

FINANCIAL INFORMATION FORUM

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February 14, 2008

Nancy M. Morris, Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

Re: Release No. 34-57171; File No. 4-534

Dear Ms. Morris:

The Financial Information Forum (FIF)¹ would like to take this opportunity to provide feedback on Amendment #1 of File No. 4-534 regarding the Proposed National Market System Plan for the Selection and Reservation of Securities Symbols. FIF believes it is of paramount importance that an NMS Exchange Symbology Plan cover all NMS securities. We strongly recommend a common symbology implementation across markets in order to minimize investor confusion, promote cross-market consistency required by Reg NMS and reduce systemic risk.

We hope that the SEC will not view the impact of special characters on the nation's financial infrastructure as merely a technology problem. It is the SEC's stated mission "to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation"² System changes requiring the use of proprietary suffix conventions with special characters raise policy concerns both from an NMS and a market resiliency perspective that are well within the purview of this mandate. The SEC should act swiftly to prevent the planned April 7th deployment of NASDAQ's Symbology Initiative - to protect investors and prevent possible market disruptions.

The FIF Symbology Working Group is active in addressing symbology initiatives including the Nasdaq Symbology Initiative and the Options Symbology Initiative from an implementation perspective. Our Working Group reviewed the SEC Notice for Comment, Release No. 34-56037 and filed a comment letter on August 23, 2007 raising several implementation concerns.³ At the Symbology Symposium on November 13, 2007, implementation issues with both initiatives were raised by the over 100 individuals from more than 35 firms that were represented. The pending launch of NASDAQ's new suffix convention heightens the sense of urgency to implement a national symbology plan that is comprehensive in its scope, covering all NMS securities.

We are in support of a single NMS symbology plan for root symbols, subordinate issues, options and test symbols because this approach offers the following benefits.

¹ FIF (www.fif.com) was formed in 1996 to provide a centralized source of information on the implementation issues that impact the financial technology industry across the order lifecycle. Our participants include trading and back office service bureaus, broker-dealers, market data vendors and exchanges. Through topic-oriented working groups, FIF participants focus on critical issues and productive solutions to technology developments, regulatory initiatives, and other industry changes.

² <http://www.sec.gov/about/whatwedo.shtml>

³ Our original comment letter is included as Appendix 2 of this document.

Minimize Investor Confusion

One of the motivations for symbol portability and a consistent NMS symbology policy is to ensure that investors are not affected by an issuer switching listing exchanges. Given that subordinate issues are securities that (both retail and institutional) investors trade, adopting a common suffix symbology across markets would be advantageous from the investor perspective. Our concerns with inconsistency are not just across markets but also with the application of the Nasdaq Symbol convention across symbols of a different root size. According to the [Nasdaq Guidance Document](#), a Class 'A' When Issued will be identified with a '#' sign if the root is 4 characters but with a '.A#' if the root is 3 or less characters.

Additionally, adopting a plain English suffix convention would reduce fat finger trading errors, verbal miscommunication, and display misinterpretation (e.g., AAA.A looks very similar to AAAA) in both text and phone-based order entry.

Promote Market-wide Consistency

In reviewing Release No. 34-57171, we are pleased that the SEC may expand the coverage of the Exchange Symbology Plans to include options and subordinate issues. Expanding the scope of an NMS Symbology Plan would be consistent with the Regulation NMS definitions of "listed equity securities"⁴ and "NMS securities"⁵ both of which include subordinate issues.

Because of Regulation NMS requirements to route orders to all execution venues trading an NMS security with better prices, the implementation effort associated with adopting Nasdaq's new suffix symbology expands well beyond connectivity to Nasdaq encompassing changes to smart order routing and trading systems not currently configured to accommodate special characters. FIF and SIFMA members continue to raise concerns regarding this initiative. As demonstrated in the 45 responses received to the FIF/SIFMA Survey, firms across the industry support cross-market standardization of suffixes.⁶

It is difficult to justify the millions of dollars in cost to the industry,⁷ for a proprietary symbology change required to accommodate only 192 issues (less than 6% of NASDAQ's volume).⁸ Especially when as an interim solution NASDAQ can accommodate subordinate issues in 3 character symbols as the industry works toward a common NMS Symbology. As discussed in the January 31, 2008, [Head Trader Alert #2008-012](#) the 3-character ticker symbol III is associated with two subordinate issues. Its units trade under the symbol IIIIU and its warrants trade under the symbol IIIIW.

Today, variations of the CMS suffix convention, the Comstock suffix convention, and the NASDAQ Integrated Platform suffix convention are in production at different exchanges. Unfortunately, broker dealers, vendors and exchanges have already spent significant resources to accommodate different suffix conventions across the U.S. exchanges. With the SEC's focus on NMS symbology, we hope you will take this opportunity to bring harmonization to this aspect of the national market system.

⁴ See <http://www.sec.gov/rules/final/34-51808.pdf>, p. 479 – "Listed equity security means any equity security listed and registered, or admitted to unlisted trading privileges, on a national securities exchange. Subordinate issues are listed equity securities."

⁵ See <http://www.sec.gov/rules/final/34-51808.pdf>, p. 480 – "NMS security means any security or class of securities for which transaction reports are collected, processed, and made available pursuant to an effective transaction reporting plan, or an effective national market system plan for reporting transactions in listed options."

⁶ See the joint FIF/SIFMA Survey including responses from 45 firms in Appendix 1.

⁷ Appendix 1. Section 4.1 for details on the implementation effort required to accommodate the new symbology.

⁸ Figures based on a review of Reuters and Bloomberg data in the 192 issues identified by NASDAQ as subordinate issues.

Mitigate Operational Risks

Inconsistent symbology schemas across NMS securities, especially those using special characters, present operational risks for several reasons. Changes to symbology affect every system that touches an order – from market data and order entry to back office and regulatory reporting⁹ systems. On behalf of its participants, DTCC’s post-trade applications, both clearing and depository, are being remediated and tested to ensure the safety and soundness of what is often referred to as the industry-wide utility. The safety and soundness of the industry infrastructure should not be underestimated. Testing of member firm and industry wide systems is a major undertaking and may not uncover unexpected behavior that could occur in production. The use of special characters exacerbates these problems due to the fact that special characters are often used as delimiters and wildcards in databases and legacy systems. In some instances, special characters do not translate properly when transmitted in either file or MQ protocols.

Additionally, changes to equity symbology reach beyond equity trading impacting the options markets. However, neither the OCC¹⁰ nor OPRA will adopt the NASDAQ subordinate issue suffix convention. Furthermore, it is understood by the industry that NASDAQ has a field-size limitation that has brought them to the decision point of selecting the symbol change, rather than expanding their field size. Taking into consideration the field expansion proposed for the OCC Symbology Initiative, NASDAQ should be expanding their field to ensure standardized formatting for all NMS securities.

In web-based applications, the use of special characters introduces cyber-security vulnerabilities that could be exploited by malicious code. Best practices established to reduce cross-site scripting, advocate eliminating the use of special characters in input fields.¹¹ Any symbology implementation effort should be carefully planned and coordinated at an industry level to minimize systemic risk.

