

Consolidated Copy of Symbology Comments
November 27, 2006

These comments were received from representatives from various organizations interested in the listed options. The comments were submitted through the OCC public website www.optionsclearing.com/symbology. The comment period ran from May 1, 2006 to August 29, 2006. The Symbology Implementation Plan was the result of a combined effort of industry professionals from the business, operations and technical areas that carry direct responsibility for the listed options product. Participants included representatives from broker dealers, exchanges, vendors, industry associations and the clearinghouse. This committee of market professionals will determine the appropriate responses to these comments. Committee members should review the comments and determine whether their organization supports any of the recommendations offered. Participants will discuss the comment letters and determine the appropriate course of action. A meeting has been scheduled for September 19, 2006 to finalize an action plan. This committee owes the OCC Board of Directors the action plan for the September 26, 2006 meeting.

Summary

Comments were received from 7 entities: Financial Information Forum, International Securities Exchange, Reuters America Inc, NASD, Oppenheimer, A.G. Edwards and Flume Data Inc. The comments reflect the topics that were most controversial during the development of the implementation plan where the majority ruled. A brief description of the comments is followed by the actual submissions.

- The series key is too long.
- The implementation timeframe is too long.
- The implementation timeframe is too short.
- Recommend a common sequencing of data elements to standardize the way options are viewed by the human eye.
- Clarify the current thinking for corporate actions.
- Provide a dedicated field(s) for corporate actions, settlement style and expiration type.

The following feedback has been submitted to the Symbology Initiative group:

Name: Brian McNelis
Email: brian.mcnelis@reuters.com
Daytime Phone: (646) 223-4439
Firm Name: Reuters America Inc
Position: VP Market Analysis

Comments:

Mark Baumgardner
Vice President, Business Development
Options Clearing Corporation
1 North Wacker Dr.
Chicago, Il. 60606

August 22, 2006

Dear Mr. Baumgardner,

Reuters appreciates the opportunity to comment on the Symbology Committee's proposal for enhancing the symbols for options cleared through the Options Clearing Corp. As you may know, Reuters has from the outset of its Integrated Data Network (IDN) market data distribution system, used a structure for options symbols similar to what the committee is proposing. This structure was designed in the early '80s and has held up pretty well over the past two decades.

Some of the elements of our option symbology are in keeping with those recommended by the Committee. In particular, we are very pleased to see the Committee recommend use of actual underlying equity symbols as the root code for all options and use of numeric strike prices instead of letter codes.

We also endorse the concept of defining options adjusted by corporate actions with a number to cater for instances of multiple events while retaining the basic underlying equity symbol. And use of expanded date information resolves the problem of distinguishing both short-dated and long-term options.

Therefore we are encouraged by the progress the Committee has made to date and look forward to participating in the Industry effort to reform option symbology.

However, we do have some concerns about the length of the proposed symbol structure. Using the minimum values recommended by the Committee produces a symbol of 21 characters. Unfortunately, Reuters cannot transmit a symbol longer than 17 characters, including an exchange identifier of two characters. Thus the effective length of the symbol for an individual contract in our system cannot exceed 15 characters.

This limit is embedded in literally tens of thousands of nodes, replicators, servers and other hardware devices globally, not to mention thousands of applications, both our own and our customers'. We therefore would find it impossible to modify our option symbols to match those recommended by the Committee.

We believe symbol length will also be an issue for a number of other commenters. Therefore, we would respectfully like to suggest some alterations of the Committee's proposals, which if not actually adopted by the OCC, would at least be endorsed by the

OCC as an acceptable alternative that would be used by entities that have a similar concern about symbol length.

Reuters Suggested Alternatives

Series Key

| Symbol | Explicit Strike | Month - C/P | Yr | Day |
|--------|-----------------|-------------|----|-----|
| MSFT1 | 234p56 | A-L / M-X | 6 | 18 |

We note that with Nasdaq's change in January '07, it is no longer necessary to plan for a five-letter root code. We also believe that by using the existing convention of combining the put/call and month into a single character, we can save two characters. Finally, we believe that it would be rare for a strike price with four whole numbers or more to have a decimal component at all. Thus we believe we can safely use six characters to represent any strike price. Even if Berkshire rises above \$99,999, we would be okay.

