HISTORICAL FULL BOOK (SECURITIES MARKET)

Update History

No.	Issue Date	Details
1	2013-09-30	First Issue

The Historical Full Book includes 4 types of information – (1) Securities Reference data, (2) Securities Status data, (3) Securities Full Order Book data and (4) Securities Market Odd Lot Order data. Please refer to the below sub-sections for the details of the 3 types of information.

The following table lists out the data files to be found in each issue:

File Name	Contents
MC01_All_YYYYMMDD	Securities Reference
MC02_AII_YYYYMMDD	Securities Status
MC30_AII_YYYYMMDD	Securities Full Order Book file for AMS stock group #1 (MAIN market)
MC31_AII_YYYYMMDD	Securities Full Order Book file for AMS stock group #2 (MAIN market)
MC32_AII_YYYYMMDD	Securities Full Order Book file for AMS stock group #3 (MAIN market)
MC33_AII_YYYYMMDD	Securities Full Order Book file for AMS stock group #4 (MAIN market)
MC34_AII_YYYYMMDD	Securities Full Order Book file for AMS stock group #5 (MAIN market)
MC35_AII_YYYYMMDD	Securities Full Order Book file for AMS stock group #6 (MAIN market)
MC36_All_YYYYMMDD	Securities Full Order Book file for AMS stock group #7 (GEM market)
MC37_AII_YYYYMMDD	Securities Full Order Book file for AMS stock group #8 (NASD market)
MC38_AII_YYYYMMDD	Securities Full Order Book file for AMS stock group #9 (ETS market)
MC70_AII_YYYYMMDD	Securities Market Odd Lot Order file for AMS stock group #1 (MAIN market)
MC71_All_YYYYMMDD	Securities Market Odd Lot Order file for AMS stock group #2 (MAIN market)
MC72_AII_YYYYMMDD	Securities Market Odd Lot Order file for AMS stock group #3 (MAIN market)
MC73_AII_YYYYMMDD	Securities Market Odd Lot Order file for AMS stock group #4 (MAIN market)
MC74_AII_YYYYMMDD	Securities Market Odd Lot Order file for AMS stock group #5 (MAIN market)
MC75_AII_YYYYMMDD	Securities Market Odd Lot Order file for AMS stock group #6 (MAIN market)
MC76_All_YYYYMMDD	Securities Market Odd Lot Order file for AMS stock group #7 (GEM market)
MC77_AII_YYYYMMDD	Securities Market Odd Lot Order file for AMS stock group #8 (NASD market)
MC78_AII_YYYYMMDD	Securities Market Odd Lot Order file for AMS stock group #9 (ETS market)

¹⁾ YYYYMMDD is the date of file

1. Securities Reference

The Securities Reference file is in binary format and contains four types of messages – *MarketDefinition*, *SecurityDefinition*, *LiquidityProvider* and *CurrencyRate*. There is only one Securities Reference file with filename MC01_All_YYYYMMDD, where YYYYMMDD is the date of the Securities Reference file.

The layout of the Securities Reference is as follows:

<RecordLength><PacketHeader><SecuritiesReference>...<RecordLength><PacketHeader><Securities
Reference>...<RecordLength><PacketHeader><SecuritiesReference>

Following is the message layout of the *RecordLength*

Offset	Field	Format	Len	Description
0	RecLen	Uint16	2	Size of the record (including this field)
Total length		2		

Following is the message layout of the *PacketHeader*

Offset	Field	Format	Len	Description
0	PktSize	Uint16	2	Size of the packet (including this field)
2	MsgCount	Uint8	1	Number of messages included in the packet
3	Filler	Strina	1	

²⁾ If there is no record in the file, a dummy file with zero-length size will be provided.

