

CANADIAN SECURITIES MARKETPLACE BEST PRACTICES AND STANDARDS: INSTITUTIONAL TRADE PROCESSING, ENTITLEMENTS AND SECURITIES LENDING

**FOR IMPLEMENTATION IN 2005 –
FINAL REQUEST FOR COMMENT ON
WHAT WILL NOT WORK AND WHY**



Release Date: June 2003



EXECUTIVE SUMMARY

1.1 Background

The securities industry best practices and standards set out in this document for institutional trade processing, entitlements and securities lending are key to industry efforts to increase efficiency, minimize risks, reduce trade processing costs and improve customer service through straight-through processing (STP). Industry-wide STP means seamlessly passing financial information electronically – on a timely, accurate, system-to-system basis – to all parties in the end-to-end securities transaction chain without manual handling or redundant processing. It is considered a pre-requisite to shortening the settlement cycle to the day following trade date (T+1) with the U.S., which remains a target that will be revisited once STP has been achieved. Industry-wide STP is key both to helping position firms for future growth and to maintaining the competitiveness of Canada's capital markets.

1.2 Purpose

The CCMA is seeking specific comments from investment managers, broker/dealers, custodians, utilities, marketplaces, service providers, vendors and investors on the responsibilities, deadlines, implementation issues and other questions that have been listed at the back of this document. For each best practice or standard, compliance mechanisms and measurement methods are proposed for monitoring industry progress. The Canadian Securities Administrators (CSA) will be re-issuing its STP Readiness Survey in early 2004 and, if necessary, additional mechanisms may be introduced if progress is considered insufficient to meet the major milestone of 100-per-cent best-practices-and-standards compliance and industry-wide STP by June 2005. Please review this document carefully within your organization (front, middle and back office) and with your counterparties and vendors to assess the impact that these changes will have on both your organization and the markets in which your firm operates and ensure that these targets can be met.

1.3 Methodology

These best practices and standards are the result of consultation with a broad range of Canadian industry representatives under the auspices of the Canadian Capital Markets Association (CCMA). Building on industry white papers and documentation developed over the last three years as well as a series of industry interviews and workshops in early 2003, they reflect changes in and new best practices and standards for institutional trade processing, entitlements and securities lending in the Canadian marketplace. They were developed by leveraging similarities with the U.S. marketplace, while recognizing the unique nature of Canadian capital markets.

1.4 Scope

The best practices and standards focus on institutional trade processing, entitlements and securities lending and apply to domestic debt, equity and investment fund transactions (**Note:** A full list of these investment products is available on www.ccma-acmc.ca, Best Practices and Standards page, Definitions section, Application). The proposed best practices and standards are minimum requirements that Canadian participants must meet to achieve cross-industry STP. Best practices and standards will be published for retail trade processing (including investment funds) and dematerialization later this year.

1.5 Major Milestones

The CCMA's major milestones for STP are:

December 2003:	Final industry standards and best practices published
December 2004:	Legislative, regulatory and rule changes enacted
June 2005:	Industry-wide STP implemented 100-per-cent compliance with best practices and standards.

1.6 Request for Comments

Given the extensive consultation that has taken place, CCMA members believe that the best practices and standards developed are reasonable and should be implemented to allow STP by June 2005. The CCMA is requesting input regarding any oversights or impediments to implementation, with clear examples of the problem and alternative ways to address issues raised. Importantly, the CCMA is also asking industry participants to confirm that their organization (1) believes that these best practices and standards should be adopted by the Canadian securities marketplace and (2) intends, in principle, to work to implement the final best practices and standards by June 2005. Please send written comments, using the Response Sheet provided as in Appendix #1, **by August 15, 2003**, to:

Canadian Capital Markets Association
Attention: Rosa Sosin
10th Floor, 85 Richmond Street West
Toronto, Ontario, Canada M5H 2C9
E-mail: info@ccma-acma.ca
Fax: 1 416 365-8700
Tel: 1 416 815-2046.

1.7 Additional Information

For additional information on STP and its benefits, the CCMA initiatives that these best practices and standards are based on or the CCMA, contact your industry association or review the detailed white papers and other material on

www.ccma-acmc.ca or e-mail or call the CCMA at the co-ordinates above. Information relating to the U.S. STP initiative is available at www.sia.com. (**Note:** For an explanation of terminology used in the paper, refer to the CCMA's Glossary and Acronyms on the CCMA's Web site, www.ccma-acmc.ca, Best Practices and Standards page, Definitions section).

Note: The presence on the front cover of the logos of organizations on the CCMA's Board of Directors and other interested parties demonstrates the breadth of industry support for industry-wide STP and the importance that they place on best practices and standards as a way to improve Canadian capital markets. They do not indicate full and final acceptance of every best practice and standard proposed.

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The CCMA is a federally incorporated, not-for-profit organization, launched to identify, analyze and recommend ways to meet the challenges and opportunities facing Canadian and international capital markets. It brings together industry leaders and technical experts from all sectors to reduce the costs and risks of our current clearing and settlement systems. The CCMA works with industry associations, stakeholders and regulators across the country and key U.S. and international associations.

Section 1:

INSTITUTIONAL TRADE PROCESSING BEST PRACTICES AND STANDARDS

1.0 Highlights

Response requested: The CCMA is requesting input from participants in the securities processing chain regarding any oversights or impediments to implementation of these institutional trade processing best practices and standards within participants and across the industry. Please provide your input, using the questions in **Appendix #1, Response Sheet**, as a guide in determining whether there are any oversights or impediments. Given the extensive comments received during the institutional white paper development process between 2000 and 2003 and the input received from industry experts through interviews and workshops in 2003, it is assumed that the best practices and standards developed are reasonable and can be implemented by participants by the target date.

Goals: The ultimate goal of institutional best practices and standards is to achieve by June 2005:

- 100-per-cent industry-wide electronic trade delivery rate for domestic trades
- 99-per-cent industry-wide matching of domestic trades on trade date (T).

The potential benefits arising from STP can be assessed at a very high level by using the template included in **Appendix #ITP.1, Template for Analysis of Potential STP Savings**.

Problems: Problems with current institutional trade processing include its manual nature; lack of real-time functionality and standard interfaces/interoperability; lack of, limited, or lack of uniformity of connectivity between all key participants; poor communications mechanisms; missing or late allocations and notices of execution; lack of data integrity and standards; lack of tolerances and more.

Current best practices/standards, rules and metrics: There is currently little in the way of best practices, standards or regulation governing institutional processing as evident from an examination of current process flows. There are no consistent, easily accessible industry metrics of operational performance that would allow for benchmarking and progress tracking. The Canadian Depository for Securities Limited (CDS) is expected to provide industry settlement and affirmation rates and custodians and an electronic trade communication provider (Financial Models Company (FMC)) is providing information for individual investment managers and broker/dealers, but specific measures on broker performance should ideally be provided by the key service bureaus (e.g., ADP, Dataphile, IBM).

Methodology: Proposed best practices and standards were identified and refined based on: the Institutional Trade Processing white paper and addendum; an extensive series of interviews and workshops held with representatives for all impacted industry segments by Cap Gemini Ernst and Young (CGEY); and their review of U.S. and other global best practices and standards (see **Appendix #ITP.3, List of Institutional Interviewees and Workshop Participants**,

www.ccma-acmc.ca, Best Practices and Standards page, Institutional Trade Processing section, for methodology and reference material).

Required best practices/standards, rules, governance and metrics: Best practices and standards tables were developed, both for an environment where firms link directly to a virtual matching utility (VMU) and where they do not. Various technology solutions will enable more efficient communication and processing of information, but a set of best practices and standards is required to ensure that the elements are in place to maximize the benefits of these new technologies in the industry. The proposed best practices and standards developed focus on timelines, data requirements and roles/responsibilities of investment managers, brokers, custodians and the depository in the institutional trade process.

The one regulatory change identified as needed to support the institutional trade processing STP milestones is a requirement for matching on trade date. As well, Canadian institutional best practices and standards, with timelines and responsibilities, are expected to be embodied in a well defined set of rules (e.g., from self-regulatory organizations such as the Investment Dealers Association of Canada (IDA)) or otherwise adopted by industry participants not part of an SRO structure, for example, by voluntary adherence to a code of practice or as required by market forces.

To ensure the institutional trade processing part of STP meets its goals, ways to capture metrics in an automated fashion will have to be built and progress tracking will be required.

Critical success factors: The involvement of all parties to the trade, from investment manager to broker to service bureau to custodian to depository, is necessary for the effective implementation of the best practices and standards. For this to occur, each participant in the securities processing chain must undertake a detailed review and analysis of what is required to enable them to conform to the best practices and standards. As well, success will require (1) improved and continuous support and involvement of all participants, (2) independent and consistent performance measurement, (3) ongoing co-ordination with industry organizations and (4) continued support in harmonizing with other best practices and standards in the Canadian marketplace (e.g., securities lending, corporate actions) and with the U.S. For more detail, refer **Appendix #ITP.3, Critical Success Factors**.

2.0 Current Problems

The CCMA's Institutional Trade Processing Working Group, in 2001, identified the following market problems, some of which could be solved by the implementation of best practices and standards:

Technology

- Manual processing and general lack of automation
- Lack of real-time functionality where technology is used
- Lack of standard interfaces/interoperability
- Poor communication mechanisms including inability to monitor

Timing

- Missing or late allocation instructions
- Missing or late notices of execution

Data

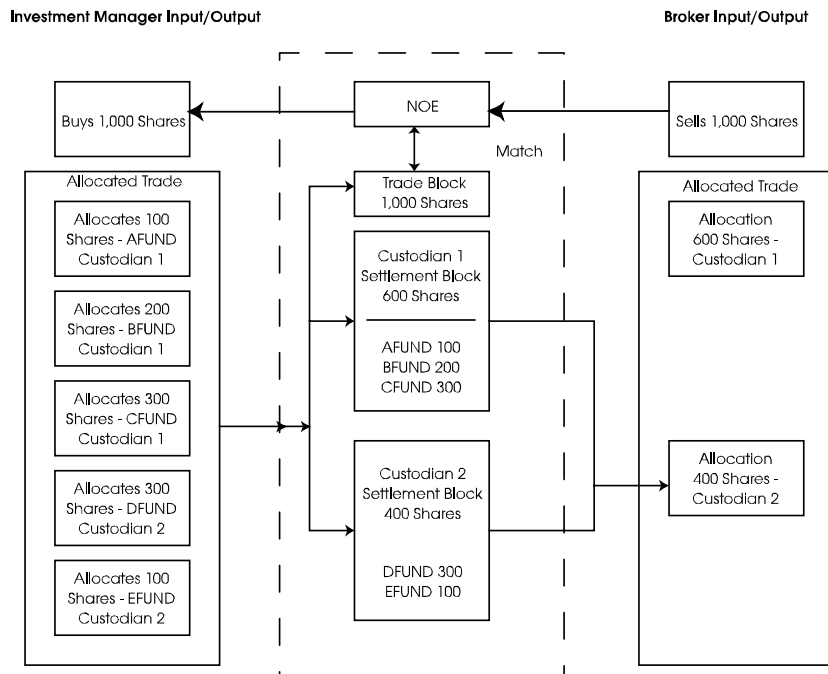
- Lack of data integrity and standards (e.g., security, executing, clearing broker/dealer identifiers; price; commission; client account number)
- Lack of tolerance standards to resolve settlement detail discrepancies

Accounting

- Problems in accounting practices for block trades, settlement by underlying allocations (**Note:** The diagram below depicts the block flow process).

Block Flow Chart

- Manager buys 1,000 shares, which is reported by the broker in the form of a notice of execution (NOE)
- Manager allocates across five portfolios (three with Custodian 1 and two with Custodian 2)
- Trade is sent to the utility by the investment manager
- The utility creates a trade block (block order notification) for 1,000 shares, which will match against the NOE
- The utility creates a settlement block for each custodian; a 600 share block for Custodian 1 and a 400 share block for custodian 2
- After a successful match, the broker receives the trade allocated between the two accounts, which are cross-referenced to the proper internal account numbers
- The custodians receive their settlement block, which will settle through CDS, along with all underlying allocations

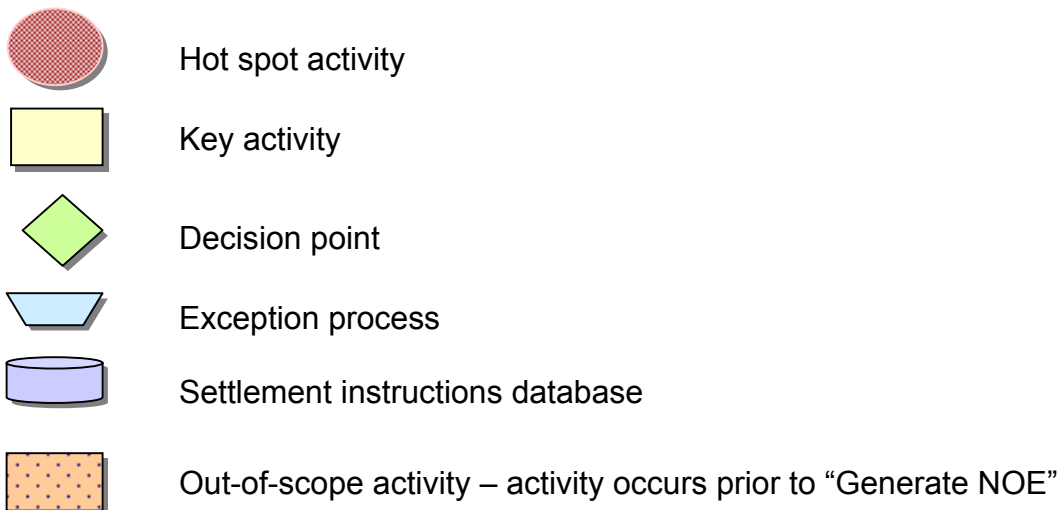


These problems are reflected below in Current State Institutional Process Flow Diagram and Current State Table. This and the other process flow diagrams and accompanying current and future state best practice tables were created through comprehensive analysis of the Canadian institutional trading process, comparisons with the U.S. processes and proposals and with the input and feedback from numerous industry stakeholders to identify the key inter-firm communications that require best practices and standards guidelines.

References: Refer www.ccma-acmc.ca, Media/publications page, White Papers –
 March 8, 2001: CCMA Institutional Trade Processing White Paper
 November 5, 2002: CCMA Institutional Trade Processing White Paper Addendum

Process Flow Diagram Legend and Notes
 (Note: These apply for all process flow diagrams)

Legend

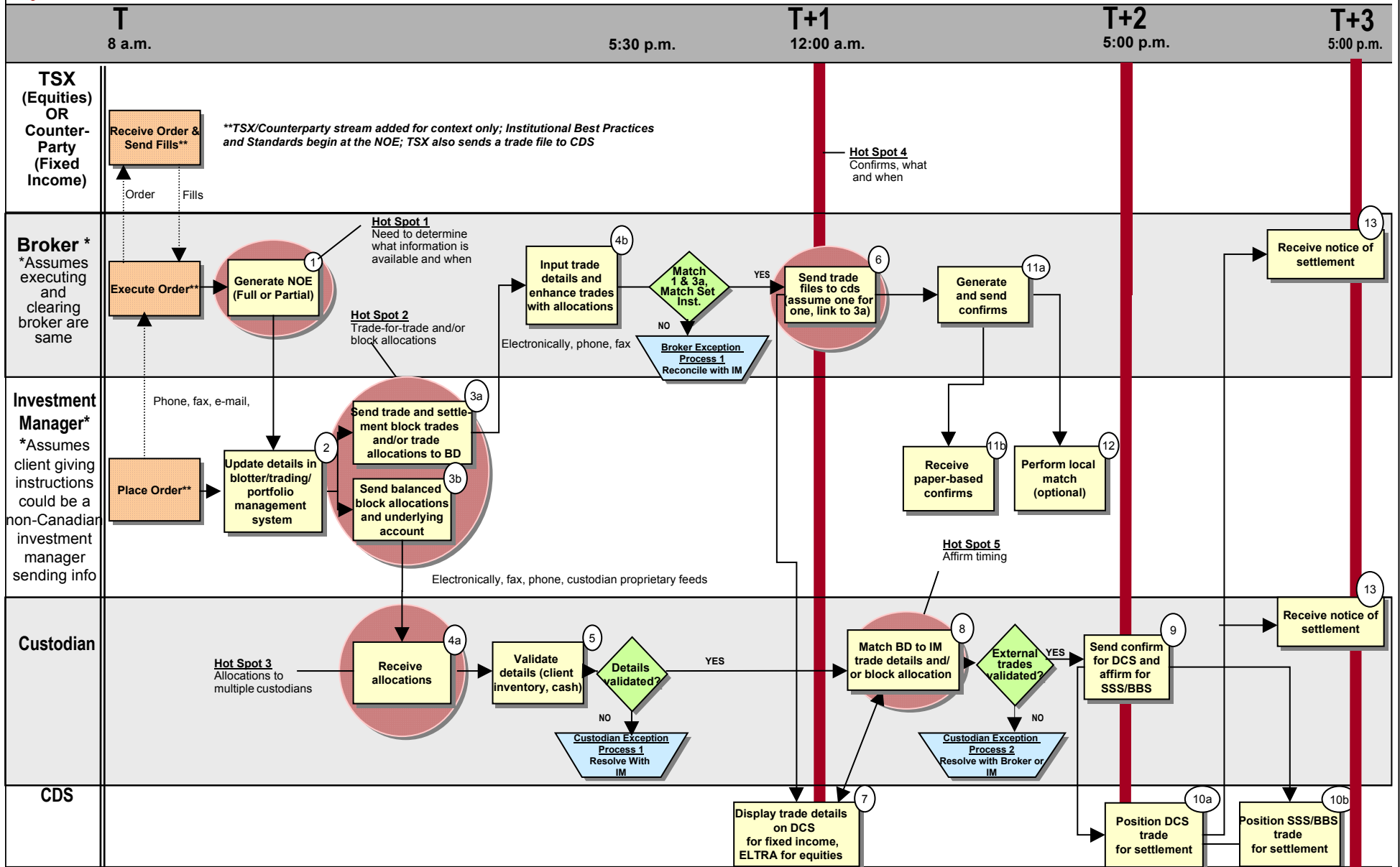


Notes

- Process flows apply for domestic equities and fixed income products only, starting from the notice of execution (NOE) and including partial NOEs.
- Future state process flows assume that the executing broker and clearing broker are the same, recognizing that this is not always the case; when the two are not the same, how to get information from the executing to the clearing broker within established timeframes needs to be addressed.
- Future state process flows:
 - Include (1) without direct or indirect connectivity to a virtual matching utility (VMU) and (2) without direct or indirect connectivity to a VMU (see 3. in Section 5.1)
 - Represent trade-for-trade and block settlement
 - Assume that there is a standing settlement instructions (SSI) database with a VMU and/or just-in-time (JIT) enrichment capability.
- The process flow diagrams are broken into “streams” to facilitate review:
 - Broker/dealer (BD) stream with vendors of broker front-office and back-office systems (e.g., ADP, IBM SIS, Dataphile, Reuters, other)
 - Investment manager (IM) stream includes vendors of investment manager front-office and back-office systems
 - Custodian stream includes the internal custody systems
 - Depository/clearing corporation stream includes CDS systems.



Current State Domestic Equities / Fixed Income Process Flows



CURRENT STATE (Institutional Trade Processing – Page 1 of 3)

Process #	Activity	From	To	Optional / Mandatory	Current Time	Exception	Potential Risk in Event of Exception	Impact in Event of Exception
Order	Portfolio manager places order via internal trader	IM	BD	M	<i>Out of Scope</i>			
Order Execution	BD executes order on exchange	BD	Exchange	M				
Receive Order and Send Fills	Exchange receives order and sends fills	Exchange	BD	M				
1	Generate NOE (full or partial)	BD	IM	M	Generally near real-time by end of day on T			Trades may not be processed in a timely manner, delaying settlement
2	Update details in blotter/trading system/portfolio management system	IM (Internal)	-	M	Near real-time or intraday batch by end of day on T	Commission amount incorrect, number of shares, input errors, BD cannot deliver	IM may not update blotter on a timely basis	Less time to resolve exceptions, potential financial impacts
3a	Send block trades (trade and settlement block) and/or trade allocations to BD	IM	BD	M	End of day on T (depends on frequency of batches)			Trade may not settle on time
3b	Send balanced block allocations and underlying accounts	IM	Custodian	Mandatory	4 p.m. on T or T+1	IM does not send allocations by end of day on T	IM may not send allocations to custodian on time	Trade may not settle on time
4a	Receive allocations	Custodian (Internal)	-	M	4 p.m. on T or T+1	IM does not send allocations by end of day T	Custodian may not receive allocations on time	Less time to resolve exceptions
4b	Input trade details and enhance trades with allocations	BD (internal)	-	M	End of day on T; if after T, trade is placed in suspense		May lead to failure	Financial impacts
	BD Exception Process 1 – Reconcile with IM	BD	IM	M (if exception)	T to T+3	Exception not resolved	Exception will delay settlement	If exception is not resolved prior to settlement, the trade may fail

CURRENT STATE (Institutional Trade Processing – Page 2 of 3)

Process #	Activity	From	To	Optional / Mandatory	Current Time	Exception	Potential Risk in Event of Exception	Impact in Event of Exception
5	Validate details (client inventory, cash)	Custodian (internal)		M	4 p.m. on T to T+3	Incorrect information (e.g., settlement information is incorrect)	Insufficient funds or securities to settle trade	May result in financial impacts and exposures
	Custodian Exception Process 1 - Resolve with IM	Custodian	IM	M (if exception)	T to T+3	Exception not resolved	Exception will delay settlement	If exception is not resolved prior to settlement, the trade may fail
6	Send trade files to CDS (assuming one-for-one: each trade sent to CDS has a corresponding confirm)	Broker	Depository	M	Overnight on T+1	Trade details not sent	Less time to resolve exceptions if details not submitted before cut-off times	Trade may fail, financial impacts
7	Display trade details on DCS for fixed income and ELTRA for equities	Depository	Custodian	M	Real-time for DCS, overnight batch for SSS/BBS (T+1)			Trade may not settle on time
8	Match BD trade details to IM trade details and/or block allocation	Custodian (Internal)	-	M	T+1; can be real-time as soon as trade is ready			Trade may not settle on time
	Custodian Exception Process 2 – Resolve with BD or IM	Custodian	BD, IM	M (if trades not validated)	T+2	Exception not resolved	Exception will delay settlement	If exception is not resolved prior to settlement, the trade may fail
9	Send confirm for DCS and affirm for SSS/BBS	Custodian	Depository	M	Real-time available for DCS; T+2 for SSS/BBS		May lead to failure	Financial impacts
10a	Position DCS trades for settlement	Depository (internal)	-	M	Real-time available	Trade not positioned for settlement	May lead to failure	Financial impacts

CURRENT STATE (Institutional Trade Processing – Page 3 of 3)

Process #	Activity	From	To	Optional / Mandatory	Current Time	Exception	Potential Risk in Event of Exception	Impact in Event of Exception
10b	Position SSS/BBS trades for settlement	Depository (internal)	-	M	T+1 to T+3	Trade not positioned for settlement	May lead to failure	Financial impacts
11a	Generate and send confirms	BD	IM	M	Depends on batch cycle; could be intraday or overnight	Information unavailable for investment manager to perform local match	IM will not be able to perform local match	Increase processing frequency will allow IM to match details earlier
11b	Receive confirms	IM (Internal)	-	M	T+1	Confirms not received	-	-
12	Perform local match	IM (Internal)	-	O	T+1	-	-	-
13	Receive notice of settlement	Depository	BD/ Custodian	M	T+3	Notice not received by T+3	-	-

3.0 Current Best Practices/Standards, Rules and Metrics

3.1 Best Practices

There are no identified industry-wide business and market best practices in institutional trade processing to address the “hot spots” identified in the above diagram and table – clarity around roles and responsibilities, timing for communication of information between industry participants, data content, etc., although there is a move, more in some segments than others, towards ISO 15022, XML and other standards. Standard market practices are non-existent as firms communicate information through different methods (e.g., phone, fax, e-mail, electronic trade communication via proprietary networks) and, when the information is sent electronically, there is no consistency in the data that is communicated. For example, when a broker sends a notice of execution (NOE) or an investment manager sends an allocation, there are no specific industry guidelines that stipulate the timing by which the information must be sent, nor are there guidelines that specify what data is to be communicated. Individual organizations may develop internal guidelines, but the goal of the CCMA is to streamline and standardize inter-firm cross-industry information flows.

