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GMAC V3 Messages Specifications

R2017-1.2 | Confidential

About This Document

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Revisions

Revision	Date	Description of Changes
R2017-1.2	03 OCT 2017	Release R2017-1.2 - Added new members to GMACExtensionNordicITCHOrderBooks - Added GMACExtensionBITMILIndicativeQuote - Added values to GMACValueType
R2017-1.1	24 JUL 2017	Release R2017-1.1 - Added new values to GMACPriceType - Added new values to GMACTradeConditions - Added presence map bit field UseQuantityAsRawValue to GMACMessageImbalanceV3, GMACMessageOrderDepthV3, GMACMessageOrderUpdateV3 and GMACMessageQuoteRequestV3
R2017-1.0	24 MAR 2017	Release R2017-1.0 - Added flags to GMACOrderConditions - Added flags to GMACQuoteConditions - Added flags to TradeFlags - Added values to GMACValueType - Added values to GMACCLULDPriceBandV3 - Added LSE GTP extension messages - Added GMACExtensionEURONEXTThrottleSize, GMACExtensionEURONEXTTrade and GMACExtensionEURONEXTTradeRetrans - Added GMACExtensionEURONEXTEMM, GMACExtensionEURONEXTRefData and GMACExtensionEURONEXTTimetable - Added GMACExtensionEURONEXTEndOfSnapshot, GMACExtensionEURONEXTReferenceData and GMACExtensionEURONEXTTicks - Added GMACExtensionStructITCHBISTOrderBookDirectory - Added GMACExtensionITCH50StockDirectory - Added GMACExtensionBatsTrade - Added GMACExtensionOSLOMILRefData - Added GMACExtensionNordicITCHAOD and GMACExtensionNordicITCHOrderBooks - Added GMACExtensionNYSEXDPImbalance - Added GMACExtensionOptionXDPBOLDRFQ - Added GMACExtensionRDIProdAuctionTypeRules - Added GMACExtensionEOBIProductSummary - Added GMACExtensionICEIndicativeQuote and GMACExtensionICEBlockDetails - Added member InstrumentDescription to GMACMessageReferenceHeaderV3 - Added GMACCMessageAuctionCollarV3 - Added member OrigType to GMACCMessageIndexV3 - Added member FinraBBOIndicator to GMACCMessageTOBV3 - Added member TestMarketIndicator to GMACExtensionICESecDefInfo and GMACExtensionICEMessagep - Added member TestMarketIndicator and RefSpreadProductId to GMACExtensionICEMessageB - Updated GMACMessageOrderUpdateV3.Position format - Removed InstrumentName from GMACExtensionITCH50QuotingPeriodUpdate - Renamed names of Eurex extension message

Revision	Date	Description of Changes
R2016-2.0	22 NOV 2016	Release R2016-2.0 - Added GMACMessageValueV3 - Added GMACMessageServiceV3 - Added GMACExtensionCMEBinaryOrderSnapshot - Added member FINRAADFMPIDIndicator to GMACCMessageTOBV3 - Added GMACExtensionBMEGrossAmount - Added GMACExtensionBATSExposurePeriod - Added GMACExtensionICEFixingIndicativePrice - Added GMACExtensionICEFuturesStrategy - Updated GMACTradeConditions flags - Updated GMACTradingStatusConditions flags - Updated GMACQuoteConditions flags - Updated GMACOrderConditions flags - Updated GMACExtensionICEMessageB, GMACExtensionICEMessagep and GMACExtensionICESecDefInfo - Updated GMACExtensionICEMessageR and GMACExtensionICEMessagel - Updated GMACExtensionEurexInstrument.ContractGenerationNumber format - Removed GMACExtensionISEMDIProductInfo
R2016-1.7.1	11 NOV 2016	Release R2016-1.7.1 - Added member ContractGenerationNumberInt to GMACExtensionEurexInstrument - Updated GMACMessageDerivativeHeaderV3.Version format
R2016-1.7	04 NOV 2016	Release R2016-1.7 - Added presence map for members ValuationMethod and SettlMethod in GMACExtensionEurexInstrument
R2016-1.6	14 OCT 2016	Release R2016-1.6 - Added flags to GMACTradeConditions
R2016-1.5	03 OCT 2016	Release R2016-1.5 - Added flags to GMACOrderConditions - Added flags to GMACTradeConditions - Added NextEffectiveBusinessDate, MarketSegmentType, MarketSegmentSubType to GMACExtensionEurexRDIProdRef - Added TickRuleID to EurexRDITickRule - Added CustomQuantities[].NumberOfOrders to GMACMessageOrderDepthV3 - Removed TradeDate, MarketSegmentPoolType from GMACExtensionEurexRDIProdRef
R2016-1.4	24 AUG 2016	Release R2016-1.4 - Added GMACExtensionStructFINRAADF - Added members OrigType, SIPGenUpdate, FINRAADFMPIDIndicator, MPID, SubVenueID to GMACCMessageTOBV3 - Added members TradeID, SaleDays, TradeTimestamp to GMACCOrderDataV3 - Added members OrigType, SubVenueID to GMACCMessageTradeV3, GMACCMessageTradeCancellationV3, GMACCMessageTradeCorrectionV3 - Added members OrigType, SubVenueID to GMACCMessageTradingStatusV3, GMACCMessageSHOShortSalePriceRestrictionV3 - Added members OrigType, SubVenueID to GMACCMessageOHLCV3, GMACCMessageLULDPriceBandV3 - Added member TradeFlags to GMACCMessageTradeCorrectionV3 - Added members Venue, SubVenueID to GMACCMessageMWCBV3, GMACCMessageMWCBStatusV3, GMACCMessageSessionV3 - Added members Timestamp1Bin and Timestamp2Bin to GMACExtensionStructSIPTimestamp

Revision	Date	Description of Changes
R2016-1.3	28 JUL 2016	Release R2016-1.3 - Added GMACExtensionStructFXAllQuote and GMACExtensionStructFXAllSecurity - Added GMACExtensionNYSEXDPTradingStatus - Added bit field UseIndexForIdentification to the presence map of GMACMessageOrderExecutedV3 - Added SSRFiling member to GMACMessageImbalanceV3 - Added details to GMACPriceFactor - Updated GMACExtensionStructHotspotFXOrderInfo
R2016-1.2	14 JUN 2016	Release R2016-1.2 - Added EntryTime member to GMACMessageOrderDecreaseV3 and GMACMessageOrderExecutedV3 - Added GMACExtensionCMEBinaryTickRules
R2016-1.1	13 MAY 2016	Release R2016-1.1 - Added GMACExtensionICEFixingTransition and GMACExtensionICEFixingLockDown - Added flags to GMACTradingMode - Added MaturityWeek member to GMACMessageDerivativeHeaderV3 - Updated GMACMessageDerivativeHeaderV3.UnderlyingIDs[].UnderlyingSegmentID format (documentation correction) - Updated GMACExtensionICEMessageB, GMACExtensionICEMessagep and GMACExtensionICEMessagel - Updated GMACExtensionICEMessageR and GMACExtensionICESecDefInfo
R2016-1.0	01 APR 2016	Release R2016-1.0 - Added GMACMessageMulticastTimeout - Updated GMACPriceFactor - Removed GMACExtensionStructLiffeRef
R2015-6.3	15 FEB 2016	Release R2015-6.3 - Updated documentation for some Eurex specific messages
R2015-6.1	08 JAN 2016	Release R2015-6.1 - Added GMACExtensionStructITCHeSpeedOrderBookDirectory.SecurityDescription
R2015-6.0	14 DEC 2015	Release R2015-6.0 - Added GMACExtensionStructITCHBrokerTecTradeSummary - Added values to GMACLiffeModes - Updated GMACCMessageSHOShortSalePriceRestrictionV3 - Updated GMACExtensionStructLiffeMS.Modes - Removed CME FAST FIX specific messages - Removed GMACMessageTradingStatusV3.ExchSpecificTradingStatus
R2015-5.3	29 OCT 2015	Release R2015-5.3 - Added GMACExtensionStructXetraSMPClxQty - Updated GMACExtensionStructXetraPacketHeader - Updated GMACExtensionStructXetraInstrRef - Updated GMACExtensionStructXetraMaintRef
R2015-5.1	22 OCT 2015	Release R2015-5.1 - Added GMACExtensionNordicITCHTrackNbr - Added GMACExtensionStructEurexTrade.RestingCxlQty

Revision	Date	Description of Changes
		- Updated EurexRDIRelatedMarketSegment.RelatedMarketSegmentID format - Removed GMACExtensionEurexRDIProdRef.RefMarketSegmentID
R2015-5.0	02 OCT 2015	Release R2015-5.0 - Added GMACExtensionStructITCHeSpeedOrderBookDirectory - Added GMACExtensionICEMessageR.SettlementType - Renamed GMACExtensionICEMessagep.OptionsSettlementType to OptionsStyle - Renamed GMACExtensionICEMessagel.OptionsSettlementType to OptionsStyle - Updated TradingMode flags
R2015-4.5	15 SEP 2015	Release R2015-4.5 - Added GMACMessageQuoteRequestV3.InstrumentContext - Updated ClosingType flags
R2015-4.3	26 AUG 2015	Release R2015-4.3 - Added bit field UseIndexForIdentification to the presence map of GMACMessageOrderUpdateV3 and GMACMessageOrderDecreaseV3
R2015-4.0	15 JUL 2015	Release R2015-4.0 - Updated allowable values for GMACMessageImbalanceV3.CrossType - Updated allowable values for GMACMessageUncrossingV3.UncrossingType
R2015-3.2	03 JUL 2015	Release R2015-3.2 - Added GMACExtensionStructSIPTimestamp
R2015-3.1	17 JUN 2015	Release R2015-3.1 - Added GMACExtensionStructITCHBrokerTecOrderBookDirectory
R2015-3.0	09 JUN 2015	Release R2015-3.0 - Added Eurex specific extension messages - Added members to GMACExtensionICEMessageB, GMACExtensionICEMessagep, GMACExtensionICEMessagel and GMACExtensionICESecDefInfo - Removed GMACExtensionStructEurexFeedRef - Removed GMACExtensionICEMessageG
R2015-2.0	16 APR 2015	Release R2015-2.0 - Added GMACMessageOrderDepthV3.RawQuoteConditionsBin - Added GMACMessageOrderDepthV3.RawQuoteConditionsStr - Added GMACMessageTradingStatusV3.RawExchangeTradingStatusBin - Added GMACMessageTradingStatusV3.RawExchangeTradingStatusStr - Added GMACMessafeReferenceSecurityV3.Group - Removed GMACMessageTradingStatusV3.RawExchangeTradingStatus - Removed GMACMessageOrderDepthV3.ReasonCode - Removed GMACMessageOrderDepthV3.ImpliedQuantity - Removed GMACMessageOrderDepthV3.TradingStatus - Removed GMACMessageOrderDepthV3.RawExchangeTradingStatus - Removed GMACMessageOrderDepthV3.ReservedTopOfBook - Removed GMACMessageOrderDepthV3.CustomerQuantity
R2015-1.2	27 MAR 2015	Release R2015-1.2 - Updated GMACBookType flags

Revision	Date	Description of Changes
R2015-1.0	27 FEB 2015	Release R2015-1.0 - Added GMACMessageReferenceHeaderV3.TargetBook - Added GMACExtensionBITMILOffBookTrade - Added GMACExtensionLSEMILOffBookTrade - Added GMACExtensionOSLOMILOffBookTrade - Added GMACExtensionICEMessageB.NumDecimalsOptionsPrice - Updated GMACExtensionICEMessageR - Updated GMACBookType flags - Renamed GMACExtensionICEExtraInfo into GMACExtensionICEMessageG - Removed GMACMessageDummyV3 - Removed GMACMessageTradeExV3
R2014-7.3	12 FEB 2015	Release R2014-7.3 - Added GMACExtensionBMETradeEvent
R2014-7.2	30 JAN 2015	Release R2014-7.2 - Added GMACExtensionEURONEXTOffBookTrade
R2014-7.1	09 JAN 2015	Release R2014-7.1 - Added GMACMessageReferenceHeaderV3.TradingMode - Added GMACMessageTradeExV3.RawTradeConditions - Added GMACMessageOrderExecutedV3.RawTradeConditions
R2014-7.0	18 DEC 2014	Release R2014-7.0 - Added GMACMessageResetV3 - Added GMACMessageOHLCV3.INAV - Added Position, Level, EntryTime and PartyID to GMACMessageOrderUpdateV3 - Updated GMACPriceType enumeration values - Updated GMACImbalanceConditions flags - Updated GMACTradeConditions flags - Updated CME Binary extension messages - Removed GMACMessageOrderResetV3 - Removed GMACMessageTotalVolumeV3
R2014-6.1	24 OCT 2014	Release R2014-6.1 - Added GMACMessageDerivativeHeaderV3.UnderlyingIDs.UnderlyingSegmentID - Added GMACMessageReferenceHeaderV3.InstrumentGroupBin - Added GMACMessageReferenceHeaderV3.InstrumentGroupStr - Added GMACMessageTradingStatusV3.InstrumentGroupBin - Added GMACMessageTradingStatusV3.InstrumentGroupStr - Updated GMACOrderConditions flags - Updated GMACTradeConditions flags - Removed GMACMessageImbalanceV3.AuctionOnlyPrice
R2014-6.0	03 OCT 2014	Release R2014-6.0 - Added GMACMessageOrderExecutedV3.Side - Added GMACExtensionStructEurexEOBIPacketHeader

Revision	Date	Description of Changes
		- Added GMACMessageDerivativeHeaderV3.UnderlyingIDs.LegPrice - Added GMACCMessageTradingStatusV3.RawTradingStatusConditionsBin - Added GMACCMessageTradingStatusV3.RawTradingStatusConditionsStr - Updated GMACMessageQuoteRequestV3.QuoteType format
R2014-5.2	12 SEP 2014	Release R2014-5.2 - Added GMACExtensionCMEBinaryMatchOrders
R2014-5.1	29 AUG 2014	Release R2014-5.1 - Added GMACExtensionICEMessageI - Added GMACExtensionICEMessageR - Added GMACExtensionICESecDefInfo - Added bit fields ClearOpen and ClearClose to the presence map of GMACMessageOHLCV3 - Updated GMACExtensionICEMessagep
R2014-5.0	08 AUG 2014	Release R2014-5.0 - Added GMACMessageTradeV3.NumberOfOrders - Updated GMACExtensionICEMessageB - Removed GMACMessageTradeV3.NumberOfOrdersBuy - Removed GMACMessageTradeV3.NumberOfOrdersSell
R2014-4.1	02 JUL 2014	Release R2014-4.1 - Updated GMACMessageSHOShortSalePriceRestrictionV3.SHOShortRestriction definition Removed Liffe US specific messages
R2014-4.0	18 JUN 2014	Release R2014-4.0 - Added GMACMessageImbalanceV3.AuctionTime - Added GMACMessageSHOShortSalePriceRestrictionV3.RawRestrictionConditionsBin - Added GMACMessageSHOShortSalePriceRestrictionV3.RawRestrictionConditionsStr - Added GMACMessageSuspendedStatusV3.RawSuspendedConditionsBin - Added GMACMessageSuspendedStatusV3.RawSuspendedConditionsStr - Added GMACMessageOrderUpdateV3.RawOrderUpdateConditionsBin - Added GMACMessageOrderUpdateV3.RawOrderUpdateConditionsStr - Added message GMACExtensionARCAXDPTrade - Updated GMACOrderConditions flags - Renamed GMACExtensionCMEBinaryIncRef into GMACExtensionCMEBinaryMatchEventInd
R2014-3.1	21 MAY 2014	Release R2014-3.1 - Added GMACExtensionStructEurexFeedRef.ParentMktSegmID - Updated GMACOrderConditions flags
R2014-3.0	30 APR 2014	Release R2014-3.0 - Added GMACMessageImbalanceV3.RawImbalanceType - Added GMACMessageUncrossingV3.UncrossingType - Added GMACMessageOrderDecreaseV3.RawOrderConditionsBin - Added GMACMessageOrderDecreaseV3.RawOrderConditionsStr - Added GMACMessageTradingStatusV3.RawTradingStatusConditionsBin - Added GMACMessageTradingStatusV3.RawTradingStatusConditionsStr

Revision	Date	Description of Changes
		- Added message GMACExtensionITCH50QuotingPeriodUpdate
R2014-2.2	02 APR 2014	Release R2014-2.2 - Added GMACMessageSnapshotUpdateV3.StartOfSnapshotCycle
R2014-2.1	28 MAR 2014	Release R2014-2.1 - Added GMACMessageOrderDepthV3.CustomQuantities[].Price - Updated GMACTradeConditions flags - Removed the union between InstrumentIndex and InstrumentName in GMACMessageOrderUpdateV3
R2014-2.0	13 MAR 2014	Release R2014-2.0 - Added CME_BINARY specific market data messages - Added CBOE CSM specific market data messages - Added GMACMessageOpenInterestV3 - Added Volume, UnderlyingPrice and NetChange to GMACCMessageOHLCV3 - Updated GMACMessageTradeV3.RawTradeConditions type - Updated GMACQuoteConditions flags - Updated GMACTradingStatusConditions flags - Updated GMACTradeConditions flags
R2014-1.2	28 FEB 2014	Release R2014-1.2 - Updated GMACQuoteConditions flags
R2014-1.1	14 FEB 2014	Release R2014-1.1 - Added GMACCMessageTradingStatusV3.RawTradingStatus - Added GMACCMessageTradingStatusV3.TradingStatusConditions
R2014-1.0	29 JAN 2013	Release R2014-1.0 - Updated GMACTradeConditions flags
R2013-8.0	13 DEC 2013	Release R2013-8.0 - Added value to GMACCOrderDataV3.SaleCondition
R2013-7.2	29 NOV 2013	Release R2013-7.2 - Added values to GMACMessageImbalanceV3.CrossType - Added GMACExtensionStructEurexFeedRef.BookType - Added GMACCMessageOpenInterestV3 - Updated GMACTradeConditions flags - Updated GMACOrderConditions flags
R2013-7.1	08 NOV 2013	Release R2013-7.1 - Added GMACMessageOrderDepthV3.RawExchangeTradingStatus - Updated GMACMessageInformationV3.CycleStatus description
R2013-7.0	31 OCT 2013	Release R2013-7.0 - Added GMACMessageImbalanceV3.ImbalanceConditions - Updated presence map submission of GMACExtensionStructXetraMaintRef - Updated GMACTradeConditions flags
R2013-6.2	16 OCT 2013	Release R2013-6.2

Revision	Date	Description of Changes
		- Added message GMACExtensionCME2IncRefEntry - Added GMACMessageTradeV3.RawTradeConditions
R2013-6.1	30 SEP 2013	Release R2013-6.1 - Added GMACMessageTradingStatusV3.TradingStatusConditions - Added GMACMessageSuspendedStatusV3.SuspendedConditions - Updated GMACQuoteConditions flags
R2013-6.0	17 SEP 2013	Release R2013-6.0 - Added GMACMessageTradeExV3, GMACMessageMWCBV3 and GMACMessageMWCBStatusV3 messages - Added InstrumentContext to GMACMessageImbalanceV3 - Updated GMACTradeConditions flags
R2013-5.2	28 AUG 2013	Release R2013-5.2 - Updated GMACMessageOrderDepthV3.ActionType description
R2013-5.0	31 JUL 2013	Release R2013-5.0 - Added PTYPE_PREVIOUS_TRADING_DAY to enumeration GMACPriceType - Added Version to GMACMessageDerivativeHeaderV3
R2013-4.1	10 JUL 2013	Release R2013-4.2 - Added PrimaryMIC GMACMessageReferenceHeaderV3 - Added PositionEffect to GMACMessageDerivativeHeaderV3
R2013-4.0	18 JUN 2013	Release R2013-4.0 - Added GMACOrderConditions new flags to support order types - Added GMACQuoteConditions new flags to support order types - Added OrderConditions to GMACMessageOrderDecreaseV3 - Added BookType to GMACMessageTradingStatusV3
R2013-2.3	09 APR 2013	Release R2013-2.3 - Added ACTION_CANCELLED to enumeration ActionType - Updated GMACOrderConditions flags support for BATS_OPTIONS
R2013-2.1	22 MAR 2013	Release R2013-2.1 - Added message GMACMessageSuspendedStatusV3
R2013-2.0	15 MAR 2013	Release R2013-2.0 - Added GMACBestMaskConditions structure - Added message GMACMessageLULDIndicatorV3 - Updated GMACTradeConditions flags - Removed GMAC_TYPE_EXTENSION_BATS_V3 from enumeration GMACMessageType - Renamed GMAC_TYPE_SHO_SHORT_PRICE_RESTR_V3 to GMAC_TYPE_SHO_SHORT_SALE_PRICE_RESTRICTION_V3 - Renamed GMAC_C_TYPE_SHO_SHORT_PRICE_RESTR_V3 to GMAC_C_TYPE_SHO_SHORT_SALE_PRICE_RESTRICTION_V3
R2013-1.3	28 FEB 2013	Release R2013-1.3 - Updated GMACTradeConditions flags
R2013-1.2	19 FEB 2013	Release R2013-1.2 - Updated GMACOrderConditions flags - Removed ISIN from GMACExtensionStructEurexFeedRef

Revision	Date	Description of Changes
		- Removed ISIN from GMACExtensionStructXetraInstrRef
R2013-1.1	11 FEB 2013	Release R2013-1.1 - Added ISIN and Mnemonic to GMACMessageReferenceHeaderV3
R2013-1.0	29 JAN 2013	Release R2013-1.0 - Added values to GMACMessageQuoteRequestV3.QuoteType - Added values to GMACMessageImbalanceV3.CrossType - Added flags to GMACOrderConditions - Added flags to GMACTradeConditions - Added MarketDepth to GMACExtensionStructEurexFeedRef - Added PerformanceIndicator to GMACExtensionStructXetraPacketHeader - Renamed GMACExtensionStructXetrapacketHeader.SrcId to GMACExtensionStructXetrapacketHeader.SenderCompID
R2012-8.3	16 JAN 2013	Release R2012-8.3 - Added flags to GMACTradeConditions - Added VenueID to GMACMessageLULDPriceBandV3 - Added GMACCLULDFinraIndicatorV3 enumeration
R2012-8.1	05 DEC 2012	Release R2012-8.1 - Added SettlePriceFactor to GMACExtensionICEMessageB and GMACExtensionICEMessagep
R2012-8.0	28 NOV 2012	Release R2012-8.0 - Added IsRegulatory to GMACMessageImbalanceV3 - Added LastTradeQuantity to GMACMessageOHLCV3 - Added FASTDecoded to GMACExtensionCME2PacketHeader - Added extension message GMACExtensionStructEurexEMDIPacketHeader - Added extension message GMACExtensionStructEurexFeedRef - Added message GMACMessageRetailPriceImprovementV3 - Added flags to GMACTradeConditions - Added flags to GMACQuoteConditions - Deprecated extension message GMACExtensionNYSERetailPriceImprovement
R2012-7.1	31 OCT 2012	Release R2012-7.1 - Added message GMACExtensionISEMDIProductInfo
R2012-7.0	17 OCT 2012	Release R2012-7.0 - Added OrigCategory to GMACCMessageLULDPriceBandV3 - Added FinraLULDIndicator to GMACCMessageTOBV3 - Added SuspendedStatus to GMACMessageTradingStatusV3 - Added ClosingType to GMACMessageDerivativeHeaderV3
R2012-6.3	27 SEP 2012	Release R2012-6.3 - Added bit field UseSideAndIndexForIdentification to the presence map of GMACMessageOrderUpdateV3, GMACMessageOrderExecutedV3 - Added bit field UseSideAndIndexForIdentification to the presence map of GMACMessageOrderDecreaseV3 - Added flags to OrderConditions of GMACMessageOrderUpdateV3 - Added flags to GMACTradeConditions for BrokerTec

Revision	Date	Description of Changes
R2012-6.2	13 SEP 2012	Release R2012-6.2 - Added QuoteCondition[0] = 'O' (OPRA) to GMACCOrderDataV3
R2012-6.1	07 SEP 2012	Release R2012-6.1 - Added LULDIndicator, LULDNationalIndicator and RetailInterest to GMACCMessageTOBV3 - Added message GMACCMessageLULDPriceBandV3 - Added message GMACCMessageMWCBV3 - Added message GMACCMessageMWCBStatusV3
R2012-6.0	17 AUG 2012	Release R2012-6.0 - Added GatewayLocID to GMACExtensionStructEurexProdRef - Added extension message GMACExtensionCME2PacketHeader - Added GMACMessageSnapshotUpdateV3.SymbolSyncSequence - Renamed GMACMessageSnapshotUpdateV3.LastMsgSeqNum to GMACMessageSnapshotUpdateV3.PacketSyncSequence
R2012-5.2	17 AUG 2012	Release R2012-5.2 - Added OrderValidity to GMACMessageOrderUpdateV3
R2012-5.1	07 AUG 2012	Release R2012-5.1 - Added extension message GMACExtensionICEMessageV - Added extension message GMACExtensionNYSERetailPriceImprovement
R2012-5.0	28 JUN 2012	Release R2012-5.0 - Added message GMACExtensionStructLiffeThrottleSize - Added SlowQuote flag to QuoteConditions of GMACMessageOrderDepthV3 - Added VWAP to GMACMessageOHLCV3 - Added ActionType = 'L' to GMACMessageOrderDepthV3 - Deprecated BATS extension messages GMACExtensionBATSAddOrder and GMACExtensionBATSModifyOrder - Deprecated LSE Millennium extension message GMACExtensionLSEMillenniumExtraInfo - GMACCurrency is of type char [GMAC_MAX_CURRENCY_LENGTH]
1.1a	21 JUN 2012	Release R2012-4.2 - Added message GMACMessageTimeReferenceV3 - Added OrderConditions to GMACMessageOrderUpdateV3 - Added PreOpen, SettlementDateTime, IsOfficial and Volatility to GMACMessageOHLCV3 - Added EndOfSnapshotCycle to GMACMessageSnapshotUpdateV3 - Changed GMACMessageSnapshotUpdateV3 Trailer field description - Value CSTATUS_END_OF_CYCLES of enumeration GMACCycleStatus is valid for both Eurex and XETRA
1.1	21 MAY 2012	Release R2012-4.0 - Added XETRA extension messages - Added GMAC_CUSTOM_QUANTITY_TYPE_CUSTOMER_ALL_OR_NONE to enumeration GMACCustomQuantityType - Added GMAC_CUSTOM_QUANTITY_TYPE_CUSTOMER_PROFESSIONAL to enumeration GMACCustomQuantityType - Added details regarding message GMACMessageReferenceSecurityV3
1.0	01 FEB 2012	Initial release

1. GMAC V3 Messages

1.1 Overview

GMAC messages are grouped into three distinct categories:

- Generic market data messages: these messages are generated as normalised messages for various exchange data feeds. See section 2;
- Consolidated generic market data messages: these messages are generated as normalised messages for the US consolidated data feeds (OPRA, CTA and UTP). See section 3;
- Specific market data messages: these messages are exchange specific messages. See section 4.