Offset	Field	Format	Len	Description
4	SeqNum	Uint32	4	Sequence number of the first message in the packet
8	SendTime	Uint64	8	The number of nanoseconds since <i>January 1</i> , 1970, <i>00:00:00 GMT</i> , precision is provided to the nearest millisecond.
Total length		16		

<SecuritiesReference> contains different combinations of the four types of messages – MarketDefinition, SecurityDefinition, LiquidityProvider and CurrencyRate. For example:

<MarketDefinition><SecurityDefinition><LiquidityProvider><CurrencyRate> or <SecurityDefinition><SecurityDefinition><SecurityDefinition>

Followings are the message layouts of the *MarketDefinition*, *SecurityDefinition*, *LiquidityProvider* and *CurrencyRate*

1.1 Market Definition (10)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	10 Market Definition
4	MarketCode	String	4	Market code	MAIN GEM NASD ETS
8	MarketName	String	25	Market Name	Alphanumerical
33	CurrencyCode String		3	Base currency code of the market.	
36	NumberOfSecurities	Uint32	4	Number of securities within the market	
Total Len	gth		40		

1.2 Security Definition (11)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	11 Security Definition
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 – 99999
8	MarketCode	String	4	Market code	MAIN GEM NASD ETS
12	ISINCode	String	12	ISIN code of the security.	
24	InstrumentType	String	4	Instrument type of the security.	BOND Bonds BWRT Basket Warrants EQTY Equities TRST Trusts WRNT Warrants & structured products (DW & CBBC)
28	SpreadTableCode	String	2	Spread table code of the security.	Spread table as per Second Schedule of Rules of the Exchange: '01' Part A '03' Part B
30	SecurityShortName	String	40	Security short name	
70	CurrencyCode	String	3	Security currency code of the	

