

CANADIAN PAYMENTS ASSOCIATION

LVTS RULE 12

EMERGENCY CONDITIONS

LVTS Rule 12, December 1998: as amended October 2000, July 30, 2000, November 19, 2001, upon CLS becoming operational (September 9, 2002), November 25, 2002, March 31, 2003, September 25, 2003, October 6, 2003, November 24, 2003, January 27, 2004, September 20, 2004, October 7, 2004, December 6, 2004, February 24, 2005, upon implementation of LVTS v5.0 (December 12, 2005), February 23, 2006, August 14, 2006, December 4, 2006, March 29, 2007, May 28, 2007, August 11, 2008, upon implementation of HABS (October 27, 2008), January 26, 2009, August 10, 2009, December 14, 2009 and February 1, 2010, August 16, 2010, December 13, 2010, June 1, 2011, July 6, 2011, January 28, 2013, April 8, 2013, August 25, 2014, January 5, 2015, March 2, 2015, April 18, 2016, January 1, 2017, January 3, 2017, April 24, 2017, and June 5, 2017.

EMERGENCY CONDITIONS

TABLE OF CONTENTS

GENERAL 1

GRANTING AN EXTENSION WITH LIMITED NOTIFICATION 1

REQUEST FOR EXTENSION 1

ADMINISTRATIVE CHARGE..... 1

RECURRING EMERGENCIES..... 2

ADDITIONAL LVTS CYCLE 2

LVTS HELP DESK 2

EMERGENCIES OCCURING DURING THE CLS PAYMENT PERIOD 2

LVTS EMERGENCY COMMITTEE EXCEPTION 2

INTIAL COMMUNICATION WITH LVTS 2

INTERNAL PAYMENT SYSTEM CHECK 2

COMMUNICATIONS (GENERAL) 3

PARTICIPANT WORKSTATION 3

PERSONNEL PROBLEM 3

INCIDENT IMPACTING PAYMENT PROCESSING 3

PAYMENTS OVER THE DIRECT NETWORK..... 4

EMERGENCY CONDITIONS

TABLE OF CONTENTS
(Continued)

CENTRAL SITE UNAVAILABLE	4
DIRECT NETWORK	4
SWIFT IS UNAVAILABLE	4
FIN COPY	4
CDSX UNAVAILABLE PLEDGING	5
UNABLE TO SETTLE CDSX	5
CPA BACK-UP CONTINGENCY FOR DIRECT NETWORK PROCESSING	5
INCIDENT REPORTING	5
BANK OF CANADA HABS UNAVAILABLE	6
BANK OF CANADA SETTLEMENT AND MONITORING	6
CITYWIDE PROBLEM	6

APPENDIX I - LVTS HELP DESK CONTACT INFORMATION

APPENDIX II - LVTS EMERGENCY COMMITTEE GUIDELINES

APPENDIX III - CLS CONTINGENCY GUIDELINES

EMERGENCY CONDITIONS

- GENERAL** 12.1 In the event that communications between LVTS central site and one or more Participants are interrupted, the ability of the LVTS central site to receive, transmit, send, approve or otherwise process a payment message or administrative message is impaired, the safe and efficient operation of the LVTS is placed into question or some other emergency affects its operations, the President may, with the prior agreement of the Bank of Canada and such other persons as may be designated by the Board,
- a. change the hours of operation of the LVTS;
 - b. change the time for determining the net multilateral position of each participant;
 - c. direct any, several, or all of the participants to not make payments through the LVTS pending resolution of the problem;
 - d. order the immediate termination of the LVTS cycle and an immediate settlement of the LVTS cycle on the books of the Bank of Canada;
 - e. refuse to permit the commencement of an LVTS cycle; or
 - f. direct such other action as the President may deem necessary.
- GRANTING AN EXTENSION WITH LIMITED NOTIFICATION** 12.2 As a result of its inability to complete certain very large transactions¹ for reasons beyond its control or due to unexpected circumstances, a Participant may request an extension of either the Payment Message Exchange Period or the Pre-Settlement Period. If, when the request is made, there is less than fifteen minutes to convene an LVTS Emergency Committee meeting to approve the extension, the President may grant an extension of no more than fifteen minutes to either the Payment Message Exchange Period or the Pre-Settlement Period, as the case may be. Any further extension will require the approval of the LVTS Emergency Committee.
- REQUEST FOR EXTENSION** 12.3 In the event that a Participant is granted an extension of any phase of any LVTS Cycle, the President may request in writing from a senior officer of such Participant, a written response detailing the reasons for the extension.
- ADMINISTRATIVE CHARGE** 12.4 Any extension granted to a Participant in the Payment Message Exchange Period or in the Pre-Settlement Period shall be subject to the payment by such Participant of an administrative fee of \$10,000.00.
- Such fee shall be payable to the Association within 30 days of the date the extension occurred. In exceptional circumstances the President, in consultation with the Senior Operational Committee, may waive the fee.

¹ one or more exceeding \$100 million in value

EMERGENCY CONDITIONS

- RECURRING EMERGENCIES** 12.5 Incidents experienced by a Participant will be taken very seriously by the Association as an indication of a potential breach of the technical compliance requirements and/or other compliance requirements for continued participation in the LVTS. The occurrence of any of the following conditions may warrant a review by the Association, at the Association's discretion, of the Participant's compliance with the requirements of participation in the LVTS:
- a. A Participant has one Severity 1 Incident of significant impact or duration at any time;
 - b. A Participant has more than one (1) Severity 1 or Severity 2 Incident in any twenty-two (22) Business Day period; or
 - c. A Participant has more than six (6) Severity 1 or Severity 2 Incidents in a twelve (12) month period.
- ADDITIONAL LVTS CYCLE** 12.6 In the event that an emergency condition would necessitate two (2) LVTS cycles on the same day, there would be a delay of one (1) hour between LVTS Cycles, unless otherwise specified by the LVTS Emergency Committee at the time of the emergency condition arising.
- LVTS HELP DESK** 12.7 The LVTS Help Desk contact information is set out in Appendix I.
- EMERGENCIES OCCURRING DURING THE CLS PAYMENT PERIOD** 12.8 In the event an emergency condition occurs during the CLS Payment Periods, the procedures in this Rule shall be followed, as applicable, in conjunction with Appendix III and any relevant provisions in Appendix II of this Rule.
- INITIAL COMMUNICATION WITH LVTS** 12.9 Where a Participant cannot complete the initial automated conversation with LVTS ("hello" dialogue) or cannot provide the confirmation of collateral apportionment which is required as part of the LVTS Cycle commencement, the Participant must notify the LVTS Help Desk by telephone by 00:15 if processing payment messages at 00:30, but in no event any later than 07:45 hours, identifying itself, the nature of the problem, the main point of contact, and if possible, the expected time of recovery (from this point forward, in this Rule, this notification process is referred to as the "Emergency Telephone Protocol").
- INTERNAL PAYMENT SYSTEM CHECK** 12.10 Prior to responding to the "hello" dialogue, each Participant shall perform a system check to ensure its internal payment system is operational. Should the Participant's internal payment system be inoperative, the Participant shall not respond to the "hello" dialogue and must contact the LVTS Help Desk by 00:15 hours if processing payment messages at 00:30, but in no event any later than 07:45 hours, using the Emergency Telephone Protocol (refer to section 12.9 for details).

EMERGENCY CONDITIONS

- COMMUNICATIONS (GENERAL)** 12.11 Where a Participant cannot communicate with the LVTS Application, the Participant shall contact the LVTS Help Desk for immediate assistance. The Participant shall attempt to access the LVTS Application using another Participant Workstation or through another CSN connection point. If there is no alternative access at that site, the Participant shall invoke its procedures for using a Participant Workstation at another site.
- PARTICIPANT WORKSTATION** 12.12 If a Participant Workstation is not functioning properly, the Participant shall engage its internal technical support for immediate assistance. If there is another Participant Workstation at the Participant site, the user should attempt to move to that Participant Workstation. If there is no alternative access at that site, the Participant should invoke its procedures for using a Participant Workstation at another site.
- PERSONNEL PROBLEM** 12.13 a. If the Participant cannot provide the confirmation of Collateral apportionment, or complete the “hello” dialogue which are required as part of the LVTS Cycle commencement because of absence of a person with the proper authority, the Participant must notify the LVTS Help Desk using the Emergency Telephone Protocol (refer to section 12.9 for details) by 00:15 hours if processing payment messages at 00:30, but in no event any later than 07:45 hours.
- b. If the Participant cannot communicate with LVTS at any time during the LVTS Cycle because of the absence of a person with the proper authority, the Participant must notify the LVTS Help Desk within 15 minutes of becoming aware of the problem using the Emergency Telephone Protocol (refer to section 12.9 for details).
- INCIDENT IMPACTING PAYMENT PROCESSING** 12.14 If a Participant encounters a technical, site or external problem (SWIFT connection problem, payments environment problem, site problem, or weather or civil problem) that may impact its ability to send or receive LVTS payment messages, the Participant must notify the LVTS Help Desk within fifteen (15) minutes of becoming aware of the problem, using the Emergency Telephone Protocol (refer to section 12.11 for details), identifying itself, the nature of the problem, and, if possible, the expected time by which the situation will be resolved.

EMERGENCY CONDITIONS

- PAYMENTS OVER THE DIRECT NETWORK** 12.15 a. Subject to subsection (b), if a Participant is experiencing a Severity 1 Incident and cannot send Payment Messages via its SWIFT interface because of a technical, site or external problem (SWIFT connection problem, payments environment problem, site problem, weather or civil problem) that results in trapped liquidity or the inability of that Participant to meet critical time-sensitive obligations (e.g. CLS pay-ins, funding for ACSS settlement, and CDSX settlement), the Participant may use the Direct Network to send Payment Messages in accordance with the procedures contained in Appendix II, Part 7 of this Rule.
- b. Only financial institution transfers equivalent in purpose to a SWIFT MT 205 may be sent using the Direct Network and only in the circumstances described in subsection (a).
- c. The Sending Participant shall not send any payments using the Direct Network to a Receiving Participant without first receiving the agreement (oral or written – including email or fax) of the Receiving Participant. It is the responsibility of the Sending Participant to obtain the agreement of the Receiving Participant prior to sending a payment using the Direct Network and the onus of proving the existence of such agreement rests with the Sending Participant.
- CENTRAL SITE UNAVAILABLE** 12.16 If the central site is unavailable due to hardware, network or software problems, or is affected adversely by a natural disaster, the procedures to be followed shall be set forth in the Association's LVTS Emergency Committee Guidelines, a copy of which is attached as Appendix II, unless otherwise specifically determined by the President in consultation with the LVTS Emergency Committee.
- DIRECT NETWORK** 12.17 If the Direct Network is unavailable, the procedures to be followed shall be set forth in the Association's LVTS Emergency Committee Guidelines unless otherwise specifically determined by the President in consultation with the LVTS Emergency Committee.
- SWIFT IS UNAVAILABLE** 12.18 If the SWIFT Secure IP Network (SIPN) or point of presence (POP) being used is unavailable, the SWIFT network in Canada is unavailable, or the SWIFT network as a whole is unavailable the procedures to be followed shall be set forth in the Association's LVTS Emergency Committee Guidelines unless otherwise specifically determined by the President in consultation with the LVTS Emergency Committee.
- FIN COPY** 12.19 If FIN Copy has a problem, the procedures to be followed shall be set forth in the Association's LVTS Emergency Committee Guidelines unless otherwise specifically determined by the President in consultation with the LVTS Emergency Committee.

EMERGENCY CONDITIONS

CDSX UNAVAILABLE FOR PLEDGING

- 12.20 In the event that the CDSX is not available to support pledging activities to the LVTS, other than when the CDSX is unavailable for pledging during the batch net settlement process (between 04:00 and 06:00 hours each business day), the following shall apply:
- a. If the CDSX is not available at any time during the Payment Message Exchange Period or Pre-Settlement each Participant may make alternative pledging arrangements with the Bank of Canada and CDS if it is required to Pledge additional Collateral in accordance with the terms of the LVTS By-law; and
 - b. If the CDSX is not available at settlement and a Participant requires an advance from the Bank of Canada to complete settlement, such Participant shall make alternative pledging arrangements with the Bank of Canada and CDS as may be required to cover its advance.

UNABLE TO SETTLE CDSX

- 12.21 If one or more Participants are unable to settle their CDSX obligations or CDSX is unable to settle its obligations to the Participants before the end of the Payment Message Exchange Period or the Pre-Settlement Period due to the inability of a Participant to settle its CDSX obligation or an emergency condition affecting the CDSX, the banker for the CDSX may request an extension of the Payment Message Exchange Period or Pre-Settlement Period. The President, in consultation with the LVTS Emergency Committee may, upon receipt of such a request, delay the start or extend the close of the Pre-Settlement Period by such time as is required to permit settlement of the CDSX obligations.

CPA BACKUP CONTINGENCY FOR DIRECT NETWORK PROCESSING

- 12.22 In the event that a Participant is unable to access the Direct Network for processing LVTS queries or commands, known as the LVTS Proxy Service, the Participant may instruct the Association to act on its behalf. To make use of this facility a Participant must first complete the required authorization forms, pay the related service costs and agree to follow the back-up processing procedures established by the Association and available to all Participants upon request. In the absence of pre-arrangements, any request for the CPA to act on behalf of a Participant will be dealt with on a best effort basis.

INCIDENT REPORTING

- 12.23 In the event that a Participant experiences a Severity 1 or Severity 2 Incident, the Participant that experiences the emergency condition shall complete an incident report form (available on the Association's Member Portal) providing as much detail as possible, including a description of the problem encountered, impact of the problem, steps taken to resolve the problem, and if possible, details on root cause of the incident. A Participant shall return the completed form to the Association within ten (10) business days of the date of the incident.

EMERGENCY CONDITIONS

- | | | |
|---|-------|---|
| BANK OF CANADA
HABS
UNAVAILABLE | 12.24 | In the event that HABS and/or one or more of its Participant interface(s) are/is unavailable each Participant shall proceed according to such alternative procedures as may be agreed on with the Bank of Canada from time to time. |
| BANK OF CANADA
SETTLEMENT
AND MONITORING | 12.25 | The Bank of Canada's settlement activities and monitoring activities (the Bank of Canada monitors the net positions to be settled via LVTS) are handled outside of the LVTS central system. |
| CITYWIDE
PROBLEM | 12.26 | If a city is affected adversely by a natural disaster or civil unrest such that a Participant or the Association cannot properly carry out its responsibilities vis-à-vis LVTS, the procedures to be followed shall be determined by the President in consultation with the LVTS Emergency Committee. |

Board Approval date: February 23, 2017
Implementation date: April 24, 2017

LVTS Rule 12
Appendix I
Page 1

EMERGENCY CONDITIONS

LVTS HELP DESK CONTACT INFORMATION

Hours of Availability

Twenty Four (24) hours per day, Seven (7) days per week

Telephone Number*

1-800-263-8863

Fax Number

1-613-688-1123

Email Address

opshd@payments.ca

* The telephone number is automatically re-routed to the alternate help desk in the event of a problem at the primary help desk.

**LVTS
EMERGENCY COMMITTEE
GUIDELINES**

Revised: December 5, 2000 and November 19, 2001, upon CLS becoming operational (September 9, 2002), November 25, 2002, March 31, 2003, September 25, 2003, November 24, 2003, October 7, 2004, February 24, 2005, upon implementation of LVTS v5.0 (December 12, 2005), February 23, 2006, August 14, 2006, December 4, 2006, March 29, 2007, May 28, 2007, August 11, 2008, upon implementation of HABS (October 27, 2008) , January 26, 2009, August 10, 2009, December 14, 2009, January 28, 2013, April 8, 2013, August 25, 2014, January 5, 2015, March 2, 2015, April 18, 2016, January 3, 2016, April 24, 2017, and June 5, 2017.

LVTS EMERGENCY COMMITTEE GUIDELINES

TABLE OF CONTENTS

Part 1

PREFACE

QUICK REFERENCE CHART	1
CENTRAL SYSTEM PROBLEMS	1
DIRECT NETWORK PROBLEMS	2
SWIFT PROBLEMS	3
NON LVTS SYSTEMS AND SINGLE PARTICIPANT PROBLEMS	3
THE CENTRAL SYSTEM IS UNAVAILABLE (AT ANY TIME DURING THE CYCLE) AND BACK UP SYSTEM IS AVAILABLE	4
Estimate for the Central System at the Central Site to come back up is less than 90 minutes	4
Estimate for the Central System at the Central Site to come back up is more than 90 minutes	5
THE CENTRAL SYSTEM IS UNAVAILABLE AND BACKUP SYSTEM IS UNAVAILABLE	6
Pre-cycle	6
Payment message exchange period has started And pre-settlement has not completed	8
Pre-settlement is complete	10
THE DIRECT NETWORK OR ITS COMPONENTS ARE UNAVAILABLE	11
Loss of Participant Workstation	11
Loss of Direct Network Connection at a Participant Location	11
Loss of Direct Network Connection at CPA's Central Site	11
Loss of the Entire Direct Network	12
SWIFT	13
SWIFT SIPN is Unavailable	13
Leased Line Unavailable	13
SWIFT Network is Out of Service/Unavailable in Canada	14
SWIFT Network is Available/FIN Copy Unavailable	16

TABLE OF CONTENTS
(Continued)

NON-LVTS SYSTEMS AND SINGLE PARTICIPANT ISSUES	19
COLLATERAL PLEDGING AND VALUATION	19
CDSX Not Available at All	19
Delays in CDSX Settlement	19
CDSX Not Available to Any One Participant	20
HABS Not Available at All	20
HABS Not Available to Any One Participant	20
SINGLE PARTICIPANT ISSUES	21
Single Participant has Technical Problems	21
CPA BACK-UP PROCEDURES	23
CPA LAN and Systems Administration	23
CPA Premises	23
LVTS EMERGENCY COMMITTEE	24
Scope	24
Composition (Membership)	24
Courses of Action	25
General Operations	25
Part 2	
THE DIRECT NETWORK	1
The Direct Network	1
Part 3	
PAYMENT NETWORK	1
LVTS Normal Operation.....	1
Y-Copy Model	1
Payment Message Preparation	2
Routing the Message	3
Copy Message Contents	3
LVTS Authorization	3
LVTS Rejection	4

TABLE OF CONTENTS
(Continued)

Part 4
PROCEDURES FOR MOVING TO ALTERNATE SITE 1
 Canadian Payments Association Requirements 1
 Participant Requirements 2

Part 5
PROCEDURES FOR BY-PASS MODE OPERATIONS 1

PROCEDURES FOR MOVING TO SWIFT BY-PASS MODE 1
 Responsibilities of the Association 2
 Responsibilities of Participants 3
 Bank of Canada Responsibilities 3

PROCEDURES FOR RECONCILING POSITIONS WHEN MOVING TO SWIFT BY-PASS MODE 5
 Scenario A 5
 Scenario B 6
 Scenario C 7
 Scenario D 8
 Scenario E 8

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING BY-PASS MODE OPERATIONS 9
 Definitions 9
 Introduction 11
 Payment Exchange 11
 Cancellation, Non-Acceptance and Return of Payment Messages 11
 Settlement Instructions 13

Part 5.1 - Multilateral Summary Report
Part 5.2 - Net Settlement Balance - SWIFT MT 299
Part 5.3 - Reimbursement Locations
Part 5.4 - Inter-member Debit 1

Board Approval date: February 23, 2017
Implementation date: April 24, 2017.....

