

## Regulation NMS

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**On December 15th, 2004, the Securities and Exchange Commission (SEC) updated, re-proposed and voted to again release for comment the set of proposed rules collectively known as Regulation NMS. NMS stands for the “National Market System”, and the proposed rules are the most far-reaching overhaul of the way the US equities markets work that have been seriously contemplated in a generation.**

This article summarizes the key areas of the proposal and their evolution, and then looks at some specific implications that it has for FIX.

### **Trade-through rule**

Also known as the Order Protection Rule, the most talked about and controversial area of proposed Regulation NMS deals with “trade-throughs” - whether or not an order at an away market must be routed to, if a better price is available. With stated goals that include normalizing the order handling between the exchange-listed and over the counter markets, and encouraging visible limit orders and protecting their price, the SEC has changed the debate; from whether or not there should be a trade-through rule, to what extent should a trade-through rule be enforced.

As originally proposed, the trade-through regulations would have protected the best price, or top of book quote from each market center, while allowing, on an order-by-order basis, the ability to opt out from the best price protection. Along with that proposal, the SEC asked for comment on and seemed to be seriously considering, whether or not a trade-through rule was even necessary. Currently, the OTC market place operates without an order protection rule and many market participants have stated a preference for the model. Refer to the quote montage, below. Today, in an OTC security, without the trade-through rule, a trader could buy the 100 shares at ARCX priced at 93.70 and the additional 400 shares at 93.71, without regard to the better priced shares on INET.

After the NMS hearings in April of last year, the discussions shifted. No longer was the focus on the feasibility of an "opt out" type exemption, but rather on what would define a "fast market" versus a "slow market". With the SEC's extension of the comment period and supplemental request for comment that was published in May 2004, a trade-through rule seemed likely for quotes against which an automatic execution (non-human intermediated) was available.

Finally, with their latest re-proposal in December, the Securities and Exchange Commission has proposed that for markets that voluntarily participate in making available their full depth-of-book, the trade-through rule would apply to all of that market's quotes, including those away from the best bid and offer. Many in the industry have likened the depth-of-book protection proposal to what has long been a four letter word in the securities markets - a CLOB, or centralized limit order book.

Bid	Price	Size	Ask	Price	Size
INET	93.1000	1	INET	93.5000	2
INET	93.0000	1	ARCX	93.7000	1
ARCX	92.9500	1	ARCX	93.7100	4
ARCX	92.8900	7	INET	94.1700	6
ARCX	92.4000	4	INET	94.1800	1
INET	92.4000	4	INET	94.4000	10
ARCX	92.2000	10	ARCX	94.4800	10
INET	92.2000	10	BRUT	94.4800	10
BRUT	92.1200	10	INET	94.7600	1
INET	91.8400	1	INET	94.9600	10
INET	90.7800	2	INET	96.0000	1
INET	90.6900	15	INET	96.1900	1
INET	90.5100	1	INET	96.7500	2
INET	86.1200	1	INET	96.9800	10
ARCX	0.0100	1	ARCX	185.5200	1

Although the "opt-out" has long been off the table, and other exemptions including those for block trades have also been removed, there remain several exemptions in the proposed rule - most notably the intermarket sweep. The intermarket sweep exemption allows for the simultaneous routing of orders to multiple markets at multiple price points. If an order entry firm were to route orders to several markets simultaneously and indicate with its order that it was also routing to all of the better priced orders currently displayed in the market, then a market center could execute the order immediately, without regard to the better priced quotes.

Under the proposed trade-through rule and intermarket sweep exemption, a firm wanting to buy the stock quoted in the montage above, would have to buy the 200 shares at

INET at 93.50 before or at the same time as buying the 100 shares at ARCX at 93.70. When buying shares at multiple venues simultaneously, the orders would all need to be marked as part of an intermarket sweep.