The presence map is a bit combination indicating the presence or the absence of a field in the message. If the presence map bit is set, it indicates that the field is sent within the message and if not, it indicates that the field is omitted.

Fields indexed with "PM" e.g. **InstrumentIndex**^{PM} are subject to the presence map: for these fields, check the presence map bit to check whether the field is present or not in the message.

Note #1:

If a field described in a message in the following sections is not part of the same message description in one of the GMAC plugin mapping specifications, it means that the field is subject to the presence map and is not present in the message generated by the said GMAC plugins.

Note #2:

If an exchange specific field is not mapped against one of the GMAC field as per the GMAC plugin mapping specifications, it means that the exchange specific field is not transcoded and therefore not provided by the GMAC plugin.

1.2 Message Header

Description The message header is present at the beginning of any GMAC message.

Structure GMACMessageHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Message length
ExtensionsLength	uint16_t	Length of all extension messages for this message. Extension messages are located just after the GMAC message. The length of the whole set is Length + ExtensionsLength.
SymbolSequence	uint64_t	Unique sequence number associated with the symbol. In case of market messages containing multiple updates the symbol sequence number will be repeated.
Sequence	uint64_t	Message sequence number in the original packet.
ExchangeTimestamp	uint64_t	Timestamp published by the Exchange, expressed in nano seconds past UTC midnight. Value ~0 if the timestamp is undefined.

2. Generic Market Data Messages

This section describes the generic and normalised GMAC messages.

2.1 Messages

2.1.1 Imbalance Message

Description The imbalance message is used to provide information about what would happen if the book was immediately uncrossed.

The message has a bit field only present in the presence map UseQuantityAsRawValue set where the quantity is not shifted to GMAC_DECIMAL_PLACES digits fixed points.

Structure GMACMessageImbalanceV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
CrossType[PM]	char	Type of cross Possible values: 'O' Opening / Early Opening 'C' Closing
		'H' Halted 'M' Core Opening 'I' IPO 'P' PIXL (PHLX Price Improvement XL mechanism whereby an initiating member submits a two-sided (buy and sell) order into an auction process soliciting price improvement) 'S' Solicitation 'o' Order exposure (PHLX Order Exposure - there is an exposed buy (or sell) order available for execution at the NBO (or NBB)) 'c' COLA (PHLX Complex Order Live Auction) 'i' Intraday cross 'p' Periodic auction
Direction[PM]	char	Market Side Possible values: 'B' Bid 'S' Ask 'N' No imbalance 'O' Insufficient orders
Variation[PM]	char	Price variation code
Reference[PM]	GMACPrice	Indicative reference price
Far[PM]	GMACPrice	Hypothetical auction-clearing price for cross orders only
Near[PM]	GMACPrice	Hypothetical auction-clearing price for cross orders as well as continuous orders
Paired[PM]	GMACQuantity	Volume for paired shares at current reference price
Imbalance[PM]	GMACQuantity	Volume for not paired shares at current reference price
MktImbalance[PM]	GMACQuantity	Volume for not paired market shares at current reference price

Field	Type	Description
BuyShares[PM]	GMACQuantity	Number of shares on buy side that are priced equal to or greater than the reference price
SellShares[PM]	GMACQuantity	Number of shares on sell side that are priced equal to or less than the reference price
IsRegulatory[PM]	char	Is the imbalance a regulatory Rule 123c published closing imbalance? Possible values: 'Y' Regulatory imbalance 'N' Informational imbalance
ImbalanceConditions[PM]	GMACImbalanceConditions	Additional conditions (bit fields)
RawImbalanceType[PM]	uint16_t	Exchange imbalance type as is
AuctionTime[PM]	uint32_t	Auction time, HHMMSS format
SSRFiling[PM]	uint32_t	SSR Filing Price

2.1.2 Information Message

Description The information message is used to provide any optional information where no generic messages are built from the feed.

Structure GMACMessageInformationV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
MarketDataEntry[PM]	char	Market data entry type
CycleStatus[PM]	GMACCycleStatus	CycleStatus used for Eurex and XETRA to indicate which phase of Reference data is being received on the Reference Data multicast. CycleStatus used for CSM to indicate the start / end of the summary messages batch and the start / end of the settlement messages batch.

2.1.3 OHLC Message

Description The OHLC message is used to provide information about prices such as the opening price, the highest price, the lowest price, the closing price and the last trade price.

The message has two bit fields only present in the presence map:

- ClearOpen set when the previous opening price must be cleared
- ClearClose set when the previous closing price must be cleared

Structure GMACMessageOHLCV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID

Field	Type	Description
		If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
PreOpen[PM]	GMACPrice	Pre-opening price
Open[PM]	GMACPrice	Opening price
High[PM]	GMACPrice	Highest price
Low[PM]	GMACPrice	Lowest price
Close[PM]	GMACPrice	Closing price If present, Settlement and Fixing will not be present
Settlement[PM]	GMACPrice	Settlement price If present, Close and Fixing will not be present
Fixing[PM]	GMACPrice	Fixing price If present, Settlement and Close will not be present
LastTrade[PM]	GMACPrice	Last trade price
LastTradeQuantity[PM]	GMACQuantity	Last trade quantity
Currency[PM]	GMACCurrency	Currency
TotalVolume[PM]	GMACQuantity	Total volume
PriceType[PM]	GMACPriceType	Price type
DataType[PM]	GMACDataType	Data type. When present, it Indicates if the message is a snapshot or not (used for plugins where snapshots and live updates are disseminated interleaved on the same multicasts). When not present, it is possible to ascertain whether a complete multicast is reserved for snapshots from GMACStats for the multicast, accessible via `GMACStatsMulticast()` (see the GMAC API Reference Guide).
BestPrice[PM]	GMACPrice	Best trade price
Volatility[PM]	GMACPrice	Volatility
SettlementDateTime[PM]	uint64_t	Settlement date and time
IsOfficial[PM]	uint8_t	Flag to indicate if the settlement price is official or not
VWAP[PM]	GMACPrice	Volume Weighted Average Price
INAV[PM]	GMACPrice	Indicative Net Asset Value

2.1.4 Order Decrease Message

Description The order decrease message is used to provide information about order quantity reduction.

The message has a bit field only present in the presence map UseSideAndIndexForIdentification set where an order is uniquely identified by OrderID, InstrumentIndex and Side.

The message has a bit field only present in the presence map UseIndexForIdentification set where an order is uniquely identified by OrderID and InstrumentIndex.

Structure GMACMessageOrderDecreaseV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
OrderID	GMACOrderID	Order ID
Side[PM]	GMACSide	Side
Quantity[PM]	GMACQuantity	Quantity reduction The whole order should be deleted if not provided
OrderConditions[PM]	GMACOrderConditions	Additional conditions (bit fields) for the order (market specific)
RawOrderConditionsBin[PM]	uint32_t	Exchange order conditions as is in binary format If present, RawOrderConditionsStr will not be present
RawOrderConditionsStr[PM]	char [4]	Exchange order conditions as is in ASCII format, right padded If present, RawOrderConditionsBin will not be present
EntryTime[PM]	int64_t	Exchange time of the quantity reduction

2.1.5 Order Depth Message

Description The order depth message is used to provide information about order book change.

The message has a bit field only present in the presence map UseQuantityAsRawValue set where the quantity is not shifted to GMAC_DECIMAL_PLACES digits fixed points.

Structure GMACMessageOrderDepthV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ActionType	char	Action type Possible values: 'N' New level 'U' Update quantity at the price specified. If price is not given, update quantity at the level specified 'L' Update (overlay) price and/or quantity at the level specified. This is the only action that can update the price in an existing entry 'Z' Unknown (either 'N' or 'U'). Price should be used if given, else level should be used 'D' Delete level 'F' Delete level from. Delete from level X to maximum levels 'T' Delete to level. Delete from level 0 to level X
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present

Field	Type	Description
InstrumentContext[PM]	uint32_t	Context information related to the instrument
Price[PM]	GMACPrice	Price
Quantity[PM]	GMACQuantity	Quantity
Level[PM]	uint32_t	Book level. Top of book is level 0.
Side	GMACSide	Side
NumberOfOrders[PM]	uint32_t	Number of orders in market
QuoteConditions[PM]	GMACQuoteConditions	Additional conditions for the quote (bit fields)
RawQuoteConditionsBin[PM]	uint32_t	Exchange quote conditions as is in binary format If present, RawQuoteConditionsStr will not be present
RawQuoteConditionsStr[PM]	char [4]	Exchange quote conditions as is in ASCII format, right padded If present, RawQuoteConditionsBin will not be present
GapIndicator[PM]	char	Gap indicator Possible values: '1' No gap '2' Possible gap
DataType[PM]	GMACDataType	Data type. When present, it Indicates if the message is a snapshot or not (used for plugins where snapshots and live updates are disseminated interleaved on the same multicasts).
		When not present, it is possible to ascertain whether a complete multicast is reserved for snapshots from GMACStats for the multicast, accessible via `GMACStatsMulticast()` (see the GMAC API Reference Guide).
CustomQuantitiesCount	unsigned	Number of custom quantities
►CustomQuantities[].Type	GMACCustomQuantityType	Custom quantity type
►CustomQuantities[].Quantity	GMACQuantity	Custom quantity
►CustomQuantities[].Price[PM]	GMACPrice	Price at which the custom quantity is available
►CustomQuantities[].NumberOfOrders[PM]	uint32_t	Number of orders

2.1.6 Order Executed Message

Description The order executed message is used to provide information about order execution.

The message has a bit field only present in the presence map UseSideAndIndexForIdentification set where an order is uniquely identified by OrderID, InstrumentIndex and Side.

The message has a bit field only present in the presence map UseIndexForIdentification set where an order is uniquely identified by OrderID and InstrumentIndex.

Structure GMACMessageOrderExecutedV3

The message description is as follows:

Field	Type	Description

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
OrderID	GMACOrderID	Order ID
TradeID[PM]	GMACTradeID	Trade ID
Price[PM]	GMACPrice	Price at which the trade was executed
Quantity[PM]	GMACQuantity	Quantity of trade and/or value to be subtracted from the order unless RemainingQuantity is present. If not specified the whole order was executed and therefore must be removed from the order book.
RemainingQuantity[PM]	GMACQuantity	Remaining quantity If set to 0, the order must be removed from the order book.
AggressorSide[PM]	GMACSide	Aggressor Side
TradeConditions[PM]	GMACTradeConditions	Additional conditions (bit fields) for the trade (market specific)
Side[PM]	GMACSide	Side
RawTradeConditions[PM]	char [16]	Exchange trade conditions as is
EntryTime[PM]	int64_t	Exchange time of the execution

2.1.7 Order Update Message

Description The order update message is used to provide information about new or updated orders.

The message has a bit field only present in the presence map UseSideAndIndexForIdentification set where an order is uniquely identified by OrderID, InstrumentIndex and Side.

The message has a bit field only present in the presence map UseIndexForIdentification set where an order is uniquely identified by OrderID and InstrumentIndex.

The message has a bit field only present in the presence map UseQuantityAsRawValue set where the quantity is not shifted to GMAC_DECIMAL_PLACES digits fixed points.

Structure GMACMessageOrderUpdateV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ActionType	char	Action type Possible values: 'N' New order 'U' Order update 'Z' Unknown (either 'N' or 'U') 'M' New order at market price 'F' New order with must be filled price 'S' New order with special terms
Side[PM]	GMACSide	Side
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID

Field	Type	Description
InstrumentName[PM]	GMACInstrumentName	Instrument name
InstrumentContext[PM]	uint32_t	Context information related to the instrument
OrderID	GMACOrderID	Order ID
TraderID[PM]	GMACTraderID	Trader ID
PreviousOrderID[PM]	GMACOrderID	Previous Order ID Set if ActionType = 'U' or 'Z' Set to OrderID if no change
Price[PM]	GMACPrice	Price
Quantity[PM]	GMACQuantity	Quantity Replaces the previous quantity if ActionType = 'U' or 'Z'
ImpliedOrder[PM]	char	Implied order Possible values: 'Y' Implied 'N' Not implied
OrderConditions[PM]	GMACOrderConditions	Additional conditions (bit fields) for the order (market specific)
OrderValidity[PM]	OrderValidity	Additional validity (bit fields) for the order (market specific)
RawOrderUpdateConditionsBin[PM]	uint64_t	Exchange order update conditions as is in binary format If present, RawOrderUpdateConditionsStr will not be present
RawOrderUpdateConditionsStr[PM]	char [8]	Exchange order update conditions as is in ASCII format, right padded
		If present, RawOrderUpdateConditionsBin will not be present
Position[PM]	uint64_t	Position of the order within a price level
Level[PM]	uint32_t	Price level Top of book is level 0.
EntryTime[PM]	int64_t	Exchange time of the update
PartyID[PM]	uint32_t	Member code

2.1.8 Quote Request Message

Description The quote request message is used to provide information about request for quotes.

The message has a bit field only present in the presence map UseQuantityAsRawValue set where the quantity is not shifted to GMAC_DECIMAL_PLACES digits fixed points.

Structure GMACMessageQuoteRequestV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present

Field	Type	Description
InstrumentContext[PM]	uint32_t	Context information related to the instrument
RequestID	GMACOrderID	Quote request ID
Quantity	GMACQuantity	Quantity
Side[PM]	GMACSide	Side
TransactTime[PM]	uint64_t	Transaction time
QuoteType[PM]	uint8_t	Quote type Possible values: 1 Indicative quote 2 Tradable quote 3 Cross request

2.1.9 Reference Security Message

Description The reference security message is the single message used to provide information about the security definition regardless the security type.

The message is however differently valued depending on the security type:

- If the security is an equity, only the GMACMessageReferenceHeaderV3 structure is populated with the appropriate information about the equity.
- If the security is a derivative instrument, the GMACMessageReferenceHeaderV3 structure and the GMACMessageDerivativeHeaderV3 structure are populated with the appropriate information about the derivative. The GMACMessageDerivativeHeaderV3 structure also contains information about the linkage with the underlying.
- If the security is a strategy instrument, then the GMACMessageReferenceHeaderV3 structure is populated with the appropriate information about the strategy. The GMACMessageDerivativeHeaderV3 structure contains information about each leg of the strategy including the linkage with the outright instrument.

Structure GMACMessageReferenceSecurityV3

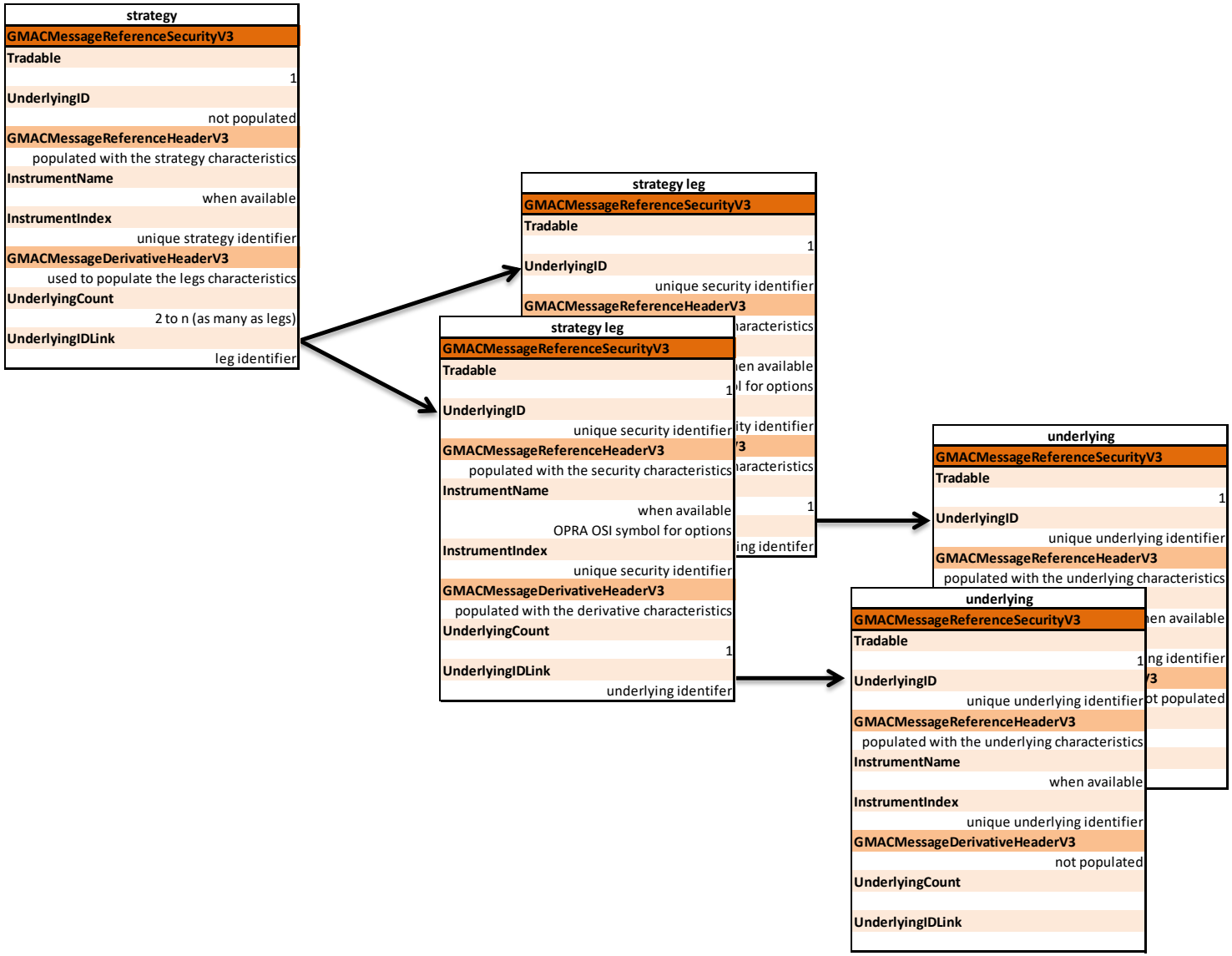
The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
UnderlyingID[PM]	GMACUnderlyingID	Underlying ID Used to retrieve security characteristics using UnderlyingIDLink
Tradable	int	Tradable indicator Possible values: 1 Tradable 0 Otherwise
Group[PM]	int	Instrument group indicator Possible values: 1 Instrument group 0 Instrument
ReferenceSecurity	GMACMessageReferenceHeaderV3	
ReferenceDerivative[PM]	GMACMessageDerivativeHeaderV3	

The relationships between a strategy, its security legs and their underlyings is done by linking UnderlyingIDLink from GMACMessageDerivativeHeaderV3 to UnderlyingID from GMACMessageReferenceSecurityV3.

The linkage between one security and its underlying is available as long as UnderlyingIDLink is populated; the linkage depth therefore depends on the exchanges.

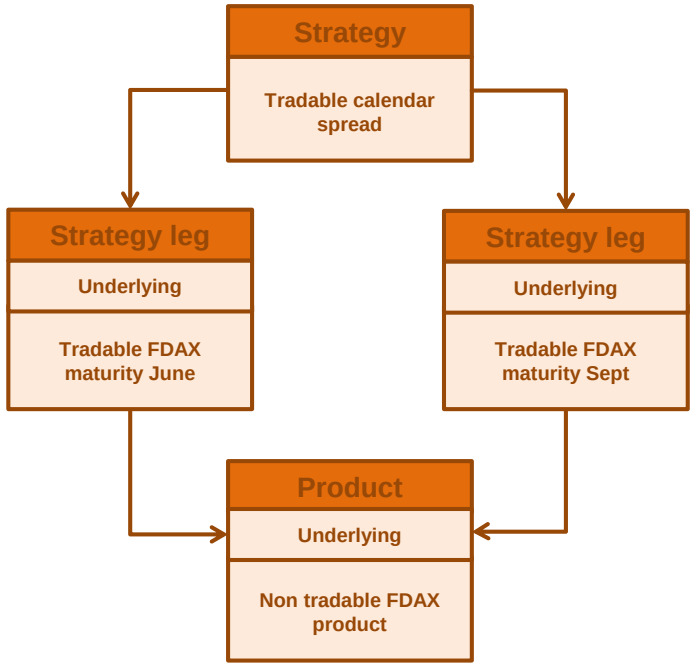
The following figure illustrates an example of a two-leg strategy where each leg is a derivative security having a different underlying:



The following figure illustrates an example of a security of type equity tradable on a stock exchange:

equity
GMACMessageReferenceSecurityV3
Tradable
1
UnderlyingID
not populated
GMACMessageReferenceHeaderV3
populated with the equity characteristics
InstrumentName
when available
InstrumentIndex
unique equity identifier
GMACMessageDerivativeHeaderV3
not populated
UnderlyingCount
UnderlyingIDLink

The following figure illustrates an example of the linkage depth available on the Eurex market:



2.1.10 Session Message

Description The session message is used to provide information about market sessions. Each session starts with this message. The action type is set to either 'S' or 'M' depending on whether there are some missing messages from the beginning of the session. The end of session is marked with action type 'E' and it is the last message of that session.

Structure GMACMessageSessionV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ActionType	char	Action type Possible values: 'S' Start of day 'E' End of day 'M' Mid-day start

2.1.11 Bundle Marker Message

Description Bundle Marker Messages generated from a single transaction may be grouped (bundled) between two Bundle Marker messages.

Structure GMACMessageBundleMarkerV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
BeginningOrEnd	uint32_t	Action type Possible values: 0 Beginning of a block 1 End of a block

2.1.12 Snapshot Update Message

Description The message is sent in front of a snapshot update for a specified instrument.

The message is immediately followed by the NumberOfMessages messages related to that snapshot all within a GMAC packet. More than one snapshot update message may be present in a GMAC packet, each snapshot update message being separated by NumberOfMessages messages.

For some feeds the NumberOfMessages is unknown at the time of message generation. For those feeds the snapshot messages are again followed by a snapshot update message where the bit-field trailer is specified. The trailing snapshot update message is sent only for cases where some information in the initiating snapshot update message is missing.

Structure GMACMessageSnapshotUpdateV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
PacketSyncSequence[PM]	uint64_t	Last message sequence number in the live feed where the update applies
SymbolSyncSequence[PM]	uint64_t	Last message sequence number in the live symbol stream where the update applies
TotNumReports[PM]	uint32_t	Total number of reports returned
NumberOfMessages	uint32_t	Number of GMAC messages to follow
RefreshStatus[PM]	uint32_t	Specifies whether the exchange requires the user to perform a refresh or no
Trailer[PM]	uint8_t	If set this message was generated at the end of a snapshot.

Field	Type	Description
		It may not necessarily indicate the end of a snapshot cycle: for instance, it indicates the end of a single instrument snapshot when the snapshot cycle is related to a set of instruments. Trailer is not mandatory and is issued in the case where snapshot information is unavailable and presented towards the end of the snapshot. In such cases the NumberOfMessages is zeroed.
EndOfSnapshotCycle[PM]	uint8_t	When set, indicates the end of a snapshot cycle.
StartOfSnapshotCycle[PM]	uint8_t	When set, indicates the start of a snapshot cycle.

