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December 11, 2013

Via Electronic Submission

Ms. Melissa D. Jurgens,  
Secretary of the Commission,  
Commodity Futures Trading Commission  
Three Lafayette Centre  
1155 21st Street NW.  
Washington, DC 20581

Re: Concept Release on Risk Controls and System Safeguards for Automated Trading Environments  
RIN 3038-AD52; 78 FR 56542

Dear Ms. Jurgens:

The Futures Industry Association<sup>1</sup> ("FIA") appreciates the opportunity to respond to the questions posed in the Commodity Futures Trading Commission's ("CFTC's") Concept Release on Risk Control and System Safeguards for Automated Trading Environments published in the *Federal Register* on September 12, 2013. As acknowledged throughout the Concept Release and described more fully in our responses, FIA member firms have been in the forefront of efforts to strengthen risk controls and system safeguards across the futures marketplace. The FIA, the FIA Principal Traders Group ("FIA PTG"), and the FIA European Principal Traders Association ("FIA EPTA")<sup>2</sup> have identified industry best practices with respect to risk controls that reduce the risk of market disruptions due to unauthorized access, software changes,

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<sup>1</sup> FIA is the leading trade organization for the futures, options and over-the-counter cleared derivatives markets. It is the only association representative of all organizations that have an interest in the listed derivatives markets. Its membership includes the world's largest derivatives clearing firms as well as leading derivatives exchanges from more than 20 countries. As the principal members of the derivatives clearing organizations, our member firms play a critical role in the reduction of systematic risk in the financial markets. They provide the majority of the funds that support these clearinghouses and commit a substantial amount of their own capital to guarantee customer transactions. FIA's core constituency consists of futures commission merchants, and the primary focus of the association is the global use of exchanges, trading systems and clearinghouse for derivatives transactions. FIA's regular members, which act as the majority clearing members of the US exchanges, handle more than 90 percent of the customer funds held for trading on US futures exchanges.

<sup>2</sup> The FIA PTG and FIA EPTA are affiliated with FIA and are comprised of more than 30 firms that trade their own capital in the exchange-traded markets. FIA PTG and FIA EPTA members engage in manual, automated and hybrid methods of trading and are active in a variety of asset classes, such as equities, foreign exchange, commodities and fixed income. Members of the FIA PTG and FIA EPTA are a critical source of liquidity in the exchange-traded markets, allowing those who use the markets to manage their business risks to enter and exit the markets efficiently.

system failures, and order entry errors.<sup>3</sup> We commend the CFTC for focusing its attention and resources on further strengthening what we believe to be an already strong futures market infrastructure.

Automated trading systems (“ATs”) play a critical role in the operation of today’s futures markets. These systems, based on decision rules programmed by humans, use publicly available information to generate, submit, monitor, and revise buy and sell orders continuously throughout the trading day. We wish to highlight that today’s electronic markets are more efficient, open, and transparent than they have ever been. We believe that automated trading technology has provided many benefits to the overwhelming majority of futures market participants. Market quality metrics have improved across the board as trading has become more automated and competitive. Trading costs are lower, markets are deeper and more liquid, discrepancies in prices across related markets are reduced, and prices better reflect information about the value of the commodities underlying futures contracts.

As a general matter, the FIA emphasizes that all market participants have a responsibility to implement risk controls appropriate to their role in the life of an order, whether initiating the trade, routing the trade, executing the trade or clearing the trade. As electronic trading has evolved, several of these focal points may now overlap where they have been historically distinct.

As we discuss in our responses, we believe it is important to implement those risk controls that are appropriate to the role of the participant, and efforts should be made to avoid introducing unnecessary complexity. We believe that for risk control requirements to be effective they should be principles-based and consideration should be given to the location where they are implemented within the trading lifecycle. Any risk control that is overly prescriptive may fail to take into account the unique characteristics of the diverse market participants, designated contract markets (“DCMs”), trading strategies, and products that exist today, thus introducing, rather than reducing risk. Further, prescriptive requirements may quickly become obsolete as markets, technology, and trading strategies evolve. Instead, the CFTC should encourage industry efforts to protect markets through innovations in risk control mechanisms and system safeguards.

The FIA also believes that in order to prevent market disruption due to a malfunctioning ATS, it is localized pre-trade risk controls—not credit-controls—that should be used. Such localized controls can use various approaches and act on a very granular level to detect unusual activity and to prevent unintended trading. We believe that kill switches, if implemented and used properly, can serve as an effective last-resort means of risk control, but stress that they are not a panacea and should only be used during extreme events when all other courses of action have been exhausted.

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<sup>3</sup> See: “Recommendations for Risk Controls for Trading Firms,” FIA PTG, November 2010, found at: [http://www.futuresindustry.org/downloads/Trading\\_Best\\_Practices.pdf](http://www.futuresindustry.org/downloads/Trading_Best_Practices.pdf) . Other documents published by the FIA related to safeguarding automated trading systems include 1) “Market Access Risk Management Recommendations,” FIA, April, 2010, found at : [http://www.futuresindustry.org/downloads/Market\\_Access-6.pdf](http://www.futuresindustry.org/downloads/Market_Access-6.pdf) ; 2) “Software Development and Change Management Recommendations,” FIA PTG and FIA EPTA, March 2012, found at: [http://www.futuresindustry.org/downloads/Software\\_Change\\_Management.pdf](http://www.futuresindustry.org/downloads/Software_Change_Management.pdf) ; 3) “Drop Copy Recommendations,” FIA, September, 2013, found at: [http://www.futuresindustry.org/downloads/FIA-Drop\\_Copy\(FINAL\).pdf](http://www.futuresindustry.org/downloads/FIA-Drop_Copy(FINAL).pdf); and 4) “Order Handling Risk Management Recommendations for Executing Brokers,” FIA, March, 2012, found at: [http://www.futuresindustry.org/downloads/Order\\_Handling-Ex\\_Brokers.pdf](http://www.futuresindustry.org/downloads/Order_Handling-Ex_Brokers.pdf) .

To address many of the Concept Release questions about existing risk management practices, the FIA conducted two surveys specifically aimed at gathering this information. The first survey inquired about the existing risk controls used by FIA PTG member firms. The second survey was directed at risk controls employed at the level of futures commission merchants (“FCMs”).

The survey results show that best practice risk controls are widely used by member firms. It is important to note that member firms adopted these controls on their own accord as a result of their business judgment rather than in response to any regulatory requirement directing them to do so. The survey results showed that all responding FIA PTG firms indicated that they used some form of pre-trade maximum order size screens, data reasonability checks, repeated automated execution throttles, and self-trading controls. In addition, all responding firms indicated they were either using, or considering using, some form of drop copy functionality as a risk control. The survey results also showed that all responding FCMs use the following controls either administered internally or at the exchange level: message and execution throttles; price collars; maximum order sizes; order, trade and position drop copy; and order cancellation capabilities. In addition, all responding FCMs use some form of a kill switch or other means to stop order submission when necessary.

In addition to the risk controls addressed in the Concept Release, our responses describe other risk controls that have been developed by the industry. For example, “Cancel on Disconnect” is a safeguard already in use that is complementary to the kill switches discussed in the Concept Release. Other system safeguards have been suggested in FIA and FIA PTG white papers that go beyond the risk controls and safeguards discussed in the Concept Release.

We observe that many of the safeguards discussed in the Concept Release have been in place for many years and continue to be improved by the industry. For example, since at least 1998, trading systems have used automated order size controls and credit controls. Prior to 1998, DCM systems already had intra-day position limit controls and user identifications. DCM systems evolved long ago to allow individual firms to incorporate their own risk controls for their own trading activities. DCMs have had messaging policies and order-to-fill ratios for much of the past decade and risk controls have continued to evolve with innovations that have made these controls significantly more effective. For example, the CME introduced its Stop Logic functionality more than five years ago and has more recently introduced Stop Spike functionality and Velocity Logic. Other controls, such as price collars, have been in place even before these controls in an effort to limit the risk posed to the system from a single order. We believe that these controls have contributed to the resiliency of futures market trading systems when compared to the resiliency of trading systems outside of the futures industry. For example, the trading pauses that were triggered during the flash crash, limited disruption in the futures markets relative to the disruption seen in equities markets.

The FIA acknowledges and appreciates the considerable effort the Commission, through its Technology Advisory Committee (“TAC”), has devoted to addressing many of the issues discussed in the Concept Release. One important topic addressed by both the TAC and the Concept Release is whether to define a segment of market participants as “high-frequency traders.” As we discuss in our response, we do not believe that a clear distinction can be made between high-frequency trading and automated trading. In fact, high-frequency trading, however defined, is a subset of automated trading and should not be used interchangeably with the term automated trading or as a way of arbitrarily identifying a type of market participant. The FIA believes that instead of adopting a formal definition of high-frequency trading, the Commission’s efforts would be better spent focusing on and addressing potential risks of automated trading according to the principle that all market participants should be subject to risk controls.

As we describe in our response, the FIA believes that the same levels of responsibility around testing and change management should apply to all market participants that deploy their own technology, as well as to providers of technology that allow access to the markets. Providers of market access technology include third-party vendors and FCMs that develop their own order entry, order routing and automated trading tools. The core components of a change management process include: 1) effective pre-deployment review of the proposed change, and 2) auditability procedures for communicating requirements, changes and functionality related to their proprietary software and technical infrastructure. DCMs also have an important responsibility in facilitating the ability of market participants to test their systems against DCM systems ahead of any system changes being released into production. We believe it is impractical to implement prescriptive standardized procedures for development, testing, and change management of DCM systems given the diversity of the technologies and business operations that are in use at DCMs. However, DCMs should consider any potential impact on market participants, compliance systems, and reporting mechanisms during the development, testing, and change management process.

Our responses also describe how the FIA supports a principles-based approach regarding registration, certification and identification of automated trading systems. We believe it should be left to the individual DCMs to define these policies for their market participants.

With respect to the Concept Release questions regarding the transmission of market data, news, and other information, the FIA PTG survey also inquired about existing industry practices with respect to which sources of information are used to inform their trading decisions. The results of this survey find that social media, such as Twitter, were not used by any responding firms to inform their automated trading decisions. Of those using market data or newsfeeds (or both) to inform their automated trading decisions, all responding firms indicated that they also used data reasonability checks for their data sources.

The FIA believes that any type of market-moving data and statements produced by the federal government should be governed by processes and released through systems that ensure the accuracy of such data as well as guarantee equal access to all entities. With respect to privately developed information, including information that may potentially move markets, we emphasize that this type of information is an important component of the price discovery process. We do not support government intervention into private enterprise in this context, but we do encourage transparency with respect to the policies and mechanics of information disclosure.

With respect to questions posed about latency, we observe that while latency is normal in markets, futures exchanges have worked hard to reduce the latency and variability in their trading systems, which has led to better market quality and lower trading costs. Reductions in latency can help a liquidity provider more efficiently manage the risk of its trading activities and enable it to offer tighter bid-ask spreads as a result. We also observe that not all market participants are equally sensitive to latency. Retail investors, asset managers, and commercial hedgers are unlikely to have much sensitivity to latency. For these market participants, price and trade execution qualities are more important.

The Concept Release also poses questions about the design of DCMs' matching algorithms. The FIA believes that DCMs are in the best position to design their marketplace based on the requirements of participants in the markets they host. This includes the decision on the most suitable matching algorithm for a specific product, for example price/time, pro rata, batched order processing, or a hybrid.

We do not believe that DCMs should impose minimum resting times on orders. Imposing such a requirement would have considerable detrimental impacts on market structure and the natural price discovery process as a result of increasing the cost and risks associated with providing liquidity to the marketplace. We believe that the CFTC should work with the DCMs to oversee market integrity and circumvent any abusive activity through improved surveillance, rather than changing market structure based on perceptions of inequality regarding market access.

Our responses were formed with the collaboration of nearly 100 representatives of FIA member firms, including many representatives of FIA PTG firms.<sup>4</sup> Our responses also include input from the European-based Futures and Options Association (FOA). We view risk management as a global responsibility and this view is reflected in our responses.

