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BSYM IDENTIFIERS ADVANCE CAUSE OF OPEN, AUTOMATED SECURITIES TRADING

Bloomberg Open Symbology Introduces New Operational Efficiencies and Cost Reductions for the Trading Community

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INTRODUCTION

Chaos theory has nothing on the complexity generated everyday by the millions—perhaps billions—of security transactions that cross trading floors, clearinghouses and exchanges all over the world. Almost every aspect of securities management is based on closed systems that use proprietary identifiers that are privately owned and licensed. Closing each deal is as much an exercise in translation as it is in transaction processing, as traders, investors and brokers wrestle with multiple proprietary formats to determine what a security is, who owns it, how much it is worth, and when the deal should be closed. It introduces a tremendous amount of friction into the trade lifecycle and creates opaqueness where clarity is sought. In addition, the use of proprietary identifiers adds significant cost and overhead when users wish to integrate data from disparate sources or migrate to a different market data system.

Symbols are essential to the securities industry. Each one uniquely identifies a specific security instrument, just as a VIN number uniquely identifies every motor vehicle. Symbols are used to research and trade securities, assess risk, manage portfolios, and manage settlement and clearing.

Even though there are national numbering agencies that create unique identifiers, symbol sets have evolved in complexity over the years to match the growing sophistication of the products they describe. Sets must be extended and created to catalog levels of granularity in symbology that a single ID simply can't capture. For privately traded, over-the-counter products, there may be no proprietary ID available.

The evolution of advanced symbologies has helped the securities industry grow, but the limitations and costs imposed by the closed systems have become more apparent as companies and institutions continue to integrate operations on a global scale. Proprietary symbology now stands as one of the most significant barriers to increased efficiency and innovation in an industry that sorely needs it. Moreover, the lack of common identifiers is a key roadblock to achieving the holy grail of straight-through processing (STP).

CONSIDER THE FOLLOWING:

- Licensing fees require firms to pay for each symbol system they use. International firms bear an especially heavy burden, because they often have to license several symbologies in order to manage trading operations in several countries.
- Restrictions imposed by proprietary symbologies prevent companies from easily mapping one set of codes to another. This hinders integration of market data from diverse sources as well as efforts to automate trade and settlement activities.
- Market data consumers who adopt proprietary symbols for use in their own systems must not only pay licensing fees, but such symbols also lead to significant future costs associated with efforts to connect to emerging trading systems.
- Proprietary trading environments may have worked well for years; but they are a byproduct of a time when data systems operated largely as islands that did not have to interoperate with other systems.

Current trends dictate a different approach. Markets, customers and governments are demanding greater connectivity, transparency and efficiency. What's more, the openness of Internet-based systems has profoundly altered the way businesses—and individuals—collect, manage and share information. Thus, in addition to new regulations that demand clarity and accountability, the move to open symbology is being driven by growing investor and institutional demands.

Adopting an open system of shared symbology establishes the foundation for a tremendous leap forward in the efficient trade and settlement of securities. Such a system will allow firms and technology service providers to shift

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resources from laborious, inefficient processes to new investments in tools and products that will better serve clients.

An open system answers the call for greater transparency. Eliminating the need to remove proprietary IDs and re-map securities will greatly simplify the steps needed to migrate between market data platforms and trading systems. Availability of a central symbology reference will facilitate mapping between users' internal systems and create opportunities for integration and automation of the global enterprise.

Introducing Bloomberg Open Symbology (BSYM)

In response to the market demand for open systems and symbology, Bloomberg has released Bloomberg Open Symbology ("BSYM") identifiers and has dedicated these identifiers to the public as set forth at the BSYM web site (bsym.bloomberg.com). BSYM is now available as a non-proprietary, open, security identification system that anyone can adopt. BSYM offers any company involved in securities trading a number of advantages over closed and costly systems.

- BSYM is a universal securities symbology that offers companies the potential to streamline internal management functions and reduce costs associated with maintaining multiple symbology systems.
- BSYM can be used independently of any Bloomberg product or system and there is no limit on the term of the license, so users will never be required to pay for or remove BSYM identifiers from their systems.
- BSYM can be applied in many unique ways. For example, a middleware tool built on BSYM would create a bridge between companies using proprietary systems, allowing them to speak in a common language without the need to license additional symbologies. This creates significant cost savings through reduced licensing fees and automated processing for all participating firms.
- BSYM can be used for any purpose and incorporated into any system now and in the future. Systems built on BSYM symbology will never be required to pay licensing fees for its use.
- BSYM will greatly reduce the cost associated with changing platforms, allowing companies the freedom to select systems that best suit their needs.

