



August 30th, 2010

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

Re: Consolidated Audit Trail, File No. S7-11-10

Endace welcomes the invitation to submit comments to the Securities and Exchange Commission (SEC) on the proposed rule establishing a Consolidated Audit Trail rule. Endace supports the SEC's efforts to improve transparency in the market and the audit of suspicious trading activities.

Endace is a global provider of data capture and time stamping technology to both government agencies and financial services companies. The company is acknowledged as a world leader in 100% data capture of both network and trade data, and of time stamping at the sub micro second level. We have extensive experience of supplying such technology to high frequency traders and major investment banks. Based on this experience we would like to provide some input to the SEC on the issue of Time Stamp Increments and Clock Synchronization.

Time Stamp Increments

Today Exchanges such as NYSE Euronext and BATS are claiming that they are executing orders in less than a millisecond (see Wall Street Journal on the January 6th 2010) and are displaying details of these trades in increments of milliseconds on their market data feeds. Clearly from an Exchange perspective the publishing of trade data at one millisecond increments is not just possible, its current practice. However Endace believes that one millisecond increments is not good enough.

To detect market manipulation or fraudulent activity by high frequency (strictly 'fast' rather than 'high frequency') traders it is necessary to understand the correct time correlation of trades. This implies that time stamps should be accurate to an order of magnitude more detailed than the speed at which trades are executed, otherwise its not possible to tell which trade happened first. Endace therefore suggest that all execution venues (be it Exchanges, ATSS, dark pools or large internalizers) report time stamped data to the SROs or a centralized audit authority accurate to 0.01 millisecond (10 microseconds). Technology to do this is readily available – in fact some Exchanges/ATSS already measure the speed of executions in terms of microseconds and publish summary information on the internet. (See http://batstrading.com/resources/features/bats_exchange_Latency.pdf) . Given the importance of this data to the SEC, Exchanges, ATSS, Dark Pools and internalizers should immediately implement this ten microsecond time stamp within the four months suggested in the CAT proposal. Relative to the costs, there would be immediate benefits

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in doing this and this could be implemented independently of any larger scale CAT project.

To increase transparency in the market, and to deter fraudulent activity it would be useful if the same timing increments were included in the market data feeds provided by execution venues. Implementing this would take longer as this would involve the re writing of the feed handlers of the receivers of such market data. To accommodate this activity, its suggested that a six month implementation time is adopted.

Again this should not be a major task if the execution venues are already internally adopting a ten microsecond time stamp for internal purposes and for audit reporting. The 'time stamp' field of the feeds would have to be increased to accommodate the extra timing 'bits' and this would lead to a slight increase in market data traffic. It should also be noted that the latest FAST FIX (v 1.2) protocol, which has been adopted by some Exchanges, already allows for timestamps at even the nano second level.

Specifying timing increments for Members of Exchanges and other market participants is more complex as they can range from a small broker with relatively un-sophisticated technology resources, to high frequency traders or large investment banks with large IT departments. Today the larger organizations sometimes track trade information at the microsecond level and the ones that do not, should be able to deploy such technology within a time period of six months. Endace therefore suggest that for Members a two tier approach is adopted. For low volume traders a time stamp accuracy of say 1 second could be adopted, whilst for high volume traders time stamp information of ten microseconds would be required (as it should be possible to derive accurate audit information for the low volume traders by looking at the audit reports form the execution venues and its also likely that the sophistication of possible market manipulation attempts from these participants will be low).

Clock Synchronization

The advent of relatively low cost GPS receivers that derive absolute timing information accurate to better than 0.1 micro-seconds has significantly eased the problem of clock synchronization across multiple global locations. Such technology costs a few thousands of dollars per installation and would readily provide required synchronization at the major data centers of execution venues. It is already in use by Exchanges and high frequency traders. The GPS timing signals are 'synced' to the UTC/NIST time clocks and provide a very high degree of accuracy. It should not be a major task to implement such a solution at all the major execution venues.

An added advantage of using GPS is that it is a global solution and hence could be used on audit activities that might involve manipulation of global markets.

Additional Requirements

One aspect not included in the CAT proposal is the need for major market participants to retain detailed information of all network packets and trade data at both the ingress and egress of their infrastructure. This would not need to be forwarded to any audit authority, but would prove useful in any investigations by regulatory bodies in some circumstances. It is currently possible to envisage scenarios where Denial of Service attacks could occur at a network level to slow down market activities or hinder the flow of market information that

could be used in sophisticated market 'attacks'. Such activities might not be apparent to application level reporting which would be unaware of such network issues. This would greatly improve confidence in the integrity of data and act as a further deterrence for fraudulent activity.

Endace hope that the above comments are useful to the SEC. If you wish to have further input or discuss the above in more detail we would welcome the opportunity to meet with SEC staff. I can be contacted via email at mike.riley@endace.com.

Sincerely,

A handwritten signature in black ink, appearing to be 'MR', with a long, sweeping horizontal stroke extending to the right.

Mike Riley
Chief Executive Officer
Endace Technology Limited