Our response is divided into 10 sections that differ from the sections and ordering in the Concept Release. The question numbers in our response correspond to the question numbers from the Concept Release, although the order may differ because of the groups we selected. For example, Question 5 on latency is identified as Question 5, but is included in our section entitled “Market Data, News Feeds, and Latency.” In forming our response, we felt it was important to group questions into related areas so that subject area experts from the industry could address them appropriately. We also note that throughout our response we have referred to futures contracts, DCMs, and other features associated solely with futures markets. We have done this deliberately and if our response is meant to include cleared swaps or swap execution facilities (“SEFs”), we have used these terms to denote them.

In summary, the FIA supports the CFTC efforts to improve market infrastructure through effective risk controls and system safeguards. As we have noted above, we believe that risk control requirements are most effective when they are principles-based and not overly prescriptive. Any risk control that is overly prescriptive may quickly become obsolete as markets, technology, and trading strategies evolve and as a result may introduce, rather than reduce, risk. Although we believe the current infrastructure underlying the futures marketplace is very strong, the FIA members will continue to work to further strengthen that infrastructure through more effective risk controls and system safeguards. The FIA stands ready to support the work of the CFTC to better understand where it thinks improvements can be made. The FIA also supports efforts of the CFTC to more effectively monitor markets and protect market participants from trading abuses through the use of state-of-the-art technology. However, we caution that any regulatory effort to improve market infrastructure must, at a minimum, preserve the market quality improvements that have occurred as markets have become more automated and competitive. Finally, if the CFTC determines that further regulation in this area is warranted, this determination should be supported by solid empirical evidence and rigorous economic analysis.

Sincerely,



Walter L. Lukken  
President and Chief Executive Officer

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<sup>4</sup> The views expressed in this comment letter are intended to represent the majority, but not all, FIA and FIA PTG members.

cc: Honorable Gary Gensler, Chairman  
Honorable Scott O'Malia  
Honorable Mark Wetjen  
Honorable Bart Chilton  
Sebastian Pujol Schott, Associate Director, Division of Market Oversight  
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Question	Section #1: Defining High-Frequency Trading and ATS
Opening Remarks	<p>The FIA appreciates the considerable effort the Commission, through its Technology Advisory Committee, has devoted to the important topic of determining whether to define a segment of market participants as “high-frequency traders.” We do not believe that a clear distinction can be made between high-frequency trading and automated trading. In fact, high-frequency trading, however defined, is a subset of automated trading and should not be used interchangeably or as a way of arbitrarily identifying a type of market participant. The FIA believes that instead of adopting a formal definition of high-frequency trading, the Commission’s efforts would be better spent focusing on and addressing potential risks of automated trading according to the following principles:</p> <ul style="list-style-type: none"> <li>• Risk controls should apply equally to all ATSs.</li> <li>• Orders of all market participants should be subject to risk controls.</li> </ul> <p>We also believe that market surveillance should evolve to identify potential abusive or disruptive practices that can occur at all trading frequencies. Market surveillance does not require a formal definition of high-frequency trading to achieve this goal but rather needs to adapt to reflect the increased automation of trading. For example, on all major US DCMs there is a complete audit trail of every order and every trade. Each order or trade is directly traceable to the individual or the automated trading system (ATS) and its operator(s). As well as being used by the DCMs for their own market surveillance, the Commission has the authority to request and review any of this information from the DCMs at any time and has the ability to filter audit trails as it sees fit in pursuit of its regulatory and oversight objectives.</p>
1	In any rulemaking arising from this Concept Release, should the Commission adopt a formal definition of HFT? If so, what should that definition be, and how should it be applied for regulatory purposes?
1A	<p>We note that there have been numerous definitions of high-frequency trading proposed by academics, regulators and traders to date, which capture a varying range of activities. These create arbitrary boundaries that may lead to an overly broad or overly narrow definition for regulatory purposes. Automated trading, including trading at higher frequencies, is merely a new means to execute age-old trading strategies in a more efficient manner in today’s electronic markets. Since a clear distinction between high-frequency trading and automated trading cannot be made, we believe that adopting a formal definition of high-frequency trading is neither practical nor desirable for formulating regulation.</p> <p>The FIA believes that instead of adopting a formal definition of high-frequency trading, the Commission’s efforts would be better spent focusing on and addressing potential risks of automated trading generally. We believe that the Commission’s concerns about system safeguards and market quality can best be addressed by making a definitional distinction between automated trading and human-initiated manual trading because different controls are likely to apply to these means of executing trading strategies. For example, software testing and conformance standards, may apply to automated trading systems differently than to manual trading systems.</p> <p>We suggest an alternative approach that considers how participants access their markets since this will influence where controls and responsibilities sit. A previous suggestion by the FIA PTG considers a new term that can be objectively measured: “Direct ATS Participant,” characterized by use of an ATS directly connected to a DCM without using an FCM’s infrastructure to route orders<sup>1</sup>.</p>

<sup>1</sup> A participant can directly access a DCM in different capacities: either as a Non Clearing Member or General Clearing Member of the DCM, or as a non-member through sponsored access provided by their FCM.

	<p>By extension, an “Indirect ATS Participant” would be characterized by the use of an ATS that routes orders through an FCM’s infrastructure.</p> <p>By categorizing market participants in this manner, the Commission can readily use data that is already collected by the DCMs to further study the activity of different types of participants. On all major US DCMs, there is a complete audit trail of every order and every trade. Each order or trade is directly attributable to the individual participant, or the ATS and its operator(s). The Commission has the authority to request and review any of this information from the DCM at any time in pursuit of its regulatory and oversight objectives.</p>
2	<p>What are the strengths and weaknesses of the TAC working group definition of HFT provided above [see section II.A.1]? How should that definition be amended, if at all?</p>
2A	<p>TAC working group definition:</p> <p>High-frequency trading is a form of automated trading that employs:</p> <ul style="list-style-type: none"> <li>(a) algorithms for decision making, order initiation, generation, routing, or execution, for each individual transaction without human direction;</li> <li>(b) low-latency technology that is designed to minimize response times, including proximity and co-location services;</li> <li>(c) high speed connections to markets for order entry; and</li> <li>(d) recurring high message rates (orders, quotes or cancellations) determined using one or more objective forms of measurement, including (i) cancel-to-fill ratios; (ii) participant-to-market message ratios; or (iii) participant-to-market trade volume ratios.</li> </ul> <p>The definition offered by the TAC working group was intended to concentrate on the mechanics used to trade at high-frequencies, and was written to be deliberately neutral with regard to types of market participants and types of strategies that may employ high-frequency trading techniques. The recommendations of the TAC working group in October 2012<sup>2</sup> emphasized that there are many types of market activity that can be potentially labeled as HFT. The general consensus of the working group was that the definition should serve as part of a broader view that regulators should understand how automated markets have evolved and focus their efforts on understanding and recognizing abusive practices that may use these new mechanics of trading.</p> <p>With the exception of (a) from the definition, which can be objectively determined, all of the other measures are subjective and will require setting arbitrary boundaries which in turn may lead to an overly broad or overly narrow definition for regulatory purposes.</p>
3	<p>The definition of HFT provided above uses “recurring high message rates (orders, quotes or cancellations)” as one of the identifying characteristics of HFT, and lists three objective measures ((i) cancel-to-fill ratios; (ii) participant-to-market message ratios; or (iii) participant-to-market trade volume ratios) that could be used to measure message rates. Are these criteria sufficient to reliably distinguish between ATSs in general and ATSs using HFT strategies? What threshold values are appropriate for each of these measures in order to identify “high message rates?” Should these threshold values vary across exchanges and assets? If so, how?</p>
3A	<p>We do not recommend using these criteria. A key criticism of the TAC working group’s definition is the attempt to define boundaries based on arbitrary thresholds. It is acknowledged that the TAC working group felt that they should provide criteria regarding message rates but deliberately</p>

<sup>2</sup> [http://www.cftc.gov/ucm/groups/public/@newsroom/documents/file/tac103012\\_wg1.pdf](http://www.cftc.gov/ucm/groups/public/@newsroom/documents/file/tac103012_wg1.pdf)

	<p>avoided setting specific thresholds since they felt that quantifying the definition detracted from the emphasis that the Commission should focus on regulating abusive practice, rather than regulating the use of automated tools.</p> <p>It is worth noting that the German regulatory authority BaFin has quantified message rates as part of their exercise to license high-frequency trading<sup>3</sup>, using a threshold of 75,000 messages per day based on two messages per second. Although we cannot yet draw any firm conclusion regarding the validity of this approach, we are concerned that a specific value creates an artificial threshold that divides market participants into two camps—those below the threshold and those above it—and may lead to arbitrary differences in how participants are regulated, particularly without regard for the benefit or quality of the activity. A specific value criterion also locks the threshold to a particular convention from a moment in time, and does not allow for changes in trading practices or individual market dynamics.</p> <p>The FIA has continuously stated that it is difficult to devise any meaningful definition for HFT that is not, in significant part, arbitrary. The evolution of electronic trading has led to a rich and diverse ecosystem of market participants using a variety of tools that trade at different speeds. Simply because an automated trading system’s designed operating parameters fall below or above a particular threshold does not mean that the system is in any way safer to operate, or may not be employed in an abusive way.</p> <p>We strongly suggest that the Commission concentrate its efforts on identifying and mitigating risks and abusive practices broadly across all market participants regardless of the number of messages they may generate.</p>
4	Should the risk controls for systems and firms that engage in HFT be different from those that apply to ATSS in general systems? If so, how?
4A	<p>We feel that risk controls should apply equally to all ATSS. With regard to risk management, orders of all market participants regardless of whether they are generated manually or through an ATS should be subject to risk controls.</p> <p>As discussed, instead of attempting to define a narrow subset of participants using an arbitrary definition of HFT, we feel that it is important to consider how market participants access a DCM and the various focal points for risk controls. As we discuss further in later questions, this distinction in access clarifies where risk controls need to be implemented for users of an ATS:</p> <ul style="list-style-type: none"> <li>• In the case of a Direct ATS Participant this focuses more controls at the participant themselves, and at the DCM level where there should be controls provided to allow the</li> </ul>

<sup>3</sup> [http://www.bafin.de/SharedDocs/Downloads/EN/Veranstaltung/dl\\_130430\\_hft\\_top2.pdf?\\_blob=publicationFile](http://www.bafin.de/SharedDocs/Downloads/EN/Veranstaltung/dl_130430_hft_top2.pdf?_blob=publicationFile)

	<p>FCM oversight of the activity;</p> <ul style="list-style-type: none"> <li>• In the case of an Indirect ATS Participant, which uses the FCM’s infrastructure to route orders to the market, this focuses more controls at the FCM level due to their responsibilities around providing access to the DCM.</li> </ul> <p>It is important to note that this distinction does not absolve participants of their overall responsibilities around risk controls, and all types of ATS participants should ensure that the same standards are met regardless of where the focus of a particular risk control may fall. To this point, the FIA Principal Traders Group’s “Recommendations for Risk Controls for Trading Firms” and other documents<sup>4</sup> published by the FIA over the past several years have been well received by the industry and were developed with input from a broad variety of market participants including Direct ATS Participants, DCMs, FCMs and other more traditional market participants. Indeed, the same controls around market access and oversight of technology development, testing and implementation should apply to all electronic market participants regardless of the type of technology they use to trade.</p>
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<sup>4</sup> See: “Recommendations for Risk Controls for Trading Firms,” FIA PTG, November 2010, found at: [http://www.futuresindustry.org/downloads/Trading\\_Best\\_Practices.pdf](http://www.futuresindustry.org/downloads/Trading_Best_Practices.pdf) . Other documents published by the FIA related to safeguarding automated trading systems include 1) “Market Access Risk Management Recommendations,” FIA, April, 2010, found at : [http://www.futuresindustry.org/downloads/Market\\_Access-6.pdf](http://www.futuresindustry.org/downloads/Market_Access-6.pdf) ; 2) “Software Development and Change Management Recommendations,” FIA PTG and FIA EPTA, March 2012, found at: [http://www.futuresindustry.org/downloads/Software\\_Change\\_Management.pdf](http://www.futuresindustry.org/downloads/Software_Change_Management.pdf) ; 3) “Drop Copy Recommendations,” FIA, September, 2013, found at: [http://www.futuresindustry.org/downloads/FIA-Drop\\_Copy\(FINAL\).pdf](http://www.futuresindustry.org/downloads/FIA-Drop_Copy(FINAL).pdf); and 4) “Order Handling Risk Management Recommendations for Executing Brokers,” FIA, March, 2012, found at: [http://www.futuresindustry.org/downloads/Order\\_Handling-Ex\\_Brokers.pdf](http://www.futuresindustry.org/downloads/Order_Handling-Ex_Brokers.pdf) .

