forecast reports and queries. It is supported in A2A as well

7. Especially for the T2 cash side, how far is the dialog between the groups of T2 and T2S on this subject.

Workshops between T2-CCBM2-T2S are taking place.

8. How is information provided on liquidity movements in T2S (threshold notifications for example).

Information of liquidity movements on T2S dedicated cash accounts are provided via

- Status advices for liquidity transfers
- Alert information for violation of floor/ ceiling on a T2S dedicated cash account

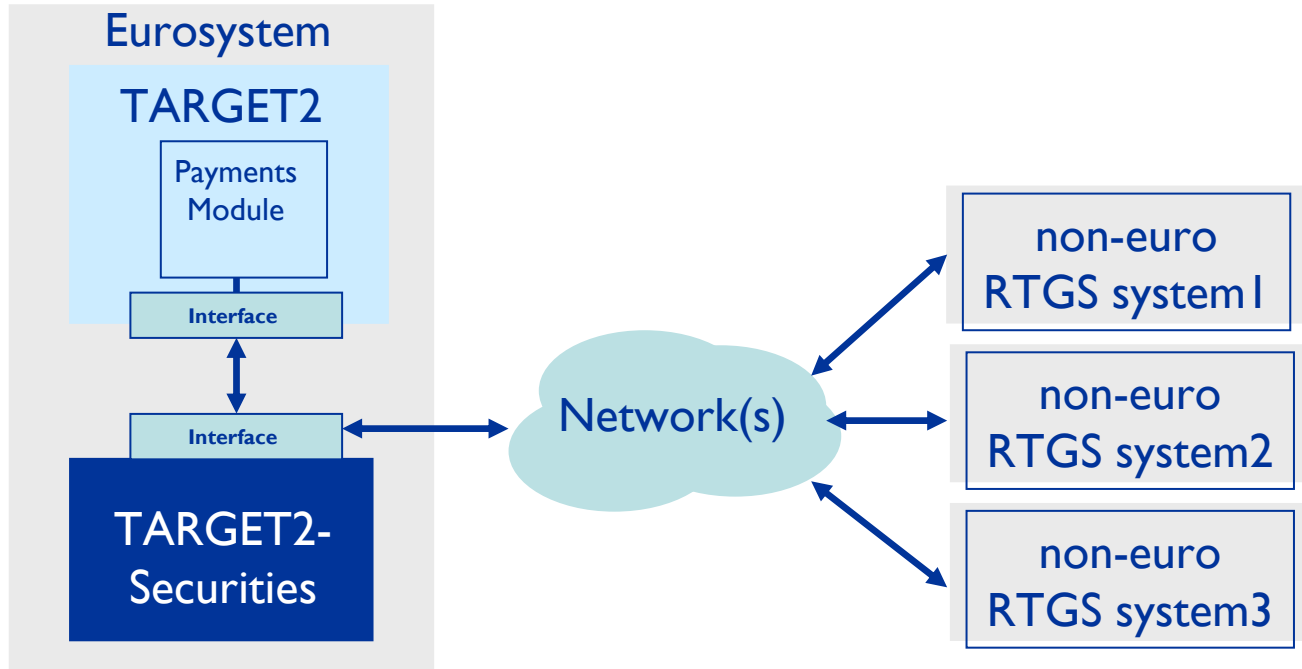
9. Pro-rata rule for liquidity transfer orders.

The pro-rata rule does not exist in T2S

10. It should be possible to include a start date/time (effective as off) and an expiry date/time in a predefined or standing order.

The facility of setup of expiry of a pre-defined/ standing order is not available. But these orders can be amended or deleted from T2S

Connecting Central Bank systems (Euro/ non-Euro) to T2S



Network provider

Options of connecting to T2S

A stable proposal, subject to approval by the T2S Programme Board concerning user connectivity was presented to the members of the PMSG.

