S&P Capital IQ Real-Time Solutions

FeedOS™ Developer's Notice

RAPID ADH – Feed Update

Reference n°: 20150605 - 26364 - 26382 - 27162

Effective as of: 22 June 2015*

Action required from users: MANDATORY ACTION



* For the actual day when the changes to your custom feed handler take effect, please contact your QuantFEED* project manager.

S&P Capital IQ Real-Time Solutions FeedOS[™] Developer's Notice: RAPID ADH – Feed Update Reference 20150605 – 26364 – 26382 – 27162 June 08, 2015

France

52 Rue de la Victoire 75009 Paris France

Tel: +33 (0) 1 73 02 32 11

United States

55 Water Street, 44th floor New York, NY 10041 United States of America Tel: +1-(212)-438-4346

United Kingdom

20 Canada Square Canary Wharf London E14 5LH United Kingdom Tel: +44 (0) 203 107 1676

130 East Randolph One Prudential Plaza, Suite 2900 Chicago, IL 60601 United States of America Tel: +1-(312)-233-7129

Singapore

12 Marina Boulevard #23-01 Marina Bay Financial Centre Tower 3 Singapore 018982 Tel: +65 6530 6546

www.spcapitaliq.com

Copyright © 2015 by Standard & Poor's Financial Services LLC, a part of McGraw Hill Financial.

All rights reserved. S&P CAPITAL IQ is a trademark of Standard & Poor's Financial Services LLC. STANDARD & POOR'S, S&P, GLOBAL CREDIT PORTAL and RATINGSDIRECT are registered trademarks of Standard & Poor's Financial Services LLC.

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P). The Content shall not be used for any unlawful or unauthorized purposes. S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Parties be liable to any party for any direct, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact or recommendations to purchase, hold, or sell any securities or to make any investment decisions. S&P assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P's opinions and analyses do not address the suitability of any security. S&P does not act as a fiduciary or an investment advisor except where registered as such. While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives.

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.



To reflect the changes caused by the refinement of the referential data on the RAPID ADH market data stream, S&P Capital IQ Real-Time Solutions has decided to enhance the content of FeedOS™.

This developer's notice contains late-breaking information about the implementation of this modification in your applications, which may not be included otherwise in the published documentation. The topics this notice covers include:

- 1. Update Summary
- 2. FeedOS Technical Implementation
- 3. Finding the Latest Information.

1. Update Summary

Table 1 Current update summary

Notice Reference	20150605 – 26364 – 26382 – 27162	
Exchanges	RAPID ADH	
Concerned MICs	XWBO	
Internal Source ID	240, 242	
Effective Date	2015-06-22 [*]	
Impact	Update of the Referential TagsUpdate of the Level1 Market Data Kinematics	
Action required	MANDATORY ACTION - see sections: • 2.1.1. SecurityType • 2.1.2. CFICode.	

2. FeedOS Technical Implementation

Effective Monday, **June 22*** **2015**, S&P Capital IQ Real-Time Solutions enhances the referential data and updates the Level1 Market Data Kinematics to accommodate the information disseminated on the RAPID ADH market data stream, as described below:

- 2.1. Changes to the Referential Data
- 2.2. Microsecond Timestamp Precision on the Level1 Market Data.

2.1. Changes to the Referential Data

S&P Capital IQ Real-Time Solutions updates the referential tags below to accommodate the information disseminated on the RAPID ADH market data stream:

Table 2 Referential tags disseminating updated values on the RAPID ADH market data stream

Tag Name	Numeric ID	Туре
SecurityType	167	String
CFICode	461	String
SecurityGroup	1151	String

2.1.1. SecurityType

The values of the referential tag **Security Type** conveyed on the RAPID ADH market data stream are disseminated via FeedOS data stream in *Referential* to specify the type of security.

FeedOS implementation of the tag SecurityType is described in the table below (existing values are in black, newly added values are in green):

Table 3 SecurityType – technical implementation in FeedOS

Component	Value	Description	
Tag Name	SecurityType	FeedOS tag name.	
Numeric ID	167	FeedOS unique ID disseminated on the S&P Capital IQ Real- Time Solutions data stream. This is the numeric equivalent of the tag name.	
Туре	String	String data type.	
Format	[Exchange Specific Value]	An exchange specific value, detailing the type of security.	