3.2 Standards

Standards are the protocols and syntax for communication of institutional trading messages. Industry message standards have been identified as a high-priority component of STP. There are currently *several* messaging standards, which results in organizations using multiple message standards to perform the same functions, thereby leading to increasing complexity and higher costs. Although there is a general consensus that standardized messages will reduce costs and improve efficiency, there are currently no enforcement mechanisms to require industry participants to use a particular messaging standard. In the past, the development of messaging standards entailed focusing on a particular part of an organization. For example, FIX is the dominant standard for pre-trade order flow, while the Society for Worldwide Interbank Financial Telecommunication (SWIFT) is focused on post-trade confirmation and settlement processing. FIX has evolved over the years from simple equity trading (version 3.1) to the latest release (version 4.4) covering fixed income. The industry, meanwhile, has largely completed the migration from the SWIFT 7775 to ISO 15022. ISO 15022 (“scheme for messages”) is a key International Organization for Standardization (ISO) standard that is increasingly forming the basis for industry communication in the securities industry. One of the key goals of the international community is working towards convergence of the multiple standards and the achievement of industry-wide interoperability.

In Canada, the Canadian Securities Market Practice Group (SMPG) of the broader worldwide SMPG has developed a framework to encompass transaction-handling from trade instruction and confirmation to final settlement in an effort to obtain consensus regarding required market

conventions, process flows, needed business elements and technology (message) standards. Their work has focused on fixed income and equity transactions, as required for institutional trade processing, and incorporates SWIFT standards as well as other standards applicable in the Canadian marketplace. For each instruction, the group has recommended the needed business elements and data content format with recommended minimum requirements. Schematics are provided illustrating the various institutional trading scenarios. The group also recommends that the same set of common elements used for settlement confirmation be used for free-of-payment transactions. For block trade reporting, they recommend fund managers report block trades to global custodians using the ISO 15022 formats; however, this is a limited constituency in the Canadian institutional marketplace.

This said, it should be noted that any service provider able to support the standard can deliver messages in an ISO 15022 format. They do not have to connect to the SWIFT network or become a member to communicate messages in the accepted standard. While SWIFT-sponsored groups have been heavily involved in the development of market practices, a clear distinction should be made between ISO 15022 and SWIFT message types. The ISO 15022 standard is meant to be vendor-neutral and, although SWIFT has had a prominent role in sponsoring organizations that are developing market practices, ISO 15022 and SWIFT should be considered as two different entities. How an individual organization chooses to transmit industry standard data is flexible and certain Canadian vendors (e.g., FMC) offer the ability to communicate via ISO 15022 (visit the FMC Web site or www.ccma-acmc.ca, Best Practices and Standards Page, FMC section).

3.3 Regulations and Rules

While there are many rules and regulations in the securities industry, there are no cross-industry rules and regulations supporting standardization. In particular, there is no current requirement in Canada to affirm a trade on trade date (T) or even on the day following trade date (T+1).

4.0 Institutional Trade Processing Target STP Milestones

- ▶ **December 2003:**
 - ▶ Establish securities industry standards and best practices on who should do what by when in terms of data quality, message protocols and timing
 - ▶ Achieve industry-wide affirmation on T+1 for 80 per cent of domestic trades
- ▶ **March 2004:** Achieve 60-per-cent electronic trade delivery STP rate for domestic trades
- ▶ **December 2004:** Enact any legislative, regulatory or rule changes needed (e.g., trade matching on T) for effect by June 2005
- ▶ **June 2005:** Achieve:
 - ▶ 99-per-cent electronic trade delivery STP rate for domestic trades
 - ▶ 100-per-cent industry participant compliance with industry standards and

- best practices
- ▶ 99-per-cent industry-wide matching of domestic trades on T by promoting matching utility participation (or the use of equivalent tools) by investment managers, broker/dealers and custodians.

5.0 Proposed Best Practices and Standards

The implementation of a consensus-based approach was instrumental in effectively developing the proposed Canadian institutional best practices and standards documentation. By attempting to achieve consensus on the practices and standards, the documentation evolved through several iterations and CGEY was able to realize general buy-in from interviewees and workshop participants. Over the course of eight weeks, the project team interviewed 42 industry participants, who represented a wide range of interests, and conducted five half-day workshops, which were attended by 161 industry representatives (some attended more than one session). The output and analysis of the interviews and the workshops provided a strong foundation upon which to develop the Canadian institutional best practices and standards.

The scope of the project covered both domestic equities and fixed income and entailed the comprehensive examination of other international best practices and standards initiatives. Canadian institutional best practices and standards focused on the following areas:

- **Best practices** refers to business and market practices
- **Business practice** refers to who does what by when – roles and responsibilities and the timeliness associated with institutional processing
- **Market practice** refers to the business data elements used for debt and equity trades and includes security and counterparty identifiers, deal price, quantity, etc.
- **Standards** refer to the protocols and syntax for communications
- **Performance measurement** refers to the approaches that could be used as incentives for adherence to standards and best practices or as disincentives to non-adherence, including disclosure.

5.1 Assumptions

A number of assumptions were identified during the research interviews and industry workshops. The list below highlights key assumptions that should be reviewed prior to analyzing the process flow diagrams. The complete list of assumptions can be found in **Appendix #ITP.4, Assumptions**.

1. The scope of this project is inter-firm, external STP only and standards are only being established for activities between industry participants – pre-trade compliance is out of scope.
2. Communications for all streams assume, in the future state, the electronic transmission of complete information through proprietary means or a service provider in an industry-accepted standard format

- (e.g., ISO 15022, FIX) – fax and e-mail are not considered electronic.
3. Future state scenarios should be developed for scenarios where there is no connectivity to a virtual matching utility and for when there is connectivity to a VMU, whether direct or through an agent (service provider or correspondent relationship) – a VMU is a software model that allows for seamless, real-time matching of trade data throughout a trade's lifecycle, from post-execution to settlement, from investment manager to broker/dealer to custodian to settlement body (FMC, Omgeo and other firms are developing VMUs).
Note: Directly connecting to a VMU is not the only way to achieve the goal of matching on trade date and the CCMA is therefore not mandating or endorsing the use by individual firms of any particular VMU or of a VMU at all. Not all firms are expected to connect directly to a VMU; many will likely use correspondent relationships or third-party service providers as they do currently. Other firms will likely connect to multiple VMUs. Still others may find that they can meet the best practices and standards – on a timely and accurate basis that will allow matching on trade date in accordance with the best practices and standards – without a VMU. The CCMA encourages industry participants to examine technologies, vendors and other alternatives to enable matching, whether through a VMU or locally.
 4. As much trade processing as possible should be shifted intraday to avoid end-of-day processing bottlenecks.
 5. The Canadian model assumes active affirmation on the part of the custodian based on the receipt of the investment manager's settlement instructions matching the broker's confirmation.
 6. The best practices and standards are designed to be vendor-neutral.
 7. Industry participants will ensure that their vendors conform to expected industry standards (e.g., ISO 15022).
 8. End-of-day for exchange-traded equities is 30 minutes after close of trading session; for fixed income, end-of-day is 30 minutes after close of trading session.
 9. Measurement of efficiency requires a time stamp at each stage throughout the trade process.

The process flow diagrams (section 5.2) and best practices tables (section 5.3) on the following pages set out the proposed process flows in a “Without Connectivity to a VMU” and “With Connectivity to a VMU” environment. A future state where the VMU supports settlement blocks has also been developed and can be found in **Appendix #ITP.5, Future State Domestic Equities/Fixed Income with Connectivity to a Virtual Matching Utility Directly Supporting Settlement Blocks.**

5.2 Proposed Equity and Debt Process Flow Diagrams

Each process flow diagram is organized horizontally by workstream (industry participant type) and vertically by time period (e.g., T+1, 8:00 a.m., etc.). Each industry participant is responsible for the activities within their

workstreams. The rectangular boxes represent activities, while the diamonds represent decisions to be taken. At each decision point there is the potential for an exception process. The key workstreams involved in the institutional process are:

- Broker/dealer
- Investment manager
- Custodian
- CDS
- Infrastructure providers
- Exchange
- VMU
- Standing settlement instructions database.

Exchanges and counterparties were included in the workstreams to provide context only, as the institutional process has been defined, for industry-wide STP purposes, to begin at the notice of execution.

Each activity within the process flow diagrams has a corresponding business practice, with the responsibility and timing associated with each one highlighted.

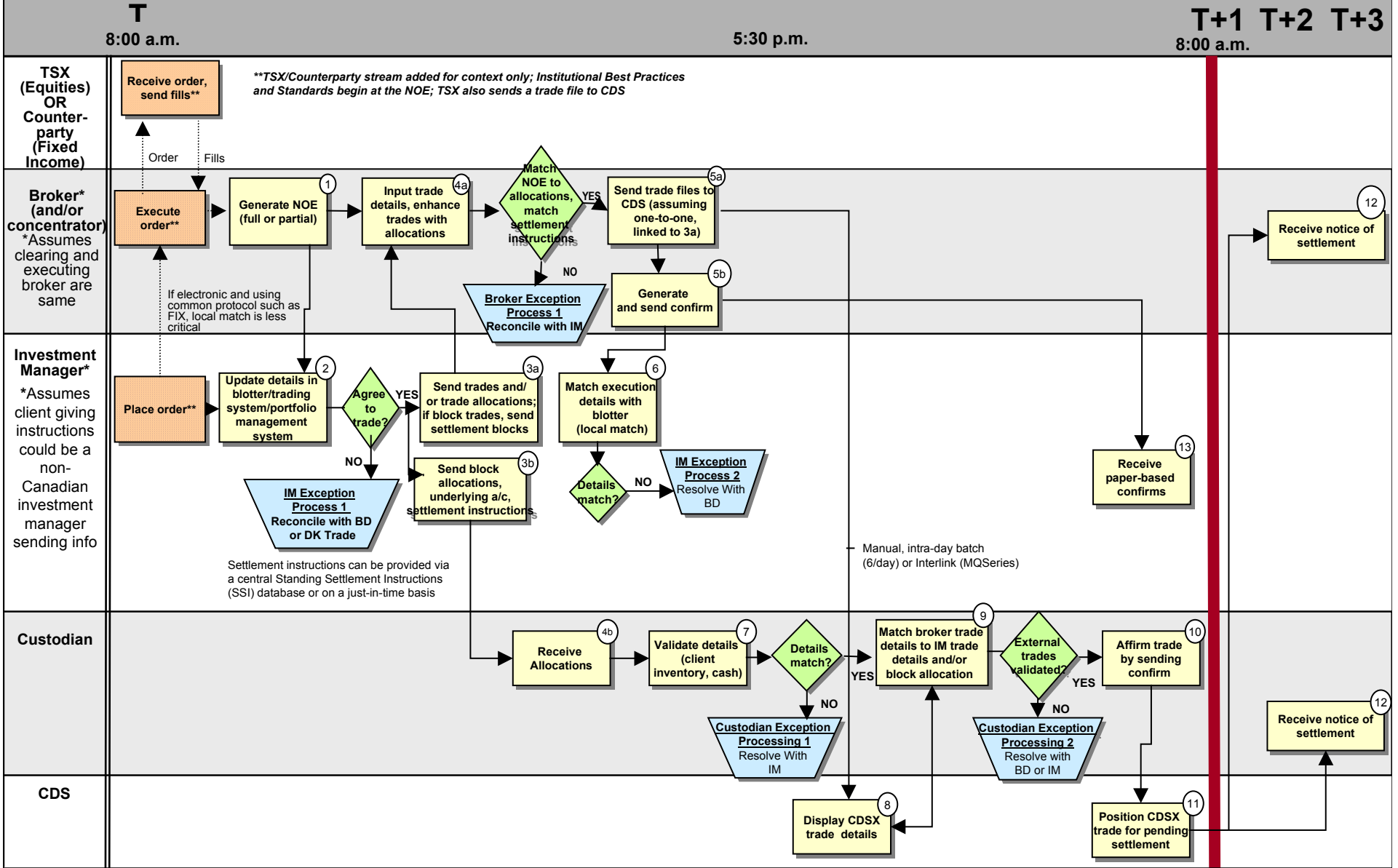
Each activity is numbered to highlight the sequence of activities within the process. For the purposes of this project, the first activity is “Generate NOE.” Moreover, each activity has a corresponding business practice. These process flow diagrams should be used in conjunction with the Canadian best business and market practices and standards templates that contain the timing and required data elements for each activity as well as a list of identified issues. Future versions of this document may be developed to cover additional types of market activity such as:

- Correspondent clearing arrangements
- Pre-allocated trades
- Prime broker trades.

On the following pages are process flow diagrams for the “without connectivity” and “with connectivity” to a VMU models. **Appendix #ITP.5, Future State Domestic Equities/Fixed Income with Connectivity to a Virtual Matching Utility Directly Supporting Settlement Blocks** provides a process flow diagram of the block trade example.

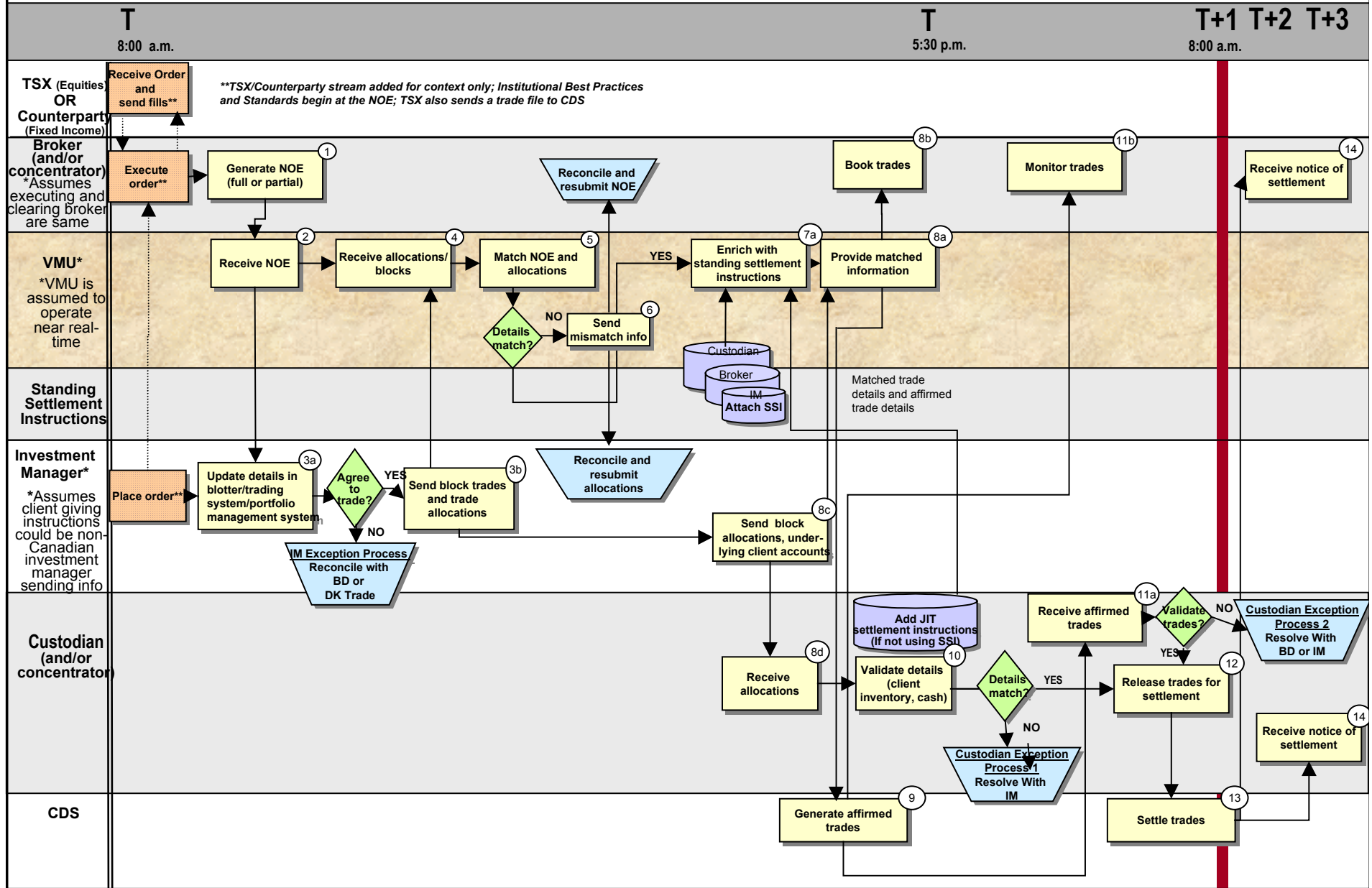


Future State Domestic Equities / Fixed Income WITHOUT Connectivity to a VMU





Future State Domestic Equities / Fixed Income WITH Connectivity to a VMU



5.3 Proposed Canadian Best Practices Tables

The best practices and standards templates directly map to the process flow diagrams and are grouped by activity (1, 2, 3, etc.). The market practices that are listed in each template are the mandatory data elements. **Appendix #ITP.6, Mandatory Future State Market Practice Data Elements**, lists all of the data elements, including those that are optional for a notice of execution in an ISO 15022 format.

The templates are designed to provide the appropriate information and direct the reader to the correct workstream location on the process flow diagrams. Each activity listed along the horizontal axis maps to the corresponding activity within the process flow diagram. The first column in the templates is labeled “Process Number” and each number within this column maps back to the process flow activity with the same number. The information highlighted across the vertical axis includes from/to, recommended time, market practice and issues/dependencies fields, defined below.

Process Number	Number corresponds to the activity number on the process flow diagrams
Activity	The actual action step within the processing model for which the business practices apply
From	The action/message originator
To	The action/message receiver
Recommended Time	The suggested timeframe to complete the activity
Mandatory Market Practice	Minimum mandatory information required with trade message
Issues/Dependencies	Issues or dependencies that have been identified with each process

These templates will require amendments and updates to ensure that as feedback is received, future releases are updated in a timely manner. These tables, broken out by broker/dealer, investment manager, custodian, depository and, in the “With Connectivity to a VMU” model, VMU are included in **Appendix #ITP.7, Best Business and Market Practices Tables by Industry Segment**.

Legend:

☑ Indicates new data to be added with the message

FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 1 of 7)

Business Practice				Mandatory Market Practice		Issues/Dependencies
Process #	Activity	From	To	Timing		
Order	Portfolio manger places order via internal trader	IM	BD		OUT OF SCOPE	
Order Execution	BD executes order on exchange	BD	Exchange			<p>Note: All communications (NOE, allocations) must be sent electronically, on a system-to-system basis, not by phone, e-mail or fax.</p>
Receive Order and Send Fills	Exchange receives order and sends fills	Exchange	BD		<p>Note: For Market Practice Data Element Definitions, see Appendix #ITP.6.</p>	
1	Generate NOE (full or partial)	BD	IM	<p>Within 30 minutes of fill on T, or within 30 minutes of end of trading session (different markets close at different times)</p> <p>NOTE: Items in bold and italics in the cell to the right are the clear responsibility of the broker; the others may be added by a service provider and/or after allocations are received</p>	<ul style="list-style-type: none"> ☑ <i>NOE Reference #</i> ☑ <i>Trade Date</i> ☑ <i>Settlement Date</i> ☑ <i>Buy/Sell Indicator</i> ☑ <i>Broker as Buyer/Seller (CUID, BIC or FINS)</i> ☑ <i>Executing and Clearing Broker (CUID)</i> ☑ <i>Security Identifier (ISIN)</i> ☑ <i>Quantity Reported</i> ☑ <i>Deal Price</i> ☑ <i>Currency</i> ☑ <i>Capacity (Agent/Principal)</i> ☑ <i>Sales Name/RR Code</i> ☑ <i>IM # (CUID, FINS, BIC)</i> ☑ <i>Order Status</i> ☑ <i>Date/Time of Message</i> ☑ <i>Partial Fills Quantity (for partial NOE ONLY- amount of shares open for further execution)</i> ☑ Function of the Message ☑ Trade Transaction Type Indicator ☑ Commission (equity trades only) ☑ Accrued Interest (fixed income trades only) ☑ Broker Settlement Location ☑ Block Reference # ☑ Net Amount ☑ Broker Portfolio/Account ID ☑ Common Reference # ☑ Settlement Type 	

FUTURE STATE **WITHOUT** CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 2 of 7)

Business Practice						
Process #	Activity	From	To	Timing	Mandatory Market Practice	Issues/Dependencies
2	Update details in blotter/trading system/portfolio management system	IM (Internal)	-	Per internal policies and procedures	-	To effectively accommodate business and market practices, the investment manager's systems must be able to communicate electronically with broker systems. This may require an investment in technology.
	IM Exception Process 1- Reconcile with BD	IM	BD	<60 minutes	-	<p>People:</p> <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. <p>Process:</p> <ul style="list-style-type: none"> If an exception is identified, the timing restarts. If an exception is identified at this stage, an investment manager may DK the trade.
3a	Send trades and/or trade allocations; if block trades, send settlement blocks	IM	BD	Within 30 minutes of final NOE; partial fill end of day on T if clearing on T Legend: <input checked="" type="checkbox"/> Indicates new data to be added with the message	<input type="checkbox"/> Function of the Message <input type="checkbox"/> Trade Date <input type="checkbox"/> Buy/Sell indicator <input type="checkbox"/> Trade Transaction Type Indicator <input type="checkbox"/> Executing and Clearing Broker (CUID) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Quantity Reported <input type="checkbox"/> Deal Price <input type="checkbox"/> Commission (equity trades only) <input type="checkbox"/> Accrued Interest (fixed income trade only) <input type="checkbox"/> Currency <input type="checkbox"/> Settlement Date <input type="checkbox"/> Block Reference # <input type="checkbox"/> Common Reference # <input type="checkbox"/> IM # (CUID, BIC, FINS) <input type="checkbox"/> Settlement Type <input checked="" type="checkbox"/> Allocation Sender Reference # <input checked="" type="checkbox"/> Custodian (CUID, BIC or FINS) <input checked="" type="checkbox"/> Settlement Location <input checked="" type="checkbox"/> Payment Indicator (Free/Against Payment) <input checked="" type="checkbox"/> IM Portfolio/Account ID <input checked="" type="checkbox"/> Net Amount <input checked="" type="checkbox"/> Quantity Allocated <input checked="" type="checkbox"/> Settlement Condition <input checked="" type="checkbox"/> Date/Time of Message	<p>Process:</p> <ul style="list-style-type: none"> Allocations for orders that are being worked over several days may not be determined. Transactions on illiquid securities may not be completed on T, depending on IM agreements with BD. There may be an issue for some investment managers regarding access to ISINs, especially ISINs on Money Market Instruments, and some providers do not have shared databases, requiring a more manual approach (e.g., verification via Bloomberg or other sources). <p>Technology:</p> <ul style="list-style-type: none"> Some order management systems (OMS) may not accommodate ISIN. Internal reference data must be cleaned up in order to facilitate communications with brokers and custodians. The investment manager could enrich the NOE information and attach data elements that they have specific control over in the allocation message.