The proposal consists of the following elements:

- In order to reap the benefits of competition, the users will have the choice between several value-added network solutions.
- In order to limit the technical and operational complexity, the Eurosystem will grant licenses to a limited number of providers of these solutions, based on objective criteria.
- The number of licenses to award in view of the go-live will be maximum three, based on a bidding process. In addition, an internet connection will be offered upon request.
- Based on the circumstances (lack of competition between providers, demands from T2S Actors, new developments in connectivity models, etc.) the Eurosystem may grant additional licenses at a later stage.



Monitoring facilities for an NCB



Category of facility	UR Reference*	Queries/ Reports
Static data	T2S.14.560	Party Management
	T2S.14.540 T2S.14.600	Securities/ Securities Account Management
	T2S.14.640	Currency/ Cash Account Management
	T2S.14.710 T2S.14.740	System entity related queries/ Roles & privileges related queries
	T2S.14.690 T2S.14.700	Calendar/ Dairy events/ schedule information queries
Settlement Instructions	T2S.14.261	Settlement Instruction status queries/ reports
	T2S.14.262	
	T2S.13.240 T2S.13.250	Liquidity reservation and reimbursement instructions related queries – for settled/ pending statuses

* Non-exhaustive list



Monitoring facilities for an NCB



EUROPEAN CENTRAL BANK

Category of facility	UR Reference*	Queries/ Reports
Cash & Liquidity Management	T2S.14.890 T2S.14.870 T2S.14.861	Queries on Cash balance/ Cash Forecasts/ Overall liquidity in a T2S dedicated cash account/ Cash postings
	T2S.13.300 T2S.13.310	Current & following settlement day cash forecast reports
	T2S.13.230	Statement of accounts - End of day balance
	T2S.14.930 T2S.14.933 T2S.14.935	Limits Management: Limit queries/ Limit utilisation query/ limit utilisation journal query
	T2S.14.936 T2S.14.940	Liquidity transfer order queries for immediate/ predefined/ standing liquidity transfer orders
	T2S.14.938 T2S.14.939	Liquidity transfer order queries for multiple liquidity providers
	T2S.14.830 T2S.14.831 T2s.14.832 T2S.14.840	Collateral value of stocks/ Outstanding auto collateralisation credit
Collateral Management	T2S.14.100 T2S.14.525	Eligible securities/ Securities valuation/ Close-links/ Query on securities accounts
General	T2S.14.530 T2S.14.282 T2S.14.150	Audit & History Queries

* Non-exhaustive list

Query/ Reporting facilities for a Payment/ Settlement Bank

Category of facility	UR Reference*	Queries/ Reports
	T2S.I4.540 T2S.I4.600	Securities/ Securities Account Management
	T2S.I4.640	Currency/ Cash Account Management
	T2S.I4.740	Roles & privileges related queries
	T2S.I4.690 T2S.I4.700	Calendar/ Dairy events/ schedule information queries
Settlement Instructions	T2S.I4.261 T2S.I4.262	Settlement Instruction status queries/ reports
	T2S.I3.240 T2S.I3.250	Liquidity reservation and reimbursement instructions related queries – for settled/ pending statuses



Query/ Reporting facilities for a Payment/ Settlement Bank

Category of facility	UR Reference*	Queries/ Reports
Cash & Liquidity Management	T2S.14.890 T2S.14.870 T2S.14.861	Queries on Cash balance/ CMB/ Cash Forecasts/ Overall liquidity in a T2S dedicated cash account Queries on Cash posting
	T2S.13.300 T2S.13.310	Current & following settlement day cash forecast reports
	T2S.13.320	Statement of accounts - End of day balance
	T2S.14.930 T2S.14.933 T2S.14.935	Limits Management: Limit queries/ Limit utilisation query/ limit utilisation journal query on a T2S DCA & CMB
	T2S.14.936 T2S.14.940	Liquidity transfer order queries for immediate/ predefined/ standing liquidity transfer orders
	T2S.14.938 T2S.14.939	Liquidity transfer order queries for multiple liquidity providers
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	Collateral Management	T2S.14.100 T2S.14.525
General	T2S.14.530 T2S.14.282 T2S.14.150	Audit & History Queries