Question	Section #2: Pre-Trade and Post-Trade Risk Controls
Opening Remarks	<p>The FIA and the FIA PTG have been in the forefront of developing industry best practice recommendations with respect to pre-trade and post-trade risk controls that reduce the risk of market disruptions due to unauthorized access, system failures, and errors. We are pleased that the Commission has acknowledged these best practice recommendations throughout the Concept Release.</p> <p>As a general matter, the FIA emphasizes that all market participants have a responsibility to implement risk controls appropriate to their role. As we discuss below, we believe that for risk control requirements to be most effective, they should be principles-based and consideration should be given to the location where they are implemented within the trading lifecycle. Any risk control that is overly prescriptive may fail to take into account the unique characteristics of the diverse market participants, DCMs, trading strategies, and products that exist today thus adding rather than reducing risk. Further, prescriptive requirements may quickly become obsolete as markets, technology, and trading strategies evolve.</p> <p>With respect to the questions posed in the Concept Release regarding specific types of risk controls, the FIA believes that:</p> <ul style="list-style-type: none"> <li>• Appropriate supervision of all market access is an important tool in limiting risk to the financial markets. We do not believe that the Commission should establish different guidelines depending on the type of market access. All types of market access—whether as principal or agent, direct to the DCM or indirect<sup>5</sup>--create risks; the same principles should apply to all market access.</li> <li>• Primary message rate limits should exist at the DCM level and may be supplemented by message rate limits at the market participant or FCM level. If a market participant chooses to implement message rate limits, the limits must be flexible in order to address the market participant's unique and diverse risk management requirements. FCMs that choose to implement message rate limits within their infrastructure should be transparent to their customers regarding the reason for the additional control and the maximum message rate that can be supported by the FCM. Message rate limits at the DCM should not dynamically adjust to market conditions.</li> <li>• The concept of message rates and related controls has two separate but equally important vantage points, namely DCMs and market participants. The appropriateness or viability of limiting message rates necessarily depends on the context of these vantage points. DCMs, for example are primarily concerned with message rates as a matter of system capacity. DCMs build their systems to meet the needs of their participants, generally knowing the extent of message flow the system can accommodate. DCMs are best positioned to identify their capacity and appropriately limit message activity so as to maintain the stability and availability of their platforms. Participants, meanwhile, are interested in monitoring their message rates as indicators of system health or as alerts of potential aberrant behavior. The appropriate message rate limits, not surprisingly, will vary per participant. Message rates of 100 orders per second may be a red flag for one participant, while being perfectly acceptable and appropriate for another. A static approach requiring</li> </ul>

<sup>5</sup> We use the terms “direct” and “indirect” to identify how a participant connects to a DCM. The terminology does not reflect the participant’s membership on a DCM or DCO. A Direct ATS Participant connects their automated trading system directly to the DCM, and can be a non-clearing member, a general clearing member, or a non-member (using sponsored access from an FCM to trade without routing through the FCM’s infrastructure). An Indirect ATS Participant uses a FCM’s infrastructure to access the DCM, and may be a non-clearing member or non-member.

	<p>message rate limits in this context, therefore, may run the risk of not only being arbitrary but introducing complexity and instability.</p> <ul style="list-style-type: none"> <li>• Neither the use of volatility alarms, nor the levels at which these alarms are set if used, should be mandated but instead should be left to the business judgment of the DCMs as part of how they manage the markets they host. Any such alarms, if used, should be flexible enough to avoid setting off excessive alarms due to variations in market conditions.</li> <li>• Price collars should be used on all contracts traded on a DCM; however, they should be set by the DCM based on estimates of volatility and market conditions and should not be mandated at specific levels across all products.</li> <li>• Most DCMs provide tools to allow the FCM to set pre-trade controls for their customers. Such controls are a prerequisite for an FCM to provide direct access to a market participant without routing orders through the FCM’s infrastructure. FCMs encourage DCMs to provide pre-trade risk controls that can be set at the most flexible level, whether at session level, customer level or account level. With regard to maximum order size, trading systems can have upper limits on the size of the orders they can send, configurable by product. These limits prevent any order for a quantity larger than the limit from leaving the system.</li> <li>• We support appropriate market pauses, circuit breakers and price limits as mechanisms to give market participants the opportunity to adjust to extreme market conditions. However, we believe that these mechanisms should be established with the goal of keeping markets open as much as possible because, among other things, market closings may dramatically reduce market participants’ ability to manage risk.</li> <li>• Drop Copies should be available for all trading venues and products whenever technologically practicable. Trade reports and other information provided by Drop Copy should be disseminated to the consumer in real-time or as near real-time as technologically and operationally practicable.</li> <li>• Error trade policies must always be clear and deterministic enough for all participants to understand. The goal of any such policy should be to promote a marketplace where all trades stand as executed. Clear error trade policies also serve to protect participants who are counterparties to error trades. Their risks are best mitigated by having dependable error trade policies that are not subject to discretion.</li> </ul>
6	Are there distinct pre-trade risk controls, including measures not listed below, or measures in addition to those already adopted by the Commission, that would be particularly helpful in protecting the financial integrity of a DCO?
6A	All participants involved with trading and clearing have a responsibility to implement risk controls appropriate to their role. Effective risk controls that are implemented and enforced by an entity within the marketplace are a critical component of ensuring the financial integrity of a DCO as well as the integrity of the entire marketplace. To maximize the effectiveness of a suite of risk controls, its requirements should be principles-based and consideration should be given to the location where they are implemented within the trading lifecycle. Any risk control that is overly prescriptive may fail to take into account the unique characteristics of the diverse market participants, DCMs, trading strategies, and products that exist today thus adding rather than reducing risk. Further, prescriptive requirements may quickly become obsolete as markets, technology, and trading strategies evolve.

Without prescribing specific risk control implementations, a degree of standardization across market participants, regardless of their trading strategies, may be achieved by hosting risk controls at the DCM. By doing so, participants are required to have each of their orders pass the DCM's risk controls prior to being accepted for execution. This would ensure that a baseline of risk controls exists within the marketplace regardless of the type of access used or the type of market participant. The specific implementation of these risk controls should not be prescribed by the Commission since DCMs are the best equipped to understand the performance of their systems, the unique needs of their markets, products and participants, and the nuances associated with introducing new functionality to their systems. Moreover, DCMs can adapt risk controls to new technology and to changes in markets and trading behavior over time.

An example of a DCM-hosted pre-trade risk control is the CME-provided Globex Credit Control (GC2). In this implementation an absolute dollar-based limit is imposed on a market participant by the FCM, and all orders submitted contribute to the dollar value of the participant's intraday activity. Any order that would cause a market participant to exceed the limit set by its FCM is rejected by the DCM. This check is mandatory for all participants on Globex regardless of whether a customer accesses the market directly or via its FCM's infrastructure<sup>6</sup>.

Three additional widely adopted DCM-hosted pre-trade risk controls are Price Collars, Quantity Limits and Cancel-On-Disconnect:

- A Price Collar is a dynamic price range that defines the range of prices that will be accepted for execution on a specific product by the DCM at a given time.
- A Quantity Limit defines the maximum order quantity that will be accepted for execution on a specific product by the DCM.
- Cancel-On-Disconnect allows direct access participants the additional safeguard of knowing that all working orders are cancelled at the DCM in the event that the participant loses connection to the DCM and cannot manage their orders.

By requiring each order to pass pre-trade Price Collar and Quantity Limit checks, DCMs can ensure that all orders are entered into the market at reasonable prices for reasonable quantities which protects the natural price discovery process from aberrant and unintended behavior. Both types of risk controls have been proven to minimize the chance of accidental price dislocation due to "fat finger" incidents. Such controls are part of a broader risk management framework used across participants, DCMs, DCOs and FCMs to ensure market integrity.

By providing Cancel-On-Disconnect functionality, the DCM makes a best-effort to cancel a participant's orders if the participant loses its connection to the DCM's trading platform. This is an important risk management tool for Direct ATS Participants in the event of a technology failure between the ATS and the DCM since it provides certainty that working orders will not be filled if the participant no longer has its connection to the DCM. When used with Drop Copy functionality (discussed in question 42), any in-flight trades that may occur while the Cancel-On-Disconnect takes effect will be reported and the participant will be confident in its ability to reconcile its positions. We note that it is increasingly common for FCMs to also employ Cancel-On-Disconnect for their connections to the DCM to manage their risk across customers in the event of a loss of

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<sup>6</sup> It is important to note that although the check is called a "credit control" it is not a comprehensive control on the actual exposure of the customer, who may be accessing multiple markets via multiple brokers, and as such is not a replacement for full credit controls implemented at an FCM.

	<p>connection.</p> <p>We encourage all market participants to implement pre- and post-trade risk controls that are commensurate with their trading operations and risk management policies and procedures. The FIA PTG has previously published a white paper<sup>7</sup> that recommends a list of several such risk controls that market participants may consider when developing their internal pre- and post-trade risk controls for automated trading.</p>
7	Are there distinct pre-trade risk controls, including measures not listed below [see section III.C.], or measures in addition to those already adopted by the Commission, that should apply specifically in the case of DMA?
7A	FIA believes that appropriate supervision of all market access is an important tool in limiting risk to the financial markets. We do not believe that the Commission should establish different guidelines depending on the type of market access. Because all market access—whether as principal or agent, or whether through direct access to the DCM or indirect access via an FCM’s connection—creates risks, the same principles should apply to all types of market access.
8	If, as contemplated above [see section III.C.1], maximum message rates and execution throttles were used as a mechanism to prevent individual entities or accounts from trading at speeds that are misaligned with their risk management capabilities, how should this message rate be determined?
8A	<p>When discussing messaging controls, it is important to understand how they work today. Some DCMs establish controls at their gateways that monitor for and either send warnings or even reject orders when certain rates of messages per second are sustained. These situations may involve messaging that could cause latencies and thus affect other market participants. Such messaging may also be indicative of a potentially malfunctioning automated order entry system. This type of control operates in real time and can prevent messages from entering the system.</p> <p>Another type of control that most DCMs have adopted is a message quality analysis. This type of analysis typically looks at the order-to-trade ratio, which is the ratio of the number of orders to executed volume. For each product group, the acceptable threshold ratios are set by the DCM and published. When a participant does not meet the ratio over time, say a two-week period, it can be first warned, and then if not corrected it can be issued a surcharge. The surcharge can then escalate if the participant continues messaging in excess of the ratio. It is important to note that this type of analysis is not done in real time but rather after a session is complete. These types of messaging programs have proven to be very effective in providing incentives for disciplined messaging from participants.</p> <p>DCMs are in the best position to monitor the activity of all market participants and ensure that message rate limits are set at levels that will safeguard the integrity of the market and the DCM platform. The DCM should be responsible for setting a message rate limit for each product based on many factors including the capacity and performance of its network and matching engine, the matching algorithm, and the unique characteristics of the financial instrument, particularly around its liquidity. Message rate limits should not be dynamic since market participants should always know what the limit is, though it is within the purview of the DCM to adjust the limit with advance notice as factors change over time.</p>
9	Message and execution throttles may be applied by trading firms (FCMs and proprietary trading

<sup>7</sup> See: “Recommendations for Risk Controls for Trading Firms,” FIA PTG, November 2010, *supra*, footnote 4.