The call from the market for systems that encourage innovation and efficiency couldn't be clearer. Bloomberg is committed to delivering the tools and standards that will help the securities industry enjoy a new era of advancement.

Using BSYM Identifiers

BSYM is not a single identifier. It is the name for Bloomberg's family of security identifiers. The BSYM identifiers allow trading and market data systems to cross reference security identifiers from various sources and various Bloomberg data products. Toward that end, Bloomberg is allowing BSYM Identifiers to be freely reproduced, distributed, transmitted, used, modified, built upon, or otherwise exploited by anyone for any purpose at no cost. Indeed, Bloomberg is encouraging all members of the trading community to use BSYM identifiers for integration and redistribution within and beyond their organizations.

BSYM identifiers available at bsym.bloomberg.com can be used to map data across all of Bloomberg's raw data products, and they can also be used to determine the 'parse key' for loading a security on the Bloomberg Terminal command line. BSYMs can be searched by many proprietary IDs, such as the Stock Exchange Daily Official List (SEDOL), Committee on Uniform Securities Identification Procedures (CUSIP), and the International Securities Identification Number (ISIN), as well as by security description, security type, and pricing source. Bsym.bloomberg.com also provides predefined dump files and searches, as well as custom search and filter capability. All data is refreshed on a daily basis.

Expanded security coverage, additional Bloomberg Identifiers, and additional mechanisms for searching and requesting data will be added as needs are defined.

For the purpose of BSYM, a security is defined as an issue that may be priced by multiple pricing sources–such as IBM's common stock, and the 10 Year US Treasury Bond. An Instrument is defined as a security that is pricing or

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trading in a specific venue – such as NYSE, AMEX, US Composite, a specific broker-dealer, or Bloomberg Generic Pricing. Instruments are identified at the level of their market price (Ticker + Pricing Source, BSID). Securities are identified at the level of the issue itself (Unique Identifier, Name).

UNDERSTANDING BSYM FIELDS

Name   Name of the company or brief description of the security. The Name of an instrument may change in conjunction with corporate actions.

Unique ID   Unique identifier assigned by Bloomberg to all securities. This id can be used for mapping B-Pipe and API identifiers to Bloomberg's Data License products. Data License provides extensive fundamental and security master data that complements Bloomberg's real time data offerings. The Unique ID can also be used to load a security onto the Bloomberg Terminal by prefixing the value with 'ID' on the command line. In general, for equities, the Unique "ID" groups together instruments that contribute pricing to the same composite market (e.g. US, JP). However, an exception to this rule occurs when the same security trades in different currencies in the same market, rendering the trading instruments nonfungible. In these cases, securities will have a different Bloomberg Ticker and Unique ID for each currency in which the security trades. MiFID OTC markets are a good example of this (see examples below). For fixed income securities, the Unique ID identifies a security across all dealers and currencies, so the Unique ID is not an indicator of fungibility or participation in a composite for fixed income. The Unique ID of a security may change in conjunction with corporate actions.

Security Type   Description of the specific security type within its Bloomberg market sector (Yellow Key). This classification corresponds to the predefined list of files that are available on the BSYM website. Mappings from Market Sector to Security Type are available on the Web site under the 'Security Type Mapping' link.

Market Sector   Market sector that Bloomberg has assigned to the security. This corresponds to the Bloomberg Yellow Key.

Pricing Source Acronym or short code for the market data source, used on the B-Pipe feed. This field provides B-Pipe source codes for a variety of asset types. Note that in some cases the source in this field is not loadable on the terminal. B-Pipe makes a distinction between sessions in the source field, while the terminal handles this by means of the PCS <GO> function, which allows configuration of user-specific session preferences. In general, for markets that have electronic, pit and combined sessions, the pit session will use the source code found on the terminal: the electronic session will use that code prefixed by "e", and the combined session will use the source code prefixed by "c". In addition, B-Pipe assigns a source code for indices that are not used on the terminal, e.g. DJI for Dow Jones pricing the INDU index. Pricing Source is currently available only for B-Pipe priced securities. See the "Pricing Source Descriptions" link on the BSYM Web site for a mapping of the Pricing Source code to a description of the source.

