

14 November 2008

PROJECT : NSC to UTP migration

Note: The purpose of this document is to give you a quick overview of the changes in order to better appreciate the evolution with a review of.

- Impacts on TOPCAC/FIM
- Impacts on EMF

Impact on TOPCAC/FIM

This section supplies a highlight summary of the changes visible in TOPCAC/FIM, resulting from the migration of instruments from NSC to UTP.

Msg.0001

- Field “Last trade at same price”:
No longer provided for UTP instruments

Msg.0002

- Field “Last trade at same price”
No longer provided for UTP instruments
- Field “Origin of market”
No longer provided for UTP instruments (always ‘B’ on NSC)

Msg.0005

- Field “Instrument Trading Status”
No longer provided for UTP instruments
- Field “Instrument State”
Values ‘G’ and ‘R’ in 2nd character no longer provided for UTP instruments
- Field “Actions affecting Instrument State”
Value A, I, E, N, F, S, G, U, W, X, Y, Z no longer supplied for UTP instruments.
Only values ‘P’, ‘M’, ‘C’, ‘O’, ‘R’, ‘D’ are supplied for UTP instruments

Msg.00A6

- Message not sent for UTP instruments

Msg.00L4

- General:
Methodology behind calculation of Market Summary on UTP slightly different from NSC.
- Field “Origin of market”
No longer provided for UTP instruments (always ‘B’ on NSC)

Msg.00S0

- Field “ID of instance”
Possible value ‘C1’ added to identify UTP trading engine



Impact on EMF

This section summarizes the UTP impacts on EMF feed. The purpose is to give you a quick overview of the changes in order to better appreciate the evolution.

Be informed, for UTP roll out, that:

- no structure evolution,
- no new data fields,
- Changes are focused on new sets of value for specific data fields. It has been summarized further in the document (and per message type for more visibility).

This extract is based on the following document:

Appendix to the Euronext Multicast Feed Specification for Cash Markets version 1.4

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1 Message iDentifier = 156/Cash message type (0x8485) = 01

LAST NSC TRADE ID	0x4B18	Integer	Serves as a reference in identifying and cancelling trades. Unique identifier per instrument. and per day.
LAST TRADE AT SAME PRICE INDICATOR	0x42E8	Character	Indicates whether the last price on the centralized market describes the last of a series of trades executed at the same price. Possible values / Restrictions: <u>For Instruments traded on NSC:</u> ‘1’ - if the message is the last of a series of trades at the same price ‘0’ - if not. <u>For instruments traded on UTP:</u> Filled with blank (will no longer be provided).



2 Message iDentifier = 156/Cash message type (0x8485) = 02

LAST NSC TRADE ID	0x4B18	Integer	Serves as a reference in identifying and cancelling trades. Unique identifier per instrument. and per day.
LAST TRADE AT SAME PRICE INDICATOR	0x42E8	Character	Indicates whether the last price on the centralized market describes the last of a series of trades executed at the same price. Possible values / Restrictions: <u>For Instruments traded on NSC:</u> '1' - if the message is the last of a series of trades at the same price '0' - if not. <u>For instruments traded on UTP:</u> Filled with blank (<i>will no longer be provided</i>).
ORIGIN OF MARKET INFORMATION INDICATOR	0x42E9	Character	Origin of market information indicator Possible values / Restrictions: <u>For Instruments traded on NSC:</u> Always filled with "B" <u>For Instruments traded on UTP:</u> Filled with blank (<i>will no longer be provided</i>).

3 Message iDentifier = 156/Cash message type (0x8485) = 03

TYPE OF LAST PRICE	0x489C	Integer	Indicates the type of operation described in this message. . 00 Trade cancellation. . 02 Buy price. . 03 Sell price. . 04 First traded price (one auction only). . 05 Market in-balance ask price. . 06 Market in-balance bid price. . 07 Nth traded price. . 30 Change of first price. . 31 New high price. . 32 New low price. . 33 New last price. . 34 New previous day's closing price. . 41 Warrant opening indicative value. . 42 Warrant closing indicative value.
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4 Message iDentifier = 156/Cash message type (0x8485) = 05