Isiting date						
Security name in Traditional Chinese using Unicode UTF-16LE encoded Chinese using Unicode Unicode UTF-16LE encoded Chinese using Unicode Unicode UTF-16LE encoded Chinese using Unicode Unicode Unicode UTF-16LE encoded Chinese using Unicode Uni	Offset	Field	Format	Len	Description	Values
SecurityNameGB					market.	
193 LotSize Uin/32 4 Board lot size for the security 197 PreviousClosingPrice Infla2 4 Previous closing price of the security 197 PreviousClosingPrice Infla2 4 Previous closing price of the security 198 Previous Closing price of the security 199 Previous Closing Price Infla2 4 Previous closing price of the security 190 Previous Closing Price Infla2 4 Previous closing price of the security 190 Previous Closing Price Infla2 4 Previous Closing price of the security 190 Previous Closing Price Infla2 Inflactor for short-sell authorization. 190 Previous Closing Price of the security 190 Previous Closing	73	SecurityNameGCCS	Binary	60	Chinese using Unicode	Unicode UTF-16LE encoded
Previous Closing Price	133	SecurityNameGB	Binary	60		Unicode UTF-16LE encoded
Filer String 1 Indicator for short-sell authorization. Y Short-sell allowed N Short	193	LotSize	Uint32	4	-	
Short-Sell allowed Short-sell authorization. Year Short-sell allowed Short-sell allowed Short-sell authorization. Year Short-sell allowed Short-sell not allowed Short sell not allowed Short	197	PreviousClosingPrice	Int32	4		3 implied decimal places
Filler String 1 204 CCASSFlag String 1 205 DummySecurityFlag String 1 206 TestSecurityFlag String 1 207 StampDutyFlag String 1 208 Filler String 1 209 ListingDate Uint32 4 209 DelistingDate Uint32 4 207 String 38 208 Free text associated to the security String 4 209 DelistingDate Uint32 4 200 DelistingDate Uint32 4 201 String 38 201 Free Text String 38 202 Filler String 38 203 Filler String 38 204 CouponRate Uint32 4 205 CouponRate Uint32 4 206 CouponRate Uint32 4 207 String 1 208 String 38 209 CouponRate Uint32 4 209 CouponRate Uint32 4 209 ConversionRatio Uint32 4 209 Conversion Ratio Uint32 4 200 CouponRate Uint32 4 200 CouponRate Uint32 4 200 ConversionRatio Uint32 4 200 Conversion Ratio Uint32 4 200 Conversion	201	Filler	String	1		
204 CCASSFlag String 1 Indicates whether or not the security is a CCASS security Non CCASS Standard Nor Non CCAS Security Non CCASS Standard Nor Non CCAS Security Non CCAS Securi	202	ShortSellFlag	String	1		
String 1 Security is a CCASS security Non CCASS security	203	Filler	String	1		
Dummy Security Flag String 1 Dummy Security Flag. Normal security Test Security Flag Y Test security Normal security Test Security Flag Y Test security Normal security Stamp Duty Flag String 1 Indicator for stamp duty requirement Stamp duty required Stamp duty not required The representation is YYYYMMDD Value is 1900101 for unknown listing date The representation is YYYYMMDD Value is 1900101 for unknown listing date The representation is YYYYMMDD Value is 1900101 for unknown listing date The representation is YYYYMMDD Value is 0 if no date exists. Fixed length array of free text. Whether is no free text, spaces will be present instead. Bonds Specific Data String 1 EFN Indicator Y EFN N Non-EFN N N N N N N N N N N N N N N N N N N	204	CCASSFlag	String	1		
Pest Security Flag 1 1 1 1 1 1 1 1 1	205	DummySecurityFlag	String	1	Dummy Security Flag.	
String 1 requirement r	206	TestSecurityFlag	String	1	Test Security Flag	,
ListingDate Uint32 4 Date of security listing The representation is YYYYMMDD Value is 19000101 for unknown listing date 213 DelistingDate Uint32 4 Date of security delisting The representation is YYYYMMDD Value is 0 if no date exists. 217 FreeText String 38 Free text associated to the security Fixed length array of free text. Whe there is no free text, spaces will be present instead. Bonds Specific Data 255 EFNFlag String 1 EFN Indicator YEFN Non-EFN 256 AccruedInterest Uint32 4 Accrued interest of the security. 3 implied decimal places 260 CouponRate Uint32 4 Coupon rate of a bond security 3 implied decimal places Warrants, Basket Warrants and Structured Product specific data 264 ConversionRatio Uint32 4 Product with stock underlying only only Strike price of the security. 3 implied decimal places 272 MaturityDate Uint32 4 Strike price of the security. The representation is YYYYMMDD For Derivative Warrants. Call Put Put 276 CallPutFlag String 1 Indicator of whether the warrant or structured security For Derivative Warrants: Call Put Put 277 FreeText String 1 Indicator of whether the warrant or structured product is a call or put option For ELI & CBBC: Call Put Put	207	StampDutyFlag	String	1		
ListingDate Uint32 4 Date of security listing Value is 19000101 for unknown listing date The representation is YYYYMMDD Value is 0 if no date exists. Free text associated to the security security self-security free text. Where is no free text, where is no free text, spaces will be present instead. Bonds Specific Data String 1 EFN Indicator YEFN Non-EFN	208	Filler	String	1		
Free Text String Str	209	ListingDate	Uint32	4	Date of security listing	Value is 19000101 for unknown listing date
Bonds Specific Data 255 EFNFlag String 1 EFN Indicator YEFN Non-EFN 256 AccruedInterest Uint32 4 Accrued interest of the security 3 implied decimal places 260 CouponRate Uint32 4 Coupon rate of a bond security 3 implied decimal places 264 ConversionRatio Uint32 4 Product with stock underlying only 3 implied decimal places 268 StrikePrice Int32 4 Strike price of the security. 270 MaturityDate Uint32 4 Strike price of the security. 281 Strike price of the security. 282 Strike price Int32 4 Strike price of the security. 283 Implied decimal places 284 Strike price Int32 4 Strike price of the security. 285 The representation is YYYYMMDD 286 StrikePrice Int32 4 Strike price of the security. 287 Date of maturity of a warrant or structured security 3 Implied decimal places 3 Implied decimal places 3 Implied decimal places 4 Date of maturity of a warrant or structured security 4 Date of maturity of a warrant or structured security 5 For Derivative Warrants: 5 C Call 6 Put 7 Put 7 Prof ELI & CBBC: 6 Bull	213	DelistingDate	Uint32	4	Date of security delisting	The representation is YYYYMMDD. Value is 0 if no date exists.
