Insights on Partial Settlement

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Market Infrastructure Development Division
European Central Bank

T2S Partial Settlement – Introduction

- T2S partial settlement is the functionality to settle only parts of the quantity/cash amount specified in a settlement instruction, settlement restriction or liquidity transfer

  - Partial settlement can be used to provide resources which would otherwise be blocked because the full quantity specified in an instruction is not available

  - This way partial settlement increases settlement efficiency and may help to reduce potential cash penalties for settlement instructions failing to fully settle on their Intended Settlement Date

- Partial settlement can be applied on

  - Settlement Instructions (SI) – only during partial settlement windows (including sequence X of the night-time settlement)

  - Settlement Restrictions (SR) – different processing per restriction processing type (EARM, RESE, BLOC), immediate partial execution if eligible

  - Liquidity Transfers (LT) – immediate partial execution, no recycling

    - this presentation focuses on SIs and SRs

    - for details on partial settlement of Liquidity Transfers, please refer to UDFS chapter 1.6.1.9.3, paragraph 'Partial settlement process for Liquidity Transfers'

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- The presentation aims to explain the concept of partial settlement for SIs and SRs in T2S and describe principles and rules of T2S partial settlement

- The presentation addresses the following key questions
  - Which types of instructions/restrictions are subject to partial settlement?
  - How is the partial settlement executed in detail?
  - What are the differences in the execution of partial settlement between the instruction types?
  - How is partial settlement reported to T2S Actors?
  - Which specific scenarios need to be considered in regards to partial settlement?

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1. **Partial settlement of Settlement Instructions (SIs)**
   a) Concept
   b) Windows and thresholds
   c) Linkage
   d) Reporting

2. **Partial settlement of Settlement Restrictions (SRs)**
   a) Concept
   b) Windows and thresholds
   c) Linkage
   d) Reporting

3. **Specific scenarios**

4. **Examples**

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- In case of partial settlement, T2S settles only a part of the quantity and amount specified in a SI. The SI will remain pending and will be subject to recycling, with the aim to also settle the remaining quantity/amount specified in the SI

- After each partial settlement, the SI details will be updated to specify the remaining to be settled quantity and cash amount

- All SIs may include a partial settlement indicator, to which the following rules apply:
  - If no partial settlement indicator is presented, PART (partial settlement allowed) will be applied as default value
  - If at least one counterparty specifies NPAR (no partial settlement), T2S will not apply partial settlement
  - Partial settlement indicators can be amended after a SI was accepted by T2S. But it is not possible to update the partial settlement indicator after a part of the instruction is already partially settled*

- Partial settlement is triggered in case of lack of securities only. It is not triggered if there is a lack of cash in case of DVP or DWP instructions.

- There is no partial settlement for PFOD instructions, as a quantity of 'zero' cannot be split

* Business Rule MIA003: The Settlement Status of a Settlement Instruction referenced by an Amendment Instruction must not be 'Partially Settled' if the modification is not referred to Priority.

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Partial settlement of SIs
Thresholds and windows

- **Partial settlement thresholds**
  - Cash: configured by the T2S operator, per currency (for EUR:10,000€ for unit-denominated ISINs, 100,000€ for amount-denominated ISINs). Below these amounts, the instruction is not considered for partial settlement
  - Quantity: based on the Minimum Settlement Unit (MSU) of the ISIN

- **Partial settlement for SIs is performed only during one dedicated NTS sequence and 5 dedicated RTS windows**

  - Night time settlement (NTS): sequence X of the second cycle (C2SX)
  - Real-time settlement
    - 08:00-08:30
    - 10:00-10:15
    - 12:00-12:15
    - 14:00-14:15
    - 15:30-16:05 (or the closure of both DVP cut-offs, whichever comes first)

  - During a single partial settlement window, an instruction eligible to partial settlement can be partially settled several times
  - It is possible to settle the remaining part of a SI in total outside the partial settlement window. Only a partial settlement including yet another remaining quantity needs to be processed within a partial settlement window.

