S&P CAPITAL IQ
McGRAW HILL FINANCIAL

S&P Capital IQ Real-Time Solutions

FeedOS™ Feed Description

CTA (CTS/CQS)

Reference n°: 20150820 – 23649 – 26508 – 27577

S&P Capital IQ Real-Time Solutions
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FEEDOS™ CTA (CTS/CQS) FEED DESCRIPTION

As part of S&P Capital IQ Real-Time Solutions FeedOS™ documentation, this feed description provides you with details about the types of data broadcast on the CTA market data stream, their possible values and current FeedOS technical implementation.

The topics this feed description covers include:

1. Feed CTA Regional

The topics this section covers include:

1.1. CTA Regional – Referential Data

The following sections describe the characteristics of the referential data on the CTA market data stream, in terms of:

1.1.1. CTA Regional – Available Markets and Branches

This section details the list of markets and branches available on the CTA market data stream:

1.1.1.1. CTA Regional – Markets

The CTA market data stream broadcasts informations about the following markets:

Table 1 Markets available on the CTA market data stream

FeedOS Market ID	Market
CBSX	CBOE Stock Exchange
EDGA	Direct Edge A
EDGX	Direct Edge X
BATY	BATS Y Exchange
XBOS	Boston Stock Exchange
XCHI	Chicago Stock Exchange
XCIS	National Stock Exchange
XISX	International Securities Exchange
XNAS	NASDAQ
XPHL	Philadelphia Stock Exchange
BATS	BATS Exchange
XADF	FINRA Alternative Display Facility

The following example shows the list of markets available on the CTA market data stream and their IDs, returned by the command `dumps`:

```
MARKETS
market # 35     CC=US/UNITED STATES OF AMERICA/CHICAGO,DESCR=CBOE STOCK EXCHANGE,
WEB=www.cbsx.com
    MIC = CBSX
    TimeZone = America/Chicago
    Country = US
    NbMaxInstruments = 2000000
market # 149    CC=US/UNITED STATES OF AMERICA/NEW YORK,DESCR=DIRECT EDGE A,
WEB=www.directedge.com
    MIC = EDGA
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
market # 157    CC=US/UNITED STATES OF AMERICA/NEW YORK,DESCR=DIRECT EDGE X,
WEB=www.directedge.com
    MIC = EDGX
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
                                                                    (see next page)
```

```
market # 158    CC=US/UNITED STATES OF AMERICA/,DESCR=BATS Y-Exchange,
WEB=www.batstrading.com
    MIC = BATY
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
market # 299    CC=US/UNITED STATES OF AMERICA/BOSTON,DESCR=BOSTON STOCK EXCHANGE,
WEB=www.bostonstock.com
    MIC = XBOS
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
market # 307    CC=US/UNITED STATES OF AMERICA/CHICAGO,DESCR=CHICAGO STOCK EXCHANGE; INC.,
WEB=www.chx.com
    MIC = XCHI
    TimeZone = America/Chicago
    Country = US
    NbMaxInstruments = 2000000
market # 308    CC=US/UNITED STATES OF AMERICA/CHICAGO,DESCR=NATIONAL STOCK EXCHANGE,
WEB=www.cincinnatistock.com
    MIC = XCIS
    TimeZone = America/Chicago
    Country = US
    NbMaxInstruments = 2000000
market # 329    CC=US/UNITED STATES OF AMERICA/NEW YORK,DESCR=INTERNATIONAL SECURITIES
EXCHANGE; LLC., WEB=www.iseoptions.com
    MIC = XISX
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
market # 330    CC=US/UNITED STATES OF AMERICA/NEW YORK,DESCR=NASDAQ, WEB=www.nasdaq.com
    MIC = XNAS
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
market # 338    CC=US/UNITED STATES OF AMERICA/PHILADELPHIA,DESCR=PHILADELPHIA STOCK
EXCHANGE, WEB=www.phlx.com
    MIC = XPHL
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
market # 444    CC=US/UNITED STATES OF AMERICA/KANSAS CITY,DESCR=BATS EXCHANGE,
WEB=www.batstrading.com
    MIC = BATS
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
market # 511    CC=US/UNITED STATES OF AMERICA/WASHINGTON/NEW YORK,DESCR=FINRA ALTERNATIVE
DISPLAY FACILITY, WEB=www.finra.org
    MIC = XADF
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
```

1.1.1.2. CTA Regional – Branches

The example below shows the list of branches available on the CTA market data stream, returned by the command `dumps`. Each branch displays the following details: `FOSMarketID`, `SecurityType`, `CFICode` and `Quantity` (of instruments):

```
BRANCHES
    { CBSX ETF  EUXXXX } qty: 1088
    { CBSX MF   EUXXXX } qty: 1
    { CBSX NONE EXXXXX } qty: 3269
    { CBSX PS   EPXXXX } qty: 161
    { CBSX WAR  RWXXXX } qty: 8
    { EDGA ETF  EUXXXX } qty: 1452
    { EDGA MF   EUXXXX } qty: 1
    { EDGA NONE EXXXXX } qty: 3798
    { EDGA NONE RXXXXX } qty: 18
    { EDGA PS   EPXXXX } qty: 573
    { EDGA WAR  RWXXXX } qty: 44
    { EDGX ETF  EUXXXX } qty: 1459
    { EDGX MF   EUXXXX } qty: 1
    { EDGX NONE EXXXXX } qty: 3799
    { EDGX NONE RXXXXX } qty: 19
    { EDGX PS   EPXXXX } qty: 573
    { EDGX WAR  RWXXXX } qty: 44
    { BATY ETF  EUXXXX } qty: 1459
    { BATY MF   EUXXXX } qty: 1
    { BATY NONE EXXXXX } qty: 3765
    { BATY NONE RXXXXX } qty: 17
    { BATY PS   EPXXXX } qty: 569
    { BATY WAR  RWXXXX } qty: 43
    { XBOS ETF  EUXXXX } qty: 1432
    { XBOS MF   EUXXXX } qty: 1
    { XBOS NONE EXXXXX } qty: 3791
    { XBOS NONE RXXXXX } qty: 16
    { XBOS PS   EPXXXX } qty: 595
    { XBOS WAR  RWXXXX } qty: 40
    { XCHI ETF  EUXXXX } qty: 1447
    { XCHI MF   EUXXXX } qty: 1
    { XCHI NONE EXXXXX } qty: 3807
    { XCHI NONE RXXXXX } qty: 11
    { XCHI PS   EPXXXX } qty: 564
    { XCHI WAR  RWXXXX } qty: 41
    { XCIS ETF  EUXXXX } qty: 1256
    { XCIS MF   EUXXXX } qty: 1
    { XCIS NONE EXXXXX } qty: 3513
    { XCIS NONE RXXXXX } qty: 3
    { XCIS PS   EPXXXX } qty: 541
    { XCIS WAR  RWXXXX } qty: 38
    { XNAS ETF  EUXXXX } qty: 1459
    { XNAS MF   EUXXXX } qty: 1
    { XNAS NONE EXXXXX } qty: 3816
    { XNAS NONE RXXXXX } qty: 19
    { XNAS PS   EPXXXX } qty: 648
    { XNAS WAR  RWXXXX } qty: 44
    { XPHL ETF  EUXXXX } qty: 1392
    { XPHL MF   EUXXXX } qty: 1
    { XPHL NONE EXXXXX } qty: 3755
    { XPHL NONE RXXXXX } qty: 9
    { XPHL PS   EPXXXX } qty: 549                                    (see next page)
```

```
    { XPHL WAR   RWXXXX } qty: 40
    { BATS ETF   EUXXXX } qty: 1458
    { BATS INDEX TIXXXX } qty: 144
    { BATS MF    EUXXXX } qty: 1
    { BATS NONE  EXXXXX } qty: 3761
    { BATS NONE  RXXXXX } qty: 17
    { BATS PS    EPXXXX } qty: 570
    { BATS WAR   RWXXXX } qty: 43
    { XADF ETF   EUXXXX } qty: 1458
    { XADF MF    EUXXXX } qty: 1
    { XADF NONE  EXXXXX } qty: 3808
    { XADF NONE  RXXXXX } qty: 15
    { XADF PS    EPXXXX } qty: 646
    { XADF WAR   RWXXXX } qty: 44
```