_

^{*} This is the proposed day for the update of the standard version of the feed handler. For dedicated feed handlers, the date and Source IDs may differ. For the actual day when the changes to your custom feed handler will take effect, please contact your FeedOS™ project manager.

Table 3 SecurityType – technical implementation in FeedOS (Continued)

Component	Value	Description	
	CORP	Corporate Bonds	
	CS	Common Stocks	
	ETF	Exchange-Traded Funds	
	GO	General Obligations	
Possible Values	MBS	Mortgage-Backed Securities	
	MF	Mutual Funds	
	ТВ	Treasury Bills	
	TINT	Interest Strip from Any Bond or Note	
	WAR	Warrants	

2.1.2. CFICode

The values of the referential tag **CFI Code** conveyed on the RAPID ADH market data stream are disseminated via FeedOS data stream in *Referential* to specify the standardized identification code of an instrument.

FeedOS implementation of the tag CFICode is described in the table below (existing values are in black, newly added values are in green):

Table 4 CFICode – technical implementation in FeedOS

Component	Value	Description		
Tag Name	CFICode	FeedOS tag name.		
Numeric ID	461	FeedOS unique ID disseminated on the S&P Capital IQ Real- Time Solutions data stream. This is the numeric equivalent of the tag name.		
Туре	String	String data type.		
Format	[Exchange Specific Value]	An exchange specific value , detailing the standardized identification code of an instrument.		
	DBFSXX	Debts - Bonds - Fixed Rate - Secured		
	DBFTFX	Debts - Bonds - Fixed Rate - Treasury Guarantee - Fixed Maturity		
	DBFTXX	Debts - Bonds - Fixed Rate - Treasury Guarantee		
	DBFXXX	Debts - Bonds - Fixed Rate		
	DBVSXX	Debts - Bonds - Variable - Secured		
	DBVTXX	Debts - Bonds - Variable - Secured - Treasury Guarantee		
	DBVXXX	Debts - Bonds - Variable		
Possible Values	DBXTXX	Debts - Bonds - Treasury Guarantee		
Possible values	DBXXXX	Debts - Bonds		
	DBZXXX	Debts - Bonds - Zero Rate		
	ESXXXX	Equities - Shares		
	EUCXXX	Equities - Units - Closed-End		
	EUOXXX	Equities - Units - Open-End		
	EUXXXE	Equities - Units - Exchange-Traded Funds		
	EUXXXX	Equities - Units		
	EXXXXX	Equities		

Table 4 CFICode – technical implementation in FeedOS (Continued)

Component	Value	Description	
	RWXCCX	Rights - Warrants - Covered Warrants - Call	
Possible Values	RWXCPX	Rights - Warrants - Covered Warrants - Put	
	RWXXCX	Rights - Warrants - Covered Warrants	
	RWXXXX	Rights - Warrants	

The example below shows the possible combinations of SecurityTypes and CFICodes, before and after the migration day (please note that additional combinations may be available, as the exchange could introduce new instruments):

BEFORE 2015-06-22	AFTER 2015-06-22
{ XWBO CORP DBVXXX }	{ XWBO CORP DBVXXX }
{ XWBO CORP DBXXXX }	{ XWBO CORP DBXXXX }
{ XWBO CORP DBZXXX }	{ XWBO CORP DBZXXX }
{ XWBO CS EXXXXX }	{ XWBO CS EXXXXX }
{ XBUD CORP DBFXXX }	{ XWBO ETF EUXXXE }
{ XBUD CORP DBVXXX }	{ XWBO ETF EUXXXX }
{ XBUD CS ESXXXX }	{ XWBO GO DBVTXX }
{ XBUD GO DBFTXX }	{ XWBO GO DBVXXX }
{ XBUD GO DBVTXX }	{ XWBO GO DBXTXX }
{ XBUD MBS DBFSXX }	{ XWBO GO DBXXXX }
{ XBUD MBS DBVSXX }	{ XWBO GO DBZXXX }
{ XBUD MF EUCXXX }	{ XWBO TINT DBXTXX }
{ XBUD MF EUOXXX }	{ XWBO WAR RWXCCX }
{ XBUD TB DBFTFX }	{ XWBO WAR RWXCPX }
{ XBUD WAR RWXXXX }	{ XWBO WAR RWXXCX }
	{ XWBO WAR RWXXXX }
	{ XBUD CORP DBFXXX }
	{ XBUD CORP DBVXXX }
	{ XBUD CS ESXXXX }
	{ XBUD GO DBFTXX }
	{ XBUD GO DBVTXX }
	{ XBUD MBS DBFSXX }
	{ XBUD MBS DBVSXX }
	{ XBUD MF EUCXXX }
	{ XBUD MF EUOXXX }
	{ XBUD TB DBFTFX }
	{ XBUD WAR RWXXXX }
	[VROD MVI KMVVVV]