Maximum field sizes

Symbol ? 5 bytes (including corporate action digit)

Strike ? Floating decimal ? 6 bytes

Month ? Call/Put indicator - 1 byte

Year ? 1 byte

Day ? 2 bytes

Total ? 15 bytes when maximum values are adopted

Note that since our purpose is to make the symbol understandable to humans, rather than machines, we would reorder the positions of the values to alternate letter and number components.

Sincerely,

Brian McNelis
Vice President, Market Analysis

The above listed comments were submitted via the Symbology Initiative webpage at <http://www.optionsclearing.com/symbology/>. Please contact WebServices@theocc.com if you would like to be removed from this list.

The following feedback has been submitted to the Symbology Initiative group:

Name: Mark Grinbaum

Email: mgrinbaum@iseoptions.com
Daytime Phone: (212) 897-0255
Firm Name: ISE
Position: Development

Comments:
Symbology Implementation Plan
ISE Comments
Revision 1.0
8/22/06

ISE fully supports Industry Symbology initiative and we believe that such an initiative is long overdue for the industry due to the reasons provided in the plan. ISE also supports the objectives stated in the industry plan and commends OCC for spearheading the industry effort.

At the same time, ISE feels that the plan could be more ambitious in terms of scope i.e. deliver additional benefits with the comparably minimal additional effort. ISE is concerned also that a three year implementation schedule might actually increase the transition costs, rather than reduce them. Based on the recent history, it is hard to imagine that no feed or system changes will be required between now and the end of 2009. Most of such changes during this period will require development testing and maintenance of multiple software versions resulting in additional monetary and resource expenditures.

Additional Benefits (Objectives):

Following is the list of additional objectives, ISE believes, can add a significant value to the initiative with just a minor incremental cost:

- ? Come up with Common Options Strikes Representation
- ? Formalize Options Order Routing Symbology
- ? Alleviate symbol bastardizing entirely
- ? Allowing support for new products
- ? Reduce message processing overhead by alleviating parsing
- ? Be consistent with FIX Order Routing applications
- ? Allow to warn end users of non-standard deliverables

Common Options Strikes Representation

Presently, there is a number of different methods Market Data Vendors and Exchanges display strikes. This regularly results in translation and associated errors. The industry would benefit greatly from a standardized representation. The representation, in ISE view should be supported by the exchanges, OCC and OPRA "wire" specifications in terms of unambiguous translation between from and to. By itself the representation should be designed as a "human" (rather than a computer) interface, be as explicit as

possible, providing clarity to an end user. The ideal representation should also be sortable.

One possibility:

<Underlyer Symbol><exp year: yy><exp month: mmm><[exp day: dd]*><strike price><P/C indicator><[corp action #]><[Expiration type E/A for flex or future products]><[settlement value method O/C]>

Note: [?] indicates optional fields

E.g.: IBM; 06;Jul 21;82.5;P;1;A;O

*Please note that underlyers without weeklies, FLEX or Quarterlies do not need expiration day

Known issues:

Bastardized Symbols: Since about 5% symbols will be bastardized, Underlying Symbol for them can't be taken from the OPRA transmissions, but can be obtained from the exchanges' memos or OCC strikes file.

1. Options Order Routing Symbology

The plan does not consider implications for Order Routing (OR) environments. Please note that adherence to FIX standards would require using unique fields for the Corporate Action modifier and FLEX Expiration style/settlement

2. Alleviate symbol bastardizing entirely

Addition of a single character field will alleviate the need for bastardizing symbols as well as provide ability to add new products related to an underlyer.

3. Allowing support for new products

See above

4. Reduce message processing overhead by alleviating parsing

The current Symbology proposal relies on OPRA symbol field parsing to identify FLEX or corporate action modifier, which is inefficient. Having separate fields would increase efficiency and reduce software complexity.

5. Be more consistent with FIX OR applications

If the OR implementation follows FIX standards (see #3) unique fields will provide more consistency between OPRA, OCC and Order Routing protocols.

6. Allow to warn end users of non-standard deliverables

Deliverables indicator can be added to the Common Options Strike representation. The indicator will not be disseminated by OPRA or required on OCC in-bound record and can be set based on OCC strike file.