	<p>firms), clearing firms, and by exchanges. The Commission requests public comment regarding the appropriate location for message and execution throttles.</p> <p>(a). If throttles should be implemented at the trading firm level, should they be applied to all ATSS, only ATSS employing HFT strategies, or both?</p> <p>(b). What role should clearing firms play in the operation or calibration of throttles on orders submitted by the trading firms whose trades they guarantee?</p>
<p>9A</p>	<p>When introducing any new functionality to the marketplace, a critical requirement is that system integrity is maintained. In order to maintain system integrity, any functionality that may affect the system must be implemented and managed by those parties directly interacting within that system. In the case of message rate limits, those parties are the DCM and market participant.</p> <p>The FIA believes that the primary message rate limits should be located at the DCM level and may be supplemented by message rate limits at the market participant or FCM level.</p> <p>The DCM-hosted limit can enforce a maximum messaging rate for all market participants that will maintain the integrity of the market. This ensures that each market participant, regardless of style of trading activity, will not exceed the limit as prescribed by the DCM. It is reasonable for message rate limit levels for designated liquidity providers to be higher than those for other market participants, as designated liquidity providers, are often required to quote two-sided markets in many products simultaneously, and an overly restrictive limit will inhibit their ability to perform their duties and properly manage the risk associated with those duties. All message rate limit levels should be publicly documented by the DCM.</p> <p>If a market participant chooses to implement message rate limits, the limits must be flexible in order to address the market participants' unique and diverse risk management requirements. FCMs that choose to implement message rate limits within their infrastructure should be transparent to their customers regarding the reason for the additional control and the maximum message rate that can be supported by the FCM. In a survey of differently-sized FCMs, we found that all responding firms were using either internal or exchange-provided message and execution throttles.</p> <p>FCMs facilitate different types of access to a marketplace, and the type of access is determined by the trading style of the participant. As mentioned, where an FCM facilitates market access through its own connections, it has the ability to impose the FCM's own message rate limits, but these should be documented and discussed with participants to ensure that they are appropriate for the participants' type of activity. Where a participant chooses to access a market directly using the FCM's membership, the FCM should rely on the message rate limits provided by the DCM and any implementation by the market participants themselves.</p> <p>To avoid introducing undue risk into the marketplace, under no circumstance should a DCM or FCM ever reject an order cancellation request due to breached message rate limits.</p>
<p>10</p>	<p>Should the message and execution throttles be based on market conditions, risk parameters, type of entity, or other factors?</p>
<p>10A</p>	<p>Message rate limits at the DCM should not dynamically adjust to market conditions in real-time. Messaging thresholds should be set by the DCM and should take into account the variety of market conditions that exist and encompass the activity of all market participants.</p> <p>From a risk perspective, it is neither practical, nor responsible to modify message rate limits dynamically. Changing this variable before market participants can determine the impact on their systems and strategies would be unwise and would compromise the rigorous testing procedures</p>

	<p>that firms conduct.</p> <p>If a market participant decides to implement supplemental message rate limits within its trading systems, it should take into consideration the unique characteristics of each of its trading strategies, the products traded, the trading system’s performance, and other relevant criteria.</p> <p>As we discuss in questions 9, 11 and 12, there is a case to be made for setting different message rate limit levels for designated liquidity providers.</p>
11	<p>What thresholds should be used for each type of market participant in order to determine when a message or execution throttle should be used? Should these thresholds be set by the exchange or the market participant?</p>
11A	<p>It is important to maintain a level playing field for all market participants and therefore message rate limits should be defined and managed by the DCM. FCMs and market participants can elect to supplement additional message rate limits within their systems at their discretion.</p> <p>We believe that DCMs should offer higher message rate limits for designated liquidity providers. These higher message rate limits allow liquidity providers to take into account the availability of new information that affects the price discovery process without limiting their ability to update quotes in real time. In instances where the DCM offers different message rate limits for designated liquidity providers, or for any type of market participant, it should be publicly documented.</p>
12	<p>Are message and execution thresholds typically set by contract, or by algorithm? What are the advantages and disadvantages to each method?</p>
12A	<p>Message rate limits should be set by the DCM for each product, with allowance for higher limits for designated liquidity providers. With respect to the matching algorithm, DCMs should evaluate all aspects of their platform when assigning message rate limits. We believe DCMs are best placed to discuss the advantages and disadvantages of the various methods.</p>
13	<p>Who should be charged with setting message rates for products and when they are activated?</p>
13A	<p>DCMs should determine the messaging thresholds for the products they offer as they are best positioned to understand the unique dynamics and needs of their marketplace while implementing messaging rate policies.</p>
14	<p>Would message and execution throttles provide additional protection in mitigating credit risk to DCOs?</p>
14A	<p>We believe that correctly implemented DCM message rate limits that limit activity to the capacity of the trading platform can mitigate risk to the DCO. Such controls prevent an inadvertent overload of the platform that would impact the processing of messages across all market participants. However, an improperly placed or poorly documented message rate limit could disrupt valid market activity and actually increase risk to the DCO by preventing participants from executing their trading strategies within their own risk limits. In addition, message rate limits could increase the risk to a DCO by precluding risk reducing trades.</p>
15	<p>The Commission is aware that alarms can be disruptive or counterproductive if “false alarms” outnumber accurate ones. How can volatility alarms be calibrated in order to minimize the risk that false alarms could interrupt trading or cause human monitors to ignore them over time?</p>
15A	<p>Volatility <i>per se</i> is not harmful and is part of the market’s price discovery process. Volatility alarms are not something we would support, but if volatility alarms are to be provided by the DCM, they should be optional and flexible enough to avoid generating excessive alarms due to variations in market conditions.</p>
23	<p>The Commission is aware that some exchanges already have price collars in place for at least a</p>

	portion of the contracts traded in their markets. Please comment on whether exchanges should utilize price collars on all contracts they list.
23A	The FIA believes that price collars are an important risk management tool deployed at a DCM. They have been proven to prevent inadvertent dislocations in price, and should be used on all financial instruments traded on the DCM. However, they should be set by the DCM based on their estimates of volatility and historical analysis of how price discovery works within that specific market. Price collars should not be mandated at the same levels across all products.
24	Would price collars provide additional protection in mitigating credit risk to DCOs?
24A	The FIA believes that price collars are very effective at preventing orders from disrupting the market and affecting the price discovery process. They have been proven to minimize erroneous trading by controlling the range of execution prices and can ensure the integrity of trades cleared through the DCO by dramatically reducing the chance that a trade may be deemed erroneous and subsequently busted or adjusted.
25	Are such controls typically applied to all contracts and customers, or on a more limited basis?
25A	Price collars are a tool that the DCM uses to maintain market integrity. We believe that some form of price collar should apply to all contracts and be calibrated to specific contract characteristics. Price collars should not be based on the type of market participant. The criteria for determining the specific level of the price collar should be applied consistently and publicly documented. The specific levels of price collars should be set by the DCMs based on their estimates of volatility and historical analysis of how price discovery works within that specific market. Price collars should not be mandated at the same levels across all products.
26	Do exchanges allow clearing members to use the exchange's technology to set maximum order sizes for specific customers or accounts?
26A	Most DCMs provide tools that allow FCMs to set pre-trade controls for their customers. Such controls are a prerequisite for an FCM to provide a market participant with direct access to a DCM—particularly a Direct ATS Participant—without routing orders through the FCM's infrastructure. The importance of these controls was discussed in the FIA's <i>Market Access Risk Management Recommendations</i> paper published in April 2010 <sup>8</sup> . Where a DCM mandates the use of a DCM-provided pre-trade risk management tool (for example Globex Credit Controls), the FCM will set limits appropriate to the type of order flow monitored by the risk control. In the case of a pre-trade control applied to a customer-specific session, the limits are set appropriately to that customer's activity; in the case of a session that spans multiple customers, a broader limit will be implemented with more customer-specific limits set upstream in the FCM's order routing infrastructure. FCMs encourage DCMs to provide pre-trade risk controls that facilitate setting the control at a range of levels, such as session level, customer level and/or account level.
27	Would additional standardization in the capabilities of this technology or more uniform application of this technology to all customers and contracts improve the effectiveness of such controls?
27A	While the FIA has been a proponent of standardization of pre-trade risk controls across DCMs, we understand that each DCM needs to have discretion in how these controls are implemented.  The FIA has conducted several surveys over the last five years to review the risk controls provided by derivatives exchanges globally and has seen a clear trend in DCMs providing better pre-trade risk management technology, as well as seeing an increased adoption of such controls by FCMs providing access to the DCM. In fact, several DCMs have already made it mandatory for their proprietary pre-trade risk controls to be applied to all types of market access regardless of the type of order flow, and we strongly encourage other DCMs to do so as well.

<sup>8</sup> See: "Market Access Risk Management Recommendations," FIA, April, 2010, *supra*, footnote 4.

28	<p>To what extent are clearing firms and trading firms conducting pre-trade maximum order size screens? Please explain whether firms are conducting such screens by utilizing:</p> <p>(1) their own technology;  (2) the exchange’s technology, or  (3) a combination of both.</p>
28A	<p>As previously discussed, FIA believes that all market participants have a responsibility regarding risk management. The electronic trading landscape has become very heterogeneous, with participants accessing multiple markets using a variety of platforms that may be developed internally, bought from a vendor or provided by an FCM. It is the responsibility of market participants to ensure that the appropriate controls are correctly implemented in the tools that they use, and it is also the responsibility of the FCM providing market access to ensure that appropriate controls are implemented in the tools used by their customers. This is discussed in the FIA’s <i>Order Handling Risk Management Recommendations for Executing Brokers</i><sup>9</sup>, as well as being mandated with CFTC Rule 1.73 which requires among other things that clearing member FCMs establish credit and market limits, as well as automated screening of orders. FCMs implement pre-trade risk controls such as maximum order size (or an equivalent) on a per customer basis for all types of order flow, including activity through their own systems, activity through third-party vendors and activity that accesses the DCM directly and relies on DCM provided tools for risk management.</p> <p>In addition to pre-trade risk controls at the DCM and FCM levels, market participants set risk controls at the participant level. Market participants generally establish and enforce pre-trade risk limits that are appropriate for the firms’ capital base, clearing arrangements, trading style, experience and risk tolerance. These risk limits can include a variety of hard limits, such as position size and order size. Depending on the trading strategy, these limits may be set at several levels of aggregation. These risk limits are applied to multiple independent pre-trade components of a trading system. Specifically with regard to maximum order size, trading systems can have upper limits on the size of the orders they can send, configurable by product. These limits prevent any order for a quantity larger than this predefined “fat-finger” limit from leaving the system.</p>
29	<p>Would regulatory standards regarding the use of such technology provide additional protection to the markets?</p>
29A	<p>Of course, the goal of establishing regulatory standards regarding the use of pre-trade maximum order size controls and attendant technology is to enhance marketplace stability. The benefits of regulatory standards, however, depend on their scope and the extent of flexibility as well as the type of order-generating behavior the proposed regulation intends to address or restrict. Standardization which fails to offer a sufficient level of flexibility for participants and FCMs may actually increase the risk of instability by providing a false sense of security. Currently, market participants and FCMs—due to competition and economic self-interest—deploy risk controls within their systems and throughout their organizations in order to reduce the risk of material losses and market disruptions. These controls have evolved over time and are subject to frequent review, revision and industry discussion—as evidenced by the FIA’s best practice recommendations<sup>10</sup>. Due to participant self-interest, these controls continue to mature and become more effective, per the unique needs and circumstances of each participant—innovation that may not otherwise occur through “standardization.”</p> <p>Regulatory standards, however, would be helpful where FCMs rely upon the pre-trade limit controls provided by DCMs. In some cases, DCMs provide risk controls that are required by exchange rule or CFTC regulation. In instances where the exchange system fails to operate according to the instructions of the FCM, FCMs should be deemed to have met their regulatory</p>

<sup>9</sup> See: “Order Handling Risk Management for Executing Brokers, FIA, March 2012, *supra*, footnote 4.