2.1.3. SecurityGroup

The values of the referential tag **Security Group** conveyed on the RAPID ADH market data stream are disseminated via FeedOS data stream in *Referential* to indicate an exchange specific name assigned to a group of related securities which may be concurrently affected by market events and actions.

FeedOS implementation of the tag SecurityGroup is described in the following table:

Table 5 SecurityGroup – technical implementation in FeedOS

Component	Value	Description	
Tag Name	SecurityGroup	FeedOS tag name.	
Numeric ID	1151	FeedOS unique ID disseminated on the S&P Capital IQ Real-Time Solutions data stream. This is the numeric equivalent of the tag name.	
Туре	String	String data type.	
Format / Possible Values	[Exchange Specific Value]	An exchange specific percentile value, indicating exchange specific name assigned to a group of relat securities which may be concurrently affected by ma events and actions.	

The table below shows the possible combinations of Security Types and CFI Codes, based on the instrument Security Group, before and after the migration day:

Table 6 Possible Security Type and CFI Code combinations within Security Groups

Security Group	p Values before 2015-06-22		Values	after 2015-06-22
AOD	CS	EXXXXX	CS	EXXXXX
			cs	EXXXXX
			ETF	EUXXXX
	CORP	DBXXXX	GO	DBXXXX
ATX	CORP	DBZXXX	GO	DBZXXX
	CS	EXXXXX	WAR	RWXCCX
			WAR	RWXCPX
			WAR	RWXXXX
	CORP	DBVXXX	GO	DBVXXX
B01A	CORP	DBXXXX	GO	DBXXXX
	CORP	DBZXXX	GO	DBZXXX
	CORP	DBVXXX	GO	DBVXXX
B01S	CORP	DBXXXX	GO	DBXXXX
	CORP	DBZXXX	GO	DBZXXX
	CORP	DBVXXX	GO	DBVXXX
B03A	CORP	DBXXXX	GO	DBXXXX
	CORP	DBZXXX	GO	DBZXXX
	CORP	DBVXXX	GO	DBVXXX
B03S	CORP	DBXXXX	GO	DBXXXX
	CORP	DBZXXX	GO	DBZXXX
	CORP	DBVXXX	GO	DBVXXX
B04A	CORP	DBXXXX	GO	DBXXXX
	CORP	DBZXXX	GO	DBZXXX
	CORP	DBVXXX	GO	DBVXXX
B05A	CORP	DBXXXX	GO	DBXXXX
	CORP	DBZXXX	GO	DBZXXX
B05S	CORP	DBVXXX	GO	DBVXXX
	CORP	DBXXXX	GO	DBXXXX
	CORP	DBVXXX	GO	DBVXXX
B07A	CORP	DBXXXX	GO	DBXXXX
	CORP	DBZXXX	GO	DBZXXX
	CORP	DBVXXX	GO	DBVXXX
B07S	CORP	DBXXXX	GO	DBXXXX
	CORP	DBZXXX	GO	DBZXXX

Table 6 Possible Security Type and CFI Code combinations within Security Groups (Continued)

