



QRTMD TMXS Level 2 SL2

Functional Specifications

Document Revision: 1.12
Date of Issue: January 8, 2013

Equities

Toronto Stock Exchange
TSX Venture Exchange
Equicom

Derivatives

Montréal Exchange
CDCC
Montréal Climate Exchange

Fixed Income

Shorcan

Energy

NGX

Data

TMX Datalinx
PC Bond

Disclaimer and Rights Granted

The information contained in this document and any other information or documentation related to this specification and associated message formats (collectively, along with any upgrades, updates and new versions or releases provided to you by TSX Inc. ("TSX") from time to time, referred to as the "SL2 Functional Specifications", are provided "as is", and neither TSX nor any of its affiliates makes any representation or warranty, express or implied, as to the contents of the SL2 Functional Specifications (or the results obtained by using it) and each such person specifically disclaims any representation, warranty or condition of accuracy, completeness, merchantability, fitness for a particular purpose or that it is error-free. By using the SL2 Functional Specifications, you are agreeing to assume the entire risk associated with its use.

TSX and its affiliates shall have no liability for damages of any kind arising in any manner out of or in connection with your use of, or your inability to use, the SL2 Functional Specifications, whether direct, indirect, incidental, special or consequential (including, without limitation, loss of data, loss of use, third party claims, lost profits, lost revenues and strict liability), arising under contract or otherwise, whether or not TSX has been advised of, or otherwise might have anticipated the possibility of, such damages.

Please note that TSX will require prior certification of any system designed to connect to its trading and market information as well as your participation from time to time in connection with the testing of changes or upgrades to the SL2 Functional Specifications or the systems used to connect to TSX.

The information contained in the SL2 Functional Specifications is proprietary and confidential information belonging to TSX and its licensors or service providers, as applicable. Copyright and trade-mark rights and any other intellectual property in the SL2 Functional Specifications belong to TSX (or its licensors or service providers, as applicable). Your permitted use of the SL2 Functional Specifications, in whole or in part, is limited to the non-exclusive, non-transferable, revocable, non-assignable, personal right for you only to build a connection between your systems and TSX's trading and market information system. You are not permitted to use all or any part of the SL2 Functional Specifications for order entry other than on Toronto Stock Exchange, TSX Venture Exchange, TMX Select, or Alpha. Any uses not specifically set out herein are prohibited. TSX may revoke this right at any time, on notice to you, and you agree to promptly comply with such notice. Do not reproduce, disclose, distribute, publish, sell, commercialize or make any part of the SL2 Functional Specifications available, in whole or in part, to any person without TSX's prior written consent. If you do not agree with, or do not wish to comply with, any of the above, please notify TSX and, in accordance with TSX's instructions, either return or destroy any copies or version of the SL2 Functional Specification in your possession.

© TSX Inc. 2011-2013. All rights reserved.

Contact Information

For questions, contact TMX Vendor Services, vendor_services@tmx.com, 416-947-4705.

Table of Contents

Chapter 1 Overview	7
1.1 Intended audience	7
1.2 Rule notation conventions	8
1.2.1 Rule naming	8
1.2.2 Literal text.....	8
1.2.3 Alternatives: Rule1 Rule2.....	8
1.2.4 Local alternatives: (Rule1 Rule2).....	8
1.2.5 Repetition: *Rule	9
1.2.6 Optional: [Rule].....	9
1.2.7 Specific repetition: Nrule	9
1.2.8 Client/Server notation convention	9
Chapter 2 Message Structure.....	10
2.1 Control Header Content.....	10
2.2 Business Content fields	10
2.2.1 Field ordering	11
2.2.2 Field Identifier.....	11
2.2.3 Field Value	11
Chapter 3 Business Content Messages	12
3.1 Trading Tier Status Message.....	12
3.2 SymbolStatus Message	13
3.3 Order/Cancel Confirmation Report	14
3.4 Trade Report.....	15
3.5 Stock Status Notification	16
3.6 Market State Change	16
3.7 General Message.....	17
Chapter 4 Operating Sequence	18
4.1 Transmission times	18
4.2 Trading hours for TMX Select.....	18
Chapter 5 Field Definitions	19
A.....	19
B.....	19
C.....	20
D.....	21
E.....	22
F.....	22
H.....	23
L.....	23
M.....	23
N.....	24
O.....	24
P.....	24
R.....	25
S.....	25
T.....	26
V.....	27

Chapter 6	Field Identifiers by Numerical Order	28
Chapter 7	Field Identifiers by Alphabetical Order	35
Appendix A	Symbology Rules	36
A.1	Share Classes	36
A.2	Symbology Notes	37
Appendix B	ASCII Character Set	38
Appendix C	Glossary	40
Appendix D	References	41
Appendix E	Revision History	42

Chapter 1 Overview

This specification defines the communications interface and the information records transmitted on the Quantum RTMD (QRTMD) TMX Select Level 2 (SL2) service.

The SL2 service is comprised of:

- Symbol and market status
- Trades
- Orders and confirmations

The TMX Select Level 2 business content messages are formatted using the STAMP protocol syntax. STAMP, the Securities Trading Access Message Protocol, is the messaging protocol developed by the TSX for order entry. More details about the STAMP protocol are given in the *STAMP Specification* (Reference [1]).

To develop and implement systems that can receive and process SL2 data, this document must be used with the *Quantum RTMD Protocol Specification and Service Access Guide*.

1.1 Intended audience

The intended audience of this specification are business analysts and programmer analysts.

All readers should familiarize themselves with Section 1.2 – Rule notation conventions, paying close attention to how the notation conventions are defined, as this notation is used throughout the specification.

Business analysts should focus primarily on Chapter 3, *Business Content Messages*, and Chapter 5, *Field Definitions*. These two sections define how the trading information is defined in the TMX Select Level 2 service. In addition to these sections, the business analysts should be familiar with the trading rules and trading scenarios that these messages represent.

Programmer analysts should be familiar with the entire specification, although their focus should be on message structure and parsing.

1.2 Rule notation conventions

This section describes the notation convention for the elements of STAMP syntax used in the business content. Although the rules presented below are somewhat formal in nature, for casual reading of the specification all that is required is to keep in mind the following points:

- Text presented in a `Consolas` typeface font means that it is a rule that is defined in the *Field Definitions* starting on page 19.
- Any rule that is enclosed in square brackets, “[” and “]” means that the rule is optional.
- The spaces between the rules mean that the rules are joined together.