255 EFNFlag String 1 EFN Indicator Y EFN Non-EFN 256 AccruedInterest Uint32 4 Accrued interest of the security. 3 implied decimal places 260 CouponRate Uint32 4 Coupon rate of a bond security 3 implied decimal places Warrants, Basket Warrants and Structured Product specific data 264 ConversionRatio Uint32 4 Conversion ratio for Structured 268 StrikePrice Int32 4 Strike price of the security. 3 implied decimal places 270 MaturityDate Uint32 4 Date of maturity of a warrant or structured security 271 Indicator of whether the warrant or structured product is a call or put option 272 For ELI & CBBC: 273 BEFN Non-EFN No	217	FreeText	String	38		Fixed length array of free text. When there is no free text, spaces will be present instead.
255 EFNFlag String 1 EFN Indicator Non-EFN 256 AccruedInterest Uint32 4 Accrued interest of the security. 3 implied decimal places 260 CouponRate Uint32 4 Coupon rate of a bond security 3 implied decimal places Warrants, Basket Warrants and Structured Product specific data 264 ConversionRatio Uint32 4 Conversion ratio for Structured Product with stock underlying only 3 implied decimal places 268 StrikePrice Int32 4 Strike price of the security. 3 implied decimal places 270 MaturityDate Uint32 4 Date of maturity of a warrant or structured security 271 Indicator of whether the warrant or structured product is a call or put option 272 For ELI & CBBC: 273 Call Put Flag String 1 For ELI & CBBC: 274 BEFN Indicator 3 implied decimal places 3 implied decimal places 3 implied decimal places 4 Indicator of whether the warrant or structured security 4 For Derivative Warrants/Basket Warrants: 275 Call Put Flag For ELI & CBBC: 276 Bull	Bonds S	oecific Data				
260 CouponRate Uint32 4 Coupon rate of a bond security 3 implied decimal places Warrants, Basket Warrants and Structured Product specific data 264 ConversionRatio Uint32 4 Conversion ratio for Structured Product with stock underlying only 3 implied decimal places 268 StrikePrice Int32 4 Strike price of the security. 3 implied decimal places 270 MaturityDate Uint32 4 Date of maturity of a warrant or structured security The representation is YYYYMMDD 271 Indicator of whether the warrant or structured product is a call or put option For ELI & CBBC: 272 Eall & CBBC: 273 Call Put Flag String 1 For ELI & CBBC: 274 Call Put Flag String 1 For ELI & CBBC: 275 Call Put Flag String 1 For ELI & CBBC: 276 Call Put Flag String 1 For ELI & CBBC:	255	EFNFlag	String	1	EFN Indicator	
Warrants, Basket Warrants and Structured Product specific data 264 ConversionRatio Uint32 4 Product with stock underlying only 268 StrikePrice Int32 4 Strike price of the security. 272 MaturityDate Uint32 4 Strike price of maturity of a warrant or structured security The representation is YYYYMMDD For Derivative Warrants/Basket Warrants: C Call Put For ELI & CBBC: C Bull	256	AccruedInterest	Uint32	4		
Conversion ratio for Structured Product with stock underlying only 268 StrikePrice Int32 4 Strike price of the security. 272 MaturityDate Uint32 4 Date of maturity of a warrant or structured security 275 CallPutFlag String 1 or structured product is a call or put option 276 CallPutFlag String 1 Conversion ratio for Structured and places 3 implied decimal places 277 Indicator of the security The representation is YYYYMMDD 278 For Derivative Warrants/Basket Warrants: 279 Call 270 Put 271 For ELI & CBBC: 270 Call For ELI & CBBC: 271 Conversion ratio for Structured product with stock underlying and places 3 implied decimal places 3 implied decimal places 3 implied decimal places The representation is YYYYMMDD For Derivative Warrants/Basket Warrants: C Call P Put For ELI & CBBC: C Bull					Coupon rate of a bond security	3 implied decimal places
264 ConversionRatio Uint32 4 Product with stock underlying only 268 StrikePrice Int32 4 Strike price of the security. Date of maturity of a warrant or structured security The representation is YYYYMMDD For Derivative Warrants/Basket Warrants: C Call Put For ELI & CBBC: Bull	Warrants,	, Basket Warrants and Structured Pi	roduct specific	data	0 ' " (0 1	
Date of maturity of a warrant or structured security The representation is YYYYMMDD For Derivative Warrants/Basket Warrants: C Call Put Put For ELI & CBBC: Bull	264	ConversionRatio	Uint32	4	Product with stock underlying	3 implied decimal places
276 CallPutFlag String String String String Structured security For Derivative Warrants/Basket Warrants: C Call Put For ELI & CBBC: C Bull	268	StrikePrice	Int32	4		3 implied decimal places
276 CallPutFlag String String Indicator of whether the warrant or structured product is a call or put option Warrants: C Call Put For ELI & CBBC: Bull	272	MaturityDate	Uint32	4		·
	276	CallPutFlag	String	1	or structured product is a call or	Warrants: C Call P Put For ELI & CBBC: C Bull P Bear / Rang
277 Style String 1 Style of the basket warrant A American style E European style 	277	Style	String	1	Style of the basket warrant	E European style Cher
278 NoUnderlyingSecurities Uint16 Uint16 Uint16 Uint16 Uint16 Number of underlying security codes within this message O to 20 for Basket Warrants o to 1 for Warrants and Structured Product	278	NoUnderlyingSecurities	Uint16	2		o to 1 for Warrants and Structured
280 UnderlyingSecurityCode Uint32 4 5-digit code identifying the underlying security.	280	UnderlyingSecurityCode	Uint32	4		
	284	UnderlyingSecurityWeight	Uint32	4	The weight of the underlying	