Security Group	Values before 2015-06-22	Values after 2015-06-22
	CORP DBVXXX	GO DBVXXX
B09A	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
	CORP DBVXXX	GO DBVXXX
B09S	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
	CORP DBVXXX	GO DBVXXX
B11A	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
B11S	CORP DBVXXX	GO DBVXXX
	CORP DBXXXX	GO DBXXXX
	CORP DBVXXX	GO DBVXXX
B12A	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
D42A	CORP DBVXXX	GO DBVXXX
B13A	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
B13S	CORP DBVXXX	GO DBVXXX
	CORP DBVXXX	GO DBVXXX
B15A	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
B15S	CORP DBXXXX	GO DBXXXX
	CORP DBVXXX	GO DBVXXX
B17A	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
	CORP DBVXXX	GO DBVXXX
B17S	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
	CORP DBVXXX	GO DBVXXX
B19A	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
B21A	CORP DBVXXX	GO DBVXXX
DZ IA	CORP DBXXXX	GO DBXXXX
	CORP DBVXXX	GO DBVXXX
B23A	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
BAC1	CORP DBVXXX	GO DBVXXX
	CORP DBXXXX	GO DBXXXX
	CORP DBVXXX	GO DBVXXX
BNCA	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
	CORP DBVXXX	GO DBVXXX
BNCS	CORP DBXXXX	GO DBXXXX
	CORP DBZXXX	GO DBZXXX
BOST		WAR RWXXXX
BSC1	CORP DBVXXX	GO DBVXXX
2001	CORP DBXXXX	GO DBXXXX

Table 6 Possible Security Type and CFI Code combinations within Security Groups (Continued)

Security Group	Values befo	Values before 2015-06-22		Values after 2015-06-22		
СВА	CORP	DBVXXX DBXXXX DBZXXX	CORP CORP CORP GO GO	DBVXXX DBXXXX DBZXXX DBVXXX DBXXXX DBXXXX		
CBNS			WAR	RWXXXX		
CBON			WAR	RWXXXX		
CBS	CORP	DBVXXX DBXXXX DBZXXX	CORP CORP CORP WAR	DBVXXX DBXXXX DBZXXX RWXXXX		
CCE1			WAR	RWXXXX		
CCE2			WAR	RWXXXX		
CDIS			WAR	RWXXXX		
CDIZ			WAR	RWXXXX		
CEA0			WAR WAR	RWXXCX RWXXXX		
CEAP		DBVXXX DBXXXX	GO GO	DBVXXX DBXXXX		
CEB1			WAR WAR WAR	RWXCCX RWXCPX RWXXXX		
CEB2			WAR	RWXXXX		
CEB3			WAR	RWXXXX		
CEB4			WAR	RWXXXX		
CEB5			WAR	RWXXXX		
CINV			WAR	RWXXXX		
CNU1			WAR	RWXXXX		
COL		DBVXXX EXXXXX	CS GO WAR	EXXXXX DBVXXX RWXXXX		
COTH			WAR	RWXXXX		
CPC2	CORP	DBXXXX	GO	DBXXXX		
СРСТ		DBVXXX DBXXXX	GO GO	DBVXXX DBXXXX		
CTD	cs	EXXXXX	CS WAR	EXXXXX RWXXXX		
СТР	cs	EXXXXX	CS WAR	EXXXXX RWXXXX		
ETF			ETF ETF	EUXXXE EUXXXX		
FOAO			ETF	EUXXXX		
GOVB		DBVXXX DBXXXX	GO GO	DBVTXX DBXTXX		
GSTR	CORP	DBXXXX	TINT	DBXTXX		
GTB	CORP	DBZXXX	GO	DBZXXX		

Table 6 Possible Security Type and CFI Code combinations within Security Groups (Continued)

Security Group	Values before 2015-06-22	Values after 2015-06-22
MIDA	CS EXXXXX	CS EXXXXX
MIDC	CC FYYYYY	CS EXXXXX
MIDC	CS EXXXXX	WAR RWXXXX
		CORP DBVXXX
		CORP DBXXXX
		CORP DBZXXX
	CORP DBVXXX	CS EXXXXX
OLD	CORP DBXXXX	ETF EUXXXX
OLD	CORP DBZXXX	GO DBVXXX
	CS EXXXXX	GO DBXXXX
		WAR RWXCCX
		WAR RWXCPX
		WAR RWXXXX
OLF	CS EXXXXX	CS EXXXXX
SNCS		WAR RWXCCX
WA01		WAR RWXCCX
VVAUT		WAR RWXCPX
WA03		GO DBXXXX
WA03		WAR RWXCCX
VVAUS		WAR RWXCPX
WA04		GO DBXXXX
WA04		WAR RWXCCX
VVAU4		WAR RWXCPX
WA05		GO DBXXXX
WA05		WAR RWXCCX
VVAOO		WAR RWXCPX
WA08		GO DBXXXX
WA08		WAR RWXCCX
WA11		GO DBVXXX
VVAII		GO DBXXXX
WA11		WAR RWXCCX
VVA I I		WAR RWXCPX
WA12		GO DBXXXX
WA12		WAR RWXCCX
VV/\ 14		WAR RWXCPX