<sup>10</sup> *Supra* footnote 4

	obligations.
30	Trading pauses, as currently implemented, can be triggered for multiple reasons. Are certain triggers more or less effective in mitigating the effects of market disruptions?
30A	<p>We support appropriate market pauses and circuit breakers as mechanisms to give market participants the opportunity to adjust to extreme market conditions. DCMs should be empowered to determine the triggering criteria of a market pause that best serves to protect the integrity of their markets. Market pause triggers that are clearly communicated to market participants and are deterministically based on the price of the product in question have helped to mitigate the effects of these market disruptions in the past.</p> <p>Trading pauses are intended to protect against the possibility of a breakdown of market integrity. When designing market pause triggering criteria, it is important to acknowledge that a pause of any length may adversely affect the price discovery process and may dramatically reduce a market participant's ability to manage risk. As such, the policies that govern the use of these mechanisms should be established with the goal of keeping markets open as much as possible. This goal can be accomplished by allowing products to trade in a price range sufficiently large enough to allow the marketplace to naturally mitigate transitory liquidity gaps and by leveraging other appropriate pre-trade risk controls such as price limits (also referred to as price collars in this document) and quantity limits to prevent a single errant order from triggering a trading pause.</p> <p>If a trading pause must be triggered because of a fundamental breakdown in the price discovery process, it is important that the duration of the pause is minimized in order to minimize any disruptions to the marketplace. Even a momentary pause of trading afforded by this type of functionality can be enough time to provide an opportunity for market liquidity to be replenished. This was clearly evident on May 6, 2010 when stop-spike functionality on CME Globex triggered a five-second trading pause in the E-mini S&amp;P futures market, during which time buy orders returned to the market leading to the reversal of the broader market decline.</p> <p>Special consideration should be given to trading pauses during the closing period due to the risks associated with suddenly losing the ability to manage risk before the market closes for the day, or even worse, the weekend. For instance, if a significant event were to occur during the closing period on a Friday, trading may be paused. If the market is paused through the DCM close, the next opportunity traders would have to manage their risk may be Sunday evening, 48 hours after the triggering event.</p>
31	Are there additional triggers for which pauses should be implemented? If so, what are they?
31A	FIA does not believe there is evidence at this time to suggest a need to expand the existing triggers.
32	What factors should the Commission or exchanges take into account when considering how to specify pauses or what thresholds should be used?
32A	Regardless of their methodology, trading pauses should take into consideration the unique characteristics of the financial instrument and should be set by the DCM based on historical analysis of the intraday volatility of the product. Given today's highly efficient market structure and sophisticated information processing technology, we believe that short pauses are sufficient to allow market participants to assimilate information, assess risk and resume trading in an orderly manner.
33	How should the re-opening of a market after a trading pause be effected?
33A	We feel that the DCM should be free to design a re-opening process that it deems fit for minimizing the duration of the pause and its impact to the market. This process should be clearly documented and deterministic and should consider its effect on correlated products at that DCM. In general,

	emulating that product’s daily opening process is preferred albeit on an abbreviated timeframe.								
42	What order and trade reports are currently offered by DCMs and DCOs? (EX) What aspects of those reports are most valuable or necessary for implementing risk safeguards? Please also indicate whether the report is included as part of the exchange or clearing service, or whether an extra fee must be paid.								
42A	<p>Drop Copy is a report that summarizes a participant’s execution activity on a trading venue and is generated in as close to real-time as possible. Drop Copy feeds are different from cleared trade feeds in that they (a) may contain additional information to aid a participant’s risk management, such as order state changes, modifications, rejections and cancellations, and (b) are generated at the point of execution, rather than when the trade has been cleared. Currently the contents and method of delivery for Drop Copy feeds vary by trading venue--FIA has released a paper making recommendations for standardization across DCMs<sup>11</sup>. All participants may use Drop Copies for real-time trade reconciliation, including trading firms and FCMs. This reconciliation process typically compares the information provided by a Drop Copy in real-time with the trade notifications received from production trading sessions. This comparison process allows firms to reconcile their electronic trading activity with an independent source of DCM-provided trade notifications. In the event a discrepancy is found, the responsible party may take action immediately to address trading risk, determine the cause of the discrepancy and resolve any issues.</p> <p>Market participants may also supplement their risk management process by using Drop Copy to consolidate multiple trading session reports into a single data feed. This consolidated data feed may then be used by operational staff to more efficiently monitor a participant’s trading activity.</p> <p>The Drop Copy service should not be seen as a revenue generating product for its providers. Good risk management benefits all market participants. Producers should promote the use of Drop Copy by providing it to consumers at no charge or a nominal fee which covers the provider’s costs.</p>								
43	If each order and trade report described above were to be standardized, please provide a detailed list of the appropriate content of the report, and how long after order receipt, order execution, or clearing the report should be delivered from the trading platform to the clearing member or other market participant.								
43A	<p>Drop Copies should be available for all trading venues and products whenever technologically practicable. Trade reports and other information provided by Drop Copy should be disseminated to the consumer in real-time or as near real-time as technologically and operationally practicable. Updates provided by Drop Copy, or any other order and trade report, should include any necessary information required to identify the order described in the update and interpret the changes to that order. Additional details may be provided to increase the utility of the order and trade report.</p> <p>Those details may include:</p> <table border="1" data-bbox="423 1535 1365 1841"> <thead> <tr> <th colspan="2">Message Fields (based on the FIX Protocol)</th> </tr> </thead> <tbody> <tr> <td>Session-related Messages</td> <td>Logon BusinessMessage Reject</td> </tr> <tr> <td>Session Details</td> <td>SessionID</td> </tr> <tr> <td>Order Details</td> <td>ClOrdID (Or any unique customer order ID) SenderSubID (Or any unique trader ID) OriginalClOrderID OrderTimeStamp</td> </tr> </tbody> </table>	Message Fields (based on the FIX Protocol)		Session-related Messages	Logon BusinessMessage Reject	Session Details	SessionID	Order Details	ClOrdID (Or any unique customer order ID) SenderSubID (Or any unique trader ID) OriginalClOrderID OrderTimeStamp
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Order Details	ClOrdID (Or any unique customer order ID) SenderSubID (Or any unique trader ID) OriginalClOrderID OrderTimeStamp								

<sup>11</sup> See: “Drop Copy Recommendations,” *supra*, footnote 4.

			<p>ExecutionReport (all types supported - Fill, Partial, Cancelled, Rejects, etc.)</p> <p>Side</p> <p>OrderType</p> <p>OrderPrice</p> <p>StopPrice (if applicable)</p> <p>TimeInForce</p> <p>ExpireDate (if applicable)</p> <p>ExpireTime (if applicable)</p> <p>MaxShowSize (if applicable)</p> <p>MinOrderQuantity (if applicable)</p> <p>EffectiveTime (if applicable)</p>	
		Instrument Details	<p>Instrument/Symbol</p> <p>MaturityMonthYear (if applicable)</p> <p>StrikePrice (if applicable)</p> <p>PutOrCallMarker (if applicable)</p>	
		Booking Details	<p>Account</p> <p>AccountType</p> <p>All fields related to fill assignment and clearing instructions</p>	
		Execution Report Details	<p>OrderStatus</p> <p>RejectReason (if applicable)</p> <p>TradeDate</p> <p>ExchangeOrderID</p> <p>ExchangeExecutionID</p> <p>LastQuantity</p> <p>LastPrice</p> <p>CumulativeQuantity</p> <p>LeavesQuantity</p> <p>AveragePrice</p> <p>ExecutionTimeStamp</p> <p>MultiLegReportingType (if applicable)</p>	
		Miscellaneous Details	<p>Currency (if applicable)</p> <p>QuoteID (if applicable)</p> <p>IOIID (if applicable)</p> <p>CoveredOrUncovered (if applicable)</p> <p>ManualOrAutomated (where applicable)</p> <p>CountryofOrigin (where applicable)</p> <p>Long/Short (if applicable)</p> <p>OpenOrClose (if applicable)</p>	
44	Is a measure that would obligate exchanges to make error trade decisions (i.e., decisions to cancel a trade or to adjust its price) within a specified amount of time after an error trade is reported			

	feasible? If so, what amount of time would be sufficient for exchanges, but would be sufficiently limited to help reduce risk for counterparties to error trades?
44A	<p>The FIA strongly encourages clear and robust error trade policies that are clearly documented so that all participants understand the consequences of an error. These policies are important for the protection of the DCO as well as individual participants. As discussed in question 24, we strongly encourage pre-trade safeguards such as price collars and maximum order size controls that minimize the need to invoke an error trade policy.</p> <p>Defined error trade policies which impose error trade obligations on participants as well as exchanges have existed for several years at both futures and equities exchanges. These obligations are generally clear and deterministic enough for all participants to understand and abide by. However, individual DCMs and DCOs have differences in their policies, particularly as it relates to time limits for participant notice and exchange decisions. These differences place an unnecessary operational burden on participants. We would encourage the industry to work together to establish consistent notice periods across DCMs.</p> <p>We feel that it is the responsibility of the DCM and DCO to implement an appropriate error trade policy for their markets, and encourage consistency in practices for the same types of financial instruments. This includes the time required to report an error, which should be appropriate to allow continued price discovery after the error trade decision and allow the counterparties to the error to mitigate their risk as quickly as possible. DCMs should also have publicly announced pre-determined “no-bust” or “non-reviewable range” criteria as part of any error trade policy.</p>
45	Should exchanges develop detailed, pre-determined criteria regarding when they can adjust or cancel a trade, or should exchanges be able to exercise discretion regarding when they can adjust or cancel a trade? What circumstances make pre-determined criteria more effective or necessary than the ability to exercise discretion, and vice versa?
45A	<p>The FIA believes that the goal of any error trade policy is to promote a marketplace where all trades stand as executed. Promoting such a goal is the only effective way to ensure that no incentive exists for changing outcomes of orders sent into the market after the fact. It also helps to promote the effective use of risk controls before orders are sent to the DCM. Having clear, deterministic error trade policies is a good first step towards realizing that goal.</p> <p>DCMs should have pre-determined and unambiguous error trade policies that are not subject to discretion. These policies should include pre-determined criteria for the application of “no-bust” or “non-reviewable” price ranges. Clear error trade policies serve to protect all market participants including counterparties to error trades. If error trade policies are unclear or subject to subjective analysis, it is possible that in attempting to reduce the risk of the party responsible for the error trade, the DCM may introduce risk to the counterparty who may have acted in accordance with just and equitable principles of trade.</p>
46	Do error trade policies that favor price adjustment over trade cancellation effectively mitigate risk for market participants that are counterparties to error trades? Are there certain situations where canceling trades would mitigate counterparty risk more effectively? If so, what are they and how could such situations be identified reliably by the exchange in a short period of time?
46A	As discussed in questions 24 and 45, DCMs with error trade policies that promote “all trades must stand” and with pre-trade risk controls in place to prevent errors from happening, are the most effective at mitigating risk. In instances where allowing trades to stand is not possible, then price adjustment is a more effective risk mitigation tool than trade cancellation. Error trade policies that favor price adjustment over trade cancellation also help to mitigate the risk for counterparties to error trades.

	Some argue that certain situations such as the inadvertent triggering of stop orders may warrant trade cancellation. In these situations a temporary price move may trigger a stop order before the market reverts to its correct level. We feel that such situations should be minimized by robust pre-trade risk controls such as price collars and protection limits applied to the stop order.
47	Should error trade policies be consistent across exchanges, either in whole or in part? If so, how would harmonization of error trade policies mitigate risks for market participants, or contribute to more orderly trading?
47A	As mentioned in question 44, fragmented and inconsistent error trade policies add unnecessary operational burdens to participants, with no discernible benefit. We encourage error trade policies for the same types of financial instruments to be consistent wherever possible. The advantages of consistency are that policies are easier to understand and manage, leading to increased market quality and risk mitigation across all participants. We also encourage error trade policies that establish clearly-defined “no bust” or “non-reviewable” price ranges so that market participants have certainty about which trades are not subject to an error trade challenge. Including published “no-bust” or “non-reviewable” ranges is an important feature of error trade policies that enables market participants to better manage the risk of a trade being potentially subject to an error trade challenge.