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- For FOPs, the Minimum Settlement Unit (MSU) is considered by T2S to determine if a first partial settlement shall be triggered or not. Any subsequent partial settlements only need to comply with the Settlement Unit Multiple (SUM)*

- For DVP and DWP instructions, in addition to the MSU/SUM threshold, the cash threshold is also considered by T2S to trigger partial settlement – unless both counterparties request to ignore it (by using the PARQ indicator)

- In a SI, the partial settlement indicator can take **4** different values:

  - PART: the instructing party allows partial settlement (default value)
  - NPAR: the instructing party forbids partial settlement
  - PARC: the instructing party allows partial settlement
  - PARQ: the instructing party allows partial settlement and agrees to ignore the cash threshold (for DVP/DWP) if the counterparty does the same

- See also the presentation on 'Insights on the usage of Minimum Settlement Unit, Settlement Unit Multiple and Deviating Settlement Units'
(https://www.ecb.europa.eu/paym/target/t2s/profuse/shared/pdf/insights_on_the_use_of_msu_sum_and_dsu_in_t2s.pdf)

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- Overview of the partial settlement thresholds considered by T2S

Indicator (counterparty 1 / counterparty 2)	FOP		DVP/DWP		
	First partial settlement	Subsequent partial settlement	First partial settlement	Subsequent partial settlement	Last partial settlement
PART / PARQ PART / PARC PARQ / PARC PARC / PARC PART / PART	MSU & SUM considered*	SUM considered*	Cash amount, MSU & SUM considered	Cash amount & SUM considered	No threshold considered
PARQ / PARQ	MSU & SUM considered	SUM considered	MSU & SUM considered	SUM considered	No threshold considered
NPAR / xxxx (at least 1 counterparty indicates NPAR)	No partial settlement	No partial settlement	No partial settlement	No partial settlement	No partial settlement

* If a FOP instruction contains PARC or PART it is processed by T2S as PARQ. In this case the cash amount threshold is not considered. This also applies for FOP instructions related to a foreign currency transaction (non-EUR amount).

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- For all SIs, T2S ensures during re-validation, that any remaining quantity is compliant with the SUM (or a deviating settlement unit – DSU)

- The partial settlement amount is calculated as

$$\frac{\text{Partial Quantity} * \text{Remaining Amount}}{\text{Remaining Quantity}}$$

  The result of this calculation is rounded if needed to the last digit (depending on the fractions allowed for the settlement currency)

- The settlement amount for the last partial settlement is calculated as

  Matched amount (original quantity) - Sum of the previous partial settlement amounts

  This ensures that when settlement completes, the full cash amount has been transferred regardless of successive rounding scenarios (please refer to example 1)

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Partial settlement of SIs
Characteristics of the partial settlement windows

- **Recycling and settlement optimisation**

  - Recycling and settlement optimisation are triggered at the beginning of each partial settlement window to (partially) settle collections of SIs and SRs which were not able to settle without partial settlement

- **End of the partial settlement window**

  - An instruction received during a partial settlement window (shortly before the end of the window), but attempted for settlement only after the end of the partial settlement window (due to processing time in T2S) is not eligible for partial settlement within that window. This applies also for transactions received shortly before the end of the last partial settlement window, i.e. shortly before 16:00.

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- For SIs linked to other SIs, partial settlement is in general not applicable:

  ➢ For pools of SIs partial settlement is **not** applied

  ➢ For WITH, BEFORE or AFTER links between 2 or more SIs <u>defined by T2S Actors</u>, partial settlement is **not** applied

  ➢ For instructions related to the creation of auto-collateralisation, partial settlement is **not** applied

- For links created by T2S in the context of realignments, partial settlement is applied

- T2S partial settlement reporting is performed in line with the standards defined in the SMPG Market Practice 'Partial Settlement' (www.smpg.info)

- For each executed partial settlement, T2S sends to actors:

  - A settlement confirmation (sese.025) to inform about
    - The type of confirmation, i.e. last partial settlement, no remaining part (code PARC) or remaining part still exists, eligible for recycling (code PAIN)
    - The partially settled quantity and amount
    - The sum of all previously settled quantities and amounts (sum of all previous partial settlements, if any)
    - The remaining to be settled quantity and amount ('zero' for the last partial settlement)

  - A status advice message (sese.024) to inform about the
    - Remaining to be settled quantity and cash amount (code PART)
    - This is not sent for the last partial settlement when remaining quantity is zero