1.1.2. Types of Instruments on CTA Regional

The following sections describe the instruments available on the CTA market data stream, according to their type:

- 1.1.2.1. Equities
- 1.1.2.2. Warrants
- 1.1.2.3. Indices.

1.1.2.1. Equities

The sample below illustrates the details of an equity:

```
instr # 35/9406 = 73409726
    PriceCurrency               string{USD}
    Symbol                      string{TXMD}
    Description                 string{TherapeuticsMD Inc. Common Stock}
    SecurityType                string{NONE}
    FOSMarketId                 CBSX
    CFICode                     string{EXXXXX}
    RoundLot                    float64{100}
    InternalCreationDate        Timestamp{2014-01-15 13:30:11:324}
    InternalModificationDate    Timestamp{2015-01-08 09:12:15:902}
    InternalHideFromLookup      bool{True}
    InternalSourceId            uint16{122}
    InternalAggregationId       uint16{122}
    InternalEntitlementId       int32{1030}
    LocalCodeStr                string{TXMD}
    ForeignFOSMarketId          XASE
    CUSIP                       string{88338N107}
    OperatingMIC                string{XCBO}
    SegmentMIC                  string{CBSX}
```

1.1.2.2. Warrants

The sample below illustrates the details of a warrant:

```
instr # 299/7765 = 627056213
    PriceCurrency               string{USD}
    Symbol                      string{GM/WS/A}
    Description                 string{General Motors Company Warrant (Expires 07/10/2016)}
    SecurityType                string{WAR}
    FOSMarketId                 XBOS
    CFICode                     string{RWXXXX}
    RoundLot                    float64{100}
    InternalCreationDate        Timestamp{2013-12-09 16:19:48:650}
    InternalModificationDate    Timestamp{2015-05-22 07:40:08:141}
    InternalSourceId            uint16{122}
    InternalEntitlementId       int32{1030}
    LocalCodeStr                string{GM/WS/A}
    ForeignFOSMarketId          XNYS
    ForeignMarketId             string{XNYS}
    OperatingMIC                string{XNAS}
    SegmentMIC                  string{XBOS}
```

1.1.2.3. Indices

The sample below illustrates the details of an index:

```
instr # 444/11408 = 931146896
    PriceCurrency               string{USD}
    Symbol                      string{MEAR.IV}
    SecurityType                string{INDEX}
    FOSMarketId                 BATS
    CFICode                     string{TIXXXX}
    SecurityStatus              uint8{2}
    InternalCreationDate        Timestamp{2015-03-03 13:30:00:938}
    InternalModificationDate    Timestamp{2015-03-05 07:15:04:679}
    InternalSourceId            uint16{122}
    InternalAggregationId       uint16{122}
    InternalEntitlementId       int32{1030}
    DelayedFeedMin              uint16{15}
    LocalCodeStr                string{MEAR.IV}
    ForeignFOSMarketId          XASE
    OperatingMIC                string{BATS}
```

1.2. CTA Regional – Quotation Data

The following sections describe the characteristics of the quotation data on the CTA market data stream, in terms of:

- 1.2.1. CTA Regional – Quotation Values
- 1.2.2. CTA Regional – Trading Status.

1.2.1. CTA Regional – Quotation Values

The examples below shows the possible values of an instrument on the CTA market data stream:

```
InstrumentStatusL1
-- 299/7765
        BID: 25.49      0       *NO ORDER*
        ASK: 25.97      0       *NO ORDER*
        LastPrice                       float64{27.06}
        LastTradeQty                    float64{158}
        DailyTotalVolumeTraded          float64{0}
        DailyTotalAssetTraded           float64{0}
        LastTradePrice                  float64{27.06}
        LastTradeTimestamp              Timestamp{2015-04-17 13:38:06:247}
        InternalDailyOpenTimestamp      Timestamp{2015-05-22 11:00:00:522}
        InternalDailyCloseTimestamp     Timestamp{2015-05-21 20:01:00:282}
        InternalDailyHighTimestamp      Timestamp{2015-04-17 13:38:06:248}
        InternalDailyLowTimestamp       Timestamp{2015-04-17 13:38:06:248}
        InternalPriceActivityTimestamp  Timestamp{2015-05-22 13:31:15:464}
        TradingStatus                   17=ReadyToTrade
        RegSHOAction                    1=NoPriceTest
        PreviousDailyTotalVolumeTraded  float64{158}
        PreviousDailyTotalAssetTraded   float64{4275.48}
        PreviousDailyClosingPrice       float64{27.06}
        PreviousBusinessDay             Timestamp{2015-04-17}
        CurrentBusinessDay              Timestamp{2015-05-22}
        InternalDailyClosingPriceType   char{a}
        LimitUpLimitDownIndicator       char{ }
        PriceActivityMarketTimestamp    Timestamp{2015-05-22 13:31:15:463}
```

For more details about the fields and tags available in quotation data type, and their possible values, see *FeedOS Quotation Tags Guide*.

