

## Appendix I

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### TECHNICAL SPECIFICATIONS FOR THE PROCESSING OF CASH TRANSFER ORDERS

In addition to the Harmonised Conditions, the following rules shall apply to the processing of cash transfer orders:

#### 1. *Testing requirements for participation in TARGET-BE*

Each participant shall pass a series of tests to prove its technical and operational competence before it may participate in TARGET-BE.

#### 2. *Account numbers*

Each participant's account shall be identified by a unique account number of up to 34 characters made up of five sections as follows:

Name	No. Of Characters	Content
Account type	1	M = MCA R = RTGS DCA C = T2S DCA I = TIPS DCA T = RTGS AS Technical account U = Sub-account A = TIPS AS Technical account G = AS Guarantee funds account D = Overnight deposit account X = Contingency Account
Country Code of Central Bank	2	ISO Country code : 3166-1
Currency code	3	EUR
BIC	11	Account holder BIC
Account name	Max. 17	Free text <sup>1</sup>

<sup>1</sup> For sub-accounts this section must start with the 3-character AS code as defined by the central bank.

### 3. *Messaging rules in TARGET*

- (a) Each participant shall comply with the message structure and field specifications, as defined in Part 3 of the relevant User Detailed Functional Specifications (UDFS).
- (b) Business application headers shall be attached to all message types processed on MCAs, RTGS DCAs (including sub-accounts) RTGS AS technical accounts, AS guarantee fund accounts and T2S DCAs as follows:

Message Type	Description
head.001	Business application header
head.002	Business file header

### 4. *Message types processed in TARGET*

- (a) The following message types are processed on MCAs:

Message Type	Description
<b>Administration (admi)</b>	
admi.004	SystemEventNotification
admi.005	ReportQueryRequest
admi.007	ReceiptAcknowledgement
<b>Cash Management (camt)</b>	
camt.003	GetAccount
camt.004	ReturnAccount
camt.005	GetTransaction
camt.006	ReturnTransaction
camt.018	GetBusinessDayInformation
camt.019	ReturnBusinessDayInformation
camt.025	Receipt
camt.046	GetReservation
camt.047	ReturnReservation
camt.048	ModifyReservation
camt.049	DeleteReservation
camt.050	LiquidityCreditTransfer

camt.053	BankToCustomerStatement
camt.054	BankToCustomerDebitCreditNotification
<b>Payments clearing and Settlement (pacs)</b>	
pacs.009	FinancialInstitutionCreditTransfer
pacs.010	FinancialInstitutionDirectDebit

(b) The following message types are processed on RTGS DCAs, and where relevant on the RTGS AS technical accounts and AS guarantee funds accounts:

<b>Administration (admi)</b>	
admi.004	SystemEventNotification
admi.005	ReportQueryRequest
admi.007	ReceiptAcknowledgement
<b>Cash Management (camt)</b>	
camt.003	GetAccount
camt.004	ReturnAccount
camt.005	GetTransaction
camt.006	ReturnTransaction
camt.007	ModifyTransaction
camt.009	GetLimit
camt.010	ReturnLimit
camt.011	ModifyLimit
camt.012	DeleteLimit
camt.018	GetBusinessDayInformation
camt.019	ReturnBusinessDayInformation
camt.021	ReturnGeneralBusinessInformation
camt.025	Receipt
camt.029	ResolutionOfInvestigation
camt.046	GetReservation
camt.047	ReturnReservation

camt.048	ModifyReservation
camt.049	DeleteReservation
camt.050	LiquidityCreditTransfer
camt.053	BankToCustomerStatement
camt.054	BankToCustomerDebitCreditNotification
camt.056	FIToFIPaymentCancellationRequest
<b>Payments Clearing and Settlement (pacs)</b>	
pacs.002	PaymentStatusReport
pacs.004	PaymentReturn
pacs.008	CustomerCreditTransfer
pacs.009	FinancialInstitutionCreditTransfer
pacs.010	FinancialInstitutionDirectDebit
<b>Payments Initiation (pain)</b>	
pain.998	ASInitiationStatus
pain.998	ASTransferNotice
pain.998	ASTransferInitiation