¹ Test security is not production security and the corresponding counter is reserved for testing purpose. It may not exist in normal trading days. Clients can ignore the test security if any.

Offset	Field	Format	Len	Description	Values
				security code.	
Total Length		280 + 8n			

(n_U = value of NoUnderlyingSecurities)

1.3 Liquidity Provider (13)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	13 Liquidity Provider
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 – 99999
8	NoLiquidityProviders	Uint16	2	Number of liquidity providers within this message.	1 to 50
10	LPBrokerNumber	Uint16	2	Broker number of the liquidity provider	
Total Len	Total Length		+ 2n _T		

 $(n_T = value of NoLiquidityProviders)$

1.4 Currency Rate (14)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	14 Currency Rate
4	CurrencyCode	String	3	Currency code.	
7	Filler	String	1		
8	CurrencyFactor	Uint16	2	Currency factor conversion.	A non-zero value <i>n</i> means all price fields for this security should be interpreted as a value equal to the price multiplied by 10 ⁿ .
10	Filler	String	2		
12	CurrencyRate	Uint32	4	Currency rate	Rate, expressed in HKD for one foreign currency unit. 4 decimals implied.
Total Len	gth		16		

2. Securities Status

The Securities Status file is in binary format and contains two types of messages – *TradingSessionStatus*, and *SecurityStatus*. There is only one Securities Status file with filename MC02_All_YYYYMMDD, where YYYYMMDD is the date of the Securities Status file.

The layout of the Securities Status is as follows:

<RecordLength><PacketHeader><SecuritiesStatus>...<RecordLength><PacketHeader><SecuritiesStatus>...

