TREX To FIXML Transformation Map TREX → TradeCaptureReport		
April 5, 2004		
TREX Message	***Transform*** →	**Trade Capture Report**

Revision/Meeting History

04/02/2004	Initial Authoring

Open Issues

Date	Raised by	Status	Issue	

Notation

The notation for specifying FIXML fields in this document uses XPath syntax which is a standard way of specifying locations of elements and attributes within an XML document.

XML documents are trees, similar to directory trees in a computer system. The notation for describing a location within this XML tree uses a syntax very similar to that used to specify a location (path) within a computer file system.

Each element location is defined in the path using forward slashes very similar to UNIX file system path specifications.

For instance, the TrdCaptRpt element in FIXML contains the contents of the Trade Capture Report. You can access contents of the TrdCaptRpt by using the /TrdCaptRpt/ XPath notation.

The TrdCaptRpt contains two <RptSide> elements – to specify any RptSide you can use the following: /TrdCaptRpt/RptSide/. Because elements can be repeated within an XML tree, you can specify which occurrence of a particular element you are referring. To access the first <RptSide> you can use the following path /TrdCaptRpt/RptSide[1]/.

FIXML makes extensive use of XML attributes. These are fields contained within the element < > brackets. To specify an attribute belonging to an element you prefix the attribute name with the "@" sign (makes sense the "at" sign specifying "attributes). To access the Transaction Type attribute of the <TrdCaptRpt> element one would specify /TrdCaptRpt/@TransTyp.

Description of columns used in the mapping tables:

Trex Field Name	Name of TREX field as it appears in CME publication
Trex Data	Sample TREX Data provided when critical to transformation
FIXML4.4 Tag Name	Name of XML element or attribute as it appears in FIXML4.4 Schema
FIXML Type	XML Type; element or attribute
FIXML Data	Sample Data FIXML Data provided when critical to transformation
Comments	Used to note special conditions or actions that need to be taken

Field Level Mapping Table

Overview of a FIXML message

The following shows a typical FIXML TradeCaptureReport with annotations describing the purpose of each attribute.

```
<FIXML>
    <TrdCaptRpt RptID="604374"                          ← Trade ID
      LastQty="10000"                                   ← Trade Quantity
      LastPx="0977550"                                  ← Trade Price
      TrdDt="2003-12-03"                                ← Trade Date
      TxnTm="2003-12-03T12:30:01"                       ← Message Time
      TransTyp="0"                                      ← Transaction Type (New)
      RptTyp="0"                                        ← Trade Report Type (Submit)
      TrdTyp="1" >                                      ← Trade Type (Block)
            <Instrmt ID="ED"                            ← Product Code
              CFI="F"                                   ← Product Type (Future)
              MMY="200312"                              ← Period Code
              Exch="CME"/>                              ← Product Exchange
            <RptSide Side="1"                           ← Buy/Sell Code
              ClOrdID="A456721"                         ← Card Order Id
              InptSrc="MQM"                             ← Trade Input Source
              CustCpcty="4"                             ← CTI Code
              SesSub="X" >                              ← Venue (Ex-pit)
                  <Pty ID="CME" R="22"/>                ← Member Exchange
                  <Pty ID="600" R="1"/>                 ← Executing Firm
                  <Pty ID="BAT" R="12"/>                ← Executing Trader
                  <Pty ID="052G0039" R="24">            ← Customer Account
                        <Sub ID="1" Typ="26"/>          ← Segregation Code
                  </Pty>
                  <Pty ID="815" R="17"/>                ← Opposite Firm
                  <Pty ID="TGK" R="37"/>                ← Opposite Trader
            </RptSide>
            <TrdRegTS TS="2003-12-03T01:31:30.00"       ← Standard Timestamp
              Typ = "1"                                 ← Timestamp Type (Execution Time)
              Src = "S"/>                               ← Timestamp Source
    </TrdCaptRpt>
</FIXML>
```