A firm wishing to buy 5000 shares of the above stock would need to route several intermarket sweep orders. They would buy 1500 shares from ARCX (100 at 93.70, 400 at 93.71 and 1000 at 94.48), 1000 from BRUT (at 94.48) and the remaining 2500 from INET at multiple price levels (2000 shares from 93.50 to 94.76 plus 500 from the shares at 94.95). With the trade-through rule in effect, INET would only be able to ignore the better prices represented on ARCX and BRUT if the order was received as an intermarket sweep order. Likewise, BRUT would see the better prices at ARCX and INET and would not be able to trade-through those quotes until or unless those better prices were taken out.

### Access rule

The access rule of Regulation NMS is designed to create fair access, to and between the market centers and their quotes. As noted by the SEC, all of the order protection provisions of the trade through rule would be moot if there was not also a mechanism in place allowing access to those limit orders.

The access rule is designed to promote access to quotations in three ways. First, it enables and promotes the use of private linkages between the markets effectively eliminating mandated linkages like the Intermarket Trading System (ITS). Second, the access rule sets a limit on the fees charged by trading centers for access to their quotations, capping the fees at 30 cents per hundred (\$0.003 per share). Finally, it requires the market centers to establish and enforce rules that would prevent the locking and crossing of other automated quotes. As proposed, the locking and crossing of manual markets would be allowed.

The access rule also lowers the threshold at which market centers would become subject to public dissemination of quotation requirements and all of the access rules above; from 20 percent of the average daily volume to 5 percent.

### Sub-penny rule

The section of proposed Regulation NMS that has received the least debate is the one on sub-penny pricing.

In an attempt to prevent the practice of “stepping ahead” of limit orders by a nominal amount, the rule would prohibit the market centers from displaying, ranking or accepting orders for NMS stocks that were priced in an increment of less than \$0.01, unless the stock is quoted for less than \$1.00. If the price of the quotation is less than \$1.00, then the minimum increment would be \$0.0001.

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Even before Regulation NMS was proposed, various market centers were in the process of putting in place and updating their minimum pricing increment policies. More recently, at the start of 2005, Brut updated their sub-penny pricing policy, moving the threshold from \$5 to \$1, bringing it in line with the proposed NMS. Currently, there are only a few highly liquid equity securities priced above \$1 that actively trade in sub-penny increments, most notably the Qs (ticker QQQQ).

**Market data rules**

The market data rules update and simplify the market data revenue allocation formula, with several goals. First, the new formula eliminates any credit for manual quotes (quotes that are not available for automatic execution). Second, the plan attempts to eliminate manipulative behavior such as wash sales and tape shredding. While still requiring the market centers to disseminate their top-of-book information to the public through one of the industry consolidators, it also allows the market centers to distribute their data directly and independently; charging for it, or providing it for free, as they see fit. Finally, the plan creates an advisory committee participating in plan governance that includes both institutional and retail broker-dealers, an ATS, a market data vendor and an investor.

**FIX and NMS**

Since FIX is the lingua franca of trading, any changes to the rules and requirements of trading necessitate potential changes, or at a minimum - discussion, planning and ideally consensus around the underlying communication around the rules. We saw this in action just recently with Reg SHO and the conversations that were held among the many FIX

protocol users around how and where the required borrow and locate information should be passed.

As I see it, the majority of the areas covered by NMS will have little to no impact on the underlying communication. How market data revenues are calculated isn't sent down the pipe in a FIX message. A FIX New Order message or Quote message can be used as easily with sub-pennies as without. But, there are some definite open questions around what will be required to support the trade-through rule and its variations. Here we'll look at some potential implementations. Several FIX version 4.4 tags are referenced here. As has been done before, users would need to use these as non-standard tags in older versions of the protocol, or the information could be carried in similar, custom tags.

Starting with the question, “Does the trade through rule apply to this quote?” quotations must be classified as manual or automatic. For venues that are fully automatic, this may be implicit and can be tracked just by noting who the quote is from, but with the manual markets implementing various hybrid models, where in a quote message would a venue indicate whether they are running in “manual mode” or “automatic mode”?