BSID   (Bloomberg Security ID Number with Source) - Unique integer identifier for all B-Pipe securities. This identifier is used for subscription services in B-Pipe (Managed and On Demand). BSIDs are unique at instrument level and have a 1-many mapping with the Unique ID field described above. The BSID of a security may change in conjunction with corporate actions and is available only for B-Pipe priced securities.

Ticker   Unique B-Pipe ticker symbol. Combined with the Pricing Source and Market Sector, this forms a loadable security string on the Bloomberg terminal for most securities. The ticker may change in conjunction with corporate actions and is available only for securities that are priced on B-Pipe.

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BSYM TICKER CREATION

The rules for forming the BSYM Ticker vary according to security class.

CURRENCY	For basic cross rates B-Pipe uses the ISO codes for both currencies.
	Due to the wide variety in type and the desire to keep them short currency derivative symbols are not so clear-cut. They tend to be based on the ISO codes, but they are often truncated. They can also be based on the futures exchange codes such as ED, BP, SF, etc. The type of derivative is often included as an abbreviation, and although the use of the abbreviation is consistent for the derivative it is difficult to predict. Time periods are almost always included when relevant.
	Spot (implied cross rate against the US dollar) currencies are not available. Instead you have to ask for explicit cross rate, e.g., instead of using "EUR" or "JPY" use "EURUSD" or "JPYUSD".
EQUITY	Equity symbols are usually the exchange ticker.
FIXED INCOME	Fixed income symbols are built by combing a root symbol, the coupon, the maturity date and an optional series.
	A zero coupon is represented by "0", e.g., "PEISTP 0 01/29/23"
	A floating coupon is represented by "F", e.g., "CNC F 12/04/13"
	A variable coupon is represented by preceding the coupon with "V", e.g.,
	"MQB V5.75 02/18/13 1"
	Loans are represented by "L" I in the coupon position, e.g., "C L 05/01/98"
	A perpetual instrument is represented by preceding a pseudo maturity date with "P", e.g., "BMO 5.474 P12/29/49 D".
	The month, day and year of maturity dates are always two digits, 0 padded if needed. Pseudo maturity dates are often "12/29/49".
FUND	For exchange traded funds the symbol is usually the exchange ticker. Other fund symbols are mnemonics or acronyms built from the description of the index.
FUTURE	Future symbols are based on the exchange ticker.
	Physical, financial and currency futures symbols use a one, two or three character root for the commodity followed by the standard month letter and single last digit of the year. If the commodity code is a single character, such as "W", it is padded with a space so that it is always two characters
INDEX	Major exchange indices usually use the common symbol, but the source is not always obvious, e.g., B-Pipe subscriptions "/DJI/INDU Index", "/OPRA/SPX Index", "/JT/TPX100 Index".
	Other index symbols are mnemonics or acronyms built from the description of the index.
OPTION	For future options use the ticker of the underlying future with a "P" or "C" appended, a space and then the strike price, e.g., "CDM8C 99.5"
	For equity options use the ticker of the underlying equity, a space followed by the month or month/day of expiration, a space and then a "C" or "P" with the strike price appended. E.g. "IBM 10 C140".
	All strike prices drop trailing 0s and decimal points, e.g. ,"15.15" is "15.15" but "15.10" is "15.1" and "123.00" is "123".
WARRANT	For listed warrants with an official exchange symbol, the exchange symbol is used.
	For warrants that are not listed, or that do not have an official symbol, the value is algorithmically generated by Bloomberg using rules that vary by issuer.

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Cross Referencing Field Names across Products

BSYM identifiers can be used to map real time data from B-Pipe or Bloomberg's Server API to Bloomberg's Data License reference data and corporate actions products.

Field ID (FLDS)	Field Mnemonic (DL / API)	B-Pipe Field	BSYM Field
DS002	NAME	Reference.Security.ID.Name	Name
ID059	ID_BB_UNIQUE	Reference.Security.Bloomberg.UniqueID	Unique ID
DS213	SECURITY_TYP	Reference.Security.Type	Security Type
DS122	MARKET_SECTOR_DES	NA*	Market Sector
DY003	ID_BB_SEC_NUM_DES	Reference.Security.ID.Bloomberg.Symbol	Ticker
DX282	FEED_SOURCE	MD.Source	Pricing Source
ID122	ID_BB_SEC_NUM_SRC	MD.Security.ID.BSID	BSID

*Reflected in the message type of the B-Pipe reference data message

EXAMPLES OF BSYM IDENTIFIERS ACROSS MARKETS AND SECURITY CLASSES

Equity (Single Currency per Listed Market):

