S&P Capital IQ Real-Time Solutions

FeedOS™ Feed Description

ORION DERIVATIVES

Reference n°: 20150722 – 26031 – 26470 – 28000

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Reference 20150722 – 26031 – 26470 – 28000
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FEEDOS™ ORION DERIVATIVES 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 ORION DERIVATIVES market data stream, their possible values and current FeedOS technical implementation.

The topics this feed description covers include:

1. Referential Data

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

1.1. Available Markets and Branches

This section details the list of Markets and Branches available on the ORION DERIVATIVES market data stream.

1.1.1. Markets

The ORION DERIVATIVES market data stream broadcasts informations about the following markets:

Table 1 List of markets available on the ORION DERIVATIVES market data stream

FeedOS Market ID	Market
XHKF	Hong Kong Futures Exchange

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

```
MARKETS
market # 109    CC=HK/HONG KONG/HONG KONG, DESCR=HONG KONG FUTURES EXCHANGE LTD.,
WEB=www.hkfe.com
    MIC = XHKF
    TimeZone = Asia/Hong_Kong
    Country = CN
    NbMaxInstruments = 2000000
```

1.1.2. Branches

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

```
BRANCHES
    { XHKF FUT  FCECSO } qty: 50
    { XHKF FUT  FFCCSO } qty: 11
    { XHKF FUT  FFDPSO } qty: 3
    { XHKF FUT  FFICSO } qty: 65
    { XHKF FUT  FFNCSO } qty: 35
    { XHKF FUT  FFSCSM } qty: 337
    { XHKF MLEG SOXXXX } qty: 850
    { XHKF MLEG SWSXXX } qty: 40
    { XHKF MLEG SXXXXX } qty: 1429
    { XHKF OPT  OCASCS } qty: 17887
    { XHKF OPT  OCEICS } qty: 1566
    { XHKF OPT  OPASCS } qty: 17887
    { XHKF OPT  OPEICS } qty: 1574
```

1.2. Types of Instruments

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

- 1.2.1. Options
- 1.2.2. Futures
- 1.2.3. Multilegs.

1.2.1. Options

The sample below illustrates the details of an option:

```
instr # 109/1040160 = 229629728
    PriceCurrency               string{HKD}
    Symbol                      string{CKH162.50I5}
    Description                 string{CKH HOLDINGS CKH162.50I5}
    SecurityType                string{OPT}
    StdMaturity                 string{20150929}
    StrikePrice                 float64{162.5}
    FOSMarketId                 XHKF
    Factor                      float64{500}
    ContractMultiplier          float64{500}
    CFICode                     string{OCASCS}
    MarketSegmentID             string{Stock Options}
    InternalCreationDate        Timestamp{2015-02-16 22:00:19:759}
    InternalModificationDate    Timestamp{2015-03-17 22:00:20:086}
    InternalSourceId            uint16{254}
    InternalAggregationId       uint16{254}
    InternalEntitlementId       int32{1039}
    LocalCodeStr                string{CKH162.50I5}
    ForeignFOSMarketId          XHKF
    ForeignMarketId             string{XHKF}
    PriceIncrement_static       float64{0.01}
    MaturityYear                uint16{2015}
    MaturityMonth               uint8{9}
    MaturityDay                 uint8{29}
    OperatingMIC                string{XHKF}
```

1.2.2. Futures

The sample below illustrates the details of a future:

```
instr # 109/1045742 = 229635310
    PriceCurrency               string{HKD}
    Symbol                      string{BCMZ5}
    Description                 string{BANK OF COMMUNICATIONS BCMZ5}
    SecurityType                string{FUT}
    StdMaturity                 string{20151230}
    FOSMarketId                 XHKF
    Factor                      float64{1000}
    ContractMultiplier          float64{1000}
    CFICode                     string{FFSCSM}
    MarketSegmentID             string{Stock Futures}
    InternalCreationDate        Timestamp{2015-03-30 22:01:06:067}
    InternalModificationDate    Timestamp{2015-04-07 22:01:05:872}
    InternalSourceId            uint16{254}
    InternalAggregationId       uint16{254}
    InternalEntitlementId       int32{1039}
    LocalCodeStr                string{BCMZ5}
    ForeignFOSMarketId          XHKF
    ForeignMarketId             string{XHKF}
    PriceIncrement_static       float64{0.01}
    MaturityYear                uint16{2015}
    MaturityMonth               uint8{12}
    MaturityDay                 uint8{30}
    OperatingMIC                string{XHKF}
```