**Some manual/auto-ex quote indicator options**

Possible Tag: Quote Condition (276)	Quote Type (537)	Quote Qualifier (695)
<b>Current Values:</b> Space-delimited list :	Int:	Char:
A = Open / Active	0 = Indicative	A = All or none
B = Closed / Inactive	1 = Tradeable	B = Market On Close (MOC) (held to close)
C = Exchange Best	2 = Restricted Tradeable	C = At the close (around/not held to close)
D = Consolidated Best	3 = Counter (tradable)	D = VWAP (Volume Weighted Avg Price)
E = ...		I = ...
...(more)		...(more)

Once quotations have been designated as protected by the trade-through rule, or not, it will be possible to route orders accordingly. The proposed exemptions and the information that may be required to be contained with an order, documenting the exemption, will be the challenge.

For example, when a firm wishes to trade through a particular venue because of the flickering quote exemption, is it enough to note "flickering quote exemption" with the New Order message? Must the firm also specify the venue through which it wishes to trade? If several orders are submitted under the intermarket sweep exemption, must each order note all of the price levels that it is honoring directly and that should be ignored?

### Some trade-through exemption indicator options

Possible Tag: ExecInst (18)	HandInst (21)	Order Restrictions (529)
<b>Current Values:</b> Space-delimited list :	Int:	Space-delimited list:
1 = Not held	1 = Automated execution order, private, no Broker	1 = Program Trade
2 = Work	2 = Automated execution order, public, Broker	2 = Index Arbitrage
3 = Go along	3 = Manual order, best execution	3 = Non-Index Arbitrage
4 = Over the day		4 = Competing Market Maker
5 = Held		5 = Acting as Market Maker or Specialist in the security
6 = Participate don't initiate		6 = Acting as Market Maker or Specialist in the underlying security of a derivative security
7 = Strict scale		7 = ...
8 = Try to scale		...(more)
9 = Stay on bid side		
0 = Stay on offer side		
A = No cross (cross is forbidden)		
B = OK to cross		
C = Call first...		
...(more)		

### NMS status

When the Securities and Exchange Commission voted to put back out for comment the latest version of Regulation NMS, it did so for a period of only thirty days. That comment period ended on January 26th, and the SEC has indicated that they expect to vote on the proposal in early 2005. There have been stories of growing political pressure on SEC Chairman Donaldson; and the depth-of-book protection proposal throws in to limbo other industry and regulatory initiatives like the NYSE's Direct+ / hybrid market initiative. Suffice it to say, all eyes are on the SEC.

Whatever happens with the rules and regulations, if and when they change, it will only add to the innovation and

evolution that is already ongoing. Market participants are coming up with new routing and sweeping technologies and incorporating them in to increasingly smarter algorithms. Even without regulation looming, the manual venues are releasing new auto-ex facilities and hybrid market structures. Through it all, like it has done with the other recent market structure changes we've seen the FIX protocol will be adapted and extended to support it all. **FIX**

### NMS and FIX Glossary

- ITS** The Intermarket Trading System is the mandated linkage currently used to route orders between the US exchanges.
- Locked / Crossed Market** When the bid and ask price are the same, a market is "locked". A market is "crossed" when the bid price is higher than the ask price. Locked and crossed markets are commonly seen as a sign of a market inefficiency - a buyer and seller whose prices match, but whose orders are not meeting.
- Reg SHO** Updated short sale regulations recently passed by the Securities and Exchange Commission, addressing locate requirements, close out procedures and price tests of short orders
- Tape Shredding** The practice of breaking up a larger trade in to smaller prints for example, a 1000 share order that is reported as ten 100 share trades
- Wash Sale** Buying and selling the same security at the same price to generate revenue from the two trade reports.
- Flickering Quote** Quotation in a security that updates multiple times per second; sometimes caused by a firm posting an order then immediately canceling it, repeatedly.

### Any thoughts on this or other articles?

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