2.1.13 Trade Message

Description The trade message is used to provide information about trades.

Structure GMACMessageTradeV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
TradeID[PM]	GMACTradeID	Trade ID
Side[PM]	GMACSide	Aggressor Side
NumberOfOrders[PM]	uint32_t	Number of orders involved in the trade
GapIndicator[PM]	char	Flag indicating a gap in the book updates Possible values: '1' No gap '2' Possible gap
EntryTime[PM]	int64_t	Local exchange time at which the trade was processed by the exchange system in nanoseconds since midnight
Quantity[PM]	GMACQuantity	Quantity executed
Price	GMACPrice	Price at which the trade was executed
TotalVolume[PM]	GMACQuantity	Total traded volume since the beginning of the session
TradeConditions[PM]	GMACTradeConditions	Additional conditions (bit fields) for the trade (market specific)
Action[PM]	ActionType	Action for the trade
RawTradeConditions[PM]	char [16]	Exchange trade conditions as is

2.1.14 Trading Status Message

Description The trading status is used to provide information about market or segment or instrument status changes.

Structure GMACMessageTradingStatusV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ChannelID[PM]	GMACChannelID	Channel ID
SegmentID[PM]	uint32_t	Segment ID
SectorID[PM]	uint32_t	Section ID within the segment
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentGroupBin[PM]	uint64_t	Instrument group If present, InstrumentGroupStr will not be present
InstrumentGroupStr[PM]	char [8]	Instrument group If present, InstrumentGroupBin will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
TradingStatus	GMACTradingStatus	Trading status
RawExchangeTradingStatusBin[PM]	uint64_t	Exchange trading status as is in binary format If present, RawExchangeTradingStatusStr will not be present
RawExchangeTradingStatusStr[PM]	char [8]	Exchange trading status as is in ASCII format, right \0 padded
		If present, RawExchangeTradingStatusBin will not be present
DataType[PM]	GMACDataType	Data type. When present, it Indicates if the message is a snapshot or not (used for plugins where snapshots and live updates are disseminated interleaved on the same multicasts). When not present, it is possible to ascertain whether a complete multicast is reserved for snapshots from GMACStats for the multicast, accessible via `GMACStatsMulticast()` (see the GMAC API Reference Guide).
SuspendedStatus[PM]	uint8_t	Indicates the instrument is currently in a suspended state when the field is present and set. The suspended state can only be removed by a subsequent trading status message with this field present and set to zero.
BookType[PM]	GMACBookType	Book type
TradingStatusConditions[PM]	GMACTradingStatusConditions	Additional conditions (bit fields) for the trading status (market specific)
RawTradingStatusConditionsBin[PM]	uint64_t	Exchange trading status conditions as is in binary format

Field	Type	Description
		If present, RawTradingStatusConditionsStr will not be present
RawTradingStatusConditionsStr[PM]	char [8]	Exchange trading status conditions as is in ASCII format, right \0 padded If present, RawTradingStatusConditionsBin will not be present

2.1.15 Uncrossing Message

Description The uncrossing message is used to provide information about an auction and therefore must not be considered as a trade message.

Structure GMACMessageUncrossingV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
BestBidPrice[PM]	GMACPrice	Best bid price
BestAskPrice[PM]	GMACPrice	Best ask price
MidPrice[PM]	GMACPrice	Middle price
UncrossingPrice[PM]	GMACPrice	Uncrossing price
UncrossingVolume[PM]	GMACQuantity	Uncrossing volume
UncrossingType[PM]	char	Type of cross Possible values: 'O' Opening 'C' Closing 'H' Halted 'M' Market 'I' IPO 'i' Intraday cross 'p' Periodic auction

2.1.16 SHO Short Sale Price Restriction Message

Description This message is used to inform whether a short sale price restriction is in effect or not for a given instrument.

Structure GMACMessageSHOShortSalePriceRestrictionV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not

Field	Type	Description
		be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
SHOShortRestriction[PM]	GMACSHOShortSaleRestriction	Short sale price restriction in effect
RawRestrictionConditionsBin[PM]	uint64_t	Exchange short sale price restriction conditions as is in binary format If present, RawRestrictionConditionsStr will not be present
RawRestrictionConditionsStr[PM]	char [8]	Exchange short sale price restriction as is in ASCII format, right \0 padded If present, RawRestrictionConditionsBin will not be present

2.1.17 Time Reference Message

Description The time reference message is used to provide the exchange reference timestamp when the exchange provides timestamps split among multiple messages, one containing the reference timestamp and other messages containing only timestamp offset since the last reference.

The message is generated depending on configuration tag `<exchange-timestamp>`.

TimestampReference is to be kept in memory (and overwritten whenever a new TimestampReference is transcoded) for the given instrument, and used for any following timestamp computation.

TimestampOffset is to be used to compute the next transcoded GMAC message's timestamp, and has to be added to the last received TimestampReference. The TimestampOffset is only valid for the next GMAC message.

Any message transcoded but not preceded by a GMACMessageTimeReferenceV3 with a TimestampOffset field set, has already the correct timestamp in ExchangeTimestamp in its header GMACMessageHeader.

Structure GMACMessageTimeReferenceV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
TimestampReference[PM]	uint64_t	Reference timestamp published by the exchange for an instrument Expressed in nanoseconds past UTC midnight
TimestampOffset[PM]	uint64_t	Offset timestamp since the last timestamp reference published by the exchange for an instrument Expressed in nanoseconds past UTC midnight

2.1.18 Retail Price Improvement Message

Description This message is used to provide retail price improvement indicator.

Structure GMACMessageRetailPriceImprovementV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
RPIIndicator	uint8_t	RPI condition. Possible values: 0 Neither bid or offer (default) 1 Bid 2 Offer 3 Bid and offer

2.1.19 Limit Up Limit Down Indicator Message

Description This message is used to indicate whether an instrument or its underlying is in a limit state[1] or not.

Structure GMACMessageLULDIndicatorV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ChannelID[PM]	GMACChannelID	Channel ID
SegmentID[PM]	uint32_t	Segment ID
SectorID[PM]	uint32_t	Section ID within the segment
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
LULDIndicator[PM]	uint8_t	Indicates if an instrument or its underlying is in a limit state when the field is present and set. The limit state can only be removed by a new subsequent LULD indicator message with this field present and set to zero.
RawExchangeLULDIndicator[PM]	uint64_t	Exchange LULD indicator as is
DataType[PM]	GMACDataType	Data type. When present, it Indicates if the message is a snapshot or not (used for plugins where snapshots and live updates are disseminated interleaved on the same multicasts). When not present, it is possible to ascertain

[1] All NMS Stocks will enter into a “Limit State” quotation period of 15 seconds if the NBO equals the Lower Price Band (without crossing the NBB), or the NBB equals the upper price band (without crossing the NBO). A stock will exit the limit state when the entire size of all Limit State Quotations are cancelled or executed.

Field	Type	Description
		whether a complete multicast is reserved for snapshots from GMACStats for the multicast, accessible via `GMACStatsMulticast()` (see the GMAC API Reference Guide).

2.1.20 Suspended Status Message

Description This message is used to indicate whether the trading of an instrument is suspended or resumed from suspension.

Structure GMACMessageSuspendedStatusV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
SuspendedStatus[PM]	GMACSuspendedStatus	Indicates if the trading of an instrument is suspended or resumed from suspension
SuspendedConditions[PM]	GMACSuspendedConditions	Additional conditions (bit fields) for the suspension
		status (market specific)
RawSuspendedConditionsBin[PM]	uint64_t	Exchange suspension conditions as is in binary format If present, RawSuspendedConditionsStr will not be present
RawSuspendedConditionsStr[PM]	char [8]	Exchange suspension conditions as is in ASCII format, right \0 padded If present, RawSuspendedConditionsBin will not be present

2.1.21 Market Wide Circuit Breaker Message

Description This message is used to provide Market Wide Circuit Breaker MWCB breach points which are set for the current trading day.

Structure GMACMessageMWCBV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
LevelOne[PM]	GMACPrice	MWCB level 1
LevelTwo[PM]	GMACPrice	MWCB level 2
LevelThree[PM]	GMACPrice	MWCB level 3

2.1.22 Market Wide Circuit Breaker Status Message

Description This message is used to inform when a Market Wide Circuit Breaker MWCB has breached one of the established levels.

Structure GMACMessageMWCBStatusV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
Status[PM]	GMACMWCBStatusV3	MWCB level that has been breached

2.1.23 Open Interest Message

Description The Open Interest message is used to report contract volume on current options that have not been exercised and have not yet reached expiration.

Structure GMACMessageOpenInterestV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
OpenInterest[PM]	GMACQuantity	Open interest volume
TradingDate[PM]	uint32_t	Trading reference date date in YYYYMMDD format

2.1.24 Reset Message

Description The reset message is used to reset all orders of a given book, channel or market.

Structure GMACMessageResetV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
Scope	GMACResetScopeType	Reset scope

2.1.25 Multicast Timeout Message

Description This message is used to inform that the live multicast does not broadcast data for a period longer than a configurable timeout `<multicast-timeout-us>`.

Structure GMACMessageMulticastTimeout

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
CurrentTimestamp	uint64_t	Current timestamp in ns
LastUpdateTimestamp	uint64_t	Timestamp of the last update in ns

2.1.26 Value Message

Description This message is used to provide information about indices, indicative net asset values etc.

Structure GMACMessageValueV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
ValuesCount	uint8_t	Number of values
►Values[]	GMACValue	Value

2.1.27 Service Message

Description This message is used to provide information about status of some TCP events e.g. TCP connection, TCP disconnection, end of a TCP request ….

Structure GMACMessageServiceV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ObjectID	GMACObjID	Object ID Each object, Market, Queue, Source Channel and Source Destination is defined by an ID See the GMAC API reference guide for details
ObjectType	GMACObjType	Object type Each object, Market, Queue, Source Channel and Source Destination is defined by a type See the GMAC API reference guide for details
EventType	GMACEventType	Event type

2.2 Structures

This section describes the generic structures used in the GMAC messages.

2.2.1 Quote Conditions Structure

Description This structure contains bit fields to provide additional market specific conditions for quotes.

It is used in message GMACMessageOrderDepthV3.

Structure GMACQuoteConditions

The available bit fields are as follows:

Bit field
ExchangeBest
Implied
OutrightOrder
OutrightQuote
SlowQuote
RMFQuotes
NoLP
LP
LPOnlyAsk
LPOnlyBid
LPAskBid
MarketOrder
LimitOrder
MarketToLimitOrder
PegOrder
AtOpeningOrder
CrossedBook
Funds

2.2.2 Trade Conditions Structure

Description This structure contains bit fields to provide additional market specific conditions for a trade.It is used in message GMACMessageOrderExecutedV3 and GMACMessageTradeV3.

Structure GMACTradeConditions

The available bit fields are as follows:

Bit field
SystemPricedCrackSpreadLeg
SystemPricedLeg
ImpliedSpreadAtMarketOpen
AdjustedTrade
OffMarketTrade
OpeningTrade
PriceCalculatedByExchange
Block

Bit field
Others
Auctions
OccurredAtCross
ExchangeLast
OpeningPrice
HighPrice
LowPrice
OfficialClosingPrice
OpeningAuctionTrade
IntradayAuctionTrade
VolatilityAuctionTrade
ClosingAuctionTrade
OutOfSequence
CrossAuctionTrade
Late
IntermarketSweep
ExchangeFutureForPhysical
Benchmark
ContinuousTrading
EndofDayAuction
ReOpeningAuctionTrade
OPAAuction
Spread

Bit field
Straddle
Combo
Stopped
TradeThroughExempt
MultilegTrade
BestPrice
MidPointPrice
SubscriptionPrice
SpecialAuction
HaltedAuctionTrade
NoBookUpdate
VolumeOnly
MiniAuction
LiquidityInterruption
ManualAuctionTrade
TradingAtLast
ExchangeForSwap
ExchangeBasisFacility
VolaTrade
EFPFin
EFPIndexFutures
RFQTrade
Dark

Bit field
Funds
PreviousClosingPrice

2.2.3 Order Conditions Structure

Description This structure contains bit fields to provide additional market specific conditions for orders.

It is used in messages GMACMessageOrderUpdateV3 and GMACMessageOrderDecreaseV3.

Structure GMACOrderConditions

The available bit fields are as follows:

Bit field
SIPDisplay
RetainPriority
ImpliedOrder
Force
ShortSell
MarketBid
PriceStabilization
OverrideCrossing
Undisclosed
FillAndKill
FirmColorDisabled

Bit field
ConvertToAggressive
Renotification
MarketOrder
LimitOrder
MarketToLimitOrder
PegOrder
OpeningOrder
RequestForQuote
GoodTillCancel
Replenish
SIQuote
Auction
AllOrNoneOrder
StopOrder

2.2.4 Trading Status Conditions Structure

Description This structure contains bit fields to provide additional market specific conditions for the trading status.

It is used in message GMACMessageTradingStatusV3.

Structure GMACTradingStatusConditions

The available bit fields are as follows:

Bit field

Bit field
ReferToSegment
NoMatchingFollows
SurveillanceIntervention
MarketEvent
InstrumentActivation
InstrumentExpiration
NoCancel
ChangeTradingSession
ImpliedOn
ImpliedOff

2.2.5 Suspended Conditions Structure

Description This structure contains bit fields to provide additional market specific conditions for the suspension.

It is used in message GMACMessageSuspendedStatusV3.

Structure GMACSuspendedConditions

The available bit fields are as follows:

Bit field
UnderlyingCondition
StopTrading
NonOpening

Bit field
DelayOpen

2.2.6 Imbalance Conditions Structure

Description This structure contains bit fields to provide additional market specific conditions to the imbalance message.

It is used in message GMACMessageImbalanceV3.

Structure GMACImbalanceConditions

The available bit fields are as follows:

Bit field
DeleteReference
DeletePaired
DeleteImbalance
Extended

2.2.7 Order Validity Structure

Description This structure contains bit fields to provide additional market specific validity conditions for orders.

It is used in message GMACMessageOrderUpdateV3.

Structure OrderValidity

The available bit fields are as follows:

Bit field
MorningHours
NormalHours
ExtendedHours

2.2.8 Reference Header Structure

Description Reference header of each GMACMessageReferenceSecurityV3.

Structure GMACMessageReferenceHeaderV3

The structure description is as follows:

Field	Type	Description
PriceFactor[PM]	GMACPriceFactor	The price value should be corrected by the price factor.
DealPriceFactor[PM]	GMACPriceFactor	Deal price factor, used only on ICE, see the GMAC ICE mappings for details If present, TradePriceFactor will not be present
TradePriceFactor[PM]	GMACPriceFactor	Trade price factor, used only on ICE, see the GMAC ICE mappings for details If present, DealPriceFactor will not be present
ChannelID[PM]	GMACChannelID	Channel ID
SegmentID[PM]	uint32_t	Segment ID
SectorID[PM]	uint32_t	Sector ID
InstrumentDescription[PM]	GMACInstrumentDescription	Instrument description
InstrumentName[PM]	GMACInstrumentName	Instrument name
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID
InstrumentGroupBin[PM]	uint64_t	Instrument group If present, InstrumentGroupStr will not be present
InstrumentGroupStr[PM]	char [8]	Instrument group If present, InstrumentGroupBin will not be present
InstrumentContext[PM]	uint32_t	Context information related to the instrument
ActionType[PM]	char	Action type Possible values: 'N' New 'U' Update 'D' Delete
TradingStatus[PM]	GMACTradingStatus	Trading status
Currency[PM]	GMACCurrency	ISO 4217 currency
TickSize[PM]	GMACPrice	Tick size
TickSizeAboveLimit[PM]	GMACPrice	Tick size above the specified limit
TickSizeLimit[PM]	GMACPrice	Tick size limit
ReferencePrice[PM]	GMACPrice	Previous day closing price
ReferenceDate[PM]	uint32_t	Date at which the reference price was taken
PriceType[PM]	GMACPriceType	Price type
ImpliedPrices[PM]	char	Implied price indicator Possible values: 'Y' Implied prices are allowed 'N' Implied prices are not allowed

Field	Type	Description
RoundLotSize[PM]	GMACQuantity	Board lot size
LowLimit[PM]	GMACPrice	Minimum price allowed for the instrument
HighLimit[PM]	GMACPrice	Maximum price allowed for the instrument
MinTradeVolume[PM]	GMACQuantity	Minimum volume allowed for the instrument
MaxTradeVolume[PM]	GMACQuantity	Maximum volume allowed for the instrument
MaxPriceVariation[PM]	GMACPrice	Maximum price fluctuation allowed for the instrument
MinLotSize[PM]	GMACQuantity	Minimum lot size
MinCabPrice[PM]	GMACPrice	Minimum cabinet price
UnitQuantity[PM]	GMACQuantity	Contract size
Unit[PM]	GMACUnit	Unit in which the contract size is defined
OrderBookDepth[PM]	uint32_t	The maximum number of levels broadcast for order book building
Isin[PM]	GMACIsinCode	ISO 6166 ISIN code
Mnemonic[PM]	GMACMnemonicCode	Mnemonic code
PrimaryMIC[PM]	GMACMarketIdentifierCode	ISO 10383 Primary Market Identifier Code MIC
TradingMode[PM]	GMACTradingMode	Trading mode
TargetBook[PM]	char	Target book Possible values: 'L' Lit book 'D' Dark book 'B' Both lit and dark books

2.2.9 Derivatives Reference Header Structure

Description Derivatives reference header.

It is used in message GMACMessageReferenceSecurityV3.

Structure GMACMessageDerivativeHeaderV3

The structure description is as follows:

Field	Type	Description
VenueID[PM]	uint64_t	Venue ID
CFICode[PM]	char [7]	ISO 10962 Security Type
StrikePrice[PM]	GMACPrice	Strike price
StrikeCurrency[PM]	GMACCurrency	Strike currency
StrikePriceFactor[PM]	GMACPriceFactor	Price factor used for the strike price. If not defined use price factor found in reference header.
MaturityYear[PM]	uint16_t	Instrument maturity year
MaturityMonth[PM]	uint16_t	Instrument maturity month
MaturityWeek[PM]	uint16_t	Instrument maturity week
MaturityDay[PM]	uint16_t	Instrument maturity day
LastTradeDate[PM]	uint32_t	Instrument last trading date in YYYYMMDD format
LastTradeTime[PM]	uint64_t	Instrument last trading time for the instrument last trading date in HHMMSSmmm format
ActivationDate[PM]	uint32_t	Instrument activation date in YYYYMMDD format
ActivationTime[PM]	uint64_t	Instrument activation time for the instrument activation date in HHMMSSmmm format
NumOfMarkets[PM]	uint16_t	Number of option markets for the given market type
ExpirationType[PM]	char	Expiration type

Field	Type	Description
		Possible values: 'M' Monthly 'D' Daily
PricingModel[PM]	char	Pricing model Possible values: 'F' Fisher-Black 'W' Whaley
MatchAlgorithm[PM]	char	Matching algorithm
ClosingType[PM]	ClosingType	Additional closing types (bit fields) for the instrument (market specific)
PositionEffect[PM]	PositionEffect	Additional conditions (bit fields) for the instrument (market specific)
Version[PM]	uint32_t	Instrument version
UnderlyingCount	unsigned	Number of underlying securities The following group of 4 fields are repeated UnderlyingCount times
►**UnderlyingIDs[]**	GMACUnderlyingDesc	Underlying characteristics

2.2.10 Underlying Structure

Description Underlying structure which provides underlying characteristics.

It is used in structure GMACMessageDerivativeHeaderV3.

Structure GMACUnderlyingDesc

The structure description is as follows:

Field	Type	Description
UnderlyingIDLink	GMACUnderlyingID	Leg underlying ID
Side[PM]	GMACSide	Leg side
RatioQuantity[PM]	uint32_t	Leg ratio quantity
OptionDelta[PM]	uint64_t	Leg delta used to calculate the quantity of futures used to cover the option or option strategy
LegPrice[PM]	GMACPrice	Leg price for a hedged strategy
UnderlyingSegmentID[PM]	uint64_t	Leg segment ID

2.2.11 Underlying ID Structure

Description Underlying ID structure.

It is used in structure GMACMessageDerivativeHeaderV3 and in message GMACMessageReferenceSecurityV3.

Structure GMACUnderlyingID

The structure description is as follows:

Field	Type	Description
Length	uint8_t	Length of the value stored in bytes
Bytes	uint8_t	An array of size specified by Length containing the UnderlyingID binary value. Maximum length is GMAC_UNDERLYINGID_MAX_LENGTH

2.2.12 Closing Type Structure

Description This structure contains bit fields to provide additional market specific closing types for derivatives instruments.

It is used in message GMACMessageDerivativeHeaderV3.

Structure ClosingType

The available bit fields are as follows:

Bit field
NormalHours
ExtendedHours
EarlyClosing

2.2.13 Book Type Structure

Description This structure contains bit fields to provide additional market specific book types.

It is used in message GMACMessageTradingStatusV3.

Structure GMACBookType

The available bit fields are as follows:

Bit field
OffBook
LitBook
DarkBook

2.2.14 Position Effect Structure

Description This structure contains bit fields to provide additional instrument conditions.

It is used in message GMACMessageDerivativeHeaderV3.

Structure PositionEffect

The available bit fields are as follows:

Bit field
Normal
ClosingOnly

2.2.15 Trading Mode Structure

Description This structure contains bit fields to provide the instrument trading modes.

It is used in message GMACMessageReferenceHeaderV3.

Structure GMACTradingMode

The available bit fields are as follows:

Bit feld
Continuous
Fixing
BlockTrades
SpecialOperations
PositionsNAV
OpeningClosingAuction
PeriodicAuction
OrderEntry
ExchangeTradeReport

Bit feld
OTCTradeReporting
ExternalMTFTradeReporting
SmartOrderRouting
FuturesHours
CrossTradesFuturesHours
NormalHours
DeltaBasisTrades
BonoHours
CrossTradesNormalHours
CrossTradesBonoHours

2.2.16 Price Factor Structure

Description Price factor structure which provides the numerator and denominator used to get the native price from the GMAC price according to the following formula:

Price Factor = Numerator / Denominator

Price (floating price) = (double) GMAC Price * Price Factor

As a reminder, the legacy members of the Price Factor structure are used as follows:

Price (floating price) = GMAC Price * PriceDenominator / (PriceNominator * GMAC_PRICE_FACTOR)

Structure GMACPriceFactor

The structure description is as follows:

Field	Type	Description
Numerator	int64_t	Price factor numerator
Denominator	int64_t	Price factor denominator (scaled to GMAC_PRICE_FACTOR)
PriceDenominator	int64_t	*** Deprecated *** Legacy member kept for backward compatibility
PriceNominator	int64_t	*** Deprecated *** Legacy member kept for backward compatibility

2.2.17 Value Structure

Description Value structure which provides the value type and the value itself.

Structure GMACValue

The structure description is as follows:

Field	Type	Description
Type	GMACValueType	Value type
Value	GMACDecimal	Value

3. Consolidated Generic Market Data Messages

This section describes the consolidated generic and normalised GMAC messages.

3.1 Messages

3.1.1 Underlying Value Message

Description This message is used to provide information about underlying values.

Structure GMACCMessageIndexV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
IndexValue[PM]	GMACPrice	Value of the index's calculation formula using the current last traded values of the component securities
BidIndexValue[PM]	GMACPrice	Value of the index's calculation formula using the current Bid values of the component securities
AskIndexValue[PM]	GMACPrice	Value of the index's calculation formula using the current ask values of the component securities
OrigCategory[PM]	char	Original message category
OrigType[PM]	char	Original message type

3.1.2 OHLC Message

Description This message is used to provide information about prices.

Structure GMACCMessageOHLCV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
VenueID	GMACVenueID	Source venue
Open[PM]	GMACPrice	Opening price
High[PM]	GMACPrice	Highest price
Low[PM]	GMACPrice	Lowest price
Close[PM]	GMACPrice	Closing price
Last[PM]	GMACPrice	Last traded price
Currency[PM]	GMACCurrency	Currency code
Volume[PM]	GMACQuantity	Total number of contracts traded for the entire trading day

Field	Type	Description
UnderlyingPrice[PM]	GMACPrice	Price of the underlying security
NetChange[PM]	GMACPrice	Change in the price of an instrument from the closing price of one day to the closing price on the next day on which the instrument is traded
OrigCategory[PM]	char	Original message category
OrigType[PM]	char	Original message type
SubVenueID[PM]	char	Sub-market

3.1.3 Session Message

Description The session message is used to provide information about market sessions. Each session starts with this message. The action type is set to either 'S' or 'M' depending on whether there are some missing messages from the beginning of the session. The end of session is marked with action type 'E' and it is the last message of that session.

Structure GMACCMessageSessionV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ActionType	char	Action type Possible values: 'S' Start of day 'E' End of day 'M' Mid-day start
Venue[PM]	GMACVenueID	Source venue
SubVenueID[PM]	char	Sub-market

3.1.4 SHO Short Sale Price Restriction Message

Description This message is used to provide information about short sale restrictions.