LVTS Rule 12
Appendix II

TABLE OF CONTENTS
(Continued)

Part 6

PROCEDURES FOR CONTINGENCY MODE OPERATIONS

PROCEDURES FOR CONTINGENCY MODE OPERATIONS (SECURE EMAIL/FAX/HAND DELIVERY)	1
PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING CONTINGENCY MODE OPERATIONS	3
Definitions	3
Introduction	5
Payment Exchange	5
Cancellation, Non-Acceptance and Return of Payment Messages	5
Settlement Instructions	7

Part 7

PROCEDURES FOR EXECUTING PAYMENTS USING THE DIRECT NETWORK..... 1

LVTS EMERGENCY COMMITTEE GUIDELINES

PREFACE

The LVTS Emergency Guidelines are as the name implies intended as a resource document for Participants and the CPA in the event that an emergency situation in connection with the operation of the LVTS arises. The guidelines are not binding, as any emergency situation will have to be evaluated given the specific facts in existence at that time. However, the guidelines do represent potential courses of action to emergency situations. These alternatives were developed by personnel from the Participants and the CPA with experience in the area.

In the case of an emergency situation arising, the decisions taken vis-à-vis the LVTS as a whole will be taken by the President in consultation with the LVTS Emergency Committee². The LVTS Emergency Committee is composed of representatives from the CPA, the Bank of Canada and the other representatives as designated by the CPA Board of Directors.

The Emergency Committee's primary task is the consideration of the course of action to be taken in the event that an emergency situation arises in connection with the operation of the LVTS³. Committee members are charged with the authority to make decisions without the need for time consuming internal confirmation from all Participants.

Emergency situations include: interruption of communications between the LVTS central site and one or more Participants, problems with the ability of the LVTS central site to receive, transmit, send, approve or otherwise process a payment message or administrative message, the safe and efficient operation of the LVTS being placed into question and any other emergency which is considered to affect LVTS operations.⁴

Several factors will have to be considered by the Emergency Committee. As well as the specific LVTS considerations, external considerations such as the specific day and time of day an emergency arises will have to be considered⁵. Furthermore a decision to expand settlement past 20:00 on the value date of the LVTS Cycle may affect many internal Participant system processes (demand deposit accounting runs, etc.), and may impact the ability of one or more Participants to be ready for the next day's cycle. Additionally, such an emergency condition may impact a Participant's ability to make funds available intra-cycle to the Payee.

It should be noted that emergency situations which are specific to a given Participant, are addressed in LVTS Rule #12 "Emergency Conditions".

² Where any provisions of the Rule requires consultation with the LVTS Emergency Committee, such consultation is not necessary in the emergency condition that occurs during the CLS Payment Period, with the exception of an emergency situation that is expected to continue until after the CLS Payment Period. Appendix III of Rule 12 contains the CLS Contingency Guidelines. In the event an emergency condition occurs during the CLS Payment Period, the procedures in this Rule shall be followed, as applicable, in conjunction with appendix III and any relevant provisions in this Appendix.

³ Unless a specific time or LVTS Cycle state is noted in the evaluation of a specific emergency situation, the analysis relates to the event arising at any time.

⁴ The Emergency Guidelines have been prepared with one key underlying assumption. If SWIFT goes down (i.e. is not available at all), at any time prior to the end of the Payment Message Exchange Period, the only practical option available to Participants and the Association is to wait until SWIFT resumes operation before any form of payment exchange can commence or continue, as the case may be, in any type of structured form.

⁵ Where the primary site is not available the minimum down time for a decision to be made to move to the alternate site has been set at 90 minutes. This time was chosen as the Ongoing Operations Services Agreement which the CPA has entered into provides for a maximum one hour recovery time to the alternate site in the event of a failure at the primary site. For this reason regardless of the reason for the failure of the primary site the most efficient course of action with the least disruption to the payment system is to move to the alternate site if the estimated recovery time at the primary site is greater than 90 minutes (allowing for the estimate to be off +/- 30 minutes). Moving to the alternate site would likely not be considered as a reasonable contingency option during the CLS Payment Period because of the time constraints associated with CLS-related payments.

LVTS EMERGENCY COMMITTEE GUIDELINES

PREFACE (continued)

Of vital importance in the evaluation of any emergency situation is an understanding of the available fallback and recovery features within LVTS itself.⁶ These include:

- Both primary and alternate sites operate on resilient infrastructure.
- Bi-directional data replication is supported between sites.
- Maximum one (1) hour to full resumption of operations once the decision has been made to move to the alternate site.
- SWIFT connectivity is resilient, supported by two (2) separate SWIFT Network Service Providers (NSPs),
- Each SWIFT NSP makes use of two (2) separate SWIFT points of presences (POPs) on the Secure IP Network (SIPN) (e.g. Montreal and Toronto).
- Fully meshed Multiprotocol Label Switching (MPLS) network using two separate NSPs.
- Requirement for each Participant to provide back-up capabilities for its LVTS operations.
- Direct Network connectivity is resilient, supported by two separate NSPs.

Another important factor is that regular disaster recovery testing and back-up facilities testing will be an integral part of the Association's LVTS Administration Plan.

In an emergency situation which might arise, notification would always be given by the Association to all Participants. Notification would take place in accordance with the notice provision in LVTS Rule 5, section 5.8.

⁶ A description of the Direct Network is attached as Attachment I and a description of the Payment Network is attached as Attachment II.

LVTS EMERGENCY COMMITTEE GUIDELINE

EMERGENCY GUIDELINES QUICK REFERENCE CHART

PROBLEM	CYCLE STATE	OPTIONS	
CENTRAL SYSTEM PROBLEMS			
Central System is unavailable and back-up system is available. (Estimate for central system to come up is less than 90 minutes)	Any State	Preferred:	Wait for Central System at the Central Site to come back up.
Central System is unavailable and back-up system is available. (Estimate for central system to come up is more than 90 minutes)	Any State	Preferred:	Move to the Alternate Site for remainder of the cycle.
Central System is unavailable and back-up system is unavailable.	Pre-Cycle	Preferred:	Wait for Central System to come back up.
		Alternative:	Move to SWIFT By-pass mode
Central System is unavailable and backup system is unavailable.	Payment Message Exchange Period has started, Pre-Settlement Not Complete	Preferred:	Wait for Central System to come back up.
		Alternative:	Move to SWIFT By-pass mode
Central System is unavailable and backup system is unavailable.	Pre-Settlement Complete	Preferred:	Settlement will continue in the normal manner, except that notification may be made manually (SWIFT, phone or fax)

Board Approval date: February 23, 2017
 Implementation date: April 24, 2017

LVTS Rule 12
 Appendix II
 Part 1
 Page 2

LVTS EMERGENCY COMMITTEE GUIDELINE

EMERGENCY GUIDELINES QUICK REFERENCE CHART

PROBLEM	CYCLE STATE	OPTION	
DIRECT NETWORK PROBLEMS			
Loss of Participant Workstation.	Any State	Preferred:	Responsibility of the Participant, LVTS Rule 12, s. 12.11 & 12.12.
Loss of Direct Network Connection at a Participant Location.	Any State	Preferred:	Responsibility of the Participant, LVTS Rule 12, s. 12.9, 12.11 and 12.17.
Loss of One Direct Network Connection at CPA's Central Site.	Any State	Preferred:	Could be a reason to switch to the alternate site. The decision to move to the alternate site will depend on the estimated time to repair the problem and the time within the cycle.
Loss of the Entire Direct Network.	Any State	Preferred:	CPA to convene LVTS Emergency Committee conference call to discuss options. Options to be considered will be similar to those outlined below for situations where the central system is unavailable (e.g. use SWIFT By-Pass Mode).

Board Approval date: February 23, 2017
 Implementation date: April 24, 2017

LVTS Rule 12
 Appendix II
 Part 1
 Page 3

LVTS EMERGENCY COMMITTEE GUIDELINE

EMERGENCY GUIDELINES QUICK REFERENCE CHART

PROBLEM	CYCLE STATE	OPTION	
SWIFT PROBLEMS			
SWIFT Secure IP Network point of presence is Unavailable	Any State	Preferred:	Switch to the alternate point of presence
Leased Line Unavailable	Any State	Preferred:	Switch to the secondary leased line.
SWIFT Network is Out of Service - Unavailable in Canada	Any State	Preferred:	Wait until SWIFT is back up.
		Alternative:	Execute payments using the Direct Network
		Alternative 2:	Implement contingency mode operations (fax/secure email)
SWIFT Network is Available/FIN Copy Unavailable	Any State	Preferred:	Wait for FIN-Copy to come back up.
		Alternative:	Execute payments using the Direct Network
		Alternative 2:	Invoke MT202 contingency
		Alternative 3:	Move to SWIFT By-pass mode
NON LVTS SYSTEMS AND SINGLE PARTICIPANT PROBLEMS			
CDSX Not Available at All	Any State		CDSX contingency procedures (as maintained by CDS) and possible extension of LVTS Cycle
CDSX Not Available to Any One Participant	Any State		Responsibility of the Participant, LVTS Rule 12, s. 12.21 & 12.22
HABS Not Available at All	Any State		HABS Contingency Procedures (as maintained by the Bank of Canada)
HABS Not Available to Any One Participant	Any State		Responsibility of the Participant, LVTS Rule 12, s. 12.25.
Single Participant has Technical Problems	Any State		Responsibility of the Participant, LVTS Rule 12, s.12.9 – 12.16.

LVTS EMERGENCY COMMITTEE GUIDELINES

THE CENTRAL SYSTEM IS UNAVAILABLE (AT ANY TIME DURING THE CYCLE) AND BACK UP SYSTEM IS AVAILABLE

Estimate for the Central System at the Central Site to come back up is less than 90 minutes.

Preferred Option: Wait for Central System at the Central Site to come back up

Advantages: No system or procedural changes are involved for the Participants or the Association.

Able to process on one system when it becomes available.

Less disruptive to wait for the Central System at the Central Site to come back up than moving to the Alternate Site.

Disadvantages: Down time may be longer than estimated and may ultimately be required to move to back up.

Customer service may be impacted by extended delay for not having moved to Alternate Site immediately.

LVTS EMERGENCY COMMITTEE GUIDELINES

**THE CENTRAL SYSTEM IS UNAVAILABLE (AT ANY TIME DURING THE CYCLE)
AND BACK UP SYSTEM IS AVAILABLE (*continued*)**

Estimate for the Central System at the Central Site to come back up is more than 90 minutes.

Preferred Option: Move to the Alternate Site for the remainder of cycle

Advantages: Reduce the customer impact, by ensuring the system is available within a specific time frame i.e. maximum 1 hour.

Disadvantages: Additional action required than waiting for the Central System at the Central Site to come back up.

Central System at the Central Site may in fact come back up under 1 hour (therefore may be longer delay than required).

LVTS EMERGENCY COMMITTEE GUIDELINES

THE CENTRAL SYSTEM IS UNAVAILABLE AND BACKUP SYSTEM IS UNAVAILABLE - PRE-CYCLE

- Options:**
1. Wait for Central System to come back up.
 2. Move to SWIFT By-pass mode.
-

Preferred Option: Wait for the Central System to come back up.

Advantages: No system or procedural changes are involved at either the Participants or the Bank of Canada.

No possible payee confusion will exist with regard to finality of payments.

All payments for the cycle are risk proofed.

LVTS Bylaw and Rules are fully in effect.

All payments exchange history is captured by the system.

Late in the day settlements (CLSS and CDSX) are accomplished via LVTS, minimizing collateral requirements and with finality.

Position can be flattened prior to settlement, minimizing collateral which is tied up for settlement of troubled cycle.

Able to process in LVTS when it becomes available.

Disadvantages: Down time may be longer than anticipated.

Customer service impacted by delay for not having moved to By-pass mode immediately. Delays may be visible to customers.

May be necessary to move to By-pass mode if the problem can't be fixed.

Business hours may lengthen impacting customers, staff, CDSX, and other Participants' systems.

LVTS EMERGENCY COMMITTEE GUIDELINES

THE CENTRAL SYSTEM IS UNAVAILABLE AND BACKUP SYSTEM IS UNAVAILABLE - PRE-CYCLE (*continued*)

Alternative Option: Move to SWIFT By-pass mode.

The Participants then use the payment exchange and settlement procedures set out in Part 5 to this Appendix. Settlement under Part 5, would be via ACSS.

Advantages: Payments start flowing immediately.

Reduce customer impact, by ensuring that payments can be made without delay.

Disadvantages: Requirement to go to alternate settlement procedures.

No finality of payment.

No certainty of settlement.

These payments will not be LVTS payments and the LVTS By-law and LVTS Rules will not apply.

LVTS EMERGENCY COMMITTEE GUIDELINES

THE CENTRAL SYSTEM IS UNAVAILABLE AND BACKUP SYSTEM IS UNAVAILABLE - PAYMENT MESSAGE EXCHANGE PERIOD HAS STARTED AND PRE-SETTLEMENT HAS NOT COMPLETED

- Options:**
1. Wait for Central System to come back up.
 2. Move to SWIFT By-pass mode.
-

Preferred Option: Wait for the Central System to come back up.

Advantages: No system or procedural changes are involved at either the Participants or the Bank of Canada.

No possible payee confusion will exist with regard to finality of payments.

All payments for the cycle are risk proofed.

LVTS Bylaw and Rules are fully in effect.

All payments exchange history is captured by the system.

Late in the day settlements (CLSS and CDSX) are accomplished via LVTS, minimizing collateral requirements and with finality.

Position can be flattened prior to settlement, minimizing collateral which is tied up for settlement of troubled cycle.

Able to process in LVTS when it becomes available.

Disadvantages: Down time may be longer than anticipated.

Customer service impacted by delay for not having moved to By-pass mode immediately. Delays may be visible to customers.

May be necessary to move to By-pass mode if the problem can't be fixed.

Business hours may lengthen impacting customers, staff, CDSX, and other Participants' systems.

LVTS EMERGENCY COMMITTEE GUIDELINES

THE CENTRAL SYSTEM IS UNAVAILABLE AND BACKUP SYSTEM IS UNAVAILABLE - PAYMENT MESSAGE EXCHANGE PERIOD HAS STARTED AND PRE-SETTLEMENT HAS NOT COMPLETED (*continued*)

Alternative Option: Move to SWIFT By-pass mode.

The Participants then use the payment exchange and settlement procedures set out in Part 5 to this Appendix. Settlement under Part 5, would be via ACSS.

Advantages: Payments start flowing immediately.

Reduce customer impact, by ensuring that payments can be made without delay.

Disadvantages: Payments have been made over LVTS which will have to be settled. Therefore going to By-pass mode (which will use alternate settlement procedures) could cause major problems for the FI's from a cash and risk management perspective.

Requirement to go to alternate settlement procedures.

No finality of payment.

No certainty of settlement.

These payments will not be LVTS payments and the LVTS By-law and LVTS Rules will not apply.

Board Approval date: February 23, 2017
Implementation date: April 24, 2017

LVTS Rule 12
Appendix II
Part 1
Page 10

LVTS EMERGENCY COMMITTEE GUIDELINES

THE CENTRAL SYSTEM IS UNAVAILABLE AND BACKUP SYSTEM IS UNAVAILABLE - PRE-SETTLEMENT IS COMPLETE

Since settlement occurs outside of LVTS, if LVTS fails during the settlement period, settlement can continue in the normal manner, as outlined in Part 5 to this appendix, except that notification of settlement complete may be made manually (SWIFT, phone, fax) by the Bank of Canada. In the normal course the settlement figures will be available to the Bank of Canada immediately after the completion of Pre-Settlement. If the LVTS were to become unavailable immediately upon Pre-Settlement terminating the figures for settlement would have to be provided by the Participants themselves. The LVTS being a sum zero multilateral netting system would facilitate the verification of these figures.

LVTS EMERGENCY COMMITTEE GUIDELINES

THE DIRECT NETWORK OR ITS COMPONENTS ARE UNAVAILABLE

Because of the backup strategy for the Direct Network, it is very unlikely that the entire network would be unavailable for all Participants.

In all the following scenarios, if a Participant has not completed its 'hello' dialogue and confirmed its apportionment of collateral via the Direct Network and the Bank of Canada has not provided a collateral valuation for the Participant via the Direct Network, the Participant's payments will not be processed by LVTS until both these conditions are met, nor will the Participant receive any payments.

1. Loss of Participant Workstation

This emergency condition is the responsibility of the Participant. See LVTS Rule 12, Section 12.13 and 12.1.

2. Loss of Direct Network Connection at a Participant Location

This emergency condition is the responsibility of the Participant. See LVTS Rule 12, Sections 12.11, 12.13 and 12.21.

3. Loss of One Direct Network Connection at CPA's Central Site

Preferred Option: Given the architecture of the CPA connection to the Direct Network (i.e. no single points of failure), it is unlikely that the CPA would lose its connection at the central site. However, in this unlikely event, the loss of Direct Network connection at the primary central site could be reason to switch to the alternate site. During the re-connection time, payments could still be sent and received via SWIFT and would continue to be sent to the LVTS central system for approval.

Recovery Time: During the switch-over time, the CPA would not have connectivity to the LVTS for monitoring purposes.

The decision to move to the alternate site will depend on the estimated time to repair the problem and the time within the cycle.

Advantages: Any direct messages due to the user would be recovered.

During the recovery time, the Participant in question may send and receive payments.

Disadvantages: Customer support issue.

