SIX Exfeed Ltd. Message No. 13 / 2012

Subject	**SMF User Specs Version 9.0 – Follow-up**
To	☒ Business Coordinators ☒ Technical Coordinators
Authorised by	Customer Support
Markets	☐ SIX Swiss Exchange ☐ Scoach Switzerland ☐ SIX Liquidnet Service ☐ BX Berne Exchange
Interfaces	☒ SMF ☐ MDI ☐ IMI
Pages	4
Date	08.08.2012

Dear Customer

As announced in our message no. 11/2012, dated 10.07.2012, please find below
- more descriptive details regarding the changes
as well as
- SMF messages as comprehensive examples
both illustrating the amendments specified in version 9.0 of the SMF User Specifications.

A separate mail beginning of September will inform you about the availability of SMF test data.

Should you have any questions about the amendments described in the SMF User Specs and the dependencies towards the MDI (Market Data Interface), please contact us.

SIX Exfeed Ltd.
Help Desk / Customer Support

For more information please contact Data Services Customer Support:

Technical Desk:	*Tel.: +41 58 399 2445*
Administration Desk:	*Tel.: +41 58 399 2977*
Email:	*data-services@six-swiss-exchange.com*

<u>More details regarding the infrastructure changes on SIX Swiss Exchange / Scoach Switzerland
(summarized as "SIX securities" having exchange code "1", "3" or "4")</u>

- *Advantages for SMF recipients:*

  - **all trades from SIX are clearly marked as paid prices** regardless of the time when they were generated: opening in the morning, during trading hours (incl. reopening after trade suspensions) or closing auction.
  <u>CURRENT</u>: the first trade of the day is sent as <01>O, all subsequent trades as <01>P, the last trade from the closing auction as <01>O.
  <u>NEW</u>: each trade is sent as <01>P, for the first trade of the day a <01>O is additionally sent, for the last trade of the day (closing price) a <01>E is additionally sent (see below).

  - **a reference price is provided with the new field <01>R** and, thus, clearly identified; the reference price is no longer combined as <01>C "current/closing" and contains additionally a reference price type.
  <u>CURRENT</u>: a reference price after a trade is sent as <01>C with the implicit meaning "reference price", some reference price adjustments are suppressed on the SMF; during the opening process in the morning, a reference price is sent for each security listed with either a time stamp = reference price equals opening price or else with a date = reference price derives from a previous trading day.
  <u>NEW</u>: reference prices are available during the following 3 phases of the business day:
  1) in the early morning (at 06:00 CET): an initial reference price <01>R for each SIX security listed is sent. Adjustments due to dividend payment or other reasons also result in a reference price being sent. These reference prices always have a time, never a date, even where they derive from a previous day's price. The timestamp of the reference price is generated by the order matcher and indicates the time from which the reference price is to be used for order matching.
  2) during the on-order book trading: a reference price <01>R with a time stamp is sent after each new trade (opening or during the day) or after a trade reversal with impact on the reference price. The timestamp is, as today, the timestamp of the trade from which the reference price is derived.
  3) after the on-order book trading: a reference price <01>R for each SIX security listed is sent with either a time stamp (when the price is from today) or a date (when the price derives from a previous trading day). As today, the date or time pertains to the trade from which the reference price is derived.

  - **a closing price is provided with the new field <01>E** and, thus, clearly identified as "end-of-day/closing price" instead of being combined as <01>C "current/closing".
  <u>CURRENT</u>: a closing price is the result of an interpretation of the latest <01>P / <01>C (SIX securities <u>without</u> a closing auction) or <01>O (SIX securities <u>with</u> a closing auction).
  <u>NEW</u>: explicit closing prices are sent as <01>E for each SIX security listed at the end of the on-book market; these closing prices may be updated until 22:00 CET due to possible mistrade corrections.

  - **a significantly reduced number of status messages on trading session events**: during the opening in the morning (as well as during the closing in the evening), the trading status for each security is changed from "preopening" to "trading" (or from "trading" to "post-trading" respectively). For example, the market segment "derivatives" consists of approx. 35'000 securities which are grouped into approx. 50 trading segments (boards).
  <u>CURRENT</u>: a trade status message (field <31>) is sent for each SIX **security** listed – this results in approx 35'000 SMF messages for the market segment mentioned.
  <u>NEW</u>: a trading session status message is sent (with the new field <30>) for each **board** (not

for each security) – this results in approx 50 SMF messages for the market segment mentioned.
Additionally, the new trading session status message (field <30>) provides more precise status information about a board (and all SIX securities belonging to that board).
NOTE that a trading session status message (field <30>) may, as an **exception**, apply to an individual SIX security (not to a board) on a special situation; in this case ISIN, currency code and exchange code are given in the message header.