1.2.3. Multilegs

The sample below illustrates the details of a multileg:

```
instr # 109/1046930 = 229636498
    PriceCurrency                string{HKD}
    Symbol                       string{HHIK5/U5}
    Description                  string{HANG SENG CHINA ENTERPRISES IDX. HHIK5/U5}
    SecurityType                 string{MLEG}
    FOSMarketId                  XHKF
    CFICode                      string{SOXXXX}
    NbLegs                       uint8{2}
    MarketSegmentID              string{H-Shares Index Futures / Options}
    InternalCreationDate         Timestamp{2015-03-30 22:01:16:104}
    InternalModificationDate     Timestamp{2015-04-07 22:01:15:975}
    InternalSourceId             uint16{254}
    InternalAggregationId        uint16{254}
    InternalEntitlementId        int32{1039}
    LocalCodeStr                 string{HHIK5/U5}
    ForeignFOSMarketId           XHKF
    ForeignMarketId              string{XHKF}
    PriceIncrement_static        float64{1}
    MaturityYear                 uint16{2015}
    MaturityMonth                uint8{9}
    MaturityDay                  uint8{29}
    OperatingMIC                 string{XHKF}
    LegFOSInstrumentCode         uint32{229627209}
    LegFOSInstrumentCode_1       uint32{229636087}
    LegRatioQty                  float64{1}
    LegRatioQty_1                float64{1}
    LegFIXSide                   '1'=Buy
    LegFIXSide_1                 '2'=Sell
```

2. Quotation Data

The sections below describe the characteristics of the quotation data on the ORION DERIVATIVES market data stream, in terms of:

- 2.1. Quotation Values
- 2.2. TradingStatus
- 2.3. Specific Quotation Tags
- 2.4. MBL and MBO Data.

2.1. Quotation Values

The example below shows the possible values of an instrument on the ORION DERIVATIVES market data stream:

```
-- 109/20738
        BID: 24582      1       @1
        ASK: 24656      1       @1
        LastPrice                       float64{24615}
        LastTradeQty                    float64{1}
        DailyHighPrice                  float64{24649}
        DailyLowPrice                   float64{24586}
        DailyTotalVolumeTraded          float64{44815}
        DailyTotalAssetTraded           float64{48475741}
        LastTradePrice                  float64{24615}
        LastTradeTimestamp              Timestamp{2015-04-06 14:59:58}
        InternalDailyOpenTimestamp      Timestamp{2015-04-08 03:45:10:293}
        InternalDailyCloseTimestamp     Timestamp{2015-04-08 03:40:40:188}
        InternalDailyHighTimestamp      Timestamp{2015-04-08 03:50:27:877}
        InternalDailyLowTimestamp       Timestamp{2015-04-08 04:19:03:556}
        InternalPriceActivityTimestamp  Timestamp{2015-04-08 05:34:01:647}
        TradingStatus                   18=NotAvailableForTrading
        TradingSessionId                int8{1}
        LastOffBookTradePrice           float64{24625}
        LastOffBookTradeQty             float64{12}
        LastOffBookTradeTimestamp       Timestamp{2015-04-06 08:10:37}
        SessionTotalOffBookAssetTraded  float64{0}
        SessionTotalOffBookVolumeTraded float64{0}
        SessionTotalVolumeTraded        float64{1969}
        SessionOpeningPrice             float64{24637}
        PreviousSessionClosingPrice     float64{24648}
        SessionHighPrice                float64{24649}
        SessionLowPrice                 float64{24586}
        SessionTotalAssetTraded         float64{48475741}
        DailyOpeningPrice               float64{24637}
        DailySettlementPrice            float64{24648}
        PreviousDailyTotalVolumeTraded  float64{42846}
        PreviousDailyTotalAssetTraded   float64{1056144833}
        PreviousDailyClosingPrice       float64{24648}
        PreviousBusinessDay             Timestamp{2015-04-08}
        CurrentBusinessDay              Timestamp{2015-04-08}
        DailyTotalOffBookVolumeTraded   float64{0}
        DailyTotalOffBookAssetTraded    float64{0}
        OpenInterest                    float64{40980}
        InternalLastAuctionTimestamp    Timestamp{2015-04-08 03:20:38:480}
        PriceActivityMarketTimestamp    Timestamp{2015-04-06 21:04:47:741}
        SettlementPriceDate             Timestamp{2015-04-08}
        OpenInterestDate                Timestamp{2015-04-08}
        SettlementPriceType             char{a}
        MARKET_HK_TradingState          string{CL_Start}
```

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

2.2. TradingStatus

Each time a modification of the trading status occurs, the values of the quotation tag **TradingStatus** in the ORION DERIVATIVES 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 table below:

Table 2 Trading Status of the ORION DERIVATIVES market data stream – technical implementation in FeedOS

Component	Value	Description
Tag Name	`TradingStatus`	FeedOS tag name.
Numeric ID	`9100`	FeedOS unique ID broadcast on the S&P Capital IQ Real-Time Solutions data stream. It is the numeric equivalent of the tag name.
Type	`Enum`	Enumeration data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, as described below, concerning the characteristics of the trading status.
Possible Values	`2`	Trading Halt
	`16`	Trade Dissemination Time
	`17`	Ready to Trade
	`18`	Not Available for Trading
	`21`	Pre-Open

2.3. Specific Quotation Tags

The following section describe the specific quotation tags available on the ORION DERIVATIVES market data stream:

- 2.3.1. Trade Conditions
- 2.3.2. Other Values.