In addition to standardizing root and suffix symbols across NMS securities, adopting test symbols to be used industry-wide would mitigate operation risk by enabling testing in production. With the adoption of Reg NMS establishing inter-market order routing obligations, we would urge the SEC to also consider establishing test symbols to be used for testing system changes that affect the National Market System. Testing with test symbols in production is the closest simulation to actual production conditions. Test symbols in production facilitate end to end testing. To avoid data corruption, market data vendors do not pass dummy data in actual symbols to their productions systems; however, dummy trades in test symbols are disseminated and would allow end user firms to test more effectively. NASDAQ has successfully incorporated test symbols in production as part of their testing protocol. We would encourage the SEC to use their approach as the model for introducing industry-wide test symbols.

Promote Market-Wide Business Continuity

As part of our involvement in industry business continuity testing and our participation in FSSCC (Financial Services Sector Coordinating Council for Critical Infrastructure Protection and Homeland Security), we are well aware of the need to continually strengthen the resiliency of the financial markets against terrorist attacks and other threats to the nation’s financial infrastructure. As discussed earlier, the introduction of special characters introduces cyber-security issues that could be exploited to disrupt our financial markets.¹²

Additionally, a common symbology implementation across markets would support industry-wide business continuity allowing trading in securities even when the primary exchange is not able to trade as a result of a natural or man-made disaster. Currently, the CTA and UTP data feed specifications do not accept

⁹ In order to support the NASDAQ integrated platform suffix convention, changes will be required to OATS because the [OATS technical specification](#) defines the symbol field as Alphanumeric. See Appendix C (pg. 242) which gives the definition of an alphanumeric character as: ASCII characters between 32 and 127, except for a delimiter character or the pound character (“#”) are acceptable.

¹⁰ See OCC Information Memo #24113.

¹¹ See [HTML Code Injection and Cross-site scripting: Understanding the cause and effect of CSS \(XSS\) Vulnerabilities](#) White Paper

¹² See [special character search results](#) from the Common Vulnerabilities & Exposures dictionary. CVE is a dictionary of publicly known information security vulnerabilities and exposures.

alternate suffix conventions. In the event of a disaster, significant development work would be required to modify trading, market data and back office systems not only at the broker dealers but also at the exchanges and utilities. While a common symbology is not the only obstacle to maintaining trading in the event of a primary market outage, the adoption of a special character suffix convention would add another hurdle to recovery.

In closing, we are concerned that failure to adopt an NMS Exchange Symbology Plan that does not include all NMS securities will result in significant wasted effort and risk to the industry. Therefore, pursuant to the SEC's efforts to establish and maintain a fair and orderly National Market System, FIF urges the SEC to (1) immediately request that NASDAQ and the NASDAQ SIP suspend the NASDAQ Stock Symbol System changes currently scheduled for April 7, 2008 and (2) work towards the adoption an NMS Exchange Symbology Plan that includes options and subordinate issues. We stand ready to assist in the development of an industry solution to NMS symbology.

Sincerely,

A handwritten signature in blue ink that reads "Manisha Kimmel". The signature is written in a cursive, flowing style.

Manisha Kimmel
Executive Director, Financial Information Forum
on behalf of the FIF Symbology Working Group

Appendix 1. FIF/SIFMA NASDAQ Suffix Symbology Survey



FIF/SIFMA NASDAQ Suffix Symbology Survey

January 31, 2008

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Appendix 1. FIF/SIFMA NASDAQ Suffix Symbology Survey

1 Executive Summary

As part of NASDAQ's strategy to attract listings from issuers that prefer a 1, 2, or 3 character root symbol and to improve market resiliency, NASDAQ initiated a two phase symbology plan. Phase 1 enabled NASDAQ to display 1-, 2- and 3- character stock symbols for NASDAQ-listed and exchange-listed issuers, in addition to the 4-character symbols currently used. Phase 1 was successfully implemented on February 20, 2007 and NASDAQ has listed several 3-character root symbols. Phase 2 of the project focused on supporting subordinate issues with a new suffix symbology.

Since the start of the symbology suffix initiative, FIF and SIFMA members have raised concerns about NASDAQ's approach including:

- Special characters increase the cost and complexity of implementation.
 - Databases and other applications rely on special characters for parsing data.
 - Legacy systems including telephony based order entry are unable to accommodate special characters
 - OPRA will not disseminate symbols with special characters. Even after the new Options Symbology Initiative is implemented, symbols with special characters will be bastardized on the OPRA feed
- Use of a NASDAQ-specific symbology is likely to cause confusion for retail investors, issuers, the buy-side and the sell-side.
- Requiring a new symbology for subordinate issues that move to NASDAQ fails to meet their objective of accommodating issuers who prefer to keep their existing symbols.
- Creating a new suffix symbology prevents NASDAQ from achieving their goal of market resiliency. When first proposing their symbology plan Nasdaq stated:
*"The technology change to support the new symbology will enable all NASDAQ systems, including the Securities Information Processor (SIP), to **support all NYSE- and Amex-listed securities using their original symbols over its core transactions and data platforms.** As the U.S. capital markets continue to enhance their redundancy and resiliency, this development is key to NASDAQ's ability to provide full backup for our other equity markets in the event of a national or local emergency."*¹³
- With the implementation of Reg NMS and the proposed Exchange Symbology Plans, the SEC and other market participants have an opportunity to address symbology at the National Market System level.

As a result of concerns expressed at the FIF/SIFMA NASDAQ Symbology Industry call held on January 22, 2008, FIF and SIFMA distributed a survey to further understand market participant concerns. Key highlights from the survey responses¹⁴ are as follows:

- **Only 24% of respondents prefer special characters.** The remaining respondents either had no preference (13%) or prefer expanding the field size over using special characters.
- **71% of respondents can accommodate a field size of seven or more characters.** Although, elimination of special characters may not necessitate expanding symbol field size beyond 6 characters. (Note: Three firms did not respond to this question.)
- **98% of respondents favored standardization of suffix symbology.**

¹³ See [HTA 2005-133](#).

¹⁴ Survey responses were received from 45 entities.

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- **81% favored using the existing CMS suffix convention across markets.** (Note: Two firms did not respond to this question.)
- **Applying the CMS standard to 1-, 2, 3 character symbols and the existing NASDAQ 5th character modifier to 4 character root symbols is not universally supported.** 49% either favored or had no preference and 40% opposed it. The remaining firms had no response or indicated further analysis is required.

Based on FIF/SIFMA survey feedback, we recommend that NASDAQ suspend the implementation of the Integrated Platform suffix symbology until the Exchange Symbology Plans are finalized. Implementing a standalone suffix convention is premature given that the SEC Notice for Comment, [File: 4-534](#) which questions the inclusion of suffixes in the Plans has not been published in the Federal Register for comment.

NASDAQ and the other exchanges should work with industry participants and the SEC to adopt a single symbology plan for all NMS securities. As part of the evaluation process, the existing CMS suffix convention should be considered as a potential standard.