Question	Section #3: Self-Trade Controls
Opening Remarks	<p>FIA supports controls that assist in the prevention of unintentional self-match activity and believes that all market participants should be required to have policies in place that are designed to prevent manipulative self-match (referred to herein as “wash trades”) activity.</p> <p>For purposes of this discussion, we recommend that the Commission distinguish between three types of self-match trades:</p> <ol style="list-style-type: none"> <li>1. <b>Wash trades</b>—intentional self-matches which the Commission and DCM rules effectively address.</li> <li>2. <b>Bona fide and desirable self-match trades</b>—buy and sell orders for accounts with common beneficial ownership that are independently initiated for legitimate and separate business purposes by independent decision makers and which coincidentally cross with each other in the competitive market. These are not considered wash trades provided that the trade was not prearranged and neither party had knowledge of the other’s order or otherwise intended for their order to trade against the other’s order<sup>12</sup>.</li> <li>3. <b>Inadvertent and undesirable self-matches</b>—two trades submitted by the same trading desk or unit are matched despite best efforts to avoid self-matching, due to the technical and operational limits of today’s matching engine technology. Self-match prevention (SMP) technology is designed to address this group of inadvertent self-match trades.</li> </ol> <p>The CME Market Regulation Advisory Notice #RA1308-5<sup>13</sup> on Rule 534, recently approved by the Commission, provides an excellent description of cases where self-matching is acceptable. The CME advisory notes: “Provided that the respective orders of each independent trader are entered in good faith for the purpose of executing bona fide transactions, are entered without prearrangement, and are entered without the knowledge of the other trader’s order, then such trades shall not be considered to violate the prohibition on wash trades.” The CME applies the same interpretation to algorithms used under the stated conditions.</p> <p>A variety of tools, whether internally developed, DCM-based and/or provided by a third party, may be used to prevent inadvertent self-matches. We believe the most effective location for self-match prevention technology, however, is at the DCM. DCMs should offer participants a suite of functionality options to allow market participants to tailor self-match prevention to their individual needs. Having the DCMs support self-match prevention provides for consistency across market participants in terms of available functionality options, costs, and latency impact.</p>
16	What specific practices or tools have been effective in blocking self-trades, and what are the costs associated with wide-spread adoption of such practices or tools?
16A	<p>DCMs should offer market participants a selection of tools to allow firms to tailor self-match prevention to their individual needs. For example, ICE expanded and CME recently introduced self-trade prevention functionality that provides the ability for market participants to reduce inadvertent self-trading.</p> <p>As we have discussed, there are many types of market participants who use a variety of approaches</p>

<sup>12</sup> CME Group Market Regulation Advisory Notice RA1308-5 issued on November 19, 2013 and found at: [http://www.cmegroup.com/tools-information/lookups/advisories/market-regulation/CMEGroup\\_RA1308-5.html](http://www.cmegroup.com/tools-information/lookups/advisories/market-regulation/CMEGroup_RA1308-5.html)

<sup>13</sup> *Id*

	to interact with the market, including direct access (Direct ATS participants), using an FCM’s systems (Indirect ATS participants) or desk, or using a third-party vendor to route orders. For the widespread adoption of the self-match prevention logic that we have articulated in response to the question, there would need to be a coordinated development across all parties to ensure that the needs of every type of market participant are appropriately met and implemented across all systems. This will require input from the participants, vendors and FCMs as well as the DCMs. FIA is currently working with DCMs to further develop this technology.
17	Please indicate how widely you believe exchange-sponsored self-trading controls are being used in the market.
17A	We believe exchange-sponsored self-trading controls are being widely used in the market in some capacity. In a survey of FIA PTG member firms, all 26 responding firms indicated that they were using some form of self-trading control. Of the 26 responding firms, 25 firms indicated that they were using exchange-sponsored self-trading controls as allowed by the limitations of the current functionality. It should be noted that firms are working with the exchanges to further develop this functionality. In addition, 21 of the 26 responding firms indicated that they were also using other types of self-trading controls in addition to exchange-provided controls.
18	Should self-trade controls cancel the resting order(s)? Or, instead, should they reject the taking order that would have resulted in a self-trade? If applicable, please explain why one mechanism is more effective than the other.
18A	<p>Due to the diversity of trading operations and strategies, there is not a one-size-fits-all answer to this question. DCMs should offer market participants a suite of functionality options to allow firms to tailor self-match prevention to their individual needs. For example, a market participant that predominately acts as a liquidity provider may not want its resting quotes to prevent new hedge orders from being accepted for execution by the DCM. Similarly, a market participant that rests large limit orders for extended periods of time may not want those orders to be cancelled as a result of submitting a new, aggressing one-lot order to the DCM. To address this, we believe that DCM-provided self-match prevention functionality should offer varying cancellation options (i.e. cancel resting, cancel new, cancel both, and decrement order quantity*) so that orders from independent sources may freely interact with each other while providing maximum flexibility for handling orders from the same source.</p> <p>In addition, the SMP functionality should take into consideration if a resting order will be filled as a result of an aggressing order triggering a match event when deciding whether or not to cancel the incoming or resting order. For instance, a resting order that is at the back of the queue in a first-in-first-out matching engine may not be filled by an aggressing order. In that case, it should not trigger self-match prevention functionality.</p> <p>*Decrement technology would cancel the smaller of the potentially self-matching orders and would reduce the larger order by the size of the smaller order.</p>
19	Should exchanges be required to implement self-trading controls in their matching engines? What benefits or challenges would result from such a requirement?
19A	<p>To reduce the number of inadvertent self matches, DCMs should offer market participants a suite of functionality options to allow firms to tailor self-match prevention to their individual needs. Having the DCMs support self-match prevention provides for consistency across participants in terms of functionality options available, costs, and latency impact. It is important to note that exchanges must be able to remediate SMP functionality issues in as close to real time as possible.</p> <p>The implementation of SMP controls should remain optional and a decision by a market participant not to implement the functionality should not be construed as evidence of intent to execute a wash</p>

	trade. On the contrary, optionality means that there may be a number of legitimate reasons for a decision not to rely on the functionality. Market participants would welcome the opportunity to use self-match prevention functionality once it is flexible and robust enough to support their trading practices. We support the approach CME Group has taken in making its functionality optional for all types of end users. We do not support mandating controls for one type of market participant.
20	Please explain whether regulatory standards regarding the use of self-trading control technology would provide additional protection to markets and market participants.
20A	Both the Commission and DCMs currently have effective rules in place that prohibit intentional wash trades. FIA does not believe that additional regulatory standards will provide increased protection to markets and market participants. The functionality to prevent self-matching is evolving and the industry is working with the DCMs to improve the technology to increase its effectiveness in preventing self-matching while preserving legitimate trading.
21	If you believe that self-trading controls are beneficial, please describe the level of granularity at which such controls should operate (e.g., should the controls limit self-trading at the executing firm level? At the individual trader level?) What levels of granularity are practical or achievable?
21A	FIA believes that self-match prevention functionality should be offered at varying levels of granularity (i.e. firm level, group level, trader ID level, customer account level and strategy level). It should be noted that certain levels may be combined or offered in conjunction with another level.
22	If you believe that self-trading controls are beneficial, please explain whether exchanges should require such controls for market participants and identify the categories of participants that should be subject to such controls. For example, should exchanges require self-trading controls for all participants, some types of participants, participants trading in certain contracts, or participants in market maker and/or incentive programs? What benefits or challenges would result from imposing such controls on each category of participant?
22A	<p>FIA supports controls that aid in the prevention of self-match activity and believes that all participants should have policies and procedures in place that are designed to prevent manipulative wash trade activity. The industry supports the DCM development of self-match prevention technology and expects that it will ultimately be effective in significantly reducing the number of inadvertent self-matches.</p> <p>Self-match prevention functionality is an emerging technology and there are currently significant challenges with its implementation. Below are two examples of these challenges, but there are many more:</p> <ol style="list-style-type: none"> <li>1. Many market participants (e.g., institutional clients and commodity trading advisors) do not connect directly to the exchange platform and instead rely on brokers and third-party vendors for access. Existing SMP logic does not allow for prevention to be set at granular levels within the broker's or vendor's connection to the DCM, and cannot be mandated in its current form without a thorough impact analysis across DCMs, FCMs, vendors and all market participants.</li> <li>2. Many market participants have trading operations in which various traders, trading groups and/or separately designed trading algorithms can make fully independent trading decisions that place orders in the same instrument for the same beneficial owner (for example a firm's proprietary account or a CTA managed fund). These orders may occasionally match with each other in the market.</li> </ol> <p>To require the adoption of DCM-based self-match prevention as a "one-size-fits-all" approach may</p>

	<p>result in unnecessary financial exposure caused by the inherent blocking of legitimate transactions. Due to limited options surrounding DCM self-match prevention choices, coupled with the diverse business structures (e.g., FCM's, managed accounts, retail platforms) within the financial industry, mandatory implementation in its current state would be not only difficult, but potentially dangerous. The options for this type of functionality must be flexible enough so that market participants can choose the method that best suits their business and preserves legitimate trading.</p>
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Question	Section #4: System Safeguards
Opening Remarks	<p>All of the questions in this section deal in some way with the subject of “kill switches.” As a threshold matter, we note that there is not a single type of kill switch applied in the market and that the management of a kill switch can involve considerable complexity. The popular image of a “red button” type kill switch cannot be applied in practice without introducing the possibility of additional risk being unnecessarily injected into the system. As a general matter, the FIA believes that kill switches, if implemented and used properly, can serve as an effective last-resort means of risk control. However, kill switches are not a panacea and they should be considered only one of many different types of risk controls and should only be used during extreme events when all other courses of action have been exhausted. We urge the Commission to look beyond kill switches to other system safeguards suggested in FIA and FIA PTG white papers<sup>14</sup> and discussed in more detail within Section 2 of this document.</p> <p>We feel that it is important to make a clear distinction between a kill switch and other types of controls that could be used to stop market access such as a pre-trade risk management system. We discuss these controls in further detail in section 2. The discussion here will focus on the concept of immediately disabling all market activity for a particular participant or group of participants based on a decision that such action is protective to market integrity or the financial integrity of the counterparties involved.</p> <p>Kill switches should be designed so that they are nuanced and flexible to allow for maximum granularity in configuration and enforcement. It is important that kill switches be designed so that they do not add risk to the marketplace by either preventing risk-reducing orders or inadvertently preventing market participants that are not associated with the offending order flow from trading.</p> <p>The conditions under which a kill switch will be used must be clearly communicated to market participants. A failure to communicate policies that govern the use of kill switches, any potential changes to such policies, or the utilization of a kill switch in a live trading environment without prior notification can introduce significant risk to a market participant’s trading operation as well as the wider marketplace.</p> <p>With respect to the question of whether the use of kill switches should be standardized, the FIA sees potential benefits and costs. Standardization of the use of kill switches could offer some potential benefits to the marketplace, including predictability of the processes, policies and procedures. Centrally located kill switches, such as those that are DCM-hosted, could provide a standardized base-line level of kill switch control to all market participants submitting orders to that DCM. However, it is important to note there are many complications in designing kill switches: blocking of future orders, cancellation of working orders, or enablement of liquidation only orders. Determining when to apply each of those functions is complicated and requires nuanced judgment calls. Standardization can impose costs on the marketplace, especially if poorly calibrated or too widely applied, by potentially disrupting legitimate trading operations, aggravating risk management, and inhibiting the natural price discovery process. Additionally, overly prescriptive requirements may cause kill switches to become quickly outdated and ineffective as technology and markets evolve.</p>
48	The Commission’s discussion of kill switches assumes that certain benefits accrue to their use across exchanges, trading and clearing firms, and DCOs. Please comment on whether such redundant use of kill switches is necessary for effective risk control.
48A	DCMs may use automated or manual kill switches when addressing the need to maintain market

<sup>14</sup> In particular, see: “Market Access Risk Management Recommendations,” FIA, April, 2010 and “Recommendations for Risk Control for Trading Firms,” FIA PTG, November, 2010, *supra*, footnote 4.