TREX Message to Trade Capture Report Mapping

Main Block Mapping							
TREX Field Name	**Start Col**	**End Col**	**FIXML4.4 Element**	**FIXML Attribute**	**TREX Value**	**FIXML Value**	**Comments**
TREX Message			/TrdCaptRpt/				
Message Identifier	1	3	/TrdCaptRpt/	**@RptTyp**	TRX	0	*Submit*
Message Version	4	4	*Not Supported*				
Message Time	5	12	*/TrdCaptRpt/*	**@TxnTm**	HHMMSSss	2003-12-03T12:30:01	Format is ”YYYY-MM-DDTHH:MM:SS.00”
Exchange Order Routing Special Id	13	20	*Not Supported*				
Message Length	21	24	*Not Supported*				
Action Code	25	25	/TrdCaptRpt/	**@TransTyp**	A	TransTyp=”0”	*New (Add)*
					D	TransTyp=”1”	*Cancel (Delete)*
					C	TransTyp=”2”	*Replace (Change)*
Trade Route Indicator	26	26	*Not Supported*				
Trade Date	27	34	/TrdCaptRpt/	**@TrdDt**	YYYYMMDD	*YYYY-MM-DD*	Trade date for which transaction is executed
Exchange ID	35	39	/TrdCaptRpt/Instrmt/	**@Exch**	01	Exch=”CBT”	*Product Exchange*
					02	Exch=”CME”	
			/TrdCaptRpt/RptSide/Pty/	**@ID, @R**	01	<Pty ID=”CBT” R=”22” />	*Member Exchange*
					02	<Pty ID=”CME” R=”22” />	
Executing Firm	40	44	/TrdCaptRpt/RptSide/Pty/	**@ID, @R**	*value*	<Pty ID=”*value*” R=”1” />	*No length limit on firm* *1=Executing Firm*
Executing Broker	45	49	/TrdCaptRpt/RptSide/Pty/	**@ID, @R**	*value*	<Pty ID=”*value*” R=”12” />	*No length limit on broker code* *12= Executing Trader*

Main Block Mapping							
TREX Field Name	**Start Col**	**End Col**	**FIXML4.4 Element**	**FIXML Attribute**	**TREX Value**	**FIXML Value**	**Comments**
Transaction Type Code	50	51	/TrdCaptRpt/	@TrdTyp, @TrdSubTyp, @SesSub	1,2,5,6,8,9	TrdTyp	*See Table 2.0 on page 14*
BuySell Code	52	52	/TrdCaptRpt//RptSide/	**@Side**	1	Side="1"	*Buy*
					2	Side="2"	*Sell*
Commodity Code	53	57	/TrdCaptRpt/Instrmt/	**@ID**	value	ID="value"	*No limit on product id*
Contract Year/Month/Day	58	65	/TrdCaptRpt/Instrmt/	**@MMY**	*YYYYMMDD*	*MMY="YYYYMMDD"*	
Put/Call Indictor	66	66	TrdCaptRpt/Instrmt/	**@CFI**			*Set the 2nd character of the CFI code if it is option (OPXXXX). Refer to CFI Code translation.*
Strike Price, Strike Price sign	67	75	TrdCaptRpt/Instrmt/	**@StrkPx**		StrkPx="value'	*The strike price with the sign (Signed decimal). This attribute will be created only for options*
Opposite Firm	76	80	/TrdCaptRpt/RptSide/Pty/	**@ID, @R**	*value*	<Pty ID="*value*" R="17">	*17= Contra Firm*
Opposite Broker	81	85	/TrdCaptRpt/RptSide/Pty/	**@ID, @R**	*value*	<Pty ID="*value*" R="37">	*37=Contra Trader*
Trade Price, Trade Price Sign	86	100	/TrdCaptRpt/	**@LastPx**	*value*	LastPX="*value*"	*Signed, decimal* *For SLEDS, used as px differential*
Quantity	101	105	/TrdCaptRpt/	**@LastQty**	*value*	LastQty="*value*"	*Signed, decimal*
Time Bracket Code	106	108	/TrdCaptRpt/RptSide/	**@TmBkt**	*value*	TmBkt="*value*"	
Account Number	109	118	/TrdCaptRpt/RptSide/Pty/	**@ID, @R**	*value*	<Pty ID="*value*" R="24">	*Customer Acct (R=24)*
CTI Code	119	119	/TrdCaptRpt/RptSide/	**@CustCpcty**	*value*	CustOrdCpcty="*value*"	
Origin Code	120	121	/TrdCaptRpt/RptSide/ Pty/Sub	**@ID, @Typ**	*value*	<Sub ID="value" Typ="26">	*Origin of the Customer Acct*
Card Order ID	122	129	/TrdCaptRpt/RptSide/	**@ClOrdID**	*value*	ClOrdID="*value*"	
Fee Code	130	131	/TrdCaptRpt/RptSide/	**@ClrFeeInd**	value	ClrFeeCode="*value*"	*Refer to schema (field-base) for enumeration*