- In addition, for each executed partial settlement, T2S adds an entry in the Statement of Transactions (semt.017) to inform about:

  - The partially settled quantity and amount related to one partial settlement, i.e. <u>not</u> the sum of all quantities and amounts already settled

- If the SI is not yet finally settled, T2S also adds an entry to the Statement of Pending Instructions (semt.018) to inform about:

  - The remaining to be settled quantity and cash amount

- For DVP/DWP instructions, T2S sends/adds for each executed partial settlement*:

  - A Bank to Customer Debit Credit Notification (camt.054) to inform about the partially settled amount credited or debited on the DCA

  - An entry in the Bank to Customer Statement (camt.053) to inform about the partially settled amount credited or debited on the DCA

<u>Notes</u>: Messages are not sent for partial settlements with zero cash amount (e.g. due to rounding differences).

In case several partial settlements were executed for a given instruction, no reference is provided to map the sese and semt messages to their related camt messages. Only quantities, amounts and timestamps of the messages/entries can be used.

During NTS multiple partial settlements may be reported with a single camt.054 / sese.025, even if they resulted in multiple unitary cash/securities postings.

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BalFrom \ BalTo	AWAS	EARM	RESE	BLOC
AWAS	N/A	partial	pre-emption	no partial
EARM	partial	partial	pre-emption	no partial
RESE	partial	partial	N/A	N/A
BLOC	no partial	no partial	N/A	N/A

Available combinations of BalFrom and BalTo for SRs

- Partial settlement on SR is applicable for
  - Set-up, increase or decrease of an Earmarking on securities side
  - Set-up, increase or decrease of a Reservation on securities and cash side

- Partial settlement on SR <u>not</u> applicable for
  - Set-up, increase or decrease of a Blocking
  - SRs generated by T2S for conditional settlement (CoSD)

- Different processing for reservation and earmarking:
  - BalTo is **RESE** (i.e. increase or set-up of reservation): after a partial settlement, the SR remains pending and the remaining amount or quantity is filled in via a pre-emption mechanism, until the full amount or quantity of the original Settlement Restriction is settled
  - BalTo is **EARM** or **AWAS**: there is no recycling and the SR is considered 'settled' after the first partial execution, even if the quantity/amount successfully settled is zero

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- The partial settlement of SRs has lesser limitations compared to partial settlement of SIs

  - There are no partial settlement indicators for SRs. Partial settlement (EARM/RESE) is always applied if full quantity/amount is not available

  - Partial settlement for SRs is attempted by T2S at any time during T2S NTS and RTS settlement, independent from partial settlement windows and NTS cycles

  - The partially settled quantity does not need to comply with the Minimum settlement unit (MSU), Settlement unit multiple (SUM) or Deviating Settlement Unit (DSU)

  - The partially settled cash amount does not need to comply with the cash threshold

- **Settlement restrictions linked WITH**

  - Case 1: the WITH link is between a SR (EARM/RESE) and a SI
    - The SR can be partially settled (also for a quantity of zero), but only if the SI can fully settle
    - If SR is a set-up/increase of reservation, the pre-emption mechanism applies to the remaining part. The WITH link does *not* require the SR to reach Settled status simultaneously to the SI.
    - For other types of SRs, the SR is considered Settled when the first partial settlement takes place (together with the SI), regardless of the quantity actually settled

  - Case 2: the WITH link is between two SRs of type EARM or RESE
    - Both SR can settle partially, also for a quantity of zero
    - The pre-emption mechanism applies to the remaining part of a reservation set-up/increase. It doesn't apply otherwise. The WITH link does not require the two SRs to reach Settled status simultaneously.

  For the description of specific scenarios involving SR and linkage, refer to Insights on T2S linking:
  https://www.ecb.europa.eu/paym/target/t2s/profuse/shared/pdf/insights_on_t2s_linking.pdf

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- **Settlement restrictions linked BEFORE to an SI/SR**

  - ➢ The fulfilment of the BEFORE/AFTER condition is assessed based on the settlement status of the "BEFORE" restriction
    - If the "BEFORE" restriction is a set-up/increase of reservation, and it settles partially, the link condition is met only after the SR has fully settled thanks to the pre-emption mechanism
    - For other types of SRs, the first partial settlement brings the SR to Settled status. Therefore, the link condition is met with the first and only partial settlement of the "BEFORE" restriction, also if the actually settled quantity/amount was zero.