Following is the message layout of the *RecordLength*

	Offset	Field	Format	Len	Description
	0	RecLen	Uint16	2	Size of the record (including this field)
Total length				2	

Following is the message layout of the *PacketHeader*

Offset	Field	Format	Len	Description
0	PktSize	Uint16	2	Size of the packet (including this field)
2	MsgCount	Uint8	1	Number of messages included in the packet
3	Filler	String	1	
4	SeqNum	Uint32	4	Sequence number of the first message in the packet
8	SendTime	Uint64	8	The number of nanoseconds since <i>January 1</i> , 1970, <i>00:00:00 GMT</i> , precision is provided to the nearest millisecond.
Total lend	gth		16	

<SecuritiesStatus> contains different combinations of the two types of messages – TradingSessionStatus and SecurityStatus. For example:

<TradingSessionStatus><SecurityStatus><TradingSessionStatus><TradingSessionStatus> or <SecurityStatus><SecurityStatus>

Followings are the message layouts of the *TradingSessionStatus* and *SecurityStatus*

2.1 Trading Session Status (20)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	20 Trading Session Status
4	MarketCode	String	4	Market segment identifier	MAIN GEM NASD ETS
8	TradingSessionID	Uint8	1	Identifies the trading session.	1 Day
9	TradingSessionSubID	Uint8	1	Trading session sub-identifier.	 Day Close (DC) Pre-trading (Order Input OI) Opening or Opening Auction (Matching MA) Continuous trading (Continuous CT) Quiescent (Blocking BL) Not Yet Open (NO) No Cancel/Modification (NC) Exchange Intervention (EI) Close (CL) Order Cancel (OC)
10	TradingSesStatus	Uint8	1	Status of the current trading session.	 Unknown (for NO) Halted (for BL, EI) Open (for OI, NC, MA, CT, OC) Closed (for CL) Day Closed (for DC)
11	TradingSesControlFlag	String	1	Indicates how control of trading session and sub-session transitions are performed.	'0' Automatic (Default) '1' Manual (this invalidates the normal schedule for the day)

Offset	Field	Format	Len	Description	Values
12	Filler	String	4		
16	StartDateTime	Uint64	8	Start time of the trading status	The data is provided as number of nanoseconds since Unix epoch Jan 1st 1970. Set to o if no time is available.
24	EndDateTime	Uint64	8	End time of the trading status	The data is provided as number of nanoseconds since Unix epoch Jan 1st 1970. Set to o if no time is available.
Total Ler	ngth		32		

2.2 Security Status (21)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	21 Security Status
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 – 99999
8	SecurityTradingStatus	Uint8	1	Indentifies the trading status of a security.	2 Trading Halt3 Resume
9	Filler	String	3		
Total Len	ıgth		12		

3. Securities Full Order Book

The Securities Full Order Book file is in binary format and contains six types of messages – *Trade*, *TradeCancel*, *AddOrder*, *ModifyOrder*, *DeleteOrder* and *IndicativeEquilibriumPrice*. There are totally 9 files, each corresponds to an AMS stock group. The filenames of the 9 Securities Full Order file are as follows:

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MC30_All_YYYYMMDD – securities full order book file for AMS stock group #1 (MAIN market) MC31_All_YYYYMMDD – securities full order book file for AMS stock group #2 (MAIN market) MC32_All_YYYYMMDD – securities full order book file for AMS stock group #3 (MAIN market) MC33_All_YYYYMMDD – securities full order book file for AMS stock group #4 (MAIN market) MC34_All_YYYYMMDD – securities full order book file for AMS stock group #5 (MAIN market) MC35_All_YYYYMMDD – securities full order book file for AMS stock group #6 (MAIN market) MC36_All_YYYYMMDD – securities full order book file for AMS stock group #7 (GEM market) MC37_All_YYYYMMDD – securities full order book file for AMS stock group #8 (NASD market) MC38_All_YYYYMMDD – securities full order book file for AMS stock group #9 (ETS market) where YYYYMMDD is the date of the Securities Full Order Book file
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The layout of the Securities Full Order Book is as follows:

<RecordLength><PacketHeader><SecuritiesFullOrderBook>...<RecordLength><PacketHeader><SecuritiesFullOrderBook>...<RecordLength><PacketHeader><SecuritiesFullOrderBook>

Following is the message layout of the RecordLength

Offset	Field	Format	Len	Description
0	RecLen	Uint16	2	Size of the record (including this field)
Total len	gth		2	