LVTS EMERGENCY COMMITTEE GUIDELINES

THE DIRECT NETWORK OR ITS COMPONENTS ARE UNAVAILABLE (*continued*)

4. Loss of the Entire Direct Network

Given the architecture of the Direct Network (i.e. using dual network service providers), it is unlikely that the entire Direct Network would be unavailable for all Participants. However, in the unlikely event that it does become unavailable for all Participants, the CPA would convene an Emergency Committee meeting to discuss alternative options. Options to be considered will be similar to those outlined above for situations where the central system is unavailable. During this time, payments could still be sent and received via SWIFT and would continue to be sent to the LVTS for approval. Neither the CPA nor Participants would have connectivity to the LVTS for monitoring purposes.

LVTS EMERGENCY COMMITTEE GUIDELINES

SWIFT

1. SWIFT point of presence (POP) on the Secure IP Network (SIPN) is Unavailable

Preferred Option: LVTS can still be operational by switching to the alternate point of presence (POP) at the primary site or using the POP at the alternate site with minimum or no impact.

Advantages: No disruption to LVTS.

Any payment messages delivered to SWIFT would be queued and delivered once the POP was re-established.

Disadvantages: Nil.

2. Leased Line Unavailable

Preferred Option: LVTS can still be operational by switching to the secondary leased line with minimum or no impact.

Advantages: No disruption to LVTS.

Disadvantages: Nil.

LVTS EMERGENCY COMMITTEE GUIDELINES

SWIFT (*continued*)

3. SWIFT Network is Out of Service/Unavailable in Canada

- Options:**
1. Wait until SWIFT is back up*
 2. Execute payments using the Direct Network
 3. Implement contingency mode operations (fax/secure email)
-

Preferred Option: Wait until SWIFT is back up.

*Note: The Emergency Guidelines have been prepared with one key underlying assumption. If SWIFT goes down (i.e. is not available at all), at any time prior to the end of the Payment Message Exchange Period, the only practical option available to Participants and the Association is to wait until SWIFT resumes operation before normal payment exchange can commence or continue, as the case may be, in any type of structured form.

Advantages: No system or procedural changes are involved at either the Participants of the Association.

No possible payee confusion will exist with regard to finality of payments.

All payments for the cycle are risk proofed.

LVTS Bylaw and Rules are fully in effect.

All payments exchange history is captured by the system.

Late in the day settlements (CLSS and CDSX) are accomplished via LVTS, minimizing collateral requirements and with finality.

Position can be flattened prior to settlement, minimizing collateral which is tied up for settlement of troubled cycle.

Able to process on one system when it becomes available.

Less descriptive to wait for SWIFT to come back up than moving to Contingency mode.

Disadvantages: Down time maybe longer than estimated and may ultimately be required to move to Contingency mode.

Customer service impacted by extended delay for not having moved to Contingency mode immediately.

LVTS EMERGENCY COMMITTEE GUIDELINES

SWIFT (*continued*)

Alternative Option: Execute payments using the Direct Network

Participants would send payments (financial institution transfers equivalent in purpose to a SWIFT MT 205 only) using the Direct Network to meet time-sensitive obligations or to alleviate liquidity that may be trapped in the system.

When the format and content of a Payment Message sent over the Direct Network does not contain sufficient information to enable the Receiving Participant to process the payment to the correct account, the Sending Participant must provide the required information by other means (e.g. fax/secure email).

Advantages:

Participants will be able to continue to process a limited number of payment instructions should there be an extended SWIFT outage. The financial markets in Canada can continue to operate.

No system changes for the Association.

All payments sent using the Direct Network are subjected to the applicable risk control test(s).

All payment exchange history is captured by the system.

Payments for settlement purposes (e.g. CLSS and CDSX) can still be accomplished with finality and irrevocability, minimizing collateral requirements.

LVTS Bylaw and Rules will be in effect.

Disadvantages:

Participants will be required to reconcile payments manually.

There will be procedural changes at the Participant level.

Alternative Option 2: Implement Contingency mode (fax/secure email) operations

Participants would use the payment exchange and settlement procedures set out in Part 6 to this Appendix. Settlement under Part 6 would be via ACSS.

Advantages:

Participants will be able to continue to process payment instructions should there be an extended SWIFT outage. The financial markets in Canada will continue to operate.

Disadvantages:

Procedural changes are required by both Participants and the Association.

Payments that are processed will not be guaranteed certainty of settlement.

Payments that are processed during the cycle will not be final and will be revocable.

LVTS Bylaw and Rules will not be in effect.

CLS and CDSX settlement may be impacted.

LVTS EMERGENCY COMMITTEE GUIDELINES

SWIFT (*continued*)

4. SWIFT Network is Available/FIN Copy Unavailable

- Options:**
1. Wait for FIN Copy to come back up.
 2. Execute payments using the Direct Network
 3. Invoke MT202 contingency
 4. Move to SWIFT By-pass mode.

Preferred Option: Wait for FIN Copy to come back up.

Advantages: No system or procedural changes are involved at either the Participants or the Association.

No possible payee confusion will exist with regard to finality of payments.

All payments for the cycle are risk proofed.

LVTS Bylaw and Rules are fully in effect.

All payments exchange history is captured by the system.

Late in the day settlements (CLSS and CDSX) are accomplished via LVTS, minimizing collateral requirements and with finality.

Position can be flattened prior to settlement, minimizing collateral which is tied up for settlement of troubled cycle.

Able to process on one system when it becomes available.

Less disruptive to wait for FIN Copy to come back up than moving to By-pass mode.

Disadvantages: Down time may be longer than estimated and may ultimately be required to move to By-pass mode.

Customer service impacted by extended delay for not having moved to By-pass immediately.

LVTS EMERGENCY COMMITTEE GUIDELINES

SWIFT (*continued*)

Alternative Option: Execute payments using the Direct Network

Participants would send payments (financial institution transfers equivalent in purpose to a SWIFT MT 205 only) using the Direct Network to meet time-sensitive obligations or to alleviate liquidity that may be trapped in the system.

When the format and content of a Payment Message sent over the Direct Network does not contain sufficient information to enable the Receiving Participant to process the payment to the correct account, the Sending Participant must provide the required information by other means (e.g. fax/secure email).

Advantages: Participants will be able to continue to process a limited number of payment instructions should there be an extended SWIFT outage. The financial markets in Canada can continue to operate.

No system changes for the Association.

All payments sent using the Direct Network are subject to the applicable risk control test(s).

All payment exchange history is captured by the system.

Payments for settlement purposes (e.g. CLSS and CDSX) can still be accomplished with finality and irrevocability, minimizing collateral requirements.

LVTS Bylaw and Rules will be in effect.

Disadvantages: Participants will be required to reconcile payments manually.

There will be procedural changes at the Participant level.

LVTS EMERGENCY COMMITTEE GUIDELINES

SWIFT (*continued*)

Alternative Option 2: Invoke MT202 contingency

Advantages: Payment Messages could be exchanged and settled almost immediately, subject to account funds availability.

Disadvantages: Requirements to go to alternate settlement procedures (i.e. ACSS). Participants will be required to extract MT 205 payment messages from internal payment systems and convert them to MT 202s.

There may be issues with reconciliation on internal systems between those payments settled in LVTS and those account entries made by the Bank of Canada.

These payments will not be LVTS payments and the LVTS By-law and LVTS Rules will not apply.

Alternative Option 3: Move to SWIFT By-pass mode.

The Participants then use the payment exchange and settlement procedures set out in Attachment IV to this Appendix. Settlement under Attachment IV, would be via ACSS.

Advantages: Payments start flowing immediately.

Reduce customer impact, by ensuring that payments can be made without delay.

Disadvantages: Payments have been made over LVTS which will have been settled. Therefore going to By-pass mode (which will use alternate settlement procedures) could cause major problems for the FI's from a cash and risk management perspective.

Requirement to go to alternate settlement procedures.

No finality of payment.

No certainty of settlement.

These payments will not be LVTS payments and the LVTS By-law and LVTS Rules will not apply.

NON-LVTS SYSTEMS AND SINGLE PARTICIPANT ISSUES

COLLATERAL PLEDGING AND VALUATION

1. CDSX Not Available at All

An emergency in CDSX or the inability of a CDSX Participant to settle its obligations can affect LVTS in at least two different ways. Firstly, a failure in CDSX could affect the ability of Participants to pledge collateral for LVTS purposes. In this case the Association would need to communicate with CDS to determine the expected time for CDSX to be back up and fully operational. At this point, a decision would have to be made by CDS whether to move to CDS's alternate site or invoke interim manual pledging mechanism. Any delay in the availability of the CDSX pledging function of more than two (2) hours would require the move to CDS's alternate site or the interim pledging mechanism.

Of greater concern is the inability of a Participant to settle its obligations in CDSX or a system wide failure in CDSX which might not only affect the pledging function but which might delay settlement of CDSX. This emergency situation could be dealt with as set out below.

It should be noted that request for extensions received from CDS can be either for CDSX system wide problems or CDSX Participants that are unable to provide payment to CDS's designated banker to settle its obligations (extensions will not be granted for one participant's inability to conclude its business in CDSX in a timely fashion). An extension request will be forthcoming from CDS only if the END OF THE CDSX PAYMENT EXCHANGE will be delayed past 17:30. The beginning of LVTS Pre-Settlement shall not be delayed if only the BEGINNING OF THE CDSX PAYMENT EXCHANGE is delayed by a short amount of time.

2. Delays in CDSX Settlement

(i) Minor Delay in CDSX

A minor delay in CDSX is one which might cause the settlement of CDSX Payment Exchange to extend past one (1) hour prior to the start of Pre-Settlement. CDS would invoke this type of delay only if there were a "system" or "system level" problem or Participant problem as set forth above.

Proposed Procedure

CDS management would notify the Bank of Canada⁷ (their banker) of the problem and the time by which they expect CDSX settlement to complete. The Bank of Canada would then notify the Association (CPA Help Desk) of the problem, and request that the Pre-Settlement Period be delayed by the appropriate amount of time. The Association would change the LVTS schedule appropriately, and notify all of the Participants. If required, the Association would establish an emergency conference call with members to keep members apprised of the situation and expected impact on the LVTS schedule.

Depending on how long the CDSX settlement is delayed, there may be a need to further delay the beginning (or close) of pre-settlement to permit the LVTS Participants to conduct other business which was delayed because of the CDSX system or participant problem(s).

⁷ Since CDS is a customer of the Bank of Canada (The Bank of Canada is a Participant in this case), the Bank of Canada is responsible for advising the Association.

LVTS EMERGENCY COMMITTEE GUIDELINES

NON LVTS SYSTEMS AND SINGLE PARTICIPANT ISSUES (*continued*)

(ii) Major Delay in CDSX

If there is a major problem with CDSX, such that CDS has to invoke its recovery procedures in order to complete its settlement (up to 3 hours), LVTS should remain available so that CDSX could be settled using LVTS for the current cycle. Depending on the timing of the occurrence of the problem, the LVTS cycle could be extended significantly, as the CDSX settlement would have to be completed prior to the start of LVTS pre-settlement (in limited circumstances CDSX settlement could be completed during the Pre-Settlement Period). This approach may be required, as one or more Participants in LVTS could be significantly impacted by their unexpected LVTS positions if settlement of CDSX was not to occur via LVTS.

Proposed Procedure

CDS would notify the Bank of Canada (their banker) of the problem, the time CDSX expects to be back in operation, and the time by which they expect CDSX settlement to be complete. The Bank of Canada would then notify the Association (CPA Help Desk) of the problem, and request that the start (or close) of pre-settlement be delayed by the appropriate amount of time. If required, the Association would establish an emergency conference call with members to keep members apprised of the situation and expected impact on the LVTS schedule.

3. CDSX Not Available to Any One Participant

This emergency condition is the responsibility of the Participant. See LVTS Rule 12, Emergency Conditions, Section 12.20 and 12.21.

4. HABS Not Available at All

Participants should adhere to the HABS contingency procedures.

5. HABS Not Available to Any One Participant

This emergency condition is the responsibility of the Participant. See LVTS Rule 12, Emergency Conditions, Section 12.25.

LVTS EMERGENCY COMMITTEE GUIDELINES

NON-LVTS SYSTEMS AND SINGLE PARTICIPANT ISSUES (*continued*)

SINGLE PARTICIPANT ISSUES

6. Single Participant has Technical Problems

This emergency condition is the responsibility of the Participant. See LVTS Rule 12, Emergency Conditions, Sections 8 through 19.

Alternatively, should a participant be unable to respond to the 'Hello' dialogue, the Emergency Committee may choose to delay the start of the cycle until that Participant has resolved any problems and is able to process LVTS payments.

If a Participant is unable to connect to SWIFT due to technical problems, it may choose to send payments (financial institution transfers equivalent in purpose to a SWIFT MT 205 only) using the Direct Network, request that the Bank of Canada perform a book-based transfer, or have another Participant process its payments for them. If these options should be deemed unreasonable for any reason, the Participant may choose to send/receive payment instructions with the other Participants via secure email, delivered by hand or as a last resort via fax. Any payment instructions sent via secure email, delivered by hand to an agreed upon location or authorized fax, will be subject to the following conditions:

- Participants will attempt to deliver all payments on a best effort basis, subject in all cases to applicable risk controls, bilateral lines and prior confirmation from the Receiving Participant's Contingency Payment contact listed in the LVTS Summary Contact List;
- Participants shall use SWIFT message formats (MT103, MT 205 or 205 COV) when delivering payment instructions. Members may use a printout of their SWIFT message application or the CPA's Contingency Mode Payment templates available upon request through the CPA to make manual payments to another FI (examples of SWIFT MT 103, MT 205 and MT 205 COV message formats can be found in Part 6). Any modifications to payment instructions must be initialized;
- The sending Participant must deliver the payment instructions to the Contingency Payment contact of the receiving Participant listed in the LVTS Summary Contact list maintained by the CPA;
- The receiving Participant has the option of not accepting the payment instruction but must notify the sending Participant as soon as they become aware if not accepting;
- Notification of acknowledgement of receipt and notification of non-acceptance of payment should be transmitted in the bilaterally agreed upon method;

* The Bank of Canada would send all payments and would expect to receive all payments regardless of amount.

LVTS EMERGENCY COMMITTEE GUIDELINES

NON-LVTS SYSTEMS AND SINGLE PARTICIPANT ISSUES (*continued*)

- All contingency mode payment instructions would be netted bilaterally (individual debits for Bank of Canada) and a single inter-member debit would be entered in the ACSS for each participant in accordance with the procedures outlined in Part 6; and
- Any payment instruction sent by secure email, delivered by hand or as a last resort by fax must be acknowledged by the Contingency Mode contact by return email, phone call or fax otherwise the payment instruction shall be considered not delivered.

Board Approval date: May 5, 2017
Implementation date: June 5, 2017

LVTS Rule 12
Appendix II
Part 1
Page 23

LVTS EMERGENCY COMMITTEE GUIDELINES

CPA BACK-UP PROCEDURES

The Association is responsible for the administration of the LVTS. In the event of an emergency affecting the Association's premises or its personnel's ability to access the premises the Association's emergency back-up procedures would apply to minimize the effect on the operations of the LVTS. The Association has developed a disaster recovery testing plan and will conduct regular disaster recovery testing.

CPA LAN and Systems Administration

The LVTS administration would be carried out from such emergency location with all non-essential services placed on hold.

CPA Premises

Premises would meet the emergency requirements to keep essential services operating.

LVTS EMERGENCY COMMITTEE GUIDELINES

LVTS EMERGENCY COMMITTEE

The Emergency Committee is defined (LVTS Rule 1) to mean “a representative from CPA’s Payment Operations Team, a representative from the Bank of Canada, the Cash Management Committee representative from each Participant, and representative(s) from Canadian Financial Market Infrastructures (e.g. CDS), as appropriate”.

Scope

The Emergency Committee’s primary task would be the consideration of the course of action to be taken in the event that an emergency situation were to arise in connection to the operation of the LVTS. Committee members would be charged with the authority to make decisions without the need for time consuming internal confirmation.

Emergency situations would include, communications between the LVTS central site and one or more Participants being interrupted, the ability of the LVTS central site to receive, transmit, send, approve or otherwise process a payment message or administrative message being impaired, the safe and efficient operation of the LVTS being placed into question and any other emergency which is considered to affect LVTS operations.

Composition (Membership)^{8, 9}

1. Representative from CPA’s Payment Operations Team;
2. BOC representative with decision making authority in emergency situations appointed by the BOC.
3. Cash Management Committee representative from each Participant;
4. Representative(s) from Canadian Financial Market Infrastructures (e.g. CDS), as appropriate.

CPA will provide appropriate support staff to the Emergency Committee.

All Members or their alternates should be present. An alternate would be appointed for each member of the Emergency Committee. Such alternate should also be charged with the authority to make decisions (same as primary member) in the event that the primary member were not available or could not be reached at the time of an emergency.

⁸ The CMUG, LVTS MC and LPUG committees will be repealed at the inaugural meetings of the new operational committees (i.e. SOC and CMC) in Q1 2017. Until such time, the CMUG representatives and the member Co-Chairs of the LVTS MC and LPUG will retain their responsibilities as LVTS EC members.

⁹ Each of the LVTS Emergency Committee representatives should have a designated alternate.

LVTS EMERGENCY COMMITTEE GUIDELINES

LVTS EMERGENCY COMMITTEE (*continued*)

Course of Action

The potential course of action to be recommended by the Emergency Committee to the President of the CPA would include:

- a. Changing the hours of operation of the LVTS;
- b. Changing the time for determining the net multilateral position of each Participant;
- c. Directing any, several, or all of the Participants to not make payment through the LVTS pending resolution of the problem;
- d. Ordering an immediate termination of the then current LVTS cycle and an immediate settlement of the then current LVTS cycle on the books of the Bank of Canada;
- e. Refusing to permit the commencement of an LVTS cycle; or
- f. Directing such other action as the President may deem necessary.

General Operations:

A meeting of the Emergency Committee may be convened by the President at any time on the President's own authority or at the request of any Participant. All meetings of the Emergency Committee shall be by way of telephone conference call unless otherwise agreed to by the Emergency Committee. All Participants shall receive notice by email as soon as practicable after a meeting of the Emergency Committee has been convened indicating the party requesting the meeting, the time of the meeting, the reason for the meeting and any resulting action having been taken. Only members of the Emergency Committee and designated CPA staff shall be permitted to participate in any meeting of the Emergency Committee unless otherwise determined by the Committee.