  - ➢ The general partial settlement rules apply to the "AFTER" SR/SI, provided the link condition is met

  For the description of specific scenarios involving SR and linkage, refer to Insights on T2S linking:
  https://www.ecb.europa.eu/paym/target/t2s/profuse/shared/pdf/insights_on_t2s_linking.pdf

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- T2S partial settlement reporting is performed in line with the standards defined in the SMPG Market Practice 'Partial Settlement' (www.smpg.info)

- For each executed partial settlement of a reservation set-up or increase, T2S sends to actors:
  - A settlement confirmation (semt.015) to inform about
    - The partially settled quantity
    - The previously settled quantity (sum of all partial settlements including the quantity of the related entry)
    - The remaining to be settled quantity ('zero' for the last partial settlement)
    - The type of confirmation (PAIN if there is a remaining part, PARC otherwise)
  - A status advice message (semt.014) to inform about the
    - Remaining to be settled quantity (code PART)

- For other types of securities SRs partially settled, T2S sends:
  - A settlement confirmation (semt.015) to inform about the partially settled quantity. The confirmation code is always PARC code (last partial settlement)

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- T2S partial settlement reporting is performed in line with the standards defined in the SMPG Market Practice 'Partial Settlement' (www.smpg.info)

- For each executed partial settlement of a cash reservation set-up or increase, T2S sends to actors:
  - A settlement confirmation (camt.068) to inform about:
    - The partially settled cash amount
    - The previously settled cash amount (sum of all partial settlements including the amount of the related entry)
    - The remaining cash amount to reserve ('zero' for the last partial settlement)
    - The type of confirmation (PAIN if there is a remaining part, PARC otherwise)
  - A status advice message (camt.067) to inform about
    - The remaining cash amount to reserve (code PART)

- For decreases of cash reservation, since partial settlement will take place only once:
  - A single camt.068 will be sent out by T2S
  - No camt.067 will be sent (since the reservation is deemed complete)
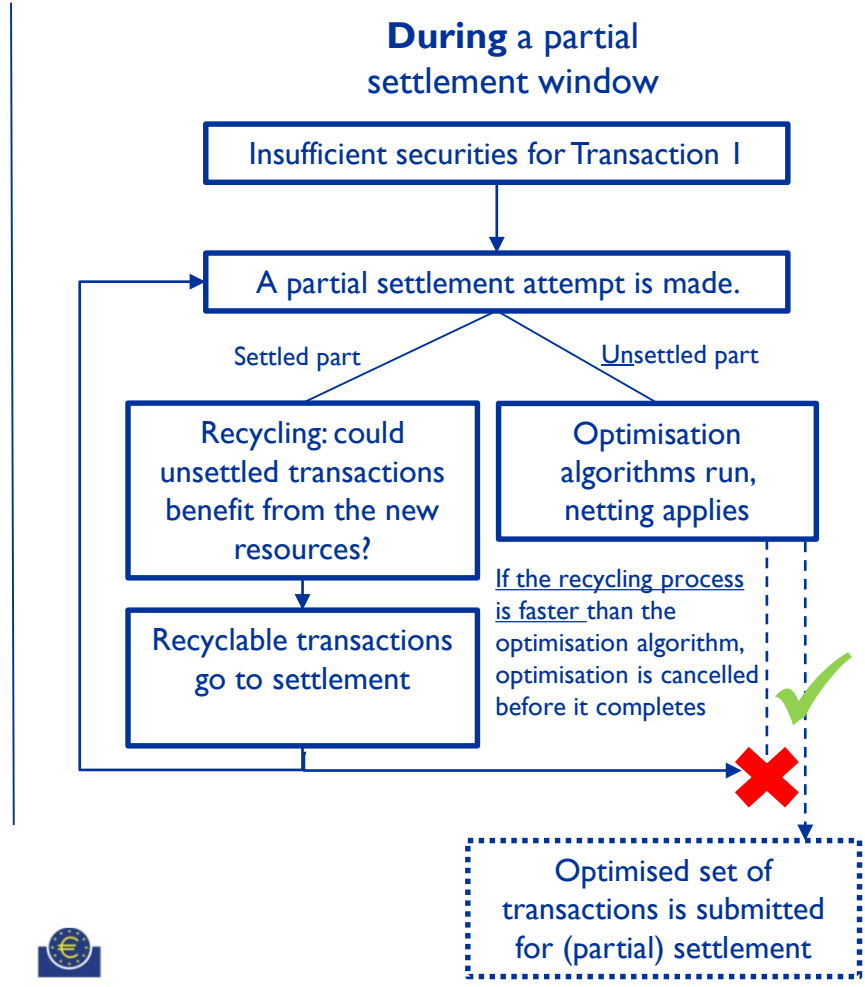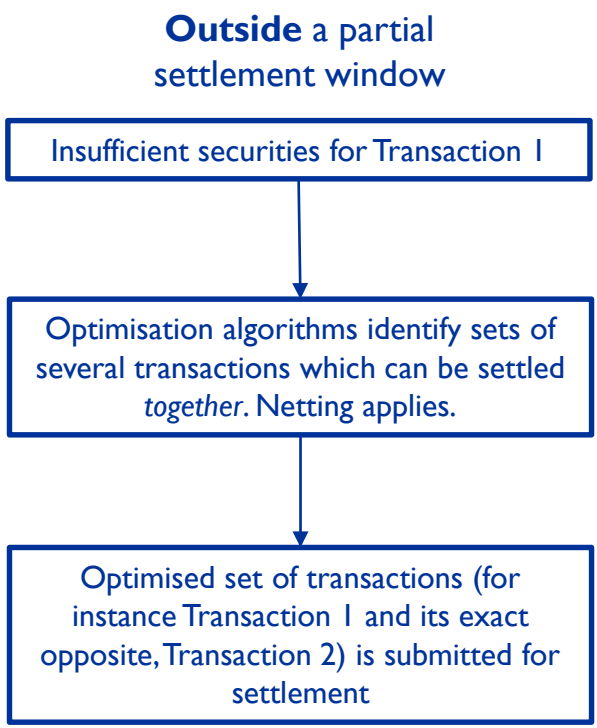
- **Securities Side**