When appropriate, this specification uses an augmented Backus-Naur Form (BNF) notation, similar to that presented in *RFC 822 – Standard For The Format of ARPA Internet Text Messages* (Reference [6]). The differences from standard BNF involve naming rules and indicating repetition and “local” alternatives. Comments about a rule, such as the hexadecimal representation of a character, are introduced by a semicolon (“;”) in-line after the rule definition. All text after a semicolon until the end of a line forms the comment.

Rules are used throughout the text of the specification when appropriate to formally define a concept. All of the rules are gathered in the *Field Definitions* for convenience.

1.2.1 Rule naming

Angle brackets (“<”, “>”) are used below in the syntax definition of rules to identify rule components; these brackets are not used, in general, in the rule names. The name of a rule is simply the name itself, rather than “<name>”. Capitalized letters are used in names to highlight the meaning of the name.

1.2.2 Literal text

Quotation marks enclose literal text (which is case sensitive). Literal text appears as is in the message content.

1.2.3 Alternatives: Rule1 | Rule2

Elements separated by vertical line (“|”) are alternatives. Therefore, “[abc | def]” will accept abc or def.

1.2.4 Local alternatives: (Rule1 | Rule2)

Elements enclosed in parentheses are treated as a single element. Thus, “(elem (abc | def) elem)” allows the token sequences “elem abc elem” and “elem def elem”.

1.2.5 Repetition: *Rule

The character “*” preceding an element indicates repetition. The full form is:

<l>*<m>element

indicating at least <l> and at most <m> occurrences of element, with default values of 0 and infinity respectively.

So that “*(element)” allows any number, *including zero*; “1*element” requires at least one; and “1*2element” allows one or two.

If the repeated element is a `FieldIdentifier`, the repeated element will be represented in the datastream using the `FieldIdentifierIndex` notation as described in *Section 2 of the STAMP Specification*.

1.2.6 Optional: [Rule]

Square brackets enclose optional elements; for example, “[abc def]” is equivalent to “1*1(abc def)”. The square bracket notation is used in the message description.

1.2.7 Specific repetition: Nrule

“<n>(element)” is equivalent to “<n>*<n>(element)”; that is, exactly <n> occurrences of (element). Thus `2Digit` is a 2-digit number, and `3AlphaNumeric` is a string of three alphabetic characters. If the repeated element is a `STAMP FieldIdentifier`, the repeated element will be represented in the datastream using the `FieldIdentifierIndex` notation as described in *Section 2 of the STAMP Specification*.

1.2.8 Client/Server notation convention

For the purpose of this specification, “Client” (initial capital letter) refers to the computer application that “listens” for output messages from the TMX Select Level 2 service.

Chapter 2 Message Structure

Business content in SL2 messages is coded in STAMP format. This portion of the message is formally described as follows:

```

MessageContent      =  ControlHeader BusinessContent [ControlTrailer]
ControlHeader       =  ControlHeaderChar ControlHeaderContent
ControlHeaderContent =  1*ControlHeaderField
ControlHeaderChar   =  <US-ASCII SOH> ; 0x01  Start of Heading
BusinessContent     =  BusinessContentChar 1*BusinessContentField
BusinessContentChar =  <US-ASCII FS> ; 0x1c  File Separator
ControlTrailer      =  ControlTrailerChar
ControlTrailerChar  =  <US-ASCII GS> ; 0x1d  Group Separator

```

2.1 Control Header Content

```

ControlHeaderContent =  DestAddress SequenceNumber TimeStamp
                      [LastSequenceReceived] [Retrans] [RetransId]
                      [SourceAddress]

```

The TMX Select Level 2 service includes the STAMP control layer header and trailer. The STAMP control header is described in detail in Reference [1].

The ControlHeaderChar (0x01), BusinessContentChar (0x1c), and ControlTrailerChar (0x1d) separators are not explicitly mentioned in Chapter 3, *Business Content Messages*.

2.2 Business Content fields

Both the Control and Business Content Sections are further divided into *Fields*. Each field is made up of a field identifier and an optional field value. The identifiers and values are variable in length and content; the *Field Definitions* must be consulted for appropriate qualifying rules.

A field is divided into two sections; a field identifier and an optional field value. The FieldIdentifier is introduced by a FieldIdentifierChar. The optional FieldValue is introduced by the US-ASCII equals sign “=”. Note that it is possible to have a FieldIdentifier without a FieldValue, in which case the FieldValue assumes a default value (see the *Field Definitions*).

The formal notation for a field is:

BusinessContentField = FieldChar FieldIdentifier “=” [FieldValue]

FieldChar = <US-ASCII RS; Record Separator> ; 0x1e

Note: The FieldIdentifier and FieldValue listed in the *Field Definitions* are for reference only. Some of these fields are defined as part of the STAMP protocol but will never appear in the business content messages delivered with the SL2 service.

2.2.1 Field ordering

The order of the fields within a section of a STAMP message is position independent. They must only be of the *correct type* (e.g. the fields within the ControlHeader must be of the type ControlHeaderField), and may be in any order within the section.

2.2.2 Field Identifier

The *Field Identifier* is a number that is used as an index into the *Field Definitions* to identify the syntactic meaning of the field value. As an example, if the field identifier of a field was “55”, this would mean the field value was a stock symbol.

For repeating groups of field identifiers, a “dot” notation is used. If a message contains multiple occurrences of a field identifier, each occurrence is represented by an addition field identifier index. If there are linked groups of fields the index is used to link the elements syntactically. It is important to note that field indexes start at zero and are contiguous. Also, a field identifier without an explicit index is equivalent to an index of zero. Fields at the same index level are conceptually “records”.

Note that the contiguous nature of the index refers to the conceptual record not individual FieldIdentifiers. For example, a STAMP message with the following tags, “11.0=ABC”, “11.1=DEF”, “15.1=5”, would be valid and would represent a situation where tag 15 was optional and not present for the “0” record. There would, however, be at least one field at each index level.

The formal notation for a field identifier is:

FieldIdentifier = 1*4Digit [FieldIdentifierIndex]; 1 to 9999,
no default

FieldIdentifierIndex = “.” 1*4Digit ; 0 to 9999, default is 0

2.2.3 Field Value

The *Field Value* contains the value of the field. If the identifier was “55” and the value was “BCE”, then the stock symbol for this message would be “BCE”.