Board Approval date: May 5, 2017
Implementation date: June 5, 2017

LVTS Rule 12
Appendix II
Part 2
Page 1

LVTS EMERGENCY COMMITTEE GUIDELINES

THE DIRECT NETWORK

Because of the architecture of the Direct Network (i.e. using dual NSPs), it is very unlikely that the entire network would be unavailable.

The Direct Network

The Direct Network is the vehicle over which the Participants (including the Bank of Canada) and the Association submit commands and queries and receive responses via their respective Participant Workstations. Payments and confirmations are transmitted via the SWIFT network, and this transmission would be unaffected by a failure of the Direct Network. However, if a Participant has not completed its "hello" dialogue and confirmed its apportionment of collateral via the Direct Network and the Bank of Canada has not provided a collateral valuation for the Participant via the Direct Network, the Participant's payments will not be processed by LVTS until both these conditions are met, nor will the Participant receive any payments.

Composition of the Direct Network:

The LVTS User's view of the Direct Network is through the Participant Workstation at its location. Direct Network functionalities are carried over the CPA Services Network (CSN). The Participant's Workstation is connected through an internal network to a CSN access point which then communicates with the LVTS infrastructure.

The CPA's primary and alternate sites are connected to the CSN using a High Availability (HA) configuration.

LVTS EMERGENCY COMMITTEE GUIDELINES

PAYMENT NETWORK

1. LVTS Normal Operation

LVTS uses SWIFT as its payment exchange network. To accomplish this, we are using a facility provided by SWIFT called FIN Copy. Within FIN Copy, we are using the Y-Copy Model, as explained below. The model is called “Y-Copy” because it resembles the letter “Y.” When LVTS is available, payment messages will follow the path described below.

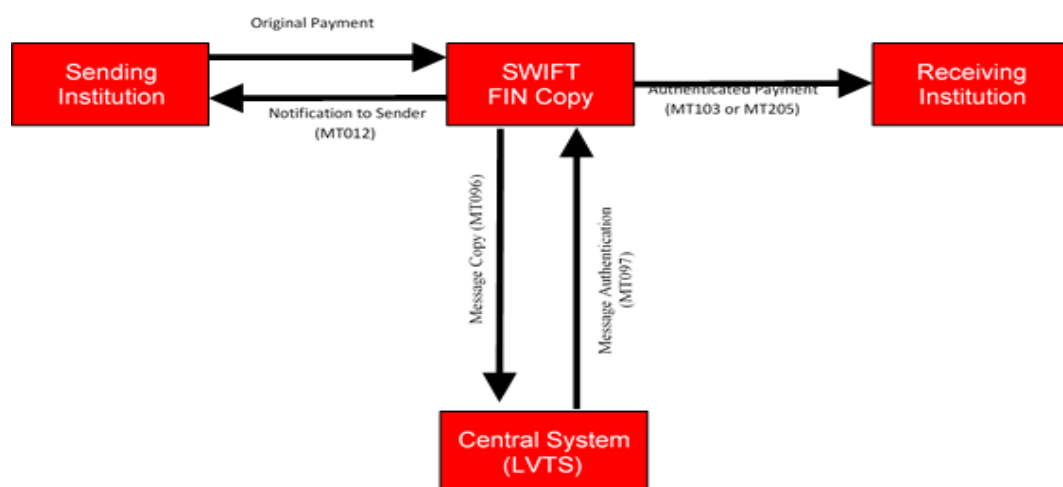
1.1 Y-Copy Model

Under the Y-Copy mode of FIN Copy, the sender of a payment transmits the payment addressed to the receiver. The SWIFT network makes a copy of certain fields, and forwards this copy (MT096) to LVTS. Both the payment message and the copy are authenticated by SWIFT. The payment message is held in the SWIFT network pending confirmation by LVTS.

LVTS evaluates the credit of the sender, and, if successful, sends an authorization (MT 097) to the FIN Copy service in the SWIFT network. The FIN Copy service then releases the original message to the receiver, and generates a sender notification (MT 012) to the sender of the payment. The released original message is authenticated. The sender notification is not.

If LVTS cannot complete the payment, LVTS sends a rejection (MT097) to the FIN Copy service in the SWIFT network. The FIN Copy service then deletes the original message it was holding, and generates an abort notification (MT019) to the sender of the payment. The abort notification is not authenticated. The receiver never sees the original payment.

Figure 1 Y-Copy Message Exchange



Y-Copy Successful Payment Message Exchange

LVTS EMERGENCY COMMITTEE GUIDELINES

PAYMENT NETWORK (*continued*)

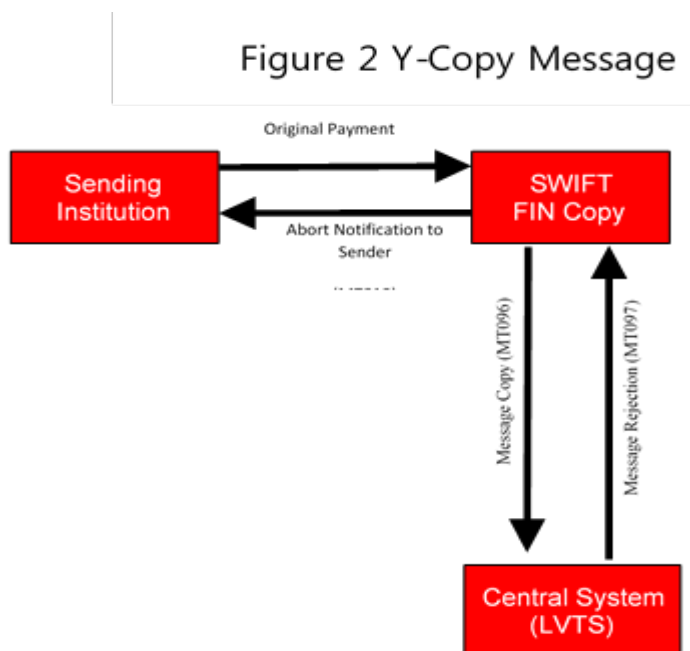
1.1.1 Payment Message Preparation

The original payment message is prepared in the fashion described below by the sending financial institution.

The original payment message is addressed to the receiving financial institution. The Identifier for LVTS (“CAD”) is placed in field : 103 : in the user Header Block (block 3) of the message. This identifier must be present for any message (MT 103 or MT 205) sent to another LVTS participant in Canadian dollars, or the message will be rejected by SWIFT. The remaining parties and information are placed in the normal fields, as they are today. Message priority is set by the sender. The MUR (field : 108:) in the User Header Block of the original message is set by the sender to indicate the Tranche for payment. Permissible values are 1, 2, or R. If this field is left blank or not included, the LVTS will use the default Tranche for this Payment, as set previously by the sender in its profile.

The CBT (computer-based-terminal - computer which is the interface to the SWIFT network) at the sending institution will authenticate the message to the receiver.

It is not necessary for the sender to request a delivery acknowledgement for the payment message, as the sender will always receive a response from LVTS, and the receiver will always be sent the entire message for this transaction from LVTS, after the payment passes the risk mitigation checks.



Y-Copy Mode Rejected Payment Message

LVTS EMERGENCY COMMITTEE GUIDELINES

PAYMENT NETWORK (*continued*)

1.1.2 Routing the Message

SWIFT uses the FIN Copy closed user group to identify participants in LVTS. It also uses the criteria of message type (MT 103 or MT 205), currency (CAD), and Copy Service Field (103 in the User Header "CAD") (of the original payment message) to identify messages to be copied.

The sender financial institution transmits the payment message to SWIFT. The SWIFT network does the remainder of the routing.

1.1.3 Copy Message Contents

The copy message (MT 096) generated by SWIFT to LVTS contains the headers of the original message, fields :20:, :21: (transaction reference numbers as in the original message), and :32A: (amount, currency, value date). A Message Reference (MRF) trailer is constructed containing the FIN Copy reference to the original message (date, time, MIR or original message).

1.1.4 LVTS Authorization

LVTS authorizes the payment to the SWIFT network by transmitting a Message Authorization (MT 097) to the FIN Copy application. Field :114: (Sender Information) and field :115: (Addressee Information) are both filled out identically as follows:

- the characters "LVTS" indicating that any generated notification are from LVTS
- LVTS Payment Confirmation Reference Number (9 characters)
- the characters "TR" followed by the appropriate Tranche (1 or 2 or R)

Field :103: (Service Code) will contain "CAD". Field :109: (Original MUR) will contain the full reference to the original message as contained in the MRF trailer of the associated MT 096 (Copy Message). Field :451: (Accept-Reject) will contain "0" indicating acceptance.

FIN Copy delivers the message to the receiver. Field :115: (Addressee Information) from the MT 097 will be included in the User Header. The receiver of the message then processes the message appropriately to the payee.

FIN Copy confirms the message to the sender using a Sender Notification (MT 012).

LVTS EMERGENCY COMMITTEE GUIDELINES

PAYMENT NETWORK (*continued*)

When a Sender Notification is received from SWIFT, the receiver of the notification matches the notification to the original message, and completes the internal processing of the payment.

1.1.5 LVTS Rejection

LVTS rejects the payment to the SWIFT network by transmitting a Message Authorization (MT 097) to the FIN Copy application for the appropriate payment.

Field 103 (Service Code) will contain "CAD". Field :109: (Original MUR) will contain the full reference to the original message as contained in the MRF trailer of the associated MT 096 (Copy Message). Field :451: (Accept-Reject) will contain "1" indicating rejection. Field :432: (Abort Reason) will contain the code indicating the reason for the LVTS rejection.

FIN Copy cancels delivery of the original message to the receiver.

FIN Copy forwards an Abort Notification (MT 019) message to the sender.

When an Abort Notification is received from SWIFT, the receiver of the notification matches the notification to the original message, and completes the internal processing associated with the rejection of the payment.

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR MOVING TO ALTERNATE SITE

The procedure for moving to the alternative site in the event of an emergency situation arising involves action to be taken primarily by the Association as most of the move will be transparent to the Participants. The Participant will be faced with a delay in the availability of LVTS and will need to be prepared to deal with this delay. It will be important that communications be open between the Association and the Participants during any such delay so that all parties are fully informed on all aspects of the shift to the Alternate Site.

Canadian Payments Association Requirements

Upon a decision being made by the President, after consultation with the LVTS Emergency Committee, to move LVTS operations to the Alternate Site, the Association will:

1. Communicate with the system operator (CGI) to inform them that a move to the Alternate Site is to be made.
2. Establish the time (eastern time) by which the move will be completed.
3. Notify each Participant's LVTS Overall Responsibility contact, as listed in the LVTS Summary Contact List, of:
 - a. the decision to move to the Alternate Site;
 - b. the estimated time of completion of the move to the Alternate Site;
 - c. the estimated time for resumption of LVTS operations;
 - d. any extensions to the current LVTS cycle or components of the cycle (Payment Message Exchange Period, Pre-Settlement or Settlement);
 - e. any other information which is required in the circumstances.
4. Notify CDS of the emergency condition and if an extension to any part of the current LVTS Cycle is made, notify CDS of the particulars of the extension.
5. Ensure a full reconciliation by the central system at the Alternate Site of the system's totals relating to payment message traffic to the status reported by the central system at the Primary Site at the time the emergency arose.
6. Confirm to all Participants the successful cut-over to the Alternate Site and any other pertinent details.

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR MOVING TO ALTERNATE SITE (*continued*)

7. At the end of the current LVTS Cycle and upon the correction of the problem which necessitated the move to the Alternate Site, the Association will need to coordinate the return to the Primary Site. If the problem cannot be corrected to the Association's satisfaction before the commencement of the next LVTS Cycle, the Alternate Site will be used until such satisfactory correction can be made.
8. Upon the decision being made by the Association to resume operations at the Primary Site, the Association shall advise the Participants of the designated time for the resumption of operations.

Participant Requirements

1. Ensure that the contact person within the Participant institution informs all areas within the institution with LVTS responsibilities of the delay.
2. Conduct an immediate reconciliation of LVTS Payment Messages sent against SWIFT MT012's and MT019's notifications received and SWIFT PDE's received.
3. All necessary adjustments will be made to the Participant's LVTS operations to deal with the delay (reschedule workflows, prepare for extended hours of operation if required) and to ensure readiness to resume operations once the move to the Alternate Site has been completed.
4. Log back on to the Direct Network at the designated time.

LVTS EMERGENCY COMMITTEE GUIDELINES
PROCEDURES FOR BY-PASS MODE OPERATIONS

PROCEDURES FOR MOVING TO SWIFT BY-PASS MODE

The President, in consultation with the Emergency Committee, will make the decision to move to By-pass mode if circumstances warrant. The decision to move to By-pass mode will depend on a variety of factors including the probability of recovery of LVTS during the current Business Day, the estimated time for recovery, the time of the day that LVTS becomes unavailable and the remaining business to be conducted for the LVTS Cycle. There will clearly be an effect on the payments exchanged through the Business Day which will have to be addressed. The decision to move to By-pass will not be made unless the alternative (waiting) has severe business consequences for the Participants and the financial community as a whole.

Once the decision has been taken to move to By-pass mode it will not be possible to return to LVTS during the LVTS Cycle (LVTS cannot resume until the initial LVTS Cycle has been settled (i.e., settlement complete)). The Association will have established an authorized list of people which can ask SWIFT to move the LVTS Message User Group (MUG) to By-pass mode. This authorized list shall be designated by the President. The authentication process with SWIFT will involve the use of a smart card which will verify the request based on matching challenge/response at the site of the CPA requester and at the SWIFT operations centre handling the telephone call from the Association.

Payment Messages which have been approved by LVTS prior to the interruption of LVTS operations are LVTS payments, will have a PCRN assigned to them and are therefore final and irrevocable and subject to the terms of the LVTS By-law with respect to the requirements for dealing with approved payment messages.

In order to move to By-Pass mode, SWIFT must change the service state (LVTS FIN Copy Service must first be closed). Payment messages which are sent while the LVTS FIN Copy Service is closed will be NAKed with 'X09' (Service is Closed) error codes.

Payment Messages which were released prior to SWIFT closing the LVTS service state and were awaiting authorization from LVTS, at the time the decision to move to By-pass mode is made, will be released to the receiving institution automatically by SWIFT. These released payments, will not be LVTS payments, will not have a PCRN attached to them and will be treated as any other payment sent by a Participant during By-pass mode operations.

There will be no certainty of settlement for payments sent through By-pass mode, there will be no finality of payment, there will be no requirement on the receiving institution to process any payment received by it in By-pass mode, and there will be no requirement imposed on the receiver, by any By-law or Rule of the Association, to make the amount of the payment available to the beneficiary.

LVTS EMERGENCY COMMITTEE GUIDELINES
PROCEDURES FOR BY-PASS MODE OPERATIONS

PROCEDURES FOR MOVING TO SWIFT BY-PASS MODE (*continued*)

If a decision is made to move to By-pass, action will have to be taken by the Association and the Participants including the Bank of Canada in its role as Participant and in its role as settlement bank for LVTS and ACSS. **Note that practical realities will dictate that the circumstances of any given emergency situation can never be entirely anticipated in advance and all parties will need to work together in the event of an emergency.**

Responsibilities of the Association

1. The Association will advise SWIFT of its decision to move to By-pass mode. The communications to SWIFT will be via authenticated telephone request from an authorized person from within the Association in accordance with the established SWIFT procedures for moving to By-pass mode. SWIFT will switch the LVTS MUG to By-pass mode operations and back to LVTS operations when requested. In order to move to By-pass mode, SWIFT must change the service state (LVTS FIN Copy Service must first be closed). SWIFT guarantees such switch in operating modes within 45 minutes of the request having been received from the Association. Note: In addition to the 45 minutes necessary for SWIFT to execute the switch in operating mode, approximately 45 minutes is also required to authenticate the Association resulting in a total time of 90 minutes to switch to from FIN Copy to By-pass mode.
2. The Association will assist Participants in performing a reconciliation of the payments processed by LVTS prior to the interruption of LVTS operations, as outlined in Part B. This reconciliation will identify any Payment Messages which have passed the risk control tests within LVTS for which an authorization (MT097) has not been sent to SWIFT because of the interruption in LVTS operations. This will permit the clear identification of which payments, sent by a Participant at the time of the interruption of LVTS operations, have been approved by LVTS.
3. The Association will advise each of the Participants, in accordance with the notice provisions of the LVTS Rules (Rule 5) of the decision to move to By-pass mode and of the expected time for resumption of payment traffic. Additionally, as soon as possible the Association shall advise the Participants of how operations are to be conducted the next Business Day (LVTS or remain in By-pass). **Note: Any decision to resume LVTS operations will not be made until the problems with LVTS have been rectified, and settlement for the previous LVTS Cycle has occurred.**
4. Once a decision has been made to move out of By-pass mode, the Association will communicate that decision to SWIFT operations utilizing the same procedures as were used to activate By-pass mode.

LVTS EMERGENCY COMMITTEE GUIDELINES
PROCEDURES FOR BY-PASS MODE OPERATIONS

PROCEDURES FOR MOVING TO SWIFT BY-PASS MODE (*continued*)

Responsibilities of Participants

1. No Participant is obligated to participate in the exchange of payments while SWIFT has placed the MUG in By-pass mode.
2. Upon receipt of notice from the Association of the intent to move to By-pass mode operations the Participants will:
 - a. hold all payment traffic which would otherwise have been directed through LVTS until notification is received from the Association that By-pass mode is now in effect;
 - b. advise the appropriate personnel within their own organizations and perform the necessary adjustments to their internal operations (CBT internal queuing) to prepare for By-pass mode operations, if required;
 - c. confirm their current multilateral net position and complete settlement of the interrupted LVTS Cycle in accordance with the procedures established for such settlement by the Association, as described in Part B; and
 - d. comply with the procedures set forth for payment exchange and settlement as described in page 9 to page 15 this Part for payments exchanged in By-pass.

Bank of Canada Responsibilities

1. At the time the decision is made by the President in consultation with the Emergency Committee to move to By-pass mode, there could be more than one option available regarding the settlement of the interrupted LVTS Cycle. The option chosen will depend on the situation at the time. These options include:
 - a. **Settle LVTS Normally**

LVTS Settlement could occur normally. No modifications to the normal settlement procedures would be needed. Participants would settle their multilateral net positions as they are at the time By-pass mode is invoked. This settlement could take place immediately or at the normal settlement time at the end of the Business Day.
 - b. **Conduct “By-pass Pre-Settlement”**

By following procedures established with the Bank of Canada to permit Participants to transfer funds amongst themselves, a form of “By-pass Pre-Settlement” could occur. This accommodation by the Bank of Canada could permit a Participant’s LVTS Multilateral Net Position to be brought closer to zero. This option would be particularly attractive where at the time By-pass mode was invoked one or more Participant(s) had a very “negative” LVTS position. Once this Pre-settlement occurred, settlement could then take place in the usual fashion.