2 Background

Dot Modifier Schema (November 14, 2005 – September 29, 2006)

The Nasdaq Suffix Symbology effort began in November 2005. The initial suffix proposal added a period before the existing NASDAQ suffix in agreement with the NYSE approach of adding a dot delimiter to indicate subordinate issues. See November 14, 2005 [HTA 2005-133](#). In order to address the market data impact of the suffix initiative, on January 26, 2006 NASDAQ issued NVA 2006-005. The NVA stated that in order to accommodate the dot delimiter no changes would be required to the SIP feeds – UQDF, UTDF, OMDf.

Comstock Suffix Schema (September 30, 2006 – November 16 2006)

On September 29, 2006, NASDAQ announced it would move to the Comstock symbology suffix. (See [HTA 2006-144](#).) On October 4, NVA 2006-065 announced data feed modifications to their proprietary feeds.

Modified Comstock Schema (November 17, 2006 – August 2007)

NASDAQ revised the values for those issue types using the backslash ("\") as a delimiter as well as the value for "With Warrants/With Rights". See [HTA 2006-193](#). At that time, FIF raised concerns over the use of special characters, particularly the asterisk. NASDAQ's response was that firm's would have to program workarounds to accommodate the asterisk. Additionally, HTA 2006-193 indicated there would be a phased roll-out of the new suffixes. However, in Mar 1, 2007 when NASDAQ encouraged readiness with Comstock suffixes, they announced the rollout will be in a big bang not a phased rollout. See [HTA 2007-50](#).

With the focus on Reg NMS and FINRA OATS, FIF requested that NASDAQ delay implementation, consider eliminating special characters, and provide test symbols in production to assist firms in determining the impact of the symbology effort. Unlike other initiatives where test symbols are used for testing system modifications, test symbols provided as part of the symbology initiative would assist firms in analyzing/sizing the implementation effort. See Mar 28, 2007 [FIF Comment Letter](#). In preparing this comment letter, FIF polled its membership and received twenty-one responses – over 60% of firms requested additional time and the remaining

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firms had already completed significant resources in order to implement the Comstock suffix convention.

In response to the FIF comment letter, on Mar 29, 2007 NASDAQ delayed implementation and stated they will give 3 months notice prior to finalizing the implementation date. See HTA [2007-074](#). On April 26, 2007, NASDAQ posted a list of current stocks with a fifth character modifier. See HTA [2007-084](#). On May 9, 2007, NASDAQ indicated they would offer FIF requested test symbols in NTF by the end of May. See HTA [2007-088](#). However, no test symbols were made available.

On June 21, 2007, NASDAQ pushed date to 1Q2008 using the Comstock suffix symbology. See [HTA 2007-128](#). No firm dates were provided for testing or production, although NASDAQ stated they would give 90 days notice before the go-live date. No test symbols were made available at that time.

Integrated Platform Suffix Schema (August 2007 -)

At the August 17, 2007, FIF Symbology WG meeting, NASDAQ announced they were switching their suffix symbology schema, to the Integrated Platform Suffix Convention. This convention is currently used for trading NYSE/AMEX issues on NASDAQ via RASH, OUCH, INET FIX, and for ITCH. However, those members connecting to NASDAQ via FIX and CTCL use the CMS suffix convention for trading these securities on NASDAQ.

FIF member response to the suffix schema change was as follows:

- Market data vendors on the call stated that once the suffix convention is finalized additional work will be required to implement the new symbology. They do not anticipate problems in implementing the suffix conventions either in mapping to their own symbology and/or passing through the exchange symbol.
- Broker dealers expressed concerns related to harmonizing symbology across multiple market data and order entry systems. Integrating special characters into telephone inquiry systems and mainframe systems is a challenge. Because firms are using different vendors and in-house systems the level of implementation effort required is not the same across firms.
- Some firms raised concerns regarding the use of additional special characters that have yet to be analyzed. Special characters that were part of the Comstock symbology caused similar problems for some firms especially use of the asterisk. The use of a numeric value instead of special characters was discussed.
- NASDAQ agreed to consider feedback received by August 21 but acknowledged that at this point the Suffix Platform Symbology is likely to be adopted.
- Without having a final decision on which suffix convention will be used, firms and vendors cannot move forward with implementation.
- Significant resources and time have already been spent on the implementation of the Comstock symbology. Work already done on implementing the Comstock suffixes will have to be revisited.

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Additionally, FIF members discussed an implementation-focused response to the Exchange Symbology Plan [SEC Notice for Comment](#). The [FIF Comment letter](#) made the following points:

- The timing of this evaluation is appropriate since NASDAQ recently implemented trading in less than 4 character symbols. If any of these securities start trading using suffixes, there is a potential for inconsistency across exchanges. Thus, the SEC should act quickly to institute a formal plan to avoid duplicative symbols and provide a definitive repository for NMS symbols, establishing a common suffix convention across exchanges.
- With the implementation of Reg NMS, securities listed on one exchange are tradable on many others. We encourage the SEC to consider a symbology plan consistent with integrated markets that would reduce investor confusion and support trading across multiple markets.
- Not only would a consistent suffix symbology provide for more efficient cross-exchange trading, a common suffix convention would be beneficial for business continuity purposes in the event that a primary exchange was unable to trade.
- As part of the exchange symbology plan, we recommend establishing industry-wide test symbols for use in both options and equity implementation initiatives.
- Any symbology plan adopted should ensure that ticker symbols remain in the public domain and not become the intellectual property of the issuing entity. Ticker symbols are an essential identifier that should not be subject to distribution or licensing fees.
- Implementing changes to symbology is a time-consuming and resource intensive process, the SEC should take a far-sighted approach to achieving a consistent NMS symbology.

Following the August 17 FIF Symbology WG meeting, the following FIF members provided feedback on the proposed Integrated Suffix Platform:

- Bloomberg
- Broadridge
- Citigroup
- Credit Suisse
- Exegy
- Fidelity Investments/National Financial Services LLC
- Goldman Sachs Execution & Clearing
- SunGard Phase 3
- Thomson Financial
- UBS

The feedback provided was as follows:

Several firms raised concerns about NASDAQ adopting a symbology that is different from existing exchange suffix conventions especially now that a uniform National Market System exists at a regulatory level. These firms suggest that NASDAQ and the other exchanges work with the industry to adopt a single symbology plan for all NMS securities. The existing CQS/CMS suffix convention described in the second and third column of http://www.nasdaqtrader.com/trader/intermarket/cqs_symbol_convention.stm should be considered in discussions regarding an NMS symbology. Using a common symbology has a number of benefits including:

- *Reduced development costs for industry adoption (firms are already using CQS/CMS conventions for trading in 1,2,3 character symbols)*

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- *Less end user confusion – suffix conventions will be portable as firms switch between exchanges for listing; CQS/CMS suffixes are natural language recognizable and less likely to cause fat finger errors*

Additional firms have indicated their agreement with the above position but are waiting for internal sign offs before providing “official” feedback.

