

CANADIAN PAYMENTS ASSOCIATION

LVTS RULE 7

PAYMENT QUEUE

LVTS Rule 7, December 1998: as amended November 19, 2001, March 31, 2003, March 1, 2010, January 3, 2017, and August 21, 2017.

TABLE OF CONTENTS

PAYMENT QUEUE..... 1

QUEUE OPTION 1

DECISION TO CHANGE PAYMENT QUEUE..... 1

TYPE R PAYMENTS 1

PAYMENT QUEUING DURING PRE-SETTLEMENT..... 1

REVERTING TO PAYMENT MESSAGE EXCHANGE PERIOD 2

JUMBO ALGORITHM 2

OPERATION OF ALGORITHM 2

APPENDIX I - PAYMENT QUEUE OPTIONS 1

APPENDIX II - OPERATIONS OF JUMBO ALGORITHM 1

PAYMENT QUEUE

- PAYMENT QUEUE** 7.1 Participants are expected to manage their Multilateral Net Tranche 1 Position, Multilateral Net Tranche 2 Position and their Bilateral Credit Limits in real time and should attempt to send only those Payment Messages which will pass their respective Risk Control Tests. *(Note: The Association may at some time in the future impose a charging policy for payments which are enqueued, for example: if the queuing facility is being abused by one or more Participants.)*
- QUEUE OPTION** 7.2 Payment Messages sent during the Payment Message Exchange Period which do not pass the applicable Risk Control Tests shall be dealt with by the LVTS Payment Queue option being used. Only one (1) Payment Queue option can be used during a given LVTS Cycle. In each queuing option (except “no queuing”) LVTS will have the ability to reject payment items in the queue at regular intervals to be set by the Association. A listing of the available Payment Queue options is attached as Appendix I.
- DECISION TO CHANGE PAYMENT QUEUE** 7.3 The President, in consultation with the Senior Operational Committee, shall determine which Payment Queue option is to be in effect. The Association shall notify each Participant of any change to the Payment Queue option to be utilized, as soon as practical after the decision to change and in any event at least one (1) full Business Day in advance of the change taking effect.
- TYPE R PAYMENTS** 7.4 Type R Payments will not be queued under any circumstances.
- PAYMENT QUEUING DURING PRE-SETTLEMENT** 7.5 All Payment Messages sent during Pre-Settlement which do not pass the applicable Risk Control Tests and that are placed in a Payment Queue shall be rejected from the Payment Queue at very short intervals (as short as one (1) minute). A SWIFT notification type MT 019 for each rejected payment shall be sent to the Sending Participant with a rejection reason. This frequent rejection activity, commencing at the start of Pre-Settlement, is triggered by a queue expiration parameter (at the start of Pre-Settlement). Payments will be rejected with a reason of “EXPIRED - QUEUED.”

PAYMENT QUEUE

- | | | |
|---|-----|--|
| REVERTING TO
PAYMENT
MESSAGE
EXCHANGE
PERIOD | 7.6 | If the LVTS Cycle reverts from Pre-Settlement to the Payment Message Exchange Period (“open for processing”) then the queue expiration parameter in effect for the LVTS Cycle is also reset. Any Payment Messages previously rejected from the Payment Queue will not be automatically restored. |
| JUMBO
ALGORITHM | 7.7 | The jumbo algorithm will be in place for all queuing, except the no queuing option, and will, on a periodic basis (parameter to be set at the commencement of the LVTS Cycle by the Association), be applied automatically in an attempt to match Jumbo Payments on a Tranche 2 bilateral and/or Tranche 1 multilateral basis in order that the greatest number of Jumbo Payments may simultaneously pass the required Risk Control Tests. |
| OPERATION
OF
ALGORITHM | 7.8 | The jumbo algorithm will operate according to the description set out in Appendix II. |

PAYMENT QUEUE
APPENDIX I
PAYMENT QUEUE OPTIONS

Characteristics/ Options	No Queuing	First In First Out (FIFO)	Jumbo Only	Jumbo/ Normal
Queued payments	None ¹	Jumbo and Normal	Jumbo	Jumbo and Normal
Retry trigger	N/A	Sender's available credit for the applicable tranche increases	Sender's available credit for the applicable tranche increases	Sender's available credit for the applicable tranche increases
Retry process	N/A	<p>Queued payments retrieved from queue and retrieved in FIFO order</p> <p>If the payment passes, it is removed from the queue and processed; next payment is tried</p> <p>If the payment fails, it remains in the queue and the next payment is tried</p>	<p>Queued payments retrieved from queue and re-tried in the following order:</p> <p>1) SWIFT Priority 01 (Urgent) 1a) FIFO order</p> <p>2) SWIFT Priority 02 (Normal) 2a) FIFO order</p> <p>If the payment passes, it is removed from the queue and processed; next payment is tried</p> <p>If the payment fails, it remains in the queue and the process terminates</p>	<p>JUMBO Queued payments retrieved from queue and re-tried in descending order of value</p> <p>If the payment passes, it is removed from the queue and processed; next payment is tried</p> <p>If the payment fails, it remains in the queue and the next payment is tried</p> <p>Once all queued Jumbo Payments have been re-tried, queued Normal Payments are re-tried</p> <p>NORMAL Queued payments retrieved from queue and re-tried in FIFO order</p> <p>If the payment passes, it is removed from the queue and processed; next payment is tried</p> <p>If the payment fails, it remains in the queue and the process terminates</p>
Blocking	N/A	No	Yes	No - Jumbo Yes - Normal

¹ Any Payment Message which fails the required Risk Control Tests shall be rejected with appropriate notification to the Sending Participant.

