



Global Exchanges and Markets Committee

Weight Units of Measure

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Document History

Revision	Date	Author/Editor	Revision Comments
0.1	May 11, 2012	Ryan Pierce, CME Group	Initial revision.
0.2	May 29, 2012	Ryan Pierce, CME Group	Clean-up of existing units, providing elaboration text for the FIX Repository.
ASBUILT	May 31, 2012	L. Taikitsadaporn	Created ASBUILT and prep for Repository coding.

1 Introduction

FIX uses the concept of UnitOfMeasure to indicate the underlying quantity of a commodity on which a derivatives contract is based. The field UnitOfMeasure (996) is used to indicate this within the Instrument component, and UnitOfMeasureQty (1147) indicates the quantity being referenced.

This gap analysis proposes adding new weight and mass unit of measure enumerations to support trading in gross tons (also known as long tons or imperial tons), as well as trading in kilograms.

2 Business Workflow

2.1 Gross Tons

Currently, FIX supports two kinds of tons:

- tn – Tons (US), which is defined as 2,000 lbs.
- t – Metric Tons, or Tonne, which is defined as 1,000 kg.

The UK definition of the ton is 2,240 lbs. This is commonly called the gross ton, long ton, or imperial ton, to differentiate it from the 2,000 lbs short ton or US ton.

Gross, long, or imperial tons are infrequently used except in certain industries. One of them happens to be scrap metal, such as scrap iron and steel. A 2,240 lbs "gross ton" of scrap, once melted and refined, will yield approximately a 2,000 lbs. "net ton" (US ton, short ton) of usable iron or steel. The American Metal Market (AMM) publishes quotes for scrap metal in gross tons.

This gap analysis proposed adding a unit of measure for:

- GT – Gross Tons (long tons or imperial tons, e.g. 2240 lbs)

As this is an imperial unit used only in a few specialized applications, an authoritative standard symbol or abbreviation does not exist. Often, symbols for ton are used interchangeably, presumably with context defining the meaning. Use of "tn" or "t" for this unit is clearly unacceptable for representation in FIX.

NIST Handbook (44) Appendix C defines the gross or long ton, but fails to give a symbol. See <http://www.nist.gov/pml/wmd/pubs/upload/AppC-12-hb44-final.pdf> p. C-20)

A rather comprehensive dictionary of units defines the symbol for gross ton as "GT". (See <http://www.unc.edu/~rowlett/units/dictG.html>)

Note that the term "gross ton" has other meanings, especially as a unit of interior volume of a ship, e.g. gross register ton. The definition, above, of gross ton should be sufficient to avoid confusion.

2.2 Kilograms

Currently, FIX supports the following units for metals trading:

- oz_tr – Troy ounces
- g – Grams

Gold frequently trades in Asia in units of kilogram bars. To facilitate such trading, this gap analysis proposes adding:

- kg – Kilograms

The symbol "kg" is accepted internationally.

3 Issues and Discussion Points

4 Proposed Message Flow

This Gap Analysis contains no changes to existing FIX message flows.

Appendix A - Data Dictionary

Tag	FieldName	Action	Datatype	Description	FIXML Abbreviation	Add to / Deprecate from Message type or Component block
996	UnitOfMeasure	Update	String	<p>The unit of measure of the underlying commodity upon which the contract is based. Two groups of units of measure enumerations are supported.</p> <p>Fixed Magnitude UOMs are primarily used in energy derivatives and specify a magnitude (such as, MM, Kilo, M, etc.) and the dimension (such as, watt hours, BTU's) to produce standard fixed measures (such as MWh - Megawatt-hours, MMBtu - One million BTUs).</p> <p>The second group, Variable Quantity UOMs, specifies the dimension as a single unit without a magnitude (or more accurately a magnitude of one) and uses the UnitOfMeasureQty(1147) field to define the quantity of units per contract. Variable Quantity UOMs are used for both commodities (such as lbs of lean cattle, bushels of corn, ounces of gold) and financial futures.</p> <p>Examples: For lean cattle futures contracts, a UnitOfMeasure of 'lbs' with a UnitOfMeasureQty(1147) of 40,000, means each lean cattle futures contract represents 40,000 lbs of lean cattle.</p> <p>For Eurodollars futures contracts, a UnitOfMeasure of Ccy with a UnitOfMeasureCurrency of USD and a</p>	UOM	

			<p>UnitOfMeasureQty(1147) of 1,000,000, means a Eurodollar futures contract represents 1,000,000 USD.</p> <p>For gold futures contracts, a UnitOfMeasure is oz_tr (Troy ounce) with a UnitOfMeasureQty(1147) of 1,000, means each gold futures contract represents 1,000 troy ounces of gold.</p> <p>Valid Values:</p> <p>Fixed Magnitude UOM Bcf - Billion cubic feet MMbbl - Million Barrels(deprecated in FIX.5.0SP1) MMBtu - One Million BTU thm – therms (elaboration: Equal to 100,000 BTU) GJ – gigajoules kWh – Kilowatt hours MWh - Megawatt hours CBM - Cubic Meters</p> <p>Variable Quantity UOM Bbl - Barrels (elaboration: Equal to 42 US gallons) Bu - Bushels lbs - pounds Gal - Gallons L - liters kL - kiloliters oz_tr - Troy Ounces t - Metric Tons (Elaboration: Also known as Tonnes, equal to 1000 kg) tn - Tons (US) (Elaboration: Equal to 2000 lbs) GT – Gross Tons (Elaboration: Also known as long tons or imperial tons, equal to 2240 lbs) USD - US Dollars [DEPRECATE]</p>		
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				Alw - Allowances CER - Certified Emissions Reduction PRINC - Principal with relation to debt instrument CRT - Climate Reserve Tonnes Ccy – Amount of currency BDFT – Board feet (Elaboration: Equal to 144 cubic inches) IPNT – Index point day – Days cwt – Hundredweight (US) (Elaboration: Equal to 100 lbs) g – Grams kg – Kilograms dt – Dry metric tons EnvOfst – Environmental Offset EnvCrd – Environmental Credit kW-min – Kilowatt-Minute (Elaboration: Unit of electrical capacity) MW-min – Megawatt-Minute (Elaboration: Unit of electrical capacity) kW-h – Kilowatt-Hour (Elaboration: Unit of electrical capacity) MW-h – Megawatt-Hour (Elaboration: Unit of electrical capacity) kW-d – Kilowatt-Day (Elaboration: Unit of electrical capacity) MW-d – Megawatt-Day (Elaboration: Unit of electrical capacity) kW-M – Kilowatt-Month (Elaboration: Unit of electrical capacity) MW-M – Megawatt-Month (Elaboration: Unit of electrical capacity) kW-a – Kilowatt-Year (Elaboration: Unit of electrical capacity) MW-a – Megawatt-Year (Elaboration: Unit of electrical capacity)	
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Appendix B - Glossary Entries

Term	Definition	Field where used

Appendix C - Abbreviations

Term	Proposed Abbreviation	Proposed Messages, Components, Fields where used

Appendix D - Usage Examples