1.2.2. CTA Regional – Trading Status

Each time a modification of the trading status occurs, the values of the quotation tag **Trading Status** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Other Values*:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `TradingStatus` is described in the following table:

Table 2 TradingStatus – technical implementation in FeedOS

Component	Value	Description
Tag Name	`TradingStatus`	FeedOS tag name.
Numeric ID	9100	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.

Table 2 TradingStatus – technical implementation in FeedOS (Continued)

Component	Value	Description
Type	`Enum`	Enum data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, detailing the characteristics of the trading status.
Possible Values	17	Ready to Trade
	18	Not Available for Trading

2. Feed CTA NYSE Arca Amex

The topics this section covers include:

- 2.1. CTA NYSE Arca Amex – Referential Data
- 2.2. CTA NYSE Arca Amex – Quotation Data.

2.1. CTA NYSE Arca Amex – Referential Data

The following sections describe the characteristics of the referential data on the CTA market data stream, in terms of:

- 2.1.1. CTA NYSE Arca Amex – Available Markets and Branches
- 2.1.2. Types of Instruments on CTA NYSE Arca Amex.

2.1.1. CTA NYSE Arca Amex – Available Markets and Branches

This section details the list of markets and branches available on the CTA market data stream:

- 2.1.1.1. CTA NYSE Arca Amex – Markets
- 2.1.1.2. CTA NYSE Arca Amex – Branches.

2.1.1.1. CTA NYSE Arca Amex – Markets

The CTA market data stream broadcasts informations about the following markets:

Table 3 Markets available on the CTA market data stream

FeedOS Market ID	Market
XASE	American Stock Exchange
XNYS	New York Stock Exchange
ARCX	NYSE Arca

The following example shows the list of markets available on the CTA market data stream and their IDs, returned by the command `dumps`:

```
MARKETS
market # 324    CC=US/UNITED STATES OF AMERICA/NEW YORK,DESCR=AMERICAN STOCK EXCHANGE,
WEB=www.amex.com
    MIC = XASE
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
market # 336    CC=US/UNITED STATES OF AMERICA/NEW YORK,DESCR=NEW YORK STOCK EXCHANGE; INC.,
WEB=www.nyse.com
    MIC = XNYS
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
market # 359    CC=US/UNITED STATES OF AMERICA/NEW YORK,DESCR=NYSE ARCA,
WEB=www.archipelago.com
    MIC = ARCX
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
```

2.1.1.2. CTA NYSE Arca Amex – Branches

The example below shows the list of branches available on the CTA market data stream, returned by the command `dumps`. Each branch displays the following details: `FOSMarketID`, `SecurityType`, `CFICode` and `Quantity` (of instruments):

```
BRANCHES
    { XASE ETF  EUXXXX } qty: 11
    { XASE NONE EXXXXX } qty: 438
    { XASE NONE RXXXXX } qty: 1
    { XASE PS   EPXXXX } qty: 38
    { XASE WAR  RWXXXX } qty: 11
    { XNYS MF   EUXXXX } qty: 1
    { XNYS NONE EXXXXX } qty: 3199
    { XNYS NONE RXXXXX } qty: 18
    { XNYS PS   EPXXXX } qty: 612
    { XNYS WAR  RWXXXX } qty: 33
    { ARCX ETF  EUXXXX } qty: 1459
    { ARCX INDEX  TIXXXX } qty: 7974
    { ARCX MF   EUXXXX } qty: 1
    { ARCX NONE EXXXXX } qty: 3808
    { ARCX NONE RXXXXX } qty: 6
    { ARCX PS   EPXXXX } qty: 585
    { ARCX WAR  RWXXXX } qty: 43
```

2.1.2. Types of Instruments on CTA NYSE Arca Amex

The following sections describe the instruments available on the CTA market data stream, according to their type:

- 2.1.2.1. Equities
- 2.1.2.2. Warrants
- 2.1.2.3. Indices.

2.1.2.1. Equities

The sample below illustrates the details of an equity:

```
instr # 324/12043 = 679489291
    PriceCurrency               string{USD}
    Symbol                      string{UGAZ}
    Description                 string{VelocityShares 3X Long Natural Gas ETN linked to the
S&P GSCI Natural Gas Index Excess Return}
    SecurityType                string{NONE}
    FOSMarketId                 XASE
    CFICode                     string{EXXXXX}
    RoundLot                    float64{100}
    InternalCreationDate        Timestamp{2015-02-10 14:30:04:493}
    InternalModificationDate    Timestamp{2015-05-22 07:41:05:672}
    InternalSourceId            uint16{119}
    InternalAggregationId       uint16{119}
    InternalEntitlementId       int32{1030}
    DelayedFeedMin              uint16{15}
    LocalCodeStr                string{UGAZ}
    ForeignFOSMarketId          ARCX
    ForeignMarketId             string{ARCX}
    CUSIP                       string{22542D571}
    OperatingMIC                string{XNYS}
    SegmentMIC                  string{XASE}
```

2.1.2.2. Warrants

The sample below illustrates the details of a warrant:

```
instr # 324/12038 = 679489286
    PriceCurrency               string{USD}
    Symbol                      string{ASB/WS}
    Description                 string{Associated Banc-Corp Warrants}
    SecurityType                string{WAR}
    FOSMarketId                 XASE
    CFICode                     string{RWXXXX}
    RoundLot                    float64{100}
    InternalCreationDate        Timestamp{2014-12-23 14:31:45:709}
    InternalModificationDate    Timestamp{2015-05-22 07:41:05:673}
    InternalSourceId            uint16{119}
    InternalAggregationId       uint16{119}
    InternalEntitlementId       int32{1029}
    DelayedFeedMin              uint16{15}
    LocalCodeStr                string{ASB/WS}
    ForeignFOSMarketId          XASE
    ForeignMarketId             string{XASE}
    OperatingMIC                string{XNYS}
    SegmentMIC                  string{XASE}
```

2.1.2.3. Indices

The sample below illustrates the details of an index:

```
instr # 359/22534 = 752900102
    PriceCurrency               string{USD}
    Symbol                      string{SCIX.EU}
    SecurityType                string{INDEX}
    FOSMarketId                 ARCX
    CFICode                     string{TIXXXX}
    SecurityStatus              uint8{2}
    InternalCreationDate        Timestamp{2015-05-12 12:00:02:062}
    InternalModificationDate    Timestamp{2015-05-13 07:41:06:682}
    InternalSourceId            uint16{119}
    InternalAggregationId       uint16{119}
    InternalEntitlementId       int32{1030}
    DelayedFeedMin              uint16{15}
    LocalCodeStr                string{SCIX.EU}
    ForeignFOSMarketId          XASE
    PriceIncrement_dynamic_TableId      uint32{7798884}
    OperatingMIC                string{XNYS}
    SegmentMIC                  string{ARCX}
```

2.2. CTA NYSE Arca Amex – Quotation Data

The following sections describe the characteristics of the quotation data on the CTA market data stream, in terms of:

- 2.2.1. CTA NYSE Arca Amex – Quotation Values
- 2.2.2. CTA NYSE Arca Amex – Trading Status.