Feedback specifically relating to the Single Suffix convention is as follows:

- *Not all front end Web Systems can support the proposed special characters.*
- *The asterisk *, in particular is used as a "wild card" and for other references in various mainframe, distributed systems and transmissions.*
- *Colons have been known to cause problems in client and vendor transmissions.*
- *Switching to the new NASDAQ suffix symbol convention will require additional resources and may impact the proposed timeline of implementation.*

While NASDAQ acknowledged the concerns raised by FIF members, they decided to move forward with the Integrated Platform suffix convention. See August 29, 2007 HTA [2007-183](#). Despite the fact that a new symbology with additional special characters was introduced, the implementation date remained 1Q2008.

Based on feedback from FIF members, NASDAQ introduced 48 test symbols for testing in the Nasdaq Test Facility (NTF) on November 2, 2007. See [HTA 2007-221](#). This was the first instance of test symbols for the suffix implementation.

Subsequent to the initial NTF, NASDAQ has offered testing opportunities on nights and weekends. During this period FIF and SIFMA members had the opportunity to evaluate the impact of the Integrated Platform suffixes on their systems.

3 Current Status

Concerns raised by FIF and SIFMA members prompted the January 22, 2008 FIF/SIFMA NASDAQ Symbology Industry call. Following the meeting, FIF and SIFMA distributed the following survey to better understand the nature and scope of implementation issues.

During the FIF/SIFMA NASDAQ Symbology call, firms raised the issue that implementing special characters was potentially a bigger effort than expanding the symbol field size beyond 6 characters. In order to better understand, the implementation effort we would like to poll our members. Please respond to the following questions by Monday, January 28.

1. *Which is a bigger implementation effort – (a) accommodating an expanded field size or (b) accepting special characters? Do you have a sense of the number of man days/cost of each option?*
2. *Do your systems have a field size restriction of 6 characters? If not, what field size restriction do you have?*
3. *Today, NYSE has 3 (or fewer) character root symbols with suffixes using the CMS suffix convention. Would this approach work for Nasdaq-listed securities? Does standardization with respect to suffixes make sense?*
4. *Would it be easier if NASDAQ were to agree to adopt the CMS suffix convention for their issues with fewer than 4 characters and maintain the current 5 character suffix convention for 4 character symbols?*
5. *Do you have any other suggestions/thoughts on reducing the implementation effort?*

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Forty-five firms responded to the survey as shown in Table 1 below.

Table 1. FIF/SIFMA Survey Respondents

Market Data Vendors	Broker Dealers	Exchanges/ECN
<ul style="list-style-type: none"> • Bloomberg • Exegy • Interactive Data Pricing & Reference Data • Reuters • Telekurs • Thomson Market Data Services <p>Service Bureau Vendors</p> <ul style="list-style-type: none"> • Broadridge • CSS • Fidessa • GL Trade Americas • Lava Trading • Omgeo • SunGard BRASS • SunGard Phase 3 • Thomson Transaction Services • Townsend Analytics 	<ul style="list-style-type: none"> • Automated Trading Desk • Barclays Capital • Bear Stearns • BNP Paribas • Charles Schwab • Citigroup • Cowen • Credit Suisse • Deutsche Bank • E*Trade • Fidelity • Goldman Sachs/GSEC • H&R Block • JP Morgan Chase • Lehman Brothers • LiquidNet • Bernard L. Madoff Investment Securities • Merrill Lynch • Pershing • Raymond James • Southwest Securities • Susquehanna International Group • TD Ameritrade • UBS 	<ul style="list-style-type: none"> • AMEX • DirectEdge • ISE • NSX <p>DTCC Response applies to DTC and NSCC.</p>

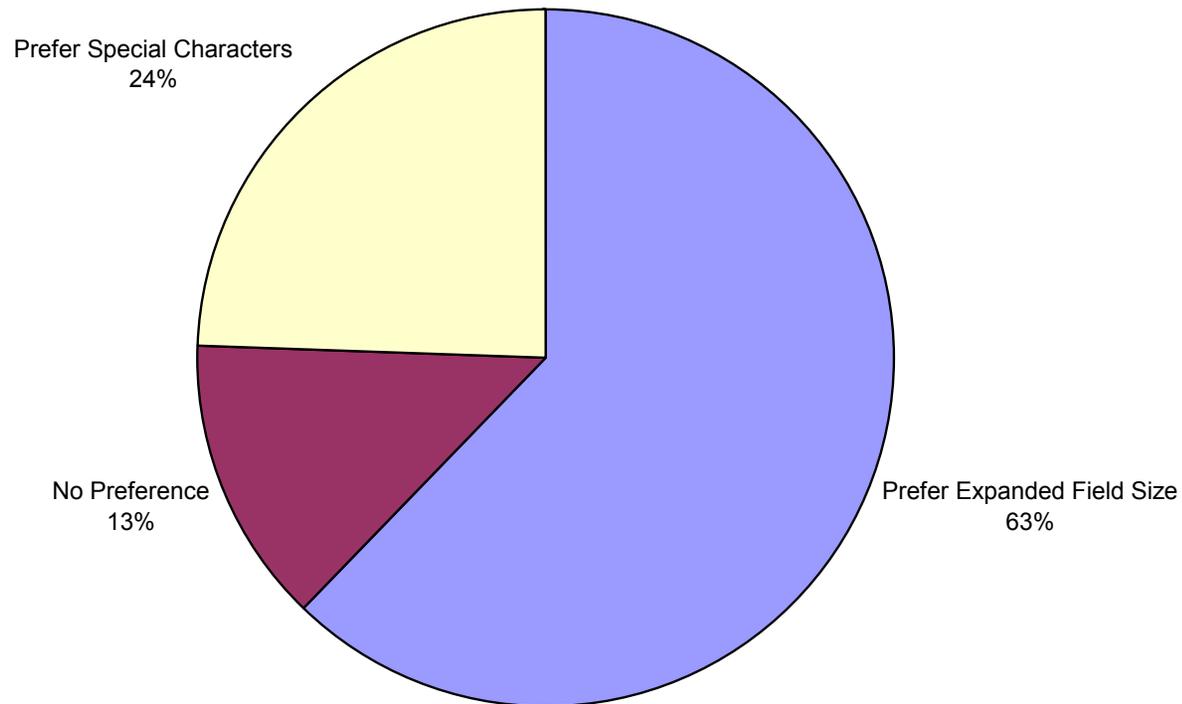
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4 FIF/SIFMA Survey Results

4.1 Question 1: Expanded Field Size/Special Characters Implementation Effort

Which is a bigger implementation effort – (a) accommodating an expanded field size or (b) accepting special characters? Do you have a sense of the number of man days/cost of each option?