2.3.1. Trade Conditions

The following sections describe the trade conditions available on the ORION DERIVATIVES market data stream:

- 2.3.1.1. TradeCondition

2.3.1.1. TradeCondition

Each time a trade occurs, the values of the quotation tag **TradeCondition** conveyed on the ORION DERIVATIVES market data stream are disseminated via FeedOS data stream in *Context* to identify the particular condition applicable to a 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 `TradeCondition` is described in the table below:

Table 3 TradeCondition – technical implementation in FeedOS

Component	Value	Description
Tag Name	`TradeCondition`	FeedOS tag name.
Numeric ID	`277`	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 a trade.
Possible Values	X	Cross Trade

2.3.2. Other Values

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

- 2.3.2.1. SettlementPriceType
- 2.3.2.2. MARKET_HK_TradingState.

2.3.2.1. SettlementPriceType

The values of the quotation tag **SettlementPriceType** conveyed on the ORION DERIVATIVES market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the type of settlement 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 tag `SettlementPriceType` is described in the following table:

Table 4 SettlementPriceType – technical implementation in FeedOS

Component	Value	Description
Tag Name	`SettlementPriceType`	FeedOS tag name.
Numeric ID	`9383`	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`	Timestamp data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, indicating the type of settlement price.
Possible Values	a	**Official** – Explicit Official Daily Settlement Price, as distributed by the exchange.
	b	**Preliminary** – Settlement Price subject to change until the Official Daily Settlement Price is published.
	z	**Manual** – Settlement Price disseminated manually (in case of a correction).
	0	**Undefined**

2.3.2.2. MARKET_HK_TradingState

The values of the quotation tag **MARKET_HK_TradingState** conveyed on the ORION DERIVATIVES market data stream are disseminated via FeedOS data stream in *Other Values* to indicate the original trading state value sent by the exchange:

- 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_HK_TradingState` is described in the following table:

Table 5 MARKET_HK_TradingState – technical implementation in FeedOS

Component	Value	Description
Tag Name	`MARKET_HK_TradingState`	FeedOS tag name.
Numeric ID	`15010`	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`	Timestamp data type.
Format	*`[Exchange Specific Value]`*	An ***exchange specific value***, indicating the original trading state value sent by the exchange.
Possible Values	`OPENALLOC`	Open Allocation Session – Markets with Pre-market Opening Period
	`CLOSE`	Market Closed – Markets not tradable in T+1 Session
	`OPEN`	Market Open – All markets
	`PREOPEN`	PreOpen Session – Markets with Pre-market Opening Period
	`PREOPENALLOC`	PreOpen Allocation Session – Markets with Pre-market Opening Period
	`PAUSE`	Market Pause – All markets
	`PRE_MKT_ACT`	PreMarket Activities – Markets without Pre-market Opening Period
	`CL_START`	Clearing Session Start – Markets tradable in T+1 Session
	`CL_CLOSE`	Clearing Session Close – All markets
	`AHT_CLOSE`	AHFT Market Closed – Markets tradable in T+1 Session
	`AHT_CLR_INFO`	AHFT Reset Price Information – Markets tradable in T+1 Session
	`AHT_INACT_T_ ORDER`	AHFT Inactive Non T+1 Order – Markets tradable in T+1 Session
	`AHT_NEXT_DA Y`	AHFT Reset Price Information for the Next Business Day – Markets tradable in T+1 Session
	`AHT_OPEN`	AHFT Market Open – Markets tradable in T+1 Session
	`AHT_OPEN_PL`	AHFT Market Open – Markets tradable in T+1 Session with price limit control enabled
	`AHT_PRE_MKT_ACT`	AHFT PreMarket Activities – Markets tradable in T+1 Session
	`OPEN_PL`	Market Open – Markets enabled with price limit control
	`CLOSE_TODAY`	Market Closed for Today Trading – Markets tradable in T+1 Session
	`OPEN_DPL`	Market Open – Markets enabled with dynamic price banding mechanism
	`FAILOVER`	Site Failover – All markets

2.4. MBL and MBO Data*

The MBL book has a 10-level depth and a special limit at the 11th level with a price equal to UNQUOTED. This limit represents the aggregation of all the limits beyond the 10th. There is no MBO.