FUTURE STATE **WITHOUT** CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 3 of 7)

Business Practice						
Process #	Activity	From	To	Timing	Mandatory Market Practice	Issues/Dependencies
3b	Send block allocations and underlying account information	IM	Custodian	Within 30 minutes of full fill on T <div style="background-color: yellow; padding: 2px;"> Legend: <input checked="" type="checkbox"/> Indicates new data to be added with the message </div>	<input type="checkbox"/> Function of the Message <input type="checkbox"/> Trade Date <input type="checkbox"/> Buy/Sell indicator <input type="checkbox"/> Trade Transaction Type Indicator <input type="checkbox"/> Executing and Clearing Broker (CUID) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Quantity Reported <input type="checkbox"/> Deal Price <input type="checkbox"/> Commission (equity trades only) <input type="checkbox"/> Accrued Interest (fixed Income trade only) <input type="checkbox"/> Currency <input type="checkbox"/> Settlement Date <input type="checkbox"/> Block Reference # <input type="checkbox"/> Common Reference # <input type="checkbox"/> IM # (CUID, BIC, FINS) <input type="checkbox"/> Settlement Type <input checked="" type="checkbox"/> Allocation Sender Reference # <input checked="" type="checkbox"/> Custodian (CUID, BIC or FINS) <input checked="" type="checkbox"/> Settlement Location <input checked="" type="checkbox"/> Payment Indicator (Free/Against Payment) <input checked="" type="checkbox"/> IM Portfolio/Account ID <input checked="" type="checkbox"/> Net Amount <input checked="" type="checkbox"/> Quantity Allocated <input checked="" type="checkbox"/> Settlement Condition <input checked="" type="checkbox"/> Date/Time of Message	Process: <ul style="list-style-type: none"> • Allocations for orders that are being worked over several days may not be determined. Transactions on illiquid securities may not be completed on T. • There may be an issue for some investment managers regarding access to ISINs, especially ISINs on money market instruments, and some providers do not have shared databases, requiring a more manual approach (e.g., verification via Bloomberg or other sources). Technology: <ul style="list-style-type: none"> • Some Order Management Systems (OMS) may not accommodate ISIN; however, CDS plans to make ISINs available by a subscription via the Web. • The investment manager could enrich the NOE information and attach data elements that they have specific control over in the allocation message.
4a	Input trade details and enhance trades with allocations	BD (Internal)	-	<30 minutes of receipt of allocation on T	-	Technology: <ul style="list-style-type: none"> • In the future state, front-office systems must update back-office systems on a near real-time basis.
	BD Exception Process – Reconcile with IM	BD	IM	<60 minutes	-	People: <ul style="list-style-type: none"> • There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. Process: <ul style="list-style-type: none"> • If an exception is identified, the timing restarts.
4b	Receive allocations	Custodian (Internal)	-	Per internal policies and procedures	-	-

FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 4 of 7)

Business Practice						
Process #	Activity	From	To	Timing	Mandatory Market Practice	Issues/Dependencies
5a	Send trade files to CDS (assuming one-for-one - each trade sent to CDS has a corresponding confirm)	BD	Depository	Within 30 minutes on T	As per CDSX requirements: <ul style="list-style-type: none"> <input type="checkbox"/> Trade Type <input type="checkbox"/> Business Role of Submitter (buyer or seller) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Par Value or Quantity <input type="checkbox"/> Price <input type="checkbox"/> Trade Date <input type="checkbox"/> Net Amount <input type="checkbox"/> Seller and Buyer CUIDs <input type="checkbox"/> Broker and Custodian Internal Account # from Submitter/Receiver <input type="checkbox"/> Broker Account # <input type="checkbox"/> Mode of Settlement (default to trade for trade unless otherwise specified) <input type="checkbox"/> Value Date <input type="checkbox"/> Settlement Currency (default to CAD unless otherwise specified) <input type="checkbox"/> Broker Tag # 	More details can be found at the following link: http://www.cds.ca/cdshome.nsf/Downloads/-EN-Operationsprocedures/\$File/trader1.pdf?OpenElement .

FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 5 of 7)

Business Practice					Mandatory Market Practice	Issues/Dependencies
Process #	Activity	From	To	Timing		
5b	Generate and send confirm	BD	IM	Per internal policies and procedures	<input type="checkbox"/> Sender Reference # <input type="checkbox"/> Function of the Message <input type="checkbox"/> Trade Date <input type="checkbox"/> Buy/Sell Indicator <input type="checkbox"/> Trade Transaction Type Indicator <input type="checkbox"/> Buyer/Seller (CUID, BIC or FINS) <input type="checkbox"/> Executing and Clearing Broker (CUID) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Quantity Reported <input type="checkbox"/> Deal Price <input type="checkbox"/> Commission (equity trade only) <input type="checkbox"/> Accrued Interest (fixed income trades only) <input type="checkbox"/> Currency <input type="checkbox"/> Settlement Date <input type="checkbox"/> Settlement Location <input type="checkbox"/> Payment Indicator (Free/Against Payment) <input type="checkbox"/> IM Portfolio/Account ID <input type="checkbox"/> Quantity Allocated <input type="checkbox"/> Block Reference # <input type="checkbox"/> Net Amount <input type="checkbox"/> Capacity (Agent/Principal) <input type="checkbox"/> Broker Portfolio/Account ID <input type="checkbox"/> Common Reference # <input type="checkbox"/> Sales Name/Code (RR Code) <input type="checkbox"/> IM # (CUID, BIC, FINS) <input type="checkbox"/> Settlement Condition <input type="checkbox"/> Settlement Type <input type="checkbox"/> Date/Time of Message <input type="checkbox"/> Settlement Instructions Indicator	Technology: <ul style="list-style-type: none"> Confirms should be generated near real-time in order to accommodate the matching of details by the investment manager.
6	Match execution details with blotter (local match)	IM (Internal)	-	Per internal policies and procedures	<input type="checkbox"/> Account <input type="checkbox"/> Security Identifier <input type="checkbox"/> Counterparty <input type="checkbox"/> Reference # <input type="checkbox"/> Underlying Allocations <input type="checkbox"/> Total Trade Amount <input type="checkbox"/> Buy/Sell Indicator	Process: <ul style="list-style-type: none"> Internal matching criteria will have to be determined by each organization. Technology: <ul style="list-style-type: none"> Investment managers will have to work with vendors to develop automated local matching capabilities.

FUTURE STATE **WITHOUT** CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 6 of 7)

Business Practice					Mandatory Market Practice	Issues/Dependencies
Process #	Activity	From	To	Timing		
	IM Exception Process 2 - Resolve with Broker	IM	BD	<60 minutes	-	-
7	Validate details (client inventory, cash)	Custodian (Internal)	-	Per internal policies and procedures	-	-
	Custodian Exception Process 1 – Resolve with IM	Custodian	IM	Resolve in <60 minutes	-	People: <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. Process: <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
8	Display trade details through CDSX	Depository (Internal)	-	Per internal policies and procedures	As per CDSX published requirements	More details can be found at the following link: http://www.cds.ca/cdshome.nsf/Downloads/-EN-Operationsprocedures/\$File/trader1.pdf?OpenElement .
9	Match BD trade details to IM trade details and/or block allocation	Custodian (Internal)	-	Per internal policies and procedures	<input type="checkbox"/> Counterparty <input type="checkbox"/> Date <input type="checkbox"/> ISIN <input type="checkbox"/> Amount	-
	Custodian Exception Process 2 – Resolve with B/D or IM	Custodian	B/D, IM	Resolve in <60 minutes	-	People: <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. Process: <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
10	Affirm trade by sending confirm	Custodian	Depository	Within 30 minutes on T	As per CDSX published requirements	More details can be found at the following link: http://www.cds.ca/cdshome.nsf/Downloads/-EN-Operationsprocedures/\$File/trader1.pdf?OpenElement .

FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 7 of 7)

Business Practice						
Process #	Activity	From	To	Timing	Mandatory Market Practice	Issues/Dependencies
11	Position CDSX trade for pending settlement	Depository (Internal)	-	Per internal policies and procedures	-	-
12	Send notice of settlement	Depository	BD, Custodian	Near real-time on settlement date	As per CDSX published requirements	More details can be found at the following link: http://www.cds.ca/cdshome.nsf/Downloads/-EN-Operationsprocedures/\$File/trader1.pdf?OpenElement .
13	Send confirm	BD	IM	Within 30 minutes or T+1 or later (if paper based)	-	Receipt of a paper-based confirm is an IDA regulatory requirement, although use of an electronic trade communication system is also considered in compliance with the regulation.

FUTURE STATE WITH CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 1 of 5)

Business Practice						
Process #	Activity	From	To	Timing	Mandatory Market Practice	Issues/Dependencies
Order	Portfolio manager places order via internal trader	IM	BD			
Order Execution	BD executes order on exchange	BD	Exchange		OUT OF SCOPE	<p>Note: All communications (NOE, allocations) must be sent electronically, on a system-to-system basis, not by phone, e-mail or fax.</p>
Receive Order and Send Fills	Exchange receives order and sends fills	Exchange	BD		<p>Note: For Market Practice Data Element Definitions, see Appendix #ITP.6.</p>	
1	Generate NOE (full or partial)	BD	VMU	<p>Near real-time or <30 minutes on T within knowing client is done-for-day</p> <p>NOTE: Items in bold and italics in the cell to the right are the clear responsibility of the broker; the others may be added by a service provider and/or after allocations are received</p> <p>Legend:</p> <p><input checked="" type="checkbox"/> Indicates new data to be added with the message</p>	<p><input checked="" type="checkbox"/> NOE Reference #</p> <p><input checked="" type="checkbox"/> Trade Date</p> <p><input checked="" type="checkbox"/> Settlement Date</p> <p><input checked="" type="checkbox"/> Buy/Sell Indicator</p> <p><input checked="" type="checkbox"/> Broker as Buyer/Seller (CUID, BIC or FINS)</p> <p><input checked="" type="checkbox"/> Executing and Clearing Broker (CUID)</p> <p><input checked="" type="checkbox"/> Security Identifier (ISIN)</p> <p><input checked="" type="checkbox"/> Quantity Reported</p> <p><input checked="" type="checkbox"/> Deal Price</p> <p><input checked="" type="checkbox"/> Currency</p> <p><input checked="" type="checkbox"/> Capacity (Agent/Principal)</p> <p><input checked="" type="checkbox"/> Sales Name/RR Code</p> <p><input checked="" type="checkbox"/> IM # (CUID, FINS, BIC)</p> <p><input checked="" type="checkbox"/> Order Status</p> <p><input checked="" type="checkbox"/> Date/Time of Message</p> <p><input checked="" type="checkbox"/> Partial Fills Quantity (for partial NOE ONLY- amount of shares open for further execution)</p> <p><input checked="" type="checkbox"/> Function of the Message</p> <p><input checked="" type="checkbox"/> Trade Transaction Type Indicator</p> <p><input checked="" type="checkbox"/> Commission (equity trades only)</p> <p><input checked="" type="checkbox"/> Accrued Interest (fixed income trades only)</p> <p><input checked="" type="checkbox"/> Broker Settlement Location</p> <p><input checked="" type="checkbox"/> Block Reference #</p> <p><input checked="" type="checkbox"/> Net Amount</p> <p><input checked="" type="checkbox"/> Broker Portfolio/Account ID</p> <p><input checked="" type="checkbox"/> Common Reference #</p> <p><input checked="" type="checkbox"/> Settlement Type</p>	

FUTURE STATE WITH CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 2 of 5)

Business Practice						
Process #	Activity	From	To	Timing	Mandatory Market Practice	Issues/Dependencies
2	Receive NOE	VMU (Internal)	-	Near real-time	-	-
3a	Update details in blotter/trading system/portfolio management system	VMU	IM	Near real-time	-	To effectively accommodate business and market practices, the investment manager's systems must be able to communicate electronically with broker systems. This may require a technology investment.
	IM Exception Process – Resolve with BD	IM	BD	<60 minutes	-	<p>People:</p> <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. <p>Process:</p> <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
3b	Send block trades and trade allocations	IM	VMU	Near real-time within 30 minutes of final NOE; partial fill end of day on T	<input type="checkbox"/> Function of the Message <input type="checkbox"/> Trade Date <input type="checkbox"/> Buy/Sell indicator <input type="checkbox"/> Trade Transaction Type Indicator <input type="checkbox"/> Executing and Clearing Broker (CUID) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Quantity Reported <input type="checkbox"/> Deal Price <input type="checkbox"/> Commission (equity trades only) <input type="checkbox"/> Accrued Interest (fixed income trade only) <input type="checkbox"/> Currency <input type="checkbox"/> Settlement Date <input type="checkbox"/> Block Reference # <input type="checkbox"/> Common Reference # <input type="checkbox"/> IM # (CUID, BIC, FINS) <input checked="" type="checkbox"/> Settlement Type <input checked="" type="checkbox"/> Allocation Sender Reference # <input checked="" type="checkbox"/> Custodian (CUID, BIC, FINS) <input checked="" type="checkbox"/> Settlement Location <input checked="" type="checkbox"/> Payment Indicator (Free/Against Payment) <input checked="" type="checkbox"/> IM Portfolio/Account ID <input checked="" type="checkbox"/> Net Amount <input checked="" type="checkbox"/> Quantity Allocated <input checked="" type="checkbox"/> Settlement Condition <input type="checkbox"/> Date/Time of Message	<p>Process:</p> <ul style="list-style-type: none"> Allocations for orders that are being worked over several days may not be determined. Transactions on illiquid securities may result in trades not being executed on T. There may be an issue for some investment managers regarding access to ISINs, especially ISINs on money market instruments, and some providers do not have shared databases, requiring a more manual approach (e.g., verification via Bloomberg or other sources). <p>Technology:</p> <ul style="list-style-type: none"> Some order management systems (OMS) may not accommodate ISINs; however, CDS plans to make ISINs available by a subscription via the Web. Internal reference data must be cleaned up to facilitate communications with the VMU. The investment manager could enrich the NOE information and attach data elements that they have specific control over in the allocation message.

Legend:
 Indicates new data to be added with the message

FUTURE STATE WITH CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 3 of 5)

Business Practice						
Process #	Activity	From	To	Timing	Mandatory Market Practice	Issues/Dependencies
4	Send allocations/blocks	IM	VMU	Real-time	-	
5	Match NOE and allocations	VMU (Internal)	-	Real-time	-	Match criteria must be more fully developed in conjunction with market practices. Not all mandatory market practice elements will be included in a match.
6	Send mismatch info	VMU	IM, BD	Real-time	-	
	BD Exception Process – Reconcile and resubmit NOE	BD (Internal)	-	<60 minutes	-	<p>People:</p> <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. <p>Process:</p> <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
	IM Exception Process- Reconcile and resubmit allocation	IM (Internal)	-	<60 minutes	-	<p>People:</p> <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. <p>Process:</p> <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
7a	Enrich with SSI (centralized database)	SSI	VMU	Real-time	<p>IM</p> <ul style="list-style-type: none"> Internal Account # and Associated Custodian Identifiers (BIC) <p>Custodian</p> <ul style="list-style-type: none"> Internal Account # <p>BD</p> <ul style="list-style-type: none"> Internal Account # (associated with IM internal account in an SSI DB) Executing and Clearing Brokers Place of Settlement 	<p>Process:</p> <ul style="list-style-type: none"> Need to develop clear roles and responsibilities for all the participants of a centralized standing settlement instructions database (SSI). Ongoing viability of a standing instructions database requires regular maintenance and rules for participants to adhere to.
7b	Just-in-time (JIT) enrichment (internal participant database)	Custodian	VMU	Real-time	<p>IM</p> <ul style="list-style-type: none"> Internal Account # and Associated Custodian Identifiers (BIC) <p>Custodian</p> <ul style="list-style-type: none"> Internal Account # Place of Settlement <p>BD</p> <ul style="list-style-type: none"> Internal Account # (associated with IM internal account in an SSI DB) Executing and Clearing Brokers Place of Settlement 	<p>Process:</p> <ul style="list-style-type: none"> Each participant should be responsible for enriching its own data.

FUTURE STATE WITH CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 4 of 5)

Business Practice

Mandatory Market Practice

Issues/Dependencies

Process #	Activity	From	To	Timing		
8a	Provide matched information	VMU	Depository, BD	Real-time	<input type="checkbox"/> Sender's Reference # <input type="checkbox"/> Function of the Message <input type="checkbox"/> Linkage Reference # <input type="checkbox"/> Status Code <input type="checkbox"/> Reason Code <input type="checkbox"/> Buy/Sell Indicator <input type="checkbox"/> Payment Indicator <input type="checkbox"/> Quantity Traded <input type="checkbox"/> Identification of the Financial Instrument <input type="checkbox"/> Settlement Party (buyer/seller) <input type="checkbox"/> Safekeeping Account #	Process: <ul style="list-style-type: none"> Match criteria need to be developed and finalized. SIA used generic match criteria; more detailed match criteria are scheduled to be published by the end of Q2 2003.
8b	Book trades	BD (Internal)	-	Real-time	-	
8c	Send block allocations and underlying client account information	IM	VMU	Near real-time within 30 minutes of full fill if clearing on T	<input type="checkbox"/> Function of the Message <input type="checkbox"/> Trade Date <input type="checkbox"/> Buy/Sell Indicator <input type="checkbox"/> Trade Transaction Type Indicator <input type="checkbox"/> Executing and Clearing Broker (CUID) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Quantity Reported <input type="checkbox"/> Deal Price <input type="checkbox"/> Commission (equity trades only) <input type="checkbox"/> Accrued Interest (fixed income trade only) <input type="checkbox"/> Currency <input type="checkbox"/> Settlement Date <input type="checkbox"/> Block Reference # <input type="checkbox"/> Common Reference # <input type="checkbox"/> IM # (CUID, BIC, FINS) <input checked="" type="checkbox"/> Settlement Type <input checked="" type="checkbox"/> Allocation Sender Reference # <input checked="" type="checkbox"/> Custodian (CUID, BIC or FINS) <input checked="" type="checkbox"/> Settlement Location <input checked="" type="checkbox"/> Payment Indicator (Free/Against Payment) <input checked="" type="checkbox"/> IM Portfolio/Account ID <input checked="" type="checkbox"/> Net Amount <input checked="" type="checkbox"/> Quantity Allocated <input checked="" type="checkbox"/> Settlement Condition <input type="checkbox"/> Date/Time of Message	Process: <ul style="list-style-type: none"> Allocations for orders that are being worked over several days may not be determined. Transactions on illiquid securities may not be completed on T. There may be an issue for some investment managers regarding access to ISINs, especially ISINs on money market instruments, and some providers do not have shared databases, requiring a more manual approach (e.g., verification via Bloomberg or other sources). Technology: <ul style="list-style-type: none"> Some order management systems (OMS) may not accommodate ISINs; however, CDS plans to make ISINs available by a subscription via the Web. The investment manager could enrich the NOE information and attach data elements that they have specific control over in the allocation message.

Legend:
 Indicates new data to be added with the message

FUTURE STATE WITH CONNECTIVITY TO A VMU (Institutional Trade Processing – Page 5 of 5)

Business Practice						
Process #	Activity	From	To	Timing	Mandatory Market Practice	Issues/Dependencies
8d	Send allocations	IM	Custodian	Near real-time	Same information as required in 8c	-
9	Generate matched (affirmed) trades	Depository	Custodian/BD	Near real-time	As per CDSX published requirements	More details can be found at the following link: http://www.cds.ca/cdshome.nsf/Downloads/-EN-Operationsprocedures/\$File/trader1.pdf?OpenElement .
10	Validate details (client, inventory, cash)	Custodian (Internal)	-	Near real-time	-	-
	Custodian Exception Process 1 - Resolve with IM	Custodian	IM	<60 minutes	-	<p>People:</p> <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. <p>Process:</p> <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
11a	Receive matched (affirmed) trades	Custodian (Internal)	-	Near real-time	-	-
	Custodian Exception Process 2	Custodian	B/D, IM	<60 minutes	-	<p>People:</p> <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. <p>Process:</p> <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
11b	Monitor trades	BD (Internal)	-	Near real-time	-	-
12	Release trades for settlement	Custodian	Depository	Near real-time	-	-
13	Settle trades	Depository (Internal)	-	Near real-time; no later than T+3	-	-
14	Send notice of settlement	Depository	BD/Custodian	Near real-time	As per CDSX requirements	-

5.4 Standards

The ISO 15022 and FIX standards in their present forms are different in message formats, data definitions and network infrastructure requirements. To achieve true STP, the standard governing bodies, FPL (FIX Protocol Organization) and SWIFT have announced the migration path for FIX and SWIFT to converge under the ISO 15022 XML standard. The goal of ISO 15022 XML is to define a single financial data definition repository, which consists of data elements, message formats and communication mechanisms. The standard is currently targeted to be available by the third quarter of 2003.

As the standards evolve and converge, individual organizations should both carefully assess their positions on standard compliance to ensure that the gains in cost savings and trading efficiency are realized and remain fully engaged with their upstream and downstream trading and vendor partners to ensure that they will be able to support the vendor-neutral ISO 15022 XML standard as it evolves.

5.5 Risks and Exceptions

The development of business and market practices is intended to reduce the exceptions that currently result from dependencies on other participants or data issues. The delays in processing affect all participants, as there is often a dependency on other parties to resolve issues.

Exceptions in the institutional process encompass inherent risks, and may result in significant potential financial impacts. When trades are not processed in a timely manner, there is less time to process exceptions, which undoubtedly increases the probability that a trade may fail and augments the financial impacts associated with a failed trade. The most common types of exceptions result from the late communication of information (e.g., late NOEs or allocations) and inaccurate or incomplete data (e.g., incorrect/incomplete security information, clearing and executing broker IDs). Manual processing, which has been identified as a high-risk problem area (see ITPWG white paper), is not compatible with the institutional best practices and standards.

The process flow diagrams and best business market practice tables identify exception processing, but increased STP and best practices and standards should diminish the need for these over time.

Canadian institutional best practices and standards must be introduced as part of the STP initiative in order to minimize risks and the associated impacts. Risk reduction is directly associated with the timely delivery of accurate and complete information, which is electronic and in an industry-standard format such as ISO 15022. By setting timing and market practice guidelines, industry participants will have a clear understanding of what steps need to be taken to minimize their risks. Adherence to the business

practices for all inter-firm activities and exception processes developed by the industry is critical to the success of the overall industry STP initiative.

5.6 U.S.

In developing Canadian best practices and standards, Canada both leveraged and tested conclusions against U.S. draft best practices and standards. Currently, Canadian institutions perform a significant number of trades in the U.S. and there was a general view that there are no major differences between Canadian and U.S. business and market practices. In general, Canadian and U.S. institutional trade processing and the related best practices and standards developed are similar, with the exception that Canada, unlike the U.S., supports block settlement in addition to trade-for-trade settlement. Each firm acting in both markets should ensure that it is able to comply with the best practices and standards in both markets.

As well, whereas there is a regulatory framework mandating interoperability between VMUs and the criteria to support this in the U.S., in Canada the regulatory mandate regarding interoperability has not yet been confirmed.

Refer **Appendix #ITP.8, Comparison of Canadian and U.S. Mandatory Data Elements**, and www.ccma-acmc.ca, Best Practices and Standards page, Institutional section, for a more detailed comparison of Canadian and U.S. mandatory data elements.

6.0 Other Considerations

Attached as **Appendix #ITP.9, Considerations** is a detailed list of issues raised pertaining to investment managers, brokers, custodians and others:

Key considerations include the following:

1. Data issues
 - Access to data that should be available to the entire industry, e.g., CUSIPs/ISINs, BICs, etc.
 - The clean-up of core reference data (e.g., ISINs, CUIDS, broker IDs, etc.)
2. Timing issues
3. The ability to move data intraday (e.g., real- or near real-time) and support of the vendors for this process
4. Responsibilities/process issues
 - A clear definition of who is responsible for updating and maintaining the data in the standing settlement instructions database (at an industry or institution level)
 - Procedures to complete fills on trade date (all orders filled by close of trade in order to fully allocate) that may be different from today
 - Exception processing – availability of resources, what happens if cut-offs are missed or trades with matched status need to be changed, etc.
 - Changes to behaviours of front-, middle- and back-office staff
 - Who will govern metrics to ensure compliance

- Certification of VMUs, especially as regards security and reliability
5. Market and implementation issues
- The impacts on low-volume/smaller broker and investment manager shops
 - The motivators to build to and measure against the set of standards and the role of regulators
 - The cost of automation or system upgrades for shops of all sizes.

7.0 Rule/Regulatory/Implementation Governing Body

While the industry is working to develop best practices through consensus-building among as many participants as possible, including regulators, as opposed to seeking regulation, there is one exception. The CCMA recommends that the securities commissions require matching on trade date (T) for the following reasons:

1. From an STP and broader efficiency benefits perspective, experience with the September 11, 2001 terrorist attacks in the U.S. showed that firms with matched or affirmed trades on trade date, which implies automation and real-time electronic communication, were significantly better off than those that had not. Without a rule requiring matching or confirmation/affirmation to confirm agreement on accurate and full information, manual intervention will continue as counterparties before settlement – or after a fail on T+3 – address the fact that trade details do not coincide, thus negating the STP efforts of other participants. Although confirmation/affirmation (or the current process in some cases of “DK”ing transactions where a counterparty believes that details do not agree) ultimately would achieve the purpose of matching, there is no current requirement to complete this process on trade date.
2. From a competitiveness perspective, a requirement to match on T will put the Canadian marketplace on a more equal footing with the U.S. Significantly more securities transactions than in Canada are matched in the U.S. through the DTCC ID system, linking brokers, investment managers and custodians with the depository. In mid-2002, 83 per cent of trades were affirmed on T+1, comparing to Canada’s estimated rate of 40 per cent.
3. From a regulatory efficiency basis, a single CSA rule can reach the broadest range of participants in the securities processing chain. As well, a CSA rule would signal to other groups not covered by regulation to follow suit. For example, some investment managers not under CSA jurisdiction would be encouraged by peer pressure to match trade details on trade date.