Following is the message layout of the *PacketHeader*

Offset	Field	Format	Len	Description
0	PktSize	Uint16	2	Size of the packet (including this field)
2	MsgCount	Uint8	1	Number of messages included in the packet
3	Filler	String	1	
4	SeqNum	Uint32	4	Sequence number of the first message in the packet
8	SendTime	Uint64	8	The number of nanoseconds since <i>January 1</i> , 1970, <i>00:00:00 GMT</i> , precision is provided to the nearest millisecond.
Total leng	gth		16	

SecuritiesFullOrderBook> contains different combinations of the six types of messages – **Trade**, **TradeCancel**, **AddOrder**, **ModifyOrder**, **DeleteOrder** and **IndicativeEquilibriumPrice** For example:

<Trade><TradeCancel><AddOrder><ModifyOrder><DeleteOrder><IndicativeEquilibriumPrice> or <AddOrder><AddOrder><DeleteOrder><ModifyOrder><Trade><Trade>

Followings are the message layouts of the *Trade*, *TradeCancel*, *AddOrder*, *ModifyOrder*, *DeleteOrder* and *IndicativeEquilibriumPrice*

3.1 Trade (50)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	50 Trade
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 – 99999
8	TradeID	Uint32	4	Unique identifier per security for each trade performed within the trading system. The ID is reset for each trading day.	Starting from 1, incrementing by 1 for each trade
12	Price	Int32	4	Price	3 implied decimal places
16	Quantity	Uint32	4	Number of shares	
20	TrdType	Int16	2	Public trade type.	 Automatch normal (AMS < space>) Late Trade (Off-exchange previous day) (AMS "P") Non-direct Off-Exchange Trade (AMS "M") Automatch internalized (AMS "Y") Direct off-exchange Trade (AMS "X") Odd-Lot Trade (AMS "D") Auction Trade (AMS "U") Overseas Trade
22	Filler	String	2		
24	TradeTime	Uint64	8	Time of trade	The number of nanoseconds elapsed since midnight Coordinated Universal Time (UTC) of January 1, 1970 TradeTime precision is currently provided to the nearest second.
Total Len	gth		32		

3.2 TradeCancel (51)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	51 Trade cancel
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 – 99999
8	TradeID	Uint32	4	Unique identifier per security for each trade performed within the trading system. The ID is reset for each trading day.	Starting from 1, incrementing by 1 for each trade
Total Len	ngth		12		

3.3 Add Order (30)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	30 Add Order
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 – 99999
8	Orderld	Uint64	8	Unique identifier per security for each order performed within the trading system	Values may not be consecutive
16	Price	Int32	4	Price	3 implied decimal places
20	Quantity	Uint32	4	Number of shares	
24	Side	Uint16	2	Side of the order	0 Bid 1 Offer
26	OrderType	String	1	Order type	'1' Market '2' Limit
27	Filler	String	1		
28	OrderBookPosition	Int32	4	Order rank information for the order position within the order book for each security	Integer
Total Len	gth		32		

3.4 Modify Order (31)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	31 Modify Order
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 - 99999
8	Orderld	Uint64	8	Unique identifier per security for each order performed within the trading system	Values may not be consecutive
16	Quantity	Uint32	4	Number of shares	
20	Side	Uint16	2	Side of the order	0 Bid1 Offer
22	Filler	String	2		
24	OrderBookPosition	Int32	4	Order rank information for the order position within the order book for each security	Integer
Total Len	Total Length				

3.5 Delete Order (32)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	32 Delete Order
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 – 99999
8	Orderld	Uint64	8	Unique identifier per security for each order performed within the trading system	Values may not be consecutive
16	Side	Uint16	2	Side of the order	0 Bid1 Offer
18	Filler	String	2		
Total Len	Total Length				

3.6 Indicative Equilibrium Price (41)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	41 Indicative Equilibrium Price
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 – 99999
8	Price	Int32	4	Price	3 implied decimal places
12	AggregateQuantity	Uint64	8	Aggregated number of shares.	
Total Len	Total Length				