2.2.1. CTA NYSE Arca Amex – Quotation Values

The examples below shows the possible values of an instrument on the CTA market data stream:

```
InstrumentStatusL1
-- 324/12043
        BID: 2.7        100
        ASK: 2.76       100
        LastPrice                       float64{2.83}
        LastTradeQty                    float64{100}
        DailyTotalVolumeTraded          float64{0}
        DailyTotalAssetTraded           float64{0}
        LastTradePrice                  float64{2.83}
        LastTradeTimestamp              Timestamp{2015-05-21 17:23:06:760}
        InternalDailyOpenTimestamp      Timestamp{2015-05-22 13:30:00:874}
        InternalDailyCloseTimestamp     Timestamp{2015-05-21 20:01:00:687}
        InternalDailyHighTimestamp      Timestamp{2015-05-21 14:30:01:007}
        InternalDailyLowTimestamp       Timestamp{2015-05-21 17:23:06:760}
        InternalPriceActivityTimestamp  Timestamp{2015-05-22 13:47:14:817}
        TradingStatus                   17=ReadyToTrade
        RegSHOAction                    1=NoPriceTest
        PreviousDailyTotalVolumeTraded  float64{400}
        PreviousDailyTotalAssetTraded   float64{1164}
        PreviousDailyClosingPrice       float64{2.83}
        PreviousBusinessDay             Timestamp{2015-05-21}
        CurrentBusinessDay              Timestamp{2015-05-22}
        InternalDailyClosingPriceType   char{a}
        LimitUpLimitDownIndicator       char{ }
        PriceActivityMarketTimestamp    Timestamp{2015-05-22 13:47:14:817}
```

For more details about the fields and tags available in quotation data type, and their possible values, see *FeedOS Quotation Tags Guide*.

2.2.2. CTA NYSE Arca Amex – Trading Status

Each time a modification of the trading status occurs, the values of the quotation tag **Trading Status** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Other Values*:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `TradingStatus` is described in the following table:

Table 4 TradingStatus – technical implementation in FeedOS

Component	Value	Description
Tag Name	`TradingStatus`	FeedOS tag name.
Numeric ID	9100	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Enum`	Enum data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, detailing the characteristics of the trading status.

Table 4 TradingStatus – technical implementation in FeedOS (Continued)

Component	Value	Description
Possible Values	1	Opening Delay
	3	Resume
	5	Price Indication
	6	Trading Range Indication
	17	Ready to Trade
	18	Not Available for Trading

3. Feed CTA NBBO

The topics this section covers include:

- 3.1. CTA NBBO – Referential Data
- 3.2. CTA NBBO – Quotation Data.

3.1. CTA NBBO – Referential Data

The following sections describe the characteristics of the quotation data on the CTA market data stream, in terms of:

- 3.1.1. CTA NBBO – Available Markets and Branches
- 3.1.2. Types of Instruments on CTA NBBO.

3.1.1. CTA NBBO – Available Markets and Branches

This section details the list of markets and branches available on the CTA market data stream:

- 3.1.1.1. CTA NBBO – Markets
- 3.1.1.2. CTA NBBO – Branches.

3.1.1.1. CTA NBBO – Markets

The CTA market data stream broadcasts informations about the following markets:

Table 5 Markets available on the CTA market data stream

FeedOS Market ID	Market
`Xcta`	Consolidated Type Association

The following example shows the list of markets available on the CTA market data stream and their IDs, returned by the command `dumps`:

```
MARKETS
market # 505    CC=US/UNITED STATES OF AMERICA/unknown,DESCR=CONSOLIDATED TAPE ASSOCIATION,
WEB=www.nyxdata.com/cta
    MIC = Xcta
    TimeZone = America/New_York
    Country = US
    NbMaxInstruments = 2000000
```

3.1.1.2. CTA NBBO – Branches

The example below shows the list of branches available on the CTA market data stream, returned by the command `dumps`. Each branch displays the following details: `FOSMarketID`, `SecurityType`, `CFICode` and `Quantity` (of instruments):

```
BRANCHES
    { Xcta ETF  EUXXXX } qty: 1458
    { Xcta MF   EUXXXX } qty: 7
    { Xcta NONE EXXXXX } qty: 5348
    { Xcta NONE RXXXXX } qty: 19
    { Xcta NONE XXXXXX } qty: 156
    { Xcta PS   EPXXXX } qty: 651
    { Xcta WAR  RWXXXX } qty: 44
```

3.1.2. Types of Instruments on CTA NBBO

The following sections describe the instruments available on the CTA market data stream, according to their type:

- 3.1.2.1. Equities
- 3.1.2.2. Warrants.

3.1.2.1. Equities

The sample below illustrates the details of an equity:

```
instr # 505/12898 = 1059074658
    PriceCurrency               string{USD}
    Symbol                      string{SCIU}
    Description                 string{Global X Scientific Beta US ETF}
    SecurityType                string{ETF}
    FOSMarketId                 Xcta
    CFICode                     string{EUXXXX}
    RoundLot                    float64{100}
    InternalCreationDate        Timestamp{2015-05-13 07:35:02:602}
    InternalModificationDate    Timestamp{2015-05-22 06:15:04:514}
    InternalSourceId            uint16{121}
    InternalAggregationId       uint16{121}
    InternalEntitlementId       int32{1030}
    DelayedFeedMin              uint16{15}
    LocalCodeStr                string{SCIU}
    ForeignFOSMarketId          ARCX
    ForeignMarketId             string{ARCX}
    OperatingMIC                string{Xcta}
```

3.1.2.2. Warrants

The sample below illustrates the details of a warrant:

```
instr # 505/11218 = 1059072978
    PriceCurrency               string{USD}
    Symbol                      string{MTB/WS}
    Description                 string{M&T Bank Corporation Warrant (Expiring December 23,
2018)}
    SecurityType                string{WAR}
    FOSMarketId                 Xcta
    CFICode                     string{RWXXXX}
    RoundLot                    float64{100}
    InternalCreationDate        Timestamp{2013-12-09 09:00:01:026}
    InternalModificationDate    Timestamp{2015-05-22 06:15:04:874}
    InternalSourceId            uint16{121}
    InternalAggregationId       uint16{121}
    InternalEntitlementId       int32{1030}
    DelayedFeedMin              uint16{15}
    LocalCodeStr                string{MTB/WS}
    ForeignFOSMarketId          XNYS
    ForeignMarketId             string{XNYS}
    OperatingMIC                string{Xcta}
```

3.2. CTA NBBO – Quotation Data

The following sections describe the characteristics of the quotation data on the CTA market data stream, in terms of:

- 3.2.1. CTA NBBO – Quotation Values
- 3.2.2. CTA NBBO – Trading Status.