CODE INDICATING THE STATE OF THE INSTRUMENT IN NSC	0x86D7	String	<p>The instrument's trading status. This determines the functions that are authorised on the instrument and the management rules related to order entry and processing</p> <p>A value is always provided for this field.</p> <p>Possible values / Restrictions:</p> <p><u>For instruments traded on NSC</u></p> <p>1st character:</p> <ul style="list-style-type: none">'I' - inhibited'A' - authorised <p>2nd character:</p> <ul style="list-style-type: none">Space - open or not provided'S' - suspended'R' - reserved'G' – Frozen <p><u>For instrument s traded on UTP:</u></p> <p>1st character:</p> <ul style="list-style-type: none">'I' – for inherited(from its class) with orders rejection.'A' – for inherited (from its classwith orders entry authorized. <p>2nd character:</p> <ul style="list-style-type: none">' ' blank – open.'S' - halted <p>Note, '<i>inherited</i>', the instrument state follows the state of its Class (Group).</p>
INSTRUMENT TRADING STATE INDICATOR	0x42D3	Character	<p>Indicates whether trading on an instrument is halted, or if trading was halted, whether trading has been resumed.</p> <p>Possible values/restrictions:</p> <p>Spaces = not provided.</p> <p><u>For instruments traded on NSC</u></p> <ul style="list-style-type: none">S - SuspendedH - Reserved, price outside upper limitB - Reserved, price outside lower limitR - Trading resumed after the instrument was reservedP - Simple reservation' ' - Other type of transmission (for example cancellation of a



			programmed opening) <u>For instruments trading on UTP,</u> S – Suspended.
MOST RECENT ACTION CODE FOR INSTRUMENT STATE CHANGE	0x42D8	Character	<p>Provides the code of the action that caused a change in the instrument state. It indicates the phase of the trading day that the instrument is in currently.</p> <p>Possible values / Restrictions:</p> <p><u>For instruments traded on NSC.</u></p> <ul style="list-style-type: none">- Space - not provided- P a deferred opening or fixing has been programmed for the instrument- M instrument reserved or suspended manually by Surveillance- C the instrument is currently being traded- O the instrument is now open (after R or S)- R the instrument has been automatically reserved after the opening of its group- D a deferred opening or auction has been cancelled- A order entry has been authorised for the instrument- I order entry has been forbidden (inhibited) for the instrument- E orders in the book have been eliminated- N the instrument is being initialised (beginning of the trading day)- F instrument in Fast-Market state- S return to normal activity (Slow-Market state)- G the instrument has been frozen or unfrozen- U modification of the state of a warrant due to a change of state of its underlying instrument.- W Programming of a deferred opening for a warrant.- X Cancellation of a deferred opening of a warrant- Y Beginning of a one side only period.- Z End of a one side only period. <p><u>For instrument s traded on UTP.</u></p> <ul style="list-style-type: none">- P a deferred opening or fixing has been programmed for the instrument- M instrument reserved or halted manually by Cash market Operations.- C the instrument is currently being traded- O the instrument is now open (after R



			or S) - R the instrument has been automatically reserved after the opening of its group - D a deferred opening or auction has been cancelled. - N the instrument is being initialised (beginning of the trading day
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5 Message iDentifier = 156/Cash message type (0x8485) = L4

<p>NSC_DEPTH_ASK&BID Level</p> <p>1. The concept of Best Limits</p> <p><u>For Instruments traded on NSC.</u> The limits for orders in the order book can be ranked in terms of their interest to a counterparty, with the most interesting orders listed first that is: Buy orders in descending order by price Sell orders in ascending order by price The “best limit with a rank of N” is a summary of the buy orders and of the sell orders present in the order book at the Nth best limit. Best limit N is characterized by: Its rank N, For Buy orders : the price limit for rank N, the number of orders at this limit and the total quantity that can be executed, and an indicator for pre-opening phase (Normal, OUV, MX type). For Sell orders : the price limit for rank N, the number of orders at this limit and the total quantity that can be executed, and an indicator for pre-opening phase (Normal, OUV – Opening-, MX-market order only- type). Any change to the value of any of the above data items results in the sending of a best limit message.</p> <p>That concerns the following fields: NSC DEPTH ASK/BID LEVEL from 1 to 5 if message type = 0004 5 Best Limits. NSC DEPTH ASK/BID LEVEL from 1 to 10 if message type = 00L4 10 Best Limits.</p> <p>Orders participating in the calculation of the best limits: Only normal orders are used in calculating the best limits, that is, all orders except non-triggered Stop orders.</p> <p><u>For Instruments traded on UTP.</u> Definition: Indicative Matching Price = Theoretical Opening Price. Note: In the pre-opening, the test bid price and/or the best ask price can have the value MX (3) for Market order or At Opening Order. The value OUV (2) for the At Opening Orders disappears. In session, the best bid and/or best ask price can have the value MX (3) for the Market orders.</p> <p>2. The concept of Market Summary for an instrument (BBO10).</p> <p>For Instruments traded on NSC. This is the summary of the orders that would be executed if the Opening of the instrument took place at the moment this message was sent. The market Summary</p>