Implementation Preference	Broker Dealer	Service Bureau	MD Vendor	Exchange/ECN	DTCC	Total
Prefer Expanded Field Size	17	4	4	2	1	28
No Preference	1	3	1	1		6
Prefer Special Characters	6	3	1	1		11
Total	24	10	6	4	1	45



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Implementation effort varied widely across survey responses. See below for comments on implementation effort required:

Table 2. Implementation Effort Comments

Firm Type	Expanding Field Size Comments	Using Special Characters Comments	Easier Implementation
Broker Dealer		50 man days and \$750,000-\$1,000,000.	Expand Field Size
Broker Dealer	No work required	2 man-months of effort (mostly testing) in total, maybe more	Expand Field Size
Broker Dealer	We believe that an increased field size is not necessary. Other options like replacing all special characters with a numeric value of "1" would keep the same field size and eliminates the issues created by introducing special characters.	3 of our vendors cannot handle the special characters and all of them are mapping them differently! This has exponentially increased the implementation challenges. As a result, there is bound to be a lot of investor/client/FA confusion.	Expand Field Size or use alphanumeric characters maintaining the current field size
Broker Dealer	Zero work for us	Accepting the special characters - takes more effort by a long way. Probably 2 man-months of effort (mostly testing) in total, maybe more. The problem is around the fact that these special symbols often have special meaning within IT systems (especially characters like the asterisk or ampersand).	Expand Field Size
Broker Dealer	Both projects are going to involve significant development and testing. Out of the 2 available options, we would like to vote for having an expanded field size rather than accepting special characters.	We have several systems where it would be rather difficult to overcome the limitation of use of special characters.	Expand Field Size
Broker Dealer	Accommodating an expanded field size past six characters is the greater effort.	We have already completed a majority of the development needed to support the special characters at a cost of over one million dollars. Expanding the field size past six characters would significantly increase our effort and cost.	Special Characters
Broker Dealer	It will likely be more work to have to expand the fields in the feeds as we would then end up making the Nasdaq feeds translate from NY symbology into our internal format instead of what we do now. To change to expand the character size would be some significant amount more.	The project for current NASDAQ symbology is 4 to 5 developer months of work.	Special Characters

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Firm Type	Expanding Field Size Comments	Using Special Characters Comments	Easier Implementation
Broker Dealer	For many systems, a field size of up to 10 characters could be supported in databases; however, some databases could be affected by more than 6 characters.	Accepting special characters seems to be a bigger issue, as it interferes with logic and data parsing. Many of the special characters hold other meanings in the applications used. For the special character issue, we have received a dev/QA cost value of up to a year and a half for some systems.	Expand Field Size
Broker Dealer	We usually have no trouble accommodating a larger field size. Some legacy code may have checks for 3-character symbols and determine the exchange type based on that. However, these should be rare these days.	Special characters are a problem if we output symbols to XML or HTML and possibly when symbols are used in regular expressions. Symbols with single quotes, for instance, can cause problems unless properly encoded/ escaped.	Expand Field Size
Broker Dealer	Moving to a symbology that is longer in width would require us to test only since most of our apps already handle the entry of wider formats including CUSIP, ISIN, RIC and Bloomberg codes. The effort would likely run under \$100,000.	Our development estimate to remediate and test applications to handle the special characters is approximately \$1.0 million - we have forty (40) applications that are impacted. The level of remediation depends on the platform and the age of the application.	Expand Field Size
Broker Dealer	We do not have a sense of the man day/costs but expanding the field size would require little effort and the effort required for special characters will be considerable.	Special Characters requires the greatest effort. Days/cost:	Expand Field Size
Broker Dealer	Accommodating a field up to 8 characters (which is our current limit) is less effort Field size bigger than 8 characters would require additional work but still feel that there is less work than accepting special characters.	In other words, favor not using special characters.	Expand Field Size
Service Bureau	40+ person-days	40+ person-days	No preference
Service Bureau	While we don't have the development sizing yet, expanding the current security field size to more than six characters will be a monumental effort. It will impact every code, screen, report, process and database that the security master touches including our architecture.		Special Characters

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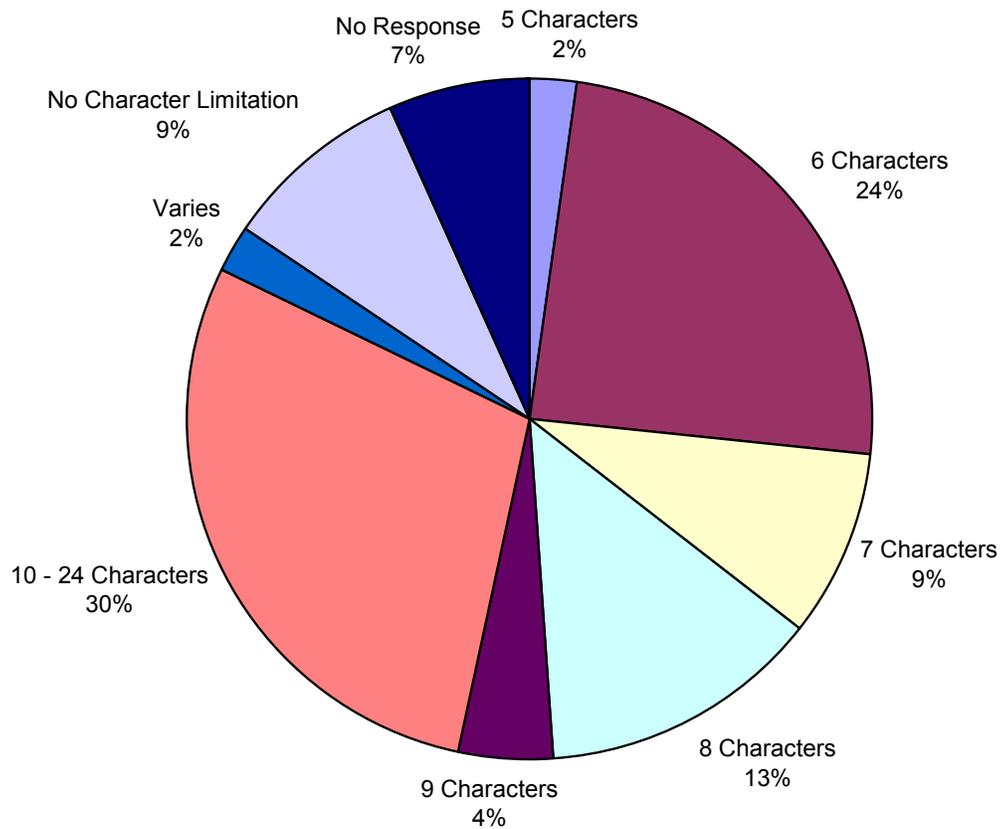
Firm Type	Expanding Field Size Comments	Using Special Characters Comments	Easier Implementation
Service Bureau	We will have a major undertaking on our hands if we expand symbol fields to >6 characters but in the long run we will have a uniform symbology across the board. Our development estimate came in at 1.1M (\$) it includes development work on our routing engine and all of our front end GUI products both sell and buy side.		Special characters are easier but expanded field size better in the long run.
MD Vendor	Accommodating a bigger field size would be a bigger effort on our part - many times larger than accommodating special symbols.		Special Characters
MD Vendor	4 person-days	35 person-days	Expand Field Size
MD Vendor		We have spent 2 months (at least 2 hours or more daily) doing this change and we cannot calculate the costs but can get back to you on this. NASDAQ uses Non-ISO standard characters and should be removed.	Expand Field Size
Exchange/ECN	Expanding our rules beyond 6 characters is a much larger project- Man Days=TBD but substantial		Special Characters
Exchange/ECN	Expansion only: 50 person days (\$80,000).	Special characters: 150 person days (~\$250,000).	Expand Field Size
DTCC	<p>The expansion of the symbol field to 5 characters requires coding at the application level. Each corresponding downstream application must also be reviewed to ensure the 6 character length can be accommodated.</p> <p>The implementation time and effort would be significantly reduced if there were no special characters.</p>	<p>The use of special characters in the equity stock symbol has an even more far reaching impact, both on receipt of and sending out data to the participants, where it is translated multiple times in the process. Universal code tables used for the MQ, DB2 and NDM processes are not structured to read and interpret (about 4) the special characters. This may impair the data flow. The displays may also be impacted by unreadable characters or characters that do not translate to the original intended value. (As an example, the ! and ^.) Even with special characters, expanding the field size will be required for some apps. At this time the estimated work hours involved with testing and some coding changes is approximately 4,500 hours.</p>	Expand Field Size