Beyond this securities commission rule, other rules or mechanisms are suggested to support industry-wide adherence to the best practices and standards:

Investment Dealers Association of Canada	Rules setting out best practices and standards noted in the above table would be set by the IDA.
Custodians	Custodians are considering a range of options to

support the best practices and standards. One option is subscribing voluntarily to the relevant best practices and standards, which would be posted on the CCMA Web site. Another alternative would be for the Office of the Superintendent of Financial Institutions (OSFI) to establish a guideline. A third possibility is to have a review of the best practices and standards be included as part of the Canadian Institute of Chartered Accountants Handbook Section 5900 audits. Finally, it may be possible to provide indirect mandating through IDA rules (e.g., IDA members could only deal with custodians that meet the requirements). The CCMA welcomes input on this point.

Investment Managers

There is no self-regulatory organization equivalent to the Investment Dealers Association of Canada or, indeed, a single or even multiple industry association(s) that span(s) the spectrum of the investment management community. One option is for the securities commissions to mandate adherence to the standards as the securities commissions' regulatory power extends to mutual funds and advisors. The CCMA will be discussing options with the Investment Counsel Association of Canada, Association of Canadian Pension Management, Pension Investment Association of Canada, Investment Funds Institute of Canada and others and welcomes input from investment managers on this point.

8.0 Compliance/Conformance Mechanisms

Compliance and conformance mechanisms will arise informally, through market forces, and formally, developed as part of the rule-setting process at the IDA, CSA, etc. and through by-laws and procedures set by utilities such as the Canadian Depository for Securities Limited.

Compliance and conformance mechanisms can range from reporting/disclosure of comparative STP data to an organization against an industry average, public disclosure of all firms' STP rates/rates of compliance with best practices and standards, incentives, penalties and progressive penalty structures.

9.0 Metrics/Progress Tracking

The table below, populated with data collected over time, will give both an indication of the magnitude of the challenge and the specific areas of greatest

challenge on which additional resources will need to be focussed:

Data for: (Month) 2003	T	T+1	T+2	T+3 or later	Total
1. Timeliness of trade details from IM to custodian <ul style="list-style-type: none"> a. All electronic to custodians and FMC¹: <ul style="list-style-type: none"> • CDSX (debt) • Book-Based Service (BBS)² b. Electronic to custodians via FMC³ c. Manual⁴ 					
2. Timeliness of broker/dealer trade details to CDS via service bureaus ⁵					
3. Timeliness of affirmation between custodians and broker/dealers at CDS (and value) <ul style="list-style-type: none"> • CDSX (debt) • Book-Based Service (BBS) 	Target 99 per cent by June 30/05	Target 80 per cent by Dec. 31/03			
4. Percentage of trade details provided manually to total (by fax)					
5. Top three repair reasons by custodians based on IM details received	1. X per cent counterparty identifier 2. Etc. 3.				

Note:

- The intention is to report the above data on a monthly basis and, quarterly, publish a year-to-date status – in the quarterly report, we will identify gaps, issue analysis and action plans to move towards the target deliverables
 - This data will be provided on a best-efforts basis, with the understanding that the data collection will be refined and automated over time
 - Excludes same-day-settling securities.
- ¹ Note: BBS is expected to be replaced by a system known as CDSX in 2003 and, depending on the CDSX implementation date, data regarding BBS may not need to be collected.
- ² Source: Financial Models Company
- ³ Source: Aggregation of data from three custodians – RBC Global Services, CIBC Mellon and StateStreet
- ⁴ Source: ADP, IBM, Dataphile
- ⁵ Source: The Canadian Depository for Securities Limited

Current data suggests that Canada’s capital markets demonstrate less than half of the U.S. affirmation rate on T+1 of 83 per cent.

While the above is of interest in the analysis stage, it is important to formally develop the metrics to provide industry-wide performance measurement in relation to best practices and standards as regards timeliness and accuracy of activities performed. As industry consensus is obtained, it will become possible to develop a consistent set of metrics that can be used to measure industry progress on best practices and standards. In terms of conformance, it has been suggested that there could be penalties and rewards for complying with best practices and standards. A growing number of market players offer/charge or are considering offering/charging discounts/premiums depending on how trades are communicated and on what level of manual intervention is required.

By developing a common and consistent set of measures among industry participants, the CCMA will be in a much better position to communicate industry progress in relation to its milestones. The benefit for individual organizations will be that organizational performance can be benchmarked against the industry.

The implementation of ongoing performance measurement may facilitate the required changes in behaviour and will provide the basis for future industry and regulatory conformance measures.

An industry body such as the CCMA could be tasked with posting the metrics, which will be defined collectively by the industry stakeholders. They would have to capture timeliness, error rates, etc.; however, how they would be captured would have to be resolved.

While the developed metrics would remain the same as in the future state without direct connection to a VMU (or VMUs), performance measurement in a future state with direct connection to a VMU would see the utility reporting on industry performance. Performance measurement by the VMU would focus on the timeliness and accuracy of information sent to and from the VMU. The VMU would provide ongoing reporting of industry conformance.

10.0 Implementation

The development of best practices and standards will require continuing industry involvement and support. The goal is 100-per-cent compliance with the best practices and standards by June 2005. A comprehensive implementation plan will be developed as more data becomes available (as set out under 9.0 above) and after comments on the proposed best practices and standards are received and reviewed.

Section 2: ENTITLEMENTS BEST PRACTICES AND STANDARDS

1.0 Highlights

The CCMA is requesting input from participants in the securities processing chain regarding any oversights or impediments to implementation of the best practices and standards within participants and across the industry. Please provide your input, using the questions in **Appendix #1, Response Sheet**, as a guide in determining whether there are any oversights or impediments. Given the extensive comments received during the white paper development process between 2002 and 2003 and the additional input received from industry experts in 2003, it is assumed that the best practices and standards developed are reasonable and can be implemented by participants by the target date.

Goals: The ultimate goal of corporate actions best practices and standards is to facilitate:

- The electronic dissemination of entitlement and all corporate-action-related information from issuers/offers through intermediaries/a central hub to beneficial owners and, where elections are required, the electronic communication of the election through intermediaries to the issuers'/offers' agent
- The electronic distribution of entitlement-related payments in irrevocable form, the electronic distribution of non-cash entitlements and the advance notification of payment timing from issuers/offers through to the final intermediary.

Problems: The problems in the area of entitlements and, in particular, corporate actions, that need to be solved to achieve these goals include: manual, duplicative, paper-based processing; absence of best practices and standards regarding data, timing and roles; payment issues; and more.

Current practices/standards, rules and metrics: There is currently little in the way of documented or widely accepted/known best practices, standards or regulation governing entitlements processing. There are no easily accessible measures of performance.

Required best practices/standards, rules, governance and metrics: Best practices and standards are required that focus on the timelines and responsibilities of parties in the entitlement-handling process and the data that should be collected in standard form. Specific areas of best practices and standards proposed, and the governance mechanisms and metrics required, relate to: payment (including payment to the final investor), certificate turnaround (recognizing that every effort should be made to convert paper certificates to electronic holdings, thereby facilitating shorter turnarounds), securities distributions, default issuance being electronic, solicitation fee claims, payment of solicitation fees, and format, content and method of entitlement information

dissemination. Securities commission regulatory changes needed to support the foregoing include rules that require: (a) filing of a broad range of entitlement information to a central location in standard form and (b) payment to depositories of entitlement payments by noon on pay date by Large Value Transfer System (LVTS) or the equivalent debiting of CDS participants' funds accounts.

2.0 Current Problems

The CCMA's Corporate Actions Working Group (CAWG), in 2002, identified the following market problems, some of which could be solved by the implementation of best practices and standards:

- Manual processes and duplication of/unnecessary effort
- Need for standards and standardized procedures – standard information sources, standard timing, standard format and standard action
- Need to reduce reliance on paper (documentation, cheques, certificates)
- Money movement issues
- Legal/regulatory impediments, including where the lack of legislation, regulations or rules is the obstacle
- Need for additional incentives/compliance mechanisms to achieve adherence to standards and market practice
- Need for effective communications.

References: Refer www.ccma-acmc.ca, Media/publications page, White Papers – October 22, 2002: CCMA Corporate Actions and Other Entitlements White Paper May 28, 2003: Corporate Actions White Paper Addendum

3.0 Current Best Practices/Standards, Rules and Metrics

There are few, if any, documented or widely accepted/known best practices and standards in the entitlements areas, as elaborated on in the above-referenced papers, although material in the Trust Companies Institute/Institute of Canadian Bankers' Corporate Trust Program: "Introduction to Stock Transfer and Bond Trusteeship Operations" (June 2001) is recognized by some in the transfer agent community as serving in this capacity to an extent. The transfer agents' 48-hour standard turnaround on physical certificate requests is generally known but not formally documented and there are no universal standards in Canada for when, where and how all entitlement events must be reported. While some entitlement events are easy to discover or predict – the maturity and interest events on most bond issues – others are less so (e.g., the timing of a call on a bond is uncertain). Some, but not all (e.g., private placement) corporate action information is filed in the System for Electronic Document Analysis and Retrieval (SEDAR), but not in standardized or a data-defined format. Limited non-corporate-action entitlement information is available in an easily accessible way. There are equally few rules and regulations, and, indeed, fewer rules and regulations than in the U.S., as set out in the CCMA's entitlements white paper.

4.0 Corporate Actions and Entitlements Target STP Milestones

- ▶ **December 2003:** Establish securities industry standards and best practices on who should do what by when in terms of data quality, message protocols and timing (e.g., entitlement notice content, payment timing notification)
- ▶ **December 2004:** Enact regulations:
 - ▶ Mandating reporting of public company and government issue entitlement information to a central hub or linked hubs
 - ▶ Requiring (i) entitlement payments be made electronically via the Large Value Transfer System (LVTS) to depositories and (ii) other entitlements be done in book-based form
- ▶ **June 2005:** Achieve 100-per-cent compliance with industry standards and best practices.

5.0 Proposed Best Practices and Standards

To develop the best practices and standards, governing bodies and metrics, the CCMA's Corporate Actions Working Group examined its white paper and white paper addendum, comments received on these documents and material developed in the U.S. and elsewhere.

Proposed best practices and standards are reflected in the following table (**Note:** For an explanation of the terminology used in the table and elsewhere in this section, refer to the CCMA's Glossary and Acronyms on the CCMA's Web site, www.ccma-acmc.ca, Best Practices and Standards page, Definitions section).

The data elements that should be included are listed in **Appendix #CA.1, Standard Entitlement Data Fields**. These are consistent in all material respects with data elements that are understood are, or will be, required in the U.S., with exceptions highlighted at the end of the noted appendix.

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#	Activity	Business Practice		Timing	Market Practice/Standard	Notes	Governing Body/ Compliance Measures	Benchmarking/ Metrics
		From	To					
1.	Payment	Issuer/ Offeror/ Agent	Paying Agent/ Depository	Prior to 12:00 p.m. Eastern Time (ET) on payment date	Large value corporate action and other entitlement payments must be made by Large Value Transfer System (LVTS) whether from issuer through The Canadian Depository for Securities Limited (CDS) to CDS participants or from transfer agents to custodians or the depositing holder directly.	Canadian Payments Association (CPA) rules prohibit cheques over \$25 million from being entered into the clearings, effectively meaning that payments in excess of \$25 million must be made by LVTS. Over time, the threshold must decline to a lower threshold. The threshold level should be decided based on analysis and discussion and the threshold should be reviewed on a periodic basis.	The CCMA has asked the Canadian Securities Administrators (CSA) to mandate the payment of corporate action and other entitlement payments to depositories via LVTS by noon, ET (or via CDS participant funds account debit). Note: While the CPA currently mandates that payment recipients must reject payments received by cheque for amounts over a threshold, currently \$25 million, this threshold is perceived to be too high and the CSA is viewed as being in a better position to require payment by LVTS to reduce risk and improve STP.	CDS and transfer agents will monitor entitlement amounts received by noon, ET.
		Paying Agent	Payment Distributors	2:30 p.m. ET on payment date	Large value corporate action and other entitlement payments must be made by LVTS whether from issuer through CDS to broker or from transfer agents to custodians or the depositing holder.	CDSX, CDS's new debt and equities clearing system, will require payment by 2:30 p.m.; if payment is received after 2:30 p.m., it will be processed on a next-day basis or, in certain circumstances, CDS may use best efforts to process the payment on the same day.	CDS Procedures specify 2:30 p.m. as the end of intraday entitlement release. No compliance mechanisms are proposed until further analysis reveals that they are required.	CDS monitors late payment. CDS will report quarterly on an aggregate industry basis on entitlement amounts at various thresholds (\$1, \$5, \$10, \$15, \$20 and \$25 million).
		CDS	Custodian, Broker/ Dealer, CDS Participant or Depositing Holder	4:00 p.m. ET on payment date	CDS completes payment exchange.		CDS Procedures specify the 4:00 p.m. deadline for payment exchange. CDS has a penalty applying to those who cause a delay to payment exchange.	CDS monitors late payment and will report payment timeliness data to the industry.

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#	Business Practice			Market Practice/Standard	Notes	Governing Body/ Compliance Measures	Benchmarking/ Metrics
	Activity	From	To				
	Exceptions: <ul style="list-style-type: none"> • Advice 	Any	Any	Immediately when known	Advice: If payment deadlines will not be met, issuers/offerors/their agents must keep their transfer agent/CDS apprised on a timely basis.	None proposed at this time; transfer agent/CDS will address bilaterally with the late payors.	None proposed as the issue will be dealt with bilaterally.
	<ul style="list-style-type: none"> • Compensation 	Any	Any	As soon as possible	Late Payment Compensation: <ul style="list-style-type: none"> • Counterparties within the capital markets industry must pay/receive compensation based on the principle of ensuring no unjust enrichment or undue harm. In situations where the receiving firm did not have use of funds or only partial use of funds, the firms requesting compensation may have their claim declined or the compensation rate adjusted accordingly; however, the expectation is that paying agents will hold funds in interest-bearing accounts. • Interest may be sought using a mutually agreeable representative rate, e.g., 91-day T-bill rate, call rate, overnight rate, etc. • Payments received in error must be promptly identified and rejected. 	CPA has LVTS Rule 14 governing the settlement of claims and adjustments <i>between</i> LVTS Participants and it is considering broadening this rule. CDS has claims rules governing errors or problems that it causes, which apply also when CDS does not benefit. More broadly, the Canadian Capital Markets Association intends to include this as part of its “Canadian Securities Marketplace Best Practices and Standards” – this would not have the force of a rule or provide monitoring, as the CCMA is not a self-regulatory organization; however, it would have the force of moral suasion.	None proposed as the issue will be dealt with bilaterally.

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#	Business Practice		Market Practice/Standard	Notes	Governing Body/ Compliance Measures	Benchmarking/ Metrics		
	Activity	From To					Timing	
2.1	Certificate Turn-around	Transfer Agent or Issuer	Custodian, Broker/ Dealer, CDS Participant or Depositing Holder	Within two business days of request	Transfer agents and other issuers must turn around physical certificates for which they are registrar within two business days.	The practice is less than 48 hours. As well, rush (one-hour) withdrawal is available.	Security Transfer Association of Canada (STAC) – this would be minuted in a STAC board of directors meeting and be published with the “Canadian Securities Marketplace Best Practices and Standards” by the CCMA. It would not have the force of a rule or provide monitoring, as STAC is not a self-regulatory organization; however, it would have the force of moral suasion. No specific compliance mechanisms are proposed until further analysis reveals that they are required.	None proposed until further analysis reveals that they are required.
	Exceptions	Transfer Agent or Issuer	Custodian, Broker/ Dealer, CDS Participant or Depositing Holder	Best efforts	In the case of securities distributions arising from corporate actions of other entitlements and in cases involving securities that are not recorded on the transfer agents’ registers (e.g., predecessor issues of another company), transfer agents must use best efforts to deliver the securities on a timely basis.		Security Transfer Association of Canada – this would be minuted in a STAC board of directors meeting and be published with the “Canadian Securities Marketplace Best Practices and Standards” by the CCMA. It would not have the force of a rule or provide monitoring, as STAC is not a self-regulatory organization; however, it would have the force of moral suasion. No specific compliance mechanisms are proposed until further analysis reveals that they are required.	None proposed until further analysis reveals that they are required.

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#	Business Practice		Market Practice/Standard		Notes	Governing Body/ Compliance Measures	Benchmarking/ Metrics	
	Activity	From	To	Timing				
2.2	Securities Distributions – Electronic	Transfer Agent or Issuer	Custodian, Broker/ Dealer, CDS Participant or Depositing Holder	First date to trade in the new security	In the case of securities distributions arising from entitlements, transfer agents and other issuers must make securities available no later than the date that the Toronto Stock Exchange (TSX) sets as the first date to trade (Note: International Securities Identification Number (ISIN), the unique number for each security on a worldwide basis established under a coding system developed by the International Organization for Standardization (ISO) for identifying securities, must be available by T-1).	Additional time to complete legal and regulatory requirements is needed.	Security Transfer Association of Canada – this would be minuted in a STAC board of directors meeting and be published with the “Canadian Securities Marketplace Best Practices and Standards” by the CCMA. It would not have the force of a rule or provide monitoring, as STAC is not a self-regulatory organization; however, it would have the force of moral suasion. No specific compliance mechanisms are proposed until further analysis reveals that they are required.	None proposed until further analysis reveals that they are required.
	Securities Distributions – Certificated			No later than two business days after the first date to trade in the new security	In the case of securities distributions arising from entitlements, transfer agents and other issuers must make securities available no later than two business days after the first date to trade (Note: ISINs must be available by T-1).	Additional time to complete legal and regulatory requirements is needed.	Security Transfer Association of Canada – this would be minuted in a STAC board of directors meeting and be published with the “Canadian Securities Marketplace Best Practices and Standards” by the CCMA. It would not have the force of a rule or provide monitoring, as STAC is not a self-regulatory organization; however, it would have the force of moral suasion. No specific compliance mechanisms are proposed until further analysis reveals that they are required.	None proposed until further analysis reveals that they are required.

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#	Business Practice		Market Practice/Standard	Notes	Governing Body/ Compliance Measures	Benchmarking/ Metrics		
	Activity	From					To	Timing
	Exceptions	Transfer Agent or Issuer	Custodian, Broker/ Dealer, CDS Participant or Depositing/Registered Holder	Best efforts	In the case of “if, as and when issued” securities, dividend re-investment program issues and rights/warrants, and in cases involving securities that are not recorded on the transfer agents’ registers (e.g., predecessor issues of another company), transfer agents must use best efforts.	Security Transfer Association of Canada – this would be minuted in a STAC board of directors meeting and be published with the “Canadian Securities Marketplace Best Practices and Standards” by the CCMA. It would not have the force of a rule or provide monitoring, as STAC is not a self-regulatory organization; however, it would have the force of moral suasion. No specific compliance mechanisms are proposed until further analysis reveals that they are required.	None proposed until further analysis reveals that they are required.	
2.3	Default Issuance	Transfer Agent or Issuer	Custodian, Broker/ Dealer, CDS Participant or Depositing Holder	N/A	Issuance should be electronic by default or immediately immobilized with trading thereafter taking place in book-entry form.	See Dematerialization Working Group, best practices and standards document to follow.	See Dematerialization Working Group, best practices and standards document to follow.	
3.1	Solicitation Fee Claims	Dealer Group	Transfer Agent	Within three business days of expiry	Solicitation fee claims should be made to transfer agents in accordance with set procedures available on the CCMA Web site.	Refer www.ccma-acmc.ca , Best Practices and Standards page, CCMA Best Practices and Standards, Corporate Actions/ Entitlements Best Practices, Solicitation Fee Claim Procedures.	Owners are Computershare and CIBC Mellon. No specific compliance mechanisms are proposed until further analysis reveals that they are required.	None proposed until further analysis reveals that they are required.
3.2	Payment of Solicitation Fees	Transfer Agent	Dealer Group	Within six weeks of claim	Transfer agents must pay participants within six weeks assuming that funds for the payment have been received.	No specific compliance mechanisms are proposed until further analysis reveals that they are required.	None proposed until further analysis reveals that they are required.	

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#	Business Practice		Market Practice/Standard		Notes	Governing Body/ Compliance Measures	Benchmarking/ Metrics
	Activity	From	To	Timing			
4.	Entitlement Information	Issuer/ Agent	Interme- diaries		<ul style="list-style-type: none"> Entitlement information set out in Appendix #CA.1 should be made available with a summary sheet including the fields noted and relevant documents attached An entitlements hub or other service providers should make the data available in ISO 15022-compliant format. 	<p>Refer Corporate Actions and Other Entitlements White Paper, October 22, 2002. ISO 15022 (“scheme for messages”) is a key International Organization for Standards (ISO) standard that increasingly forms the basis for communication in the securities industry. Any service provider able to support the standard can deliver messages in ISO 15022 format. Designed to be vendor-neutral, it does not require connection to the SWIFT network or membership in SWIFT to communicate messages, although SWIFT-sponsored groups are heavily involved in developing market practices. For further detail, refer to www.ccma-acmc.ca, Best Practices and Standards page, Best Practices and Standards/Standards-Setting Bodies, Securities Market Practice Group.</p>	<p>The Canadian Securities Administrators has been requested by the CCMA to mandate reporting in standard format.</p>

6.0 Other Considerations

A number of issues were identified and discussed during the development of the best practices and standards, with the agreed-on resolution or conclusions reached identified below, in no particular priority:

1. There is a potential for dislocation as CDSX requires payment by 2:30 p.m. whereas participants could withdraw holdings and tender directly to the transfer agent, only having to make payment by cheque by the 4:00 p.m. deadline. CAWG members considered that this would no longer be a risk once final conversion to CDSX takes place.
2. The proposed late compensation parameters outlined provides a great deal of latitude. CAWG members considered whether there was a way and/or a willingness to tighten these proposed rules. The conclusion was that competitive forces will serve to constrain those who do not meet the best practice.
3. The U.S. cut-off is 3:00 p.m. – CAWG members considered whether the difference between CDSX and the U.S. Depository Trust and Clearing Corporation (DTCC) cut-off was a problem. Members concluded that the same issue exists today and has not proven to be problematic.
4. Transfer agents used to provide cheques in advance of pay date allowing CDS to prepare for reconciliation; with the use of LVTS, this advance warning does not occur. CAWG members considered whether this advance warning should be automated to avoid having to make the phone calls currently placed to confirm expected payment. **CDS is reviewing the possibility of offering such a service.**
5. CAWG members considered whether due bill dates in Canada and the U.S. should be synchronized (in Canada, the ex date is before record date, whereas in the U.S., the ex date follows the record date). The U.S. method requires a tracking of due bills that the Canadian method avoids. As changing the U.S. standard would be extremely challenging due to the market size and fragmentation, and changing the Canadian practice to map to the U.S. would lead to more work, CAWG members considered alternatives in the one area that causes greatest investor confusion and problems: the case of interlisted securities. **The CAWG committed to review this issue further and report back with a recommendation at a later date for possible inclusion in an updated version of the best practices and standards.**
6. CAWG members considered a best practice for the turnaround on dividend re-investment plans (DRIPs). **The CAWG committed to review this issue further and report back with a recommendation at a later date for possible inclusion in an updated version of the best practices and standards.**
7. CAWG members considered whether there should be a best practice regarding

when transfer agents and intermediaries should pay beneficial owners. There is agreement with the principle that registered and beneficial holders should be treated equivalently, which is general practice in Canada as transfer agents usually mail payable-dated cheques before payable date to ensure easy access to funds on payable date whether by cheque or electronically. Generally, dividends are paid on payable date and interest and other corporate actions are distributed/paid when received. This said, instructions from issuers may direct otherwise, e.g., that cheques to be mailed on payable date, which is common practice in the U.S. As this is not strictly an STP issue, the CAWG has not included it in the best practices and standards at this time.

8. CAWG members considered electronic messaging of liability notices and agreed that a liability hub, as is contemplated in the U.S., is not required in Canada. This said, **the CAWG will continue to monitor developments in the U.S. so that liability message content can be standardized as much as possible with the U.S. once the U.S. agrees on appropriate wording.**

A number of issues were considered that were outside the scope of an industry-wide solution, but one is identified here for participants to investigate as it will impede achievement of timely STP. That is, there have been numerous complaints regarding delays in wires that appear to be unrelated to LVTS itself. This may be the result of firms' systems problems or volume, but is also understood to stem from procedures established by firms, for example, delays *within* firms (e.g., where one department faxes another and the fax machine is out of paper, one person enters data and the person authorizing it is not available to approve release). These problems should be assessed by firms.