has no meaning except when the TOP (Theoretical Opening Price) has been determined during the pre-Opening phase. The Market Summary is not provided if it is equal to the first limit. The Market Summary can be used to calculate the Theoretical Opening Volume as followed:

Upon reception of a TOP (Theoretical Opening Price - Message 0030) then

If the TOP is provided then,

If the Limit 11 is updated then,

If the Limit 11 is provided then,

The TOV is the minimum between the total quantity of the buy orders and the total quantity in the sell orders from Limit 11

Else, The TOV is the minimum between the total quantity of the buy orders and the total quantity in the sell orders from Limit 1

Else, The TOV is the minimum between the total quantity of the buy orders and the total quantity in the sell orders from Limit 1

Else The TOV is 0

That concerns the following fields:

NSC DEPTH ASK/BID LEVEL from 6 if message type = 0004 5 Best Limits.

NSC DEPTH ASK/BID LEVEL from 11 if message type = 00L4 10 Best Limits.

For Instruments traded on UTP.

As the Indicative Matching Price is displayed at regular intervals of time, the Market Summary (11th limit) is only provided when the later is sent to the Market data.

The 'market summary' for an instrument will contain the theoretical opening volume at the Indicative Matching Price. The information will be the same on the buys and sell sides.

NSC DEPTH ASK LEVEL 1	0x83D6	Byte Array	<p>NSC Depth ask level 1, Field structure:</p> <p>For Instruments traded on NSC Price – 6 Bytes (Decimal: 4 Bytes Mantissa + 2 Bytes Exponent) No. of Order – 2 Bytes (Integer) Volume – 4 Bytes (Integer) Price Type – 1 Byte (Integer) 0: Normal price 2: OUV 3: MX</p> <p>LP Indicator – 1 Byte (Char).</p> <p>For Instruments traded on UTP Price – 6 Bytes (Decimal: 4 Bytes Mantissa + 2 Bytes Exponent) No. of Order – 2 Bytes (Integer) Volume – 4 Bytes (Integer) Price Type – 1 Byte (Integer) 0: Normal price 3: MX</p> <p>LP Indicator – 1 Byte (Char).</p>
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6 Message Identifier = 156/Cash message type (0x8485) = A6

For Instruments traded on UTP, This message and the associated Data Fields (listed below) will no longer be available.

TOP BID PRICE	0x6199	Decimal	Theoretical opening bid price
TOP ASK PRICE	0x619A	Decimal	Theoretical opening ask price.
TYPE OF LAST PRICE	0x489C	Integer	Indicates the type of operation

7 Message Identifier = 156/Cash message type (0x8485) = S0

This message is sent:

- . in the morning, when NSC-VE or UTP is initialized, to indicate the updates executed overnight (when the purge of orders in post session triggers a stop spread).
- . during the day, each time an order introduced by a member firm modifies the market sheet (for example, when creating, modifying or changing the priority of an order), except during Opening processing.

NSC INSTANCE ID	0x871B	String	Identifies the instance which sent the message in which this data item appears. Permitted Values: <ul style="list-style-type: none">• 'VE', Instance for the instruments traded on NSC• 'VL', Instance for the instruments traded on NSC• 'VW', Instance for the instruments traded on NSC• 'C1', Instance for the instruments traded on UTP.
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8 Message Identifier = 156/Cash message type (0x8485) = S4

This message is sent:

- UTP:** At the beginning of the day, for UTP instruments only, this message is sent to delete all the orderbook before the market sheet retransmission (type of deletion =3).
- . During the day, each time one or several orders are deleted from the market sheet.