(c) The following message types are processed on T2S DCAs:

Message Type	Description
<b>Administration (admi)</b>	
admi.005	ReportQueryRequest
admi.006	ResendRequestSystemEventNotification
admi.007	ReceiptAcknowledgement
<b>Cash Management (camt)</b>	
camt.003	GetAccount
camt.004	ReturnAccount
camt.005	GetTransaction
camt.006	ReturnTransaction
camt.009	GetLimit

camt.010	ReturnLimit
camt.011	ModifyLimit
camt.012	DeleteLimit
camt.018	GetBusinessDayInformation
camt.019	ReturnBusinessDayInformation
camt.024	ModifyStandingOrder
camt.025	Receipt
camt.050	LiquidityCreditTransfer
camt.051	LiquidityDebitTransfer
camt.052	BankToCustomerAccountReport
camt.053	BankToCustomerStatement
camt.054	BankToCustomerDebitCreditNotification
camt.064	LimitUtilisationJournalQuery
camt.065	LimitUtilisationJournalReport
camt.066	IntraBalanceMovementInstruction
camt.067	IntraBalanceMovementStatusAdvice
camt.068	IntraBalanceMovementConfirmation
camt.069	GetStandingOrder
camt.070	ReturnStandingOrder
camt.071	DeleteStandingOrder
camt.072	IntraBalanceMovementModificationRequest
camt.073	IntraBalanceMovementModificationRequestS tatusAdvice
camt.074	IntraBalanceMovementCancellationRequest
camt.075	IntraBalanceMovementCancellationRequestS tatusAdvice
camt.078	IntraBalanceMovementQuery
camt.079	IntraBalanceMovementQueryResponse
camt.080	IntraBalanceModificationQuery
camt.081	IntraBalanceModificationReport
camt.082	IntraBalanceCancellationQuery

camt.083	IntraBalanceCancellationReport
camt.084	IntraBalanceMovementPostingReport
camt.085	IntraBalanceMovementPendingReport

(d) The following message types are processed on TIPS DCAs and TIPS AS technical accounts:

<b>Message Type</b>	<b>Description</b>
<b>Administration (admi)</b>	
pacs.002	FIToFIPayment Status Report
pacs.004	PaymentReturn
pacs.008	FIToFICustomerCreditTransfer
pacs.028	FIToFIPaymentStatusRequest
<b>Cash Management (camt)</b>	
camt.003	GetAccount
camt.004	ReturnAccount
camt.011	ModifyLimit
camt.019	ReturnBusinessDayInformation
camt.025	Receipt
camt.029	ResolutionOfInvestigation
camt.050	LiquidityCreditTransfer
camt.052	BankToCustomerAccountReport
camt.053	BankToCustomerStatement
camt.054	BankToCustomerDebitCreditNotification
camt.056	FIToFIPaymentCancellationRequest
acmt.010	AccountRequestAcknowledgement
acmt.011	AccountRequestRejection
acmt.015	AccountExcludedMandateMaintenanceRequest
<b>Reference data (reda)</b>	
reda.016	PartyStatusAdviceV01
reda.022	PartyModificationRequestV01

## 5. **Double-entry check**

All cash transfer orders shall pass a double-entry check, the aim of which is to reject orders that have been submitted more than once (duplicated cash transfer orders). Details can be found in Part I, Section 3 of the relevant UDFS.

## 6. **Validation rules and error codes**

Validation of messages is carried out according to High Value Payments Plus (HVPS+) guidelines on message validations specified by the ISO 20022 standard, and TARGET-specific validations. The detailed validation rules and error codes are described in the respective parts of the UDFS as follows:

- (a) for MCAs, in Chapter 14 of the CLM UDFS;
- (b) for RTGS DCAs, in Chapter 13 of the RTGS UDFS;
- (c) for T2S DCAs, in Chapter 4.1 of the T2S UDFS.