3.2.1. CTA NBBO – Quotation Values

The examples below shows the possible quotation values of an instrument on CTA market data stream:

```
InstrumentStatusL1
-- 505/12898
        BID: 25.25      5500
        ASK: 25.33      5000
        LastPrice                       float64{25.32}
        LastTradeQty                    float64{100}
        DailyTotalVolumeTraded          float64{0}
        DailyTotalAssetTraded           float64{0}
        LastTradePrice                  float64{25.32}
        LastTradeTimestamp              Timestamp{2015-05-21 17:24:58:112}
        InternalDailyOpenTimestamp      Timestamp{2015-05-22 08:00:00:140}
        InternalDailyCloseTimestamp     Timestamp{2015-05-21 20:01:00:886}
        InternalDailyHighTimestamp      Timestamp{2015-05-21 17:19:38:787}
        InternalDailyLowTimestamp       Timestamp{2015-05-21 17:24:58:112}
        InternalPriceActivityTimestamp  Timestamp{2015-05-22 14:01:42:242}
        LowLimitPrice                   float64{22.75}
        HighLimitPrice                  float64{27.8}
        TradingStatus                   17=ReadyToTrade
        PreviousDailyTotalVolumeTraded  float64{200}
        PreviousDailyTotalAssetTraded   float64{5065}
        PreviousDailyClosingPrice       float64{25.32}
        PreviousBusinessDay             Timestamp{2015-05-21}
        CurrentBusinessDay              Timestamp{2015-05-22}
        InternalDailyClosingPriceType   char{a}
        LimitUpLimitDownIndicator       char{A}
        PriceActivityMarketTimestamp    Timestamp{2015-05-22 14:01:42:241}
```

For more details about the fields and tags available in quotation data type, and their possible values, see *FeedOS Quotation Tags Guide*.

3.2.2. CTA NBBO – Trading Status

Each time a modification of the trading status occurs, the values of the quotation tag **Trading Status** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Other Values*:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `TradingStatus` is described in the following table:

Table 6 TradingStatus – technical implementation in FeedOS

Component	Value	Description
Tag Name	`TradingStatus`	FeedOS tag name.
Numeric ID	9100	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.

Table 6 TradingStatus – technical implementation in FeedOS (Continued)

Component	Value	Description
Type	`Enum`	Enum data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, detailing the characteristics of the trading status.
Possible Values	`17`	Ready to Trade
	`18`	Not Available for Trading

4. Specific Referential Tags

The following sections describe the specific referential tags available on CTA market data stream:

- 4.1. PriceCurrency
- 4.2. SecurityStatus
- 4.3. PriceIncrement_dynamic_TableId
- 4.4. OperatingMIC and SegmentMIC.

4.1. PriceCurrency

The values of the referential tag **Price Currency** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Referential* to identify the currency used for the price.

FeedOS implementation of the tag `PriceCurrency` is described in the table below:

Table 7 PriceCurrency – technical implementation in FeedOS

Component	Value	Description
Tag Name	`PriceCurrency`	FeedOS tag name.
Numeric ID	`15`	FeedOS unique ID disseminated on S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`String`	String data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, identifying the currency used for the price.
Possible Values	`USD`	US Dollar

4.2. SecurityStatus

The values of the referential tag **SecurityStatus** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Referential* to indicate the status of an instrument.

FeedOS implementation of the tag `SecurityStatus` is described in the table below:

Table 8 SecurityStatus – technical implementation in FeedOS

Component	Value	Description
Tag Name	`SecurityStatus`	FeedOS tag name.
Numeric ID	`965`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`UInt8`	UInt8 data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, indicating the status of an instrument.
Possible Values	`1`	Active (Default value)
	`2`	Inactive
	`3`	Suspended

4.3. PriceIncrement_dynamic_TableId

The values of the referential tag **PriceIncrement_dynamic_TableId** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Referential* to specify the table detailing the price increments for an instrument.

FeedOS implementation of the tag `PriceIncrement_dynamic_TableId` is described in the table below:

Table 9 PriceIncrement_dynamic_TableId – technical implementation in FeedOS

Component	Value	Description
Tag Name	`PriceIncrement_dynamic_TableId`	FeedOS tag name.
Numeric ID	`9522`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`UInt32`	UInt32 data type.
Format / Possible Values	*`[Exchange Specific Value]`*	An ***exchange specific value***, specifying the table that details the price increments for an instrument.

4.4. OperatingMIC and SegmentMIC

The values of the referential tags **OperatingMIC** and **SegmentMIC** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Referential* to reflect the adoption of the ISO 10383:2012 standard. This new edition of the ISO standard refines the level of granularity on CTA market data stream, by introducing two levels of MIC codes – *operating* (parent-like) and *market segment* (child-like) MICs.

FeedOS implementation of the tags `OperatingMIC` and `SegmentMIC` is described in the table below:

Table 10 OperatingMIC and SegmentMIC – technical implementation in FeedOS

Component	Value		Description
Tag Name	`OperatingMIC`	`SegmentMIC`	FeedOS tag name.
Numeric ID	`9533`	`9534`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`String`	`String`	String data type.
Format	*`[Exchange Specific Value]`*	*`[Exchange Specific Value]`*	An ***exchange specific value***, specifying the parent and child MICs.
Possible Values	`XNYS`	`<None>`	NEW YORK STOCK EXCHANGE, INC.
	`XNYS`	`ARCX`	NYSE ARCA
	`XNYS`	`XASE`	NYSE MKT LLC
	`BATS`	`BATS`	BATS EXCHANGE
	`BATS`	`BATY`	BATS Y-EXCHANGE, INC.
	`EDGE`	`EDGA`	EDGA EXCHANGE
	`EDGE`	`EDGX`	EDGX EXCHANGE
	`XNAS`	`<None>`	NASDAQ – ALL MARKETS
	`XNAS`	`XPHL`	NASDAQ OMX PHLX
	`XNAS`	`XBOS`	NASDAQ OMX BX
	`XCBO`	`CBSX`	CBOE STOCK EXCHANGE
	`XCHI`	`XCHI`	CHICAGO STOCK EXCHANGE, INC
	`XCIS`	`XCIS`	NATIONAL STOCK EXCHANGE
	`FINR`	`XADF`	FINRA ALTERNATIVE DISPLAY FACILITY (ADF)