Board Approval date: February 23, 2017
Implementation date: April 24, 2017

LVTS Rule 12
Appendix II
Part 5
Page 4

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR BY-PASS MODE OPERATIONS

PROCEDURES FOR MOVING TO SWIFT BY-PASS MODE (*continued*)

c. Delay LVTS Settlement

In some cases it might be more appropriate if LVTS settlement is delayed, until the settlement of the next ACSS cycle (currently 12:00 noon the next day). This would be done to settle the two systems (LVTS and ACSS) in such a way that a large debit position in one system would be largely offset by a large credit position in the other system, with the Participant taking an advance, as needed, for any remaining net debit amount.

LVTS EMERGENCY COMMITTEE GUIDELINES
PROCEDURES FOR BY-PASS MODE OPERATIONS

PROCEDURES FOR RECONCILING POSITIONS WHEN MOVING TO SWIFT BY-PASS MODE

These procedures govern the steps to be taken to ensure the proper reconciliation of payments in the event that an emergency occurs during the “open for processing” cycle state which would cause the Association to instruct SWIFT to place the LVTS MUG in By-pass mode. **The primary goal in the event of any move to By-pass mode is to ensure that before any such move is made that each Participant know the status of each payment sent by it prior to that time. In other words which payments have been processed by LVTS prior to the system failure.**

These procedures list the steps to be taken by the Association and the Participants in all cases where an emergency arises which would necessitate the placing of the LVTS MUG into By-pass mode. The actions to be taken depend on the extent of the system problems and the availability of the system to aid in the payment reconciliation problem.

The following analyses five scenarios that have been identified by the Association:

Scenario A - LVTS is available (but not able to process payments)

1. The Association logs on to LVTS via the Direct Network.
2. The Association requests the Multilateral Summary Report and fax/email a copy to the Bank of Canada. The format of the report is attached as Part 5.1 to these procedures.
3. The Association requests a “CPA FI Transaction Report” for each Participant (by either time or amount depending on Participant reconciliation procedures).
4. The Association requests “Rejected Transaction Report” for each Participant.
5. The Association requests a “CPA FI Position Report” for each Participant.
6. The Association faxes/emails “CPA FI Transaction Report”, the “Rejected Transaction Report” and the “CPA FI Position Report” to the Payment Operations contact for each Participant listed in the LVTS Summary Contact List.
7. The Association requests confirmation from each Participant of the information set out in the “CPA FI Transaction Report”, the “Rejected Transaction Report” and the “CPA FI Position Report”.
8. All confirmations shall be made to the **Association** by fax (613) 233-3385 or email marked: *attention LVTS Help Desk - LVTS Emergency.*
9. Any discrepancies shall be communicated to the Association by fax (613) 233-3385 or email marked: *attention LVTS Help Desk - LVTS Emergency.*

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR BY-PASS MODE OPERATIONS

PROCEDURES FOR RECONCILING POSITIONS WHEN MOVING TO SWIFT BY-PASS MODE (continued)

10. Upon receipt of all confirmation and discrepancy reports the Association shall:
 - a. contact both the sender and the receiver of any payment which is noted on a discrepancy report; and
 - b. take all steps possible in trying to assist the sender and receiver in resolving the discrepancy and to reach agreement on the status of any payment for which a discrepancy has been reported.
11. Once all discrepancies have been resolved the Association shall confirm by fax/email to the Payment Operations contact for each Participant that no payment discrepancies exist. The Participant shall, by return fax/email, indicate its agreement with this statement.
12. Once all discrepancies have been resolved the Association shall confirm by fax/email to the Payment Operations contact for each Participant the Multilateral Net Position of that Participant. The Participant shall, by return fax/email, indicate its agreement with the position stated.

Scenario B - the LVTS application is not available at either data centre, but the Association still has access to the mainframe data files.

1. Each Participant shall fax/email to the Association (613) 233-3385 marked: *attention LVTS Help Desk - LVTS Emergency* a list of payment items for which it has not received an MT 012 or MT 019.
2. The Association shall run the Last Payment Received program if possible to determine the last payment received by LVTS.
3. The Association shall use FILEAID or any other utility available to obtain positions at LVTS, if possible.
4. The Association shall run an Audit Trail and a Log Report by participant (use file to access results).
5. The Association shall use file scan utility to locate unposted payments in reports.
6. The Association requests confirmation from each Participant with the information set out in the Last Payment Received program and the Audit Trail and the Log Report.
7. The Association and the Participants shall follow steps 8 through 12 in Scenario A above.

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR BY-PASS MODE OPERATIONS

PROCEDURES FOR RECONCILING POSITIONS WHEN MOVING TO SWIFT BY-PASS MODE (continued)

Scenario C – If the LVTS application and access to the mainframe data files is not available, but the Association still has access to SWIFT Alliance Access and SWIFT at the primary data centre for the cycle.

1. The Association's analysis will be based on SWIFT Alliance Access message list.
2. Each Participant shall fax/email to the Association (613) 233-3385 marked: *attention LVTS Help Desk – LVTS Emergency* a list of payment items for which it has not received an MT 012 or MT 019.
3. Using the SWIFT Alliance Access message list, the Association shall execute a search by MIR. This request should show the MT 096, MT 097 ACK/NAK received. If LVTS attempted to send an MT 097 positive confirmation, then the payment was processed by LVTS. If LVTS attempted to send an MT 097 rejection, then the payment was not processed by LVTS.
4. The Association shall fax/email to the Payment Operations contact for each Participant, a summary of the information relating to the payments identified by that Participant in #2 above and the status of each payment.
5. The Association requests confirmation from each Participant of its position on the status of each payment identified in #2 above.
6. The Association and the Participants shall follow steps 8 through 12 in Scenario A above.

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR BY-PASS MODE OPERATIONS

PROCEDURES FOR RECONCILING POSITIONS WHEN MOVING TO SWIFT BY-PASS MODE (continued)

Scenario D – If the Association has access to SWIFT Alliance Access and SWIFT only at the alternate data centre.

1. The Association's analysis is limited to research based on SWIFT
2. Each Participant shall fax/email to the Association (613) 233-3385 marked: *attention LVTS Help Desk – LVTS Emergency* a list of payment items for which it has not received an MT 012 or MT 019.
3. The Association shall attempt to retrieve the MT 097's sent by LVTS (MT 020) to see if it can find outgoing confirmation from LVTS (positive or negative) for these payments for which no MT 012 or 019 has been received. The Association will need the sender's MIR once again. If the Association finds a positive confirmation, then the payment was processed by LVTS. If the Association finds a negative confirmation or if the Association does not find any confirmation, then the payment was not processed by LVTS.
4. Upon receipt of all reports required in #2 above the Association shall:
 - a. contact both the sender and the receiver of any payment which is noted; and
 - b. take all steps possible in trying to assist the sender and receiver in resolving the discrepancy and to reach agreement on the status of any payment for which a discrepancy has been reported.
5. Once all discrepancies have been resolved the Association shall confirm by fax/email to the Payment Operations contact for each Participant that no payment discrepancies exist. The Participant shall, by return fax/email, indicate its agreement with this statement.

Scenario E – If the Association has no access to either SWIFT Alliance Access or the application data, then the Association cannot provide research assistance using any part of the system.

1. Each Participant shall fax/email to the Association (613) 233-3385 marked: *attention LVTS Help Desk – LVTS Emergency* a list of payment items for which it has not received an MT 012 or MT 019.
2. Upon receipt of all reports required in #1 above the Association shall:
 - a. contact both the sender and the receiver of any payment which is noted; and
 - b. take all steps possible in trying to assist the sender and receiver in resolving the discrepancy and to reach agreement on the status of any payment for which a discrepancy has been reported.
3. Once all discrepancies have been resolved the Association shall confirm by fax/email to the Payment Operations contact for each Participant that no payment discrepancies exist. The Participant shall, by return fax/email, indicate its agreement with this statement.

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING BY-PASS MODE OPERATIONS

1.0 Definitions

In Part C the following definitions shall apply. Where those definitions conflict with the definitions in LVTS Rule 1, the definitions set forth below should take precedence.

“Accepted Payment Message” means a Payment Message that is (i) sent by one Participant; (ii) received by another Participant; and (iii) not the subject of a timely and effective request and Confirmation of Cancellation, or Confirmation of Non-Acceptance before the Cut-Off Time;

“ACSS” means the Automated Clearing Settlement System owned and operated by the Association through which Members may account for the exchange of payment items amongst themselves;

“Bilateral Net Position” means with respect to each Participant vis-à-vis each other Participant the outstanding balance at any point in time during a By-pass Mode Payments Processing Cycle, expressed as a single sum payable by one Participant to the other, which balance is the net amount for that By-pass Mode Payments Processing Cycle as reflected in the Instruction Messages exchanged between the two Participants for that By-pass Mode Payments Processing Cycle;

“By-pass Mode Payments Processing Cycle or By-pass Mode” means the period of time during which Payment Messages may be exchanged between Participants. It shall be deemed to be from the time when the decision to move to By-pass Mode is made until 18:00 (eastern time) or such other period of time as may be set by the President.

“Cancellation” means an annulment of any Payment Message made on value date. Cancellations are made at the request of the sending Participant. To be effective, the receiving Participant must agree to the Cancellation;

“Confirmation of Cancellation” is an Instruction Message which is sent in accordance with the procedural requirements and time constraints of this Part for confirmations of cancellation. Both the confirmation of cancellation and the original Payment Message to which it refers shall be included in the Participants’ calculation of their Settlement Claims for the By-pass Mode Payments Processing Cycle;

“Confirmation of Non-Acceptance” is an Instruction Message which is sent in accordance with the procedural requirements and time constraints of this Part for confirmation of non-acceptance. Both the confirmation of non-acceptance and the original Payment Message to which it refers shall be included in the Participants’ calculation of their Settlement Claims for that By-pass Mode Payments Processing Cycle;

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING BY-PASS MODE OPERATIONS (*continued*)

“**Cut-Off Time**” is 18:00 hours Eastern Time or such other time as determined by the President after which no Participant shall send an Instruction Message;

“**Instruction Message**” is a message transmitted in a form, media and content authorized by this Part of the following types only: (i) a Payment Message; (ii) the Confirmation of Non-Acceptance; and (iii) the Confirmation of Cancellation of a specific Payment Message;

“**Net Settlement Account**” is an account or similar tracking mechanism established and maintained by a Participant to record the sending and receipt of Instruction Messages with every other Participant, on a bilateral basis (except the Bank of Canada which is on a gross basis);

“**Net Settlement Balance**” means with respect to each Participant’s Net Settlement Account, the outstanding balance expressed as a single sum, payable by one Participant to the other, as of Cut-off Time, in each By-pass Mode Payments Processing Cycle;

“**Non-Acceptance**” means a unilateral act on the part of the receiving Participant annulling a Payment Message;

“**Participant**” means the Bank of Canada and each other Member that has elected to participate in By-pass Mode operations;

“**Payment Message**” means an electronic message, sent from one Participant to another instructing the receiving Participant to pay a fixed amount of money to a receiving customer;

“**Reimbursement Location**” means the location designated by each Participant to which Inter-member Debit are cleared;

“**Settlement Claim(s)**” means the claim a Participant has against another Participant by reason of its execution of or obligation to execute accepted Payment Messages received in a By-pass Mode Payments Processing Cycle;

“**Inter-Member Debit**” means an instrument created by a Participant and addressed to another Participant with its expressed or implied consent for the purpose of receiving a payment from it; and

“**SWIFT**” means the Society for Worldwide Interbank Financial Telecommunication.

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING BY-PASS MODE OPERATIONS (*continued*)

2.0 Introduction

During By-pass Mode operations:

- a. Payment Messages will be sent using SWIFT and will go directly from the sending Participant to the receiving Participant;
- b. Payment Messages will not be copied to LVTS;
- c. payments which are delivered directly to the receiving Participant do not contain a PCRN in field :115: of the SWIFT message header;
- d. the sending Participant will not receive an MT012 or MT019 from SWIFT;
- e. the sending Participant will have to reconcile its position using the procedures outlined in this Part.

3.0 Payment Exchange

- 3.1 Payment Messages shall be sent using the SWIFT payment network. All payments exchanged during any By-pass Mode Payments Processing Cycle shall be exchanged and settled in accordance with the procedures laid out in this Part. Any tranche designation is to be ignored irrespective of whether any tranche designation appears in field :108: of the SWIFT Payment Message header.
- 3.2 The Cut-off Time for payment exchange during any By-pass Mode Payments Processing Cycle shall be 18:00 hours eastern time or such time as determined by the President.

4.0 Cancellation, Non-Acceptance and Return of Payment Messages

- 4.1 Where a receiving Participant does not accept a Payment Message it shall advise the sending Participant. Where the amount of the Payment Message is greater than twenty-five million dollars (\$25,000,000.00), the receiving Participant should notify the sending Participant by telephone that it is not accepting the Payment Message. The receiving Participant shall confirm the non-acceptance of all Payment Messages by sending a Confirmation of Non-Acceptant message by way of a SWIFT MT205, stipulating in field :72: the reason for return including the transaction reference number.
- 4.2 Where the sending Participant wishes to cancel a Payment Message, it shall advise the receiving Participant by telephone by the Cut-Off Time of the cancellation on the value date and send an MT192/292 or 199/299 to confirm the request to cancel. Upon receipt of such a request, the receiving Participant may return the amount of the Payment Message to the sending Participant by sending a Confirmation of Cancellation message by way of a SWIFT MT205, stipulating in field 72 the reason for return including the transaction reference number. The receiving Participant may request from the sending Participant an indemnity in a form acceptable to the receiving Participant to be received via SWIFT. The sending and receiving Participant may agree upon any form of indemnity that is acceptable to them.

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING BY-PASS MODE OPERATIONS (*continued*)

- 4.3 Where a receiving Participant does not accept a Payment Message, agrees to cancel a Payment Message or otherwise elects to return the amount of a Payment Message to the sending Participant, the amount of the original Payment Message shall be returned by way of a new Payment Message using SWIFT MT205 or MT103, stipulating in field :72: the reason for return including the transaction reference number, as soon as practicable after the decision to return the amount of the original Payment Message has been made and in any event, no later than the Cut-Off Time.
- 4.4 If the original Payment Message is received after 16:00 hours and the returning Participant is required or elects to return the amount of the original Payment Message to the original sending Participant, the returning Participant shall use its best efforts to return the amount of the original Payment Message to the original sending Participant prior to the Cut-Off Time failing which the returning Participant shall return the amount of the original Payment Message by Payment Message (MT205) no later than two (2) hours after the commencement of the next Payment Processing Cycle.

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING BY-PASS MODE OPERATIONS (*continued*)

5.0 Settlement Instructions

- 5.1 The tracking of the Bilateral Net Position of each Participant vis-à-vis each other Participant is the responsibility of the individual Participants. It is up to the Participants to control their counterparty risks with all other Participant during any By-pass Mode Payments Processing Cycle.
- 5.2 Daily operating procedures and the calculation and verification of the Net Settlement Balance after the Cut-Off Time for Payment Messages shall be as described in this Part. The points of contact for confirming the Net Settlement Balance can be found in the CPA's LVTS Summary Contact List.
- 5.3 Each Participant shall establish and maintain in accordance with this Part, a Net Settlement Account. The account will be used to determine the Net Settlement Balance, for the period of By-pass Mode Payments Processing Cycle. For greater certainty, the recording of a Payment Message in a Participant's Net Settlement Account shall not create any liability upon the Participant to pay the sum designates in the message, nor prejudice its ability to return any payment by timely action in accordance with this Part.
- 5.4 Each Participant shall calculate a running balance in each of its Net Settlement Accounts during the day, novating the balance as required from time to time by setting against each Payment Message exchanged with another Participant, any related Instruction Message cancelling or returning such Payment Message, so as to facilitate the determination at Cut-off Time, of the number and aggregate amount of the accepted Payment Messages exchanged by the Participants in that By-pass Mode Payments Processing Cycle.
- 5.5 Each Participant shall, after Cut-Off Time for each By-pass Mode Payments Processing Cycle with respect to each other Participant:
 - a. calculate the Net Settlement Balance for each Participant (in the case of the Bank of Canada it shall be an individual Payment Message basis); and
 - b. advise the other Participant, by phone, of its determination of the Net Settlement Balance providing (if requested for the purposes of assisting in a reconciliation of the respective Net Settlement Accounts) such additional information as the other Participant may reasonable require.

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING BY-PASS MODE OPERATIONS (*continued*)

- 5.6 If the Participants' advices given, as described above, do not agree, and the Participants cannot resolve the difference within one-half hour, they shall cooperate to produce a fresh calculation of their respective Settlement Claims and the Net Settlement Balance, omitting from their calculations each Instruction Message on which they disagree for any reason. The rights and liabilities of a Participant under this Part with respect to any Instruction Message omitted from the calculation of the Net Settlement Balance by this section shall be as provided in this Part.
- 5.7 Subject to any adjustment required in order to confirm their respective Net Settlement Accounts, the Net Settlement Balance shall be the only amount owed by either Participant to the other with respect to the separate Settlement Claims calculated by them for that By-pass Mode Payments Processing Cycle. For greater certainty, it is provided in this Part that the Net Settlement Balance as calculated under this Part shall, by the process of novation, discharge and irrevocably take the place of all of the Participant's discrete respective Settlement Claims that (i) were calculated for that By-pass Mode Payments Processing Cycle and (ii) are correctly reflected in the calculation of the Net Settlement Balance.
- 5.8 When the Participants agree on the Net Settlement Balance, the net debtor shall immediately confirm the amount of the Net Settlement Balance in writing by a message sent to the other Participant by SWIFT MT299, an example of which is set out in Part 5.2, or by such other medium or format as may be agreed to in writing by the Participants. The other Participant shall promptly prepare and enter into the ACSS for that day, one or more Inter-Member Debits drawn on the net debtor for an aggregate amount equal to the Net Settlement Balance.
- 5.9 With respect to each Accepted Payment Message exchanged by a Participant with the Bank of Canada, the Receiving Participant, shall after Cut-off Time, promptly prepare and enter into the ACSS for that day, an Inter-Member Debit drawn on the sending Participant in the amount of each Accepted Payment Message.
- 5.10 The Participant will designate one Reimbursement Location at which Inter-Member Debits will be received irrespective of the number of locations capable of receiving Payment Messages. A list of Participant reimbursement locations is attached as Part 5.3.