Main Block Mapping							
TREX Field Name	**Start Col**	**End Col**	**FIXML4.4 Element**	**FIXML Attribute**	**TREX Value**	**FIXML Value**	**Comments**
Reserved for future use	132	132	/TrdCaptRpt/RptSide/	**@SesSub**	*value*	SesSub="*P*"	*This is mapped to the Trading session Sub Id P=Pit*
						SesSub="*E*"	*E=Electronic*
						SesSub="*X*"	*X=Ex-Pit*
CTRCardSequenceNumber	133	138	/TrdCaptRpt/RptSide/	**@ClOrdID2**	*value*	**ClOrdID2**="*value*"	
OpenCloseIndicator	139	139	/TrdCaptRpt/RptSide/	**@PosEfct**	O	O	*One Chicago-Used for outbound Trades only*
TradeIDSeqNumber	140	145	/TrdCaptRpt/	**@RptId**	*Value*	RptID="*value*"	***Leg Level Trade Id*** *(Front or Back) depending on the Leg or SLED ID if it a SLED transaction*
TradeIDSourceCode	146	148	/TrdCaptRpt/RptSide/	**@InptSrc**	*value*	TrdInptSrc="*value*"	
Trade ID Cycle code	149	150	/TrdCaptRpt/RptSide/	**@SesID**	*Not used*	SesID=*"value"*	
OrderTypeCode	151	152	/TrdCaptRpt/RptSide/	**@OrdTypCD**[1]	*value*	OrdTypCD="*value*"	*OrdTpCd is a CCL custom field that is an extension to the FIXML standard to support additional types required by CME*
Floor Broker	153	157	/TrdCaptRpt/RptSide/Pty/	**@ID, @R**	*value*	<Pty ID="*value*" R="2">	*36=Entering Trader*
Cabinet Indicator	158	158	/TrdCaptRpt/	**@PxTyp**	C	PxTyp="10"	*Fixed*
					V	PxTyp="11"	*Variable*
Transfer Reason Code	159	160	/TrdCaptRpt/	**@TrnsfrRsn**	value	TrnsfrRsn="*value*"	*Transfer Reason Code*
Opposing Origin	161	162	Not Supported				
Opposing Open/Close Indicator	163	163	Not Supported				
Cancel Indicator	164	164	Not Supported				
SLED Leg Indicator	165	165	/TrdCaptRpt/Instrmt/	@SecTyp, @SecSubTyp	L	SecTyp="FUT"	*New TREX Field ion Position 165 & Length=1. This is used only for SLEDS*

[1] This is a CME custom field that is not part of the FIX standard.

Main Block Mapping							
TREX Field Name	**Start Col**	**End Col**	**FIXML4.4 Element**	**FIXML Attribute**	**TREX Value**	**FIXML Value**	**Comments**
							currently.
					S	SecTyp="MLEG", SecSubTyp ="CAL"	*New TREX Field ion Position 165 & Length=1. This is used only for SLEDS currently.*
Not Defined	166	167					
APS GUS Indicator	168	168	/TrdCaptRpt/RptSide/	**@AllocInd**	*blank*	AllocInd="0"	*Regular Trade*
				@AllocInd	G	AllocInd="1"	*IF there is no A2 block*
APS Group ID	169	173	/TrdCaptRpt/RptSide/	**@AllocID**	G	AllocInd="2" AllocID="*value of APS Group ID*"	*IF A2 Block Exists*
APS Group ID			/TrdCaptRpt/	**@AvgPxInd, LinkID**	A	AvgPxInd="1" LinkID="*value of APS Group ID*"	*Indicates if trade is an AvpPx.*
Order Execution Time	174	179	/TrdCaptRpt/TrdRegTS/	**@TS, @Typ**	HHMMSS	2003-12-03T12:30:01 Typ="1"	Format is "YYYY-MM-DDTHH:MM:SS.00"
Business Cycle Code	180	184	Not Supported		Value	Value	*The values would be "RTH", "ITD" etc*

Complex mapping logic for APS GUS Indicator
1. Give up and allocation are indicated differently and independently in FIX. In TREX they are both specified by the APS GUS Indicator. This makes for some difficulty in mapping. Specifically to properly map to FIX, the mapping logic will have to test for the presence of an A2 block
IF APSGusIndicator="G" THEN *If **A2 Block Exists** THEN* */RptSide[1]/@AllocInd="2" //This trade includes a Give up specified in the A2 Block* *RptSide[1]/@AllocID=APSGroupID* *Else* *RptSide[1]/@AllocInd="1" //This trade requires a giveup, but one has not been provided* *ELSE If APSGUSindicator=="A" THEN // Average Price trade* *RptSide[1]/@AllocInd="0"* *@AvgPxInd="1"* *@LinkID=APSGroupID* *ELSE // Not a Give up or Average price trade* *RptSide[1]/@ AllocInd="0" // Regular Trade no allocation or average pricing*