Appendix 1. FIF/SIFMA NASDAQ Suffix Symbology Survey

4.2 Question 2: Field Size Restriction

Do your systems have a field size restriction of 6 characters? If not, what field size restriction do you have?

Field Size Restriction	Broker Dealer	Service Bureau	MD Vendor	Exchange/ECN	DTCC	Total
5 Characters				1		1
6 Characters	6	3	1	1		11
7 Characters	4					4
8 Characters	3		2	1		6
9 Characters	2					2
10 - 24 Characters	3	6	3	1		13
Varies					1	1
No Character Limitation	3	1				4
No Response	3					3
Total	24	10	6	4	1	45



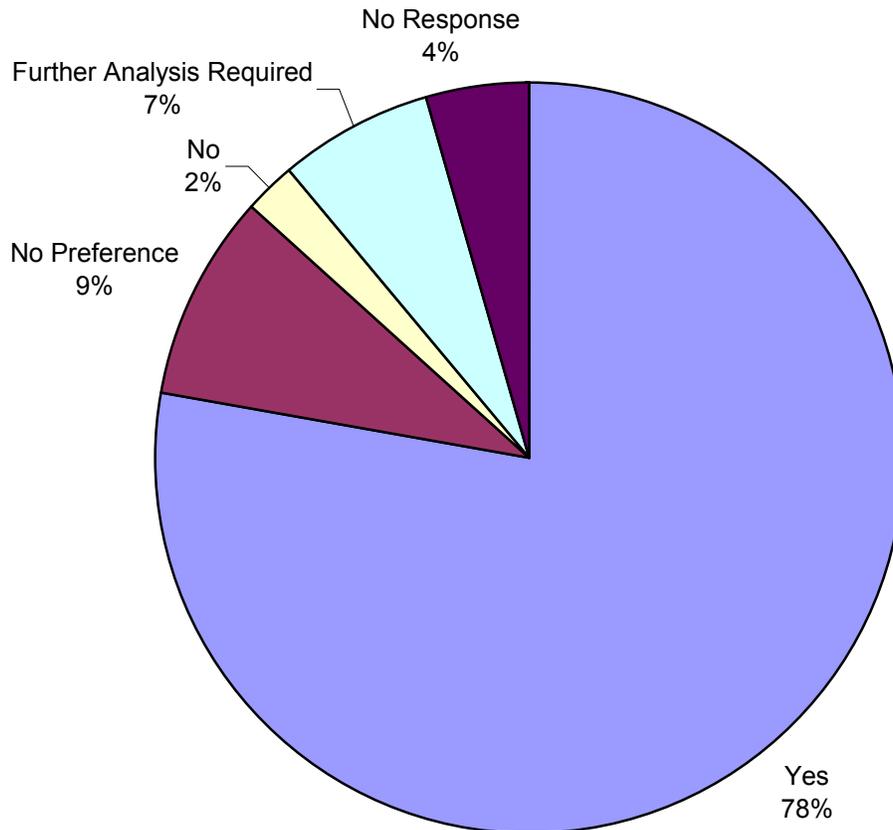
Appendix 1. FIF/SIFMA NASDAQ Suffix Symbology Survey

4.3 Question 3: Importance of Standardization

Today, NYSE has 3 (or fewer) character root symbols with suffixes using the CMS suffix convention. Would this approach work for NASDAQ-listed securities? Does standardization with respect to suffixes make sense?

98% of respondents favor standardization of suffixes across markets. Most recommended using the existing CMS suffix convention across markets:

Standardize on CMS	Broker Dealer	Service Bureau	MD Vendor	Exchange/ECN	DTCC	Total
Yes	18	8	5	3	1	35
No Preference	1	2	1			4
No	1					1
Further Analysis Required	2			1		3
No Response	2					2
Total	24	10	6	4	1	45



Appendix 1. FIF/SIFMA NASDAQ Suffix Symbology Survey

Additional Comments:

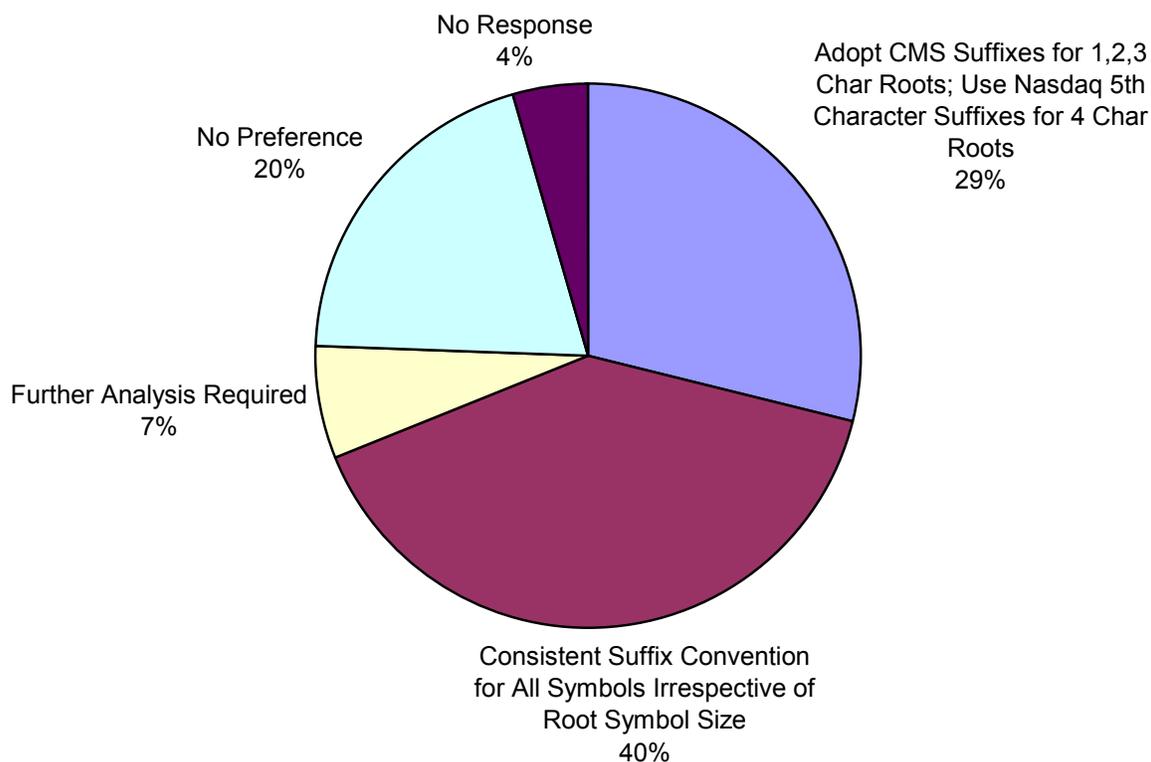
- Standardization makes sense and is something the industry should aim for. Several competing symbologies exist to identify Listed subordinate stocks, these include SIAC's CMS codes, SIAC's CQS codes, Comstock codes, NASDAQ's INET/integrated system codes and NASDAQ's legacy ACT/TMTR codes. Systems would be simpler and significantly more reliable if there was a single, industry standard symbology to identify the listed subordinate stocks. On the NASDAQ side, the current NASDAQ 4 and 5 character symbols have several beneficial features:
 - They are used universally by everyone and are an effective standard.
 - They are compact and can be accommodated by all existing systems.
 - They are formed solely of upper case letters so they are easy to type, easy to view and contain no problematic punctuation.
- The CMS suffix symbol usage would create uniformity and standard symbology in the market place. We also mentioned to NASDAQ that keeping this standard would also help disaster recovery scenario as in the case of September 11 where NYSE was out of commission and NASDAQ could have helped in processing the feed if we had the same symbology standard. However, this would not be feasible under the current circumstances. Standardization makes a lot of sense.
- Standardization would make a lot of sense, as would an alphanumeric character-based system. The crazy new symbols proposed are confusing and the trading desks are very much against them. The character-based standard of the NYSE, or the existing NASDAQ 5-character convention, are both much preferred.
- There are mixed opinions on this question, changes to NASDAQ suffixes to conform to CMS convention is preferable in some ways, so not to carry and maintain two conventions, however changes may be required in the trading and market data apps. This requires further analysis if this position were adopted
- We would like to strongly support the view that there needs to be standardization with respect to the suffixes used by all US exchanges (and not just NYSE and NASDAQ). No matter what the convention used is, there needs to be a common convention established as this will save us all significant development and testing, converting eventually into better value for our end users.
- The entire industry can obviously handle CMS suffixes on three-byte symbols, so the question of whether CMS suffixes would work for NASDAQ comes down to one extra byte

Appendix 1. FIF/SIFMA NASDAQ Suffix Symbology Survey

4.4 Question 4: Suffix Convention by Root Symbol Size

Would it be easier if NASDAQ were to agree to adopt the CMS suffix convention for their issues with fewer than 4 characters and maintain the current 5 character suffix convention for 4 character symbols?

Suffix Convention by Root Symbol Size	Broker Dealer	Service Bureau	MD Vendor	Exchange/ECN	DTCC	Total
Adopt CMS Suffixes for 1,2,3 Char Roots; Use Nasdaq 5th Character Suffixes for 4 Char Roots	8	2	1	2		13
Consistent Suffix Convention for All Symbols Irrespective of Root Symbol Size	10	5	2	1		18
Further Analysis Required	1	1	1			3
No Preference	4	1	2	1	1	9
No Response	1	1				2
Total	24	10	6	4	1	45



Appendix 1. FIF/SIFMA NASDAQ Suffix Symbology Survey

4.5 Question 5: Additional Considerations

Do you have any other suggestions/thoughts on reducing the implementation effort?

Broker Dealer Response:

Revisit the entire methodology and find a solution that eliminates the complexities of introducing special characters and allows all vendors to adopt the symbology without the need for symbol mapping. The solution should allow all firms to implement the changes utilizing the native NASDAQ symbol so it consistent in all places that it is sourced or stored.

Broker Dealer Response:

We would again like to stress the importance of standardization of the conventions used across the industry. This creates significant issues for all our systems and takes up a lot of resources that could have been used more fruitfully elsewhere. Also we would like to insist on adequate time for implementation, development and proper testing cycles for this project as it impacts several internal as well external systems for all of us.

Broker Dealer Response:

Consider using NYSE suffix naming convention standards. From a firm perspective, it may be more cumbersome for advisors to communicate symbols with special characters to their clients. Certain special characters may be harder to describe verbally as advisors make recommendations to clients.

From a systems perspective, we believe that handling special characters is a larger risk because we have seen occurrences of inaccurate translations of special characters in downstream systems when transmitting files from one platform to another.

The risk appears to be higher with special characters because an inaccurate translation of a special character may go undetected for a period of time. With the expanded field we would anticipate a risk of truncation of a symbol if one of the columns was overlooked and not expanded in an upstream source system. It would be less difficult to troubleshoot a truncation issue than an inaccurate character translation issue, as it is more likely that a truncation error would be detected quicker. Although we would perform extensive impact analysis in either scenario, if a failure were to occur, we would prefer a "hard failure" that would quickly surface so that it could be quickly resolved as opposed to a "sleeper" issue that could propagate itself before being identified.

Our securities master file allows for 10 characters, which would already accommodate an expanded NASDAQ symbol.

Impact analysis and QA on front-end systems that display symbols would have to be performed in either case. If inaccurate character translations from system to system occurred during QA, the hours necessary to implement the change and the risk of changing character sets globally would increase significantly.

In summary, most of the effort related to either of the two options would be related to the QA involved to assure that impact is eliminated or minimized. Risk appears to be significantly higher with the special character option.

Appendix 1. FIF/SIFMA NASDAQ Suffix Symbology Survey

Broker Dealer Response:

More concerned currently about our ability to cross reference and subscribe to MDS data and conversion rules for routing, than I am about the symbol nomenclature itself. It would seem that a ticker or symbol should be ubiquitous regardless of the market on which it trades or the MDS system publishing it, albeit I acknowledge that for systems providing data for many markets or asset classes additional designation may be required.

Broker Dealer Response:

We have completed 87% of production pre-deployment for integrated NASDAQ symbology utilizing special characters and will be participating in NASDAQ UAT weekend test on February 9, 2008.

We are concerned about the three previous questions that seem to indicate that there is thinking to move away from the "special character" effort that we have all worked on for the last 10 months. To change to some other format at this late date doesn't make sense.

Broker Dealer Response:

As a Broker Dealer we would like to see a consistent symbology in place for the entire industry to use as a standard. This will make using these types of issues easier to quote for or trade our Retail and Institutional clients.

Broker Dealer Response:

One of our technical groups gave the following proposal for improving the process: NASDAQ should provide consumers of the data the option to test feeds at night by playing data through the existing lines. Perhaps using a different login, but something that allows firms to actually test a real feed. NASDAQ can play all their little conversion games on this and people can test more easily as they progress in their implementations. Then firms would be able to route these IP addresses into their test application environments and just test away. We doubt NASDAQ can do this with ACT/SOES connections. NASDAQ could also send raw logs to everyone for testing. In that instance, ftp would be far preferable to email.