Structure GMACCMessageSHOShortSalePriceRestrictionV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
VenueID[PM]	GMACVenueID	Source venue
SHOShortRestriction	GMACSHOShortSaleRestriction	Short sale restriction indicator
OrigCategory[PM]	char	Original message category
OrigType[PM]	char	Original message type
SubVenueID[PM]	char	Sub-market

3.1.5 Top of Book Update Message

Description This message is used to provide information about order updates.

Structure GMACCMessageTOBV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
BackgroudInfo[PM]	void*	Pointer to background info of the instrument. Not implemented yet.
NoBestMask[PM]	GMACBestMaskConditions	Bit mask specifying indicators for which no BBO value can be calculated at present
OrigCategory[PM]	char	Original message category
LULDIndicator[PM]	GMACCLULDIndicatorV3	Limit Up Limit Down BBO indicator. Describes whether or not the participant quotation is executable within the context of the price band for the issue.
LULDNationalIndicator[PM]	GMACCLULDNationalIndicatorV3	Limit Up Limit Down national indicator. Describes the limit state of the NBBO with respect to the price band for the issue.
FinraLULDIndicator[PM]	GMACCLULDFinraIndicatorV3	FINRA BBO Limit Up Limit Down indicator. Indicates the effect that the LULD price bands have on the FINRA best bid and FINRA best offer.
RetailInterest[PM]	GMACCRetailInterestV3	Retail interest indication on the bid, ask or both the bid and ask.
FinraADFMPIDIndicator[PM]	GMACCFinraAdfMpidIndicatorV3	FINRA ADF MPID Indicator
MPID[PM]	char [5]	MPID
SubVenueID[PM]	char	Sub-market
OrigType[PM]	char	Original message type
SIPGenUpdate[PM]	char	SIP generated update flag
FinraBBOIndicator	GMACCFinraBBOIndicatorV3	FINRA ADF BBO Indicator
OrderCount	int	Number of orders present in the message The following group of 6 fields are repeated OrderCount times
►Orders[]	GMACCOrderDataV3	An array of orders

3.1.6 Trade Cancellation Message

Description This message is used to provide information about trade cancellations.

Structure GMACCMessageTradeCancellationV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
ActionType	char	Action type Possible values: 'C' Cancel 'E' Error
TradeMessageSequenceNumber[PM]	uint64_t	Sequence number of the message being cancelled
Currency[PM]	GMACCurrency	Currency
OriginalTrade	GMACCOrderDataV3	Original trade information
OrigCategory[PM]	char	Original message category
OrigType[PM]	char	Original message type
SubVenueID[PM]	char	Sub-market

3.1.7 Trade Correction Message

Description This message is used to provide information about trade corrections.

Structure GMACCMessageTradeCorrectionV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
TradeMessageSequenceNumber	uint64_t	Sequence number of the message being changed
Currency[PM]	GMACCurrency	Currency
OrigCategory[PM]	char	Original message category
OriginalTrade	GMACCOrderDataV3	Original trade information
CorrectedTrade	GMACCOrderDataV3	Corrected trade information
OrigType[PM]	char	Original message type
SubVenueID[PM]	char	Sub-market
TradeFlags[PM]	TradeFlags	Additional flags for the trade (bit fields)

3.1.8 Trade Message

Description This message is used to provide information about trades.

Structure GMACCMessageTradeV3

The message description is as follows:

Field	Type	Description

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
MarketPCI[PM]	GMACCPriceChIndV3	Price Change Indicator bit field indicating which price values are affected for this venue by the trade
ConsolidatedPCI[PM]	GMACCPriceChIndV3	Price Change Indicator bit field indicating which consolidated price values are affected by the trade
Trade	GMACCOrderDataV3	Executed trade
Currency[PM]	GMACCurrency	Currency
TradeFlags	TradeFlags	Additional flags for the trade (bit fields)
OrigCategory[PM]	char	Original message category
OrigType[PM]	char	Original message type
SubVenueID[PM]	char	Sub-market

3.1.9 Trading Status Message

Description This message is used to provide information about trading status changes.

Structure GMACCMessageTradingStatusV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
VenueID[PM]	GMACVenueID	Source venue
TradingStatus	GMACTradingStatus	Trading status
OrigCategory[PM]	char	Original message category
RawTradingStatus[PM]	uint32_t	Exchange trading status as is
TradingStatusConditions[PM]	GMACCTradingStatusConditions	Additional conditions (bit fields) for the trading status (market specific)
RawTradingStatusConditionsBin[PM]	uint64_t	Exchange trading status conditions as is in binary format If present, RawTradingStatusConditionsStr will not be present
RawTradingStatusConditionsStr[PM]	char [8]	Exchange trading status conditions as is in ASCII format, right \0 padded If present, RawTradingStatusConditionsBin will not be present
OrigType[PM]	char	Original message type
SubVenueID[PM]	char	Sub-market

3.1.10 Limit Up Limit Down Price Band Message

Description This message is used to provide Limit Up and Limit Down LULD intended to address extraordinary market volatility in NMS stocks.

Structure GMACCMessageLULDPriceBandV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
VenueID[PM]	GMACVenueID	Source venue
PriceBandIndicator[PM]	GMACCLULDPriceBandV3	LULD price band indicator. Denotes the event that initiated the price band message being disseminated.
TimeEffective[PM]	uint64_t	LULD price band effective time. Denotes the time in nanoseconds since midnight that the price band originally became effective.
LimitDownPrice[PM]	GMACPrice	Limit down price. Represents the lower boundary of the price range for executable quotes.
LimitUpPrice[PM]	GMACPrice	Limit up price. Represents the upper boundary of the price range for executable quotes.
OrigCategory[PM]	char	Original message category
OrigType[PM]	char	Original message type
SubVenueID[PM]	char	Sub-market

3.1.11 Market Wide Circuit Breaker Message

Description This message is used to provide Market Wide Circuit Breaker MWCB breach points which are set for the current trading day.

Structure GMACCMessageMWCBV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
LevelOne[PM]	GMACPrice	MWCB level 1
LevelTwo[PM]	GMACPrice	MWCB level 2
LevelThree[PM]	GMACPrice	MWCB level 3
Venue[PM]	GMACVenueID	Source venue
SubVenueID[PM]	char	Sub-market

3.1.12 Market Wide Circuit Breaker Status Message

Description This message is used to inform when a Market Wide Circuit Breaker MWCB has breached one of the established levels.

Structure GMACCMessageMWCBStatusV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
Status[PM]	GMACCMWCBStatusV3	MWCB level that has been breached
Venue[PM]	GMACVenueID	Source venue
SubVenueID[PM]	char	Sub-market

3.1.13 Open Interest Message

Description The Open Interest message is used to report contract volume on current options that have not been exercised and have not yet reached expiration.

Structure GMACCMessageOpenInterestV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
VenueID[PM]	GMACVenueID	Source venue
OpenInterest[PM]	GMACQuantity	Open interest volume
OrigCategory[PM]	char	Original message category

3.1.14 Auction Collar Message

Description The Auction Collar message is used to report auction collars.

Structure GMACCMessageAuctionCollarV3

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
InstrumentIndex[PM]	GMACInstrumentIndex	Instrument ID If present, InstrumentName will not be present
InstrumentName[PM]	GMACInstrumentName	Instrument name If present, InstrumentIndex will not be present
VenueID[PM]	GMACVenueID	Source venue
InstrumentType[PM]	char	Instrument type
CollarReferencePrice	GMACPrice	Auction collar reference price
CollarUpPrice	GMACPrice	Auction collar upper threshold price
CollarDownPrice	GMACPrice	Auction collar lower threshold price
Extension	unit8_t	Number of extensions
PrimaryMarketParticipant[PM]	char	Primary listing market participant ID

Field	Type	Description
FinancialStatus[PM]	char	Financial status indicator
OrigCategory	char	Original message category
OrigType	char	Original message type
SubVenueID[PM]	char	Sub-market

3.2 Structures

This section describes the consolidated generic structures used in the GMAC consolidated messages.

3.2.1 Order Information Structure

Description This structure contains data about an order from the feed.

It is used in messages GMACCMessageTOBV3, GMACCMessageTradeV3, GMACCMessageTradeCorrectionV3 and GMACCMessageTradeCancellationV3.

Structure GMACCOrderDataV3

The structure description is as follows:

Field	Type	Description
VenueID	GMACVenueID	Source venue
BestMask	GMACBestMaskConditions	Bit mask specifying by which indicators was this order marked as the best
DeletedFlag	uint8_t	Flag indicating that no BBO is available for the venue
Side	GMACSide	Side
Quantity	GMACQuantity	Order quantity
Price	GMACPrice	Order price
QuoteCondition	char [5]	Quote condition forwarded from the exchange (used for orders). First character determines the exchange: 'C' CTA quotes (CQS) 'O' OPRA 'U' UTP quotes (UQDF) '\0' None
		The value from the exchange is the second character. If present, SaleCondition will not be present.
SaleCondition	char [5]	Sale condition forwarded from the exchange (used for trades). First character determines the exchange: 'S' CTA trades (CTS) 'F' UTP trades (UTDF) 'A' OPRA '\0' None The value from the exchange is from the second to the fifth character. If present, QuoteCondition will not be present.
TradeID[PM]	uint64_t	Trade ID
SaleDays[PM]	uint16_t	Sale days
TradeTimestamp[PM]	uint64_t	Trade timestamp. Number of nanoseconds since Epoch.

3.2.2 Options Background Information Structure

Description This structure contains background information for options in OPRA. It carries detailed description of the instrument as published by OPRA. Note that there are no optional fields in this message - i.e. all the fields are always populated.

This structure is physically located just after the GMAC message that points to it. The GMAC message length is adjusted accordingly.

Structure GMACOpraBackgroundInfoV3

The structure description is as follows:

Field	Type	Description
ExpirationDay	uint8_t	Expiration day (1 to 31)
ExpirationMonth	uint8_t	Expiration month (1 to 12)
ExpirationYear	uint16_t	Expiration year, YYYY format
StrikePrice	GMACPrice	Strike price
CFICode	char [7]	ISO 10962 security type

3.2.3 Price Change Indicator Structure

Description This structure indicates whether a trade should update values either for the individual market or consolidated for all markets.

Structure GMACCPriceChIndV3

The structure description is as follows:

Bt fField
Open
Close
Last
Low
High

3.2.4 Trade Flags Structure

Description This structure contains bit fields to provide additional market specific trade flags.

It is used in message GMACCMessageTradeV3.

Structure TradeFlags

The available bit fields are as follows:

Bit field
LateMessage
OutOfSequence
OrigTradeThroughExempt
CorrTradeThroughExempt
AsOfTrade
OrigStopStock
CorrStopStock
HeldTrade
HeldTradeParticipant
HeldTradeConsolidated

3.2.5 Best Mask Conditions Structure

Description This structure contains bit fields to provide additional information about the BBO.

It is used in message GMACCMessageTOBV3.

Structure GMACBestMaskConditions

The available bit fields are as follows:

Bit field
NationalBBO
FINRABBO
NoNationalBBOChange
NoFINRABBOChange
NoNationalBBO
NoFINRABBO
BestBid
BestOffer
NoBestBid
NoBestOffer
ExcludedBBO

3.2.6 Trading Status Conditions Structure

Description This structure contains bit fields to provide additional market specific conditions for the trading status.

It is used in message GMACCMessageTradingStatusV3.

Structure GMACCTradingStatusConditions

The available bit fields are as follows:

Bit field
NewsDissemination
Unused
OrderImbalance
LULDTradingPause
NewsPending
EquipmentChangeover
SubPennyTrading
MarketWideCBLvl1Breach
MarketWideCBLvl2Breach
MarketWideCBLvl3Breach

4. Specific Market Data Messages

This section describes the market specific GMAC messages.

4.1 ICE Specific Messages

This section describes the ICE specific GMAC messages.

Refer to the GMAC ICE V3 mapping specifications for more details.

4.1.1 Generic Extension Header

Description The message header is present at the beginning of any ICE iMpact extension message.

Structure GMACExtensionICEGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	ICEExtensionType	ICE extension type

4.1.2 Futures Definition Extension Message

Description This message is the ICE message 'B' extension, issued as an extension to the generic messages Reference Security.

Structure GMACExtensionICEMessageB

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
AllowOptions	char	Indicate if the market supports option markets Possible values: 'Y' Yes 'N' No
IsSpread	char	Indicate if the market is a spread
IsCrackSpread	char	Indicate if the market is crack spread
RequestMarketType	uint16_t	Market type
ProductID	uint32_t	ID of the product that the contract/market is under
ProductName	char [62]	Name of the product that the contract/market is under
HubID	uint32_t	ID of the hub for the contract/market
HubAlias	char [80]	Alias of the hub for the contract/market
PrimaryMarketID[PM]	uint32_t	Ignored when it is not spread
SecondaryMarketID[PM]	uint32_t	Ignored when it is not spread
TickValue	uint64_t	OrderPriceDenominator should be applied to get the real value
MinPrice	int64_t	Minimum Price
MaxPrice	uint64_t	Maximum Price
StripID	uint32_t	ID of the strip for the contract/market
StripName	char [39]	Name of the strip for the contract/market
ClearedAlias	char [15]	Clearing limit admin related
MarketDesc	char [120]	Description of the market

Field	Type	Description
SettlePriceFactor	GMACPriceFactor	Settlement price denominator
SecuritySubType[PM]	uint16_t	Strategy Code for defined market where applicable
HedgeOnly[PM]	char	Indicates if the contract is for hedge only
ExchangeSilo[PM]	char	Exchange silo code for the market
OffExchangeIncrementQty[PM]	GMACQuantity	Off exchange increment quantity
OffExchangeIncrementPrice[PM]	GMACPrice	Off exchange increment price
OffExchangeIncrementOptionPrice[PM]	GMACPrice	Off exchange options increment price
NumDecimalsOptionsPrice[PM]	char	NumDecimalsOptionsPrice field
FlexAllowed[PM]	char	FlexAllowed field
SettlementType[PM]	char	SettlementType field
IsBlockOnly[PM]	char	IsBlockOnly field
UnitOfMeasure[PM]	char [30]	UnitOfMeasure field
GTAllowed[PM]	char	GTAllowed field
CrossOrderSupported[PM]	char	CrossOrderSupported field
AONAllowed[PM]	char	AONAllowed field
MiFIDRegulatoryMarket[PM]	char	MiFIDRegulatoryMarket field
TestMarketIndicator[PM]	char	TestMarketIndicator field
RefSpreadProductId[PM]	int32_t	RefSpreadProductId field

4.1.3 Options Definition Extension Message

Description This message is the ICE message ‘p’ extension, issued as an extension to the generic messages Reference Security.

Structure GMACExtensionICEMessagep

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
MinQty	GMACQuantity	Minimum quantity for this market
MarketDesc	char [120]	Description of the market
MinOptionsPrice	uint64_t	Minimum premium price for the option.
MaxOptionsPrice	uint64_t	Maximum premium price for the option
IncrementPremiumPrice	uint64_t	Price increment for the option market.
RequestMarketType	uint64_t	Market type
SettlePriceFactor	GMACPriceFactor	Settlement price denominator
OptionsStyle	char [1]	Option settlement type
TickValue[PM]	uint64_t	TickValue
FlexAllowed[PM]	char	FlexAllowed
SettlementType[PM]	char	SettlementType
IsBlockOnly[PM]	char	IsBlockOnly
UnitOfMeasure[PM]	char [30]	UnitOfMeasure field
GTAllowed[PM]	char	GTAllowed field
CrossOrderSupported[PM]	char	CrossOrderSupported field
GuaranteedCrossSupported[PM]	char	GuaranteedCrossSupported field
MiFIDRegulatoryMarket[PM]	char	MiFIDRegulatoryMarket field

Field	Type	Description
TestMarketIndicator[PM]	char	TestMarketIndicator field

4.1.4 Old Style Options Trade Extension Message

Description This message is the ICE message 'W' extension, issued as an extension to the generic messages OHLC.

Structure GMACExtensionICEMessageW

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
UnderlyingMarketID	uint32_t	Market ID of the underlying
TradeID	uint64_t	Trade ID
Price	GMACPrice	Trade price
Quantity	GMACQuantity	Trade quantity
OffMarketTradeType	char	Only for off market trade. The value is ' ' when it is a regular trade. Possible values: 'K' Block trade 'E' EFP trade 'S' EFS trade 'F' EFP/EFS contra trade 'V' Bilateral off-exchange trade 'O' NG EFP/EFS trade '9' CCX EFP trade 'J' EFR trade 'Q' EOO trade 'I' EFM trade
TransactDateTime	uint64_t	Deal date time
OptionType	char	Option type Possible values: '1' Call '2' Put
StrikePrice	GMACPrice	Strike price
EventCode	char	Event code Possible values: '0' Normal trade '1' Cancelled trade '2' Adjusted trade

4.1.5 Interval Price Limit Notification Extension Message

Description This message is the ICE message 'V' extension. It is not appended to any other GMAC message.

Structure GMACExtensionICEMessageV

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
InstrumentIndex	GMACInstrumentIndex	Instrument ID
IPLHoldType	char	IPL hold type Possible values: 'S' IPL Hold Start 'E' IPL Hold End
NotificationDateTime	uint64_t	Date time of the IPL notification

Field	Type	Description
IsUp[PM]	char	Possible values: 'Y' IPL Upper bound violation (Bidding too high) 'N' IPL Lower bound violation (Asking too low) N/A when IPLHoldType = 'E'
IPLHoldDuration[PM]	uint32_t	Hold duration, in milliseconds. N/A when IPLHoldType = 'E'
IPLUp[PM]	uint64_t	IPL upper bound. N/A when IPLHoldType = 'E'
IPLDown[PM]	uint64_t	IPL lower bound. N/A when IPLHoldType = 'E'

4.1.6 New Options Market Extension Message

Description This message is the ICE message 'I' extension, issued as an extension to the generic messages Reference Security.

Structure GMACExtensionICEMessageI

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
MarketDesc	char [120]	Description of the market
MinOptionsPrice	uint64_t	Minimum premium price for the option.
MaxOptionsPrice	uint64_t	Maximum premium price for the option
IncrementPremiumPrice	uint64_t	Price increment for the option market.
SettlePriceFactor	GMACPriceFactor	Settlement price denominator
OptionsStyle	char [1]	Option settlement type
TickValue	uint64_t	TickValue
FlexAllowed	char	FlexAllowed
SettlementType	char	SettlementType
IsBlockOnly	char	IsBlockOnly
GTAllowed[PM]	char	GTAllowed field
CrossOrderSupported[PM]	char	CrossOrderSupported field
GuaranteedCrossSupported[PM]	char	GuaranteedCrossSupported field
UnitOfMeasure[PM]	char [30]	UnitOfMeasure field
MiFIDRegulatoryMarket[PM]	char	MiFIDRegulatoryMarket field

4.1.7 New Expiry Extension Message

Description This message is the ICE message 'R' extension, issued as an extension to the generic messages Reference Security.

Structure GMACExtensionICEMessageR

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
MarketTypeID	uint16_t	Market type

Field	Type	Description
ProductID	uint32_t	ID of the product that the contract/market is under
ProductName	char [62]	Name of the product that the contract/market is under
HubID	uint32_t	ID of the hub for the contract/market
HubAlias	char [80]	Alias of the hub for the contract/market
MinPrice	int64_t	Minimum Price
MaxPrice	uint64_t	Maximum Price
StripID	uint32_t	ID of the strip for the contract/market
StripName	char [39]	Name of the strip for the contract/market
ClearedAlias	char [15]	Clearing limit admin related
MarketDesc	char [120]	Description of the market
SettlePriceFactor	GMACPriceFactor	Settlement price denominator
OffExchangeIncrementQty[PM]	GMACQuantity	Off exchange increment quantity
OffExchangeIncrementPrice[PM]	GMACPrice	Off exchange increment price
OffExchangeIncrementOptionPrice[PM]	GMACPrice	Off exchange options increment price
ContractSymbol[PM]	char [35]	The ISIN of the security this market is associated with
SettlementType	char	SettlementType
GTAllowed[PM]	char	GTAllowed field
CrossOrderSupported[PM]	char	CrossOrderSupported field
UnitOfMeasure[PM]	char [30]	UnitOfMeasure field
MiFIDRegulatoryMarket[PM]	char	MiFIDRegulatoryMarket field

4.1.8 ICE Benchmark Administration Electronic Gold Auction - Fixing Transition Extension Message

Description This message is the ICE message '3' extension providing ICE Benchmark Administration's (IBA) electronic Gold Auction data.

Structure GMACExtensionICEFixingTransition

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
AuctionEndTime[PM]	uint64_t	AuctionEndTime field
ThresholdImbalanceQty[PM]	uint32_t	ThresholdImbalanceQty field

4.1.9 ICE Benchmark Administration Electronic Gold Auction - Fixing Lock Down Extension Message

Description This message is the ICE message '4' extension providing ICE Benchmark Administration's (IBA) electronic Gold Auction data.

Structure GMACExtensionICEFixingLockDown

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
AuctionDate[PM]	char [10]	AuctionDate field
Description[PM]	char [20]	Description field

Field	Type	Description
Round[PM]	uint16_t	Round field
AggBidQty[PM]	uint32_t	AggBidQty field
AggOfferQty[PM]	uint32_t	AggOfferQty field
IsBalanced[PM]	char	IsBalanced field
IsFinal[PM]	char	IsFinal field
USDPrice[PM]	uint64_t	USDPrice field
GBPPrice[PM]	uint64_t	GBPPrice field
EURPrice[PM]	uint64_t	EURPrice field

4.1.10 ICE Benchmark Administration Electronic Gold Auction - Fixing Indicative Price Extension Message

Description This message is the ICE message '0' extension providing ICE Benchmark Administration's (IBA) electronic Gold Auction data.

Structure GMACExtensionICEFixingIndicativePrice

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
Currency[PM]	GMACCurrency	Currency field
Price[PM]	uint64_t	Price field
PriceInGram[PM]	uint64_t	PriceInGram field
NumDecimalsInPrice[PM]	uint8_t	NumDecimalsPrice field
NumDecimalsPriceInGram[PM]	uint8_t	NumDecimalsPriceInGram field

4.1.11 Security Definition Information Extension Message

Description This message is an ICE extension message carrying non-normalised futures and options strategy security definition information.

Structure GMACExtensionICESecDefInfo

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
RequestMarketType[PM]	uint16_t	Market type
SecuritySubType	uint16_t	Strategy Code
IsBlockOnly	char	IsBlockOnly
StrategySymbol[PM]	char [18]	StrategySymbol field
GTAllowed[PM]	char	GTAllowed field
MiFIDRegulatoryMarket[PM]	char	MiFIDRegulatoryMarket field
SettlePriceDenominator[PM]	char	SettlePriceDenominator fiels
TestMarketIndicator[PM]	char	TestMarketIndicator field

4.1.12 Futures Strategy Extension Message

Description This message is an ICE extension message carrying non-normalised futures strategy security definition information.

Structure GMACExtensionICEFuturesStrategy

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
AllowOptions[PM]	char	AllowOptions field
ProductID[PM]	uint32_t	ProductID field
ProductName[PM]	char [62]	ProductName field
HubID[PM]	uint32_t	HubID field
HubAlias[PM]	char [80]	HubAlias field
MinPrice[PM]	uint64_t	MinPrice field
MaxPrice[PM]	uint64_t	MaxPrice field
StripID[PM]	uint32_t	StripID field
StripName[PM]	char [39]	StripName field
ClearedAlias[PM]	char [15]	ClearedAlias field
MarketDesc[PM]	char [120]	MarketDesc field
SettlePriceFactor[PM]	char	SettlePriceFactor field
HedgeOnly[PM]	char	HedgeOnly field
ExchangeSilo[PM]	char	*ExchangeSilo field*
OffExchangeIncrementQty[PM]	uint32_t	*OffExchangeIncrementQty field adjusted by OffExchangeIncrementQtyDenominator field*
OffExchangeIncrementPrice[PM]	uint32_t	*OffExchangeIncrementPrice field adjusted by OrderPriceDenominator field*
OffExchangeIncrementOptionPrice[PM]	uint32_t	*OffExchangeIncrementOptionPrice field adjusted by*
		NumDecimalsOptionsPrice field
NumDecimalsOptionsPrice[PM]	char	*NumDecimalsOptionsPrice field*

4.1.13 Indicative Quote Extension Message

Description This message is an ICE extension message carrying non-normalised indicative quote data.

Structure GMACExtensionICEIndicativeQuote

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
Side	char	Side field
Price	int64_t	Price field
DateTime	int64_t	*DateTime field*
SequenceWithinMillis	int32_t	*SequenceWithinMillis field*

4.1.14 Block Details Extension Message

Description This message is an ICE extension message carrying non-normalised instrument block details.

Structure GMACExtensionICEBlockDetails

The message description is as follows:

Field	Type	Description
Head	GMACExtensionICE GenericHeader	
NumBlockDetails	int8_t	NumBlockDetails field
►Details[]	GMACExtensionICE BlockDetail	List of block details

4.1.15 Block Details Structure

Description This structure holds the instrument block details.