The above listed comments were submitted via the Symbology Initiative webpage at <http://www.optionsclearing.com/symbology/>. Please contact WebServices@theocc.com if you would like to be removed from this list.

The following feedback has been submitted to the Symbology Initiative group:

FINANCIAL INFORMATION FORUM 5 Hanover Square New York, New York 10004
212-422-8568 August 24, 2006

Mark Baumgardner
Vice President, Business Development
The Options Clearing Corporation
One North Wacker Drive, Suite 500
Chicago IL 60606
Re: Options Symbology Implementation Plan
Dear Mr. Baumgardner:

The Financial Information Forum (FIF) welcomes the opportunity to comment on the proposed changes to Options Symbology. FIF (www.fif.com) was formed in 1996 to provide a centralized source of information regarding events and issues that affect the securities processing and market data communities. Through topic-oriented working groups, FIF participants focus on critical issues and productive solutions to technology developments, regulatory initiatives, and other industry changes.

The FIF Service Bureau Committee was formed to address the implementation of industry changes from a multi-client perspective. Given that many U.S. broker/dealer firms are using service bureaus for back office processing and order routing services, it is important to consider these entities when designing and implementing rules or processes that impact these functions. FIF's roster of U.S. securities processing vendors includes Automatic Data Processing (ADP), ADP/SIS, Computer Research Inc. (CRI), Comprehensive Software Systems (CSS), GL Americas, SunGard Trading Systems/BRASS, SunGard Securities Processing/Phase 3, and Thomson Transaction Services. Given the complexity and magnitude of a new OCC Symbology implementation, FIF Service Bureau Committee formed the OCC Symbology Working Group consisting of service bureaus and market data vendors¹ to understand the implications of migration and areas where additional clarification is required.

Comments on Proposed Symbology

As OCC seeks to modernize options symbology to meet current and expected market requirements, FIF recommends that OCC look to minimize the message length without sacrificing the benefits of an expanded symbol. We believe that it is possible to reduce

the proposed message size without significantly reducing readability or processing requirements to decode the symbol. To this end, FIF recommendations on fields and field sizes are outlined in the following table:

Reducing the message length as indicated below, would have the following advantages:

- Many processing systems have limitations of 16 character fields. For those systems, increasing the field size beyond 16 bytes will significantly increase both the cost and complexity of implementing a new symbology, especially for legacy back office systems.

1 In addition to the service bureaus listed, representatives of the working group include: Bloomberg, Fidelity, Interactive Data, Reuters, Telekurs, and Thomson Financial.

- While display systems will still require modification even with the reduced FIF-proposed message size, there is a better chance that all the stakeholders could accommodate the symbol.
- Use of denominator indicator accommodates higher strike prices and to whatever extent possible expected innovation in options products
- Reducing the message size would reduce bandwidth requirements

| Proposed Fields (Not in Sequence) | OCC Proposal | FIF Recommendation | Comments/Questions |
|--|---------------------|---------------------------|---|
| Symbol | 6 bytes | 5 bytes | 4 byte symbol code and use a # to indicate corporate actions status. Since Nasdaq is eliminating the 5th character, 6 bytes is not needed. |
| Year | 2 bytes | 1 byte | Could this be 1 byte, given that currently no options are listed 10 years out? |
| Month | 2 bytes | 1 byte | Currently A – L is used for calls over the year and M- X for puts. Couldn't OCC continue to combine call/put indicator and month? |
| 1 byte | | | |
| Day | 2 bytes | 2 bytes | No Change. |
| Strike Dollar | 5 bytes | 3 to 6 bytes (variable) | Combine the strike dollar and decimal to a variable length field. Since most options require less than 5 digits and there is a potential for more than 5 being required in the future, a variable length allows for this without requiring additional coding. |
| 3 bytes | | | |

| | | | |
|---|-----------------|----------------------|--|
| Denominator Indicator (FIF Addition) | N/A | 1 byte | Use a single character to indicate decimal places required. This will work for fractional strike prices and sub-penny prices if necessary. |
| Total | 21 bytes | 13 - 16 bytes | |