Static data check list for an NCB

#	Items
1	Party Management: Payment Banks/ Settlement Banks
2	Currency, Dedicated Cash Account Management: central bank cash account/ RTGS transit accounts
3	Collateral Management: Securities/ Securities Valuation – Dirty prices/ Close-links
4	Securities Accounts Management: Collateral Accounts Management/ Groups of securities accounts
5	Auto-collateralisation setup: eligible currency – securities/ securities accounts/ party relations; collateralisation procedure (repo/ pledge)
6	Limits Setup: Central bank limit, other limits for the settlement banks
7	Limit groups setup
8	List of external RTGS accounts, links between RTGS accounts to T2S dedicated cash accounts, links between T2S dedicated cash accounts and their own/ clients securities accounts
9	Pre-defined/ Standing liquidity transfer order setup
10	Calendar Setup: Working days/ Holidays/ Synchronization of calendar if needed
11	Roles & Privileges setup
12	Administrators/ Users setup
13	List of queries/ messages setup via message subscription service
14	List of reports setup via report configuration & report subscription service

Static data check list for a Payment Bank (with CMB)

#	Items
1	Dedicated Cash Account Management: DCA
2	Limit Monitoring: CMB
3	Collateral Management: Securities/ Securities Valuation – Dirty prices/ Close-links
4	Securities Accounts Management: Collateral Accounts/ Link between securities accounts and DCA via CMB
5	Auto-collateralisation setup: eligible currency – securities/ securities accounts/ party relations;
6	Limits Setup: Auto-collateralisation limit/ External guarantee limit/ Unsecured limit
7	Links between RTGS accounts to T2S dedicated cash accounts, links between T2S dedicated cash accounts and their own/ clients securities accounts/ auto-collateralisation links
8	Pre-defined/ Standing liquidity transfer order setup
9	Roles & Privileges setup
10	Users setup
11	List of queries/ messages setup via message subscription service
12	List of reports setup via report configuration & report subscription service

Appendix

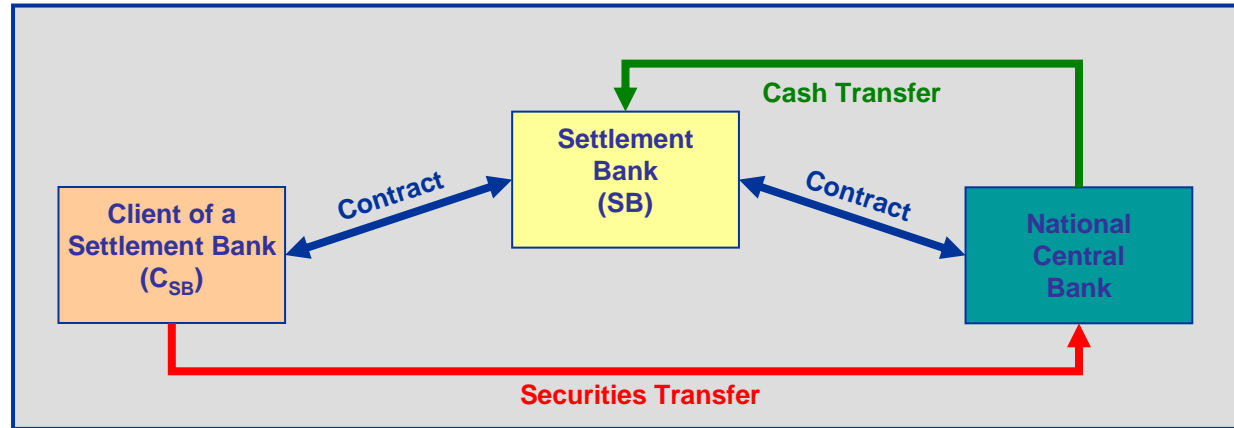
- Checking whether the buyer and seller have resources necessary to settle a transaction is a core function of a settlement system.
 - This also means checking for resources potentially available.
 - T2S checks whether it has the potential to generate cash through auto-collateralisation.
 - Where a participant uses a Settlement Bank to provide cash for settlement, it is logical that T2S should also check whether that participant has the potential to obtain liquidity by providing collateral to its Settlement Bank.
- Checking the resources available for settlement is at the heart of the settlement process.
 - It is more efficient to manage liquidity provision and control of limits as part of the T2S settlement process.
- T2S is in the most efficient position to identify eligible securities to provide part of the liquidity required for their purchase. T2S can manage automatic substitution.