7.0 Rule/Regulatory/Implementation Governing Body

Refer Section 5.0, Column 8. As well, the organizations responsible for each best practice or standard should review the best practice/standard annually to determine whether updates are required.

8.0 Compliance/Conformance Mechanisms

Refer Section 5.0, Column 8.

9.0 Metrics/Progress Tracking

Refer Section 5.0, Column 9.

10.0 Implementation

All best practices and standards itemized here should apply immediately. The formalization of best practices and standards, and the governing bodies for each,

should be confirmed by December 31, 2003, with the best practices and standards to be posted by the governing bodies by that date. The regulatory changes identified for the entitlement hub and mandating payment via LVTS should be undertaken no later than 2004. The goal is 100-per-cent compliance with the best practices and standards by June 2005.

Section 3: SECURITIES LENDING BEST PRACTICES AND STANDARDS

1.0 Highlights

The CCMA is requesting input from participants in the securities processing chain regarding any oversights or impediments to implementation of the securities lending best practices and standards within participants and across the industry. Please provide your input, using the questions in **Appendix #1, Response Sheet**, as a guide in determining whether there are any oversights or impediments. Given the extensive comments received during the white paper development process between 2002 and 2003 and the additional input received from industry experts in 2003, it is assumed that the best practices and standards developed are reasonable and can be implemented by participants by the target date.

Goal: The ultimate goal of securities lending best practices and standards is the electronic processing of a securities loan among all parties involved in the process, on a system-to-system basis, complying with industry rules/regulations and standards.

Problems: Problems in the securities lending arena include manual processes/reliance on paper, incomplete standards/best market practices and incentives/compliance mechanisms, and questions regarding the need for rules and improved communication.

Current practices/standards, rules and metrics: There is currently little in the way of industry-wide best practices, standards or regulation governing securities lending. There are a small number of Investment Dealers Association of Canada regulations governing only member firms' collateral and certain minimum provisions for securities loan agreements. Otherwise, best practices are often addressed bilaterally through contracts, which may be developed based on a range of mainly U.S. or European industry models. There are no easily accessible measures of performance.

Required best practices/standards, rules, governance and metrics: Best practices and standards are required that focus on the timelines and responsibilities of parties in the securities lending process. These best practices and standards are expected to evolve over time as the market changes and as messaging functionality becomes available for recalls and other aspects of securities lending: the best practices and standards developed are designed to work in both the current environment and when a messaging facility is used. They should be embodied in Investment Dealers Association of Canada rules; however, they should also form part of industry best practices and standards to which non-IDA member borrowers and lenders could subscribe. No other regulatory changes are contemplated. Metrics to track progress towards securities lending milestones and best practices and standards will have to be developed.

2.0 Current Problems

The CCMA's Securities Lending Working Group, in 2002, identified a number of market problems, some of which could be solved by the implementation of best practices and standards. The main problem identified is manual processes/reliance on paper. Currently, an estimated 99 per cent of the notices of recalls sent to securities borrowers are provided by way of fax or phone, sometimes with a follow-up phone call, often on T+1. This is in stark contrast to the 99 per cent of trade/sales notifications that are done electronically on a system-to-system basis, although this does not give an idea as to how many are error-free and do not require data enrichment, meaning this does not identify what percentage of notifications are truly STP. The phone-fax-phone process is subject to errors in transcription or misunderstanding, is potentially time-consuming and is inefficient. The recall also may result in a timing mismatch where a sale takes place on trade date (T) and recall notification on T+1. In this situation, the borrower is only required to return the lent securities on T+4, although in practice, returns are usually made on T+3 or earlier. There also is no formal acknowledgement process, leading to missed recalls, resubmission of recall notices, cancellations and amendments.

References: Refer www.ccma-acmc.ca, Media/publications page, White Papers – January 31, 2003: CCMA Securities Lending White Paper

3.0 Current Best Practices/Standards, Rules and Metrics

While standards and market practices (e.g., timelines, message content, etc.) are set out to varying degrees in lending agreements, and are in general based on models known to industry practitioners (e.g., under the auspices of the International Securities Lenders Association (ISLA), Financial Services Authority (FSA), Risk Management Association (RMA), and Federal Financial Institutions Examination Council (FFIEC), there is inconsistency across the marketplace and no single standard for default liability and notification. As well, no best practice fully captures the timing of recalls and importance of moving towards 100-per-cent electronic system-to-system communication. The 2002 survey of Securities Lending Working Group members also found that 52 per cent of sale notifications are received on T, 38 per cent on T+1 and 10 per cent on or after T+2 and that there is an average of just under two days between recall notification and delivery. While manageable bilaterally in the current environment, as volumes increase, this may become more challenging.

4.0 Securities Lending Target STP Milestones

- ▶ **June 2004:** Make 80 per cent of recalls and acknowledgements electronically
- ▶ **December 2004:** Make 100 per cent of recalls and acknowledgements electronically
- ▶ **June 2005:** Meet 100 per cent of securities industry institutional trade processing standards (e.g., trades matched on T to facilitate initiation of a recall on T).

5.0 Proposed Best Practices and Standards

To develop best practices and standards, the CCMA's Securities Lending Working Group examined its white paper, comments received on the white paper and U.S. securities lending recommendations.

The following best practices have been developed to work in both the current environment and if a messaging facility is used. The proposed time-frames for recall notification acknowledgement/reject are consistent with those presented in Section 3, Proposed Standards for Recall Notification, of the Securities Industry Association January 17, 2003 STP Securities Lending White Paper.

For an explanation of the terminology used in the table and elsewhere in this section, refer to the CCMA's Glossary and Acronyms on the CCMA's Web site, www.ccma-acmc.ca, Best Practices and Standards page, Definitions section).

SECURITIES LENDING – PAGE 1 OF 2

#	Business Practice			Market Practice/Standard	Notes	Governing Body/ Compliance Measures	Benchmarking/ Metrics	
	Activity	From	To					Timing
1.	Sales Notification	Beneficial owners	Lenders/Lending Agents	Trade date (T)	Beneficial owners should notify lenders/lending agents of sales on trade date according to industry institutional best practices/standards.	Electronic excludes use of fax, e-mail or phone.	Refer Section 1, Institutional Trade Processing Best Practices and Standards.	Refer Section 1, Institutional Trade Processing Best Practices and Standards.
2.1	Recall Notification – Same-day Settlement Securities	Lenders/Lending Agents	Borrowers	No later than 11:30 a.m.	<p>Recalls should be notified throughout the day but no later than by 11:30 a.m. for securities with a same-day settlement cycle (e.g., T-bills) in electronic/automated fashion.</p> <p>The recall period should be the loaned asset’s standard settlement cycle.</p> <p>Message formats should follow the ISO 15022 standard (Refer to Institutional Trade Processing Section 3.2) and include basic information, such as expiry date, amount recalled, recall date.</p>	<p>Electronic excludes use of fax, e-mail or phone. It may mean through existing or proposed functionality through CDS, Automated Recall Management Systems (ARMSs) or other equivalent methods established.</p> <p>Message content, mandatory and optional, will be discussed as participants work with CDS to explore messaging options and will likely form part of the Canadian Securities Market Practice Group (CSMPG) standards.</p>	<p>Investment Dealers Association of Canada rule.</p> <p>Bilateral agreements set out the recourse of the parties should, at the end of the recall period, the securities not be returned. Note that there may have to be a phase-in period due to the fact that aspects of securities lending remain a batch process for some organizations.</p>	Refer Section 8 below.
2.2	Recall Notification – Other Securities	Lenders/Lending Agents	Borrowers	No later than 3:00 p.m.	<p>Recalls should be notified throughout the day but no later than by 3:00 p.m. for all other securities (e.g., equities, bonds).</p> <p>The recall period should be the loaned asset’s standard settlement cycle.</p> <p>Message formats should follow the ISO 15022 standard (Refer to Institutional Trade Processing Section 3.2) and include basic information, such as expiry date, amount recalled, recall date.</p>	<p>Electronic excludes use of fax or phone. It may mean through existing or proposed functionality through CDS, ARMSs or other equivalent methods.</p> <p>Message content, mandatory and optional, will be discussed as participants work with CDS to explore messaging options and will likely form part of CSMPG standards.</p>	<p>Investment Dealers Association of Canada rule.</p> <p>Bilateral agreements set out the recourse of the parties should, at the end of the recall period, the securities not be returned.</p>	Refer Section 8 below.

SECURITIES LENDING – PAGE 2 OF 2

#	Business Practice			Market Practice/Standard	Notes	Governing Body/ Compliance Measures	Benchmarking/ Metrics	
	Activity	From	To					Timing
3.	Buy-in Notification	Lenders/ Lending Agents	Borrowers	9:30 a.m. the following morning	Assuming that buy-in occurs on Day 1, notice of execution of actual buy-in must be by 9:30 a.m. on Day 2 (the following morning).	IDA Rule.	Refer Section 8 below.	
4.1	Recall Notification Acknowledgment/Reject – Same-day Settlement Securities	Borrowers	Lenders/ Lending Agents	Within one hour of receipt or no later than 11:45 a.m., whichever comes first	<p>Borrowers must confirm receipt of recall notices electronically/in automated fashion or “DK” (reject details of messages (same-day-settlement-cycle assets) within one hour of receipt.</p> <p>Any recall notices not DKed within one hour after receipt or by 11:45 a.m. at the latest, whichever time comes first, will be deemed accepted.</p> <p>Rejections should include reasons for the reject (loan not to us, disagreement on quantity, etc.).</p>	Should the reason for the DK later be found to be erroneous, the recall date will be the date the recall was originally sent.	IDA Rule.	Refer Section 8 below.
4.2	Recall Notification Acknowledgment/Reject – Other Securities	Borrowers	Lenders/ Lending Agents	Within one hour of receipt or no later than 3:15 p.m., whichever comes first	<p>Borrowers should confirm receipt of recall notices electronically/in automated fashion or “DK” (reject details of messages received by T+1-or-later-settlement-cycle assets within one hour of receipt.</p> <p>Any recall notices not DKed within one hour after receipt or by 3:15 p.m. at the latest, whichever time comes first, for all other assets will be deemed accepted.</p> <p>Rejections should include reasons for the reject (loan not to us, disagreement on quantity, etc.).</p>	Should the reason for the DK later be found to be erroneous, the recall date will be the date the recall was originally sent.	IDA Rule.	Refer Section 8 below.

Note: Recall amendment, cancellation and returns are dealt with in bilateral agreements and/or according to current practice and thus do not form part of the proposed best practices and standards. These will be considered in discussions of possible messaging functionality to deliver recall notices electronically/in automated fashion.

6.0 Other Considerations

One of the challenges is that, unlike in other countries such as the U.S., there is no single body or forum bringing together both borrowers and lenders to discuss improvements in the securities lending area in Canada. Communications will need to be developed to move forward effectively on implementing the best practices and standards.

Another issue discussed was the development of industry-wide model agreement standards; however, this was viewed as being outside the scope of the current straight-through processing initiative.

7.0 Rule/Regulatory/Implementation Governing Body

The securities lending best practices and standards should be embodied in Investment Dealers Association of Canada rules; however, they should also form part of an industry best practice to which non-IDA Member borrowers and lenders could subscribe.

Given that not all participants in securities lending and borrowing fall under one (or necessarily any) oversight organization, an obvious and effective way of embedding a number of the best practices and standards into routine processing in Canada's securities lending market is by change to industry standard agreements or the addition of amendments to existing contracts where appropriate.

8.0 Compliance/Conformance Mechanisms

IDA Members would be subject to the compliance requirements embodied in the IDA Rules. For non-IDA members, the best practices and standards will effectively be self-policing through bilateral agreements and the ability of firms to no longer deal with a counterparty that does not meet the best practices and standards.

9.0 Metrics/Progress Tracking

No measurements/statistics for the current environment are proposed; this will be considered as part of the discussion of messaging options to be developed via discussions with The Canadian Depository for Securities.

10.0 Implementation

The best practices and standards are expected to be implemented beginning January 2004, noting that some may require a move away from a batch system and therefore require longer. Best practices and standards relating to messaging through CDS functionality will be addressed once further work on this initiative has been undertaken. The goal is 100-per-cent compliance with the best practices and standards by June 2005.

APPENDICES

Appendix #1	Response Sheet
Appendix #ITP.1	Template for Analysis of Potential STP Savings
Appendix #ITP.2	List of Institutional Interviewees and Workshop Participants
Appendix #ITP.3	Critical Success Factors
Appendix #ITP.4	Assumptions
Appendix #ITP.5	Future State Domestic Equities/Fixed Income with Connectivity to a Virtual Matching Utility Directly Supporting Settlement Blocks
Appendix #ITP.6	Mandatory Future State Market Practice Data Elements
Appendix #ITP.7	Best Business and Market Practices Tables by Industry Segment
Appendix #ITP.8	Comparison of Canadian and U.S. Mandatory Data Elements
Appendix #ITP.9	Considerations
Appendix #CA.1	Standard Entitlement Data Fields

RESPONSE SHEET

Please respond to the following points, returning your response, **by August 15, 2003**, to:

Canadian Capital Markets Association
 10th Floor, 85 Richmond Street West
 Toronto, Ontario, Canada M5H 2C9
 E-mail: info@ccma-acmc.ca
 Fax: 1 416 365-8700
 Tel: 1 416 815-2046.

Firm Name	
Contact Name	
Title	
Phone Number	
E-mail	

Given extensive comments received during the white paper development process between 2000 and 2003 and the input received from industry experts through interviews and workshops in 2003, it is assumed that the best practices and standards developed are practical and can be implemented within a reasonable time period. The CCMA is requesting input of participants in the securities processing chain regarding any oversights or impediments to implementation, with clear examples of the problem and alternative ways to address the issue.

For the most complete response, please involve:

- your front, middle and back office from all relevant parts of your organization
- your service providers/vendors and
- if possible, your counterparties

in identifying:

- What technology and processes need to change in your organization in the front, middle and back office to meet the best practices and standards
- What behaviours need to change within your organization and within the industry to be successful at meeting the new best practices and standards
- What industry/support networks/utilities/providers and counterparties can do to help your organization meet the established best practices and standards
- What obstacles and challenges your organization will face in meeting the new best practices and standards
- Answers to the questions below.

If you have questions as you develop your response, please contact info@ccma.acmc.ca.

Note: Comments received from interested stakeholders will be shared with the relevant CCMA committee so that proposed changes can be discussed. The names of responding firms and an unattributed summary of comments received will be publicized via the CCMA Web site so that respondents can be assured that their input has been heard before the best practices and standards are finalized.

OVERALL

1. Does your organization believe that these best practices and standards should be adopted by the Canadian securities marketplace?
2. Does your organization intend, in principle, to work to implement the final best practices and standards by June 2005?

INSTITUTIONAL BEST PRACTICES AND STANDARDS QUESTIONS

- 1. Best Practices and Standards Content:** Are there any significant errors or problems identified in the following and, if so, what are they and what alternative would make the best practice, standard or other element successful?
 - a. The process flow diagrams?
 - Current state
 - Future state without connectivity to a virtual matching utility
 - Future state with connectivity to a virtual matching utility (allocations between investment manager and custodian)
 - Future state without connectivity to a virtual matching utility (block trade)
 - b. The roles and responsibilities of broker/dealer, investment manager, custodian, depository and VMU as set out in the best practices tables, including the *minimum* data requirements and who provides what data elements?
 - c. The maximum response times proposed in the best practices tables?
 - d. The proposed standard (ISO-15022-compliant)?
- 2. Governance and Compliance:**
 - a. Are there any better alternatives to the proposed governing body(ies)/compliance process(es) proposed to ensure that the best practices and standards are implemented, monitored, maintained and improved over time?
 - b. What compliance process do you recommend to ensure that your counterparties also comply with the best practices and standards? (Compliance and conformance mechanisms can range from disclosure of comparative STP data to the organization against an industry average, public disclosure of all firms' STP rates/rates of compliance with best practices and standards, incentives, penalties and progressive penalty structures.)
- 3. Implementation Timelines:**
 - a. What would inhibit your firm's ability to comply with the best practices and standards by the June 2005 final deadline?
 - b. What would accelerate your firm's ability to meet the deadline?
- 4. Other:** What has not been included in this document that should have been for the best practices and standards to be implemented successfully within the Canadian industry?

ENTITLEMENTS INCLUDING CORPORATE ACTIONS BEST PRACTICES AND STANDARDS QUESTIONS

- 1. Best Practices and Standards Content:** Are there any significant errors or problems identified in the following and, if so, what are they and what alternative would make the best practice, standard or other element successful?
 - a. The roles and responsibilities as set out in the best practices table?
 - b. The maximum response times proposed in the best practices table?
 - c. The proposed standard (ISO-15022-compliant)?
- 2. Governance and Compliance:**
 - a. Are there any better alternatives to the proposed governing body(ies)/compliance process(es) proposed to ensure that the best practices and standards are implemented, monitored, maintained and improved over time?
 - b. What compliance process do you recommend to ensure that your counterparties also comply with the best practices and standards? (Compliance and conformance mechanisms can range from disclosure of comparative STP data to the organization against an industry average, public disclosure of all firms' STP rates/rates of compliance with best practices and standards, incentives, penalties and progressive penalty structures.)
- 3. Implementation Timelines:**
 - a. What would inhibit your firm's ability to comply with the best practices and standards by the June 2005 final deadline?
 - b. What would accelerate your firm's ability to meet the deadline?
- 4. Other:** What has not been included in this document that should have been for the best practices and standards to be implemented successfully within the Canadian industry?

SECURITIES LENDING BEST PRACTICES AND STANDARDS QUESTIONS

- 1. Best Practices and Standards Content:** Are there any significant errors or problems identified in the following and, if so, what are they and what alternative would make the best practice, standard or other element successful?
 - a. The roles and responsibilities as set out in the best practices table?
 - b. The maximum response times proposed in the best practices table?
 - c. The proposed standard (ISO-15022-compliant)?

2. Governance and Compliance:

- a. Are there any better alternatives to the proposed governing body(ies)/compliance process(es) proposed to ensure that the best practices and standards are implemented, monitored, maintained and improved over time?
- b. What compliance process do you recommend to ensure that your counterparties also comply with the best practices and standards? (Compliance and conformance mechanisms can range from disclosure of comparative STP data to the organization against an industry average, public disclosure of all firms' STP rates/rates of compliance with best practices and standards, incentives, penalties and progressive penalty structures.)

3. Implementation Timelines:

- a. What would inhibit your firm's ability to comply with the best practices and standards by the June 2005 final deadline?
- b. What would accelerate your firm's ability to meet the deadline?

4. Other: What has not been included in this document that should have been for the best practices and standards to be implemented successfully within the Canadian industry?

TEMPLATE FOR ANALYSIS OF POTENTIAL STP SAVINGS

Analysis of Trade Errors and Associated Intervention Costs									
(1) Trade Problem Area	Average Percentage of Trades Requiring Intervention		Associated Average Per-Transaction Intervention Cost		(6) Transaction Volume	Aggregated Associated Intervention Costs			
	(2) Current State	(3) STP Environment	(4) Current State	(5) STP Environment		Current State (Current % x Cost x Volume)	STP Environment (Current % x Cost x Volume)	Net STP Benefit (Current State less STP State)	Percent Savings
Not received electronically	60%	5%	\$ 7.50	\$ 7.50	50,000	\$ 225,000.00	\$ 18,750.00	\$ 206,250.00	92%
Invalid trade	10%	5%	\$ 6.50	\$ 6.50	50,000	\$ 32,500.00	\$ 16,250.00	\$ 16,250.00	50%
Does not match with custodian	10%	5%	\$ 5.50	\$ 5.50	50,000	\$ 27,500.00	\$ 13,750.00	\$ 13,750.00	50%
Not received on timely basis	40%	5%	\$ 7.00	\$ 7.00	50,000	\$ 140,000.00	\$ 17,500.00	\$ 122,500.00	88%
Total						\$ 425,000.00	\$ 66,250.00	\$ 358,750.00	84%

Current State (Note: May exceed total volume due to multiple corrections required)	Percentage of Trades Requiring Intervention	Total Volume	Trades Requiring Correction	STP Environment	Percentage of Trades Requiring Intervention	Total Volume	Trades Requiring Correction
	60%	50,000	30,000		5%	50,000	2,500
	10%	50,000	5,000		5%	50,000	2,500
	10%	50,000	5,000		5%	50,000	2,500
	40%	50,000	20,000		5%	50,000	2,500
			60,000				10,000

LIST OF INSTITUTIONAL INTERVIEWEES AND WORKSHOP PARTICIPANTS

#	Participant Type	Organization	Name	Interviews	Workshops
1	Investment Manager	Acuity Funds	George Trapkov		✓
2	Investment Manager	AGF	Cindy Gedney		✓
3	Investment Manager	AIM Trimark Investments	Graham Anderson		✓
4	Investment Manager	AIM Trimark Investments	Marie Shannon		✓
5	Investment Manager	AIM Trimark Investments	Salvatore Auditore		✓
6	Investment Manager	AMI Partners	Joanne Skalos		✓
7	Investment Manager	Barclays Global Investors	Paul Tremblay		✓
8	Investment Manager	Barclays Global Investors	Rosemin Mohamed		✓
9	Investment Manager	Beutel Goodman	Anna Ferrara		✓
10	Investment Manager	Beutel Goodman	Valerie Barnes		✓
11	Investment Manager	Bloom Investment Counsel Inc	Sara Bloom		✓
12	Investment Manager	Burgundy Asset	Ruby D'Souza		✓
13	Investment Manager	Casgrain	André Zanga		✓
14	Investment Manager	Caisse de dépôt	Daphne Guerci	✓	✓
15	Investment Manager	Caisse de dépôt	Emmanuel Doyon		✓
16	Investment Manager	Caisse de dépôt	Greg King	✓	
17	Investment Manager	Caisse de dépôt	Hélène Jacques		✓
18	Investment Manager	Caisse de dépôt	Jacques Lavallée	✓	✓
19	Investment Manager	Caisse de dépôt	Vincent Fitzbay		✓
20	Investment Manager	CN Investment Capital	Louis Phillipe		✓
21	Investment Manager	Elantis	Jean-Francois Proulx	✓	✓
22	Investment Manager	Fiducie Desjadins	Pierre Latreille		✓
23	Investment Manager	Franklin Templeton Investments	Ghion Shewangzaw		✓
24	Investment Manager	Greystone	Michelle Moore	✓	
25	Investment Manager	Investment PSP	Lyne Crépin		✓
26	Investment Manager	Investors Group	Ian Kinnaird	✓	
27	Investment Manager	J . Zechner Associates	Chris Johne	✓	
28	Investment Manager	Jarislowsky Fraser	Aarti Joshi		✓
29	Investment Manager	Jarislowsky Fraser	Erin O'Brien	✓	
30	Investment Manager	Jones Heward	Cliff Bowers	✓	✓
31	Investment Manager	KBSH	Jackie Humber		✓
32	Investment Manager	KBSH	Jackie Lycett		✓
33	Investment Manager	Leon Frazer & Associates Inc	Chris Webster		✓
34	Investment Manager	Mackenzie Financial	Alastair Heath		✓
35	Investment Manager	Mackenzie Financial	Chuck Murray		✓
36	Investment Manager	Manulife	Paul Slawinski		✓
37	Investment Manager	Mavrix Funds	Raluca Sarbu		✓
38	Investment Manager	Mavrix Funds	Sergio Di Vito		✓
39	Investment Manager	NBCN	Jésus Sanchez		✓
40	Investment Manager	OMERS	Jenny Tsouvalis	✓	✓
41	Investment Manager	Opvest	Yvonne Makedessian		✓
42	Investment Manager	Perigee Investment Counsel	Christin Nicholls		✓
43	Investment Manager	Perigee Investment Counsel	Jackie Lui		✓
44	Investment Manager	Perigee Investment Counsel	Terry Rountes		✓
45	Investment Manager	Phillips Hager & North	Pam Schilling	✓	
46	Investment Manager	Phillips Hager &North	Lisa Friesen	✓	
47	Investment Manager	RBC Financial Group	Bob Markakis		✓
48	Investment Manager	RBC Financial Group	Jean-Marc Pagé		✓
49	Investment Manager	RBC Financial Group	Lucy Spadafora		✓
50	Investment Manager	RBC Financial Group	Tom Brown		✓