5. Specific Quotation Tags

The following sections describe the specific quotation tags available on the CTA market data stream:

5.1. Trade Conditions

The following subsections describe the trade conditions on the CTA market data stream:

5.1.1. MARKET_CTA_SaleCondition

Each time a trade occurs, the values of the quotation tag **MARKET_CTA_SaleCondition** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Context* to identify a particular condition applicable to the trade:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `MARKET_CTA_SaleCondition` is described in the table below:

Table 11 MARKET_CTA_SaleCondition – technical implementation in FeedOS

Component	Value	Description						
Tag Name	MARKET_CTA_SaleCondition	FeedOS tag name.						
Numeric ID	15700	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.						
Type	String	String data type.						
Format	*[Exchange Specific Value]*	An ***exchange specific value***, detailing the particular condition applicable to the trade.						
Impacts on...		**Consolidated**		**Participant**			**Sale Cond. Update Volume**	**Description**
		Last	**High/ Low**	**Open**	**Last**	**High/ Low**		
Possible Values	4	#2[i]	Yes	#4	#2	Yes	Yes	Derivatively Priced
	5	Yes	Yes	#4	Yes	Yes	Yes	Market Center Reopening Trade
	6	Yes	Yes	#4	Yes	Yes	Yes	Market Center Closing Trade
	7	No	No	No	No	No	Yes	Qualified Contingent Trade
	8	No	No	No	No	No	TBD	Reserved
	9	Yes	Yes	No	No	No	No	Corrected Consolidated Close (per listing market)
	@	Yes	Yes	#4	Yes	Yes	Yes	Regular Trade (indicates a trade with no associated conditions)
	BLANK	N/A						No Sale Condition required within the category it appears (Long Trade format only)
	B	No	No	No	No	No	Yes	Average Price Trade
	C	No	No	No	No	No	Yes	Cash Trade (Same Day Clearing)
	E	Yes	Yes	#4	Yes	Yes	Yes	Automatic Execution
	F	Yes	Yes	#4	Yes	Yes	Yes	Intermarket Sweep Order

Table 11 MARKET_CTA_SaleCondition – technical implementation in FeedOS (Continued)

Component	Value	Description						
Possible Values	H	No	No	No	No	No	Yes	Price Variation Trade
	I	No	No	No	No	No	Yes	Odd Lot Trade
	K	Yes	Yes	#4	Yes	Yes	Yes	Rule 127 (NYSE only) or Rule 155 (NYSE AMEX only)
	L	#3	Yes	#4	Yes	Yes	Yes	Sold Last (Late Reporting)
	M	No	No	No	Yes	Yes	No	Market Center Official Close
	N	No	No	No	No	No	Yes	Next Day Trade (Next Day Clearing)
	O	#1	Yes	Yes	#2	Yes	Yes	Market Center Opening Trade
	P	#2	Yes	#4	#2	Yes	Yes	Prior Reference Price
	Q	No	No	Yes	No	Yes	No	Market Center Official Open
	R	No	No	No	No	No	Yes	Seller
	T	No	No	No	No	No	Yes	Extended Hours Trade
	U	No	No	No	No	No	Yes	Extended Hours Sold (Out of Sequence)
	V	No	No	No	No	No	Yes	Contingent Trade
	X	Yes	Yes	#4	Yes	Yes	Yes	Cross Trade
	Z	#2	Yes	#4	#2	Yes	Yes	Sold (Out of Sequence)

i. Deviations from a trade's qualification for the Open, Last, High and Low calculations both on a Consolidated and individual Participant basis are denoted with a number – #1, #2, #3 and #4 – and described below:

- ***#1*** – Yes*, if it is the only qualifying last OR if it is that Participant's first qualifying last; OTHERWISE* No*.*
- ***#2*** – Yes*, if it is the only qualifying last; OTHERWISE* No*.*
- ***#3*** – Yes*, if it is the only qualifying last OR if it is from the same participant as the last OR if it is from the PRIMARY MARKET for that Security; OTHERWISE* No*.*
- ***#4*** – Yes*, if it is the first qualifying or only qualifying trade of the day; OTHERWISE* No *(In instances of multiple Market Center Opening Trades, the latest trade takes precedence.).*

Moreover, the table below shows the possible 4-byte combinations in `MARKET_CTA_SaleCondition`:

Table 12 MARKET_CTA_SaleCondition possible 4-byte combinations

Byte 1 – Settlement Type	Byte 2 – Reason for Trade-Through Exemption/Other Reason	Byte 3 – Extended Hours/ Sequence Type	Byte 4 – SRO Required Detail
The '@' code in the first byte followed by '`Blanks`' in the 2nd, 3rd, and 4th bytes indicates a trade without conditions.			
`Blank` (Regular Settlement)	**`Blank`** (No Trade Through Exempt Reason)	**`Blank`** (Not Extended Hours or Sold Out of Sequence)	**`Blank`** (No Unusual Trade Detail)
`C` Cash Trade (Same Day Clearing)	**`F`** Inter-market Sweep Order	**`L`** Sold Last (Late Reporting)	**`B`** Average Price Trade
`N` Next Day Trade (Next Day Clearing)	**`O`** Market Center Opening Trade	**`T`** Extended Hours Trade	**`E`** Automatic Execution
`R` Seller	**`4`** Derivatively Priced	**`U`** Extended Hours Sold (Out of Sequence)	**`H`** Price Variation Trade
	`5` Market Center Reopening Trade	**`Z`** Sold (Out of Sequence)	**`I`** Odd Lot Trade
	`6` Market Center Closing Trade		**`K`** Rule 127 (NYSE only) or Rule 155 (NYSE MKT only)
	`7` Qualified Contingent Trade		**`M`** Market Center Official Close
	`8` Reserved		**`P`** Prior Reference Price
	`9` Corrected Consolidated Close Price as per Listing Market		**`Q`** Market Center Official Open
			`V` Contingent Trade
			`X` Cross Trade

5.1.2. MARKET_CTA_QuoteCondition

The values of the quotation tag **QuoteCondition** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Context* to identify a particular condition applicable to the quote:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `MARKET_CTA_QuoteCondition` is described in the table below:

Table 13 MARKET_CTA_QuoteCondition – technical implementation in FeedOS

Component	Value	Description
Tag Name	`MARKET_CTA_QuoteCondition`	FeedOS tag name.
Numeric ID	`15701`	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Char`	Char data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, detailing the particular condition applicable to the quote.
Possible Values	`A`	Slow Quote on Offer Side
	`B`	Slow Quote on Bid Side
	`C`	Closing
	`D`	News Dissemination
	`E`	Slow Quote Due to an LRP or Gap Quote on the Bid Side
	`F`	Slow Quote Due to an LRP or Gap Quote on the Offer Side
	`G`	Trading Range Indication
	`H`	Slow Quote on the Bid and Offer Sides
	`I`	Order Imbalance
	`J`	Due To Related Security-News Dissemination
	`K`	Due To Related Security-News Pending
	`L`	Closed Market Maker (FINRA)
	`M`	Additional Information
	`N`	Non-Firm Quote
	`O`	Opening Quote
	`P`	News Pending
	`Q`	Additional Information-Due To Related Security
	`R`	Regular (FINRA Open)
	`S`	Due To Related Security
	`T`	Resume
	`U`	Slow Quote Due to a NYSE Liquidity Replenishment Point (LRP), NYSE AMEX Tolerance Breach (Spread, Momentum or Gap Trade Tolerance), or Gap Quote on Both the Bid and Offer Sides (New)
	`V`	In View of Common
	`W`	Slow Quote Due to Set Slow List on Both the Bid and Offer Sides
	`X`	Equipment Changeover
	`Y`	Sub-Penny Trading
	`Z`	No Open/No Resume

5.2. Other Values

The following subsections describe the other values of the specific quotation tags available on the CTA market data stream:

5.2.1. LowLimitPrice

The values of the quotation tag **LowLimitPrice** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the inferior price limit:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `LowLimitPrice` is described in the following table:

Table 14 LowLimitPrice – technical implementation in FeedOS

Component	Value	Description
Tag Name	`LowLimitPrice`	FeedOS tag name.
Numeric ID	`1148`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Float64`	Float64 data type.
Format / Possible values	*`[Exchange Specific Value]`*	An ***exchange specific value***, indicating the inferior price limit.

5.2.2. HighLimitPrice

The values of the quotation tag **HighLimitPrice** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the superior price limit:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `HighLimitPrice` is described in the following table:

Table 15 HighLimitPrice – technical implementation in FeedOS

Component	Value	Description
Tag Name	`HighLimitPrice`	FeedOS tag name.
Numeric ID	`1149`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Float64`	Float64 data type.
Format / Possible values	*`[Exchange Specific Value]`*	An ***exchange specific value***, indicating the superior price limit.

5.2.3. LastPrice

The values of the quotation tag **Last Price** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the last price for a specific security either on a Consolidated or an individual Participant basis:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `LastPrice` is described in the following table (newly added values are in **bold**):

Table 16 LastPrice – technical implementation in QuantFEED®FeedOS

Component	Value	Description
Tag Name	`LastPrice`	FeedOS tag name.
Numeric ID	`9106`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Float64`	Float64 data type.
Format / Possible Values	***`[Exchange Specific Value]`***	An ***exchange specific value***, detailing the last price for a specific security either on a Consolidated or an individual Participant basis.
	`Unknown`	This value is disseminated from 04:00 AM to 09:30 AM New York, US Local Time, when the tag is reset.

5.2.4. ShortSalePriceRestriction

Each time a short sale price restriction occurs, the values of the quotation tag **ShortSalePriceRestriction** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Other Values* to identify the type of trade:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the tag `RegSHOAction` is described in the table below:

Table 17 RegSHOAction – technical implementation in FeedOS

Component	Value	Description
Tag Name	`RegSHOAction`	FeedOS tag name.
Numeric ID	`9113`	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Enum`	Enum data type.
Format	***`[Exchange Specific Value]`***	An ***exchange specific value***, detailing the short sale price restriction status.
Possible Values	`1`	No short sale price restriction.
	`2`	Short sale price restriction in progress.
	`3`	Short sale price restriction remains in effect for a second business day.

5.3. InternalDailyClosingPriceType

The values of the quotation tag **InternalDailyClosingPriceType** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the type of the internal daily closing price:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

FeedOS implementation of the values currently available for the tag `InternalDailyClosingPriceType` is described in the table below (the values currently disseminated are in `green`):

Table 18 InternalDailyClosingPriceType – technical implementation in FeedOS

Component	Value	Description
Tag Name	`InternalDailyClosingPriceType`	FeedOS tag name.
Numeric ID	`9155`	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	`Char`	Char data type.
Format	*`[Internal Specific Value]`*	An ***internal specific value***, detailing the type of daily closing price.
Possible Values	0	**Undefined**
	`a`	**Official Close** – Explicit closing price value calculated and distributed by an exchange for the main trading session of a given trading day.
	b	**Official Indicative** – Exchange has provided an indicative price and marked it as indicative, however no trading activity is observed.
	c	**Official Carry Over** – Explicit Closing price value from a previous trading day carried forward by the exchange to the given trading day.
	d	**Last Price** – Final price disseminated by the exchange for the main trading session or dissemination period of a given trading day (for indices).
	`e`	**Last Eligible Price** – Execution price of the final trade (subject to trade qualifiers) accepted by the exchange for the main trading session of a given trading day.
	z	**Manual** – Price disseminated manually (in case of production correction).

5.3.1. LimitUpLimitDownIndicator

The values of the quotation tag **LimitUpLimitDownIndicator** conveyed on CTA market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the type of specified price bands related to a security:

- in the callback carrying the Level1 event `notif_TradeEventExt()`, for C++
- in the event handler `TradeEventExtEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifTradeEventExt`, for Java.

The **Limit Up-Limit Down** (LULD) mechanism aims at addressing extraordinary market volatility in U.S. equity markets. This mechanism is intended to prevent trades in National Market System (NMS) from occurring outside of specified price bands. The bands would be set at a percentage level above and below the average reference price of the security over the immediately preceding five-minute period.

To accommodate more fundamental price moves, there would be a five-minute trading pause – similar to the pause triggered by the current single-stock circuit breakers – only if trading is unable to occur within the specified price band after 15 seconds.