LVTS EMERGENCY COMMITTEE GUIDELINES

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING BY-PASS MODE OPERATIONS (*continued*)

The Inter-Member Debit, as discussed above, shall be in the format described in Part 5.4 and completed in accordance with this Part. As a result of the technical limitations in data centre equipment, more than one Inter-Member Debit may be required if the amount to be settled exceeds \$90 million CAD. Each Participant shall, if requested, provide to the other Participants a supply of Inter-Member Debits drawn upon itself.

- 5.11 All Payment Messages sent by a Participant shall be for payments made for its own account, as a principal in its own right (whether or not made at the request of, and for the account of a customer of the Participant).

All Payment Messages received by a Participant will be for payments to such Participant as a principal in its own right (whether or not made for purpose of making a payment to a customer of the Participant).

The receiving Participant may set-off Instruction Messages in its Net Settlement Account as contemplated in this Part without regard for the fact that some Instruction Messages received by it may disclose the name of another person as the originator or beneficiary of the payment.

- 5.12 The Participants shall establish and maintain internal records and procedures to implement the provisions of this Part and to facilitate its intended effect of achieving end-of-day netting of the Participants' mutual Settlement Claims arising out of their exchange of Instruction Messages (excluding Instruction Messages exchanged with the Bank of Canada). Any archival or back-up records of Instruction Messages sent to and received from the other Participant that are maintained on a detailed or gross basis, rather than a net basis as contemplated in this Part, shall not be used or introduced by the Participants as evidence for any purpose to hinder or defeat the intended operation and effect of this Part.

Board Approval date: February 23, 2017
Implementation date: April 24, 2017

LVTS Rule 12
Appendix II
Part 5.1

LVTS EMERGENCY COMMITTEE GUIDELINE

MULTILATERAL SUMMARY REPORT

Multilateral Summary Report

0802 Operation successfully completed

Institution Position

ALBERTA TREASURY BRANCHES	0.00
BANK OF CANADA	0.00
LAURENTIAN BANK OF CANADA	0.00
NATIONAL BANK OF CANADA	0.00
BNP PARIBAS (CANADA)	0.00
BANK OF AMERICA (NATIONAL ASSOCIATION)	0.00
BANK OF MONTREAL	0.00
FÉDÉRATION DES CAISSES DESJARDINS DU QUÉBEC	0.00
CANADIAN IMPERIAL BANK OF COMMERCE	0.00
CENTRAL 1 CREDIT UNION	0.00
ICICI BANK CANADA	0.00
HSBC BANK CANADA	0.00
MANULIFE BANK OF CANADA	0.00
THE BANK OF NOVA SCOTIA	0.00
ROYAL BANK OF CANADA	0.00
STATE STREET BANK AND TRUST COMPANY	0.00
THE TORONTO-DOMINION BANK	0.00

=====

----- Report ended successfully - Multilateral Summary Report -----

Board Approval date: February 23, 2017
Implementation date: April 24, 2017

LVTS Rule 12
Appendix II
Part 5.2

LVTS EMERGENCY COMMITTEE GUIDELINE

NET SETTLEMENT BALANCE -SWIFT MT 299

Model of a MT 299 to use between Participants for settlement instructions during the By-pass Mode Payments Processing Cycle, in order to not affect the bilateral limits.

“QUOTE”

BNDCCAMMINT
299
CIBCCATT

:20: TRANSACTION REFERENCE NUMBER: 123456789
:21: RELATED REFERENCE :BY-PASS NET
:79: NARRATIVE:

WE AUTHORIZE YOU TO DEBIT US IN THE CAD CLEARING FOR THE SETTLEMENT OF THE BY-PASS MODE PAYMENTS PROCESSING CYCLE AS INDICATED HEREUNDER;

:20: TRANSACTION REFERENCE NUMBER : : BY-PASS NET
:21: RELATED REFERENCE : : BY-PASS NET
:32A: VALUE DATE, CURRENCY CODE, AMOUNT : 970925CAD25500,
:52A: ORDERING INSTITUTION (BIC) : BNDCCAMMINT
:58A: BENEFICIARY INSTITUTION (BIC) : CIBCCATT

“UNQUOTE”

Board Approval date: February 23, 2017
 Implementation date: April 24, 2017

LVTS Rule 12
 Appendix II
 Part 5.3

LVTS EMERGENCY COMMITTEE GUIDELINE

REIMBURSEMENT LOCATIONS

FINANICAL INSTITUTION	REIMBURSEMENT LOCATION
Alberta Treasury Branches	Edmonton 07519:219-103361124
Bank of America (National Association)	Toronto 00732:004 56792 241
Bank of Canada	Montreal 00000:177
Bank of Montreal	Montreal 00991:001
Bank of Nova Scotia	Toronto 52712:002
BNP Paribas	Montreal 0011:250:9903400022
Fédération des caisses Desjardins du Québec	Montreal 98000:815-000:003:4
Canadian Imperial Bank of Commerce	Toronto 09602:010-03-04042
Central 1 Credit Union	Vancouver 00809
HSBC Bank Canada	Toronto 10930:016
ICICI Bank Canada	Toronto 07172:003 - 1012558
Laurentian Bank of Canada	Montreal 09061:039 499517-901
Manulife Bank of Canada	Toronto 00002:003:1028638
National Bank of Canada	Montreal ICOD 15041:006 Montreal FX-MM 1504-1 097562 286 001 001 01
Royal Bank of Canada	Toronto 00762:003 - 7 - digit account number
State Street Bank and Trust Company	Toronto 00001:327 100-106-4
Toronto-Dominion Bank	Toronto 00732:004

Board Approval date: February 23, 2017
Implementation date: April 24, 2017

LVTS Rule 12
Appendix II
Part 5.4

LVTS EMERGENCY COMMITTEE GUIDELINE

INTER-MEMBER DEBIT

Each Inter-Member Debit shall be MICR pre-encoded to CPA Standard 006, with the branch/institution transit number of the branch on which it is drawn.

Computer Printed Drafts

Where a Participant produces computer-printed Inter-Member Debit, the drafts shall be in the form of the draft as described in this Part. MICR encoding requirements on this draft shall be as specified in CPA Standard 006 and include all fields defined by the Sending Institution, with the institution/branch transit number of the branch and the account, where applicable, on which it is drawn.

Completion of Inter-Member Debit

In settlement of Payment Instructions, the Receiving Institution shall complete two copies of the draft, as described in detail below. Field Numbers refer to equivalent SWIFT Message Fields.

DATE the date on which the Inter-Member Debit enters the clearing process

INTER-MEMBER DEBIT NO. optional preprinted sequential number for reconciliation or clearing tracing purposes

TRANS. REF. "Transaction Reference" shall be the reference requested by the owing Participant

RE. RELATED MSG/TRANS message or transaction reference of the Ordering Institution (field :21:)

ACCOUNT NO. the Receiving Institution is to insert the account number of the owing Institution if the Inter Member debit is not pre encoded (field :25:)

VALUE DATE the date, in the format YYMMDD, that the payment is effective (field :32A:)

AMOUNT expressed in Canadian dollars only (field :32A:)

ORDERING INSTITUTION "Ordering Institution" shall be the owing Participant

BENEFICIARY "Beneficiary" shall be the Participant owed

Board Approval date: February 23, 2017
Implementation date: April 24, 2017

LVTS Rule 12
Appendix II
Part 5.4

LVTS EMERGENCY COMMITTEE GUIDELINE

INTER-MEMBER DEBIT *(continued)*

INSTITUTION TO INSTITUTION INFORMATION "Institution to Institution Information" shall contain the Net Settlement Balance

RECEIVING INSTITUTION the Receiving Institution is to insert its Financial Institution/branch name (field :58:)

AUTHORIZED SIGNATURE authorized signature is at the option of the Receiving Institution

CLEAR TO pre-printed or computer-printed with the name of the Sending Institution.

As a result of the technical limitations in data centre equipment, more than one Inter-Member Debit may be required if the net settlement amount exceeds \$90 million CAD.

Inter-Member Debit Copies - The two copies of the draft may be used as follows:

- i) PART I: To be passed through the clearing system to the Sending Institution.
- ii) PART II: For use as an advice of credit, to the Beneficiary.

LVTS EMERGENCY COMMITTEE GUIDELINE

PROCEDURES FOR CONTINGENCY MODE OPERATIONS (SECURE EMAIL/HAND DELIVERY/FAX)

If SWIFT or LVTS is unavailable prior to commencing the cycle and it is known that it will be an extended outage, the LVTS Emergency Committee may choose to implement Contingency Mode Operations. Should such a decision be made, the preferred method for sending payment instructions is via secure email. If secure email is not available then hand delivery of payment instructions should be considered. Fax may also be considered as a last resort.

LVTS Participant Contact information for where Contingency Payment instructions should be delivered are included in the **LVTS Summary Contact List**, maintained and distributed by the CPA. This list is regularly reviewed and distributed to the Senior Operational Committee, LVTS Working Group and the Cash Management Committee for updates.

Regardless whether payment instructions are delivered via secure email, by hand or, as a last resort, by fax to an agreed upon location, the following conditions will apply:

- Sending Participants must confirm with the receiving Participant's contingency mode contact listed in the LVTS Summary Contact List which method of delivery will be used and provide an approximate number of payments prior to sending any payment instructions;
- Participants will attempt to deliver all payments on a best effort basis, subject in all cases to applicable risk controls, bilateral lines and confirmation from the receiving Participant;
- The receiving Participant has the option of not accepting the payment instruction but must notify the sending Participant as soon as they become aware if not accepting;
- Notification of non-acceptance should be transmitted in the bilaterally agreed upon method;
- Any payment instructions sent via secure email or fax must be acknowledged by return email, phone call or fax otherwise the payment instructions will be considered not delivered;
- Any payment instructions delivered would be netted bilaterally (individual debits for Bank of Canada) and a single inter-member debit would be entered in the ACSS for each participant in accordance with the procedures outlined in Part II; and
- The same hours of operations would be used for the payments processing cycle (0030-1800 ET) but alternate arrangements could be made for bilateral extensions.

LVTS EMERGENCY COMMITTEE GUIDELINE

PROCEDURES FOR CONTINGENCY MODE OPERATIONS (SECURE EMAIL/HAND DELIVERY/FAX) *(continued)*

- Participants shall use SWIFT message formats (MT 103, MT 205 or MT205 COV) when delivering payment instructions by hand or by secure email. Members may use a printout of their SWIFT message application or the CPA's Contingency Mode Payment template available upon request through the CPA to make manual payments to another FI. Any modifications to payment instructions must be initialized. Examples of SWIFT MT 103 or MT 205 message formats can be found below:
- The sending Participant must deliver the payment instructions by hand, secure email or as a last resort, fax to the Contingency Payment contact of the receiving Participant listed in the LVTS Summary Contact List maintained by the CPA;
- The email shall include a summary total of the number of payments and the total value of the payments being sent to that FI;
- All Contingency payment instruction emails shall be sent to the Contingency Payment Contact of the Receiving FI as listed on the LVTS Summary Contact List. Both the sending and receiving FI's LPUG representatives shall be copied on the email; and
- If a payment is received by secure email from a contact not listed in the ***LVTS Summary Contact List***, the email shall be forwarded to the appropriate contact at that FI for confirmation/validation before processing the payment.

LVTS EMERGENCY COMMITTEE GUIDELINE

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING CONTINGENCY MODE OPERATIONS

Note: Where an emergency occurs during the CLS Payment Period, the procedures below may not be applicable. See Appendix III of Rule 12 for the CLS Contingency Guidelines.

1.01 Definitions

In this Part the following definitions shall apply. Where those definitions conflict with the definitions in the LVTS Rules, the definitions set forth below should take precedence.

"Accepted Payment Message" means a Payment Message that is (i) sent by one Participant; (ii) received by another Participant; and (iii) not the subject of a timely and effective request and Confirmation of Cancellation, or Confirmation of Non-Acceptance before the Cut-off Time;

"ACSS" means the Automated Clearing Settlement System owned and operated by the Association through which Members may account for the exchange of payment items amongst themselves;

"Bilateral Net Position" means with respect to each Participant vis-à-vis each other Participant, the outstanding balance at any point in time during a Contingency Mode Payments Processing Cycle, expressed as a single sum payable by one Participant to the other, which balance is the net amount for that Contingency Mode Payments Processing Cycle as reflected in the Instruction Messages exchanged between the two Participants for that Contingency Mode Payments Processing Cycle;

"Cancellation" means an annulment of any Payment Message made on value date. Cancellations are made at the request of the sending Participant. To be effective, the receiving Participant must agree to the Cancellation;

"Confirmation of Cancellation" is an Instruction Message which is sent in accordance with the procedural requirements and time constraints of this Part for confirmations of cancellation. Both the confirmation of cancellation and the original Payment Message to which it refers shall be included in the Participants' calculation of their Settlement Claims for that Contingency Mode Payments Processing Cycle;

"Confirmation of Non-Acceptance" is an Instruction Message which is sent in accordance with the procedural requirements and time constraints of this Part for confirmations of non-acceptance. Both the confirmation of non-acceptance and the original Payment Message to which it refers shall be included in the Participants' calculation of their Settlement Claims for that Contingency Mode Payments Processing Cycle;

"Contingency Mode Payments Processing Cycle or Contingency Mode Operations" means the period of time during which Payment Messages may be exchanged between Participants. It shall be deemed to be from the time when the decision to implement Contingency Mode Operations is made until 18:00 (Eastern Time) or such other period of time as may be set by the President, in consultation with the LVTS Emergency Committee;

LVTS EMERGENCY COMMITTEE GUIDELINE

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING CONTINGENCY MODE OPERATIONS (*continued*)

"**Cut-off Time**" is 18:00 hours Eastern Time or such other time as determined by the President, unless alternate bilateral arrangements are made by Participants;

"**Instruction Message**" is a message transmitted in a form, media and content authorized by this Part of the following types only: (i) a Payment Message; (ii) the Confirmation of Non-Acceptance; and (iii) the Confirmation of Cancellation of a specific Payment Message;

"**Inter-Member Debit**" means an instrument created by a Participant and addressed to another Participant with its expressed or implied consent for the purpose of receiving a payment from it.

"**Net Settlement Account**" is an account or similar tracking mechanism established and maintained by a Participant to record the sending and receipt of Instruction Messages with every other Participant, on a bilateral basis (except the Bank of Canada which is on a gross basis);

"**Net Settlement Balance**" means with respect to each Participant's Net Settlement Account, the outstanding balance expressed as a single sum, payable by one Participant to the other, as of Cut-off Time, in each Contingency Mode Payments Processing Cycle;

"**Non-Acceptance**" means a unilateral act on the part of the receiving Participant annulling a Payment Message;

"**Participant**" means the Bank of Canada and each other Member that has elected to participate in Contingency Mode Operations;

"**Payment Message**" means an electronic message or hand delivered instruction, sent from one Participant to another instructing the receiving Participant to pay a fixed amount of money to a receiving customer;

"**Reimbursement Location**" means the location designated by each Participant to which Inter-Member Debits are cleared; and

"**Settlement Claim(s)**" means the claim a Participant has against another Participant by reason of its execution of or obligation to execute accepted Payment Messages received in a Contingency Mode Payments Processing Cycle.

LVTS EMERGENCY COMMITTEE GUIDELINE

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING CONTINGENCY MODE OPERATIONS (*continued*)

2.0 Introduction

During Contingency Mode Operations:

- a. Payment Messages will be delivered by secure email, by hand, or as a last resort, by fax to an agreed upon location and will go directly from the sending Participant to the receiving Participant;
- b. Payment Messages will not be final and will be revocable;
- c. the sending Participant will have to reconcile its position using the procedures outlined in this Part.

3.0 Payment Exchange

- 3.1 Payment Messages shall be sent to the appropriate contacts at the Receiving Participant. LVTS Participant Contact information for where Contingency payment instructions should be delivered is listed in the **LVTS Summary Contact List**, maintained and distributed by the CPA. This list is regularly reviewed and distributed to the Senior Operational Committee, LVTS Working Group and the Cash Management Committee. Physical addresses for hand delivery shall be bilaterally agreed upon. All payments exchanged during any Contingency Mode Payments Processing Cycle shall be exchanged and settled in accordance with the procedures outlined in this Part.
- 3.2 The Cut-off Time for payment exchange during any Contingency Mode Payments Processing Cycle shall be 18:00 hours Eastern Time or such time as determined by the President.

4.0 Cancellation, Non-Acceptance and Return of Payment Messages

- 4.1 Where a receiving Participant does not accept a Payment Message it shall advise the sending Participant. Where the amount of the Payment Message is greater than twenty-five million dollars (\$25,000,000.00), the receiving Participant should notify the sending Participant by telephone that it is not accepting the Payment Message. The receiving Participant shall confirm the non-acceptance of all Payment Messages by sending a Confirmation of Non-Acceptance message using the same format of the original Payment Message.

LVTS EMERGENCY COMMITTEE GUIDELINE

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING CONTINGENCY MODE OPERATIONS (*continued*)

- 4.2 Where the sending Participant wishes to cancel a Payment Message, it shall advise the receiving Participant by telephone by the Cut-Off Time of the cancellation on the value date and send a confirmation request to cancel. Upon receipt of such a request, the receiving Participant may return the amount of the Payment Message to the sending Participant by sending a Confirmation of Cancellation message stipulating the reason for return including the transaction reference number. The receiving Participant may request from the sending Participant an indemnity in a form acceptable to the receiving Participant. The sending Participant and receiving Participant may agree upon any form of indemnity that is acceptable to them.
- 4.3 Where a receiving Participant does not accept a Payment Message, agrees to cancel a Payment Message or otherwise elects to return the amount of a Payment Message to the sending Participant, the amount of the original Payment Message shall be returned by way of a new Payment Message. The receiving Participant should send a response by the same delivery mechanism it received the original message stipulating the reason for return including the transaction reference number, as soon as practicable after the decision to return the amount of the original Payment Message has been made and in any event, no later than the Cut-Off Time.
- 4.4 If the original Payment Message is received after 16:00 hours and the returning Participant is required or elects to return the amount of the original Payment Message to the original sending Participant, the returning Participant shall use its best efforts to return the amount of the original Payment Message to the original sending Participant prior to the Cut-Off Time failing which the returning Participant shall return the amount of the original Payment Message in the same way that it received the original Payment Message no later than two (2) hours after the commencement of the next Payment Processing Cycle.