  - The Intra Position Movement Posting Report (semt.016) informs about

    - The partially settled quantity
    - The sum of all previously settled quantities (sum of all partial settlements including the quantity of the related entry)
    - The remaining to be settled quantity ('zero' for the last partial settlement)

  - The Intra Position Movement Pending Report (semt.034) informs about the

    - Remaining to be settled quantity

- **Cash Side**

  - The Intra Balance Movement Posting Report (camt.084) informs about

    - The partially settled amount
    - The sum of all previously settled amounts (sum of all partial settlements including the amount of the related entry)
    - The remaining to be settled amount ('zero' for the last partial settlement)

  - The Intra Balance Movement Pending Report (camt.085) informs about the

    - Remaining to be settled amount

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- The T2S Recycling and optimisation processes are affected by partial settlement as illustrated below

Outside a partial
settlement window

| Insufficient securities for Transaction 1 |

↓

| Optimisation algorithms identify sets of several transactions which can be settled *together*. Netting applies. |

↓

| Optimised set of transactions (for instance Transaction 1 and its exact opposite, Transaction 2) is submitted for settlement |

During a partial
settlement window

| Insufficient securities for Transaction 1 |

↓

| A partial settlement attempt is made. |

Settled part / Unsettled part

| Recycling: could unsettled transactions benefit from the new resources? | | Optimisation algorithms run, netting applies |

↓

| Recyclable transactions go to settlement |

If the recycling process is faster than the optimisation algorithm, optimisation is cancelled before it completes

| Optimised set of transactions is submitted for (partial) settlement |

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- In back-to-back situations or closed circles, T2S executes partial settlement of each individual transaction in the circle whenever a quantity sufficient to apply partial settlement is available in one of the securities accounts (loops of settlement of small amounts, please refer to example 2)

- In such cases, the T2S optimisation might be regularly cancelled by the recycling attempts, so that no optimisation is applied

- Due to this behaviour, a high number of partial settlements might be executed within a short period of time, until the one transaction in the circle having the lowest quantity is fully settled