Impact on Back Office Processing & Market Data Systems

In addition to reviewing the symbol structure, the FIF OCC Symbology Working Group also discussed the impact of modifying options symbols from a development and operational perspective. Almost every system that includes data relating to options from market data through securities processing will require development work to accommodate the symbology change. Functional components that will change include:

- Display terminals (especially 3270 screens) including market data, order management and securities processing screens
- Historical databases
- Compliance reporting including blue sheets
- File transfers – every file transfer between systems and entities that currently uses the OPRA code
- Stock records

- Corporate actions processing
- Security master files
- Customer statements
- Tax reporting
- Order management and order entry systems

Additionally, the group identified the following questions related to system impact:

- What are the bandwidth implications on real-time data feeds?
- What impact will the OCC Symbology change have on OPRA data? Will OPRA's 5 letter code be eliminated?
- The new symbology should be standard across the industry for the complete options trade lifecycle. What steps will the OCC take so that the new symbology becomes a uniformly adopted across the trade lifecycle?
- Option trades are reported on blue sheets today using OPRA codes. Should we expect some record layout changes from the Intermarket Surveillance Group (ISG)?
- Please clarify how historical data will be converted. What changes will be required for historical data processing?
- How will order messaging interfaces change? Will updates be made to CMS and FIX specifications?
- Could you further elaborate on how corporate actions will be handled? For example, please explain how the following contracts would be designated at each phase of the scenario outlined:

Stock ABCD pays a spin-off dividend of stock XYZ on June 1, 2006. The deliverable per contract becomes 100 ABCD and 100 XYZ. Immediately after the spinoff, new options begin trading on both ABCD and XYZ. On September 1, 2006 stock ABCD pays a cash dividend of \$5 per share. Since the cash dividend represents more than 10% of the value of the ABCD, the deliverable per contract of ABCD becomes 100 ABCD and \$500. The deliverable of the original ABCD options (pre-spinoff) becomes 100 ABCD, 100 XYZ and \$500. Also immediately after the cash dividend payment, new options are listed in ABCD that represent 100 ABCD. At this point, there three different option contract on ABCD that have the following deliverables: 1) 100 ABCD, 2) 100 ABCD + \$500 and 3) 100 ABCD + 100 XYZ + \$500.

How would these three contracts be designated? Would it be ADCD, ABCD1 and ABCD2?

Implementation Resources Required

From an order of magnitude perspective, FIF members believe this effort will exceed the move to decimalization and Y2K because it affects so many systems and processes. This change represents a huge development cost without any offsetting revenue for vendors or broker dealers. It is important to note that in addition to the symbology conversion effort, the move to decimal strike prices will also require significant resources.

At this stage, FIF vendors are starting to form user groups and expect to perform intensive analysis to truly assess the resource requirements of implementing the OCC Symbology change. As more detailed information is provided, initial estimates of

development time and cost may be altered dramatically. Without evaluating technical specifications from the exchanges it is not possible to prepare a meaningful project plan to address OCC Symbology implementation.

We would expect the OCC to prepare cost analysis estimates for the industry to use in determining the financial impact of this project.

Migration/Implementation Planning Considerations

FIF members look forward to understanding the OCC strategy of a phased conversion plan extending to 2009. We have identified the following questions/considerations for your review:

- What will be the phase-in approach (i.e., by product; alpha, etc.)?
- How does the implementation of decimal strike prices take place as part of the symbology conversion?
- How will OCC coordinate the implementation of the new symbology with other industry participants such as the options markets (for order processing and execution reporting), market data vendors (for data dissemination)?
- Each market participant must analyze OCC's requirements and subsequently publish their requirements for downstream users such as service bureaus, trading systems, broker dealers and market data vendors of option market information. How will conversion deadlines take into account this sequential process?
- What is the fallback/recovery strategy if problems arise with the conversion?
- How will open order reconciliation work during the conversion?
- How will reporting of option trades pre-conversion and post conversion be handled? Will we have to maintain two formats to report option trade pre-conversion and those post-conversion?