The formal notation for a field value is:

FieldValue = 1*PrintableChar

Chapter 3 Business Content Messages

The messages described in this section are the trading messages that are broadcast from the TMX to the Client.

3.1 Trading Tier Status Message

TMX Select sends Trading Tier Status messages to the Client at the beginning of each trading day. The Trading Tier Status message provides statistical information to the trading community about the total number of:

- Stock groups per Trading Engine for the trading day.
- Symbols per Trading Engine for the trading day.
- Open orders per Trading Engine for the trading day.

TradingTierStatus Message	=	ControlHeader BusinessContent
ControlHeaderContent	=	DestAddress SequenceNumber SourceAddress TimeStamp [Retrans] [RetransId]
BusinessContent	=	BusinessAction BusinessClass Exchangeld TotalNumOpenOrders TotalNumStockGroups TotalNumSymbols TradingSysTimeStamp TradingTierId
Where:		
BusinessClass	=	"MarketInfo"
BusinessAction	=	"TradingTierStatus"

3.2 SymbolStatus Message

SymbolStatus message provides information for an equity, debenture or trading instrument for the current trading day.

- The SymbolStatus message is available at the beginning of each trading day.
- SymbolStatus message provides information for an equity, debenture or trading instrument for the current trading day.
- The ProductType field indicates an equity or debenture security.
- The LastMessage tag indicates the completion for the Symbol Status messages.

SymbolStatusMessage	=	ControlHeader BusinessContent
ControlHeaderContent	=	DestAddress SequenceNumber SourceAddress TimeStamp [Retrans] [RetransId]
BusinessContent	=	BusinessAction BusinessClass Symbol TradingSysTimeStamp [AcceptAnonymous] [AcceptUndisplayed] [BoardLot] [Currency] [CUSIP] [ExchangeId] [FaceValue] [LastMessage] [LastSale] [ListingMkt] [NumberOfMessages] [ProductType] [StockGroup] [StockHaltDate] [StockState] [SymbolFullName] [TotalNumMessages]
Where:		
BusinessClass	=	"SymbolInfo"
BusinessAction	=	"SymbolStatus"

3.3 Order/Cancel Confirmation Report

TMX Select sends an Order/Cancel Confirmation Report in response to a new order or cancel being entered into the trading system.

An Order/Cancel Confirmation Report will confirm changes to the attributes of an existing order when they have been modified.

OrderCancelRespMessage	=	ControlHeader BusinessContent
ControlHeaderContent	=	DestAddress SequenceNumber SourceAddress TimeStamp [Retrans] [RetransId]
PublicContent	=	BrokerNumber BusinessAction BusinessClass ConfirmationType OrderNumber PublicPrice Symbol TradingSysTimeStamp Volume [ByPass] [CFOdOrderNumber] [ExchangeId] [PriorityTimeStamp] [PriorityVolume]
BusinessClass	=	"OrderCancelResp"
BusinessAction	=	"Buy" "Sell"
ConfirmationType	=	AssignTimePriority Booked Cancelled PriceAssigned

The following are the meanings of the ConfirmationType field:

"AssignTimePriority"	The order has been sequenced in the book according to its time priority. The PriorityTimeStamp indicates the new time stamp used for sequencing the order in the book.
"Booked"	The order has been entered in the book and is now eligible for matching.
"Cancelled"	The order has been cancelled by the submitting broker and is no longer in the book.
"PriceAssigned"	The order has been re-priced.

3.4 Trade Report

TMX Select sends a Trade Report in response to a trade occurring on a previously accepted new order, CFO, or cross.

The Trade Report includes all relevant transaction details including the opposite broker number, remaining order volume and if the member acted as principal on the trade.

TradeReportMessage	=	ControlHeader BusinessContent
ControlHeaderContent	=	DestAddress SequenceNumber SourceAddress TimeStamp [Retrans] [RetransId]
BusinessContent	=	2BrokerNumber BusinessAction BusinessClass 2OrderNumber Price Symbol TradeNumber TradingSysTimeStamp Volume [ByPass] [CFOdOrderNumber] [CrossType] [2DisplayVolume] [ExchangedId] [LastSale] [OrigTradeId] [2PriorityTimeStamp] [TradeCorrection] [TradeTimeStamp]
Where:		
BusinessClass	=	"TradeReport"
BusinessAction	=	"Cancelled" "Trade"

Each trade consists of two fills. By convention, the first element of any two element field (.0) will refer to the buy side and the second element (.1) will refer to the sell side.

BusinessAction of "Cancelled" will appear in the Trade Report when the TSX Trading Services officer cancels a trade after it has been transacted.

3.5 Stock Status Notification

TMX Select sends a Stock Status Notification in response to a change in stock status on the Trading Engine.

StockStatusMessage	=	ControlHeader BusinessContent
ControlHeaderContent	=	DestAddress SequenceNumber SourceAddress TimeStamp [Retrans] [RetransId]
BusinessContent	=	BusinessClass Symbol TradingSysTimeStamp [AcceptAnonymous] [AcceptUndisplayed] [Comment] [Currency] [Exchangeld] [OpeningTime] [StockState]
Where:		
BusinessClass	=	"StockStatus"

3.6 Market State Change

TMX Select sends Market State Change message whenever a notice of a market state change or a trading session change has been received from the Trading Engine.

MarketStateChangeMessage	=	ControlHeader BusinessContent
ControlHeaderContent	=	DestAddress SequenceNumber SourceAddress TimeStamp [Retrans] [RetransId]
BusinessContent	=	BusinessClass TradingSysTimeStamp [Exchangeld] [MarketState] [StockGroup]
Where:		
BusinessClass	=	"MarketStateChange"

3.7 General Message

TMX Select sends a General message when it is generated by the Trading Engine.

GeneralMessage	=	ControlHeader BusinessContent
ControlHeaderContent	=	DestAddress SequenceNumber SourceAddress TimeStamp [Retrans] [RetransId]
BusinessContent	=	BusinessClass MessageText TradingSysTimeStamp [BulletinIndicator] [ExchangeId]
Where:		
BusinessClass	=	"GeneralMessage"

Chapter 4 Operating Sequence

4.1 Transmission times

Clients can listen on the SL2 port at any time during the day. The unsequenced Heartbeat message is transmitted every 60 seconds.

Start of the day TradingTierStatus and StockStatus messages are sent at the beginning of each trading day.

Transmission times for SL2 are Eastern Standard/Daylight Savings Time.