A1 Block Mapping							
TREX Field Name	**Start Col**	**End Col**	**FIXML4.4 Element**	**FIXML Attribute**	**TREX Value**	**FIXML Value**	**Comments**
Block 1	1	2	Not Supported				
SpecialRuleCode	3	7	/TrdCaptRpt/RptSide/	**@ExchRule**	*value*	ExchRule="*value*"	
BK Broker	9	13	/TrdCaptRpt/RptSide/Pty/	**@ID, @R**	*value*	<Pty ID="*value*" R="36">	*36=Entering Trader*
LOXIndicator	8	8	**Not supported**				
SpecificProductCode	14	23	**Not supported**				

A2 Block Mapping							
TREX Field Name	**Start Col**	**End Col**	**FIXML4.4 Element**	**FIXML Attribute**	**TREX Value**	**FIXML Value**	**Comments**
Block 2	1	2	Not Supported				
Carry Exchange (NEW)	3	7	/TrdCaptRpt/RptSide/Alloc/Pty/	**@ID, @R**	01	<Pty ID="CBT" R="22">	*Use the correspondent Clearing Org Role*
					02	<Pty ID="CME" R="22">	
Carry Firm	8	12	/TrdCaptRptRptSide/Alloc/Pty/	**@ID, @R**	*value*	<Pty ID="*value*" R="1">	
Carry Account	13	27	/TrdCaptRpt/RptSide/Alloc/Pty/	**@ID, @R**	*value*	<Pty ID="*value*" R="24">	

R1 Block Mapping							
TREX Field Name	**Start Col**	**End Col**	**FIXML4.4 Element**	**FIXML Attribute**	**TREX Value**	**FIXML Value**	**Comments**
TimeStampIn	3	10	/TrdCaptRpt/TrdRegTS[1]/	**@TS, @Typ**	HHMMSSDD	TS=”YYYY-MM-DDTHH:MM:SS.00” Typ=”2”	
TimeStampInSourceCode	11	15	/TrdCaptRpt/TrdRegTS[1]/	**@Src**	*value*	Src=”*value*”	
BrokerReceiptTimeStamp	16	23	/TrdCaptRpt/TrdRegTS[2]/	**@TS, @Typ**	HHMMSSDD	TS=”YYYY-MM-DDTHH:MM:SS.00” Typ=”4”	
BrokerReceiptSourceCode	24	28	/TrdCaptRpt/TrdRegTS[2]/	**@Src**	*value*	Src=”*value*”	
ExecutionTimeStamp	29	36	/TrdCaptRpt/TrdRegTS[3]/	**@TS, @Typ**	HHMMSSDD	TS=”YYYY-MM-DDTHH:MM:SS.00” Typ=”1”	
ExecutionTimeStampSourceCode	37	41	/TrdCaptRpt/TrdRegTS[3]/	**@Src**	*value*	Src=”*value*”	
TimeStampOut	42	49	/TrdCaptRpt/TrdRegTS[4]/	**@TS, @Typ**	HHMMSSDD	TS=”YYYY-MM-DDTHH:MM:SS.00” Typ=”3”	
TimeStampOutSourceCode	50	54	/TrdCaptRpt/TrdRegTS[4]/	**@Src**	*value*	Src=”*value*”	