Service Bureau Response:

Leave things the way they are!

The US markets operate well enough with a mixture of stocks that have 1, 2, 3, 4 and 5 character symbols (with no suffix) and stocks with a 1, 2 or 3 character roots and suffixes. NASDAQ's systems already handle trading of listed subordinate stocks with suffixes as well as 4 and 5 character long symbols and there are already NASDAQ listed stocks with symbols less than 4 characters in length.

The NASDAQ Trader web site says:

"NASDAQ must adopt a new suffix symbology to assist our customers in separating the root symbol from the subordinate issue modifier type to properly identify the NASDAQ-listed issue." It is unclear why NASDAQ feel the need to make this change but it really isn't assisting anyone. NASDAQ's customers don't want this and the suggestion that anyone would have difficulty separating the 4 character root off the start of a 5 character symbol is bizarre.

By their own admission on the FIF/SIFMA call, NASDAQ is unable to find a new symbology that is compatible with all of their customers' systems. Symbols longer than 6 characters will apparently cause serious issues for some systems, symbols with punctuation will cause serious issues for others and any change means a great deal of testing and work for everyone – all for no apparent benefit.

Appendix 1. FIF/SIFMA NASDAQ Suffix Symbology Survey

There should be no reason why NASDAQ can't retain their existing 5 character symbols and also take on listings of subordinate issues of former NYSE-listed companies with suffixes on their symbols. All these symbol types are already processed by NASDAQ's systems every day.

The industry has already accepted that a stock's symbol length and its listing market are unrelated.

Service Bureau Response:

All Market Centers should adopt a common symbology - this would be easier not only on the vendors who keep having to adhere to different symbologies but to the traders themselves that have to remember the different symbology based on venue.

If NASDAQ is going to move forward with changes on March 31st - the following would help to ensure a smooth transition:

1. *Conduct an industry wide test (including the other venues and market data vendors)*
2. *Implement a smaller list on day one and provide a schedule to convert sets of symbols over a period of weeks/month*

Service Bureau Response:

The easiest way is to keep the status quo and not to change anything. After the concern and issues raised by the market participants, the whole stock symbol changes for those with 5th character modifiers should be re-evaluated and possibly even back-burnered unless there are compelling reasons to move forward. Nonetheless, NASDAQ should provide for enough time to accommodate development and testing work before setting an implementation date. They should consider using actual production symbols in tests. In addition, NASDAQ should make available the list of impacted securities at least a month before the implementation date.

Service Bureau Response:

We would strongly endorse an Industry-wide plan that would standardize symbols and suffixes across markets by leveraging longer symbols and no "special characters." It seems that the SEC is in a position to develop and implement this type of plan. If a plan for Industry-wide standardization is unrealistic, and if NASDAQ must move forward with some sort of changes for just their internal systems, we would urge them to poll the Industry to develop a list of "special characters" that should not be used. In our particular case, removing just 6 "special characters" would completely alleviate all known issues.

Market Data Vendor Response:

Users frequently need to use symbols in non display applications such as word processors, spreadsheets, html pages, etc., the use of special characters in symbols can cause substantial difficulties and should be avoided where possible. Restriction of symbols to alpha numeric characters would ensure the highest level of interoperability.

Market Data Vendor Response:

We are ready to go ahead with the current Nasdaq Integrated Platform suffixes but if they were to decide to expand the symbol and use the CMS symbology it would make more sense. Whichever way works for us now.

DTCC Response:

The information security implications have not been addressed here, but should be raised as NASDAQ expects the entire industry to deploy new code to accommodate their change as a big

Appendix 1. FIF/SIFMA NASDAQ Suffix Symbology Survey

bang implementation. This issue is even more wide spread than the use of special characters. Given the extraordinarily difficult task of testing all applications for the impact of using special characters and the high risk associated with the big bang implementation, this initiative should be set to a more manageable date in the future. The industry should be in concert with NASDAQ to either eliminate the use of special characters or phase in the approach.

5 Next Steps/Recommendations

Based on FIF/SIFMA survey feedback, we recommend that NASDAQ suspend the implementation of the Integrated Platform suffix symbology until the Exchange Symbology Plans are finalized. Implementing a stand alone suffix convention is premature given that the SEC Notice for Comment, [File: 4-534](#) which questions the inclusion of suffixes in the Plans has not been published in the Federal Register for comment.

NASDAQ and the other exchanges should work with industry participants and the SEC to adopt a single symbology plan for all NMS securities. As part of the evaluation process, the existing CMS suffix convention should be considered as a potential standard.

Appendix 2: FIF Exchange Symbology Comment Letter – August 23, 2007

FINANCIAL INFORMATION FORUM

5 Hanover Square
New York, New York 10004

August 23, 2007

212-422-8568

Nancy M. Morris, Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

Re: File Numbers 4-533 and 4-534 – Exchange Symbology Plans

Dear Ms. Morris:

The Financial Information Forum would like to take this opportunity to provide feedback on the Exchange Symbology Plans. FIF (www.fif.com) was formed in 1996 to provide a centralized source of information on the implementation issues that impact the financial technology industry across the order lifecycle. Our participants include trading and back office service bureaus, broker-dealers, market data vendors and exchanges. 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 Symbology Working Group addresses both equity and options symbology initiatives including the Options Symbology Initiative and the Nasdaq Symbology initiative from an implementation perspective. Our WG reviewed the SEC Notice for Comment, Release No. 34-56037 and recommends the implementation of a single Exchange Symbology Plan that covers all NMS securities with consistency across SROs.

The timing of this evaluation is appropriate since Nasdaq recently implemented trading in less than 4 character symbols. If any of these securities start trading using suffixes, there is a potential for inconsistency across exchanges. Thus, the SEC should act quickly to institute a formal plan to avoid duplicative symbols and provide a definitive repository for NMS symbols, establishing a common suffix convention across exchanges.

- With the implementation of Reg NMS, securities listed on one exchange are tradable on many others. We encourage the SEC to consider a symbology plan consistent with integrated markets that would reduce investor confusion and support trading across multiple markets.
- Not only would a consistent suffix symbology provide for more efficient cross-exchange trading, a common suffix convention would be beneficial for business continuity purposes in the event that a primary exchange was unable to trade.
- Additionally, as part of the exchange symbology plan, we recommend establishing industry-wide test symbols for use in both options and equity implementation initiatives.

In addition to achieving consistency in symbology implementation, any symbology plan adopted should ensure that ticker symbols remain in the public domain and not become the intellectual property of the issuing entity. Ticker symbols are an essential identifier that should not be subject to distribution or licensing fees.

Implementing changes to symbology is a time-consuming and resource intensive process, we encourage the SEC to consider the implementation effort and cost of current initiatives and take a far-sighted approach to achieving a consistent NMS symbology. As we have with Regulation NMS, Y2K and decimalization, we look forward to assisting industry implementation efforts.

Sincerely,



Manisha Kimmel
Executive Director, Financial Information Forum
on behalf of the FIF Symbology Working Group