The FIF Service Bureau Committee's OCC Symbology Working Group appreciates the importance and magnitude of the OCC Symbology effort. We look forward to working with you to ensure a smooth implementation of a new options symbology methodology. Sincerely,

Bob Linville, ADP/SIS Deborah Mittelman, SunGard

Service Bureau Committee Co-Chair Service Bureau Committee Co-Chair

4

From: Eric Miller [mailto:eric.miller@nasd.com]
Sent: Tuesday, August 08, 2006 2:01 PM
To: Symbology Discussion List
Subject: Symbology Initiative Project Comments

The following feedback has been submitted to the Symbology Initiative group:

Name: Eric Miller
Email: eric.miller@nasd.com
Daytime Phone: (212) 306-1552
Firm Name: NASD
Position: Deputy Director

Comments:

I attended the August 8 presentation by Mark Baumgardner and I would like to make the following recommendations/comments.

There needs to be a separate field to indicate non-standard deliveries. If it is embedded in the symbol field, it may get lost in the symbol, especially if the underlying has a one- or two-character symbol. If all symbols were the same length, except for those with non-standard deliveries, then it would be acceptable to keep it in the symbol field, but symbols are of a variety of lengths, from 1 to 5 characters and it would be easier for both people and systems to handle non-standards if a separate field indicated their existence.

A separate field for non-standards could also be used by the industry to flag options in which customer opening transactions are prohibited.

One question I still have is what happens after a merger, if company ABC buys XYZ, today, XYZ options become XZZ (or some other symbol) what symbol would XYZ options trade under following a merger? Perhaps the inclusion of several OCC Circulars showing today's symbology and the proposed symbology side-by-side would help.

If the Industry is serious about making these monumental changes, it would be better to include more about non-standard options in the presentation. The goal is to reduce or eliminate the problems regarding non-standards, not just to create new problems.

The above listed comments were submitted via the Symbology Initiative webpage at <http://www.optionsclearing.com/symbology/>. Please contact

WebServices@theocc.com if you would like to be removed from this list.

The following feedback has been submitted to the Symbology Initiative group:

Name: Tamara Tate
Email: tammie.tate@agedwards.com
Daytime Phone: (314) 955-9618
Firm Name: A. G. Edwards
Position: Associate Vice-President, Order Room

Comments:

We are very concerned about the proposed changes, as is our vendor. The scope of the changes is very large, potentially huge, to them, as they would probably have to rework every online, report and downstream system that contains an option symbol. Our firm would also have to make many changes within our internal systems to accommodate the new symbols. Additionally we have all experienced resource shortages due to continuing and ever-increasing regulatory change projects with short deadlines. Because of these concerns, we do not believe we can accomplish the changes with the proposed timeframe. Once the final recommendation is approved and distributed, we believe that our vendor and we will need at least two years to do internal coding changes and testing. These changes must be complete before we could begin testing with the OCC.

The following feedback has been submitted to the Symbology Initiative group:

Name: Rafi Krikorian
Email: rafi.krikorian@opco.com
Daytime Phone: (212) 668-1296
Firm Name: Oppenheimer & Co. Inc. (0571)
Position: 1st VP of Technology

Comments:

While I see the benefits, I think it is too long an identifier - I suggest you adhere to cusip 9 byte or ISIN 12 byte format which is a standard on the street.

I can not help but imagine Order management/quote service/order routing ramifications...we currently have our own identifier C/P for all or put; followed by the opra symbol 1,2 or 3 bytes; followed by the actual price, followed by the month (an even that is used internally by the back office only).

Regards
Rafi

The above listed comments were submitted via the Symbology Initiative webpage at <http://www.optionsclearing.com/symbology/>. Please contact WebServices@theocc.com if you would like to be removed from this list.

The following feedback has been submitted to the Symbology Initiative group:

Name: David Lawless
Email: david_lawless@flumedata.com
Daytime Phone: (646) 435-0985
Firm Name: Flume Data, Inc.
Position: President

Comments:

The suggested option symbol seems verbose and difficult to read:

MSFT060218C00047500

How about something closer to what the current OPRA formats have for space, processing and visual efficiency? The symbols must be unique but not utterly didactic as most access is via series lookups keyed off of the underlying symbol. Detailed attributes can be obtained from the record and serve little purpose in the symbol. The existing strike month letter codes seem fine.

Equivalent Example:

MSFT6B00047

The above listed comments were submitted via the Symbology Initiative webpage at <http://www.optionsclearing.com/symbology/>. Please contact WebServices@theocc.com if you would like to be removed from this list.