	<p>integrity, and, given their role within the trading lifecycle, could be considered best positioned to impose kill switch functionality on market participants.</p> <p>However, we do not advocate a prescriptive requirement for DCM-based kill switches due to the challenges around setting the correct level of granularity. Given the diversity in participants using automated trading systems directly or indirectly, consideration needs to be given to whether connections to the DCM are unique to a participant or shared across participants. In the event of a shared connection—as provided by FCMs to multiple customers—invocation of a kill switch should only affect the activity of the specified participant and not others. If a DCM cannot provide the appropriate level of granularity in such a case, then the Commission should not expect that the functionality can be used appropriately, and instead the focus of managing participant activity should fall with the FCM not the DCM. To this point, market participants and FCMs may leverage proprietary automated or manual kill switches as part of their suite of risk controls.</p> <p>If implemented and used properly, kill switches can offer an effective means to suspend a market participant’s trading activity at various levels of the trading life cycle. The criteria used to determine when a kill switch is triggered may be diverse, and the resulting effect on a participant’s activity can vary from highly granular to broad in scope. However, they are not a panacea, and the existence of a kill switches is not essential for effective risk control. Rather, kill switches should be considered one of many different types of risk controls that comprise an effective suite of risk controls, and only invoked as a last resort during extreme events when all other courses of action have been exhausted. In an environment that has adequate pre-trade risk controls at all appropriate focal points for the participant, FCM and DCM, a kill switch may be considered redundant.</p>
49	<p>What processes, policies, and procedures should exchanges use to govern their use of kill switches? Are there any different or additional processes, policies and procedures that should govern the use of kill switches that would specifically apply in the case of DMA?</p>
49A	<p>A robust kill switch—or trading termination—methodology that can be applied at the DCM level should have the ability to be invoked at the finest resolution possible, and should include manual and automated methods for triggering the kill switch.</p> <p>As we have discussed in question 48, the invocation of a kill switch is a final measure only to be taken when other risk control processes have not been successful. As such, policies and procedures should be in place for contacting the market participant to discuss a means of intervention prior to a kill switch being invoked. The policies and procedures should also be written to clearly authorize DCM staff to terminate market access when action is required immediately to protect market integrity or the financial integrity of the parties involved, even in the event that contact cannot be made with the participant, FCM or a supervisor at the DCM.</p> <p>These conditions must be communicated to the market participant accessing the DCM directly or to the FCM facilitating access for customers. Any potential changes to those conditions should be discussed with the market participant prior to taking effect. A failure to communicate policies that govern the use of kill switches, any potential changes to such policies, or the unsupportable unilateral invocation of a kill switch in a live trading environment can introduce significant risk to a market participant’s trading operation as well as the wider marketplace.</p> <p>DCMs should train all relevant staff on their policies and procedures governing the use of kill switches and ensure that access to kill switches is limited to authorized personnel. Furthermore, procedures must be in place for authorized staff at the Direct ATS Participant or FCM to contact the authorized staff at the DCM to request that the appropriate kill switch be activated on their behalf. We note that many DCMs have already taken the initiative to define such policies and</p>

	procedures that are well-suited for the scope of their marketplace.
50	What processes, policies, and procedures should clearing firms use to govern their use of kill switches when using such a safeguard to cancel and prevent orders on behalf of one or more clients?
50A	<p>A robust kill switch—or trading termination—methodology that can be applied at the FCM level should have the ability to be invoked at the finest resolution possible and should include manual and automated methods for triggering the kill switch.</p> <p>As we have discussed in question 48, the invocation of a kill switch is a final measure only to be taken when other risk control processes have not been successful. As such, policies and procedures should be in place for contacting the market participant to discuss a means of intervention prior to a manual kill switch being invoked - for example at risk limit thresholds set at 25%, 50%, 75%, etc. of the absolute limit - and should also limit the scenario where the kill switch is invoked unilaterally. The procedures should also be written to clearly authorize the FCM staff to terminate market access for a customer when action is required immediately to protect market integrity or the financial integrity of the parties involved, even in the event that contact cannot be made with the customer or a supervisor at the FCM.</p> <p>These conditions must be communicated to the market participant. Any potential changes to those conditions should be discussed with the market participant prior to taking effect. A failure to communicate policies that govern the use of kill switches, any potential changes to such policies, or the unsupportable unilateral invocation of a kill switch in a live trading environment can introduce significant risk to a market participant’s trading operation as well as the wider marketplace.</p> <p>FCMs should train all relevant staff on their policies and procedures governing the use of kill switches and ensure that access to kill switches is limited to authorized personnel. Furthermore, procedures must be in place for authorized staff at the market participant to contact authorized staff at the FCM to request that the kill switch be activated on their behalf.</p>
51	What objective criteria regarding kill switch triggers, if any, should entities incorporate into their policies and procedures?
51A	<p>As we have stated in question 48, a kill switch is redundant if the appropriate risk controls are implemented at participant FCM and DCM level. These risk controls should be set appropriately for the participant and should monitor and control activity before a kill switch is needed. However, if a kill switch is used as final safeguard then its invocation should always be considered a final measure to be used only after other controls have failed, including discussion with the participant regarding their activity.</p> <p>It is advisable to outline procedures for whether new orders are to be blocked, whether working orders are to be cancelled, and whether liquidation orders should be permitted. Written procedures should also delineate when it is advisable to take these actions, who should approve these actions, and who should be notified. The process should incorporate reasonable approaches to the benchmarking of limits as well as a process to re-evaluate limits when necessary.</p> <p>As we have discussed in questions 49 and 50, policies should be generic at both DCM and FCM levels and procedures should be clearly documented regarding the escalation and final invocation of the kill switch. These policies should be flexible enough to take into account the trading operations of the participant including—but not limited to—the type of activity that the participant engages in and their creditworthiness.</p>

52	What benefits or problems could result from standardizing processes, policies, and procedures related to kill switches across exchanges and/or clearing firms?
52A	<p>The benefits of standardization could include predictability of the processes, policies, and procedures. Centrally located kill switches, such as those that are DCM-hosted, could provide a standardized base line level of kill switch controls to all market participants submitting orders to that DCM, although it is important that kill switches act at the appropriate level of granularity for an FCM's connection used by multiple participants.</p> <p>However, standardization, if poorly calibrated or too widely applied, could disrupt legitimate trading operations, aggravate risk management, and inhibit the natural price discovery process by either being invoked too soon or too late. Overly prescriptive requirements may also cause kill switches to become quickly outdated and ineffective as technology and markets evolve. To avoid this, kill-switch polices should take into account the unique business operations of each market participant, the technical limitations of each DCM, and the dynamics of each product they govern.</p> <p>As we have stated in question 48, kill switches are redundant if appropriate pre-trade risk controls are in place to limit accidental trading or market disruption. If kill switches are implemented at FCM or DCM levels, then they should only be invoked as a last resort, and the policies and procedures regarding the escalation for this course of action should be clearly documented and understood by all parties involved.</p>
53	Please explain how kill switches should be designed to prevent them from canceling or preventing the submission of orders that are actually risk reducing or that offset positions that have been entered by a malfunctioning ATS.
53A	<p>First and foremost, kill switches should be nuanced and flexible to allow for maximum granularity in configuration and enforcement and should only be invoked as a last resort when other risk management controls have not be successful.</p> <p>Those responsible for the administration of the kill switch should be able to prevent or permit orders from being submitted or accepted across several dimensions on an order-by-order basis, rather than blocking all messages. This ability is of paramount importance because a kill switch that prevents risk-reducing orders, or inadvertently prevents market participants that are not associated with the offending order flow from trading, is inherently adding undue risk to the marketplace.</p> <p>Where possible, an effort should be made to design kill switches in a way that allows for continuation of position-reducing trading.</p>
54	The Commission requests comment regarding whether kill switches used by clearing firms already have or should have the following capabilities: (a) distinguish client orders from proprietary orders; (b) distinguish among orders from individual clients; and (c) cancel working orders and prevent additional orders from one or more of the clearing firm's clients, or for all the clearing firm's proprietary accounts, without cancelling and preventing all orders from the clearing firm.
54A	<p>Typically FCMs separate their proprietary orders from their clients' orders and are able to cancel proprietary orders quickly without affecting their clients' trading.</p> <p>FCMs will distinguish between individual client orders using a variety of naming conventions that identify the customer based on their firm, operator ID or trading account and are designed to permission each client independently based on conversation with the customer and an assessment of the customer's risk.</p> <p>For an FCM to use a kill switch for customer flow through its own pipes to the DCM, it must be</p>

	<p>granular enough to identify individual clients according to the FCM’s naming scheme, and typically the revocation of customer trading access is actioned through the FCM’s own pre-trade risk controls rather than a control provided by a DCM.</p> <p>Where an FCM has to rely on a DCM-provided risk management control—for example for a Direct ATS participant—the FCM must ensure that the DCM control operates at a suitable level to control only that customer’s order flow and not be shared across customers. It is important to note that DCM risk management tools vary in how they are implemented based on how the DCM identifies trading sessions or operator IDs.</p>
55	<p>The Commission is aware of proposals that would enable FCMs to establish credit limits for customers that are stored at a central “credit hub” for the purpose of pre-trade credit checks. If such a model were implemented, is it possible that it could also be enabled with kill switches that cancel existing working orders and prevent additional orders from being submitted by one or more market participants? Should such an approach be designed to complement kill switches that are controlled by exchanges, clearing members, and trading firms, or to replace these kill switches? What benefits and drawbacks would result from each approach?</p>
55A	<p>As we discuss above in our responses to questions 34 through 41, the FIA believes that it is important to make a clear distinction between credit controls and pre-trade risk controls, including the concept of a kill switch.</p> <p>We do not feel that credit controls, whether implemented on a pre-trade basis through a hub, or on a post trade basis at an FCM, are a suitable control in the context of a malfunctioning ATS. Instead, the emphasis should be on adequate pre-trade risk controls at all appropriate levels—participant, FCM and DCM—to prevent issues, and control market access at the appropriate level of granularity. A kill switch that disables at least some trading access should only be invoked as a last resort when all other controls have failed.</p>

Question	Section #5: Testing and Change Management
Opening Remarks	<p>The FIA believes that the same levels of responsibility for testing and change management should apply to all market participants that deploy their own technology, as well as providers of technology that allows access to the markets. Market participants that deploy their own technology include both Direct and Indirect ATS Participants. Providers of market access technology include third-party vendors and FCMs that develop their own order entry, order routing and automated trading tools—for example, autospreaders or FCM-provided execution algorithms. DCMs also have an important responsibility in facilitating the ability of market participants to test their systems against DCM systems ahead of any system changes being released into production.</p> <p>As we describe below, FIA PTG and FIA EPTA members have been thought leaders in developing best practice recommendations for testing and change management at the trading firm level.<sup>15</sup> The principles described in our responses can be viewed as building blocks all types of market participants may use to tailor a testing and change management process. These practices facilitate effective risk management and are consistent with the overall testing and change management process: identifying the desired or required change, developing and testing the change, deploying the change, and verifying the change. The core components of a change management process include: 1) effective pre-deployment review of the proposed change, and 2) auditability procedures for communicating requirements, changes and functionality related to their proprietary software and technical infrastructure. Market participants should also maintain a historical audit trail of material changes made to their proprietary software.</p> <p>The best practices used to guide software development, testing, and change management by market participants may also be applied to DCMs. We believe it is impractical to implement prescriptive standardized procedures for development, testing, and change management of DCM systems given the diversity of the technologies and business operations that are in use at DCMs. DCMs should consider any potential impact to market participants, compliance systems, and reporting mechanisms during the development, testing, and change management process. DCMs should also provide their customers with an opportunity to test their systems against the proposed change in a DCM-provided development or certification environment ahead of the release of the proposed change into production.</p>
56	Please describe the necessary elements of an effective ATS testing regime, in connection with both the initial deployment and the modification of an ATS.
56A	<p>In March 2012, FIA PTG and FIA EPTA published <i>Software Development and Change Management Recommendations</i><sup>16</sup> which include best practices for software development, testing and change management. While written specifically for trading firms, we believe these recommendations can be applied to all market participants. The report recommends that firms have a process for testing core software components before they are released to the production environment. Software testing should be appropriate and proportionate to the change being made and should be performed in an environment that sufficiently simulates the necessary aspects of the production environment such as a DCM-provided test environment or a proprietary simulation environment. A variety of effective testing methodologies exist and each market participant should employ a suite of software testing tools to suit their unique needs.</p> <p>Among the testing methods to consider are:</p>

<sup>15</sup> For a full list of references, see footnote 4.