Column Heading	IBM (US Composite)	IBM (NYSE)	IBM (German Composite)	IBM (Berlin Exchange)
Name	INTL BUSINESS MACHINES CORP	INTL BUSINESS MACHINES CORP	INTL BUSINESS MACHINES CORP	INTL BUSINESS MACHINES CORP
Unique ID	EQ0010080100001000	EQ0010080100001000	EQ0010080100001007	EQ0010080100001007
Security Type	Common Stock	Common Stock	Common Stock	Common Stock
Market Sector	Equity	Equity	Equity	Equity
Ticker	IBM	IBM	IBM	IBM
Pricing Source	US	UN	GR	GB
BSID	399432473346	627065740034	395137622225	1623498268881

Equity (MiFID On Book):

Column Heading	LLOY (London Listed - GBp)	LLOY (PLUS - GBp)	LLOY (Chi-X - GBp)
Name	LLOYDS BANKING GROUP PLC	LLOYDS BANKING GROUP PLC	LLOYDS BANKING GROUP PLC
Unique ID	EQ0011242800001000	EQ0000000005037071	EQ0000000002865282
Security Type	Common Stock	Common Stock	Common Stock
Market Sector	Equity	Equity	Equity
Ticker	LLOY	LLOY	LLOY
Pricing Source	LN	PZ	IX
BSID	678605350662	1997163581670	2005750482138

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Equity (MiFID OTC):

Column Heading	LLOY (London OTC - GBP)		LLOY (Chi-X OTC - GBP)	LLOY (London OTC - Euro)	LLOY (Chi-X OTC - Euro)
Name	LLOYDS BANKING GROUP PLC		LLOYDS BANKING GROUP PLC	LLOYDS BANKING GROUP PLC	LLOYDS BANKING GROUP PLC
Unique ID	EQ0000000005002180		EQ0000000005002180	EQ0000000005103164	EQ0000000005103164
Security Type	Common Stock		Common Stock	Common Stock	Common Stock
Market Sector	Equity	Equity	Equity	Equity	
Ticker	LLOYGBP	LLOYGBP	LLOYEUR	LLOYEUR	
Pricing Source	XJ	XC	XJ	XC	
BSID	6111741723983		6064497083727	6111741807243	6064497166987

Commodity/Index Future (With Sessions):

Column Heading	LCJ0 PIT (CME)	LCJ0 ELEC (CME)	LCJ0 COMB (CME)
Name	LIVE CATTLE FUTR Apr10	LIVE CATTLE FUTR Apr10	LIVE CATTLE FUTR Apr10
Unique ID	IX8013948-0	IX8013948-0	IX8013948-0
Security Type	Physical commodity future.	Physical commodity future.	Physical commodity future.
Market Sector	Comdty	Comdty	Comdty
Ticker	LCJ0	LCJ0	LCJ0
Pricing Source	CME	eCME	cCME
BSID	614188830019	2078772677955	9981512502595

Single Stock Future:

Column Heading	Daimler May 2010 (LIFFE)	Daimler May 2010 (Eurex)	Daimler May 2010 (Milan)
Name	DaimlerChrysler AG May10	DaimlerChrysler AG May10	DaimlerChrysler AG May10
Unique ID	EF12666074700074186777	EF12399952420074448897	EF12666075260074186844
Security Type	SINGLE STOCK FUTURE	SINGLE STOCK FUTURE	SINGLE STOCK FUTURE
Market Sector	Equity	Equity	Equity
Ticker	DCX=K0	DCX=K0	BDCX=K0
Pricing Source	LIF	EUX	SM
BSID	609900809283	279182846813	476756828955

Corporate Bond:

Column Heading	GS 7.5 02/15/19 (TRACE)	GS 7.5 02/15/19 (German Composite)	GS 7.5 02/15/19 (CBBT)
Name	GOLDMAN SACHS GROUP INC	GOLDMAN SACHS GROUP INC	GOLDMAN SACHS GROUP INC
Unique ID	COEH7068206	COEH7068206	COEH7068206
Security Type	GLOBAL	GLOBAL	GLOBAL
Market Sector	Corp	Corp	Corp
Ticker	GS 7.5 02/15/19	GS 7.5 02/15/19	GS 7.5 02/15/19
Pricing Source	TRAC	GR	CBBT
BSID	631369281816	395146080536	665729020184

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Mortgage:

Column Heading	FNCL 4 4/10 (Bloomberg Generic)	FNCL 4 4/10 (Composite Bloomberg Bond Trader)
Name	FNCL 4 4/10	FNCL 4 4/10
Unique ID	MG%3278ACK	MG%3278ACK
Security Type	MBS 30yr	MBS 30yr
Market Sector	Mtge	Mtge
Ticker	FNCL 4 4/10	FNCL 4 4/10
Pricing Source	BGN	CBBT
BSID	12894812880	665729841872

Preferred:

Column Heading	RBS CAPITAL FND TRST VII (US Composite)	RBS CAPITAL FND TRST VII (NYSE Preferred)	RBS CAPITAL FND TRST VI (US Composite)	RBS CAPITAL FND TRST VI (NYSE Preferred)
Name	RBS CAPITAL FND TRST VII	RBS CAPITAL FND TRST VII	RBS CAPITAL FND TRST VI	RBS CAPITAL FND TRST VI
Unique ID	PFEP0109264	PFEP0109264	PFEP0093955	PFEP0093955
Security Type	PUBLIC	PUBLIC	PUBLIC	PUBLIC
Market Sector	Pfd	Pfd	Pfd	Pfd
Ticker	ABNA 6.08 P12/31/49 G	ABNA 6.08 P12/31/49 G	ABNA 6.25 P12/31/49 F	ABNA 6.25 P12/31/49 F
Pricing Source	US	SNY1	US	SNY1
BSID	399432238302	618475570398	399432238212	618475570308

Government Bonds:

Column Heading	T 7.5 11/15/24 (Standard Chartered)	T 7.5 11/15/24 (Citigroup)	T 7.5 11/15/24 (Credit Suisse)
Name	US TREASURY N/B	US TREASURY N/B	US TREASURY N/B
Unique ID	*	*	*
Security Type	US GOVERNMENT	US GOVERNMENT	US GOVERNMENT
Market Sector	Govt	Govt	Govt
Ticker	T 7.5 11/15/24	T 7.5 11/15/24	T 7.5 11/15/24
Pricing Source	SCBX	CGUK	CSFB
BSID	12004433733107	5063766582771	5059471615475

* In some cases Unique ID is blank due to the value being based on a proprietary ID. New IDs are being assigned and will be updated soon.

Currency:

Column Heading	USD-EUR X-RATE (Tokyo Composite)	USD-EUR X-RATE (New York Composite)	USD-EUR X-RATE (CBA Bank)	USD-EUR X-RATE (8am Fixing Rate)
Name	USD-EUR X-RATE	USD-EUR X-RATE	USD-EUR X-RATE	USD-EUR X-RATE
Unique ID	IX430979-0	IX430979-0	IX430979-0	IX430979-0
Security Type	CROSS	CROSS	CROSS	CROSS
Market Sector	Curncy	Curncy	Curncy	Curncy
Ticker	USDEUR	USDEUR	USDEUR	USDEUR
Pricing Source	CMPT	CMPN	CBAX	F080
BSID	425201809525	416611874933	12648678733941	14289356241013

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Index Option:

Column Heading	June 10 Puts on SPX (US Composite)	June 10 Calls on SPX (US Composite)
Name	June 10 Puts on SPX	June 10 Calls on SPX
Unique ID	IX6956513-0-1400	IX6956509-0-9400
Security Type	Index Option	Index Option
Market Sector	Index	Index
Ticker	SPX 06/19/10 P800	SPX 06/19/10 C800
Pricing Source	US	US
BSID	399438708018	399438708043

Equity Option:

Column Heading	April 10 Calls on VOD US (US Composite)	April 10 Calls on VOD US (AMEX)	April 10 Calls on VOD LN (LIFFE)	April 10 Calls on VOD NQ (EUREX)
Name	April 10 Calls on VOD US	April 10 Calls on VOD US	April 10 Calls on VOD LN	April 10 Calls on VOD NQ
Unique ID	EO101605201004018190000	EO1016052010040181900001	EO101605201004038DC00006	EO101605201004028F000002
Security Type	Equity Option	Equity Option	Equity Option	Equity Option
Market Sector	Equity	Equity	Equity	Equity
Ticker	VOD 04/17/10 C12.5	VOD 04/17/10 C12.5	VOD 04/16/10 C110	VOD 04/16/10 C120
Pricing Source	US	UA	LIF	EUX
BSID	399444460111	523998511695	609900043157	279187460380