LVTS EMERGENCY COMMITTEE GUIDELINE

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING CONTINGENCY MODE OPERATIONS (*continued*)

5.0 Settlement Instructions

- 5.1 The tracking of the Bilateral Net Position of each Participant vis-à-vis each other Participant is the responsibility of the individual Participants. It is up to the Participants to control their counterparty risks with all other Participants during any Contingency Mode Payments Processing Cycle.
- 5.2 Daily operating procedures and the calculation and verification of the Net Settlement Balance after the Cut-Off Time for Payment Messages shall be as described in this Part. The points of contact for confirming the Net Settlement Balance are published in the CPA's LVTS Summary Contact List.
- 5.3 Each Participant shall establish and maintain in accordance with this Part, a Net Settlement Account. The account will be used to determine the Net Settlement Balance, for the period of Contingency Mode Payments Processing Cycle. For greater certainty, the recording of a Payment Message in a Participant's Net Settlement Account shall not create any liability upon the Participant to pay the sum designated in the message, nor prejudice its ability to return any payment by timely action in accordance with this Part.
- 5.4 Each Participant shall calculate a running balance in each of its Net Settlement Accounts during the day, novating the balance as required from time to time by setting against each Payment Message exchanged with another Participant, any related Instruction Message cancelling or returning such Payment Message, so as to facilitate the determination at Cut-off Time, of the number and aggregate amounts of the accepted Payment Messages exchanged by the Participants in that Contingency Mode Payments Processing Cycle.
- 5.5 Each Participant shall, after Cut-off Time for each Contingency Mode Payments Processing Cycle with respect to each other Participant:
- a. calculate the Net Settlement Balance for each Participant (in the case of the Bank of Canada it shall be an individual Payment Message basis); and
 - b. advise the other Participant, by phone, of its determination of the Net Settlement Balance providing (if requested for the purposes of assisting in a reconciliation of the respective Net Settlement Accounts) such additional information as the other Participant may reasonably require.
- 5.6 If the Participants' advices given, as described above, do not agree, and the Participants cannot resolve the difference within one-half hour, they shall cooperate to produce a fresh calculation of their respective Settlement Claims and the Net Settlement Balance, omitting from their calculations each Instruction Message on which they disagree for any reason. The rights and liabilities of a Participant under this Part with respect to any Instruction Message omitted from the calculation of the Net Settlement Balance by this section shall be as provided in this Part.

LVTS EMERGENCY COMMITTEE GUIDELINE

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING CONTINGENCY MODE OPERATIONS (*continued*)

- 5.7 Subject to any adjustment required in order to confirm their respective Net Settlement Accounts, the Net Settlement Balance shall be the only amount owed by either Participant to the other with respect to the separate Settlement Claims calculated by them for that Contingency Mode Payments Processing Cycle. For greater certainty, it is provided in this Part that the Net Settlement Balance as calculated under this Part shall, by the process of novation, discharge and irrevocably take the place of all of the Participant's discrete respective Settlement Claims that (i) were calculated for that Contingency Mode Payments Processing Cycle and (ii) are correctly reflected in the calculation of the Net Settlement Balance.
- 5.8 When the Participants agree on the Net Settlement Balance, the net debtor shall immediately confirm the amount of the Net Settlement Balance in writing by a message sent to the other Participant using secure email, Fax, or by such other medium or format as may be agreed to in writing by the Participants. The other Participant shall promptly prepare and enter into the ACSS for that day, one or more Inter-Member Debits drawn on the net debtor for an aggregate amount equal to the Net Settlement Balance.
- 5.9 With respect to each Accepted Payment Message exchanged by a Participant with the Bank of Canada, the Receiving Participant, shall after Cut-off Time, promptly prepare and enter into the ACSS for that day, an Inter-Member Debit drawn on the sending Participant in the amount of each Accepted Payment Message.
- 5.10 The Participant will designate one Reimbursement Location at which Inter-Member Debits will be received irrespective of the number of locations capable of receiving Payment Messages. A list of Participant reimbursement locations is attached as Part 5.3.

The Inter-Member Debit, as discussed above, shall be in the format described in Part 5.4 and completed in accordance with this Part. As a result of the technical limitations in data centre equipment, more than one Inter-Member Debit may be required if the amount to be settled exceeds \$90 million CAD. Each Participant shall, if requested, provide to the other Participants a supply of Inter-Member Debits drawn upon itself.

- 5.11 All Payment Messages sent by a Participant shall be for payments made for its own account, as a principal in its own right (whether or not made at the request of, and for the account of a customer of the Participant).

All Payment Messages received by a Participant will be for payments to such Participant as a principal in its own right (whether or not made for purpose of making a payment to a customer of the Participant).

The receiving Participant may set-off Instruction Messages in its Net Settlement Account as contemplated in this Part without regard for the fact that some Instruction Messages received by it may disclose the name of another person as the originator or beneficiary of the payment.

Board Approval date: February 23, 2017
Implementation date: April 24, 2017

LVTS Rule 12
Appendix II
Part 6
Page 9

LVTS EMERGENCY COMMITTEE GUIDELINE

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING CONTINGENCY MODE OPERATIONS (*continued*)

- 5.12 The Participants shall establish and maintain internal records and procedures to implement the provisions of this Part and to facilitate its intended effect of achieving end-of-day netting of the Participants' mutual Settlement Claims arising out of their exchange of Instruction Messages (excluding Instruction Messages exchanged with the Bank of Canada). Any archival or back-up records of Instruction Messages sent to and received from the other Participant that are maintained on a detailed or gross basis, rather than a net basis as contemplated in this Part, shall not be used or introduced by the Participants as evidence for any purpose to hinder or defeat the intended operation and effect of this Part.

LVTS EMERGENCY COMMITTEE GUIDELINE
PROCEDURES FOR EXECUTING PAYMENTS USING THE DIRECT NETWORK

If there are technical difficulties experienced with either SWIFT (system-wide or for a single Participant), FIN Copy, or a Participant's internal system, a Participant may choose to send payments using the Direct Network to alleviate any trapped liquidity in the system or to execute critical time sensitive payments (e.g. CLS pay-ins, funding for ACSS settlement, and CDSX settlement). This section outlines the process to be followed for exchanging Payment Messages using the Direct Network.

The Sending Participant shall not send any payments using the Direct Network to a Receiving Participant without first receiving the agreement (oral or written – including email or fax) of the Receiving Participant. It is the responsibility of the Sending Participant to obtain the agreement of the Receiving Participant prior to sending a payment using the Direct Network and the onus of proving the existence of such agreement rests with the Sending Participant. The preferred method for obtaining the agreement is over a recorded line.

In order to send payments using the Direct Network, the LVTS Participant security officer must define those users that will have access to the 'Create Payment' command. The Participant security officer will also be responsible for assigning distribution privileges for those users that will be eligible to receive the notification message for a Payment Message that was sent and/or received over the Direct Network. This will be done through the access control list (ACL)/message distribution list. It is mandatory for Participants to use the dual authorization feature in order to send Payment Messages using the Direct Network. This will ensure that the appropriate operational controls and procedures are in place.

Only financial institution transfers equivalent in purpose to a SWIFT MT 205 can be sent using the Direct Network utilizing tranche 1 or tranche 2. If a Sending Participant wishes to send multiple payments to the same Receiving Participant, it may send one consolidated Payment Message, but details specific to each underlying payment will need to be provided separately by other acceptable means. Once the Participant resumes normal processing and has re-established SWIFT connections, the Participant may transmit an MT299 containing the details of the original Payment Message to the Receiving Participant.

Payment Messages sent using the Direct Network will be subject to the applicable risk test(s). If the payment passes the applicable risk control test(s), a response will be generated and sent to the Sending Participant. An unsolicited message will also be sent to the Receiving Participant. The position and bilateral limits for both the Sending and Receiving Participants will be updated accordingly and reflected in LVTS. If the payment fails the applicable risk control test(s), a rejection message will be generated and provided to the Sending Participant. The intended Receiving Participant will not receive a notification message.

If the Payment Message fails to pass the applicable risk control test(s) but meets the criteria for the jumbo minimum payment threshold, it will be queued and retried using the Jumbo queue parameters that are in place.

The payment will be effected in accordance with existing LVTS security and encryption protocol.

Participants will be required to manually reconcile Payment Messages sent or received using the Direct Network against their back office systems.

**CLS CONTINGENCY
GUIDELINES**

Revised: Upon CLS becoming operational (September 9, 2002), October 6, 2003, November 24, 2003, September 20, 2004, upon implementation of LVTS v5.0 (December 12, 2005), upon implementation of HABS (October 27, 2008), January 26, 2009, February 1, 2010, April 8, 2013, April 18, 2016 and April 24, 2017.

CLS CONTINGENCY GUIDELINES

TABLE OF CONTENTS

Part 1	
PREFACE	1
DEFINITIONS	3
CONTINGENCY TESTING REQUIREMENTS	4
CLS GUIDELINES QUICK REFERENCE CHART	5
SYSTEM-WIDE EMERGENCIES	6
LVTS IS UNAVAILABLE - ANY TIME DURING CLS PAYMENT PERIOD	6
SWIFT NETWORK IS AVAILABLE - FIN COPY UNAVAILABLE	8
SWIFT NETWORK IS UNAVAILABLE IN CANADA	10
SINGLE PARTICIPANT ISSUES	12
SINGLE PARTICIPANT HAS TECHNICAL PROBLEMS - SWIFT AVAILABLE	12
SINGLE PARTICIPANT HAS TECHNICAL PROBLEMS - SWIFT UNAVAILABLE	15
Part 2	
PROCEDURES FOR CLS CONTINGENCY MODE OPERATIONS	1
PROCEDURES FOR MOVING TO CLS CONTINGENCY MODE	1
Responsibilities of the Association	1
Responsibilities of Participants	2
Bank of Canada Responsibilities	3
PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF PAYMENTS PROCESSED DURING CLS CONTINGENCY MODE OPERATIONS	4
Introduction	4
Exchange of CLSB Contingency Payment Messages.....	4
Part 3	
EXAMPLE OF MT202 PAYMENT MESSAGE	1

CLS CONTINGENCY GUIDELINES

PREFACE

The LVTS CLS Contingency Guidelines are intended as a resource document for Participants and the CPA in the event that an emergency situation in connection with the operation of the LVTS arises during the CLS Payment Periods. The guidelines only address situations that may arise between approximately 00:00 hours and 08:00 hours and 12:00 and 15:15 hours that are not already addressed by the LVTS Emergency Committee Guidelines. The guidelines are not binding, as any emergency situation will have to be evaluated given the specific facts in existence at that time. However, the guidelines do recommend potential courses of action to emergency situations that arise during the CLS Payment Period. **To the extent possible given the circumstances, priority consideration should be given to waiting for the normal recovery of the affected payment system component to occur.** Under certain circumstances, there may be a requirement to invoke CLS Contingency Mode Operations within one hour (including the time for analysis of the problem) of the emergency situation arising.

In the case of an emergency situation arising during the CLS Payment Periods, the decisions taken vis-à-vis the LVTS relating to the processing of CLS-related payments and the system as a whole will be taken by the Bank of Canada, in consultation with the CPA and CLS Bank.

If the Association is aware that the LVTS Direct Network or SWIFT network will be unavailable for an extended period of time (e.g., 24 hours), an LVTS Emergency Committee meeting will be convened. Otherwise, if an emergency situation arises during the CLS Main Session Payment Period, the Bank of Canada, in consultation with the CPA and CLS will make a decision based on the available information and the Association will notify the LVTS Emergency Committee before 09:00 hours.

Several factors will have to be considered prior to invoking CLS Contingency Mode Operations arrangements. As well as the specific LVTS considerations, external considerations such as the specific day and the time an emergency situation arises will have to be considered. It must be recognized that CLSB Contingency Payment Messages are time critical and require finality, and therefore moving to the back-up site or moving to SWIFT By-pass mode may not be considered viable options for an emergency that takes place during the CLS Payment Periods.

Once the Bank of Canada has made the decision to move to CLS Contingency Mode Operations, only CLSB Contingency Payment Messages will be permitted. There are only two viable options for an emergency situation that occurs during the CLS Payment Period, regardless of whether the emergency is system-wide or impacts only a single Participant.

The preferred option is to use MT 202 payment messages to instruct the Bank of Canada to make entries on the settlement accounts of the Bank (i.e., debit the Participant's account, and credit the CLSB account). In order to accomplish this, Participants may be required to extract/convert MT 205 payment messages from their internal payment systems to produce MT 202 payment messages. There will be additional time required to convert these payment messages but once formatted into an MT 202, the payment will be sent via SWIFT in normal fashion. Once invoked, this contingency option shall require that any CLSB Contingency Payment Messages to/from the Bank of Canada be made using the MT 202 payment message type. Should the SWIFT network be unavailable to all Participants then authorized facsimile, instructing the Bank of Canada to make settlement account entries, shall be used.

CLS CONTINGENCY GUIDELINES

PREFACE (cont'd)

In the case of a proprietary Participant emergency, the Bank of Canada shall determine the method of CLS Contingency Mode Operations to be invoked, in consultation with the affected Participant. However, if the affected Participant has access to the SWIFT network, it would most likely be used to send LVTS payments (i.e., MT 205 or MT 202). If the Participant does not have access to the SWIFT network, it is likely that authorized facsimile or secure email, instructing the Bank of Canada to make settlement account entries, would be used.

Once CLS Contingency Mode Operations have been invoked, CLSB Contingency Payment Messages will continue to be made using the chosen method (MT 202 or authorized facsimile) until the CLS Payment Period has been completed, regardless of whether the problem is resolved. By doing so, Participants will reduce the chance of issues arising with reconciliation and the management of collateral. *However, if CLS Contingency Mode Operations have been invoked for a proprietary emergency, only the affected Participant will be required to continue using the chosen method. In addition, should a system wide emergency be resolved prior to the end of the CLS Payment Period, all other LVTS Payment Messages could commence/resume.*

Once the Bank of Canada makes a settlement account entry, it will be deemed final and irrevocable. The Bank of Canada will only make a debit entry if the Participant has sufficient funds available in its account with the Bank of Canada, or if sufficient funds are not available, if the Bank of Canada is willing to provide an intra-day liquidity advance to the Participant. Alternatively, if the affected Participant still has access to the Direct Network, funding to the Bank of Canada may be provided by sending a payment using the Direct Network.

In any emergency situation which might arise (system-wide or proprietary), notification of the incident would always be given by the Association to all Participants. See Part 2 of the Appendix for an explanation of the procedures for CLS Contingency Mode Operations.

CLS CONTINGENCY GUIDELINES

1 DEFINITIONS

In this Appendix the following definitions shall apply. Where those definitions conflict with the definitions in LVTS Rule 1, the definitions set forth below should take precedence.

"CLS Contingency Mode Operations" means the period of time during which CLSB Contingency Payment Messages may be exchanged only between a Participant and the Bank of Canada. It shall be deemed to be from the time when the decision to implement CLS Contingency Mode Operations is made until such period of time as may be set Bank of Canada, in consultation with the CPA and CLS;

"CLSB Contingency Payment Message" means a payment message between a Participant and the Bank of Canada, in the format set out in this Appendix, to effect a payment to/from CLSB during a contingency situation; and,

"CLS Main Session Payment Period" means the LVTS hours of operation during which CLS-related payments are made for the main session settlement, normally between 00:30 hours and 08:00 hours.

"CLS Same Day Session Payment Period" mean the LVTS hours of operation during which CLS-related payments are made for the same day settlement, normally between 12:00 hours and 15:15 hours.

CLS CONTINGENCY GUIDELINES

2 CONTINGENCY TESTING REQUIREMENTS

All CLS contingency testing shall be conducted, in accordance with test scripts provided by the Bank of Canada.

2.1 PROPRIETARY OUTAGE TESTING

Any Participant that is preparing to become active in CLS is required to conduct contingency testing of their proprietary CLS operations prior to exchanging CLS-related payments. This testing shall be coordinated through a bilateral arrangement between the Participant and the Bank of Canada and should simulate the use of the CLS Contingency Mode Operations Procedures outlined in LVTS Rule 12, Part 2.

2.2 SYSTEM-WIDE TESTING

System-wide CLS contingency testing shall be conducted according to the following:

- 2.2.1 SWIFT Outage testing will be conducted periodically as established by CLS on a date agreed to by the Bank of Canada and the Participants involved in CLS-related payment processing;
- 2.2.2 LVTS Outage testing will be conducted periodically as established by CLS on a date agreed to by the Bank of Canada, the Association, and the Participants involved in CLS-related payment processing; and
- 2.2.3 SWIFT Same Day Settlement (SDS) Outage testing will be conducted periodically as established by CLS on a date agreed to by the Bank of Canada and the Participants involved in CLS-related payment processing.

CLS CONTINGENCY GUIDELINES

CLS GUIDELINES QUICK REFERENCE CHART

PROBLEM	CYCLE STATE	OPTIONS	
SYSTEM-WIDE EMERGENCIES			
LVTS is unavailable – any time during CLS payment periods	OPP	Preferred	Wait for LVTS to come back up.
		Alternative	Invoke MT202 Contingency
SWIFT Network is available – FIN Copy unavailable	OPP	Preferred	Wait for FIN Copy to come back up.
		Alternative	Invoke MT202 contingency.
SWIFT Network is unavailable in Canada	OPP	Preferred	Wait for SWIFT to come back up.
		Alternative 1	Implement contingency (authorized facsimile or secure email).
		Alternative 2	<u>Execute payments using the Direct Network</u>
SINGLE PARTICIPANT ISSUES			
Single Participant has technical problems – Access to SWIFT available	OPP	Preferred	Continue to send MT205 payment messages.
		Alternative	Invoke MT202 contingency.
		Alternative 2	Implement contingency (authorized facsimile or secure email).
		Alternative 3	Execute payments using the Direct Network
Single Participant has technical problems – Access to SWIFT not available	OPP	Preferred	Wait for SWIFT to come back up.
		Alternative 1	Implement contingency (authorized facsimile or secure email).
		Alternative 2	Execute payments using the Direct Network

CLS CONTINGENCY GUIDELINES

3 SYSTEM-WIDE EMERGENCIES

3.1 LVTS IS UNAVAILABLE-ANY TIME DURING CLS PAYMENT PERIOD

Options:

1. Wait for LVTS to come back up.
2. Invoke MT 202 Contingency.

Preferred Option: Wait for LVTS to come back up.