- *Disadvantages for SMF recipients:*

  - Explicit **correction messages** with fields <02> and <06> are no longer available. Corrections after trade reversals, i.e. correct values of Open/Close/High/Low and cumulated trading volume are provided via the regular <01> and <05> fields; in other words: any update of these values (O/C/H/L and volumes) may be based on a new trade or on a correction due to a trade reversal or a combination of both.

  - **Statistics** like open, close, high, low and cumulated volumes are no longer disseminated with each paid price but at frequent intervals during and after trading. It is thus possible that some intraday changes, for example to the high or low price, may not be sent. After trading, the definitive O/C/H/L/Volumes for the day – which also take into account any mistrades corrections – will always be sent.

  - **Time stamps** contained in the SMF messages may **not always** be **ascending**, even within updates pertaining to the same security; the SMF message sequence numbers, however, are always ascending.

Comprehensive examples of SMF messages for a SIX security

Field	Type	Examples / Comments
<01>P	changed	On-book Paid Price – Trade Type not Nostro-Cross: (msg hdr)`<01>P#102.5#T15051685#00038A4UF620003T#N_`
<01>O	changed	Opening Price: (msg hdr)`<01>O#102.5# T15051685_`
<01>R	NEW	Reference Price – Initial Price for new security: (msg hdr)`<01>R#43.21#T05500648#6_` Reference Price – Last Paid: (msg hdr)`<01>R#102.5#T15051685#3_`
<01>E	NEW	End-of-Day / Closing Price: (msg hdr)`<01>E#102.5#D20121015_`
<01>F	changed	Off-book Paid Price – immediate publication, not Liquidnet: (msg hdr)`<01>F#75.25#T09001100#OB20120802000007##9001##1_` Off-book Paid Price – immediate publication, Liquidnet: (msg hdr)`<01>F#275#T07133400#LN1343884412584###LN#1_`

<05>L	changed	Last Traded Volume: (msg hdr)`<05>L#200##T13565420_`

<30>	NEW	Trading Session Status for board (therefore no Security identification in header)
		
		– Open pending:
		`100022386`**00**`                        .<30>DCqj#2#T10150000#0_`
		
		– Close pending:
		`100022596`**00**`                        .<30>ImU#7#T22000000#0_`
		
		Trading Session Status for a security – Open triggered
		`10003409120    CH0034061959CHF3_<30>DCJm#2#T07104900#1_`

<31>	changed	Security Status Trading Halt with Book Condition Non-Opening: (msg hdr)`<31>ABdC#2#2#T12025120_`
<03>R	changed	Price Reversal – original source Off-order book, mistrade reversal (msg hdr)`<03>R#0.12#T09013200#OM20120802000008#1#9003_`
<07>R	changed	Volume Reversal (msg hdr)`<07>R#8765#T09013200_`
<53>	changed	Security Type : Equity (Over the exchange), Price Type per unit, Liquidnet Board LNNL (msg hdr)`<53>OX#EUR#2#001203204#OX#LNNL` Security Type : Bond (straight bond), Price Type in percent, Board ImG (msg hdr)`<53>BO#EUR#1#011199981#IA#ImG`

Please note that the group code in the message header for field <30> above is "**00**" and not "31" as shown in the SMF user specs (section 4.7 Examples of SMF Messages).
Since the group code belongs to a specific instrument, it is not possible to have a group code for a board (a group of SIX securities) and, therefore, "**00**" is used:

< ----------- MESSAGE HEADER ----------- > < ------ MESSAGE DATA AREA ------ >
1 12345678 **00** bbbbbbbbbbbbbbbbbbbb *NL* <30> ED2y # 2 # T09150000 # . # . *CR*

message type	message sequence number	group code	security identification	separator 3 (end of msg header)	separator 1 – field ID – separator 2	item 1 of field <30>	separator 4	item 2 of field <30>	separator 4	item 3 of field <30>	separator 4	items 4 and 5 of field <30>	separator 6 (end of message)