Please contact TMX Vendor Services for Operational hours.

4.2 Trading hours for TMX Select

Marketplace	Regular Trading Session (EST)			Last Sale Trading Session (EST)		
	Pre-Open	Open	Close	Pre-Open	Open	Close
TMX Select	N/A	08:00	17:00	N/A	N/A	N/A

Chapter 5 Field Definitions

A

AcceptAnonymous

Flag to indicate if a stock symbol is eligible to accept Anonymous orders.

```
FieldIdentifier = 110 ;
AcceptAnonymous = "Y" | "N" ; default is "Y"
```

AcceptUndisplayed

Flag to indicate if a stock symbol is eligible for undisplayed orders.

```
FieldIdentifier = 605 ;
AcceptUndisplayed = "Y" | "N" ; default is "Y"
```

AlphaNumeric

Alphabetic and numeric characters.

```
AlphaNumeric = all US-ASCII character, 0x00 to 0x7f
```

B

BoardLot

Board lot volume.

```
FieldIdentifier = 115
BoardLot       = Volume ; no default
```

BrokerNumber

An exchange-assigned number identifying a Member Firm.

```
FieldIdentifier = 70
BrokerNumber   = 1*3Digit ; no default
```

BulletinIndicator

Indicates message is a bulletin.

```
FieldIdentifier = 317
BulletinIndicator = "Y" | "N" ; default is "N"
```

BusinessAction

The action to take for a BusinessContent section.

FieldIdentifier = 5 ; no default	Maximum 35 Characters
BusinessAction = "AssignLimit"	
"Buy"	
"Cancelled"	
"Cross"	
"Sell"	
"Trade"	
"SymbolStatus"	
"TradingTierStatus"	

BusinessClass

The message class for a Business Content Layer message.

FieldIdentifier = 6 ; no default	Maximum 35 Characters
BusinessClass = "GeneralMessage"	
"MarketStateChange"	
"OrderCancelResp"	
"StockStatus"	
"TradeReport"	
"MarketInfo"	
"SymbolInfo"	

BusinessContent

The business fields for a STAMP message.

BusinessContent = BusinessContentChar 1*BusinessContentField

BusinessContentChar

The character that introduces BusinessContent.

BusinessContentChar = <US-ASCII FS; File Separator> ; 0x1c

BusinessContentField

A field found in the Business Content section of a message.

ByPass

To indicate orders are tradable against only visible/disclosed volumes and bypasses iceberg orders, RT participation and autofill, and special terms book. Any part of the OrderQty balance not filled immediately is "killed/cancelled".

FieldIdentifier = 503 ;
ByPass = "Y" | "N" ; default "N"

C**CF0dOrderNumber**

The original order number of the order that was CF0d.

FieldIdentifier = 11
CF0dOrderNumber = OrderNumber ; no default;

Comment

A text field corresponding to a reason code entered by Market Surveillance when a stock is halted; or, the initiator of a delayed opening on a stock, or when there is a change to the RT/Oddlot Trader on a stock.

FieldIdentifier = 173
Comment = 1*40AlphaNumeric ; no default

CrossType

Type of crosses originating from a participating organization between managed accounts that have the same manager.

FieldIdentifier = 390 ; no default	
CrossType = "Basis" ; Basis	
"Contgt" ; Contingent	
"Intrnl" ; Internal	
"VWAP" ; Volume Weighted Average Price	

ConfirmationType

The type of confirmation for a report.

```
FieldIdentifier = 16
ConfirmationType = "AssignTimePriority" |
                  "Booked"             |
                  "Cancelled"           |
                  "PriceAssigned"       |
```

ControlHeader

The portion of the STAMP message that contains administrative information.

```
ControlHeader = ControlHeaderChar 1*ControlHeaderField
```

ControlHeaderChar

The character that introduces ControlHeader.

```
ControlHeaderChar = <US-ASCII SOH; Start of Heading> ; 0x01
```

ControlHeaderField

A field found in the ControlHeader section of a message.

CrossType

Type of crosses originating from a Participating Organization between managed accounts that have the same manager.

```
FieldIdentifier = 390 ; no default
CrossType = "Basis" ; Basis
           "Contgt" ; Contingent
           "Intrnl" ; Internal
           "VWAP" ; Volume Weighted Average Price
```

Currency

The currency of a price.

```
FieldIdentifier = 58
Currency = "CAD" ; default
          "USD"
```

CUSIP

Clearing and settlement registration number.

```
FieldIdentifier = 171
CUSIP = 9*12AlphaNumeric ; no default
```

D**Date**

The date format.

```
Date = 8Digit ; in YYYYMMDD format
```

DestAddress

The destination STAMP address.

```
FieldIdentifier = 17
DestAddress = DirectedAddress | BroadcastAddress ; no default
```

Note that only servers are allowed to use BroadcastAddress.

Digit

Representation of numeric values.

Digit = "0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9"

DirectedAddress

A specific STAMP address.

DirectedAddress = 8Hexadecimal ; 4 bytes (00000000 is reserved)

The value is a 4-byte value encoded in 8-byte hexadecimal format. Please refer to the *STAMP Assigned Addresses* document for details as to how these numbers are assigned.

DisplayVolume

Public remaining volume.

FieldIdentifier = 150
DisplayVolume = Volume

E**Empty**

Nothing.

Empty = ""

ExchangeId

Identifies the exchange from which the message originated.

FieldIdentifier = 247
ExchangeId = "SEL"

F**FaceValue**

The face value of a debenture.

FieldIdentifier = 119
FaceValue = Price ; no default

Field

A unit within a section that includes a FieldIdentifier and an optional FieldValue.

Field = FieldChar FieldIdentifier "=" [FieldValue]

FieldChar

The character that introduces a field.

FieldChar = <US-ASCII RS; Record Separator> ; 0x1e

FieldIdentifier

The value that identifies what the field means.

FieldIdentifier = 1*4Digit [FieldIdentifierIndex] ; 1 to 9999, no default

FieldIdentifierIndex

An instance of a specific field within a message.

FieldIdentifierIndex = "." 1*4Digit ; 0 to 9999, default is 0

FieldValue

The value of the field.

FieldValue = 1*PrintableChar

H**Hexadecimal**

Hexadecimal number representation.

Hexadecimal = Digit | "a" | "b" | "c" | "d" | "e" | "f"

L**LastMessage**

A marker to indicate that the current message is the last in a series.