#	Participant Type	Organization	Name	Interviews	Workshops
51	Investment Manager	Royal Bank Investment Management	Jana Porter		✓
52	Investment Manager	Sceptre	David Sexsmith	✓	✓
53	Investment Manager	Standard Life	Gary Sanders		✓
54	Investment Manager	Standard Life	John Scrimgeour		✓
55	Investment Manager	Standard Life	Yue Lan Anand		✓
56	Investment Manager	Tal Global Asset Management	Lina Marracino	✓	✓
57	Investment Manager	Teachers	Jeff Lucassen		✓
58	Investment Manager	Teachers	Nicole Moosie		✓
59	Investment Manager	VMD	Gaétan Lamontagne		✓
60	Investment Manager	YMG Capital Management	William Chow		✓
61	Broker/Dealer	BMO Nesbitt Burns	Fionnuala Martin	✓	✓
62	Broker/Dealer	BMO Nesbitt Burns	Kris Sanker		✓
63	Broker/Dealer	BMO Nesbitt Burns	Maureen Dougherty		✓
64	Broker/Dealer	BMO Nesbitt Burns	Michelle Peacock	✓	✓
65	Broker/Dealer	BMO Nesbitt Burns	Tino Perciballi		✓
66	Broker/Dealer	CIBC World Markets	Ivan Alexander	✓	✓
67	Broker/Dealer	CIBC World Markets	Tim Evans	✓	✓
68	Broker/Dealer	Goldman Sachs	Brent Watson	✓	✓
69	Broker/Dealer	Goldman Sachs	Karen Robinson	✓	✓
70	Broker/Dealer	Scotia Capital	Norm Graham	✓	
71	Broker/Dealer	TD Securities	Paul White		✓
72	Custodian	CIBC Mellon	Adrian Baldeo		✓
73	Custodian	CIBC Mellon	Daniel Yam	✓	✓
74	Custodian	CIBC Mellon	Derek Ferlatte		✓
75	Custodian	CIBC Mellon	Marian Aquilina	✓	
76	Custodian	CIBC Mellon	Mark Wilson	✓	✓
77	Custodian	CIBC Mellon	Paul Nicosia		✓
78	Custodian	CIBC Mellon	Savie Fiorini	✓	✓
79	Custodian	Citibank Canada	Mariles Delfin	✓	✓
80	Custodian	RBC Financial Group	Denise Doucet		✓
81	Custodian	RBC Financial Group	James Bowes		✓
82	Custodian	RBC Financial Group	Lorraine Monaco		✓
83	Custodian	RBC Financial Group	Pierre Légaré		✓
84	Custodian	RBC Financial Group	Sidney Brougham		✓
85	Custodian	RBC Financial Group	Brad Spring		✓
86	Custodian	RBC Financial Group	John Riordon	✓	✓
87	Custodian	RBC Financial Group	Barry Stienstra	✓	✓
88	Custodian	State Street	Damien Michel		✓
89	Custodian	State Street	Dennis Hunt	✓	
90	Custodian	State Street	Ronald Robertson		✓
91	Custodian	State Street	Tim Robertson	✓	✓
92	Custodian	The Northern Trust	Joan Frith	✓	
93	Custodian	The Northern Trust	Peter Leinenweber		✓
94	Depository	The Canadian Depository for Securities Limited	Barbara Amsden		✓
95	Depository	The Canadian Depository for Securities Limited	Bruce Butterill	✓	
96	Depository	The Canadian Depository for Securities Limited	Ronald Meyer		✓
97	Depository	The Canadian Depository for Securities Limited	Sarah Tothill	✓	✓
98	Exchange	Toronto Stock Exchange	David Chmelnitsky		✓
99	Exchange	Toronto Stock Exchange	Greg Allen	✓	
100	Exchange	Toronto Stock Exchange	John Cieslak	✓	

#	Participant Type	Organization	Name	Interviews	Workshops
101	Transfer Agent	Computershare	Terry Martinuk		✓
102	Transfer Agent	Pacific Corporate Trust	Bill Brolly		✓
103	Vendor/Infrastructure	CanDeal	Jayson Horner	✓	✓
104	Vendor/Infrastructure	CanDeal	Philip Wright		✓
105	Vendor/Infrastructure	Dataphile	Michael Bagley	✓	
106	Vendor/Infrastructure	eClientscope	Bob Smythe		✓
107	Vendor/Infrastructure	eClientscope	Jackie Chung		✓
108	Vendor/Infrastructure	FMC	Bob Shaw	✓	
109	Vendor/Infrastructure	FMC	David Campbell	✓	✓
110	Vendor/Infrastructure	FundSERV	Alan Hutton		✓
111	Vendor/Infrastructure	IBM	Amy Li		✓
112	Vendor/Infrastructure	IBM	Julie Porter		✓
113	Vendor/Infrastructure	IBM	Michael Kenny		✓
114	Vendor/Infrastructure	Nucent Technologies	Don Findlay		✓
115	Vendor/Infrastructure	Reuters	Kirsti Suutari	✓	✓
116	Vendor/Infrastructure	STP Solutions	Alex Fairweather		✓
117	Vendor/Infrastructure	STP Solutions	Des Andrade		✓
118	Vendor/Infrastructure	Transatron Systems Inc.	Ronald Tooley		✓
119	Vendor/Infrastructure	Transatron Systems Inc.	Stan Deudney		✓
120	Vendor/Infrastructure	Unisen	Bryan Blake		✓
121	Vendor/Infrastructure	Unisen	Nancy Deadman		✓
122	External Consultant	Independent	Izzy Kutnowski		✓
123	External Consultant	Additon Consulting	Dan Brennan		✓
124	External Consultant	Bill Cavanagh & Associates	Bill Cavanagh		✓
125	External Consultant	Bill Cavanagh & Associates	Randy Pascucci		✓
126	External Consultant	Independent	Carlos Alvarado		✓
127	External Consultant	Independent	Mary Ashbourne-Smith		✓
128	Regulator	Ontario Securities Commission	Dave McCurdy		✓
129	Regulator	Ontario Securities Commission	Emily Sutlic	✓	
130	Regulator	Ontario Securities Commission	John Kearns		✓
131	Regulator	Ontario Securities Commission	Randee Pavalow	✓	
132	Other	Canadian Capital Markets Association	Jess Hungate		✓

CRITICAL SUCCESS FACTORS

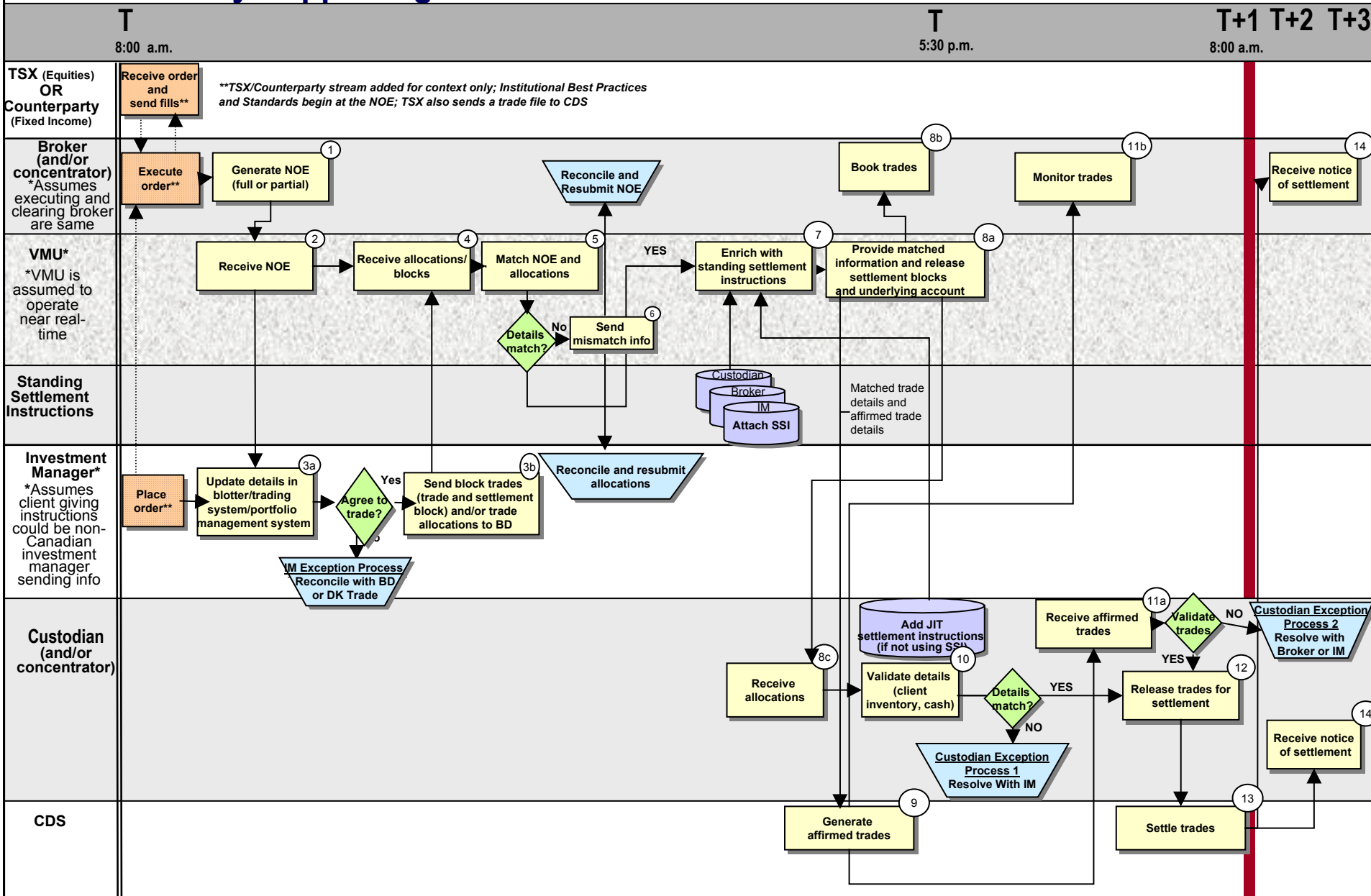
<p>Improved and continuous support and involvement</p>	<ul style="list-style-type: none"> • Obtain buy-in of the CCMA Board and their organizations • Promote a detailed review and analysis by each broker/dealer, investment manager, custodian, vendor and infrastructure provider of what is required to enable them to conform to the best practices and standards • Achieve industry consensus on the proposed Canadian best practices and standards • Obtain executive sponsorship and ongoing commitment from all stakeholder groups, including the broker/dealer and investment management community • Increase coordination with the vendor community (e.g., service bureaus) on industry best practices and standards • Continue the process of educating industry participants (e.g., front, middle and back office)
<p>Independent and consistent performance measurement</p>	<ul style="list-style-type: none"> • Establish an ongoing industry performance measurement process • Identify an independent industry body to develop and maintain the performance measurement process • Develop a baseline for industry performance and a process to measure progress in achieving CCMA milestones at regular intervals
<p>Ongoing co-ordination with industry organizations</p>	<ul style="list-style-type: none"> • Develop industry process for communicating performance results (i.e., publish the data) • Remain well-informed on international best practices and standards initiatives being implemented by such industry bodies as SWIFT, SIA, ISO
<p>Harmonization Efforts</p>	<ul style="list-style-type: none"> • Ensure institutional, dematerialization, corporate actions, securities lending and retail best practices and standards are consistent • Identify key areas of the business practices and standards that will require further regulatory participation and explore appropriate rule changes

ASSUMPTIONS

Future State (VMU and Non-VMU)	
1	Scope covers domestic equities and fixed income in two scenarios for participants: (1) without direct or indirect connectivity to a virtual matching utility and (2) without direct or indirect connectivity to a VMU.
2	The scope of this project is inter-firm, external STP only and standards are only being established for activities between industry participants.
3	Process begins from NOE and includes partial NOEs.
4	Pre-trade compliance is out of scope.
5	Future states represent block and trade-for-trade settlement.
6	The Canadian model assumes active affirmation on the part of the custodian based on the receipt of the IM's settlement instruction matching the broker's confirm.
7	Industry participants will ensure that their vendors will conform to industry expected standards (e.g., 15022).
8	Electronic communication includes the electronic transmission of complete information in an industry accepted format (e.g., fax and e-mail are not considered electronic).
9	Information needs to move electronically - this does not preclude you from speaking with someone (not attempting to eliminate the relationships).
10	Canadian model assumes that the NOE is fully figured for equity trades to include commissions and for fixed income trades to include accrued interest
11	Some IMs may send pre-allocations prior to receiving the NOE.
12	Data elements within the trade order management stage can also be passed through to the NOE for post-trade clearing and settlement.
13	End-of-day for exchange-traded equities is 30 minutes after close of trading session. End-of-day for fixed income is 30 minutes after close of trading session.
14	Business practices are guidelines – some slippage may occur during periods of very high volumes or around specific events in the market.
15	Securities Lending And Corporate Actions Working Groups will develop standards for their respective working groups.
16	Development of best practices and standards can be independent of VMU implementation.
17	In the VMU scenario, the timing identified by the SIA's business practices committee will be leveraged.
18	Measurement of efficiency requires a time stamp throughout the trade process.
19	For comprehensive industry performance measurement participants such as CDS, FMC, custodians, ADP, IBM, Dataphile will need to be leveraged
20	CDSX, as CDS clearing and settlement application, is up and running, allowing for real-time affirmation of equities.
21	Future state process flow diagrams (with or without connectivity to a VMU) assume that the executing broker and clearing broker are the same.
22	Participants reviewing the best practices and standards must involve and respond on behalf of their broader organization, including the front office.
Future State (VMU-specific)	
1	It is assumed that there is a Standing Settlement Instructions (SSI) database with a VMU or just-in-time (JIT) enrichment capability.
2	The VMU would operate in real-time (<1 minute).
3	Performance measurement reporting for processes that are directly tied to the VMU will be managed by the VMU.
4	In a VMU environment, certain exception processes will have to be defined (e.g., reversing entries).
5	Any VMU will be interoperable with other VMUs.



Future State Domestic Equities / Fixed Income WITH Connectivity to a VMU Directly Supporting Settlement Blocks



MANDATORY FUTURE STATE MARKET PRACTICE DATA ELEMENTS**Notes:**

Market practices were identified by reviewing SMPG TIC, ISO 15022 and SIA documentation

Information from the order may flow to the NOE

Custodian would provide internal account numbers and settlement location to a standing settlement instructions database

'X' denotes new data to be provided by the investment manager with the allocation message

#	Mandatory Market Practice Elements	Participant Responsible for Sending the Info.	Comments	Additional Information Required to be Sent with Message	Information that Could Be Provided by Standing Settlement Instructions Database (SSI)
NOTICE OF EXECUTION WITHOUT VMU					
1	Accrued Interest (Fixed Income trades only)	Broker/Dealer	For fixed income trades		
2	Block Reference Number	Broker/Dealer	Should be filled in if an electronic block order exists		
3	Broker as Buyer/Seller (CUID, BIC or FINS)	Broker/Dealer	-		
4	Broker Portfolio/Account ID	Broker/Dealer	Safekeeping account ID		X
5	Broker Settlement Location	Broker/Dealer	E.g., CDS, DTC		
6	Buy/Sell Indicator	Broker/Dealer	Indicates if the transaction is a buy or a sell		
7	Capacity (Agent/Principal)	Broker/Dealer	Indicates whether broker/dealer acted as an agent or principal		
8	Commission (equity trades only)	Broker/Dealer	For equity trades		
9	Common Reference Number	Broker/Dealer	Reference number to link all messages		
10	Currency	Broker/Dealer	Should be specified for all dollar amounts		
11	Deal Price	Broker/Dealer	Used to indicate execution price		
12	Executing and Clearing Broker (CUID)	Broker/Dealer	Used to indicate clearing broker if different from executing broker		X
13	Function of the Message	Broker/Dealer	Indicates if the message is new or a cancel message		
14	IM Number (CUID, BIC, FINS)	Broker/Dealer	IM identifier		
15	Net Amount	Broker/Dealer	Settlement amount		
16	NOE Reference Number	Broker/Dealer	Reference number assigned to the message, must be filled in if electronic NOE exists		
17	Order Status	Broker/Dealer	Filled, partial fill, etc.		
18	Partial Fills Quantity (For Partial NOE ONLY - Amount of shares open for further execution)	Broker/Dealer	Leaves quantity: amount of shares open for further execution if order is done for the day		
19	Quantity Reported	Broker/Dealer	Execution quantity		
20	Sales Name/RR Code	Broker/Dealer	Identifies the salesperson		
21	Security Identifier (ISIN)	Broker/Dealer	ISIN preferred		

22	Settlement Date	Broker/Dealer	Reflected as YYYY/MM/DD		
23	Settlement Type	Broker/Dealer	Will default to trade if not specified		
24	Time/Date of Message	Broker/Dealer	Systems will have to date and timestamp message		
25	Trade Date	Broker/Dealer	Reflected as YYYY/MM/DD, trade execution date		
26	Trade Transaction Type Indicator	Broker/Dealer	Indicates if trade is pre-allocated, short-sale, basket, index, etc.		
#	Mandatory Market Practice Elements	Participant Responsible for Sending the Info.	Comments	Additional Information Required to be Sent with Message	Information that Could Be Provided by Standing Settlement Instructions Database (SSI)
ALLOCATION WITHOUT VMU					
1	Accrued Interest (Fixed Income trade only)	Investment Manager	For fixed income trades		
2	Allocation Sender Reference Number	Investment Manager	Reference number assigned to the message, must be filled in if electronic allocation exists	X	
3	Block Reference Number	Investment Manager	Should be filled in if an electronic block order exists		
4	Buy/Sell Indicator	Investment Manager	Indicates if the transaction is a buy or a sell		
5	Commission (Equity trades only)	Investment Manager	For equity trades		
6	Common Reference Number	Investment Manager	Reference number to link all messages		
7	Currency	Investment Manager	Should be specified for all dollar amounts		
8	Custodian (CUID, BIC or FINS)	Investment Manager	Identifies the custodian		X
9	Date/Time of Message	Investment Manager	Systems will have to date and timestamp messages	X	
10	Deal Price	Investment Manager	Average price for multiple executions		
11	Executing and Clearing Broker (CUID)	Investment Manager	Used to indicate clearing broker if different from executing broker	X	
12	Function of the Message	Investment Manager	Indicates if the message is new or a cancel message		
13	IM Number (CUID, BIC, FINS)	Investment Manager	IM identifier		
14	IM Portfolio/Account ID	Investment Manager	Investment manager internal account ID	X	X
15	Net Amount	Investment Manager	Settlement amount	X	
16	Payment Indicator (Free/Against Payment)	Investment Manager	Indicates whether free or against payment	X	
17	Quantity Allocated	Investment Manager	Reflected as unit	X	
18	Quantity Reported	Investment Manager	Execution quantity		
19	Security Identifier (ISIN)	Investment Manager	ISIN preferred		
20	Settlement Condition	Investment Manager	Used to identify if securities are physically settled	X	
21	Settlement Date	Investment Manager			
22	Settlement Location	Investment Manager	E.g., CDS, DTC	X	
23	Settlement Type	Investment Manager	Will default to trade if not specified		
24	Trade Date	Investment Manager	Reflected as YYYY/MM/DD, trade execution date		
25	Trade Transaction Type Indicator	Investment Manager	Indicates if trade is pre-allocated, short-sale, basket, index, etc.		

#	Mandatory Market Practice Elements	Participant Responsible for Sending the Info.	Comments	Additional Information Required to be Sent with Message	Information that Could Be Provided by Standing Settlement Instructions Database (SSI)
CONFIRMATION					
1	Accrued Interest (Fixed Income trades only)	Broker/Dealer	For fixed income trades only		
2	Block Reference Number	Broker/Dealer, Investment Manager	Should be filled in if electronic block order exists		
3	Broker Portfolio/Account ID	Broker/Dealer	Safekeeping account ID		
4	Buy/Sell Indicator	Broker/Dealer	Indicates if transaction is a buy or sell		
5	Buyer/Seller (CUID, BIC or FINS)	Broker/Dealer	Identifies the buyer/seller		
6	Capacity (Agent/Principal)	Broker/Dealer	Indicates whether broker/dealer acted as an agent or principal		
7	Commission (Equity trade only)	Broker/Dealer	For equity trades only		
8	Common Reference Number	Broker/Dealer	Reference number to link all messages		
9	Currency	Broker/Dealer	Should be specified for all dollar amounts		
10	Deal Price	Broker/Dealer	Used to indicate execution price		
11	Executing and Clearing Broker (CUID)	Broker/Dealer	Used to indicate clearing broker if different from executing broker		
12	Function of the Message	Broker/Dealer	Indicates if the message is new or a cancel message		
13	IM Number (CUID, BIC, FINS)	Broker/Dealer	IM identifier		
14	IM Portfolio/Account ID	Investment Manager	Investment manager internal account ID		
15	Net Amount	Broker/Dealer, Investment Manager	Settlement amount		
16	Payment Indicator (Free/Against Payment)	Investment Manager	Indicates whether free or against payment		
17	Quantity Allocated	Investment Manager	Reflected as unit		
18	Quantity Reported	Broker/Dealer	Execution quantity		
19	Sales Name/Code (RR Code)	Broker/Dealer	Identifies the salesperson		
20	Security Identifier (ISIN)	Broker/Dealer	ISIN preferred		
21	Sender Reference Number	Broker/Dealer	Sender message reference, which is a unique reference assigned by the sender to unambiguously identify the message		
22	Settlement Condition	Broker/Dealer	Used to identify if securities are physically settled		
23	Settlement Date	Broker/Dealer	Reflected as YYYY/MM/DD		
24	Settlement Instructions Indicator	Investment Manager	Mandatory if settlement instructions are being provided; indicates what the source of those instructions will be (e.g., IM or SSI)		
25	Settlement Location	Investment Manager	E.g., CDS, DTC		
26	Settlement Type	Broker/Dealer	Will default to trade if not specified		
27	Trade Date	Broker/Dealer	Reflected as YYYY/MM/DD, trade execution date		
28	Trade Transaction Type Indicator	Broker/Dealer	Indicates if trade is pre-allocated, short sale, basket, index, etc.		

#	Mandatory Market Practice Elements	Participant Responsible for Sending the Info.	Comments	Additional Information Required to be Sent with Message	Information that Could Be Provided by Standing Settlement Instructions Database (SSI)
NOTICE OF EXECUTION WITH VMU					
1	Accrued Interest (fixed income trades only)	Broker/Dealer	For fixed income trades		
2	Block Reference Number	VMU	Should be filled in if an electronic block order exists		
3	Broker as Buyer/Seller (CUID, BIC or FINS)	Broker/Dealer	Depends on buy/sell indicator, BIC is preferred		
4	Broker Portfolio/Account ID	Broker/Dealer	Safekeeping account ID		X
5	Broker Settlement Location	Broker/Dealer	E.g., CDS, DTC		
6	Buy/Sell Indicator	Broker/Dealer	Indicates if the transaction is a buy or a sell		
7	Capacity (Agent/Principal)	Broker/Dealer	Indicates whether broker/dealer acted as an agent or principal		
8	Commission (Equity trades only)	Broker/Dealer	For equity trades		
9	Common Reference Number	VMU	Reference number to link all messages		
10	Currency	Broker/Dealer	Should be specified for all dollar amounts		
11	Deal Price	Broker/Dealer	Used to indicate execution price		
12	Executing and Clearing Broker (CUID)	Broker/Dealer	Used to indicate clearing broker if different from executing broker		X
13	Function of the Message	Broker/Dealer	Indicates if the message is new or a cancel message		
14	IM Number (CUID, BIC, FINS)	Broker/Dealer	IM identifier		
15	Net Amount	Broker/Dealer	Settlement amount		
16	NOE Reference Number	VMU	Reference number assigned to the message, must be filled in if electronic NOE exists		
17	Order Status	Broker/Dealer	Filled, partial fill, etc.		
18	Partial Fills Quantity (For Partial NOE ONLY - Amount of shares open for further execution)	Broker/Dealer	Leaves quantity: amount of shares open for further execution if order is done for the day		
19	Quantity Reported	Broker/Dealer	Execution quantity		
20	Sales Name/RR Code	Broker/Dealer	Identifies the salesperson		
21	Security Identifier (ISIN)	Broker/Dealer	ISIN preferred		
22	Settlement Date	Broker/Dealer	Reflected as YYYY/MM/DD		
23	Settlement Type	Broker/Dealer	Will default to trade if not specified		
24	Time/Date of Message	VMU	Systems will have to date and timestamp messages		
25	Trade Date	Broker/Dealer	Reflected as YYYY/MM/DD, trade execution date		
26	Trade Transaction Type Indicator	Broker/Dealer	Indicates if trade is pre-allocated, short-sale, basket, index, etc.		