FeedOS implementation of the tag `LimitUpLimitDownIndicator` is described in the following table:

Table 19 LimitUpLimitDownIndicator – technical implementation in FeedOS

Component	Value		Description
Tag Name	`LimitUpLimitDownIndicator`		FeedOS tag name.
Numeric ID	9255		FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.
Type	Char		Char data type.
Format	*[Exchange Specific Value]*		An ***exchange specific value***, indicating the type of specified price bands.
Possible values	**CQS**	<space>	Limit Up Limit Down Not Applicable
		A	Bid Price above Upper Limit Price Band – Bid is Non-Executable
		B	Offer Price below Lower Limit Price Band – Offer is Non-Executable
	CTS	<space>	Limit Up Limit Down Not Applicable
		A	National Best Bid and/or National Best Offer are Executable
		B	National Best Bid below Lower Limit Price Band – National Best Bid is Non-Executable
		C	National Best Offer above Upper Limit Price Band – National Best Offer is Non-Executable
		D	National Best Bid below Lower Limit Price Band and National Best Offer above Upper Limit Price Band – National Best Bid and National Best Offer are Non-Executable
		E	National Best Bid equals Upper Limit Price Band – National Best Bid is in Limit State
		F	National Best Offer equals Lower Limit Price Band – National Best Offer is in Limit State
		G	National Best Bid equals Upper Limit Price Band – National Best Bid is in Limit State and National Best Offer above Upper Limit Price Band – National Best Offer is Non-Executable
		H	National Best Bid below Lower Limit Price Band – National Best Bid is Non-Executable and National Best Offer equals Lower Limit Price Band – National Best Offer is in Limit State
		I	National Best Bid equals Upper Limit Price Band and National Best Offer equals Lower Limit Price Band (Crossed - NOT in Limit State)

5.4. MBL and MBO Data*

The MBL book has a 5-level depth. The MBO book is full depth.

6. Special Behavior

The following sections describe the special behavior of the CTA market data stream in terms of

6.1. Instrument Characteristics

Some instrument characteristics, such as the SEDOL and the ISIN are not available on the CTA market data stream. To enrich the content of the feed, please contact your project manager.

6.2. Bid-Ask Spreads Behavior

Sometimes, on the CTA market data stream large Bid-Ask spreads can occur, as the buyer or the seller uses the Bid-Ask spread to get out from the National Best Bid and Offer (NBBO).

6.3. Market Wide Circuit Breaker

Each time an extraordinary market volatility occurs, the values of the **Level 1, Level 2 and Level 3 Halts of the Market-Wide Circuit Breakers**, which halt the trading in all exchange listed securities throughout the U.S. markets, as well as the **breached level** conveyed on the CTA market data stream are disseminated via FeedOS data stream in *Market News*:

- in the callback carrying the Level1 event `notif_MarketNews()`, for C++
- in the event handler `MarketNewsEventHandler`, for C#
- in the callback carrying the Level1 event `quotNotifMarketNewsEvent`, for Java.

* The MBL and MBO data may not be included by default in your Level1 data subscription, but sold separately. Depending on your contract, additional terms, conditions and fees may apply. For more details about the subscription options, please contact S&P Capital IQ Real-Time Solutions.

The format of the **Market-Wide Content Breaker Decline Level Message**, which conveys the values of the three-level halts in the market news, follows the template described below:

```
Market-wide circuit breaker indicator
MarketId=<market ID>
Level1=<level1>
Level2=<level2>
Level3=<level3>


Example:
MN      null    null    ????    Normal     Market-wide circuit breaker level status
MarketId=E;  Level1=144.45;  Level2=135.13;  Level3=124.26     related_instruments:
```

The format of the **Market-Wide Content Breaker Status Message**, which conveys the breached level in the market news, follows the template described below:

```
Market-wide circuit breaker indicator
MarketId=<market_id >
LevelBreached=<Level>
```

6.4. Level1 Market Data Kinematics – CLOSE

The CLOSE signal is sent for all the markets no later than 16:01 (New York Time). However, the instruments continue to trade until the closing time of each market, as shown in the example below:

```
"TE (TradeEvent) : MARKET_TIME INSTRUMENT LAST_PRICE TRADE_QTY BID_PRICE BID_QTY ASK_PRICE
ASK_QTY *CONTENT_MASK* *FLAGS*"
"VU (ValuesUpdate) : SERVER_TIME INSTRUMENT VALUES..."
"SI (TradeEvent) *SIGNAL* : SERVER_TIME INSTRUMENT SIGNAL LAST_PRICE"

TE  20:54:49:671 73402754   *       *       19.67   1       *       *
TE  20:54:49:672 73402754   *       *       *       *       20.59   1
TE  20:54:49:672 73402754   *       *       20.01   2       *       *
TE  20:54:49:672 73402754   *       *       *       *       20.27   2
TE  20:55:03:590 73402754   *       *       19.68   1       *       *
TE  20:55:03:590 73402754   *       *       *       *       20.58   1
TE  20:58:34:449 73402754   *       *       19.67   1       20.59   1
TE  20:59:42:222 73402754   *       *       19.63   1       20.57   1
TE  21:00:06:171 73402754   *       *       !       0       21.31   1
TE  21:00:06:171 73402754   *       *       !       0       !       0
SI  21:01:00:265 73402754   CLOSE   19.83
TE  21:01:00:265 73402754   19.83   *       *       *       *       *       C
VU  21:01:00:265 73402754   InternalDailyClosingPriceType=e
VU  21:15:05:494 73402754   InternalDailyClosingPriceType=a  DailyOpeningPrice=19.83
TE  21:45:00:576 73402754   *       *       !       0       !       0
VU  22:45:00:004 73402754   TradingStatus=18
```

6.5. BBO of the Level1 Market Data – Measurement Unit

The Bid and Ask quantities are multiplied by `RoundLot`, as shown below:

> **Caution** The `RoundLot` value affects only the quotation quantity, but not the value disseminated by the tag `LastTradeQty`.

```
instr # 157/7506 = 329260370
    PriceCurrency               string{USD}
    Symbol                      string{GRP/U}
    Description                string{Granite Real Estate Inc. Stapled Units, each consisting
of one unit of Granite Real Estate Trust and one common share of Granite REIT Inc.}
    SecurityType                string{MF}
    FOSMarketId                 EDGX
    CFICode                     string{EUXXXX}
    RoundLot                    float64{100}
[...]
TE  14:29:53:165  329260370  34.7    100     *       *       *       *
MARKET_CTA_SaleCondition=--T-
VU  14:29:53:165  329260370  LastPrice=?
TE  14:30:00:084  329260370  *       *       18.43   100     !       0
TE  14:30:00:084  329260370  *       *       *       *       43.22   100
```

6.6. Microsecond Timestamp Precision on the Level1 Market Data

The server timestamps displays microsecond units on the Level1 Market Data, as shown in the example below (highlighted in `green`):

```
“TE (TradeEvent) : MARKET_TIME INSTRUMENT LAST_PRICE TRADE_QTY BID_PRICE BID_QTY ASK_PRICE
ASK_QTY *CONTENT_MASK* *FLAGS*"

TE   18:12:22:962.842    73402754   75.32   75000   *    *    *    *
```

7. Official Closing Price

The closing price is provided by the market. When a stock splits, the closing price is adjusted after the closing. There is no settlement price.

8. Finding the Latest Information

For the latest documentation and product updates, additional support and training, please contact our support services one of the following ways:

- E-mail: rts-support@spcapitaliq.com
- Web: https://support.quanthouse.com.