4. Securities Market Odd Lot Order

The Securities Market Odd Lot Order file is in binary format and contains two types of messages – *AddOddLotOrder*, and *DeleteOddLotOrder*. There are totally 9 files, each corresponds to an AMS stock group. The filenames of the 9 Securities Market Odd Lot Order file are as follows:

```
MC70_All_YYYYMMDD – securities market odd lot order file for AMS stock group #1 (MAIN market) MC71_All_YYYYMMDD – securities market odd lot order file for AMS stock group #2 (MAIN market) MC72_All_YYYYMMDD – securities market odd lot order file for AMS stock group #3 (MAIN market) MC73_All_YYYYMMDD – securities market odd lot order file for AMS stock group #4 (MAIN market) MC74_All_YYYYMMDD – securities market odd lot order file for AMS stock group #5 (MAIN market) MC75_All_YYYYMMDD – securities market odd lot order file for AMS stock group #6 (MAIN market) MC76_All_YYYYMMDD – securities market odd lot order file for AMS stock group #7 (GEM market) MC77_All_YYYYMMDD – securities market odd lot order file for AMS stock group #8 (NASD market) MC78_All_YYYYMMDD – securities market odd lot order file for AMS stock group #9 (ETS market) where YYYYMMDD is the date of the Securities Market Odd Lot Order file
```

The layout of the Securities Market Odd Lot Order is as follows:

<RecordLength><PacketHeader><SecuritiesMarketOddLotOrder>...<RecordLength><PacketHeader><
SecuritiesMarketOddLotOrder>...<RecordLength><PacketHeader><SecuritiesMarketOddLotOrder>

Following is the message layout of the *RecordLength*

Offset	Field	Format	Len	Description
0	RecLen	Uint16	2	Size of the record (including this field)
Total length			2	

Following is the message layout of the *PacketHeader*

Offset	Field	Format	Len	Description	
0	PktSize	Uint16	2	Size of the packet (including this field)	
2	MsgCount	Uint8	1	Number of messages included in the packet	
3	Filler	String	1		
4	SeqNum	Uint32	4	Sequence number of the first message in the packet	
8	SendTime	Uint64	8	The number of nanoseconds since <i>January 1</i> , 1970, <i>00:00:00 GMT</i> , precision is provided to the nearest millisecond.	
Total length			16		

SecuritiesMarketOddLotOrder> contains different combinations of the two types of messages – **AddOddLotOrder** and **DeleteOddLotOrder**. For example:

<AddOddLotOrder><DeleteOddLotOrder><AddOddLotOrder><AddOddLotOrder><Ord><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder><AddOddLotOrder

Followings are the message layouts of the *AddOddLotOrder* and *DeleteOddLotOrder*

4.1 Add Odd Lot Order (33)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	33 Add Odd Lot Order
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 – 99999
8	Orderld	Uint64	8	Unique identifier per security for each order performed within the trading system	Values may not be consecutive
16	Price	Int32	4	Price	3 implied decimal places
20	Quantity	Uint32	4	Number of shares	
24	BrokerID	Uint16	2	Integer identifier uniquely identifying the Broker	Integer
26	Side	Uint16	2	Side of the order	0 Bid1 Offer
Total Length					

4.2 Delete Odd Lot Order (34)

Offset	Field	Format	Len	Description	Values
0	MsgSize	Uint16	2	Size of the message	
2	MsgType	Uint16	2	Type of message.	34 Delete Odd Lot Order
4	SecurityCode	Uint32	4	Uniquely identifies a security available for trading	5 digit security codes with possible values 1 – 99999
8	Orderld	Uint64	8	Unique identifier per security for each order performed within the trading system	Values may not be consecutive
16	BrokerID	Uint16	2	Integer identifier uniquely identifying the Broker	Integer
18	Side	Uint16	2	Side of the order	0 Bid1 Offer
Total Length					