3. Closing Price

The closing price is the last trade price upon close, as provided by the exchange. If the instrument has an auction phase, the market sends the last auction price, which becomes the closing price. When a stock splits, the closing price is adjusted after the closing. The settlement price is handled when provided by the market.

4. Multi-Session Kinematics

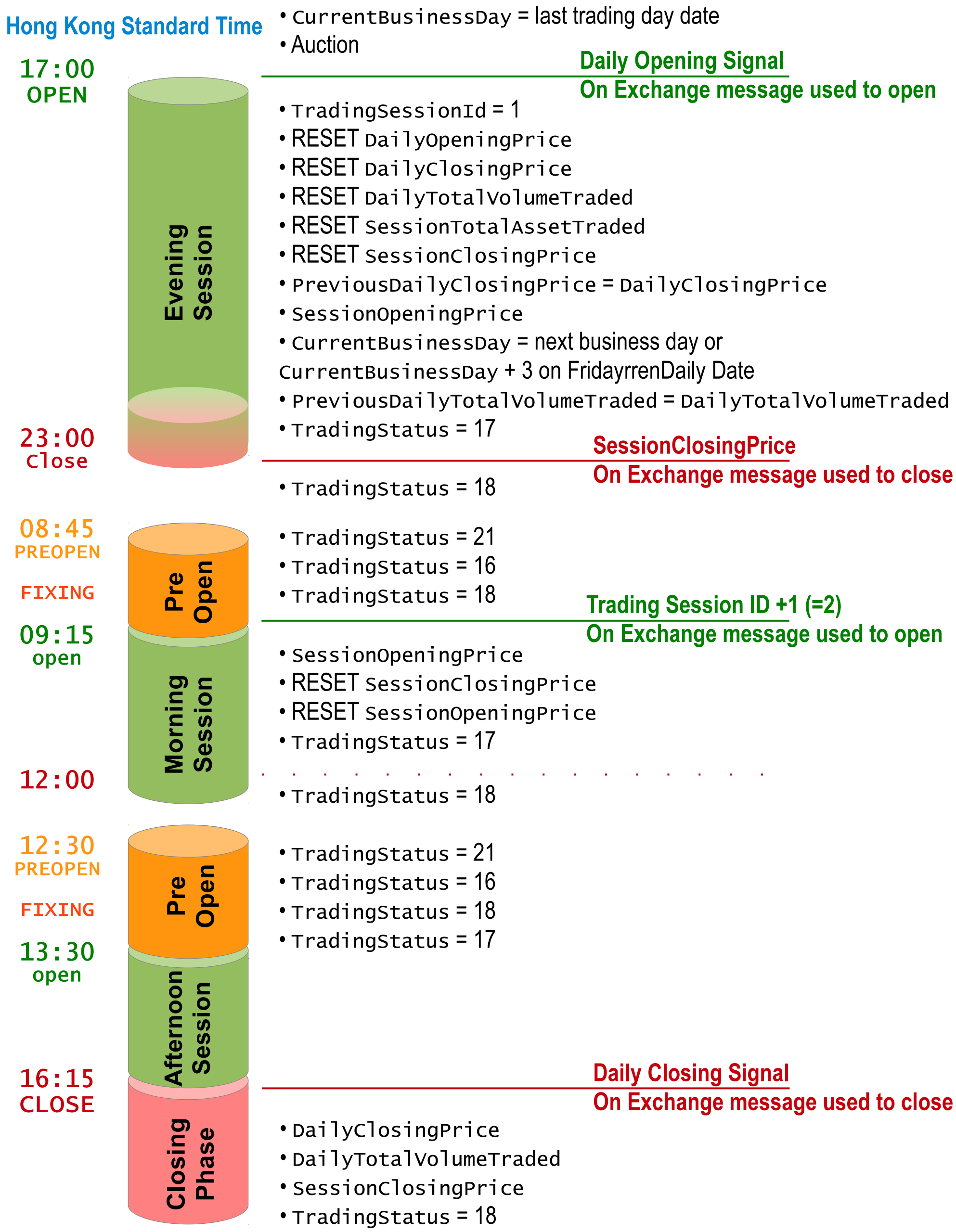
The following segments have multi-session kinematics:

- HangSengIndexFuturesAndOptions
- HSharesIndexFuturesAndOptions
- MiniHangSengIndexFuturesAndOptions
- RenminbiCurrencyFutures
- AsiaCommoditiesFutures
- ThermalCoalFutures.

The diagram below describes the main trading phases and the update mechanism of the tags available for a HSI Future available on the ORION DERIVATIVES market data stream:

* 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.

Figure 5-1 Example of tags update mechanism for a HSI Future on the ORION DERIVATIVES market data stream in Hong Kong Standard Time



5. 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.