If an instant payment order or a positive recall answer is rejected for any reason, the TIPS DCA holder shall receive a payment status report (pacs.002), as described in Chapter 4.2 of the TIPS UDFS. If a liquidity transfer order is rejected for any reason, the TIPS DCA holder shall receive a rejection (camt.025), as described in Chapter 1.6 of the TIPS UDFS.

## 7. **Predetermined settlement times and events**

### **RTGS DCAs**

- (a) For payment orders using the Earliest Debit Time Indicator, the message element '/FromTime/' shall be used.
- (b) For payment orders using the Latest Debit Time Indicator, two options shall be available.
  - (i) Message element 'RejectTime': if the payment order cannot be settled by the indicated debit time, the cash transfer order shall be rejected.
  - (ii) Message element 'TillTime': if the payment order cannot be settled by the indicated debit time, the cash transfer order shall not be rejected but shall be kept in the relevant queue.

Under both options, if a payment order with a Latest Debit Time Indicator is not settled 15 minutes prior to the time indicated therein, a notification shall automatically be sent via the GUI.

### **T2S DCAs**

- (a) For immediate liquidity transfer orders, no specific XML tag is required;
- (b) Predefined liquidity transfer orders and standing liquidity transfer orders may be triggered by a specific time or event on the day of settlement:
  - (i) for settlement at a specific time, the XML tag 'Time(/ExctnTp/Tm/)' shall be used,
  - (ii) for settlement upon occurrence of a specific event, the XML tag '(EventType/ExctnTp/Evt/)' shall be used.

- (c) the validity period for standing liquidity transfer orders shall be set by the following XML tags: 'FromDate/VldtyPrd/FrDt/' and 'ToDate/VldtyPrd/ToDt/'.

### **8. Offsetting of cash transfer orders on RTGS DCAs**

Offsetting checks and, if appropriate, extended offsetting checks (both terms as defined in subparagraphs a) and b) shall be carried out on cash transfer orders to facilitate the smooth settlement.

- (a) An offsetting check shall determine whether the payee's cash transfer orders that are at the front of the queue for cash transfer orders with the priority 'urgent' or, if inapplicable, 'high' are available to be offset against the payer's cash transfer order (hereinafter 'offsetting cash transfer orders'). If an offsetting cash transfer order does not provide sufficient funds for the respective payer's cash transfer order it shall be determined whether there is sufficient available liquidity on the payer's RTGS DCA.
- (b) If the offsetting check fails, the NBB may apply an extended offsetting check. An extended offsetting check determines whether offsetting cash transfer orders are available in any of the payee's queues regardless of when they joined the queue. However, if in the queue of the payee there are higher priority cash transfer orders addressed to other participants, the FIFO principle may only be breached if settling such an offsetting cash transfer order would result in a liquidity increase for the payee.

### **9. Optimisation algorithms on RTGS DCAs and sub-accounts**

Four algorithms shall be applied to facilitate the smooth settlement of payment flows. Further information is available in the RTGS UDFS Part 2.

- (a) Under the '**partial optimisation**' algorithm the NBB shall:
- (i) calculate and check the liquidity positions, limits and reservations of each relevant RTGS DCA; and
  - (ii) if the total liquidity position of one or more relevant RTGS DCA is negative, extract single payment orders until the total liquidity position of each relevant RTGS DCA is positive.

Thereafter, the NBB and the other CBs involved shall, provided there are sufficient funds, settle the relevant remaining cash transfer orders (except the extracted payment orders described in point (ii)) simultaneously on the RTGS DCAs of the participants concerned.

When extracting payment orders, the NBB shall start from the participant's RTGS DCA with the highest negative total liquidity position and from the payment order at the end of the queue with the lowest priority. The selection process shall only run for a short time, to be determined by the NBB at its discretion.