S1 Block Mapping							
TREX Field Name	**Start Col**	**End Col**	**FIXML4.4 Element**	**FIXML Attribute**	**TREX Value**	**FIXML Value**	**Comments**
Block S1	1	2	Not Supported				
Spread Types	3	17	Not Supported				
			/TrdCaptRpt/	**@MLEGRptTyp**		MLEGRptTyp="3"	
SpreadDifferential, SpreadDifferentialSign	18	32	/TrdCaptRpt/	**@LastPx**	*value*	LastPX="*value*"	*Signed, decimal* *For SLEDS, used as px differential*
BuySellof SecondLegofSpread	33	34	/TrdCaptRpt/TrdLeg[2]/Leg/	**@Side**	1	Side="1" *Set equal to the Side value of the far term contract leg – This will require comparing the maturity year month of the legs*	
					2	Side="2"	*Sell*
			/TrdCaptRpt/TrdLeg[1]/Leg/	**@Side**	*Set equal to the Side value of the near term contract month leg – This will require comparing the maturity year month of the legs*		
ExchangeCode	35	39	/TrdCaptRpt/TrdLeg[2]/Leg/	**@Exch**	01	Exch="CBT"	*CBT*
					02	Exch="CME"	*CBT*
CommodityCode	40	44	/TrdCaptRpt/TrdLeg[2]/Leg/	**@ID**	*value*	ID="*value*"	*No limit on product id* *Should be same value as the Main Block*
Contract Year/Month	45	52	/TrdCaptRpt/TrdLeg[2]/Leg/	**@MMY**	YYYYMM	YYYYMM	*Maturity Date Optional Day of the month*
TradePrice, TradePriceSign	63	77	/TrdCaptRpt/TrdLeg[2]/	**@LastPx**	*value*	*LastPx="value"*	*Signed, decimal* *Leg Price*
Quantity	78	82	/TrdCaptRpt/TrdLeg[2]/	**@Qty**	*value*	*Qty="value"*	*Value should be the same as the value in the main block.*
Front Leg Trade Id	88	93	/TrdCaptRpt/TrdLeg[1]/	@RefID	*Value*	*RefId="value"*	*New TREX Filed (88-93)*
Back Leg Trade Id	94	99	/TrdCaptRpt/TrdLeg[2]/	@RefID	*Value*	*RefId="value"*	*New TREX Filed (94-99)*

M1 Block Mapping							
TREX Field Name	**Start Col**	**End Col**	**FIXML4.4 Element**	**FIXML Attribute**	**TREX Value**	**FIXML Value**	**Comments**
Block M1	1	2	Not Supported				
Message ID	3	17	Not Supported				
SubSystem	6	8	Not Supported				
Error/Special Conditions Code	9	12	/TrdCaptRptAck/	@RejRsn			
Level	13	13	Not Supported				
Date	14	21	/TrdCaptRpt/	@BizDt	MM/DD/YY	BizDt=”*YYYY-MM-DD*”	
Time	22	29	Not Supported		HHMMSS		
Message Text	30	109	/ TrdCaptRpt/	@Txt			
System assigned Trade id	110	115	/ TrdCaptRpt/	@RptID2			If /TrdCaptRpt/@RptID2 is NOT blank This is mapped in the case of a non unique Trade Id. The newly generated SLED ID is sent in this field.

M2 Block Mapping							
TREX Field Name	**Start Col**	**End Col**	**FIXML4.4 Element**	**FIXML Attribute**	**TREX Value**	**FIXML Value**	**Comments**
Block M2	1	2	Not Supported				
Message ID	3	17	Not Supported				
SubSystem	6	8	Not Supported				
MSG recovery Status	9	13	Not Supported				
Status	14	18	/TrdCaptRpt/	@MtchStat	MATCH	MtchStat=”0”	
					Unmatched	MtchStat=”1”	
Time	27	34	Not Supported		HHMMSS		

Table 2.0
FIXML Trade Type Mapping

	Trade Description	TREX Trade Type	TREX APSGUS Indicator	Trade Type <TrdTyp>	Trade Sub Type <TrdSubTyp>	Transfer Type <TrnsfrTyp>	Session Sub ID (venue) <SesSub>	MLeg Report Type <MLEGRptTyp>	Allocation Indicator <AllocInd>	Average Price Indicator <AvgPxInd>
1	**Pit Trade**	1		0			P			
2	**Pit Allocation**	1	G	0			P		1	
3	**Pit Allocation w/ Carry**	1	G	0			P		2	
4	**Pit APS**	1	A	0			P			1
5	**Pit Spread**	6		0			P	3		
6	**Electronic Trade**	2		0			E			
7	**Electronic Allocation**	2	G	0			E		1	
8	**Electronic Allocation w/ Carry**	2	G	0			E		2	
9	**Electronic APS**	2	A	0			E			1
10	**Electronic Spread**	5		0			E	3		
11	**Block**	B		1			X			
12	**EFP**	9		2			X			
13	**EFR**	R		11			X			
14	**EFS**	S		12			X			
15	**Pit SLEDS**	D		0	7		P	3		

	Trade Description	TREX Trade Type	TREX APSGUS Indicator	Trade Type <TrdTyp>	Trade Sub Type <TrdSubTyp>	Transfer Type <TrnsfrTyp>	Session Sub ID (venue) <SesSub>	MLeg Report Type <MLEGRptTyp>	Allocation Indicator <AllocInd>	Average Price Indicator <AvgPxInd>
16	**Pit SLEDS Leg level**	D		0	7		P	2		
17	**Electronic SLEDS**	D		0	7		E	3		
18	**Electronic SLEDS Leg level**	D		0	7		E	2		
19	**Transfer**	8		0		M				