PAYMENT QUEUE

APPENDIX II

OPERATION OF JUMBO ALGORITHM

The jumbo algorithm will operate as follows: all Jumbo Payments which have been enqueued are considered as a group to determine, if all Jumbo Payments were submitted to LVTS simultaneously, whether all the Risk Control Tests would be passed, i.e.: (1) would every Participant's Multilateral Net Tranche 1 Position fall within its Tranche 1 Net Debit Cap; (2) would every Bilateral Net Tranche 2 Position of every Participant fall within the Bilateral Credit Limit extended to it by every other Participant; and (3) would every Participant's Multilateral Net Tranche 2 Position fall within its Tranche 2 Net Debit Cap?

With respect to Tranche 1, if any Participant's group of Tranche 1 Jumbo Payments would not pass its Tranche 1 Risk Control Test, the last Tranche 1 Jumbo Payment sent by the Participant who would have been in the most negative Tranche 1 position is eliminated from the group and the Tranche 1 Risk Control Test is retried for all Participants. This process of elimination continues until all Participants' remaining Tranche 1 Jumbo Payments would pass the Tranche 1 Risk Control Test, or until there is only one Tranche 1 Jumbo Payment Left. Any Tranche 1 Jumbo Payments that would pass are included in the posting process described below.

With respect to Tranche 2, if any group of Tranche 2 Jumbo Payments between two Participants would not pass the Bilateral Tranche 2 Risk Control Test, the last Tranche 2 Jumbo Payment sent by the Participant who would have been in the negative Bilateral Net Tranche 2 Position is eliminated and the Bilateral Tranche 2 Risk Control Test is retried. This process of elimination is repeated until the Bilateral Tranche 2 Risk Control Test would be passed, or until all Tranche 2 Jumbo Payments between the two participants are eliminated. This is repeated for every pair of Participants whose group of Tranche 2 Jumbo Payments would not pass the Bilateral Tranche 2 Risk Control Test until all Bilateral Tranche 2 Risk Control Tests for all Participants would be passed, or until there are no Tranche 2 Jumbo Payments remaining.

Then, if there are Tranche 2 Jumbo Payments remaining, the Multilateral Tranche 2 Net Debit Cap Risk Control Test is checked and, if every Participant's remaining Tranche 2 Jumbo Payments would pass, these remaining Tranche 2 Jumbo Payments are included in the posting process described below.

On the other hand, if any Participant's Tranche 2 Jumbo Payments would not pass the Multilateral Tranche 2 Net Debit Cap Risk Control Test, then the process stops and all remaining Tranche 2 Jumbo Payments for all Participants are eliminated from the group, i.e., no Tranche 2 Jumbo Payments are posted.

PAYMENT QUEUE

Once, and if, there is a group of Jumbo Payments that would all pass the appropriate Risk Control Tests, then the Jumbo Payments in this group are all posted simultaneously. An acceptance notification (MT012) and a Payment Confirmation Reference Number are generated in the normal manner for each Jumbo Payment that is posted.

Example: the following Tranche 1 payments are enqueued in the order they are received:

*FI A to FI B amount \$400mm
FI C to FI A amount \$800mm
FI B to FI C amount \$300mm
FI D to FI B amount \$200mm
FI A to FI D amount \$500mm*

If these Payment Messages were to be put through one at a time in the order that they were received and we assumed that all Participants had no Collateral pledged to the BOC and had not received any TR1 payments; A would require a TR1 CAP of \$400mm (min); C - \$800mm (min); D - \$200mm (min). Also, if A's payment could not get through to B, B would require a TR1 CAP of \$300mm (min) and A's payment to D would not get through.

If these payments were to be tried simultaneously (matching on a multilateral basis) then the TR1 CAP required by A is \$100mm; by B is \$0; C is \$500mm; and D is \$0.

As can be seen, the algorithm allows the netting of Collateral requirements to permit the maximum number of payments to pass the risk controls with a minimum amount of Collateral pledged. The same process would be applied to TR2 payments with the matching done on a bilateral basis.

*Example; FI A to FI B \$ 500mm
 FI B to FI A \$ 400mm*

If the payments were to be put through in order, A would require a bilateral credit limit from B of at least \$500mm (assuming no other received from B as well as a TR2 net debit cap of at least \$500mm) and B would have to collateralize its Maximum ASO accordingly (if this was the largest Bilateral Credit Limit). By matching the payments A needs only a \$100mm bilateral credit limit from B as well as a TR2 net debit cap of \$100mm.