SymbolStatus message: Set the LastMessage indicator to 'Y' on the last symbol message in the stock group

FieldIdentifier = 113
LastMessage = "Y" | "N" ; default is "N"

LastSale

Last sale price of a stock.

FieldIdentifier = 114
LastSale = NumericPrice ; no default

LastSequenceReceived

The last sequence number received.

FieldIdentifier = 15
LastSequenceNumber = SequenceNumber ; no default

ListingMkt

The market on which the security is listed.

FieldIdentifier = 554
ListingMkt = "CDX" | "TSE" | "ALM" ; no default

M**MarketSide**

The buy or sell side of the market.

FieldIdentifier = 197
MarketSide = "Buy" | "Sell" ; no default

MarketState

The indication of the current market state.

FieldIdentifier = 159
MarketState = "Open" | "Closed"

MessageText

The description for a trading system generated message.

FieldIdentifier = 160
MessageText = 1*1024PrintableChar ; no default

N

NumberOfMessages

Number of messages contained in the symbol status message.

SymbolStatus message: Assign incremental numbers for each symbol message in the stock group

```
FieldIdentifier = 111
NumberOfMessages = 1*8Digit ; no default
```

NumericPrice

A price in a currency.

```
NumericPrice = 1*6Digit [“.” 1*5Digit]
```

O

Opening Time

Contained in the Symbol Status.

```
Field Identifier = 120
```

OrderNumber

A number assigned to the order by the trading system.

```
FieldIdentifier = 40 ; no default
OrderNumber = 1*18AlphaNumeric
```

OrigTradeID

Used with trade corrections to reference previously reported executions and the side initiating the cancel/correct

```
FieldIdentifier = 506 ;
OrigTradeID = Trade # | Side (B=Buy; S=Sell ; C = combined Indicator for
both sides) |
```

P

Price

The limit or type of price for an order.

```
FieldIdentifier = 41
Price = NumericPrice
```

PrintableASCII

Characters that have a glyph from the US-ASCII character set.

```
PrintableASCII = <any printable char from US-ASCII char set plus HT>
; 0x09, 0x20 to 0x3c, 0x3e to 0x7e
```

PrintableChar

Characters that have a glyph.

```
PrintableChar = PrintableASCII | PrintableLatin1
```

PrintableLatin1

Characters that have a glyph from the Latin 1 character set.

```
PrintableLatin1 = <any printable char from Latin 1 char set> ; 0xa1 to 0xff
```


PriorityTimeStamp

Timestamp assigned by the trading engine to specify time priority of an order. Orders are sequenced in the order book based on symbol, price and PriorityTimeStamp.

FieldIdentifier = 178
 PriorityTimeStamp = 20Digit ; YYYYMMDDHHMMSSmmmmmm (year, month, day, hour, minute, second, millionths of a second)

PriorityVolume

The volume of the order that has priority.

FieldIdentifier = 68
 PriorityVolume = Volume ; no default

ProductType

The product type for a symbol.

FieldIdentifier = 105
 ProductType = "CDNX-Equity" | ;
 "CDNX-Debtenture" | ;
 "Debtenture" |
 "Equity" |
 "ALM-Equity"

PublicPrice

The public price of an order (specifically different than the 'private' price for some pre-open orders).

FieldIdentifier = 196
 PublicPrice = Price ; no default

R**Retrans**

A marker that indicates the message is a retransmitted message.

FieldIdentifier = 97
 Retrans = "Y" | "N" ; default is "N"

RetransId

An identifier as to which retransmission request caused the retransmission.

FieldIdentifier = 147
 RetransId = 1*5AlphaNumeric ; no default

S**SequenceNumber**

The sequence number of the message.

FieldIdentifier = 50
 SequenceNumber = 1*9Digit ; 0 to 999,999,999 ; no default

SourceAddress

The source STAMP address.

FieldIdentifier = 54
 SourceAddress = DirectedAddress ; no default

StockGroup

An indicator of stock group.

```
FieldIdentifier = 282
StockGroup      = 1*2Digit ; no default
```

StockHaltDate

The date on which the stock was halted.

```
FieldIdentifier = 80
StockHaltDate  = Date ; no default
```

StockState

The possible states that a stock may be in that are broadcast.

```
FieldIdentifier = 161
StockState      = "Authorized"
                 "AuthorizedFrozen"
                 "AuthorizedHalted"
                 "Inhibited"
                 "InhibitedFrozen"
                 "InhibitedHalted"
```

Symbol

The security/issue symbol.

```
FieldIdentifier = 55
Symbol         = 1*17AlphaNumeric ; no default
```

SymbolFullName

The security/issue symbol's complete company name.

```
FieldIdentifier = 177
SymbolFullName  = 1*80PrintableASCII ; no default
```

T

TimeStamp

The time at which the STAMP message was sent.

[illegible]

Note that for a retransmitted message, the value of TimeStamp is the time of the retransmission, not the transmission time of the original message.

TotalNumMessages

The total number of messages expected for a query response.

Symbol Status message: Total number of symbols per stock group

```
FieldIdentifier = 112
TotalNumMessages = 1*8Digit ; no default
```

TotalNumOpenOrders

The total number of open orders per trading tier and Exchangeld.

```
FieldIdentifier      = 581      ;
TotalNumOpenOrders  = 1*7Digit ; 0 to 9,999,999
```

TotalNumStockGroups

The total number of stock groups per trading tier and Exchangeld.

FieldIdentifier = 582 ;
TotalNumStockGroups = 1*3Digit

TotalNumSymbols

The total number of stocks per trading tier and Exchangeld.

FieldIdentifier = 583 ;
TotalNumSymbols = 1*5Digit

TradeCorrection

An indicator as to whether the Trade Report is a trade correction or a normal fill.

FieldIdentifier = 183
TradeCorrection = "Y" | "N" ; default is "N"

TradeNumber

Unique identifier assigned to each trade on a per stock basis.

FieldIdentifier = 220
TradeNumber = 1*7Digit ; no default

TradeTimeStamp

The time at which the trade occurred, manually set when a trade is added by TMXS.

FieldIdentifier = 264
TradeTimeStamp = 16Digit ; YYYYMMDDHHMMSShh (year, month, day, hour
; minute, second, hundredths of a second)

TradingSysTimeStamp

The time at which the BusinessAction occurred.