Functionality to automatically collateralise intraday liquidity usage between settlement banks and their clients could be in T2S

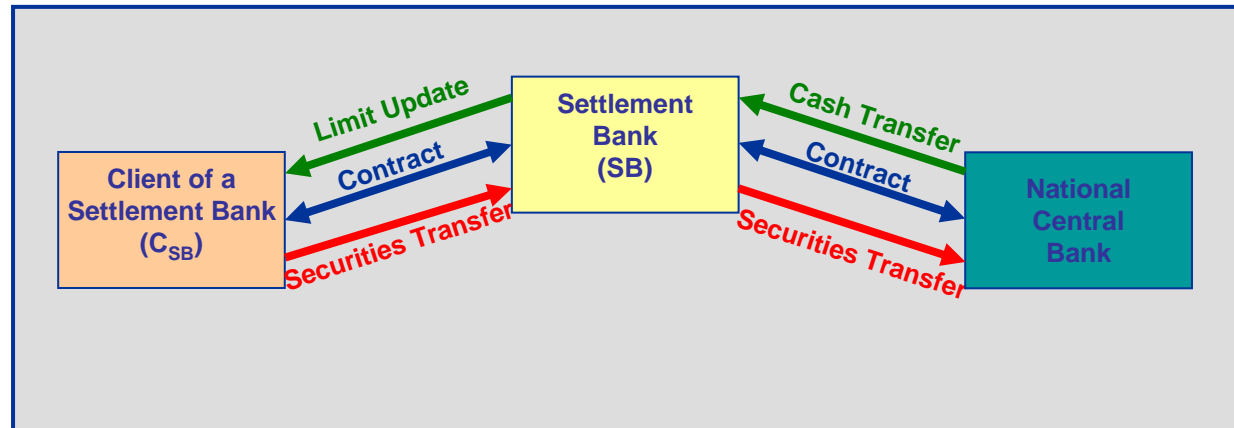
Legal Aspects of CMB in T2S

Legal Aspects: Current Model vs. CMB

Current Model



Enhanced Model / CMB



CMB puts the functional process in sync with legal set up

Legal Aspects of CMB

- Current functionality for auto-collateralisation covers the case of a direct relationship between a T2S securities account holder and the NCB for the provision of intra day credit on their own DCA through auto collateralisation.
- In case of a settlement bank giving a client access to their DCA, the settlement bank can link the securities account of the client to its DCA.
 - This makes the securities of the client available for auto-collateralisation of the settlement bank.
 - Once the credit is repaid with the NCB by the settlement bank the securities are returned to the client of the settlement bank.
 - In case of insolvency of the client, the settlement bank is potentially exposed to risk, in case it has repaid the NCB, but is not repaid by its client.
- CMB resolves this risk for the settlement bank as it creates a chain of credit relationships.
 - The client-collateralisation transfers collateral from the client to the settlement bank for the liquidity used on the DCA.
 - The settlement bank could use the clients assets to refinance with the NCB.
 - In case the client does not repay the settlement bank, the collateral is not returned.

THANK YOU