#	Mandatory Market Practice Elements	Participant Responsible for Sending the Info.	Comments	Additional Information Required to be Sent with Message	Information that Could Be Provided by Standing Settlement Instructions Database (SSI)
ALLOCATION WITH VMU					
1	Accrued Interest (fixed income trade only)	Investment Manager	For fixed income trades		
2	Allocation Sender Reference Number	VMU	Reference number assigned to the message, must be filled in if electronic allocation exists	X	
3	Block Reference Number	VMU	Should be filled in if an electronic block order exists		
4	Buy/Sell Indicator	Investment Manager	Indicates if the transaction is a buy or a sell		
5	Commission (equity trades only)	Investment Manager	For equity trades		
6	Common Reference Number	VMU	Reference number to link all messages		
7	Currency	Investment Manager	Should be specified for all dollar amounts		
8	Custodian (CUID, BIC or FINS)	Investment Manager	Identifies the custodian		X
9	Date/Time of Message	VMU	Systems will have to date and timestamp messages	X	
10	Deal Price	Investment Manager	Average price for multiple executions		
11	Executing and Clearing Broker (CUID)	Investment Manager	Used to indicate clearing broker if different from executing broker	X	
12	Function of the Message	Investment Manager	Indicates if the message is new or a cancel message		
13	IM Number (CUID, BIC, FINS)	Investment Manager	IM identifier		
14	IM Portfolio/Account ID	Investment Manager	Investment manager internal account ID	X	X
15	Net Amount	Investment Manager	Settlement amount	X	
16	Payment Indicator (Free/Against Payment)	Investment Manager	Indicates whether free or against payment	X	
17	Quantity Allocated	Investment Manager	Reflected as unit	X	
18	Quantity Reported	Investment Manager	Execution quantity		
19	Security Identifier (ISIN)	Investment Manager	ISIN preferred		
20	Settlement Condition	Investment Manager	Used to identify if securities are physically settled	X	
21	Settlement Date	Investment Manager			
22	Settlement Location	Investment Manager	E.g., CDS, DTC	X	
23	Settlement Type	Investment Manager	Will default to trade if not specified		
24	Trade Date	Investment Manager	Reflected as YYYY/MM/DD, trade execution date		
25	Trade Transaction Type Indicator	Investment Manager	Indicates if trade is pre-allocated, short-sale, basket, index, etc.		

FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Page 1 of 7)

Business Practice				Mandatory Market Practice		Issues/Dependencies
Process #	Activity	From	To	Timing		
Order	Portfolio manager places order via internal trader	IM	BD			
Order Execution	BD executes order on exchange	BD	Exchange		OUT OF SCOPE	Note: All communications (NOE, allocations) must be sent electronically, on a system-to-system basis, not by phone, e-mail or fax.
Receive Order and Send Fills	Exchange receives order and sends fills	Exchange	BD		Note: For Market Practice Data Element Definitions, see Appendix #ITP.6.	

BROKER/DEALER

1	Generate NOE (full or partial)	BD	IM	Within 30 minutes of fill on T, or within 30 minutes of end of trading session (different markets close at different times) NOTE: Items in bold and italics in the cell to the right are the clear responsibility of the broker; the others may be added by a service provider and/or after allocations are received	<input checked="" type="checkbox"/> NOE Reference # <input checked="" type="checkbox"/> Trade Date <input checked="" type="checkbox"/> Settlement Date <input checked="" type="checkbox"/> Buy/Sell Indicator <input checked="" type="checkbox"/> Broker as Buyer/Seller (CUID, BIC or FINS) <input checked="" type="checkbox"/> Executing and Clearing Broker (CUID) <input checked="" type="checkbox"/> Security Identifier (ISIN) <input checked="" type="checkbox"/> Quantity Reported <input checked="" type="checkbox"/> Deal Price <input checked="" type="checkbox"/> Currency <input checked="" type="checkbox"/> Capacity (Agent/Principal) <input checked="" type="checkbox"/> Sales Name/RR Code <input checked="" type="checkbox"/> IM # (CUID, FINS, BIC) <input checked="" type="checkbox"/> Order Status <input checked="" type="checkbox"/> Date/Time of Message <input checked="" type="checkbox"/> Partial Fills Quantity (for partial NOE ONLY- amount of shares open for further execution) <input checked="" type="checkbox"/> Function of the Message <input checked="" type="checkbox"/> Trade Transaction Type Indicator <input checked="" type="checkbox"/> Commission (equity trades only) <input checked="" type="checkbox"/> Accrued Interest (fixed income trades only) <input checked="" type="checkbox"/> Broker Settlement Location <input checked="" type="checkbox"/> Block Reference # <input checked="" type="checkbox"/> Net Amount <input checked="" type="checkbox"/> Broker Portfolio/Account ID <input checked="" type="checkbox"/> Common Reference # <input checked="" type="checkbox"/> Settlement Type	Technology: <ul style="list-style-type: none"> The front office may have access to some of the mandatory components of an NOE; however, they may require another system to enrich the information with the required fields. This will require the system providing the additional information to operate near real-time. NOEs must be fully figured within the recommended guideline and, in the interim, the generation of an NOE may have to be parsed out among multiple systems. Information from trade order management systems can flow through to the NOE, reducing the amount of information that must be supplied by the broker at the NOE stage. Process: <ul style="list-style-type: none"> There are no recommendations for specific split thresholds. Instead, the best practice is that an NOE will be matched and processed as it is stated. Block level tolerances will not be set; tolerances will be determined through bilateral arrangements between broker/dealers and investment managers. If executing and clearing broker differ, the custodian must be notified who the executing broker clears through (see Notes, p. 4).
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FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Page 2 of 7)

Business Practice		Mandatory Market Practice			Issues/Dependencies	
Process #	Activity	From	To	Timing	Mandatory Market Practice	Issues/Dependencies
4a	Input trade details and enhance trades with allocations	BD (Internal)	-	<30 minutes of receipt of allocation on T	-	Technology: <ul style="list-style-type: none"> In the future state, front-office systems must update back-office systems on a near real-time basis.
	BD Exception Process – Reconcile with IM	BD	IM	<60 minutes	-	People: <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. Process: <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
5a	Send trade files to CDS (assuming one-for-one - each trade sent to CDS has a corresponding confirm)	BD	Depository	Within 30 minutes on T	As per CDSX requirements: <ul style="list-style-type: none"> <input type="checkbox"/> Trade Type <input type="checkbox"/> Business Role of Submitter (buyer or seller) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Par Value or Quantity <input type="checkbox"/> Price <input type="checkbox"/> Trade Date <input type="checkbox"/> Net Amount <input type="checkbox"/> Seller and Buyer CUIDs <input type="checkbox"/> Broker and Custodian Internal Account # from Submitter/Receiver <input type="checkbox"/> Broker Account # <input type="checkbox"/> Mode of Settlement (default to trade for trade unless otherwise specified) <input type="checkbox"/> Value Date <input type="checkbox"/> Settlement Currency (default to CAD unless otherwise specified) <input type="checkbox"/> Broker Tag # 	More details can be found at the following link: http://www.cds.ca/cdshome.nsf/Downloads/-EN-Operationsprocedures/\$File/trader1.pdf?OpenElement .

FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Page 3 of 7)

Business Practice					Mandatory Market Practice	Issues/Dependencies
Process #	Activity	From	To	Timing		
5b	Generate and send confirm	BD	IM	Per internal policies and procedures	<input type="checkbox"/> Sender Reference # <input type="checkbox"/> Function of the Message <input type="checkbox"/> Trade Date <input type="checkbox"/> Buy/Sell Indicator <input type="checkbox"/> Trade Transaction Type Indicator <input type="checkbox"/> Buyer/Seller (CUID, BIC or FINS) <input type="checkbox"/> Executing and Clearing Broker (CUID) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Quantity Reported <input type="checkbox"/> Deal Price <input type="checkbox"/> Commission (equity trade only) <input type="checkbox"/> Accrued Interest (fixed income trades only) <input type="checkbox"/> Currency <input type="checkbox"/> Settlement Date <input type="checkbox"/> Settlement Location <input type="checkbox"/> Payment Indicator (Free/Against Payment) <input type="checkbox"/> IM Portfolio/Account ID <input type="checkbox"/> Quantity Allocated <input type="checkbox"/> Block Reference # <input type="checkbox"/> Net Amount <input type="checkbox"/> Capacity (Agent/Principal) <input type="checkbox"/> Broker Portfolio/Account ID <input type="checkbox"/> Common Reference # <input type="checkbox"/> Sales Name/Code (RR Code) <input type="checkbox"/> IM # (CUID, BIC, FINS) <input type="checkbox"/> Settlement Condition <input type="checkbox"/> Settlement Type <input type="checkbox"/> Date/Time of Message <input type="checkbox"/> Settlement Instructions Indicator	Technology: <ul style="list-style-type: none"> Confirms should be generated near real-time in order to accommodate the matching of details by the investment manager.
13	Send confirm	BD	IM	Within 30 minutes or T+1 or later (if paper based)	-	Receipt of a paper-based confirm is an IDA regulatory requirement, although use of an electronic trade communication system is also considered in compliance with the regulation.

FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Page 4 of 7)

Business Practice		Mandatory Market Practice			Issues/Dependencies	
Process #	Activity	From	To	Timing		
INVESTMENT MANAGER						
2	Update details in blotter/trading system/portfolio management system	IM (Internal)	-	Per internal policies and procedures	-	To effectively accommodate business and market practices, the investment manager's systems must be able to communicate electronically with broker systems. This may require an investment in technology.
	IM Exception Process 1- Reconcile with BD	IM	BD	<60 minutes	-	<p>People:</p> <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. <p>Process:</p> <ul style="list-style-type: none"> If an exception is identified, the timing restarts. If an exception is identified at this stage, an investment manager may DK the trade.
3a	Send trades and/or trade allocations; if block trades, send settlement blocks	IM	BD	Within 30 minutes of final NOE; partial fill end of day on T if clearing on T <div style="background-color: yellow; padding: 2px; display: inline-block;">Legend:</div> <input checked="" type="checkbox"/> Indicates new data to be added with the message	<input type="checkbox"/> Function of the Message <input type="checkbox"/> Trade Date <input type="checkbox"/> Buy/Sell indicator <input type="checkbox"/> Trade Transaction Type Indicator <input type="checkbox"/> Executing and Clearing Broker (CUID) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Quantity Reported <input type="checkbox"/> Deal Price <input type="checkbox"/> Commission (equity trades only) <input type="checkbox"/> Accrued Interest (fixed income trade only) <input type="checkbox"/> Currency <input type="checkbox"/> Settlement Date <input type="checkbox"/> Block Reference # <input type="checkbox"/> Common Reference # <input type="checkbox"/> IM # (CUID, BIC, FINS) <input type="checkbox"/> Settlement Type <input checked="" type="checkbox"/> Allocation Sender Reference # <input checked="" type="checkbox"/> Custodian (CUID, BIC or FINS) <input checked="" type="checkbox"/> Settlement Location <input checked="" type="checkbox"/> Payment Indicator (Free/Against Payment) <input checked="" type="checkbox"/> IM Portfolio/Account ID <input checked="" type="checkbox"/> Net Amount <input checked="" type="checkbox"/> Quantity Allocated <input checked="" type="checkbox"/> Settlement Condition <input checked="" type="checkbox"/> Date/Time of Message	<p>Process:</p> <ul style="list-style-type: none"> Allocations for orders that are being worked over several days may not be determined. Transactions on illiquid securities may not be completed on T, depending on IM agreements with BD. There may be an issue for some investment managers regarding access to ISINs, especially ISINs on Money Market Instruments, and some providers do not have shared databases, requiring a more manual approach (e.g., verification via Bloomberg or other sources). <p>Technology:</p> <ul style="list-style-type: none"> Some Order Management Systems (OMS) may not accommodate ISIN. Internal reference data must be cleaned up in order to facilitate communications with brokers and custodians. The investment manager could enrich the NOE information and attach data elements that they have specific control over in the allocation message.

FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Page 5 of 7)

Business Practice					Mandatory Market Practice		Issues/Dependencies
Process #	Activity	From	To	Timing			
3b	Send block allocations and underlying account information	IM	Custodian	Within 30 minutes of full fill on T	<input type="checkbox"/> Function of the Message <input type="checkbox"/> Trade Date <input type="checkbox"/> Buy/Sell indicator <input type="checkbox"/> Trade Transaction Type Indicator <input type="checkbox"/> Executing and Clearing Broker (CUID) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Quantity Reported <input type="checkbox"/> Deal Price <input type="checkbox"/> Commission (equity trades only) <input type="checkbox"/> Accrued Interest (fixed Income trade only) <input type="checkbox"/> Currency <input type="checkbox"/> Settlement Date <input type="checkbox"/> Block Reference # <input type="checkbox"/> Common Reference # <input type="checkbox"/> IM # (CUID, BIC, FINS) <input type="checkbox"/> Settlement Type <input checked="" type="checkbox"/> Allocation Sender Reference # <input checked="" type="checkbox"/> Custodian (CUID, BIC or FINS) <input checked="" type="checkbox"/> Settlement Location <input checked="" type="checkbox"/> Payment Indicator (Free/Against Payment) <input checked="" type="checkbox"/> IM Portfolio/Account ID <input checked="" type="checkbox"/> Net Amount <input checked="" type="checkbox"/> Quantity Allocated <input checked="" type="checkbox"/> Settlement Condition <input checked="" type="checkbox"/> Date/Time of Message	<p>Legend:</p> <input checked="" type="checkbox"/> Indicates new data to be added with the message	<p>Process:</p> <ul style="list-style-type: none"> • Allocations for orders that are being worked over several days may not be determined. Transactions on illiquid securities may not be completed on T. • There may be an issue for some investment managers regarding access to ISINs, especially ISINs on money market instruments, and some providers do not have shared databases, requiring a more manual approach (e.g., verification via Bloomberg or other sources). <p>Technology:</p> <ul style="list-style-type: none"> • Some Order Management Systems (OMS) may not accommodate ISIN; however, CDS plans to make ISINs available by a subscription via the Web. • The investment manager could enrich the NOE information and attach data elements that they have specific control over in the allocation message.
6	Match execution details with blotter (local match)	IM (Internal)	-	Per internal policies and procedures	<input type="checkbox"/> Account <input type="checkbox"/> Security Identifier <input type="checkbox"/> Counterparty <input type="checkbox"/> Reference # <input type="checkbox"/> Underlying Allocations <input type="checkbox"/> Total Trade Amount <input type="checkbox"/> Buy/Sell Indicator		<p>Process:</p> <ul style="list-style-type: none"> • Internal matching criteria will have to be determined by each organization. <p>Technology:</p> <ul style="list-style-type: none"> • Investment managers will have to work with vendors to develop automated local matching capabilities.
	IM Exception Process 2 - Resolve with Broker	IM	BD	<60 minutes	-		-

FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Page 6 of 7)

Process #	Activity	From	To	Timing	Mandatory Market Practice	Issues/Dependencies
CUSTODIAN						
4b	Receive allocations	Custodian (Internal)	-	Per internal policies and procedures	-	-
7	Validate details (client inventory, cash)	Custodian (Internal)	-	Per internal policies and procedures	-	-
	Custodian Exception Process 1 – Resolve with IM	Custodian	IM	Resolve in <60 minutes	-	People: <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. Process: <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
9	Match BD trade details to IM trade details and/or block allocation	Custodian (Internal)	-	Per internal policies and procedures	<input type="checkbox"/> Counterparty <input type="checkbox"/> Date <input type="checkbox"/> ISIN <input type="checkbox"/> Amount	-
	Custodian Exception Process 2 – Resolve with B/D or IM	Custodian	B/D, IM	Resolve in <60 minutes	-	People: <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. Process: <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
10	Affirm trade by sending confirm	Custodian	Depository	Within 30 minutes on T	As per CDSX published requirements	More details can be found at the following link: http://www.cds.ca/cdshome.nsf/Downloads/-EN-Operationsprocedures/\$File/trader1.pdf?OpenElement .

FUTURE STATE WITHOUT CONNECTIVITY TO A VMU (Page 7 of 7)

		Business Practice		Mandatory Market Practice		Issues/Dependencies
Process #	Activity	From	To	Timing		
<i>DEPOSITORY</i>						
8	Display trade details through CDSX	Depository (Internal)	-	Per internal policies and procedures	As per CDSX published requirements	More details can be found at the following link: http://www.cds.ca/cdshome.nsf/Downloads/-EN-Operationsprocedures/\$File/trader1.pdf?OpenElement .
11	Position CDSX trade for pending settlement	Depository (Internal)	-	Per internal policies and procedures	-	-
12	Send notice of settlement	Depository	BD, Custodian	Near real-time on settlement date	As per CDSX published requirements	More details can be found at the following link: http://www.cds.ca/cdshome.nsf/Downloads/-EN-Operationsprocedures/\$File/trader1.pdf?OpenElement .

FUTURE STATE WITH CONNECTIVITY TO A VMU (Page 1 of 7)

Business Practice				Mandatory Market Practice	Issues/Dependencies
Process #	Activity	From	To	Timing	
Order	Portfolio manager places order via internal trader	IM	BD		OUT OF SCOPE
Order Execution	BD executes order on exchange	BD	Exchange		
Receive Order and Send Fills	Exchange receives order and sends fills	Exchange	BD		

BROKER/DEALER

1	Generate NOE (full or partial)	BD	VMU	<p>Near real-time or <30 minutes on T within knowing client is done-for-day</p> <p>NOTE: Items in bold and italics in the cell to the right are the clear responsibility of the broker; the others may be added by a service provider and/or after allocations are received</p> <p>Legend:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Indicates new data to be added with the message 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> <i>NOE Reference #</i> <input checked="" type="checkbox"/> <i>Trade Date</i> <input checked="" type="checkbox"/> <i>Settlement Date</i> <input checked="" type="checkbox"/> <i>Buy/Sell Indicator</i> <input checked="" type="checkbox"/> <i>Broker as Buyer/Seller (CUID, BIC or FINS)</i> <input checked="" type="checkbox"/> <i>Executing and Clearing Broker (CUID)</i> <input checked="" type="checkbox"/> <i>Security Identifier (ISIN)</i> <input checked="" type="checkbox"/> <i>Quantity Reported</i> <input checked="" type="checkbox"/> <i>Deal Price</i> <input checked="" type="checkbox"/> <i>Currency</i> <input checked="" type="checkbox"/> <i>Capacity (Agent/Principal)</i> <input checked="" type="checkbox"/> <i>Sales Name/RR Code</i> <input checked="" type="checkbox"/> <i>IM # (CUID, FINS, BIC)</i> <input checked="" type="checkbox"/> <i>Order Status</i> <input checked="" type="checkbox"/> <i>Date/Time of Message</i> <input checked="" type="checkbox"/> <i>Partial Fills Quantity (for partial NOE ONLY- amount of shares open for further execution)</i> <input checked="" type="checkbox"/> Function of the Message <input checked="" type="checkbox"/> Trade Transaction Type Indicator <input checked="" type="checkbox"/> Commission (equity trades only) <input checked="" type="checkbox"/> Accrued Interest (fixed income only) <input checked="" type="checkbox"/> Broker Settlement Location <input checked="" type="checkbox"/> Block Reference # <input checked="" type="checkbox"/> Net Amount <input checked="" type="checkbox"/> Broker Portfolio/Account ID <input checked="" type="checkbox"/> Common Reference # <input checked="" type="checkbox"/> Settlement Type 	<p>Technology:</p> <ul style="list-style-type: none"> The front office may have access to some of the mandatory components of an NOE; however, they may require another system to enrich the information with the required fields. This will require the system providing the additional information to operate near real-time. NOEs must be fully figured within the recommended guideline and, in the interim, the generation of an NOE may have to be parsed out among multiple systems. Information generated in the order could flow through to the NOE, reducing the amount of information that must be supplied by the broker. <p>Process:</p> <ul style="list-style-type: none"> There are no recommendations for specific split thresholds. Instead, the best practice is that an NOE will be matched and processed as it is stated. Block level tolerances will not be set; tolerances will be determined through bilateral arrangements between broker/dealers and investment managers. If executing and clearing broker are different, the custodian must be notified as to who the executing broker clears through. The current model assumes that the executing broker and clearing broker are the same; however, they could be different and this raises the issue of how to get information from the executing broker to the clearing broker.
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FUTURE STATE WITH CONNECTIVITY TO A VMU (Page 2 of 7)

Business Practice					Mandatory Market Practice	Issues/Dependencies
Process #	Activity	From	To	Timing		
	BD Exception Process – Reconcile and resubmit NOE	BD (Internal)	-	<60 minutes	-	People: <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. Process: <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
8b	Book trades	BD (Internal)	-	Real-time	-	
11b	Monitor trades	BD (Internal)	-	Near real-time	-	-
14	Receive notice of settlement	BD/ Custodian (Internal)	BD/ Custodian	Near real-time	As per CDSX requirements	-

FUTURE STATE WITH CONNECTIVITY TO A VMU (Page 3 of 7)

Business Practice					Mandatory Market Practice	Issues/Dependencies
Process #	Activity	From	To	Timing		
INVESTMENT MANAGER						
	IM Exception Process – Resolve with BD	IM	BD	<60 minutes	-	<p>People:</p> <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. <p>Process:</p> <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
3b	Send block trades and trade allocations	IM	VMU	Near real-time within 30 minutes of final NOE; partial fill end of day on T <div style="background-color: yellow; padding: 2px; display: inline-block;"> Legend: <input checked="" type="checkbox"/> Indicates new data to be added with the message </div>	<input type="checkbox"/> Function of the Message <input type="checkbox"/> Trade Date <input type="checkbox"/> Buy/Sell indicator <input type="checkbox"/> Trade Transaction Type Indicator <input type="checkbox"/> Executing and Clearing Broker (CUID) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Quantity Reported <input type="checkbox"/> Deal Price <input type="checkbox"/> Commission (equity trades only) <input type="checkbox"/> Accrued Interest (fixed income trade only) <input type="checkbox"/> Currency <input type="checkbox"/> Settlement Date <input type="checkbox"/> Block Reference # <input type="checkbox"/> Common Reference # <input type="checkbox"/> IM # (CUID, BIC, FINS) <input checked="" type="checkbox"/> Settlement Type <input checked="" type="checkbox"/> Allocation Sender Reference # <input checked="" type="checkbox"/> Custodian (CUID, BIC, FINS) <input checked="" type="checkbox"/> Settlement Location <input checked="" type="checkbox"/> Payment Indicator (Free/Against Payment) <input checked="" type="checkbox"/> IM Portfolio/Account ID <input checked="" type="checkbox"/> Net Amount <input checked="" type="checkbox"/> Quantity Allocated <input checked="" type="checkbox"/> Settlement Condition <input type="checkbox"/> Date/Time of Message	<p>Process:</p> <ul style="list-style-type: none"> Allocations for orders that are being worked over several days may not be determined. Transactions on illiquid securities may result in trades not being executed on T. There may be an issue for some investment managers regarding access to ISINs, especially ISINs on money market instruments, and some providers do not have shared databases, requiring a more manual approach (e.g., verification via Bloomberg or other sources). <p>Technology:</p> <ul style="list-style-type: none"> Some order management systems (OMS) may not accommodate ISINs; however, CDS plans to make ISINs available by a subscription via the Web. Internal reference data must be cleaned up to facilitate communications with the VMU. The investment manager could enrich the NOE information and attach data elements that they have specific control over in the allocation message.
4	Send allocations/blocks	IM	VMU	Real-time	-	

FUTURE STATE WITH CONNECTIVITY TO A VMU (Page 4 of 7)