Structure GMACExtensionICEBlockDetail

The structure description is as follows:

Field	Type	Description
BlockType	char	BlockType field
TradeType	char [2]	TradeType field
MinQty	int64_t	MinQty field

4.2 EUREX and XETRA T7 Specific Messages

This section describes the Eurex and XETRA T7 specific GMAC messages.

Refer to:

- GMAC EMDI mapping specifications for both Enhanced Market Data Interface EMDI and Market Data Interface MDI
- GMAC EOBI mapping specifications for the Enhanced Order Book Interface

4.2.1 EMDI Generic Extension Header

Description The message header is present at the beginning of any EMDI extension message.

Structure GMACEMDIExtensionGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	EMDIExtensionType	EMDI extension type

4.2.2 EOBI Generic Extension Header

Description The message header is present at the beginning of any EOBI extension message.

Structure GMACEOBIExtensionGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	EOBIExtensionType	EMDI extension type

4.2.3 Packet Enhanced MDI Header Extension Message

Description This message is used to provide the original New Trading Architecture packet header of the MDI and Enhanced MDI feeds.

Structure GMACExtensionStructEMDIPacketHeader

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
PartitionID^{PM}	uint32_t	Sending partition. Present only for EMDI.
SenderCompID	uint32_t	Unique ID for a sender
PacketSeqNum	uint64_t	Packet sequence number
SendingTime	uint64_t	Time when market data feed handler writes packet on the wire
PerformanceIndicator^{PM}	uint32_t	Current load of system. Present only for EMDI.

4.2.4 Packet Enhanced OBI Header Extension Message

Description This message is used to provide the original New Trading Architecture packet header of the EOBI feed.

Structure GMACExtensionStructEOBIPacketHeader

The message description is as follows:

Field	Type	Description
Head	GMACEOBIExtension GenericHeader	
PartitionID	uint32_t	Sending partition
MarketSegmentID	int32_t	Product identifier
ApplSeqNum	uint32_t	Contiguous message sequence number
CompletionIndicator	uint8_t	Indicates if a unit of work fits in one packet
ApplSeqResetIndicator	uint8_t	Indicates if a sequence reset should occur

4.2.5 Trade Extension Message

Description This message is used to provide trade data.

Structure GMACExtensionStructEMDITrade

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
AggressorEntTime^{PM}	int64_t	AggressorTimestamp [28820]
NumberOfBuyOrders^{PM}	uint32_t	NumberOfBuyOrders [28821]
NumberOfSellOrders^{PM}	uint32_t	NumberOfSellOrders [28822]
RestingCxlQty^{PM}	uint32_t	RestingCxlQty [28869]

4.2.6 Product Reference Extension Message

Description This message is used to provide product reference data.

Structure GMACExtensionRDIProdRef

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
EffectiveBusinessDate	uint32_t	EffectiveBusinessDate [2400]
NextEffectiveBusinessDate^{PM}	uint32_t	NextEffectiveBusinessDate [28871]
MarketSegmentDesc	char [70]	MarketSegmentDesc [1396]
ParentMktSegmID	char [16]	ParentMktSegmID [1325]
MarketSegmentStatus	uint8_t	MarketSegmentStatus [28599]
USFirmFlag	uint8_t	USFirmFlag [9543]
PartitionID	uint32_t	PartitionID [5948]
UnderlyingSecurityExchange^{PM}	char [6]	UnderlyingSecurityExchange [30308]
UnderlyingSymbol^{PM}	char [16]	UnderlyingSymbol [30311]
UnderlyingSecurityID^{PM}	char [13]	UnderlyingSecurityID [30309]

Field	Type	Description
UnderlyingSecurityIDSource[PM]	uint32_t	UnderlyingSecurityIDSource [30305]
UnderlyingPrevClosePx[PM]	GMACPrice	UnderlyingPrevClosePx [28843]
QuoteSideIndicator	uint32_t	QuoteSideIndicator [28814]
FastMarketPercentage[PM]	uint64_t	FastMarketPercentage [28833]
MarketSegmentType[PM]	uint32_t	MarketSegmentType [2543]
MarketSegmentSubType[PM]	uint32_t	MarketSegmentSubType [2544]
NoInstrumentScopes	uint8_t	NoInstrumentScopes [1656]
►scopes[]	RDIExtensionInstrumentScope	List of instrument scopes in the segment

4.2.7 Product Related Segments Extension Message

Description This message is used to provide product related segments data.

Structure GMACExtensionRDIProdRelatedSegments

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
NoRelatedMarketSegments	uint8_t	NoRelatedMarketSegments [2545]
►segments[]	RDIRelatedMarketSegment	List of related segments

4.2.8 Product Tick Rules Extension Message

Description This message is used to provide product tick rules data.

Structure GMACExtensionRDIProdTickRules

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
NoTickRules	uint8_t	NoTickRules [1205]
►tickRules[]	RDITickRule	List of tick rules

4.2.9 Product Match Rules Extension Message

Description This message is used to provide product match rules data.

Structure GMACExtensionRDIProdMatchRules

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
NoMatchRules	uint8_t	NoMatchRules [1235]
►matchRules[]	RDIMatchRule	List of match rules

4.2.10 Product Quote Size Rules Extension Message

Description This message is used to provide product match rules data.

Structure GMACExtensionRDIProdQuoteSizeRules

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
NoQuoteSizeRules	uint8_t	NoQuoteSizeRules [2558]
►quoteSizeRules[]	RDIQuoteSizeRule	List of quote size rules

4.2.11 Product Flex Eligibility Rules Extension Message

Description This message is used to provide product flex eligibility rules data.

Structure GMACExtensionRDIProdFlexRules

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
NoFlexProductEligibilities	uint8_t	NoFlexProductEligibilities [2560]
►flexRules[]	RDIProdFlexRule	List of flex eligibility rules

4.2.12 Product Feeds Extension Message

Description This message is used to provide product feeds data.

Structure GMACExtensionRDIMDFeeds

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
NoMDFeedTypes	uint8_t	NoMDFeedTypes [1141]
►feeds[]	RDIMDFeed	List of feeds

4.2.13 Product Price Range Rules Extension Message

Description This message is used to provide product price range rules data.

Structure GMACExtensionRDIProdPriceRangeRules

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
NoPriceRangeRules	uint8_t	NoPriceRangeRules [2550]
►rules[]	RDIProdPriceRangeRule	List of price range rules

4.2.14 Instrument Reference Extension Message

Description This message is used to provide instrument reference data.

Structure GMACExtensionRDIInstrument

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension	

Field	Type	Description
	GenericHeader	
SecuritySubType[PM]	uint32_t	SecuritySubType [762]
ProductComplex	uint8_t	ProductComplex [1227]
StrikePricePrecision[PM]	uint32_t	StrikePricePrecision [2577]
PricePrecision[PM]	uint32_t	PricePrecision [2576]
OrigStrikePrice[PM]	GMACPrice	OrigStrikePrice [2578]
ContractGenerationNumber[PM]	char [5]	ContractGenerationNumber [25034] Not present when ContractGenerationNumberInt is present
ContractGenerationNumberInt[PM]	uint32_t	ContractGenerationNumber [25034] Not present when ContractGenerationNumber is present
LowExercisePriceOptionIndicator[PM]	uint8_t	LowExercisePriceOptionIndicator [2574]
BlockTradeEligibilityIndicator[PM]	uint8_t	BlockTradeEligibilityIndicator [2575]
ValuationMethod[PM]	uint8_t	ValuationMethod [1197]
SettlMethod[PM]	uint8_t	SettlMethod [1193]
SettlSubMethod[PM]	uint8_t	SettlSubMethod [2579]
LastEligibleTradeDate[PM]	uint32_t	EventType [865]
TransactTime[PM]	uint64_t	TransactTime [60]
MinPriceIncrementAmount[PM]	GMACPrice	MinPriceIncrementAmount [1146]
SecurityStatus[PM]	uint8_t	SecurityStatus [965]
PrevAdjustedOpenInterest[PM]	uint64_t	PrevAdjustedOpenInterest [28816]
PrevUnadjustedOpenInterest[PM]	uint64_t	PrevUnadjustedOpenInterest [28817]
PriorSettlePrice[PM]	GMACPrice	PriorSettlePrice [734]
MultiLegModel[PM]	uint8_t	MultiLegModel [1377]
PriceRangeRuleID[PM]	uint32_t	PriceRangeRuleID [2556]
MinBidSize[PM]	uint32_t	*MinBidSize [647]*
MinOfferSize[PM]	uint32_t	*MinOfferSize [648]*
TradingSessionID[PM]	uint32_t	*TradingSessionID [336]*
TradingSessionSubID[PM]	uint32_t	*TradingSessionSubID [625]*

4.2.15 Product AuctionType Rules Extension Message

Description This message is used to provide product auction type rules data.

Structure GMACExtensionRDIProdAuctionTypeRules

The message description is as follows:

Field	Type	Description
Head	GMACEMDIExtension GenericHeader	
NoAuctionTypeRules	uint8_t	NoAuctionTypeRules [2548]
►rules[]	RDIAuctionTypeRule	List of auction type rules

4.2.16 Product Summary Extension Message

Description This message is used to provide the EOBI product summary data.

Structure GMACExtensionEOBIProductSummary

The message description is as follows:

Field	Type	Description
Head	GMACEOBIExtension GenericHeader	
LastMagSeqNumProcessed	uint32_t	LastMsgSeqNumProcessed [369]

4.2.17 Instrument Scope Structure

Description This structure holds the instrument scope.

Structure RDIExtensionInstrumentScope

The structure description is as follows:

Field	Type	Description
InstrumentScopeOperator	uint8_t	InstrumentScopeOperator [1535]
InstrumentScopeSecurityType	uint8_t	InstrumentScopeSecurityType [1547]
InstrumentScopeSecuritySubType[PM]	uint32_t	InstrumentScopeSecuritySubType [1548]

4.2.18 Related Segments Structure

Description This structure holds the product related segment.

Structure RDIRelatedMarketSegment

The structure description is as follows:

Field	Type	Description
RelatedMarketSegmentID	uint32_t	RelatedMarketSegmentID [2545]
MarketSegmentsRelationship	uint8_t	MarketSegmentsRelationship [2546]

4.2.19 Tick Rules Structure

Description This structure holds the product tick rule.

Structure RDITickRule

The structure description is as follows:

Field	Type	Description
TickRuleID[PM]	uint32_t	TickRuleID [28887]
TickRuleProductComplex	uint8_t	TickRuleProductComplex [2571]
StartTickPrcRng	GMACPrice	StartTickPrcRng [1206]
EndTickPrcRng	GMACPrice	EndTickPrcRng [1207]
TickIncrement	GMACPrice	TickIncrement [1208]

4.2.20 Match Rules Structure

Description This structure holds the product match rule.

Structure RDIMatchRule

The structure description is as follows:

Field	Type	Description
MatchRuleProductComplex	uint8_t	MatchRuleProductComplex [2569]
MatchAlgorithm	uint8_t	MatchAlgorithm [1142]
MatchType[PM]	uint8_t	MatchType [574]

4.2.21 Quote Size Rules Structure

Description This structure holds the product quote size rule.

Structure RDIQuoteSizeRule

The structure description is as follows:

Field	Type	Description
MinBidSize[PM]	uint32_t	MinBidSize [647]
MinOfferSize[PM]	uint32_t	MinOfferSize [648]
FastMarketIndicator[PM]	uint8_t	FastMarketIndicator [2447]

4.2.22 Flex Eligibility Rules Structure

Description This structure holds the product flex eligibility rule.

Structure RDIProdFlexRule

The structure description is as follows:

Field	Type	Description
FlexProductEligibilityComplex	uint8_t	FlexProductEligibilityComplex [2561]
FlexProductEligibilityIndicator	uint8_t	FlexProductEligibilityIndicator [1242]

4.2.23 MD Feed Structure

Description This structure holds the product MD feed.

Structure RDIMDFeed

The structure description is as follows:

Field	Type	Description
MDFeedType	uint8_t	MDFeedType [1022]
MDBookType	uint8_t	MDBookType [2021]
MarketDepth[PM]	uint32_t	MarketDepth [264]
MarketDepthTimeInterval[PM]	uint32_t	MarketDepthTimeInterval [2563]
MDRecoveryTimeInterval[PM]	uint32_t	MDRecoveryTimeInterval [2565]
PrimaryIP	char [16]	PrimaryServiceLocationID [2567]
PrimaryPort	uint16_t	PrimaryServiceLocationSubID [28591]
SecondaryIP[PM]	char [16]	SecondaryServiceLocationID [2568]
SecondaryPort[PM]	uint16_t	SecondaryServiceLocationSubID [28593]

4.2.24 Price Range Rules Structure

Description This structure holds the product price range rule.

Structure RDIProdPriceRangeRule

The structure description is as follows:

Field	Type	Description
PriceRangeRuleID	uin32_t	PriceRangeRuleID [2556]
PriceRangeProductComplex	uint8_t	PriceRangeProductComplex [2555]
StartPriceRange	GMACPrice	StartPriceRange [2551]
EndPriceRange	GMACPrice	EndPriceRange [2552]
PriceRangeValue[PM]	GMACPrice	PriceRangeValue [2553]
PriceRangePercentage[PM]	GMACPrice	PriceRangePercentage [2554]

4.2.25 Auction Type Rules Structure

Description This structure holds the product auction type rule.

Structure RDIAuctionTypeRule

The structure description is as follows:

Field	Type	Description
AuctionType	uint32_t	*AuctionType [1803]*
ClosedBookIndicator	uint32_t	*ClosedBookIndicator [28874]*
MarketImbalanceIndicator	uint32_t	*MarketImbalanceIndicator [28875]*

4.3 XETRA EBS Specific Messages

This section describes the XETRA specific GMAC messages.

Refer to the GMAC XETRA V3 mapping specifications for more details.

4.3.1 Generic Extension Header

Description The message header is present at the beginning of any XETRA EBS extension message.

Structure GMACExtensionXetraGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	XetraExtensionType	Xetra EBS extension type

4.3.2 Packet Header Extension Message

Description This message is used to provide the original Xetra packet header.

Structure GMACExtensionStructXetraPacketHeader

The message description is as follows:

Field	Type	Description
Head	GMACExtensionXetraGenericHeader	
MajorRelease[PM]	uint32_t	XETRA major release number
SenderCompID[PM]	uint32_t	Source ID type
PacketSeqNum[PM]	uint64_t	Packet sequence number
Timestamp[PM]	uint64_t	Time at which this packet left the XETRA host, specified in microseconds since midnight
PerformanceIndicator[PM]	uint64_t	XETRA host performance indicator

4.3.3 Instrument Reference Data Extension Message

Description This message is used to provide extra instrument reference data.

Structure GMACExtensionStructXetraInstrRef

The message description is as follows:

Field	Type	Description
Head	GMACExtensionXetraGenericHeader	
InstrumentGroup	char [15]	Instrument group
StreamCount	int	Number of streams
►Streams[6]	GMACExtensionStructEurexIPPort	

4.3.4 Maintenance Reference Data Extension Message

Description This message is used to provide extra maintenance reference data.

Structure GMACExtensionStructXetraMaintRef

The message description is as follows:

Field	Type	Description
Head	GMACExtensionXetraGenericHeader	
Exchange	char [5]	Exchange ID
Segment[PM]	char [5]	Exchange segment ID
StreamCount	int	Number of streams
►**Streams[2]**	GMACExtensionStructEurexIPPort	

4.3.5 SMP Cancelled Quantity Extension Message

Description This message is used to provide the cancelled quantity due to SMP event.

Structure GMACExtensionStructXetraSMPClxQty

The message description is as follows:

Field	Type	Description
Head	GMACExtensionXetra GenericHeader	
BidRestingClx[PM]	GMACQuantity	Bid cancelled quantity
BidRestingClxMarket[PM]	GMACQuantity	Bid cancelled market quantity
AskRestingClx[PM]	GMACQuantity	Ask cancelled quantity
AskRestingClxMarket[PM]	GMACQuantity	Ask cancelled market quantity
BidPrice[PM]	GMACPrice	Bid cancelled limit
AskPrice[PM]	GMACPrice	Ask cancelled limit

4.3.6 IP Address and Port Structure

Description This structure holds stream IP address details.

It is used in XETRA specific messages GMACExtensionStructXetraInstrRef and GMACExtensionStructXetraMaintRef.

Structure GMACExtensionStructEurexIPPort

The structure description is as follows:

Field	Type	Description
MID	GMACMulticastID	Multicast ID
Type	EurexXetraStreamType	Stream type
Service	char	Stream service type
IP	char [16]	IP address
Port	uint16_t	Port

4.4 Hotspot FX Specific Messages

This section describes the Hotspot FX specific GMAC messages.

Refer to the GMAC Hotspot FX V3 mapping specifications for more details.

4.4.1 Generic Extension Header

Description The message header is present at the beginning of any Hotspot FX extension message.

Structure GMACExtensionHotspotFXGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	HotspotFXExtensionType	Hotspot FX extension type

4.4.2 Order Information Extension Message

Description This message is used to provide order details.

Structure GMACExtensionStructHotspotFXOrderInfo

The message description is as follows:

Field	Type	Description
Head	GMACExtensionHotspotFX GenericHeader	
MinQty[PM]	GMACQuantity	Minimum quantity
LotSize[PM]	GMACQuantity	Lot Size

4.5 Euronext Derivatives Markets Specific Messages

This section describes the Euronext Derivatives Markets specific GMAC messages.

Refer to the GMAC Euronext Derivatives Markets XDP V3 mapping specifications for more details.

4.5.1 Market Modes Extension Message

Description This message is the Euronext Derivatives Markets modes extension message.

Structure GMACExtensionStructLiffeMS

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ExtensionType	XDPExtensionType	LiffeMS
Modes	GMACLiffeModes	Set of market modes, 15 bytes array

4.5.2 Throttle Size Extension Message

Description This message is the Euronext Derivatives Markets throttle size extension message.

Structure GMACExtensionStructLiffeThottleSize

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ExtensionType	XDPExtensionType	LiffeThrottleSize
ThrottleSize	uint32_t	Throttle size

4.6 CME Binary Specific Messages

This section describes the CME Globex Binary specific GMAC messages used by the GMAC plugin CME_BINARY.

Refer to the GMAC CME Binary V3 mapping specifications for more details.

4.6.1 Generic Extension Header

Description The message header is present at the beginning of any CME Binary extension message.

Structure GMACExtensionCMEBinaryGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	CMEBinaryExtensionType	CME Binary extension type

4.6.2 Feed Type Extension Message

Description This message is the CME security definition repeating Group extension message, issued as an extension to the generic messages Reference Security.

Structure GMACExtensionCMEBinaryFeedType

The message description is as follows:

Field	Type	Description
Head	GMACExtensionCMEBinary GenericHeader	
MDFeedType	char [4]	MDFeedType [1022]
MarketDepth	uint32_t	MarketDepth [264]

4.6.3 Instrument Attribute Extension Message

Description This message is the CME security definition repeating Group extension message, issued as an extension to the generic messages Reference Security.

Structure GMACExtensionCMEBinaryInstAttrib

The message description is as follows:

Field	Type	Description
Head	GMACExtensionCMEBinary GenericHeader	
InstAttribType	uint32_t	InstAttribType [871]
InstAttribValue	uint64_t	InstAttribValue [872]

4.6.4 Main Security Definition Extension Message

Description This message is the CME main security definition extension message, issued as an extension to the generic messages Reference Security.

Structure GMACExtensionCMEBinarySecDefMain

The message description is as follows:

Field	Type	Description
Head	GMACExtensionCMEBinary GenericHeader	
TotNumReports	uint32_t	TotNumReports [911]
NoMDFeedType	uint32_t	NoMDFeedType [1141]
NoInstAttrib	uint32_t	NoInstAttrib [870]
UserDefinedInstrument	char	UserDefinedInstrument [9779]
ClearedVolume[PM]	GMACQuantity	ClearedVolume [5791]
OpenInterestQty[PM]	GMACQuantity	OpenInterestQty [5792]
SecurityExchange[PM]	char [5]	SecurityExchange [207]
SecuritySubType[PM]	char [7]	SecuritySubType [762]
ApplID[PM]	int16_t	ApplID [1180]
PriceRatio[PM]	GMACPrice	PriceRatio [5770]
ContractMultiplierUnit[PM]	uint32_t	ContractMultiplierUnit [1435]
ContractMultiplier[PM]	uint32_t	ContractMultiplier [231]
FlowScheduleType[PM]	uint32_t	FlowScheduleType [1439]
UnderlyingProduct[PM]	uint32_t	UnderlyingProduct [462]
SettlCurrency[PM]	GMACCurrency	SettlCurrency [120]
MinLotSize_BlockLot[PM]	GMACQuantity	MinLotSize [1231] where LotType [1093] = 3 (minimum qty required for a block trade)
MinLotSize_RoundLotVar[PM]	GMACQuantity	MinLotSize [1231] where LotType [1093] = 4 (round lot)
OriginalContractSize[PM]	GMACQuantity	OriginalContractSize [5849]
SecurityType[PM]	char [7]	SecurityType [167]
TickRule[PM]	int8_t	TickRule [6350]
MainFraction[PM]	uint8_t	MainFraction [37702]
SubFraction[PM]	uint8_t	SubFraction [37703]
PriceDisplayFormat[PM]	uint8_t	PriceDisplayFormat [9800]
Asset[PM]	char [6]	Asset [6937]

4.6.5 Template Header Extension Message

Description This message is used to provide the template ID of the original CME message. It is issued as an extension to all generic messages.

Structure GMACExtensionCMEBinaryTemplateHeader

The message description is as follows:

Field	Type	Description
Head	GMACExtensionCMEBinary GenericHeader	
TemplateID	uint32_t	Template ID

4.6.6 Match Event Indicator Extension Message

Description This message is the CME match event indicator extension message. It is used to provide the raw Globex event indicator and is appended to the last generic message generated from the CME Binary template.

Structure GMACExtensionCMEBinaryMatchEventInd

The message description is as follows:

Field	Type	Description

Field	Type	Description
Head	GMACExtensionCMEBinary GenericHeader	
MatchEventIndicator[PM]	uint8_t	MatchEventIndicator [5799]

4.6.7 Matched Orders Extension Message

Description This message is the CME matched orders extension message. It is used to provide orders that participated in a match event and is appended as an extension to the generated trade message.

Structure GMACExtensionCMEBinaryMatchOrders

The message description is as follows:

Field	Type	Description
Head	GMACExtensionCMEBinary GenericHeader	
NumberOfMatchedOrders	uint8_t	NoOrderIDEntries [37705]
►MatchedOrders[]	GMACExtensionCMEBinary MatchOrderElement	List of orders that participated in a match event. The number of orders is provided by NumberOfMatchedOrders

4.6.8 Tick Rules Extension Message

Description This message is the CME tick rules extension message. It is used to provide tick rules as defined in the PRF clearing file.

Structure GMACExtensionCMEBinaryTickRules

The message description is as follows:

Field	Type	Description
Head	GMACExtensionCMEBinaryGenericHeader	
NoTickRules	uint8_t	Number of tick rules
►TickRules[]	GMACExtensionCMEBinaryTickRulesElement	List of tick rules

4.6.9 Order Snapshot Extension Message

Description This message is used to provide the total number of packets that constitutes a single instrument order book and the chunk sequence.

Structure GMACExtensionCMEBinaryOrderSnapshot

The message description is as follows:

Field	Type	Description
Head	GMACExtensionCMEBinary GenericHeader	
NoChuncks	uint32_t	NoChuncks [37709]
CurrentChunk	uint32_t	CurrentChunk [37710]

4.6.10 Matched Orders Structure

Description This structure handles the characteristics of an order that participated in a match event.

Structure GMACExtensionCMEBinaryMatchOrderElement

The structure description is as follows:

Field	Type	Description
MatchedOrderId	uint64_t	OrderID [37]
LastQty	uint32_t	LastQty [32]

4.6.11 Tick Rules Structure

Description This structure handles the characteristics of a tick rule.

Structure GMACExtensionCMEBinaryTickRulesElement

The structure description is as follows:

Field	Type	Description
TickRuleType	uint32_t	Tick rule type
StartTickPrcRng	GMACPrice	Start of tick price range
EndTickPrcRng	GMACPrice	End of tick price range
TickIncrement	uint64_t	Tick increment

4.7 CBOE Streaming Market Specific Messages

This section describes the CBOE CSM specific GMAC messages.

Refer to the GMAC CSM V3 mapping specifications for more details.

4.7.1 Security Definition Extension Message

Description This message is the CSM security definition extension message and is used to provide the Target Location ID which indicates over which data channel the market data for a given product will be delivered.

Structure GMACExtensionCSMSecDef

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ExtensionType	CSMExtensionType	CSMSecDef
TargetLocationID $^{P}_{M}$	CSMExtensionName	Indicates over which data channel the market data for a product will be transmitted

4.8 ITCH 5.0 Specific Messages

This section describes the ITCH 5.0 specific GMAC messages.

Refer to the GMAC ITCH50 V3 mapping specifications for more details.