Advantages: No system or procedural changes are involved for the Participants or the Bank of Canada.

Able to process on one system when it becomes available.

Less disruptive to wait for the Central System at the Central Site to come back up than to invoke CLS Contingency Mode Operations.

Disadvantage: Down time may be longer than estimated and may ultimately be required to move to CLS Contingency Mode Operations.

Alternate Option: Invoke MT202 contingency.

CLSB Contingency Payment Messages should be executed using SWIFT MT 202* directly with the Bank of Canada. The procedures for payment exchange and settlement are set out in Part B of this Appendix.

Contingency Payment Messages exchanged during CLS Contingency Mode Operations will be settled directly on the books of the Bank of Canada. The Participants must create SWIFT MT 202 payment messages for transmission to the Bank of Canada.

* See Part 3 of this Appendix for an example of the MT202.

Advantages: CLSB Contingency Payment Messages could start to be exchanged and settled almost immediately, subject to account funds availability.

Once the Bank of Canada makes an entry, it will be final and irrevocable.

CLS CONTINGENCY GUIDELINES

Disadvantages: Requirement to go to alternate settlement procedures. Participants will be required to extract MT 205 payment messages from internal payment systems and convert them to MT 202s.

There may be issues with reconciliation on internal systems between those payments settled in LVTS and those account entries made by the Bank of Canada.

Participants will have to arrange for settlement account funding through proprietary means. An advance from the Bank of Canada may be required.

These payments will not be LVTS payments and the LVTS By-law and LVTS Rules will not apply.

CLS CONTINGENCY GUIDELINES

3.2 SWIFT NETWORK IS AVAILABLE - FIN COPY UNAVAILABLE

Options:

1. Wait for FIN Copy to come back up.
2. Invoke MT 202 Contingency

Preferred Option: Wait for FIN Copy to come back up.

Advantages: No system or procedural changes are involved for the Participants or for the Bank of Canada.

Able to process on one system when it becomes available.

Less disruptive to wait for FIN copy to come back up than to invoke CLS Contingency Mode Operations.

Disadvantage: Down time may be longer than estimated and may ultimately be required to move to CLS Contingency Mode Operations.

Alternate Option: Invoke MT202 contingency.

CLSB Contingency Payment Messages should be executed using SWIFT MT 202 directly with the Bank of Canada. The procedures for payment exchange and settlement are set out in Part B of this Appendix.

Contingency Payment Messages exchanged during CLS Contingency Mode Operations will be settled directly on the books of the Bank of Canada. The Participants must create SWIFT MT 202 payment messages for transmission to the Bank of Canada.

The Participant must have funds available in its account in order for the Bank of Canada to act on the MT 202 instruction. This may be accomplished by either sending a Payment Message to the Bank of Canada using the Direct Network or requesting an intra-day advance.

Advantages: CLSB Contingency Payment Messages could start to be exchanged and settled almost immediately, subject to account funds availability.

Once the Bank of Canada makes an entry, it will be final and irrevocable.

CLS CONTINGENCY GUIDELINES

Disadvantages: Requirement to go to alternate settlement procedures. Participants will be required to extract MT 205 payment messages from internal payment systems and convert them to MT 202s.

There may be issues with reconciliation on internal systems between those payments settled in LVTS and those account entries made by the Bank of Canada.

Participants may have to arrange for settlement account funding through proprietary means. An advance from the Bank of Canada may be required if the settlement account is not funded by a Payment Message using the Direct Network.

CLS CONTINGENCY GUIDELINES

3.3 SWIFT NETWORK IS UNAVAILABLE IN CANADA

Options:

1. Wait for SWIFT to come back up.
2. Implement contingency (authorized facsimile or secure email).
3. Execute payments using the Direct Network

Preferred Option: Wait for SWIFT to come back up.

Advantages: No system or procedural changes are involved for the Participants or for the Bank of Canada.

Able to process on one system when it becomes available.

Less disruptive to wait for SWIFT to come back up than to invoke CLS Contingency Mode Operations.

Disadvantage: Down time may be longer than estimated and may ultimately be required to move to CLS Contingency Mode Operations.

Alternate Option: Implement contingency (authorized facsimile or secure email).

Advantages: Participants will be able to send CLSB Contingency Payment Messages should there be an extended SWIFT outage.

CLSB Contingency Payment Messages would be settled directly on the books of the Bank of Canada, subject to funds availability.

The Participant must have funds available in its account in order for the Bank of Canada to act on the authorized facsimile or secure email instruction. This may be accomplished by either sending a Payment Message to the Bank of Canada using the Direct Network or requesting an intra-day advance.

Once the Bank of Canada makes an entry, it will be deemed final and irrevocable.

Disadvantages: Procedural changes are required by both Participants and the Bank of Canada.

CLS CONTINGENCY GUIDELINES

Alternative Option 2: Execute payments using the Direct Network

Participants would send payments (financial institution transfers equivalent in purpose to a SWIFT MT 205 only) using the Direct Network to meet time-sensitive obligations or to alleviate liquidity that may be trapped in the system.

When the format and content of a Payment Message sent over the Direct Network does not contain sufficient information to enable the Receiving Participant to process the payment to the correct account, the Sending Participant must provide the required information by other means (e.g. fax/secure email).

Advantages:

Payments for settlement purposes (e.g. CLSS and CDSX) can still be accomplished with finality and irrevocability, minimizing collateral requirements.

All payments sent using the Direct Network are subjected to the applicable risk control test(s).

All payment exchange history is captured by the system.

LVTS Bylaw and Rules will be in effect.

Disadvantages:

Participants will be required to reconcile payments manually.

There will be procedural changes at the Participant level.

CLS CONTINGENCY GUIDELINES

4 SINGLE PARTICIPANT ISSUES*

The decision as to which CLS Contingency Mode Operations option will be invoked for a proprietary Participant problem rests with the Bank of Canada, in consultation with the affected Participant. In making a decision, the possible options/alternatives shall be considered in consultation with the affected Participant. Consultation with CLS Bank may also be considered.

4.1 SINGLE PARTICIPANT HAS TECHNICAL PROBLEMS - ACCESS TO SWIFT AVAILABLE

This emergency condition is the responsibility of the Participant. See LVTS Rule 12, Emergency Conditions, Sections 7 through 13.

Options:

1. Continue to send MT205 payment messages.
2. Invoke MT202 contingency
3. Implement contingency (authorized facsimile or secure email).
4. Execute payments using the Direct Network

Preferred Option: Continue to send MT205 payment messages.

Advantages:

- CLS-related payments will continue to flow in the normal manner.
- No system or procedural changes are involved for the Participant of the Bank of Canada.
- Able to process on one system when the Participant problem is resolved.
- Less disruptive to wait for Participant problem to be resolved than to invoke CLS Contingency Mode Operations.

Disadvantages:

- Participant may not be able to quickly determine its collateral standing.
- CLS-related payments may need to be reconciled by the Participant once the problem is resolved.

CLS CONTINGENCY GUIDELINES

Alternate Option: Invoke MT202 contingency.

CLSB Contingency Payment Messages should be executed using SWIFT MT 202 directly with the Bank of Canada. The procedures for payment exchange and settlement are set out in Part B of this Appendix.

Contingency Payment Messages exchanged during CLS Contingency Mode Operations will be settled directly on the books of the Bank of Canada. The Participants must create SWIFT MT 202 payment messages for transmission to the Bank of Canada.

* Note: In the event of a Bank of Canada proprietary LVTS problem, contingency procedures would be determined by the Bank of Canada, in consultation with the CPA and all Participants.

Advantages: CLSB Contingency Payment Messages could start to be exchanged and settled almost immediately, subject to account funds availability.

Once the Bank of Canada makes an entry, it will be final and irrevocable.

Disadvantages: Requirements to go to alternate settlement procedures. Participants will be required to extract MT 205 payment messages from internal payment systems and convert them to MT 202s.

There may be issues with reconciliation on internal systems between those payments settled in LVTS and those account entries made by the Bank of Canada.

Participants will have to arrange for settlement account funding through proprietary means. An advance from the Bank of Canada may be required.

These payments will not be LVTS payments and the LVTS By-law and LVTS Rules will not apply.

CLS CONTINGENCY GUIDELINES

Alternate Option 2: Implement contingency (authorized facsimile or secure email).

Advantages: Participants will be able to send CLSB Contingency Payment Messages should there be an extended proprietary SWIFT outage.

CLSB Contingency Payment Messages would be settled directly on the books of the Bank of Canada, subject to funds availability.

Once the Bank of Canada makes an entry, it will be deemed final and irrevocable.

Disadvantages: Procedural changes are required by both Participants and the Bank of Canada.

These payments will not be LVTS payments and the LVTS By-law and LVTS Rules will not apply.

Participants will have to arrange for settlement account funding through proprietary means. An advance from the Bank of Canada may be required.

Alternative Option 3: Execute payments using the Direct Network

Participants would send payments (financial institution transfers equivalent in purpose to a SWIFT MT 205 only) using the Direct Network to meet time-sensitive obligations or to alleviate liquidity that may be trapped in the system.

When the format and content of a Payment Message sent over the Direct Network does not contain sufficient information to enable the Receiving Participant to process the payment to the correct account, the Sending Participant must provide the required information by other means (e.g. fax/secure email).

Advantages: Payments for settlement purposes (e.g. CLSS and CDSX) can still be accomplished with finality and irrevocability, minimizing collateral requirements.

All payments sent using the Direct Network are subjected to the applicable risk control test(s).

All payment exchange history is captured by the system.

LVTS Bylaw and Rules will be in effect.

Disadvantages: Participants will be required to reconcile payments manually.

There will be procedural changes at the Participant level.

CLS CONTINGENCY GUIDELINES

4.2 SINGLE PARTICIPANT TECHNICAL PROBLEMS - ACCESS TO SWIFT NOT AVAILABLE

This emergency condition is the responsibility of the Participant. See LVTS Rule 12, Emergency Conditions, Sections 7 through 13.

Options:

1. Wait for SWIFT to come back up.
2. Implement Contingency (authorized facsimile or secure email).
3. Execute payments using the Direct Network

Preferred Option: Wait for SWIFT to come back up.

Advantages: No system or procedural changes are involved for the Participants or the Bank of Canada.

Able to process on one system when it becomes available.

Less disruptive to wait for SWIFT to come back up than to invoke CLS Contingency Mode Operations.

Disadvantage: Down time may be longer than estimated and may ultimately be required to move to CLS Contingency Mode Operations.

Alternate Option: Implement contingency (authorized facsimile or secure email).

Advantages: Participants will be able to send CLSB Contingency Payment Messages should there be an extended SWIFT outage.

CLSB Contingency Payment Messages would be settled directly on the books of the Bank of Canada, subject to funds availability.

The Participant must have funds available in its account in order for the Bank of Canada to act on the authorized facsimile instruction. This may be accomplished by either sending a Payment Message to the Bank of Canada using the Direct Network or requesting an intra-day advance.

Once the Bank of Canada makes an entry, it will be deemed final and irrevocable.

Disadvantages: Procedural changes are required by both Participants and the Bank of Canada.

CLS CONTINGENCY GUIDELINES

Alternative Option 2: Execute payments using the Direct Network

Participants would send payments (financial institution transfers equivalent in purpose to a SWIFT MT 205 only) using the Direct Network to meet time-sensitive obligations or to alleviate liquidity that may be trapped in the system.

When the format and content of a Payment Message sent over the Direct Network does not contain sufficient information to enable the Receiving Participant to process the payment to the correct account, the Sending Participant must provide the required information by other means (e.g. fax/secure email).

Advantages:

Payments for settlement purposes (e.g. CLSS and CDSX) can still be accomplished with finality and irrevocability, minimizing collateral requirements.

All payments sent using the Direct Network are subjected to the applicable risk control test(s).

All payment exchange history is captured by the system.

LVTS Bylaw and Rules will be in effect.

Disadvantages:

Participants will be required to reconcile payments manually.

There will be procedural changes at the Participant level.

CLS CONTINGENCY GUIDELINES

PROCEDURES FOR CLS CONTINGENCY MODE OPERATIONS

PROCEDURES FOR MOVING TO CLS CONTINGENCY MODE

The Bank of Canada, in consultation with the CPA, CLS Bank and all Participants will make the decision to move to CLS Contingency Mode Operations if circumstances warrant. There will clearly be an effect on the payments exchanged throughout the CLS Payment Period which will have to be addressed. The decision to move to CLS Contingency Mode Operations will be made only because the alternative (waiting) could have severe business consequences, both domestically and internationally, for the Participants and the financial community as a whole with respect to CLS obligations.

Once the decision has been taken to move to CLS Contingency Mode Operations it will be possible to return to LVTS during the LVTS Cycle.

CLS-related payments which have been approved by LVTS prior to the interruption of LVTS operations are LVTS payments, will have a PCRN assigned to them and are therefore final and irrevocable and subject to the terms of the LVTS By-law with respect to the requirements for dealing with approved payment messages. Any CLS-related payments which were awaiting authorization from LVTS, at the time the problem was encountered, will be held in a queue by SWIFT until LVTS is back up.

If a decision is made to move to CLS Contingency Mode Operations action will have to be taken by the Association and the Participants including the Bank of Canada in its role as Participant and in its role as settlement bank for LVTS and ACSS. **Note that practical realities will dictate that the circumstances of any given emergency situation can never be entirely anticipated in advance and all parties will need to work together in the event of an emergency.**

Responsibilities of the Association

1. The Association will advise the Participants of the decision to move to CLS Contingency Mode Operations.
2. The Association will attempt to assist Participants in identifying any Payment Messages which have passed the risk control tests within LVTS for which an authorization (MT 097) has not been sent to SWIFT because of the interruption in LVTS operations. This will permit the clear identification of which payments, sent by a Participant at the time of the interruption of LVTS operations, have been approved by LVTS.

CLS CONTINGENCY GUIDELINES

3. The Association will advise each Participant, in accordance with the notice provisions of the LVTS Rules (Rule 5) of the decision to move to CLS Contingency Mode Operations and the requirement to send CLSB Contingency Payment Messages. **Note: Any decision to resume LVTS operations will not be made until the problems with LVTS have been rectified.**
4. Once a decision has been made to move out of CLS Contingency Mode Operations, the Association will communicate that decision to Participants.

Responsibilities of Participants

1. No Participant is obligated to participate in the exchange of payments while in CLS Contingency Mode Operations.
2. Upon receipt of notice from the Association of the intent to move to CLS Contingency Mode Operations the Participants will:
 - a. hold all payment traffic which would otherwise have been directed through LVTS until notification is received from the Association that LVTS is back up;
 - b. advise the appropriate personnel within their own organizations and perform the necessary adjustments to their internal operations (CBT internal queuing) to prepare for CLS Contingency Mode Operations, if required;
 - c. confirm their current multilateral net position and the status of any CLSB payments that were in transit; and
 - d. comply with the procedures set forth for payment exchange and settlement as described in Part B of this Appendix and other procedures as may be communicated by the Bank of Canada
3. Participants shall use SWIFT MT 205 message format when sending payment instructions by authorized facsimile or secure email (examples of SWIFT MT 205 message formats can be found in LVTS Rule 12, Appendix III, Part 3). There shall be one payment instruction per page which is clearly legible and each instruction must be signed by an authorized officer. Any modifications to payment instructions must be initialized. The cover should include an authorized signature. A call back procedure should be in place for verification, confirmation of receipt and authentication. The Bank of Canada may rely on the list of authorized signatures in the Participant's authorized signature list. It is suggested that the call back person be different than the person who had sent the payment instruction; and
4. In the absence of a call back the payment instruction should be considered not delivered.

CLS CONTINGENCY GUIDELINES

Bank of Canada Responsibilities

1. The Bank of Canada will communicate with CLS Bank regarding any CLS contingency decisions.
2. At the time the decision is made by the Bank of Canada to move to CLS Contingency Mode Operations, no modifications to the normal settlement procedures would be needed. Participants would settle their multilateral net positions at the normal settlement time at the end of the Business Day.

Once the Bank of Canada makes a CLSB Contingency Payment Message account entry, it will be deemed final and irrevocable. The Bank of Canada will only make a CLSB Contingency Payment Message account entry if the Participant has sufficient funds available, or if sufficient funds are not available, if the Bank of Canada is willing to provide an advance to the Participant.

CLS CONTINGENCY GUIDELINES

PROCEDURES FOR PAYMENT EXCHANGE AND SETTLEMENT OF SWIFT CLSB CONTINGENCY PAYMENT MESSAGES PROCESSED DURING CLS CONTINGENCY MODE OPERATIONS

1.0 Introduction

During CLS Contingency Mode Operations:

- a. CLSB Contingency Payment Messages will be sent using SWIFT MT 202 and will be sent/received directly between a Participant and the Bank of Canada;
- b. CLSB Contingency Payment Messages will not be copied to LVTS;
- c. payments which are delivered directly to the receiving Participant do not contain a PCRN in field :115: of the SWIFT message header; and
- d. the sending Participant will not receive an MT 012 or MT 019 from SWIFT

2.0 Exchange of CLSB Contingency Payment Messages

- 2.1 CLSB Contingency Payment Messages (MT202) shall be sent using the SWIFT payment network. All CLSB Contingency Payment Messages exchanged during any CLS Contingency Mode Operations shall be exchanged and settled in accordance with the procedures laid out in this Part. Any tranche designation is to be ignored irrespective of whether any tranche designation appears in field :108: of the SWIFT payment message header.

EXAMPLE OF THE MT202 PAYMENT MESSAGE FORMAT

MT 202 Financial Institution Transfer - CLS Contingency Payment Message

This message type is sent by the Sending Participant directly to the Receiving Participant for the account of the CLS settlement member.

Status	Tag	Field Name	Example
O	13c	(time indication)	(time indication)
M	20	Transaction Reference Number	(sender's reference)
O	21	(related reference)	(related reference)
M	32a	Value Date, Currency Code, Amount - Same Day Value	970505CAD5000000,00
M	52a	Ordering Information	ROYCCAT2
O	53a	Sender's Correspondent	
O	54a	Receiver's Correspondent	
O	56a	Intermediary	
O	57a	Account With Institution	CLSBUS33
M	58a	Beneficiary Institution	ROYCCAT2
O	72	Sender to Receiver Information	*

M = Mandatory O = Optional

* use of field 72 should be avoided as it does not allow for straight through processing