Business Practice				Mandatory Market Practice		Issues/Dependencies
Process #	Activity	From	To	Timing		
	IM Exception Process-Reconcile and resubmit allocation	IM (Internal)	-	<60 minutes	-	People: <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. Process: <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
8c	Send block allocations and underlying client account information	IM	VMU	Near real-time within 30 minutes of full fill if clearing on T <div style="background-color: yellow; padding: 2px;"> Legend: <input checked="" type="checkbox"/> Indicates new data to be added with the message </div>	<input type="checkbox"/> Function of the Message <input type="checkbox"/> Trade Date <input type="checkbox"/> Buy/Sell Indicator <input type="checkbox"/> Trade Transaction Type Indicator <input type="checkbox"/> Executing and Clearing Broker (CUID) <input type="checkbox"/> Security Identifier (ISIN) <input type="checkbox"/> Quantity Reported <input type="checkbox"/> Deal Price <input type="checkbox"/> Commission (equity trades only) <input type="checkbox"/> Accrued Interest (fixed income trade only) <input type="checkbox"/> Currency <input type="checkbox"/> Settlement Date <input type="checkbox"/> Block Reference # <input type="checkbox"/> Common Reference # <input type="checkbox"/> IM # (CUID, BIC, FINS) <input checked="" type="checkbox"/> Settlement Type <input checked="" type="checkbox"/> Allocation Sender Reference # <input checked="" type="checkbox"/> Custodian (CUID, BIC or FINS) <input checked="" type="checkbox"/> Settlement Location <input checked="" type="checkbox"/> Payment Indicator (Free/Against Payment) <input checked="" type="checkbox"/> IM Portfolio/Account ID <input checked="" type="checkbox"/> Net Amount <input checked="" type="checkbox"/> Quantity Allocated <input checked="" type="checkbox"/> Settlement Condition <input type="checkbox"/> Date/Time of Message	Process: <ul style="list-style-type: none"> Allocations for orders that are being worked over several days may not be determined. Transactions on illiquid securities may not be completed on T. There may be an issue for some investment managers regarding access to ISINs, especially ISINs on money market instruments, and some providers do not have shared databases, requiring a more manual approach (e.g., verification via Bloomberg or other sources). Technology: <ul style="list-style-type: none"> Some order management systems (OMS) may not accommodate ISINs; however, CDS plans to make ISINs available by a subscription via the Web. The investment manager could enrich the NOE information and attach data elements that they have specific control over in the allocation message.
8d	Send allocations	IM	Custodian	Near real-time	Same information as required in 8c	-

FUTURE STATE WITH CONNECTIVITY TO A VMU (Page 5 of 7)

Business Practice					Mandatory Market Practice	Issues/Dependencies
Process #	Activity	From	To	Timing		
CUSTODIAN						
7b	Just-in-time (JIT) enrichment (internal participant database)	Custodian	VMU	Real-time	IM <input type="checkbox"/> Internal Account # and Associated Custodian Identifiers (BIC) Custodian <input type="checkbox"/> Internal Account # <input type="checkbox"/> Place of Settlement BD <input type="checkbox"/> Internal Account # (associated with IM internal account in an SSI DB) <input type="checkbox"/> Executing and Clearing Brokers <input type="checkbox"/> Place of Settlement	Process: <ul style="list-style-type: none"> Each participant should be responsible for enriching its own data.
10	Validate details (client, inventory, cash)	Custodian (Internal)	-	Near real-time	-	-
	Custodian Exception Process 1 - Resolve with IM	Custodian	IM	<60 minutes	-	People: <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. Process: <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
11a	Receive matched (affirmed) trades	Custodian (Internal)	-	Near real-time	-	-
	Custodian Exception Process 2	Custodian	B/D, IM	<60 minutes	-	People: <ul style="list-style-type: none"> There may be resourcing issues as the staff required to handle exceptions must be available to meet timing guidelines. Process: <ul style="list-style-type: none"> If an exception is identified, the timing restarts.
12	Release trades for settlement	Custodian	Depository	Near real-time	-	-

FUTURE STATE WITH CONNECTIVITY TO A VMU (Page 6 of 7)

Process #	Activity	Business Practice		Timing	Mandatory Market Practice	Issues/Dependencies
		From	To			
DEPOSITORY						
9	Generate matched (affirmed) trades	Depository	Custodian/BD	Near real-time	As per CDSX published requirements	More details can be found at the following link: http://www.cds.ca/cdshome.nsf/ Downloads/-EN-Operationsprocedures/\$File/trader1.pdf?OpenElement .
13	Settle trades	Depository(Internal)	-	Near real-time; no later than T+3	-	
14	Send notice of settlement	Depository	BD/Custodian	Near real-time	As per CDSX requirements	-
VIRTUAL MATCHING UTILITY						
2	Receive NOE	VMU (Internal)	-	Near real-time	-	-
3a	Update details in blotter/trading system/portfolio management system	VMU	IM	Near real-time	-	To effectively accommodate business and market practices, the investment manager's systems must be able to communicate electronically with broker systems. This may require a technology investment.
5	Match NOE and allocations	VMU (Internal)	-	Real-time	-	Match criteria must be more fully developed in conjunction with market practices. Not all mandatory market practice elements will be included in a match.
6	Send mismatch info	VMU	IM, BD	Real-time	-	
8a	Provide matched information	VMU	Depository, BD	Real-time	<input type="checkbox"/> Sender's Reference # <input type="checkbox"/> Function of the Message <input type="checkbox"/> Linkage Reference # <input type="checkbox"/> Status Code <input type="checkbox"/> Reason Code <input type="checkbox"/> Buy/Sell Indicator <input type="checkbox"/> Payment Indicator <input type="checkbox"/> Quantity Traded <input type="checkbox"/> Identification of the Financial Instrument <input type="checkbox"/> Settlement Party (buyer/seller) <input type="checkbox"/> Safekeeping Account #	Process: <ul style="list-style-type: none"> Match criteria need to be developed and finalized. SIA used generic match criteria; more detailed match criteria are scheduled to be published by the end of Q2 2003.

FUTURE STATE WITH CONNECTIVITY TO A VMU (Page 7 of 7)

Business Practice		Mandatory Market Practice			Issues/Dependencies
Process #	Activity	From	To	Timing	
STANDING SETTLEMENT INSTRUCTIONS DATABASE (SSI DB)					
7a	Enrich with SSI (centralized database)	SSI	VMU	Real-time	<p>IM</p> <ul style="list-style-type: none"> <input type="checkbox"/> Internal Account # and Associated Custodian Identifiers (BIC) <p>Custodian</p> <ul style="list-style-type: none"> <input type="checkbox"/> Internal Account # <p>BD</p> <ul style="list-style-type: none"> <input type="checkbox"/> Internal Account # (associated with IM internal account in an SSI DB) <input type="checkbox"/> Executing and Clearing Brokers <input type="checkbox"/> Place of Settlement <p>Process:</p> <ul style="list-style-type: none"> • Need to develop clear roles and responsibilities for all the participants of a centralized standing settlement instructions database (SSI). • Ongoing viability of a standing instructions database requires regular maintenance and rules for participants to adhere to.

COMPARISON OF CANADIAN AND U.S. MANDATORY DATA ELEMENTS

The following was based on information from the Securities Market Practices Group, Trade Initiation and Confirmation Group, cross-referencing mandatory fields identified in the most recently available U.S. Securities Industry Association (SIA) market practice documentation, SMPG material and Canadian market practices, as analyzed by Cap Gemini Ernst and Young.

NOTICE OF EXECUTION	U.S. (Equity)	U.S. (Generic Fixed Income)	Mandatory/ Optional in Canada (M/O)	Canadian Market Practice Data Field Name
Comparison of U.S. Mandatory fields vs. Identified Canadian fields	NOE	NOE		
FIELD NAME	SMPG	SMPG		
Account Name	M	M	O	-
Account Number (Broker), BIA	M	M	M	Broker Portfolio/Account ID
Agent Number	M	M	M	Broker as Buyer/Seller
Amount (Interest)		M	M	Accrued Interest
Amount (Net)	M	M	M	Net Amount
Amount (Principal Amount)	M	M	O	-
Capacity/Role (Agent/Principal)	M	M	M	Capacity (Agent/ Principal)
Date (Maturity)	-	M	M	-
Date (Message)	M	M	M	Message Date/Time
Date (Order)	M	M	O	-
Date (Settlement)	M	M	M	Settlement Date
Date (Trade)	M	M	M	Trade Date
Executing Broker-Dealer Number/ID	M	M	M	Executing & Clearing Broker ID
Institution Number/Investment Manager Number/ID	M	M	M	IM Number/ID (CUID, BIC or FINS)
Market/Place of Trade	M	M	O	-
Order Status	M	M	M	Order Status
Quantity (Shares/Face Value/Current Face/Execution Shares)	M	M	M	Quantity Reported
Quantity (Partial Fill, Leaves Quantity)	C		M	Partial Fills Quantity
Reference (Master Reference Number)	M	M	M	Common Reference Number
Reference (Sender Reference)	M	M	M	NOE Reference Number
Reference (Linked Reference Number)	M	M	M	Block Reference Number
Restrictions on Transfer of Ownership	M	M	O	-
Security Description	M	M	O	-
Security Identifier	M	M	M	Security Identifier (ISIN)
Security Identifier Type	M	M	O	-
Settlement ISO Currency Code	M	M	M	-
Settlement Type	M	M	M	Settlement Type
Side (Buy/Sell)	M	M	M	Buy/Sell Indicator
Time of Message	M	M	M	Date/Time of Message
Transaction	M	C	M	Trade Transaction Type Indicator
Transaction Type	M	M	M	Function of the Message
Working Allocation of Shares	M		O	-
	-	-	M	Sales Name/RR Code

ALLOCATION	U.S. (Equity)	U.S. (Generic Fixed Income)	Mandatory/Optional in Canada (M/O)	Canadian Market Practice Data Field Name
Comparison of U.S. Mandatory fields vs. Identified Canadian fields	Allocation	Allocation		
FIELD NAME	SMPG	SMPG		
Account Name	M	M	O	-
Account Number (Agent), AIA	M	M	M	IM Internal Account/Portfolio ID
Account Number (Institution), IIA	M	M	M	IM Internal (Account/Portfolio ID)
Agent Number	M	M	M	Custodian (BIC, CUID or FINS)
Amount (Commission)	O	-	O	Commission
Amount (Interest)	-	O	M	Accrued Interest
Amount (Net)	O	O	M	Net Amount
Executing Broker-Dealer Number/ID ?	M	M	M	Executing & Clearing Broker
Institution Number/Investment Manager Number/ID ?	M	M	M	IM Number (CUID, BIC or FINS)
Price (Average Price)	C	C	M	Deal Price
Quantity (Shares/Face Value/Current Face/Execution Shares)	M	M	M	Quantity Reported
Date (Maturity)	-	M	O	-
Date (Message)	M	M	M	Message Date/Time
Date (Settlement)	M	M	M	Settlement Date
Date (Trade)	M	M	M	Trade Date
Reference (Common Identifier)	N/A?		M	Block Reference Number
Reference (Sender Reference) OR Broken out into Reference (Initiator Message Reference) and Reference (Responder Message Reference)	M	M	M	Allocation Sender Reference Number
Reference (Linked Reference Number)	M	M	M	Block Reference Number
Reference (Master Reference Number)	M	M	M	Common Reference Number
Restrictions on Transfer of Ownership	M	M	O	Specific to U.S. Regulations
Security Description	M	M	M	Security ID (ISIN)
Security Exchange	M	O	O	-
Security Identifier	M	M	M	Security Identifier (ISIN)
Security Identifier Type	M	M	O	-
Settlement Condition	M	M	M	Settlement Condition
Settlement ISO Currency Code	M	M	M	-
Settlement Location	M	M	M	Settlement Location
Settlement Type	M	M	M	Settlement Type
Side (Buy/Sell)	M	M	M	
Split Settlement Indicator	M	M	O	-
Time of Message	M	M	M	Message Date/Time of Message
Transaction Type	M	M	M	Transaction Type indicator
-	-	-	O	Payment Type Indicator

CONFIRMATION	U.S. (Equity)	U.S. (Generic Fixed Income)	Mandatory/ Optional in Canada (M/O)	Canadian Market Practice Data Field Name
Comparison of U.S. Mandatory fields vs. Identified Canadian fields	Confirm	Confirm		
FIELD NAME	SMPG	SMPG		
Account Name	M	M	O	-
Account Number (Agent), AIA	M	M	M	IM Portfolio/Account ID
Account Number (Broker), BIA	M	M	M	BD Portfolio/Account ID
Account Number (Institution), IIA	M	M	M	IM Portfolio/Account ID
Agent Number	M	M	M	Custodian (BIC,CUID or FINS)
Amount (Commission)	M		M	Commission
Amount (Interest)		M	M	Accrued Interest
Amount (Net)	M	M	M	Net Amount
Amount (Principal Amount)	M	M	M	-
Capacity/Role (Agent/Principal)	M	M	M	-
Date (Maturity)		M	O	-
Date (Message)	M	M	M	Message Date/Time
Date (Settlement)	M	M	M	Settlement Date
Date (Trade)	M	M	M	Settlement Date
Executing Broker-Dealer Number/ID or BIC	M	M	M	Executing & Clearing Broker
Institution Number/Investment Manager Number/ID or BIC	M	M	M	IM Number
Market/Place of Trade	M	M	O	-
Price (Actual Price Per Share/Face Value)	M	M	M	Deal Price
Quantity (Shares/Face Value/Current Face/Execution Shares)	M	M	M	Quantity Reported
Reference (Sender Reference) OR Broken out into Reference (Initiator Message Reference) and Reference (Responder Message Reference)	M	M	M	Sender Reference Number
Reference (Linked Reference Number)	M	M	M	Block Reference Number
Reference (Master Reference Number)	M	M	M	Common Reference Number
Restrictions on Transfer of Ownership	M	M	O	Specific to U.S. Regulations
Security Description	M	M	O	-
Security Exchange	M		O	-
Security Identifier	M	M	M	Security ID (ISIN)
Security Identifier Type	M	M	O	-
Settlement Condition	M	M	M	Settlement Condition
Settlement Instructions Indicator	M	M	M	Settlement Instructions Indicator
Settlement ISO Currency Code	M	M	M	Currency
Settlement Location	M	M	M	Settlement Location
Settlement Type	M	M	M	Need clarification on this field
Side (Buy/Sell)	M	M	M	Buy/Sell Indicator
Time of Message	M	M	M	Date/Time of Message
Transaction Type	M	M	N	Transaction Type Indicator
-	-	-	Y	Payment Type Indicator

CONSIDERATIONS

The issues highlighted below were identified during interviews and workshops with key industry stakeholders (February – March 2003). Every effort was made to involve all stakeholders.

CONSIDERATIONS WITHOUT CONNECTIVITY TO A VMU	
Broker	Non-VMU: May need more information from internal brokerage systems to supplement reporting of affirmation rates from CDS as CDS cannot provide the reason for trade failures.
	Non-VMU: Exception processing: If cut-off time is missed, then batch processing necessitates waiting a full day before being able to proceed.
	Both: Internal Reference Data must be cleaned up in order to facilitate communications with other parties and a VMU.
	Both: Notices of Execution may come later if the order is not filled in on T.
	Both: Warehousing of Trades: How do we handle this type of event in the T+1 world?
	Both: Exception Processing: Resource availability for turnaround on exceptions.
	Both: Motivators for agents to align with Future State Steps – identification of performance measures. Need to develop methods that could modify behaviour, such as incentives for electronic delivery and penalties for non-electronic delivery.
	Both: Brokerage back-office systems, need to identify the implications of intraday processing (brokers will have to generate trades and send them to CDSX earlier and other front-office systems will have to update ADP, ISM, Dataphile or other systems sooner).
	Both: Canadian brokers have not widely adopted pre-trade communication methods, such as the FIX protocol, to the extent that their US counterparts have.
	Both: In order to make the NOE fully configured, the BD and IM will need speedy access to ISIN.
Both: Greater involvement and participation are required from key vendors (e.g., ADP).	
Investment Manager	Both: Smaller IM's have staff with multiple responsibilities, which may make it difficult to meet recommended timing.
	Both: Exception Processing: Resource availability for turnaround on exceptions.
	Both: Internal Reference Data must be cleaned up in order to facilitate communications with other parties and a VMU. Some investment managers may not have the resources or knowledge to perform a data clean-up.
	Both: Some investment managers may wait until the end of the day before sending allocations, delaying the settlement process.
	Both: <u>Non-VMU</u> - Warehousing of Trades: How do we handle this type of event in the T+1 world? <u>VMU</u> - Partial Fill Pricing: Average price vs. specific prices for specific clients.
	Both: Motivators for agents to align with Future State Steps - identification of performance measures. Need to develop methods that could modify behaviour, such as incentives for electronic delivery and penalties for non-electronic delivery.
	Both: In order to make the NOE fully configured, the BD and IM will need speedy access to ISINs.
	Both: IMs often do not communicate a trade on trade date for one of the following reasons: 1. Late completion of allocations 2. Allocations not yet determined, order being worked over several days

3. Allocation have not yet been determined by the portfolio manager
4. Sometimes due to laziness – “I’ll do it in the morning”
5. Only some type of system problem would make us not execute a trade on trade date; however, illiquid securities could be held for a day or so depending on broker agreements.

Both: Costs of upgrading technology under relatively low individual trading volumes could affect investment managers, especially the smaller ones.

Both: Several IMs have stated that a majority of trades here are executed on a trade date basis, however they are not sent to the custodian (via FMCNet) until T+1, due to an internal accounting process.

Custodian Both: Need to minimize the amount of human input, especially re-inputs in order to minimize potential errors (e.g., incorrect commission calculations or data entry errors).

Both: Internal Reference Data must be cleaned up in order to facilitate communications with other parties and a VMU.

Both: May have to develop a set of common criteria that all custodians can provide in order to develop a consistent industry measure for IM performance.

Both: Ownership of standing settlement instructions must involve broker/dealer, investment manager and custodian. However, the industry still needs to determine who will provide value added services around settlement instructions in Canada (e.g., Central SSI).

Both: Affirmation precedes actual settlement and is conditional on matching trade details between the broker's New Trade Confirm transmitted to CDS and the IM's Settlement Instruction to the custodian.

Both: Exception Processing: Resource availability for turnaround on exceptions resulting from matching between steps 4 and 5 on Future State.

Both: Motivators for agents to align with Future State Steps - identification of performance measures. Need to develop methods that could modify behaviour, such as incentives for electronic delivery and penalties for non-electronic delivery.

Both: JIT is being considered by some custodians because they were concerned about having to update multiple standing settlement instructions databases.

Other Both: Who will govern metrics defined to ensure compliance?

Both: End of trading session for fixed income is less clear - most end by 5:00 p.m., but some transactions can occur later.

Both: Significant investment and behavioural changes are required on the part of some stakeholders (e.g., traders).

Both: Participants may have to modify office staffing arrangements to accommodate new business practices (e.g., IMs may have to stay later to resolve issues that arise after the close of the trading session).

Both: Every stakeholder has different levels of automation. Therefore those with lower levels may require greater investments in automation.

Both: Market standard for criteria for matching with and without a VMU.

Both: Timestamps must be reasonably consistent. All systems should have their clocks synchronized within seconds of a standard time (e.g., Greenwich Mean Time).

Both: Lack of regulatory pressure will make enforcement a challenging task.

Both: Currently, with the absence of regulatory changes, such as T+1, there is minimal motivation for some vendors to make certain changes (e.g., real-time processing).

CONSIDERATIONS WITHOUT CONNECTIVITY TO A VMU

Depository	VMU: Trades with a matched status in a VMU that are rejected by CDS will require a specific resolution process that needs to be developed (e.g., invalid CUID or security has no record).
Other	VMU: Who will be regulating or supervising concentrators?
Other	VMU: How will conformance affect participants that are not directly connected to a VMU but whose transactions are processed via matching utilities.
Other	VMU: Need to develop certification process for VMUs and connectivity providers.
Other	VMU: How do the participants balance if the VMU real-time flow has a missed/erroneous step (i.e., if the VMU errs).
Other	VMU: Standards for participants (not the VMU) to accommodate 30-minute window. This assumes that the VMU is real-time and there is documentation re timing: time-stamping to the minute or second. NOTE: This may cause a challenge for vendors as real-time could be expensive and that expense would be passed on to the other participants.
Other	VMU: Concern regarding the capabilities of a VMU vendor to address risks (e.g., security, reliability, etc.).
Other	VMU: Pre-allocated trades that occur when an IM sends a BD allocations prior to the NOE, will require the VMU to recognize and process these trades differently.

OUT OF SCOPE CONSIDERATIONS

Other	Does the VMU protect against fraud?
Other	Legal implications of failed trades – who is responsible?
Other	Cross-border: Holidays must be taken into account; however, the Canadian and U.S. holiday schedules differ.
Other	Request of corporate actions working group - To trade by T, security information needs to be ready by T-1. There is a need to define when an issue is ready to be traded: cannot be traded unless it can be settled?
Other	Request of Legal & Regulatory Working Group – What are the legal requirements around trading and settlement for corporate actions and new issues (ask TSX, IDA)?
Other	Regulatory bodies do not have jurisdiction over service providers or vendors. Therefore, vendor conformance to industry best practices and standards will be driven by pressure from clients.
Other	May need to develop a certification process for VMU connectivity providers.
Other	Post corporate action: Cannot validate details of match (corporate actions, securities lending). If corporate action, 10 shares of ABC tendered for eight shares for XYZ, exchange shares have not been distributed yet.

STANDARD ENTITLEMENT DATA FIELDS

Field				Comments
• Date and time filed	• Date of announcement	• Hub number and version		Mandatory – date, time and number will be system-generated; number will remain with corporate action but the version will change automatically as new information is added, with a new date and time stamp added
• Name of the securities on which the event has been announced				Mandatory – multiple securities could be involved and the template would have to allow for this; a system-generated number would be needed for items such as a private placements
• CUSIP, ISIN, SEDOL or hub-generated (UNK) number for all target securities				
• Offeror				Mandatory in the case of a takeover or offer to purchase
• Name of the securities of any other security affected by the event				Mandatory depending on type
• CUSIP, ISIN, SEDOL or hub-generated number of these related securities				
• Name of the securities of any other security resulting from the event				Mandatory depending on type
• CUSIP, ISIN, SEDOL or hub-generated number of these related securities				
• Category				Mandatory – Categories would be mandatory, voluntary, mandatory with options, distributions
• Type				Mandatory – Pre-defined event types to be agreed on; will have to define a way to quickly add new types or have an interim solution for them
• Payment limits <input type="checkbox"/> Yes <input type="checkbox"/> No				Mandatory if applicable – e.g., subject to maximum cash or shares
• News release (preliminary), prospectus, as well as news releases for updates/changes and amended prospectuses				Mandatory – Insert text of releases or attach as available; attach prospectus
• Restrictions <input type="checkbox"/> Yes <input type="checkbox"/> No				Mandatory
• Option	• Quantities/ratios	• Withdrawal date/time/time zone	• Option expiry date/time/time zone	Mandatory where applicable – Option (cash, shares, currency) – one row per option; tax implications will be reflected in the different options listed; detailed tax information would be in the prospectus
• Default option	• Quantities/ratios	• Withdrawal date/time/time zone	• Option expiry date	Mandatory
• Letter of transmittal terms and conditions				Mandatory – Attach or link
• Guaranteed delivery letter/notice				Mandatory – Attach or link
• Liability letter				Mandatory – Attach or link
• Date of event expiry				Mandatory – Legal/market expiry
• Date/time/time zone when cash/position entitlement will be distributed				Mandatory, as available
• Location(s)	• Paying agent/ depository name and contact information (name, tel. no., e-mail, fax, address)	• (Co)transfer agent(s) contact information		Mandatory
• Information agent contact data, number				Mandatory

Field			Comments
• Basis for calculation			Mandatory
• Deadline for releasing/advising of pro-ration factor			Mandatory, as available
• Ex date	• Record date	• Due bill date	Mandatory
• Last date to trade offeree securities	• First date to trade in new entitlement	• Symbol if entitlement is a new security	Mandatory (last date to trade determined by Toronto Stock Exchange; advised to and entered by issuer or their agent)
• Target payment date			Mandatory
• Cash in lieu date	• Effective date		Mandatory
• Solicitation fees <input type="checkbox"/> Yes <input type="checkbox"/> No	• Other fees/costs if any <input type="checkbox"/> Yes <input type="checkbox"/> No		Mandatory – Attach or link
• Offeror contact information			Optional – Name, tel. no., e-mail, fax no., Web site

Differences between U.S. 29 Data Elements and Canadian Proposed Fields

All fields above are consistent with the modifications/clarifications noted below (these divergences between Canada and the U.S. may be revisited further later):

<u>U.S. Field Name</u>	<u>Canadian Fields</u>
------------------------	------------------------

Name Differences

- | | |
|----------------------------|------------------------------------|
| • Consent fee: | Covered in Other Fees/Costs |
| • Protect expiration date: | Same as Guaranteed Delivery Letter |
| • Security rate: | Part of Options |
| • New restrictions: | Included as Y/N |

Divergences

- | | |
|-----------------------------|----------------------------|
| • Shares outstanding: | Not required |
| • Utility eligibility: | Not required at this stage |
| • Back-end odd-lot: | Not required |
| • Disposition of fractions: | Not applicable |
| • Odd-lot preference: | Not applicable |