4.8.1 Generic Extension Header

Description The message header is present at the beginning of any Nasdaq ITCH 5.0 extension message.

Structure GMACExtensionITCH50GenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	ITCH50ExtensionType	Nasdaq ITCH 5.0 extension type

4.8.2 Quoting Period Update Extension Message

Description This message is the ITCH 5.0 Quoting Period Update extension message and is used to provide the anticipated IPO quotation release time of a security.

Structure GMACExtensionITCH50QuotingPeriodUpdate

The message description is as follows:

Field	Type	Description
Head	GMACExtensionITCH50 GenericHeader	
IPOQuotationReleaseTime[PM]	uint32_t	IPO release time, in seconds since midnight, for quotation to the nearest second
IPOQuotationReleaseQualifier[PM]	char	See TotalView ITCH 5.0 specifications for the values
IPOPrice[PM]	GMACPrice	IPO price to be used for intraday net change calculations

4.8.3 Stock Directory Extension Message

Description This message is the ITCH 5.0 Stock Directory extension message and is used to provide the additional reference data.

Structure GMACExtensionITCH50StockDirectory

The message description is as follows:

Field	Type	Description
Head	GMACExtensionITCH50 GenericHeader	
TrackingNumber[PM]	uint16_t	NASDAQ OMX internal tracking number
FinancialStatusIndicator[PM]	char	See TotalView ITCH 5.0 specifications for the values
RoundLotsOnly[PM]	uint32_t	See TotalView ITCH 5.0 specifications for the values
IssueClassification[PM]	char	Identifies the security class for the issue as assigned by NASDAQ
IssueSubType[PM]	char [2]	Identifies the security sub-type for the issue as assigned by NASDAQ
Authenticity[PM]	char	See TotalView ITCH 5.0

Field	Type	Description
		specifications for the values
ShortSaleThresholdIndicator[PM]	char	See TotalView ITCH 5.0 specifications for the values
IPOFlag[PM]	char	See TotalView ITCH 5.0 specifications for the values
LULDReferencePriceTier[PM]	char	See TotalView ITCH 5.0 specifications for the values
ETPFlag[PM]	char	See TotalView ITCH 5.0 specifications for the values
ETPLeverageFactor[PM]	uint32_t	Tracks the integral relationship of the ETP to the underlying index
InverseIndicator[PM]	char	See TotalView ITCH 5.0 specifications for the values

4.9 NYSE ARCA XDP Specific Messages

This section describes the NYSE ARCA XDP specific GMAC messages.

Refer to the GMAC NYSE ARCA XDP V3 mapping specifications for more details.

4.9.1 New Trade Extension Message

Description This message is the XDP New Trade extension message and is used to provide the ask price and volume, bid price and volume of the last quote at the time of the trade.

Structure GMACExtensionARCAXDPTrade

The message description is as follows:

Field	Type	Description
Head	GMACMessageHeader	
ExtensionType	ARCAXDPExtensionType	ARCAXDPNewTrade
AskQuantity[PM]	GMACQuantity	Ask quantity of the last quote at the time of the trade
AskPrice[PM]	GMACPrice	Ask price of the last quote at the time of the trade
BidQuantity[PM]	GMACQuantity	Bid quantity of the last quote at the time of the trade
BidPrice[PM]	GMACPrice	Bid price of the last quote at the time of the trade

4.10 Euronext Cash Markets XDP Specific Messages

This section describes the Euronext Cash Markets XDP specific GMAC messages.

Refer to the GMAC Euronext Cash Markets XDP V3 mapping specifications for more details.

4.10.1 Generic Extension Header

Description The message header is present at the beginning of any Euronext Cash Markets XDP extension message.

Structure GMACExtensionEURONEXTGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	EURONEXTExtensionType	Euronext cash extension type

4.10.2 Off-book Trade Extension Message

Description This message is the Euronext Cash Markets XDP Off-book Trade extension message and is used to provide additional trade data.

Structure GMACExtensionEURONEXTOffBookTrade

The message description is as follows:

Field	Type	Description
Head	GMACExtensionEURONEXT GenericHeader	
TradeReference^{PM}	char [30]	Reference of the trade reported to the exchange
TradeDate^{PM}	uint32_t	Date at which the trade was executed, format YYYYMMDD
TradeTime^{PM}	uint64_t	Time at which the trade was executed
Venue^{PM}	char [12]	Venue where the trade took place
DelayedIndicator^{PM}	char	Was the trade subject to a deferred publication? Possible values: '0' Not delayed '1' Deferred
Currency^{PM}	GMACCurrency	Currency
Isin^{PM}	GMACIsinCode	ISIN code

4.10.3 Reference Data Extension Message

Description This message is the Euronext Cash Markets XDP Reference Data extension message and is used to provide additional reference data.

Structure GMACExtensionEURONEXTRefData

The message description is as follows:

Field	Type	Description
Head	GMACExtensionEURONEXT GenericHeader	
FinancialMarket	char [3]	Financial market code

4.11 BME HF SMARTGate Specific Messages

This section describes the BME HF SMARTGate specific GMAC messages.

Refer to the GMAC BME HF SMARTGate V3 mapping specifications for more details.

4.11.1 Generic Extension Header

Description The message header is present at the beginning of any BME HF SMARTGate extension message.

Structure GMACExtensionBMEGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	BMEExtensionType	BME extension type

4.11.2 Trade Event Extension Message

Description This message is the BME HF SMARTGate trade extension message and is used to provide additional trade data.

Structure GMACExtensionBMETradeEvent

The message description is as follows:

Field	Type	Description
Head	GMACExtensionBME	
	GenericHeader	
NoEvent	int	Number of events
►EventPairings[][PM]	GMACExtensionBME EventPairing	BME event information pairing

4.11.3 Gross Amount Extension Message

Description This message is the BME HF SMARTGate gross amount extension message.

Structure GMACExtensionBMEGrossAmount

The message description is as follows:

Field	Type	Description
Head	GMACExtensionBME GenericHeader	
GrossTradeAmt	uint64_t	Gross trade amount

4.11.4 Event Pairing Structure

Description This structure provides the BME event information pairing.

Structure GMACExtensionBMEEventPairing

The message description is as follows:

Field	Type	Description
EventType[PM]	char [4]	Event type

Field	Type	Description
EventText[PM]	char	Event text

4.12 Borsa Italiana Millennium ITCH Specific Messages

This section describes the Borsa Italiana Millennium ITCH specific GMAC messages.

Refer to the GMAC Borsa Italiana Millennium V3 mapping specifications for more details.

4.12.1 Generic Extension Header

Description The message header is present at the beginning of any BIT Millennium ITCH extension message.

Structure GMACExtensionBITMILGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	BITMILExtensionType	BIT Millennium ITCH extension type

4.12.2 Off-book Trade Extension Message

Description This message is the BIT Millennium ITCH Off-book Trade extension message and is used to provide additional trade data.

Structure GMACExtensionBITMILOffBookTrade

The message description is as follows:

Field	Type	Description
Head	GMACExtensionBITMIL GenericHeader	
TradeDate[PM]	char [9]	Date at which the trade was executed, format YYYYMMDD
TradeTime[PM]	char [9]	Time at which the trade was executed
Venue[PM]	char [12]	Venue where the trade took place
Currency[PM]	GMACCurrency	Currency
Isin[PM]	GMACIsinCode	ISIN code

4.12.3 Indicative Quote Extension Message

Description This message is the BIT Millennium ITCH Indicative Quote extension message and is used to provide the RFQ ID.

Structure GMACExtensionBITMILIndicativeQuote

The message description is as follows:

Field	Type	Description
Head	GMACExtensionBITMIL GenericHeader	
RFQID	char [10]	RFQ ID

4.13 LSE Millennium ITCH Specific Messages

This section describes the LSE Millennium ITCH specific GMAC messages.

Refer to the GMAC LSE Millennium V3 mapping specifications for more details.

4.13.1 Generic Extension Header

Description The message header is present at the beginning of any LSE Millennium ITCH extension message.

Structure GMACExtensionLSEMILGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	LSEMILExtensionType	LSE Millennium ITCH extension type

4.13.2 Off-book Trade Extension Message

Description This message is the LSE Millennium ITCH Off-book Trade extension message and is used to provide additional trade data.

Structure GMACExtensionLSEMILOffBookTrade

The message description is as follows:

Field	Type	Description
Head	GMACExtensionLSEMIL	
	GenericHeader	
TradeDate^{PM}	char [9]	Date at which the trade was executed, format YYYYMMDD
TradeTime^{PM}	char [9]	Time at which the trade was executed
Venue^{PM}	char [6]	Venue where the trade took place
Currency^{PM}	GMACCurrency	Currency

4.14 Oslo Millennium ITCH Specific Messages

This section describes the Oslo Millennium ITCH specific GMAC messages.

Refer to the GMAC Oslo Millennium V3 mapping specifications for more details.

4.14.1 Generic Extension Header

Description The message header is present at the beginning of any Oslo Millennium ITCH extension message.

Structure GMACExtensionOSLOMILGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	OSLOMILExtensionType	Oslo Millennium ITCH extension type

4.14.2 Off-book Trade Extension Message

Description This message is the Oslo Millennium ITCH Off-book Trade extension message and is used to provide additional trade data.

Structure GMACExtensionOSLOMILOffBookTrade

The message description is as follows:

Field	Type	Description
Head	GMACExtensionOSLOMIL	
	GenericHeader	
TradeDate[PM]	char [9]	Date at which the trade was executed, format YYYYMMDD
TradeTime[PM]	char [9]	Time at which the trade was executed
Venue[PM]	char [6]	Venue where the trade took place
Currency[PM]	GMACCurrency	Currency
Isin[PM]	GMACIsinCode	ISIN code

4.14.3 Reference Data Extension Message

Description This message is the Oslo Millennium ITCH Reference Data extension message and is used to provide additional reference data.

Structure GMACExtensionOSLOMILRefData

The message description is as follows:

Field	Type	Description
Head	GMACExtensionOSLOMIL GenericHeader	
MarketID	uint16_t	The market the Instrument is traded under

4.15 BrokerTec ITCH Specific Messages

This section describes the BrokerTec ITCH specific GMAC messages.

Refer to the GMAC BrokerTec ITCH mapping specifications for more details.

4.15.1 Generic Extension Header

Description The message header is present at the beginning of any BrokerTec ITCH extension message.

Structure GMACExtensionITCHBrokerTecGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	ITCHBrokerTecExtensionType	BrokerTec ITCH extension type

4.15.2 Order Book Directory Extension Message

Description This message is the BorkerTec ITCH Order Book Directory extension message and is used to provide additional reference data.

Structure GMACExtensionStructITCHBrokerTecOrderBookDirectory

The message description is as follows:

Field	Type	Description
Head	GMACExtensionITCHBrokerTec	
	GenericHeader	
LongName	char [32]	Long Name
FinancialProduct	uint8_t	Financial Product
NominalValue	uint64_t	Nominal Value
NumberOfDecimalsInNominal Value	uint16_t	Number of Decimals in Nominal Value
OddLotSize[PM]	uint32_t	Odd Lot Size
BlockLotSize[PM]	uint32_t	Block Lot Size

4.15.3 Trade Summary Extension Message

Description This message is the BrokerTec ITCH Trade Summary extension message and is used to provide a summary of a trade.

Structure GMACExtensionStructITCHBrokerTecTradeSummary

The message description is as follows:

Field	Type	Description
Head	GMACExtensionITCHBrokerTec GenericHeader	
Side[PM]	GMACSide	Side
TradePrice[PM]	GMACPrice	Trade Price
ShownQty[PM]	GMACQuantity	Shown Quantity
OtherQty[PM]	GMACQuantity	Other Quantity

4.16 SIP Specific Messages

This section describes the specific GMAC messages for the SIP CTA, UTP.

Refer to the GMAC CTA, UTP mapping specifications for more details.

4.16.1 Generic Extension Header

Description The message header is present at the beginning of any extension message.

Structure GMACExtensionSIPGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	SIPExtensionType	SIP extension type

4.16.2 Timestamp Extension Message

Description This message is the SIP extension message and is used to provide the Timestamp 1 and Timestamp 2 from the message header

Structure GMACExtensionStructSIPTimestamp

The message description is as follows:

Field	Type	Description
Head	GMACExtensionSIP GenericHeader	
Timestamp1[PM]	char [6]	Timestamp 1 expressed in base 95
Timestamp2[PM]	char [6]	Timestamp 2 expressed in base 95
Timestamp1Bin[PM]	uint64_t	Timestamp 1 Number of nanoseconds since Epoch.
Timestamp2Bin[PM]	uint64_t	Timestamp 2 Number of nanoseconds since Epoch.

4.16.3 FINRA ADF MPID Extension Message

Description This message is the SIP extension message and is used to provide the FINRA ADF MPIDs from the message header

Structure GMACExtensionStructFINRAADF

The message description is as follows:

Field	Type	Description
Head	GMACExtensionSIP GenericHeader	
BidADFMPID[PM]	char [5]	Bid ADF MPID
AskADFMPID[PM]	char [5]	Ask ADF MPID

4.17 eSpeed ITCH Specific Messages

This section describes the eSpeed ITCH specific GMAC messages.

Refer to the GMAC eSpeed ITCH mapping specifications for more details.

4.17.1 Generic Extension Header

Description The message header is present at the beginning of any eSpeed ITCH extension message.

Structure GMACExtensionITCHeSpeedGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	ITCHeSpeedExtensionType	eSpeed ITCH extension type

4.17.2 Order Book Directory Extension Message

Description This message is the eSpeed ITCH Order Book Directory extension message and is used to provide additional reference data.

Structure GMACExtensionStructITCHeSpeedOrderBookDirectory

The message description is as follows:

Field	Type	Description
Head	GMACExtensionITCHeSpeed	
	GenericHeader	
CUSIP[PM]	char [10]	CUSIP
SecurityDescription[PM]	char [17]	Security Description
Product[PM]	uint8_t	Product
ProductSubType[PM]	uint8_t	Product Subtype
PriceType[PM]	char [1]	Price Type
PriceDecimals[PM]	uint16_t	Price Decimals
YieldDecimals[PM]	uint16_t	Yield Decimals
CouponDecimals[PM]	uint16_t	Coupon Decimals
QtyMultiplier[PM]	uint32_t	Quantity Multiplier
Maturity[PM]	uint32_t	Maturity
Coupon[PM]	uint32_t	Coupon
DatedDate[PM]	uint32_t	Dated Date
IssueDate[PM]	uint32_t	Issue Date
AuctionDate[PM]	uint32_t	Auction Date
AnnouncementDate[PM]	uint32_t	Announcement Date
FirstCouponDate[PM]	uint32_t	First Coupon Date
SettlementDate[PM]	uint32_t	Settlement Date
Index[PM]	uint32_t	Index Reference Rate
Spread[PM]	uint32_t	Spread Rate
TradingFeatures[PM]	uint16_t	Trading Features
MinimumEntryQty[PM]	uint32_t	Minimum Entry Quantity
MinimumQtyIncrement[PM]	uint32_t	Minimum Quantity Increment

Field	Type	Description
MinimumBlockQty[PM]	uint32_t	Minimum Block Quantity
MaximumBlockBidOfferSpread[PM]	uint32_t	Maximum Block Bid/Offer Spread
MinimumBlockBidOfferSpread[PM]	uint32_t	Minimum Block Bid/Offer Spread
MinimumDiscretionQty[PM]	uint32_t	Minimum Discretion Quantity
DiscretionPriceTickSize[PM]	uint16_t	Discretion Price Tick Size
MaximumDiscretionBidOfferSpread[PM]	uint32_t	Maximum Discretion Bid/Offer Spread
DiscretionMarketZone[PM]	uint32_t	Discretion Market Zone

4.18 Nasdaq Nordic ITCH Specific Messages

This section describes the Nasdaq Nordic ITCH specific GMAC messages.

Refer to the GMAC Nasdaq Nordic ITCH mapping specifications for more details.

4.18.1 Generic Extension Header

Description The message header is present at the beginning of any Nasdaq Nordic ITCH extension message.

Structure GMACExtensionNordicITCHGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	NordicITCHExtensionType	Nasdaq Nordic ITCH extension type

4.18.2 Tracking Number Extension Message

Description This message is the Nasdaq Nordic ITCH extension message and is used to provide the tracking number.

Structure GMACExtensionNordicITCHTrackNbr

The message description is as follows:

Field	Type	Description
Head	GMACExtensionNordicITCH GenericHeader	
TrackingNumber	uint16_t	Tracking Number

4.18.3 Auction On Demand Extension Message

Description This message is the Nasdaq Nordic ITCH AOD extension message and is used to provide additional raw data.

Structure GMACExtensionNordicITCHAOD

The message description is as follows:

Field	Type	Description
Head	GMACExtensionNordicITCH GenericHeader	
CrossLevel	char	Level the cross is being generated for

4.18.4 Order Book Directory Extension Message

Description This message is the Nasdaq Nordic ITCH order book directory extension message and is used to provide additional raw data.

Structure GMACExtensionNordicITCHOrderBooks

The message description is as follows:

Field	Type	Description
Head	GMACExtensionNordicITCH GenericHeader	
MidBookMIC^{PM}	char [4]	Venue MIC indicating that a

Field	Type	Description
		Nordic@Mid book is available for the symbol
AODBookMIC[PM]	char [4]	Venue MIC indicating that an Auction On demand book is available for the symbol
NotationOfQty[PM]	char	Indication of the measurement units in which the quantity is expressed
NotionalAmount[PM]	uint64_t	Notional amount
Currency[PM]	char [3]	Currency of notional amount
PriceNotation[PM]	char	Indicates whether the price is expressed in monetary value
Multiplier[PM]	uint64_t	Multiplier to calculate quantity in measurement units

4.19 FXall Specific Messages

This section describes the FXall specific GMAC messages.

Refer to the GMAC FXall V3 mapping specifications for more details.

4.19.1 Generic Extension Header

Description The message header is present at the beginning of any FXall extension message.

Structure GMACExtensionFXAllGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	FXAllExtensionType	FXall extension type

4.19.2 Order Information Extension Message

Description This message is used to provide order details.

Structure GMACExtensionStructFXAllQuote

The message description is as follows:

Field	Type	Description
Head	GMACExtensionFXAll GenericHeader	
ExtensionType	FXAllExtensionType	FXAllQuote
MinQty[PM]	GMACQuantity	MinQty |110]
SettlDate[PM]	uint32_t	FutSettDate [64]
SettlCurrency[PM]	GMACCurrency	SettlCurrency [120]
SecurityType[PM]	char [12]	SecurityType [167]
MaturityDate[PM]	uint32_t	MaturityDate [541]

4.19.3 Security Extension Message

Description This message is used to provide security details.

Structure GMACExtensionStructFXAllSecurity

The message description is as follows:

Field	Type	Description
Head	GMACExtensionFXAll GenericHeader	
ExtensionType	FXAllExtensionType	FXAllSecurity
SettlDate[PM]	uint32_t	FutSettDate [64]
SettlType[PM]	char [12]	
SecurityType[PM]	char [12]	SecurityType [167]
MaturityDate[PM]	uint32_t	MaturityDate [541]
Currency1[PM]	GMACCurrency	Currency1 [7100]
Currency2[PM]	GMACCurrency	Currency2 [7101]
DaysToSpot[PM]	uint32_t	DaysToSpot [7102]

Field	Type	Description
BasisPoint[PM]	uint32_t	BasisPoint [7103]
RatePrecision[PM]	uint32_t	RatePrecision [7104]
RateTerm[PM]	GMACCurrency	RateTerm [7105]
Currency1AmtDecimals[PM]	uint32_t	Currency1AmtDecimals [7106]
Currency2AmtDecimals[PM]	uint32_t	Currency2AmtDecimals [7107]

4.20 NYSE XDP Specific Messages

This section describes the NYSE XDP specific GMAC messages.

Refer to the GMAC NYSE XDP V3 mapping specifications for more details.

4.20.1 Generic Extension Header

Description The message header is present at the beginning of any NYSE XDP extension message.

Structure GMACExtensionNYSEXDPGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	NYSEXDPExtensionType	NYSE XDP extension type

4.20.2 Trading Status Extension Message

Description This message is used to provide trading status additional data.

Structure GMACExtensionNYSEXDPTradingStatus

The message description is as follows:

Field	Type	Description
Head	GMACExtensionNYSEXDP GenericHeader	
Price1[PM]	uint32_t	Price1
Price2[PM]	uint32_t	Price2
SSRTriggeringExchangeID[PM]	char	SSRTriggeringExchangeID
SSRTriggeringVolume[PM]	uint32_t	SSRTriggeringVolume
Time[PM]	uint32_t	Time
SSRState[PM]	char	SSRState
MarketState[PM]	char	MarketState
SessionState[PM]	char	SessionState

4.20.3 Imbalance Extension Message

Description This message is used to provide imbalance additional data.

Structure GMACExtensionNYSEXDPImbalance

The message description is as follows:

Field	Type	Description
Head	GMACExtensionNYSEXDP GenericHeader	
ReferencePrice	uint32_t	Reference price
AuctionType	char	Auction type
UpperCollar[PM]	uint32_t	Upper Collar
LowerCollar[PM]	uint32_t	Lower Collar
AuctionStatus[PM]	uint8_t	Auction Status
FreezeStatus[PM]	uint8_t	Freeze Status

Field	Type	Description
NumExtensions[PM]	uint8_t	Num Extensions

4.21 Bats Specific Messages

This section describes the Bats specific GMAC messages.

Refer to the GMAC Bats US Equities V3 mapping, GMAC Bats Europe V3 mapping and GMAC Bats Options V3 mapping specifications for more details.

4.21.1 Generic Extension Header

Description The message header is present at the beginning of any Bats extension message.

Structure GMACExtensionBATSGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	BATSExtensionType	Bats extension type

4.21.2 Exposure Period Extension Message

Description This message is used to provide the Bats Options exposure period.

Structure GMACExtensionBATSExposurePeriod

The message description is as follows:

Field	Type	Description
Head	GMACExtensionBATS GenericHeader	
AuctionEndOffset	uint32_t	Auction End Offset

4.21.3 Trade Extension Message

Description This message is used to provide the Bats Europe Market Model Typology (MMT) flags using efficient encoding flags as defined by the MMT Initiative.

Structure GMACExtensionBatsTrade

The message description is as follows:

Field	Type	Description
Head	GMACExtensionBATS GenericHeader	
MarketMechanism	char	MMT level 1 using ESMA efficient encoding option
TradingMode	char	MMT level 2 using ESMA efficient encoding option
TransactionCategory	char	MMT level 3.1 using ESMA efficient encoding option
NegotiatedTrade	char	MMT level 3.2 using ESMA efficient encoding option
CrossingTrade	char	MMT level 3.3 using ESMA efficient encoding option
ModificationIndicator	char	MMT level 3.4 using ESMA efficient encoding option
BenchmarkPriceIndicator	char	MMT level 3.5 using ESMA efficient encoding option
ExCumDividend	char	MMT level 3.6 using ESMA efficient encoding option
OffBookAutomatedIndicator	char	MMT level 3.7 using ESMA efficient encoding option
ContributionToPriceFormation	char	MMT level 3.8 using ESMA

Field	Type	Description
		efficient encoding option
AlgorithmicTrade	char	MMT level 3.9 using ESMA efficient encoding option
PublicationMode	char	MMT level 4.1 using ESMA efficient encoding option
PostTradeDeferral	char	MMT level 4.2 using ESMA efficient encoding option
DuplicativeIndicator	char	MMT level 5 using ESMA efficient encoding option

4.22 Borsa Istanbul ITCH Specific Messages

This section describes the Borsa Istanbul ITCH specific GMAC messages.

4.22.1 Generic Extension Header

Description The message header is present at the beginning of any Borsa Istanbul ITCH extension message.

Structure GMACExtensionITCHBISTGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	ITCHBISTExtensionType	Borsa Istanbul ITCH extension type

4.22.2 Order Book Directory Extension Message

Description This message is the Borsa Istanbul ITCH Order Book Directory extension message and is used to provide additional reference data.

Structure GMACExtensionStructITCHBISTOrderBookDirectory

The message description is as follows:

Field	Type	Description
Head	GMACExtensionITCHBIST GenericHeader	
LongName[PM]	char [32]	Long name
FinancialProduct[PM]	uint8_t	Financial product
NominalDecimals[PM]	uint16_t	Number of decimals in nominal value
Nominal[PM]	uint64_t	Nominal value

4.22.3 State Name Extension Message

Description This message is the Borsa Istanbul ITCH State Name extension message and is used to provide the instrument state name.

Structure GMACExtensionStructITCHBISTStateName

The message description is as follows:

Field	Type	Description
Head	GMACExtensionITCHBIST GenericHeader	
LongName	char [20]	State name

4.23 Euronext Optiq MDG Specific Messages

This section describes the Euronext Optiq MDG specific GMAC messages.

4.23.1 Generic Extension Header

Description The message header is present at the beginning of any Euronext Optiq MDG extension message.

Structure GMACExtensionEURONEXTGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	EURONEXTExtensionType	Euronext cash extension type

4.23.2 Throttle Size Extension Message

Description This message is the Euronext Optiq MDG throttle size extension message.

Structure GMACExtensionEURONEXTThrottleSize

The message description is as follows:

Field	Type	Description
Head	GMACExtensionEURONEXT GenericHeader	
ThrottleSize^{PM}	uint16_t	Throttle for incoming orders

4.23.3 Trade Retransmission Extension Message

Description This message is the Euronext Optiq MDG trade retransmission extension message.

Structure GMACExtensionEURONEXTTradeRetrans

The message description is as follows:

Field	Type	Description
Head	GMACExtensionEURONEXT GenericHeader	
StartTime^{PM}	uint64_t	Trade retransmission start time
EndTime^{PM}	uint64_t	Trade retransmission end time
EMM	uint8_t	Exchange Market Mechanism

4.23.4 Trade Extension Message

Description This message is the Euronext Optiq MDG trade retransmission extension message and is used to provide additional trade data. It particularly provides the Market Model Typology (MMT) flags using efficient encoding flags as defined by the MMT Initiative.

Structure GMACExtensionEURONEXTTrade

The message description is as follows:

Field	Type	Description
Head	GMACExtensionEURONEXT GenericHeader	

Field	Type	Description
PublicationDateTime[PM]	char [27]	Publication Date Time
InstrumentIDType[PM]	char [4]	MiFID Instrument ID Type
InstrumentID[PM]	char [12]	MiFID Instrument ID
ExecutionID[PM]	char [52]	MiFID Execution ID
PriceNotation[PM]	char [4]	MiFID Price Notation
Currency[PM]	char [3]	MiFID Currency
QtyMeasurementUnitNotation[PM]	char [25]	MiFID Qty in Measurement Unit Notation
QtyMeasurementUnit[PM]	char [20]	MiFID Quantity Measurement Unit
NotionalAmount[PM]	char [20]	MiFID Notional Amount
NotionalCurrency[PM]	char [3]	Notional Currency
ClearingFlag[PM]	char [5]	MiFID Clearing Flag
EffectiveDateInd[PM]	uint8_t	Effective Date Indicator
BlockTradeCode[PM]	uint8_t	Block Trade Code
TradeReference[PM]	char [30]	Trade Reference
OriginalTimestamp[PM]	uint64_t	Original Report timestamp
CurrencyCoefficient[PM]	uint32_t	Currency Coefficient
PriceMultiplier[PM]	uint32_t	Price Multiplier
Venue[PM]	char [11]	Venue
StartTimeVWAP[PM]	uint32_t	Start Time VWAP
EndTimeVWAP[PM]	uint32_t	End Time VWAP
EmissionAllowanceType[PM]	char [4]	MiFID Emission Allowance Type
MarketReference[PM]	char [4]	Instrument Exchange of

Field	Type	Description
		Reference MIC
MiFIDPrice[PM]	char [20]	MiFID Price
EMM	uint8_t	Exchange Market Mechanism
MarketMechanism[PM]	char	MMT level 1 using ESMA efficient encoding option
TradingMode[PM]	char	MMT level 2 using ESMA efficient encoding option
TransactionCategory[PM]	char	MMT level 3.1 using ESMA efficient encoding option
NegotiatedTrade[PM]	char	MMT level 3.2 using ESMA efficient encoding option
CrossingTrade[PM]	char	MMT level 3.3 using ESMA efficient encoding option
ModificationIndicator[PM]	char	MMT level 3.4 using ESMA efficient encoding option
BenchmarkPriceIndicator[PM]	char	MMT level 3.5 using ESMA efficient encoding option
ExCumDividend[PM]	char	MMT level 3.6 using ESMA efficient encoding option
OffBookAutomatedIndicator[PM]	char	MMT level 3.7 using ESMA efficient encoding option
ContributionToPriceFormation[PM]	char	MMT level 3.8 using ESMA efficient encoding option
AlgorithmicTrade[PM]	char	MMT level 3.9 using ESMA efficient encoding option
PublicationMode[PM]	char	MMT level 4.1 using ESMA efficient encoding option

Field	Type	Description
PostTradeDeferral[PM]	char	MMT level 4.2 using ESMA efficient encoding option
DuplicativeIndicator[PM]	char	MMT level 5 using ESMA efficient encoding option

4.23.5 Exchange Market Mechanism Extension Message

Description This message is the Euronext Optiq MDG exchange market mechanism 'EMM' extension message.

Structure GMACExtensionEURONEXTEMM

The message description is as follows:

Field	Type	Description
Head	GMACExtensionEURONEXT GenericHeader	
EMM	uint8_t	Exchange Market Mechanism

4.23.6 End Of Snapshot Extension Message

Description This message is the Euronext Optiq MDG end of snapshot extension message.

Structure GMACExtensionEURONEXTEndOfSnapshot

The message description is as follows:

Field	Type	Description
Head	GMACExtensionEURONEXT GenericHeader	
LastMarketDataSequenceNumber	uint64_t	Last Market Data Sequence Number

4.23.7 Timetable Extension Message

Description This message is the Euronext Optiq MDG timetable extension message.

Structure GMACExtensionEURONEXTTimetable

The message description is as follows:

Field	Type	Description
Head	GMACExtensionEURONEXT GenericHeader	
PatternID	uint16_t	Pattern ID
EMM	uint8_t	EMM
PhaseTime[PM]	uint32_t	Phase Time
PhaseID[PM]	uint8_t	Phase ID
PhaseQualifier[PM]	uint16_t	Phase Qualifier
TradingPeriod[PM]	uint8_t	Trading Period
OrderEntryQualifier[PM]	uint8_t	Order Entry Qualifier
Session[PM]	uint8_t	Session

4.23.8 Tick Size Extension Message

Description This message is Euronext Optiq MDG tick size extension message.

Structure GMACExtensionEurexProdTickRules

The message description is as follows:

Field	Type	Description
Head	GMACExtensionEURONEXTGenericHeader	
NoOfTicks	uint8_t	Number of tick sizes
►Ticks[]	GMACExtensionEURONEXTTick	List of tick sizes

4.23.9 Reference Data Extension Message

Description This message is the Euronext Optiq MDG reference data extension message.

Structure GMACExtensionEURONEXTReferenceData

The message description is as follows:

Field	Type	Description
Head	GMACExtensionEURONEXT GenericHeader	
QuantityDecimals	uint8_t	Quantity decimals

4.23.10 Tick Size Structure

Description This structure holds the tick size.

Structure GMACExtensionEURONEXTTick

The structure description is as follows:

Field	Type	Description
EMM	uint8_t	EMM
MinimumPrice^{PM}	GMACPrice	Minimum Price
Tick^{PM}	GMACPrice	Tick Size

4.24 LSE Group Ticker Plant Specific Messages

This section describes the LSE Group Ticker Plant specific GMAC messages.

Refer to the GMAC LSE GTP V3 mapping specifications for more details.

4.24.1 Generic Extension Header

Description The message header is present at the beginning of any LSE GTP extension message.

Structure GMACExtensionGTPGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	GTPExtensionType	LSE GTP extension type

4.24.2 System Event Extension Message

Description This message is the LSE GTP system event extension message and is used to provide additional raw data.

Structure GMACExtensionGTPSystemEvent

The message description is as follows:

Field	Type	Description
Head	GMACExtensionGTP	
	GenericHeader	
EventCode	char	Event Code
SourceVenue	uint16_t	Source Venue

4.24.3 Order Book Clear Extension Message

Description This message is the LSE GTP order book clear extension message and is used to provide additional raw data.

Structure GMACExtensionGTPOrderBookClear

The message description is as follows:

Field	Type	Description
Head	GMACExtensionGTP GenericHeader	
SourceVenue	uint16_t	Source Venue
OrderBookType	uint8_t	Order Book Type

4.24.4 Add Order Extension Message

Description This message is the LSE GTP add order extension message and is used to provide additional raw data.

Structure GMACExtensionGTPAddOrder

The message description is as follows:

Field	Type	Description

Field	Type	Description
Head	GMACExtensionGTP GenericHeader	
Yield	int64_t	Yield
Participant	char [11]	Participant
SourceVenue	uint16_t	Source Venue
Depth[PM]	uint8_t	Depth
OrderType[PM]	uint8_t	Order Type
OrderBookType	uint8_t	Order Book Type

4.24.5 Modify Order Extension Message

Description This message is the LSE GTP modify order extension message and is used to provide additional raw data.

Structure GMACExtensionGTPModifyOrder

The message description is as follows:

Field	Type	Description
Head	GMACExtensionGTP GenericHeader	
Yield	int64_t	Yield
SourceVenue	uint16_t	Source Venue
PreviousYield	int64_t	Previous Yield
PreviousPrice	int64_t	Previous Price
PreviousQuantity	uint64_t	Previous Quantity
OrderBookType	uint8_t	Order Book Type
Flags	uint8_t	Flags

4.24.6 Delete Order Extension Message

Description This message is the LSE GTP delete order extension message and is used to provide additional raw data.

Structure GMACExtensionGTPDeleteOrder

The message description is as follows:

Field	Type	Description
Head	GMACExtensionGTP GenericHeader	
SourceVenue	uint16_t	Source Venue
PreviousYield	int64_t	Previous Yield
PreviousPrice	int64_t	Previous Price
PreviousQuantity	uint64_t	Previous Quantity
OrderBookType	uint8_t	Order Book Type

4.24.7 Top of Book Extension Message

Description This message is the LSE GTP top of book order extension message and is used to provide additional raw data.

Structure GMACExtensionGTPTOBLimit

The message description is as follows:

Field	Type	Description
Head	GMACExtensionGTP GenericHeader	
Yield	int64_t	Yield
SourceVenue	uint16_t	Source Venue
OrderBookType	uint8_t	Order Book Type

4.24.8 Market by Price Extension Message

Description This message is the LSE GTP market by price extension message and is used to provide additional raw data.

Structure GMACExtensionGTPMBP

The message description is as follows:

Field	Type	Description
Head	GMACExtensionGTP GenericHeader	
Yield	int64_t	Yield
SourceVenue	uint16_t	Source Venue
OrderBookType	uint8_t	Order Book Type

4.24.9 Instrument Status Extension Message

Description This message is the LSE GTP instrument status extension message and is used to provide additional raw data.

Structure GMACExtensionGTPInstrumentStatus

The message description is as follows:

Field	Type	Description
Head	GMACExtensionGTP GenericHeader	
SourceVenue	uint16_t	Source Venue
SessionChangeReason	uint8_t	Session Change Reason
NewEndTime	char [6]	New End Time
OrderBookType	uint8_t	Order Book Type

4.24.10 Source Venue Extension Message

Description This message is the LSE GTP source venue extension message and is used to provide additional raw data.

Structure GMACExtensionGTPSourceVenue

The message description is as follows:

Field	Type	Description
Head	GMACExtensionGTP GenericHeader	
SourceVenue	uint16_t	Source Venue

4.24.11 Trade Extension Message

Description This message is the LSE GTP trade extension message and is used to provide additional raw data.

Structure GMACExtensionGTPTrade

The message description is as follows:

Field	Type	Description
Head	GMACExtensionGTP GenericHeader	
SourceVenue	uint16_t	Source Venue
Yield[PM]	int64_t	Yield
AuctionType[PM]	uint8_t	Auction Type
CrossID[PM]	uint64_t	Cross ID
CrossType[PM]	char	Cross Type
ReportedExecutionVenue[PM]	char	Reported Execution venue
Flags[PM]	uint8_t	Flags
OffBookTradeType[PM]	char [4]	Off-book Trade Type
TradedCurrency[PM]	char [3]	Traded Currency
OriginalPrice[PM]	int64_t	Original Price

4.24.12 Instrument Directory Extension Message

Description This message is the LSE GTP instrument directory extension message and is used to provide additional raw data.

Structure GMACExtensionGTPInstrumentDirectory

The message description is as follows:

Field	Type	Description
Head	GMACExtensionGTP GenericHeader	
SourceVenue	uint16_t	Source Venue
AllowedBookTypes	uint8_t	Allowed Book Types
VenueInstrumentID	char [11]	Venue Instrument ID
TickID	char [2]	Tick ID
PriceBandTolerances	int64_t	Price band Tolerances
DynamicCircuitBreakerTolerances	int64_t	Dynamic Circuit Breaker Tolerances
StaticCircuitBreakerTolerances	int64_t	Static Circuit Breaker Tolerances
UnderlyingISINCode	char [12]	Underlying ISIN Code
UnderlyingInstrumentID	char [11]	Venue Underlying ID
InverseOrderBook	uint8_t	Flags
StaticReferencePrice	int64_t	Static Reference Price
DynamicReferencePrice	int64_t	Dynamic Reference Price

4.25 NYSE Options XDP Specific Messages

This section describes the NYSE Options XDP specific GMAC messages.

Refer to the GMAC NYSE Options XDP V3 mapping specifications for more details.

4.25.1 Generic Extension Header

Description The message header is present at the beginning of any NYSE Options XDP extension message.

Structure GMACExtensionOptionXDPGenericHeader

The header description is as follows:

Field	Type	Description
MsgType	GMACMessageType	Exchange message type
Length	uint16_t	Extension length
ExtensionType	OptionXDPExtensionType	NYSE Options XDP extension type

4.25.2 BOLD RFQ Extension Message

Description This message is used to provide Broadcast Order Liquidity Delivery RFQ additional data.

Structure GMACExtensionOptionXDPBOLDRFQ

The message description is as follows:

Field	Type	Description
Head	GMACExtensionOptionXDP	
	GenericHeader	
Capacity	char	Customer or Firm capacity specified with the order
Price	int32_t	The price at which the order is exposed
Participant	char [4]	OCC code for the Clearing firm specified with the order

5. Format

5.1 Field Types

The following table provides the des description of generic field types:

Type	Type	Comments
GMACPrice	int64_t	The price value should be corrected by the price factor. Either the price factor is provided by GMACMessageReferenceHeaderV3.PriceFactor or the prices in the GMAC messages are scaled using a fixed price factor. Refer to each plug-in mapping for details. See section Price Factor Structure for details.
GMACDecimal	int64_t	Value is shifted to GMAC_DECIMAL_PLACES digits fixed points.
GMACQuantity	uint64_t	Quantity is shifted to GMAC_DECIMAL_PLACES digits fixed points. The quantity 12.34 is coded as 1234000000
GMACOrderID	uint64_t	Any Order ID in the feed is uniquely coded into 64 bits
GMACTradeID	uint64_t	Trade ID type
GMACTraderID	uint64_t	Trader ID type
GMACInstrumentIndex	char [GMAC_INSTRUMENT_MAX_LENGTH]	Two instrument index types: • Instrument index, null terminated C string, starting with '#'. Null termination is only applicable if the instrument index is smaller than GMAC_INSTRUMENT_MAX_LENGTH • instrument binary index starting with '/', the second byte is the length of the following array of characters
GMACInstrumentName	char [GMAC_INSTRUMENT_MAX_LENGTH]	Instrument name, null terminated C string, starting with any alpha numeric character. Null termination is only applicable if the instrument name is smaller than GMAC_INSTRUMENT_MAX_LENGTH.
GMACInstrumentDescription	char [GMAC_INSTRUMENT_MAX_LENGTH]	Instrument description, null terminated C string, starting with any alpha numeric character. Null termination is only applicable if the instrument name is smaller than

Type	Type	Comments
		GMAC_INSTRUMENT_MAX_LENGTH.
GMACMulticastID	uint32_t	Multicast ID type
GMACChannelID	uint32_t	Channel ID type
GMACCurrency	char [GMAC_MAX_CURRENCY_LENGTH]	Currency type
GMACUnit	char [GMAC_UNIT_MAX_LENGTH]	Contract size unit type
GMACVenueID	uint8_t	Venue ID type
GMACIsinCode	char [GMAC_MAX_ISIN_LENGTH]	ISIN code type
GMACMnemonicCode	char [GMAC_MAX_MNEMONIC_LENGTH]	Mnemonic type
GMACMarketIdentifierCode	char [GMAC_MAX_MIC_LENGTH]	MIC type
CSMExtensionName	char [GMAC_INSTRUMENT_MAX_LENGTH]	CBOE CSM Target Location ID type
GMACObjID	uint32_t	Object ID type

5.2 Enumerations

The following table provides the possible values of enumerations:

Enumeration	Values	Description
GMACTradingStatus	**TSTATUS_UNKNOWN**	Unknown or invalid
	TSTATUS_CLOSE	Closed trading status. Orders and / or quotes submission is not allowed.
	TSTATUS_SUSPEND	Suspended or halted trading status. Orders and / or quotes submission may be allowed or not with no matching.
	TSTATUS_QUOTE	Quotation-only trading status. Orders and / or quotes submission is allowed with no matching. This also includes rotation.
	TSTATUS_EXTEND	Extended hours trading status. Orders and / or quotes submission is allowed with matching outside the standard market hours.
	TSTATUS_OPEN	Open trading status. Orders and / or quotes submission is allowed with matching (regular trading) within market hours.
GMACCycleStatus	**CSTATUS_NONE**	Reset
	CSTATUS_START_CYCLE1	Start of cycle 1 (Eurex EBS product reference) Start of reference data (Eurex New Trading Architecture) Start of reference (XETRA) Start of summary messages (CSM)
	CSTATUS_END_CYCLE1	End of cycle 1 (Eurex EBS product reference)

Enumeration	Values	Description
		End of reference data (Eurex New Trading Architecture)
		End of reference (XETRA)
		End of summary messages (CSM)
	CSTATUS_START_CYCLE2	Start of cycle 2 (Eurex EBS SglLeg reference)
		Start of maintenance (XETRA)
		Start of settlement messages (CSM)
	CSTATUS_END_CYCLE2	End of cycle 2 (Eurex EBS Leg reference)
		End of maintenance (XETRA)
		End of settlement messages (CSM)
	CSTATUS_START_CYCLE3	Start of cycle 3 (Eurex EBS strategy reference)
	CSTATUS_END_CYCLE3	End of cycle 3 (Eurex EBS strategy reference)
	CSTATUS_END_OF_CYCLES	End of cycles (Eurex EBS, Eurex New Trading Architecture, XETRA)
GMACLiffeModes	**LMM_Closed**	1
	LMM_ExPitExtendOpen	4
	LMM_Halted	6
	LMM_Open	7
	LMM_PreClosed	8
	LMM_PreOpen	9
	LMM_PriceLimitsEnabled	10
	LMM_PriceLimitsDisabled	11
	LMM_RestrictedOpen	12
	LMM_Session1	13

Enumeration	Values	Description
	LMM_Session2	14
	LMM_Session3	15
	LMM_QuoteWidthExemption1	23
	LMM_QuoteWidthExemption2	24
	LMM_QuoteWidthExemption3	25
	LMM_DarkSeries	28
	LMM_LightSeries	29
	LMM_TradingUnhalt	30
	LMM_Terminate	31
	LMM_UnTerminate	32
	LMM_Expire	39
	LMM_PreExpiry	40
	LMM_Hold	41
	LMM_Unhold	42
	LMM_ExPitLargeinScaleTradesExtendOpen	51
	LMM_ExPitBasisTradesExtendOpen	52
	LMM_ExPitAgainstActualsTradesExtendOpen	53
	LMM_ExPitLargeinScalePackageTradesExtendOpen	55
	LMM_ExPitExchangeForSwapsTradesExtendOpen	57
GMACPriceType	**PTYPE_PRELIMINARY_SETTLEMENT**	Preliminary settlement price (rounded)
	PTYPE_PRELIMINARY_SETTLEMENT_INTRADAY	Preliminary intraday settlement price (rounded)

Enumeration	Values	Description
	PTYPE_FINAL_REAL_SETTLEMENT	Final real settlement price (rounded)
	PTYPE_FINAL_REAL_SETTLEMENT_INTRADAY	Final intraday real settlement price (rounded)
	PTYPE_FINAL_THEORETICAL_SETTLEMENT	Final theoretical settlement price (rounded)
	PTYPE_FINAL_THEORETICAL_SETTLEMENT_INTRADAY	Final intraday theoretical settlement price (rounded)
	PTYPE_PRELIMINARY_SETTLEMENT_NOT_ROUNDED	Preliminary settlement price (non-rounded or undefined)
	PTYPE_PRELIMINARY_SETTLEMENT_NOT_ROUNDED_INTRADAY	Preliminary intraday settlement price (non-rounded or undefined)
	PTYPE_FINAL_REAL_SETTLEMENT_NOT_ROUNDED	Final real settlement price (non-rounded or undefined)
	PTYPE_FINAL_REAL_SETTLEMENT_NOT_ROUNDED_INTRADAY	Final intraday real settlement price (non-rounded or undefined)
	PTYPE_FINAL_THEORETICAL_SETTLEMENT_NOT_ROUNDED	Final theoretical settlement price (non-rounded or undefined)
	PTYPE_FINAL_THEORETICAL_SETTLEMENT_NOT_ROUNDED_INTRADAY	Final intraday theoretical settlement price (non-rounded or undefined)
	PTYPE_Provisional_Daily	Provisional daily
	PTYPE_Official_Daily	Official daily
	PTYPE_Provisional_Market_Close	Provisional market close
	PTYPE_Official_Market_Close	Official market close
	PTYPE_Provisional_Expiry	Provisional expiry
	PTYPE_Official_Expiry	Official expiry
	PTYPE_Provisional_IntraDay	Provisional intraday
	PTYPE_Official_IntraDay	Official intraday
	PTYPE_Official_YDSP	Official YDSP
	PTYPE_FINAL_DAILY_SETTLEMENT_PRICE	Final daily settlement price
	PTYPE_FINAL_REAL_OPEN_PRICE	Final real open price

Enumeration	Values	Description
	PTYPE_FINAL_THEORETICAL_OPEN_PRICE	Final theoretical open price
	PTYPE_PREVIOUS_TRADING_DAY	Price is related to the previous trading day
GMACSide	**SIDE_ASK**	Ask side (-1)
	SIDE_BID	Bid side (1)
	SIDE_UNKNOWN	Unknown (0)
GMACCustomQuantityType	**GMAC_CUSTOM_QUANTITY_TYPE_ALL_OR_NONE**	All or none quantity type
	GMAC_CUSTOM_QUANTITY_TYPE_CUSTOMER	Customer quantity type
	GMAC_CUSTOM_QUANTITY_TYPE_CUSTOMER_ALL_OR_NONE	Customer all or none quantity type
	GMAC_CUSTOM_QUANTITY_TYPE_CUSTOMER_PROFESSIONAL	Customer professional quantity type
	GMAC_CUSTOM_QUANTITY_TYPE_IMPLIED	Implied quantity type
GMACDataType	**GMAC_DATA_TYPE_UNKNOWN**	Unknown data type
	GMAC_DATA_TYPE_SNAPSHOT	Snapshot data type
	GMAC_DATA_TYPE_LIVE	Live data type
GMACSHOShortSaleRestriction	**REGSHO_IN_EFFECT**	RegSHO short sale price restriction in effect or remains in effect
	REGSHO_NOT_IN_EFFECT	No short sale price restriction
GMACSuspendedStatus	**SUSPENDEDSTATUS_RESUMED**	Trading of instrument is resumed from suspension
	SUSPENDEDSTATUS_SUSPENDED	Trading of instrument is suspended
GMACMessageType	**GMAC_TYPE_IMBALANCE_V3**	Imbalance message
	GMAC_TYPE_INFORMATION_V3	Information message
	GMAC_TYPE_OHLC_V3	OHLC message
	GMAC_TYPE_ORDER_DECREASE_V3	Order decrease message

Enumeration	Values	Description
	GMAC_TYPE_ORDER_DEPTH_V3	Order depth message
	GMAC_TYPE_ORDER_EXECUTED_V3	Order executed message
	GMAC_TYPE_ RESET_V3	Reset message
	GMAC_TYPE_ORDER_UPDATE_V3	Order update message
	GMAC_TYPE_QUOTE_REQUEST_V3	Quote request message
	GMAC_TYPE_REFERENCE_SECURITY_V3	Reference security message
	GMAC_TYPE_BUNDLE_MARKER_V3	Bundle marker message
	GMAC_TYPE_SNAPSHOT_UPDATE_V3	Snapshot update message
	GMAC_TYPE_TRADE_V3	Trade message
	GMAC_TYPE_TRADING_STATUS_V3	Trading status message
	GMAC_TYPE_UNCROSSING_V3	Uncrossing message
	GMAC_TYPE_TIME_REFERENCE_V3	Time reference message
	GMAC_TYPE_SHO_SHORT_SALE_PRICE_RESTRICTION_V3	SHO short sale price restriction message
	GMAC_TYPE_RETAIL_PRICE_IMPROVEMENT_V3	Retail price improvement message
	GMAC_TYPE_LULD_INDICATOR_V3	Limit Up Limit Down Indicator message
	GMAC_TYPE_SUSPENDED_STATUS_V3	Suspended status message
	GMAC_TYPE_MWCB_LEVEL_V3	Market Wide Circuit Breaker Level message
	GMAC_TYPE_MWCB_STATUS_V3	Market Wide Circuit Breaker Status message
	GMAC_TYPE_OPEN_INTEREST_V3	Open interest message
	GMAC_TYPE_MULTICAST_TIMEOUT	Multicast timeout message
	GMAC_TYPE_VALUE_V3	Value message