FieldIdentifier = 57
TradingSysTimeStamp = 16Digit ; YYYYMMDDHHMMSShh (year, month, day, hour
; minute, second, hundredths of a second)

TradingTierId

A Trading Engine identifier.

FieldIdentifier = 584 ;
TradingTierId = 1*9Alphanumeric

V**Volume**

The quantity of shares for an order or a fill report.

FieldIdentifier = 64
Volume = 1*9Digit ; no default

Chapter 6 Field Identifiers by Numerical Order

1	RESERVED	40	OrderNumber
2	RESERVED	41	Price
3	RESERVED	42	RESERVED
4	RESERVED	43	RESERVED
5	BusinessAction	44	RESERVED
6	BusinessClass	45	RESERVED
7	RESERVED	46	RESERVED
8	RESERVED	47	RESERVED
9	RESERVED	48	RESERVED
10	RESERVED	49	RESERVED
11	CFOdOrderNumber	50	SequenceNumber
12	RESERVED	51	RESERVED
13	RESERVED	52	RESERVED
14	RESERVED	53	RESERVED
15	LastSequenceReceived	54	SourceAddress
16	ConfirmationType	55	Symbol
17	DestAddress	56	TimeStamp
18	RESERVED	57	TradingSysTimeStamp
19	RESERVED	58	Currency
20	RESERVED	59	RESERVED
21	RESERVED	60	RESERVED
22	RESERVED	61	RESERVED
23	RESERVED	62	RESERVED
24	RESERVED	63	RESERVED
25	RESERVED	64	Volume
26	RESERVED	65	RESERVED
27	RESERVED	67	RESERVED
28	RESERVED	68	PriorityVolume
29	RESERVED	69	RESERVED
30	RESERVED	70	BrokerNumber
31	RESERVED	71	RESERVED
32	RESERVED	72	RESERVED
33	RESERVED	73	RESERVED
34	RESERVED	74	RESERVED
35	RESERVED	75	RESERVED
36	RESERVED	76	RESERVED
37	RESERVED	77	RESERVED
38	RESERVED	78	RESERVED
39	RESERVED	79	RESERVED

80	StockHaltDate	122	RESERVED
81	RESERVED	123	RESERVED
82	RESERVED	124	RESERVED
83	RESERVED	125	RESERVED
84	RESERVED	126	RESERVED
85	RESERVED	127	RESERVED
86	RESERVED	128	RESERVED
87	RESERVED	129	RESERVED
88	RESERVED	130	RESERVED
89	RESERVED	131	RESERVED
90	RESERVED	132	RESERVED
91	RESERVED	133	RESERVED
92	RESERVED	134	RESERVED
93	RESERVED	135	RESERVED
94	RESERVED	136	RESERVED
95	RESERVED	137	RESERVED
96	RESERVED	138	RESERVED
97	Retrans	139	RESERVED
98	RESERVED	140	RESERVED
99	RESERVED	141	RESERVED
100	RESERVED	142	RESERVED
101	RESERVED	143	RESERVED
102	RESERVED	144	RESERVED
103	RESERVED	145	RESERVED
104	RESERVED	146	RESERVED
105	ProductType	147	RetransId
106	RESERVED	148	RESERVED
107	RESERVED	149	RESERVED
108	RESERVED	150	Display Volume
109	RESERVED	151	RESERVED
110	AcceptAnonymous	152	RESERVED
111	NumberOfMessages	153	RESERVED
112	TotalNumMessages	154	RESERVED
113	LastMessage	155	RESERVED
114	LastSale	156	RESERVED
115	BoardLot	157	RESERVED
116	RESERVED	158	RESERVED
117	EquityStatus	159	MarketState
118	RESERVED	160	MessageText
119	FaceValue	161	StockState
120	OpeningTime	162	RESERVED
121	RESERVED	163	RESERVED

164	RESERVED	206	RESERVED
165	RESERVED	207	RESERVED
166	DELETED	208	RESERVED
167	DELETED	209	RESERVED
168	RESERVED	210	RESERVED
169	RESERVED	211	RESERVED
170	RESERVED	212	RESERVED
171	CUSIP	213	RESERVED
172	RESERVED	214	RESERVED
173	Comment	215	RESERVED
174	RESERVED	216	RESERVED
175	RESERVED	217	RESERVED
176	StockIndex	218	RESERVED
177	SymbolFullName	219	RESERVED
178	PriorityTimeStamp	220	TradeNumber
179	RESERVED	221	RESERVED
180	RESERVED	222	RESERVED
181	RESERVED	223	RESERVED
182	RESERVED	224	RESERVED
183	TradeCorrection	225	RESERVED
184	RESERVED	226	RESERVED
185	RESERVED	227	RESERVED
186	RESERVED	228	RESERVED
187	RESERVED	229	RESERVED
188	RESERVED	230	RESERVED
189	RESERVED	231	RESERVED
190	RESERVED	232	RESERVED
191	RESERVED	233	RESERVED
192	RESERVED	234	RESERVED
193	RESERVED	235	RESERVED
194	RESERVED	236	RESERVED
195	RESERVED	237	RESERVED
196	PublicPrice	238	RESERVED
197	MarketSide	239	RESERVED
198	RESERVED	240	RESERVED
199	RESERVED	241	RESERVED
200	RESERVED	242	RESERVED
201	RESERVED	243	RESERVED
202	RESERVED	244	RESERVED
203	RESERVED	245	RESERVED
204	RESERVED	246	RESERVED
205	RESERVED	247	Exchangeld

248	RESERVED	290	RESERVED
249	RESERVED	291	RESERVED
250	RESERVED	292	RESERVED
251	RESERVED	293	RESERVED
252	RESERVED	294	RESERVED
253	RESERVED	295	RESERVED
254	RESERVED	296	RESERVED
255	RESERVED	297	RESERVED
256	RESERVED	298	RESERVED
257	RESERVED	299	RESERVED
258	RESERVED	300	RESERVED
259	RESERVED	301	RESERVED
260	RESERVED	302	RESERVED
261	RESERVED	303	RESERVED
262	RESERVED	304	RESERVED
263	RESERVED	305	RESERVED
264	TradeTimeStamp	306	RESERVED
265	RESERVED	307	RESERVED
266	RESERVED	308	RESERVED
267	RESERVED	309	RESERVED
268	RESERVED	310	RESERVED
269	RESERVED	311	RESERVED
270	RESERVED	312	RESERVED
271	RESERVED	313	RESERVED
272	RESERVED	314	RESERVED
273	RESERVED	315	RESERVED
274	RESERVED	316	RESERVED
275	RESERVED	317	BulletinIndicator
276	BoardLotTraded	318	RESERVED
277	RESERVED	319	RESERVED
278	RESERVED	320	RESERVED
279	RESERVED	321	RESERVED
280	RESERVED	322	RESERVED
281	RESERVED	323	RESERVED
282	StockGroup	324	RESERVED
283	RESERVED	325	RESERVED
284	RESERVED	326	RESERVED
285	RESERVED	327	RESERVED
286	RESERVED	328	RESERVED
287	RESERVED	329	RESERVED
288	RESERVED	330	RESERVED
289	RESERVED	331	RESERVED