Referential Data Sample

Below are several examples showing the current implementation of the updated (in blue) referential tags:

```
BEFORE 2015-06-22
instr # 25/1066 = 52429866
   PriceCurrency
                               string{ATS}
   Symbol
                               string{CA NR GM-FL. 96-21/1}
                               string{CA}
   Issuer
   Description
                               string{CA NR GM-FL. 96-21/1}
                              string{CORP}
   SecurityType
   StdMaturity
                               string{202102}
   FOSMarketId
                              XWBO
   CouponRate
                               float64{0.324}
   CouponPaymentDate
                              uint32{20150824}
   CFICode
                               string{DBVXXX}
   RoundLot
                               float64{10000}
                              float64{10000}
   MinTradeVol
   SecuritySubType
                               string{BON}
   SecurityGroup
                               string{B01A}
   MarketSegmentID
                               string{VIB}
   InternalCreationDate
                              Timestamp{2014-06-16 04:02:00:067}
   InternalModificationDate
                              Timestamp{2015-06-04 04:02:10:082}
   InternalSourceId
                               uint16{240}
   InternalEntitlementId
                              int32{1121}
   LocalCodeStr
                               string{AT0000246814}
   ISIN
                               string{AT0000246814}
   PriceIncrement_static
                               float64{0.01}
   MaturityYear
                              uint16{2021}
   MaturityMonth
                              uint8{2}
   MaturityDay
                               uint8{26}
   WertpapierKennNummer
                              string{24681}
                               string{XWBO}
   OperatingMIC
   SegmentMIC
                               string{XVIE}
   MARKET_XETRA_ISIX
                              uint32{738}
   MARKET_XETRA_OptimalGatewayLocation string{0000}
```

```
AFTER 2015-06-22
instr # 25/1066 = 52429866
   PriceCurrency
                               string{ATS}
   Symbol
                               string{CA NR GM-FL. 96-21/1}
                               string{CA}
   Issuer
                               string{CA NR GM-FL. 96-21/1}
   Description
   SecurityType
                               string{GO}
   StdMaturity
                               string{202102}
   FOSMarketId
                               XWBO
                               float64{0.324}
   CouponRate
   CouponPaymentDate
                               uint32{20150824}
                               string{DBVXXX}
   CFICode
   RoundLot
                               float64{10000}
   MinTradeVol
                               float64{10000}
   SecuritySubType
                               string{BON}
                               string{B01A}
   SecurityGroup
                               string{VIB}
   MarketSegmentID
   InternalCreationDate
                               Timestamp{2014-06-16 04:02:00:067}
   InternalModificationDate
                               Timestamp{2015-06-04 04:02:10:082}
   InternalSourceId
                               uint16{240}
   InternalEntitlementId
                               int32{1121}
   LocalCodeStr
                               string{AT0000246814}
   TSTN
                               string{AT0000246814}
                               float64{0.01}
   PriceIncrement_static
   MaturityYear
                               uint16{2021}
   MaturityMonth
                               uint8{2}
   MaturityDay
                               uint8{26}
   WertpapierKennNummer
                               string{24681}
   OperatingMIC
                               string{XWBO}
   SegmentMIC
                               string{XVIE}
   MARKET_XETRA_ISIX
                               uint32{738}
   MARKET_XETRA_OptimalGatewayLocation string{0000}
```

2.2. Microsecond Timestamp Precision on the Level1 Market Data

Effective **2015-06-22**, the server timestamps will display 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 19:55:07:508.521 52429866 * * * * * 1.27 700@2
TE 20:00:48:238.168 52429866 * * * * * 1.22 100@1
TE 20:00:48:240.254 52429866 * * * * * 1.31 100@1
```

3. Finding the Latest Information

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

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