Enumeration	Values	Description
	GMAC_TYPE_SERVICE_V3	Service message
	GMAC_TYPE_EXTENSION_ICE_V3	ICE extension message
	GMAC_TYPE_EXTENSION_EUREX_V3	EUREX extension message
	GMAC_TYPE_EXTENSION_XETRA_V3	XETRA extension message
	GMAC_TYPE_EXTENSION_HOTSPOTFX_V3	Hotspot FX extension message
	GMAC_TYPE_EXTENSION_XDP_V3	Euronext Derivatives extension message
	GMAC_TYPE_EXTENSION_ISEMDI_V3	ISE MDI extension message
	GMAC_TYPE_EXTENSION_CSM_V3	CBOE CSM extension message
	GMAC_TYPE_EXTENSION_CME_BINARY_V3	CME Binary extension message
	GMAC_TYPE_EXTENSION_ITCH50_V3	ITCH 5.0 extension message
	GMAC_TYPE_EXTENSION_EURONEXT_V3	Euronext cash markets extension message
	GMAC_TYPE_EXTENSION_BME_V3	BME HF SMARTGate extension message
	GMAC_TYPE_EXTENSION_BIT MIL_V3	Borsa Italiana Millennium ITCH extension message
	GMAC_TYPE_EXTENSION_LSE MIL_V3	LSE Millennium ITCH extension message
	GMAC_TYPE_EXTENSION_OSLO MIL_V3	Oslo Millennium ITCH extension message
	GMAC_TYPE_EXTENSION_ITCH_BROKERTEC_V3	ICAP BrokerTec ITCH extension message
	GMAC_TYPE_EXTENSION_SIP_V3	SIP (CQD, CTS, UTP) extension message
	GMAC_TYPE_EXTENSION_ITCH_ESPEED_V3	Nasdaq eSpeed ITCH extension message
	GMAC_TYPE_EXTENSION_NORDIC_ITCH_V3	Nasdaq Nordic ITCH extension message
	GMAC_TYPE_EXTENSION_FXALL_V3	FXall extension message
	GMAC_TYPE_EXTENSION_NYSE_XDP_V3	NYSE XDP extension message

Enumeration	Values	Description
	GMAC_TYPE_EXTENSION_BATS_V3	Bats extension message
	GMAC_TYPE_EXTENSION_ITCH_BIST_V3	Borsa Istanbul ITCH extension message
	GMAC_TYPE_EXTENSION_OPTIONS_XDP_V3	NYSE Options XDP extension message
	GMAC_TYPE_EXTENSION_GTP_V3	LSE GTP extension message
	GMAC_TYPE_EXTENSION_EMDI_V3	T7 EMDI extension message
	GMAC_TYPE_EXTENSION_EOBI_V3	T7 EOBI extension message
	GMAC_C_TYPE_SESSION_V3	Consolidated session message
	GMAC_C_TYPE_TOB_V3	Consolidated top of the book update message
	GMAC_C_TYPE_TRADING_STATUS_V3	Consolidated trading status message
	GMAC_C_TYPE_TRADE_V3	Consolidated trade message
	GMAC_C_TYPE_OHLC_V3	Consolidated OHLC message
	GMAC_C_TYPE_TARDE_CORRECTION_V3	Consolidated trade correction message
	GMAC_C_TYPE_TRADE_CANCELLATION_V3	Consolidated trade cancellation message
	GMAC_C_TYPE_INDEX_V3	Consolidated underlying value message
	GMAC_C_SHO_SHORT_SALE_PRICE_RESTRICTION_V3	Consolidated SHO short sale price restriction message
	GMAC_C_TYPE_LULD_PRICE_BAND_V3	Consolidated Limit Up Limit Down Price Band message
	GMAC_C_TYPE_MWCB_LEVEL_V3	Consolidated Market Wide Circuit Breaker Level message
	GMAC_C_TYPE_OPEN_INTEREST_V3	Consolidated open interest message
	GMAC_C_TYPE_MWCB_STATUS_V3	Consolidated Market Wide Circuit Breaker Status message
	GMAC_C_TYPE_AUCTION_COLLAR_V3	Consolidated Auction Collar message
ICEExtensionType	**ICEMessageB**	ICE Futures Definition extension message

Enumeration	Values	Description
	ICEMessagep	ICE Options Definition extension message
	ICEMessageW	ICE Old Style Options Trade extension message
	ICEMessageV	ICE Interval Price Limit Notification extension message
	ICEMessageI	ICE New Options Market extension message
	ICEMessageR	ICE New Expiry extension message
	ICESecDefInfo	ICE extension message for futures and options strategy definitions
	ICEFixingTransition	ICE Benchmark Administration Electronic Gold Auction - Fixing Transition extension message
	ICEFixingLockDown	ICE Benchmark Administration Electronic Gold Auction - Fixing Lock Down extension message
	ICEFixingLockDown	ICE Benchmark Administration Electronic Gold Auction - Fixing Indicative Price extension message
	ICEFixingLockDown	ICE futures strategy definitions extension message
	ICEIndicativeQuote	ICE indicative quote extension message
	ICEBlockDetails	ICE instrument block details extension message
XetraExtensionType	**XetraPacketHeader**	XETRA packet header extension message
	XetraInstrRef	XETRA instrument reference data extension message
	XetraMaintRef	XETRA maintenance reference data extension message
	XetraSMPClxQty	XETRA cancelled quantity extension message
EMDIExtensionType	**EMDIPacketHeader**	T7 MDI & EMDI packet header extension message
	RDIProdRef	T7product reference data extension message
	RDIProdRelatedSegment	T7product related segments extension message
	RDIProdTickRules	T7product tick rules extension message
	RDIProdMatchRules	T7product match rules extension message

Enumeration	Values	Description
	RDIProdQuoteSizeRules	T7product quote size rules extension message
	RDIProdFlexRules	T7product flex eligibility rules extension message
	RDIMDFeeds	T7RDI MD feeds extension message
	RDIProdPriceRangeRules	T7product price range rules extension message
	RDIInstrumentRef	T7instrument reference data extension message
	RDIProdAuctionTypeRules	T7 product auction type rule
	EMDITrade	T7 EMDI trade extension message
EOBIExtensionType	**EOBIPacketHeader**	T7 EOBI packet header extension message
	EOBIProductSummary	T7 EOBI product summary extension message
XDPExtensionType	**LiffeMS**	Euronext Derivatives market modes extension message
	LiffeThrottleSize	Euronext Derivatives throttle size extension message
HotspotFXExtensionType	**HotspotFXOrderInfo**	Hotspot FX order information extension message
CMEBinaryExtensionType	**CMEBinarySecDefRepeatGroupFeedType**	CME Binary feed type extension message
	CMEBinarySecDefRepeatGroupInstrAttrib	CME Binary instrument attributes extension message
	CMEBinarySecDefMain	CME Binary security definition extension message
	CMEBinaryTemplateHeader	CME Binary template header extension message
	CMEBinaryMatchEventInd	CME Binary match event indicator extension message
	CMEBinaryMatchedOrders	CME Binary matched orders list extension message
	CMEBinaryTickRules	CME Binary tick rules list extension message
	CMEBinaryOrderSnapshot	CME Binary order snapshot number of packets extension message
ITCH50ExtensionType	**ITCH50QuotingPeriodUpdate**	ITCH 5.0 Quoting Period Update extension message

Enumeration	Values	Description
	ITCH50StockDirectory	ITCH 5.0 Stock Directory extension message
CSMExtensionType	**CSMSecDef**	CBOE CSM extension message
ARCAXDPExtensionType	**ARCAXDPNewTrade**	ARCA XDP trade extension message
EURONEXTExtensionType	**EURONEXTOffBookTrade**	Euronext cash markets off-book trade extension message
	EURONEXTThrottleSize	Euronext throttle size extension message
	EURONEXTTrade	Euronext trade extension message
	EURONEXTTradeRetransmission	Euronext trade retransmission extension message
	EURONEXTEMM	Euronext exchange market mechanism extension message
	EURONEXTReferenceData	Euronext reference data extension message
	EURONEXTTimetable	Euronext timetable extension message
	EURONEXTEndOfSnapshot	Euronext end of snapshot extension message
	EURONEXTTicks	Euronext tick extsnion message
BMEExtensionType	**BMETradeEvent**	BME HF SMARTGate trade event extension message
	BMEGrossAmount	BME HF SMARTGate gross amount extension message
BITMILExtensionType	**BITMILOffBookTrade**	Borsa Italiana Millennium ITCH off-book trade extension message
	BITMILIndicativeQuote	Borsa Italiana Millennium ITCH indicative quote extension message
LSEMILExtensionType	**LSEMILOffBookTrade**	LSE Millennium ITCH off-book trade extension message
GTPExtensionType	**GTPSystemEventExtension**	LSE GTP system event extension message
	GTPInstrumentDirectoryExtension	LSE GTP instrument directory extension message
	GTPInstrumentStatusExtension	LSE GTP instrument status extension message
	GTPAddOrderExtension	LSE GTP add order extension message

Enumeration	Values	Description
	GTPModifyOrderExtension	LSE GTP modify order extension message
	GTPDeleteOrderExtension	LSE GTP delete order extension message
	GTPTOBLimitExtension	LSE GTP top of book extension message
	GTPOrderBookClearExtension	LSE GTP order book clear extension message
	GTPMBPExtension	LSE GTP market by price extension message
	GTPTradeExtension	LSE GTP trade extension message
	GTPSourceVenueExtension	LSE GTP source venue extension message
	GTPIndicativeQuoteExtension	LSE GTP indicative quote extension message
	GTPMIFIDTradeExtension	LSE GTP MiFID trade extension message
	GTPMIFIDCrossTradeExtension	LSE GTP MiFID cross trade extension message
	GTPMIFIDTradeReportExtension	LSE GTP MiFID trade report extension message
OSLOMILExtensionType	**OSLOMILOffBookTrade**	Oslo Millennium ITCH off-book trade extension message
	OSLOMILRefData	Oslo Millennium ITCH reference data extension message
ITCHBrokerTecExtensionType	**ITCHBrokerTecOrderBookDirectory**	BrokerTec ITCH order book directory extension message
	ITCHBrokerTecTradeSummary	BrokerTec ITCH trade summary extension message
SIPExtensionType	**SIPTimestamp**	SIP timestamps extension message
	FINRAADF	FINRA ADF MPIDs extension message
ITCHeSpeedExtensionType	**ITCHeSpeedOrderBookDirectory**	eSpeed ITCH order book directory extension message
NordicITCHExtensionType	**NordicITCHTrackingNumber**	Nasdaq Nordic ITCH tracking number extension message
	NordicITCHAOD	Nasdaq Nordic ITCH Auction On Demand extension
	NordicITCHOrderBooks	Nasdad Nordic ITCH Order Book Directory extension

Enumeration	Values	Description
FXAllExtensionType	**FXAllQuote**	FXall order information extension message
	FXAllSecurity	FXall security information extension message
NYSEXDPExtensionType	**NYSEXDPTradingStatus**	Trading status information extension message
	NYSEXDPImbalance	Imbalance extension message
OptionXDPExtensionType	**OptionXDPBoldRFQ**	BOLD RFQ extension message
BATSExtensionType	**BATSExposurePeriod**	Bats option exposure period extension message
	BATSTrade	Bats trade extension message
ITCHBISTExtensionType	**ITCHBISTOrderBookDirectory**	Borsa Istanbul ITCH order book directory extension message
	ITCHBISTStateName	Borsa Istanbul ITCH state name extension message
EurexXetraStreamType	**STREAM_SNAPSHOT**	Snapshot stream
	STREAM_DELTA	Delta stream
	STREAM_ATP	ATP All Trade Price stream
	STREAM_MAINT	Maintenance stream
	STREAM_HIGH_INCREMENTAL	High incremental
	STREAM_HIGH_SNAPSHOT	High snapshot
	STREAM_LOW	Low
ActionType	**ACTION_NEW**	Add last trade price (default value if GMACMessageTradeV3::ActionType is not present)
	ACTION_UPDATE	Update last trade price
	ACTION_REVERSE	Delete last trade price
	ACTION_CANCELLED	Cancel a particular trade
GMACMWCBStatusV3	**GMAC_MWCB_LEVEL_ONE_BREACHED**	Level 1 breached

Enumeration	Values	Description
	GMAC_MWCB_LEVEL_TWO_BREACHED	Level 2 breached
	GMAC_MWCB_LEVEL_THREE_BREACHED	Level 3 breached
GMACCMWCBStatusV3	**GMACC_MWCB_LEVEL_ONE_BREACHED**	Level 1 breached
	GMACC_MWCB_LEVEL_TWO_BREACHED	Level 2 breached
	GMACC_MWCB_LEVEL_THREE_BREACHED	Level 3 breached
GMACCRetailInterestV3	**GMACC_RETAIL_NOT_APPLICABLE**	Retail interest not applicable
	GMACC_RETAIL_BID	Retail interest on bid quote
	GMACC_RETAIL_ASK	Retail interest on ask quote
	GMACC_RETAIL_BID_AND_ASK	Retail interest on both bid and ask quotes
GMACCLULDIndicatorV3	**GMACC_LULD_NOT_APPLICABLE**	LULD not applicable
	GMACC_LULD_BID_ABOVE_LIMIT	Bid price above upper limit price band
	GMACC_LULD_ASK_BELOW_LIMIT	Ask price below lower limit price band
	GMACC_LULD_BID_AND_ASK_OUTSIDE_PRICE_BAND	Band and ask outside price band
GMACCLULDNationalIndicatorV3	**GMACC_LULD_NATIONAL_NOT_APPLICABLE**	Limit Up - Limit Down Not Applicable
	GMACC_LULD_NATIONAL_BID_AND_ASK_EXECUTABLE	National Best Bid and National Best Ask are Executable
	GMACC_LULD_NATIONAL_BID_BELOW_LOWER_LIMIT	National Best Bid below Lower Limit Price Band
	GMACC_LULD_NATIONAL_ASK_ABOVE_UPPER_LIMIT	National Best Ask above Upper Limit Price Band
	GMACC_LULD_NATIONAL_BID_BELOW_LOWER_ASK_ABOVE_UPPER	National Best Bid below Lower Limit Price Band and National Best ask above Upper Limit Price Band
	GMACC_LULD_NATIONAL_BID_EQUALS_UPPER	National Best Bid equals Upper Limit Price Band
	GMACC_LULD_NATIONAL_ASK_EQUALS_LOWER	National Best Offer equals Lower Limit Price Band
	GMACC_LULD_NATIONAL_BID_EQUALS_UPPER_ASK_ABOVE_UPPER	National Best Bid equals Upper Limit Price Band – National Best Bid is in Limit State and National Best Ask above Upper Limit Price Band

Enumeration	Values	Description
	GMACC_LULD_NATIONAL_ASK_EQUALS_LOWER_BID_BELOW_LOWER	National Best Ask equals Lower Limit Price Band – National Best Ask is in Limit State and National Best Bid below Lower Limit Price Band
	GMACC_LULD_NATIONAL_BID_EQUALS_UPPER_ASK_EQUALS_LOWER	National Best Bid equals Upper Limit Price Band – National Best Bid is in Limit State and National Best Ask equals Lower Limit Price Band
GMACCLULDPriceBandV3	**GMACC_LULD_PRICE_BAND_NOT_PROVIDED**	None
	GMACC_LULD_PRICE_BAND_OPENING	Opening update
	GMACC_LULD_PRICE_BAND_INTRADAY	Intra-day update
	GMACC_LULD_PRICE_BAND_RESTATED_VALUE	Restated value
	GMACC_LULD_PRICE_BAND_SUSPENDED	Suspended during trading halt or trading pause
	GMACC_LULD_PRICE_BAND_REOPEN	Re-opening update
	GMACC_LULD_PRICE_BAND_OUTSIDE_HOURS	Outside price band rule hours
	GMACC_LULD_PRICE_BAND	Limit Up Limit Dow Price Band
	GMACC_LULD_PRICE_BAND_REPUBLISHED	Republished Limit Up Limit Dow Price Band
	GMACC_LULD_NBB_ENTERED	National Best Bid Limit State Entered
	GMACC_LULD_NBB_EXITED	National Best Bid Limit State Exited
	GMACC_LULD_NBO_ENTERED	National Best Offer Limit State Entered
	GMACC_LULD_NBO_EXITED	National Best Offer Limit State Exited
	GMACC_LULD_NBB_ENTERED_NBO_ENTERED	National Best Bid and National Best Offer Limit State Entered
	GMACC_LULD_NBB_EXITED_NBO_EXITED	National Best Bid and National Best Offer Limit State Exited
	GMACC_LULD_NBB_ENTERED_NBO_EXITED	National Best Bid Limit State Entered and National Best Offer Limit State Exited
	GMACC_LULD_NBB_EXITED_NBO_ENTERED	National Best Bid Limit State Exited and National Best Offer Limit State Entered
GMACCLULDFinraIndicatorV3	**GMACC_LULD_FINRA_NOT_APPLICABLE**	Limit Up - Limit Down Not Applicable
	GMACC_LULD_FINRA_BID_AND_ASK_EXECUTABLE	FINRA Best Bid and FINRA Best Offer are Executable

Enumeration	Values	Description
	GMACC_LULD_FINRA_BID_BELOW_LOWER_LIMIT	FINRA Best Bid below Lower Limit Price Band – FINRA Best Bid is Non-Executable
	GMACC_LULD_FINRA_ASK_ABOVE_UPPER_LIMIT	FINRA Best Offer above Upper Limit Price Band – FINRA Best Offer is Non-Executable
	GMACC_LULD_FINRA_BID_BELOW_LOWER_ASK_ABOVE_UPPER	FINRA Best Bid below Lower Limit Price Band and FINRA Best Offer above Upper Limit Price Band – FINRA Best Bid and FINRA Best Offer are Non-Executable
GMACCFinraAdfMpidIndicatorV3	**GMACC_FINRA_ADF_NOT_APPLICABLE**	Not applicable
	GMACC_FINRA_ADF_NO_CHANGES	No ADF MPID changes
	GMACC_FINRA_ADF_NO_MPID	No ADF MPID exists
	GMACC_FINRA_ADF_MPID	ADF MPID attached
GMACCFinraBBOIndicatorV3	**GMACC_FINRA_BBO_NOT_APPLICABLE**	FINRA BBO Indicator not applicable
	GMACC_FINRA_BBO_CHANGE	No FINRA BBO change
	GMACC_FINRA_BBO_EXISTS	No FINRA BBO exists
GMACResetScopeType	**RESET_SCOPE_INVALID**	Invalid reset scope
	RESET_SCOPE_INSTRUMENT	Instrument bid and ask sides reset scope
	RESET_SCOPE_INSTRUMENT_BID	Instrument bid side only reset scope
	RESET_SCOPE_INSTRUMENT_ASK	Instrument ask side reset scope
	RESET_SCOPE_CHANNEL	Current channel reset scope
	RESET_SCOPE_MARKET	Current market reset scope
GMACValueType	**GMAC_VALUE_UNDEF**	Undefined value type
	GMAC_VALUE_BID	Bid value
	GMAC_VALUE_ASK	Ask value
	GMAC_VALUE_INDEX	Index value

Enumeration	Values	Description
	GMAC_VALUE_BOOK_HIGH	Daily high value
	GMAC_VALUE_BOOK_LOW	Daily low value
	GMAC_VALUE_YEARLY_HIGH	Yearly high value
	GMAC_VALUE_YEARLY_LOW	Yearly low value
	GMAC_VALUE_LIFETIME_HIGH	Lifetime high value
	GMAC_VALUE_LIFETIME_LOW	Lifetime low value
	GMAC_VALUE_VARIATION_LAST	Variation last value
	GMAC_VALUE_OPEN	Open value
	GMAC_VALUE_TOTAL_TRADE_COUNT	Trade count value
	GMAC_VALUE_OFF_BOOK_TRADE_COUNT	Off book trade count value
	GMAC_VALUE_LAST	Last traded value
	GMAC_VALUE_VARIATION_PREVIOUS_CLOSE	Percent variation previous close value
	GMAC_VALUE_OFF_BOOK_CUMULATIVE_QTY	Off book cumulative quantity value
	GMAC_VALUE_ON_BOOK_AUCTION_CUMULATIVE_QTY	On book auction cumulative quantity value
	GMAC_VALUE_ON_BOOK_CONTINUOUS_CUMULATIVE_QTY	On book continuous cumulative quantity value
	GMAC_VALUE_TOTAL_BOOK_CUMULATIVE_QTY	On and off book cumulative quantity value
	GMAC_VALUE_OFFICIAL_DAILY	Official daily value
	GMAC_VALUE_OFFICIAL_MARKET_CLOSE	Close value
	GMAC_VALUE_OFFICIAL_EXPIRY	Official expiry value
	GMAC_VALUE_PROVISIONAL_INTRADAY	Provisional intra-day value
	GMAC_VALUE_OFFICIAL_INTRADAY	Official intra-day value

Enumeration	Values	Description
	GMAC_VALUE_OFFICIAL_YDSP	Official YDSP value
	GMAC_VALUE_NAV	Net asset value
	GMAC_VALUE_NEW_LAST	New last traded value
	GMAC_VALUE_ADJUSTED_CLOSE	Adjusted closing value
	GMAC_VALUE_SUBSCRIPTION	Subscription value
	GMAC_VALUE_MIN_OUT_SESSION_TRADES	Minimum price out of session trades value
	GMAC_VALUE_MAX_OUT_SESSION_TRADES	Maximum price out of session trades value
	GMAC_VALUE_MIN_OUT_SESSION_BLOCK_TRADES	Minimum price out of session block trades value
	GMAC_VALUE_MAX_OUT_SESSION_BLOCK_TRADES	Maximum price out of session block trades value
	GMAC_VALUE_VALUATION	Valuation value
	GMAC_VALUE_FUND_SUBSCRIPTION	Fund subscription value
	GMAC_VALUE_FUND_REDEMPTION	Fund redemption value
	GMAC_VALUE_UNCROSSING	Uncrossing value
	GMAC_VALUE_ALTERNATIVE_INDICATION	Alternative indication value
	GMAC_VALUE_INDICATIVE_INDEX	Indicative index value
	GMAC_VALUE_OPENING_INDEX	Opening index value
	GMAC_VALUE_AUTOMATIC_INDICATIVE_INDEX	Automatic indicative index value
	GMAC_VALUE_PRELIMINARY_REFERENCE_INDEX	Preliminary reference index value
	GMAC_VALUE_CLOSING_REFERENCE_INDEX	Closing reference index value
	GMAC_VALUE_CONFIRMED_REFERENCE_INDEX	Confirmed reference index value
	GMAC_VALUE_OPTIONS_LIQUIDATION_INDEX	Options liquidation index value

Enumeration	Values	Description
	GMAC_VALUE_HIGH_DYNAMIC_COLLAR	High dynamic collar value
	GMAC_VALUE_LOW_DYNAMIC_COLLAR	Low dynamic collar value
	GMAC_VALUE_LOW_STATIC_COLLAR	Low static collar value
	GMAC_VALUE_HIGH_STATIC_COLLAR	High static collar value
	GMAC_VALUE_VWAP	VWAP value
	GMAC_VALUE_OFF_BOOK_VWAP	Off book VWAP value
	GMAC_VALUE_TURNOVER	Turnover value
	GMAC_VALUE_OFF_BOOK_TURNOVER	Off book turnover value
	GMAC_VALUE_BEST_CLOSING_BID	Best closing bid value
	GMAC_VALUE_BEST_CLOSING_ASK	Best closing ask value
	GMAC_VALUE_BEST_CLOSING_BID_SIZE	Best closing bid size value
	GMAC_VALUE_BEST_CLOSING_ASK_SIZE	Best closing ask size value
	GMAC_VALUE_VOLATILITY	Volatility value
	GMAC_VALUE_OFF_BOOK_HIGH	Off book high value
	GMAC_VALUE_OFF_BOOK_LOW	Off book low value
	GMAC_VALUE_AUCTION	Auction value
	GMAC_VALUE_PREVIOUS_CLOSE	Previous closing price
	GMAC_VALUE_STATIC_REF_PRICE	Static reference price
	GMAC_VALUE_DYNAMIC_REF_PRICE	Dynamic reference price
GMACObjType	**GMAC_OBJ_ROOT**	GMAC Handle parent of all objects
	GMAC_OBJ_MARKET	Object market

Enumeration	Values	Description
	GMAC_OBJ_QUEUE	Object queue
	GMAC_OBJ_SRC_CHANNEL	Object data source: UDP multicast, TCP channel, referential file …
	GMAC_OBJ_DST_CHANNEL	Object data destination: GMAC output logical channel
GMACEventType	**GMAC_DISCONNECTED**	TCP disconnection event
	GMAC_CONNECTED	TCP connection event
	GMAC_FINISHED	TCP request ended e.g. GMAC received all requested data