- (b) Under the '**multiple optimisation**' algorithm the NBB shall:
- (i) compare pairs of participants' RTGS DCAs to determine whether queued payment orders can be settled within the available liquidity of the two participants' RTGS DCAs concerned and within the limits set by them (by starting from the pair of RTGS DCAs with the smallest difference between the payment orders addressed to each other), and the CBs involved shall book those payments simultaneously on the two participants' RTGS DCAs; and
  - (ii) if, in relation to a pair of RTGS DCAs as described in point (i), liquidity is insufficient to fund the bilateral position, extract single payment orders until there is sufficient liquidity. In this case the CBs involved shall settle the remaining payments, except the extracted ones, simultaneously on the two participants' RTGS DCAs.

After performing the checks specified in points (i) to (ii), the NBB shall check the multilateral settlement positions (between a participant's RTGS DCA and other participants' RTGS DCAs in relation to which a multilateral limit has been set). For this purpose, the procedure described under subparagraphs (i) to (ii) shall apply mutatis mutandis.

- (c) Under the algorithm 'partial optimisation with AS' which supports settlement procedure B, the NBB shall follow the same procedure as for the partial optimisation algorithm, but without extracting AS transfer orders (for an AS which settles on a simultaneous multilateral basis i.e. RTGS AS settlement procedure B).
- (d) The algorithm '**optimisation on sub-accounts**' is used to optimise the settlement of urgent priority AS transfer orders on participants' sub-accounts. When using this algorithm the NBB shall calculate the total liquidity position of each participant's sub-account by establishing whether the aggregate of all outgoing and incoming AS transfer orders pending in the queue is negative or positive. If the outcome of these calculations and checks is positive for each relevant sub-account, the NBB and other CBs involved shall settle all cash transfers simultaneously on the sub-accounts of the participants concerned. If the outcome of these calculations and checks is negative no settlement shall take place. Furthermore, this algorithm does not take account of any limits or reservations. For each settlement bank the total position is calculated and, if the positions for all settlement banks are covered, all transactions shall be settled. Transactions which are not covered are returned to the queue.
- (e) Cash transfer orders entered after the multiple optimisation algorithm, the partial optimisation algorithm or the partial optimisation with AS algorithm has started may nevertheless be settled immediately if the positions and limits of the participants' RTGS DCAs concerned are compatible with both the settlement of these orders and the settlement of cash transfer orders in the current optimisation procedure.
- (f) The partial optimisation algorithm and the multiple optimisation algorithm shall be run sequentially in that order. They shall not be run if RTGS AS settlement procedure B is running.

- (g) The algorithms shall run flexibly by setting a pre-defined time lag between the application of different algorithms to ensure a minimum interval between the running of two algorithms. The time sequence shall be automatically controlled. Manual intervention shall be possible.
- (h) While included in a running algorithm, a payment order shall not be reordered (change of the position in a queue) or revoked. Requests for reordering or revocation of a payment order shall be queued until the algorithm is complete. If the payment order concerned is settled while the algorithm is running, any request to reorder or revoke shall be rejected. If the payment order is not settled, the participant's requests shall be taken into account immediately.

## **10. Connectivity**

Participants shall connect to TARGET using one of the following modes.

- (a) The user to application (U2A) mode: in the U2A mode, participants connect via a GUI which allows users to perform business functions based on their respective access rights. It allows users to enter and maintain business data as well as to retrieve business information. The relevant User Handbook (UHB) provides exhaustive information on each of the business functions that the respective GUI provides.
- (b) The application to application (A2A) mode: in A2A mode software applications communicate with TARGET by exchanging single messages and files based on their respective access rights and message subscription and routing configuration. The A2A communication relies on XML messages, using the ISO 20022 standard where applicable, for both inbound and outbound communication.

The modes of connection are described in further detail in the ESMIG UDFS.

## **11. The UDFS and the User Handbook**

Further details and examples explaining the above rules are contained in the respective UDFS and the User Handbooks for each service, as amended from time to time and published on the ECB's website in English.