332	RESERVED	374	RESERVED
333	RESERVED	375	RESERVED
334	RESERVED	376	RESERVED
335	RESERVED	377	RESERVED
336	RESERVED	378	RESERVED
337	RESERVED	379	RESERVED
338	RESERVED	380	RESERVED
339	RESERVED	381	RESERVED
340	RESERVED	382	RESERVED
341	RESERVED	383	RESERVED
342	RESERVED	384	RESERVED
343	RESERVED	385	RESERVED
344	RESERVED	386	RESERVED
345	RESERVED	387	RESERVED
346	RESERVED	388	RESERVED
347	RESERVED	389	RESERVED
348	RESERVED	390	CrossType
349	RESERVED	391	RESERVED
350	RESERVED	392	TradeThroughExempt
351	RESERVED	393	RESERVED
352	RESERVED	394	RESERVED
353	RESERVED	395	RESERVED
354	RESERVED	396	RESERVED
355	RESERVED	397	RESERVED
356	RESERVED	398	RESERVED
357	RESERVED	399	RESERVED
358	RESERVED	400	RESERVED
359	RESERVED	401	RESERVED
360	RESERVED	402	RESERVED
361	RESERVED	403	RESERVED
362	RESERVED	404	RESERVED
363	RESERVED	405	RESERVED
364	RESERVED	406	RESERVED
365	RESERVED	407	RESERVED
366	RESERVED	408	RESERVED
367	RESERVED	409	RESERVED
368	RESERVED	410	RESERVED
369	RESERVED	411	RESERVED
370	RESERVED	412	RESERVED
371	RESERVED	413	RESERVED
372	RESERVED	414	RESERVED
373	RESERVED	415	RESERVED

416	RESERVED	458	RESERVED
417	RESERVED	459	RESERVED
418	RESERVED	460	RESERVED
419	RESERVED	461	RESERVED
420	RESERVED	462	RESERVED
421	RESERVED	463	RESERVED
422	RESERVED	464	RESERVED
423	RESERVED	465	RESERVED
424	RESERVED	466	RESERVED
425	RESERVED	467	RESERVED
426	RESERVED	468	RESERVED
427	RESERVED	469	RESERVED
428	RESERVED	470	RESERVED
429	RESERVED	471	RESERVED
430	RESERVED	472	RESERVED
431	RESERVED	473	RESERVED
432	RESERVED	474	RESERVED
433	RESERVED	475	RESERVED
434	RESERVED	476	RESERVED
435	RESERVED	477	RESERVED
436	RESERVED	478	RESERVED
437	RESERVED	479	RESERVED
438	RESERVED	480	RESERVED
439	RESERVED	481	RESERVED
440	RESERVED	482	RESERVED
441	RESERVED	483	RESERVED
442	RESERVED	484	RESERVED
443	RESERVED	485	RESERVED
444	RESERVED	486	RESERVED
445	RESERVED	487	RESERVED
446	RESERVED	488	RESERVED
447	RESERVED	489	RESERVED
448	RESERVED	490	RESERVED
449	RESERVED	491	RESERVED
450	RESERVED	492	RESERVED
451	RESERVED	493	RESERVED
452	RESERVED	494	RESERVED
453	RESERVED	495	RESERVED
454	RESERVED	496	RESERVED
455	RESERVED	497	RESERVED
456	RESERVED	498	RESERVED
457	RESERVED	499	RESERVED

500	RESERVED	605	AcceptUndisplayed
503	ByPass	606	RESERVED
506	OrigTradeID	607	RESERVED
554	ListingMkt	608	RESERVED
580	DELETED	609	RESERVED
581	TotalNumOpenOrders	610	RESERVED
582	TotalNumStockGroups	611	RESERVED
583	TotalNumSymbols	612	RESERVED
584	TradingTierId	613	RESERVED
585	RESERVED	614	RESERVED
586	RESERVED	615	RESERVED
587	RESERVED	616	RESERVED
588	RESERVED	617	RESERVED
589	RESERVED	618	RESERVED
590	RESERVED	619	RESERVED
591	RESERVED	620	RESERVED
592	RESERVED	621	RESERVED\
593	RESERVED	622	RESERVED
594	RESERVED		

Chapter 7 Field Identifiers by Alphabetical Order

This section lists the subset of STAMP tags (public fields) used in the SL2 business content.

110	AcceptAnonymous	196	PublicPrice
605	AcceptUndisplayed	97	Retrans
115	BoardLot	147	RetransId
279	BoardLotTraded	50	SequenceNumber
70	BrokerNumber	282	StockGroup
317	BulletinIndicator	80	StockHaltDate
5	BusinessAction	176	StockIndex
6	BusinessClass	161	StockState
503	ByPass	55	Symbol
11	CFOdOrderNumber	177	SymbolFullName
173	Comment	56	TimeStamp
16	ConfirmationType	112	TotalNumMessages
390	CrossType	581	TotalNumOpenOrders
58	Currency	582	TotalNumStockGroups
171	CUSIP	583	TotalNumSymbols
17	DestAddress	183	TradeCorrection
150	Display Volume	220	TradeNumber
117	EquityStatus	392	TradeThroughExempt
247	Exchangeld	264	TradeTimeStamp
76	ExtendedHours	57	TradingSysTimeStamp
119	FaceValue	584	TradingTierId
113	LastMessage	64	Volume
114	LastSale		
15	LastSequenceReceived		
554	ListingMkt		
197	MarketSide		
159	MarketState		
160	MessageText		
31	MinimumFillVolume		
111	NumberOfMessages		
120	OpeningTime		
40	OrderNumber		
506	OrigTradeID		
41	Price		
178	PriorityTimeStamp		
68	PriorityVolume		
105	ProductType		