- Users should be aware that

  - This situation may result in a high number of settlement confirmations (sese.025 and camt.054) and status reports (sese.024) received during a short period of time

  - This may result in reconciliation issues, e.g. because the individual camt.054 messages cannot be mapped to the single sese.025 confirmations

- Alternatively, depending on several factors inside the core settlement engine, optimisation might also be successful and netting is applied by T2S, i.e. the above situation would not materialise especially thanks to the implementation of change request 677 in T2S release 4.0 (June 2020)

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Example 1
Fractions

Example 1: Fraction

Matched DVP transaction:

- Quantity: 2

- Cash amount: 0,01€

- SUM: 1, MSU: 1

T2S settlement activities:

1. Partial settlement of a Quantity of 1 and Cash amount of 0,01€,
   i.e. (1*0,01€)/2 = 0,005€ → rounded to 0,01€

2. Partial settlement of a Quantity of 1 and Cash amount of 0€,
   i.e. 0,01€ - 0,01€

Final status: Full settlement of the transaction

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Example 2
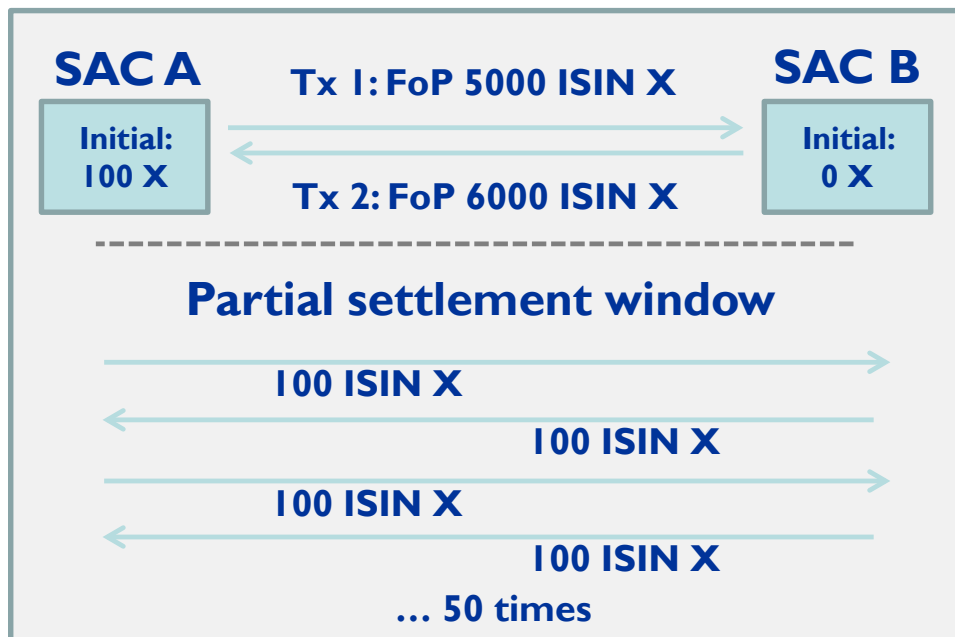## Recycling and optimisation during partial settlement

Example 2: Recycling and optimisation during partial settlement *

FOP transaction 1, SAC A → SAC B:

- Quantity: 5000, PART
- ISIN X, SUM: 1, MSU: 1

FOP transaction 2, SAC B → SAC A:

- Quantity: 6000, PART
- ISIN X, SUM: 1, MSU: 1

SAC A — Tx 1: FoP 5000 ISIN X — **SAC B**

Initial: 100 X

Initial: 0 X

Tx 2: FoP 6000 ISIN X

Partial settlement window

100 ISIN X
100 ISIN X
100 ISIN X
100 ISIN X
100 ISIN X

… 50 times

Settlement result (per leg)

- 50 confirmations (sese.025)
- 50 status advices (sese.024)
- 50 entries in the Posting report (semt.017)

Note: For DVP instructions, T2S would also

- send 50 Debit Credit Notifications (camt.054)
- add 50 entries in the Cash Statement (camt.053)

* This example shows a situation where any optimisation attempt is cancelled by the execution of the next partial settlement. Alternatively, optimisation might also be successful and netting is applied by T2S

Thank You