Appendix A Symbology Rules

Description	Symbology
Debenture	.DB
Installment	.IR
Preferred Share	.PR
Preferred Share	.PE
Preferred Share	.PF
Rights	.RT
Notes	.NO
Notes	.NS
Notes	.NT
Units	.UN
Warrants	.WT
Class	See table below for Share Classes

A.1 Share Classes

Description	Symbology
Class A, B, C, X	.A, .B, .C
Equity Dividend	.E
NEX (junior venture market) issue	.H
NEX (junior venture market) issue	.K
NEX (junior venture market) issue	.X
Capital Pool Company	.P
Legended Share	.L
BOOMS	.M
Subscription Receipt	.R
Second Subscription Receipts	.N
Third Subscription Receipts	.O
U.S. Trading Terms	.S
Second U.S. Trading Terms	.T
USD Traded Issue	.U
Second USD Traded Issue	.V
When Issued	.W
Second When Issued	.I
Redeemable Common Shares	.Y

A.2 Symbology Notes

Description	Note	Example
All	Symbol Roots can be 1, 2 or 3 digits in length	A – valid AB – valid ABC – valid ABCD – not valid
All	In limited cases, common and preferred shares can have different symbol roots. These cases arise when a company name change is only applicable to common share issues but preferred shares remain under the old company name	TransAlta Corp Common share – TA Preferred share – TAU.PR.A
All	A symbol cannot contain two single letter extensions	ABC.XX.Y – valid ABC.X.Y – not valid
Preferred Share	.PR, .PE, .PF extension must be followed by a second, single letter, extension	ABC.PR.A
Unit	.UN extension cannot be followed by a second, single letter, extension. A second Unit issue for the same issuer will be denoted with a single letter extension	1st Unit Issue – ABC.UN 2nd Unit Issue – ABC.A
Warrant	.WT extension can be followed by a single letter extension for additional warrant issues	1st Warrant – ABC.WT 2nd warrant – ABC.WT.A
Right	.RT extension can be followed by a single letter extension for additional rights issues	1st Right – ABC.RT 2nd Right – ABC.RT.A
Debenture	.DB extension can be followed by a single letter extension for additional debenture issues	1st debenture – ABC.DB 2nd debenture – ABC.DB.A

Appendix B ASCII Character Set

HEX	ASCII	HEX	ASCII	HEX	ASCII
00	NUL	2D	-	5A	Z
01	SOH	2E	.	5B	
02	STX	2F	/	5C	
03	ETX	30	0	5D	
04	EOT	31	1	5E	
05	ENQ	32	2	5F	
06	ACK	33	3		
07	BEL	34	4	5B	
08	BS	35	5	5C	
09	HT	36	6	5D	
0A	LF	37	7	5E	
0B	VT	38	8	60	
0C	FF	39	9	61	a
0D	CR	3A		62	b
0E	SO	3B		63	c
0F	SI	3C		64	d
10	DLE	3D		65	e
11	DC1	3E		66	f
12	DC2	3F		67	g
13	DC3	40	@	68	h
14	DC4	41	A	69	i
15	NAK	42	B	6A	j
16	SYN	43	C	6B	k
17	ETB	44	D	6C	l
18	CAN	45	E	6D	m
19	EM	46	F	6E	n
1A	SUB	47	G	6F	o
1B	ESC	48	H	70	p
1C	FS	49	I	71	q
1D	GS	4A	J	72	r
1E	RS	4B	K	73	s

HEX	ASCII	HEX	ASCII	HEX	ASCII
1F	US	4C	L	74	t
20	SP	4D	M	75	u
21	!	4E	N	76	v
22	"	4F	O	77	w
23	#	50	P	78	y
24	\$	51	Q	79	z
25	%	52	R	7A	
26	&	53	S	7B	
27	'	54	T	7C	
28	(55	U	7D	
29)	56	V	7E	
2A	*	57	W	7F	DEL
2B	+	58	X		
2C	,	59	Y		

Appendix C Glossary

ARPA	Advanced Research Projects Agency
ASCII	American Standard Code for Information Interchange
BNF	Backus Naur Form
CAD	Canadian dollar
CFO	Change Former Order
CUSIP	Committee on Uniform Security Identification Procedures
CXL	Cancel
DES	Data Encryption Standard
EST	Eastern Standard Time
ETX	End Of Text
MGF	Minimum Guaranteed Fill
MKT	Market Price
OPG	Opening Price
RFC	Request for Comment
QRTMD	Quantum RTMD
SL2	TMX Select Level 2
STAMP	Securities Trading Access Message Protocol
STX	Start Of Text
TMXS	TMX Select
TSX	Toronto Stock Exchange
TSXV	TSX Venture Exchange
USD	United States dollar

Appendix D References

- [1] *STAMP Specification*, Version 6.4, TMX Group, November 2012.
- [2] *QRTMD Protocol Specification and Service Access Guide*, Version 2.0, TMX Group, December 2012.
- [3] *RFC 791, Internet Protocol*, J. Postel, September 1981, <http://www.ietf.org>.
- [4] *RFC 792, Internet Control Message Protocol*, J. Postel, September 1981, <http://www.ietf.org>.
- [5] *RFC 793, Transmission Control Protocol*, J. Postel, September 1981, <http://www.ietf.org>.
- [6] *RFC 822, Standard for the Format of ARPA Internet Text Messages*, David M. Crocker, August 1982, <http://www.ietf.org>.
- [7] *RFC 2117, Protocol Independent Multicast Sparse Mode*, D. Estrin et al, June 1997, <http://www.ietf.org>.
- [8] *RFC 2770, GLOP Addressing in 233/8*, <http://www.ietf.org>.

Appendix E Revision History

Version	Date	Changes
1.12	2013/01/08	Added information about QRTMD Protocol Specification and Service Access Guide to Introduction. Removed \$ from Currency values of “CAD” and “USD”. Added Comment tag to Field Definitions.
1.11	2012/06/26	Changed value of TimeStamp and TradingSysTimeStamp to be the same as TradeTimeStamp.
1.1	2012/02/29	Added values for Alpha to ListingMkt and ProductType tags.
1.0	2011/10/31	Initial release.



TMX Group
The Exchange Tower
130 King St. W.
Toronto, ON M5X 1J2

phone: 416.947.4670
toll free: 888.878.8392
fax: 416.947.4662
e-mail: info@tsx.com