<sup>16</sup> See: “Software Development and Change Management Recommendations,” FIA PTG and FIA-EPTA, *supra*, footnote 4.

	<p><b>Unit Testing</b>—Discrete units of source code are tested to verify they work as desired. These tests may be configured to run automatically throughout the development process.</p> <p><b>Functional Testing</b>—Well-defined software modules are combined to have their functionality tested as a group. Two types of functional testing that may be considered are “integration” and “regression” testing.</p> <p><b>Non-Functional Testing</b>—Well-defined software modules are combined to have their non-functional aspects tested as a group. Such non-functional aspects might include scalability, performance, stability, and usability.</p> <p><b>Acceptance Testing</b>—The software is tested by an end-user to verify conformance of a system to the stated business requirements. Acceptance testing should be done in an environment that adequately represents the environment in which the software will be released.</p> <p><b>DCM-Based Conformance Testing</b>—Used to confirm a system’s functionality while interacting with a DCM. This process is often guided by a script of tests provided by the DCM and is performed in a DCM-provided test environment to simulate the production trading environment.</p> <p>We encourage DCMs to develop more robust test environments that more closely simulate trading in the production environment, and market participants to thoroughly test new and modified software in these DCM provided simulators when necessary.</p> <p>During the development and testing process, market participants should consider potential impact to trading systems, external markets, compliance systems, middle and back office systems, user interfaces, and reporting mechanisms.</p>
57	<p>With respect to testing of modifications, how should the Commission and market participants distinguish between major modifications and minor modifications? What are the objective criteria that can be used to make such distinctions? Should any testing regime applicable to ATS modifications distinguish between major and minor modifications, and if so, how?</p>
57A	<p>All software modifications, regardless of their magnitude, should be tested appropriately and proportionately to the modification being made. The Commission is correct to acknowledge that software modifications can differ in magnitude, but we caution against classifying modifications as “major” or “minor.” Given the wide range of technologies leveraged by technical staff when implementing systems and the unique needs of the trading industry’s diverse set of market participants it is impractical to develop a set of objective criteria to qualify a modification as “major” or “minor.” These are highly subjective terms that are difficult to properly apply and may be misleading to technical and other staff. Instead, those responsible for development, testing, and change management should be allowed to determine the amount and type of testing necessary to confirm that a modification is working as intended since they are best positioned to understand the scope of such a modification as well as any external impacts it may have.</p> <p>Any attempt to classify the magnitude of a modification should be limited to whether a modification is material or immaterial to core functionality and business operations, and that determination should be made by those responsible for the development, testing, and change management of the software. By doing so those responsible will be able to determine if recertification with DCMs is necessary, properly communicate the modifications to the necessary staff, and prepare for any potential impact to internal and external operations. In other words, by understanding if a modification is material or immaterial, those responsible will be better equipped to follow the proper change management procedures.</p>

The following principles can serve as building blocks that market participants may use to tailor a change management process to best fit their needs. Firms may choose to combine one or more of these steps into a single step in their process, while others might elect to split a particular step into several other sub-steps. Different kinds of modifications may warrant different refinements or variants of the process, depending on the nature of the modifications and their potential impacts.

#### ***Change Management Core Components***

The following practices are integral to a market participant's change management process:

- **Authorization**—Any changes to the production environment should be subject to review by a responsible party within the organization. The depth of the review performed should align with the magnitude of the proposed change.
- **Auditability**—Market participants should establish procedures for communicating requirements, changes and functionality related to their proprietary software and technical infrastructure. A historical audit trail of material changes made to proprietary software should also be maintained, allowing firms to accurately determine:
  - When a change was made,
  - Who made the change, and
  - The nature of the change.

#### ***Steps Commonly Seen Within the Release Process***

- **Initiation**—Every software change is initiated to meet a business, technical, or external requirement. The initiator of the change should identify the requirement(s) or nature of the change.
- **Approval**—Prior to deployment, a planned change should be reviewed and subject to approval by a responsible party. This review may occur prior to development taking place or after development is completed.
- **Scheduling**—Prior to deployment, a planned change should be scheduled for release into the production environment and should be considered along with any other planned changes.
- **Deployment**—Deployment is the act of releasing a change into the production environment. Depending on the nature of the change, it may be appropriate to deploy to the entire production environment at once or to deploy the change in phases to further mitigate risk and ease the reversion of the change if necessary.

Deployment may be thought of as containing four phases:

- (1) **Preparation**—The change is prepared for release and the current production environment is backed up in order to allow for reversion of the change.
- (2) **Execution**—The change is released to the production environment.
- (3) **Validation**—The change and the state of the production environment should be verified for correctness. The scope of a firm's validation process should be

	<p>appropriate and proportionate to the change being made.</p> <p>(4) <b>Completion/Reversion</b>—A successful validation should result in completion of the change. If the change cannot be validated, the environment should be reverted to its prior stable state.</p> <ul style="list-style-type: none"> <li>• <b>Post Deployment</b>—Special consideration should be given to how certain changes to trading systems may impact trading in the production environment. Where reasonable, substantive changes to trading systems should be activated initially with appropriately restricted risk limits and access to markets.</li> </ul> <p>These practices facilitate effective risk management and are consistent with the overall development and change management process: identifying the desired or required change, developing and testing the change, deploying the change, and verifying the change.</p>
58	<p>What challenges or benefits may result from exchanges implementing standardized procedures regarding the development, change management and testing of exchange systems? Please describe, if any, the types of standardized procedures that would be most effective.</p>
58A	<p>As with trading systems, it is impractical to implement prescriptive standardized procedures for development, testing, and change management of DCM systems given the diversity of the technologies and business operations that are in use at DCMs. Nonetheless, the best practices that may be used to guide software development, testing, and change management by market participants may also be applied to DCMs.</p> <p>In addition to the practices described in <i>Software Development and Change Management Recommendations</i>, DCMs should consider any potential impact to market participants, compliance systems, and reporting mechanisms during the development, testing, and change management process. If the proposed software release would have a material impact on their market participants, the DCM should take steps to clearly communicate the expected impact to their customers as well as its proposed release date. When deciding on a release date DCMs should take into account the time needed by their customers to make any software or operational changes necessary to properly account for the proposed release. To aid in this process, DCMs should also provide their customers with an opportunity to test their systems against the proposed release in a DCM-provided development or certification environment.</p>
59	<p>Should basic crisis management procedures be standardized across market participants? If so, what elements should be addressed in an industry-wide standard?</p>
59A	<p>FIA strongly recommends that market participants have crisis management procedures in place for managing software and operational failures. The ability to manage a crisis shouldn't be inhibited by an overly prescriptive crisis management procedure. Instead these procedures should be designed by the market participant that intends to use them and should be commensurate with the type of business they are conducting. For example, a firm handling customer trades should consider the needs of the customers when developing a DR/BCP plan whereas a firm trading exclusively for its own account will have different DR/BCP needs. Given the diversity of market participants that exists today it is infeasible, and potentially dangerous, to standardize crisis management procedures with prescriptive rules.</p>
60	<p>Are there specific, core requirements that should be included in any crisis management procedures? Similarly, are there specific types of crisis events that should be addressed in any crisis</p>

	management procedures? If so, please identify such requirements and/or crisis events and the level of granularity or specificity that the procedures should have with respect to each.
60A	<p>Firms should consider a DR/BCP plan that is appropriate for their business. Such plans should designate disaster response personnel and include all necessary contact details. As no two business operations or crisis events are the same, procedures should be flexible enough to allow responsible personnel to take into account the facts and circumstances of a particular event while deciding the necessary course of action to take in response to the event. A prescriptive crisis management procedure may be overly specific and, as a result of not considering the myriad of contextual details possible for any given event, may require responsible personnel to take a suboptimal course of action.</p> <p>To minimize the impact of certain types of disruptions, firms should consider the utility of standby systems for production infrastructure such as servers and network hardware in addition to key services such as the trading application and supporting services such as back office and even business e-mail continuity. Business continuity plans should be tested and participation in DCM-sponsored failover testing when available is encouraged. FIA recommends that a secondary means of execution be established in the event that the primary access to execution platforms is not available.</p>

Question	Section #6: Registration, Certification and Identification
Opening Remarks	<p>The FIA supports a principles-based approach regarding registration, certification and identification of automated trading systems. We believe it should be left to the individual DCMs to define these policies for their market participants.</p> <p>US DCMs have their own rules regarding identification and registration of an ATS. Such rules are designed to allow the DCM to identify orders generated by the ATS and know the supervisor(s) behind the ATS. These rules apply to all types of ATSs deployed by both Direct ATS Participants and Indirect ATS Participants. The CME also asks for identification of all orders, modifications and cancelations generated by an automated trading tool, including third-party vendor-supplied autospreaders and FCM provided execution algorithms.</p> <p>DCMs also have requirements around certification for all participants connecting to their trading platforms, including the retention of log files regarding the generation and execution of orders sent to the DCM.</p> <p>FCMs are required by CFTC rule 1.73 to ensure that all orders are automatically screened for pre-trade risk management. FCMs are also regularly inspected by the self-regulatory organizations (SROs) to ensure that they perform adequate risk management of their customers and maintain records of customer activity.</p> <p>We believe that all market participants have a responsibility to implement appropriate pre-trade risk controls, post-trade reports and system safeguards to ensure that the integrity of the market is maintained. This responsibility is implicit for both DCMs and FCMs to grant access to a participant regardless of the sophistication of the technology used to trade, and access can be revoked in the event of poor quality standards. Due to the variety of approaches taken across different organizations regarding development, testing and implementation of technology--as well as its proprietary nature and intellectual property—we feel it is more appropriate to provide guidelines regarding quality management as opposed to imposing a registration and certification regime that would be difficult to enforce across the Commission, SROs, DCMs, FCMs and market participants.</p> <p>We welcome the opportunity to discuss any additional information the Commission may seek regarding participants that is not already included in the DCMs’ audit trails. Expanding the information required in the audit trail may be a more direct and efficient way to address the Commission’s concerns than a new registration framework.</p>
61	How often should a market participant certify that their pre-trade risk controls, post-trade reports and other measures, and system safeguards meet the necessary standards?
61A	FIA believes that all system changes, including those pertaining to a system’s risk controls, should be tested prior to deployment. Without first determining the registration and certification requirements, it is not practical to identify a reasonable certification timeframe or frequency. For a more complete description of best practices, please see Section 5.
62	Which representative of the market participant should be required to attest that the certification standards have been met? Should it be the market participant’s chief executive officer, chief compliance officer, or similar high-ranking corporate official, or some other individual?
62A	In the event that the Commission determines that certification is required, standards should be principles-based, and the adherence to these standards should be the responsibility of senior management at the market participant, FCM or DCM.
63	Which entity(ies) should receive certifications from market participants? For example, should it be

	the market participant's clearing firm, its designated self-regulatory organization (if applicable), one or more trading platforms, a registered futures association, the Commission, or other entity?
63A	<p>We believe that each organization should take responsibility for quality management of its trading systems. Rather than managing formal certifications, market access should be based on an attestation that the highest quality standards are maintained, and appropriate risk controls and escalation procedures have been put in place to ensure market integrity. Properly implemented pre- and post-trade risk management at various levels can minimize the occurrence of accidental disruption, but in the event of an issue we recommend that responsibilities should be as follows:</p> <ul style="list-style-type: none"> <li>• A market participant is responsible for the systems that it uses, and should ensure full quality standards are met before that system is deployed in production;</li> <li>• An FCM is responsible for providing a participant access to a DCM, as well as the quality of any systems, including execution algorithms, that it provides to its customers;</li> <li>• A DCM is responsible for the maintenance of an orderly marketplace.</li> </ul> <p>In the event that the Commission determines that certification is required, the certifying entity (market participant, FCM or DCM) should maintain the certification and provide to relevant parties or regulators upon request.</p>
64	Should DCMs, SEFs or clearing member firms be required to audit market participant certifications? What would be covered in an audit and how often should these audits occur? Should the same entity that receives the certification be required to perform the audit?
64A	<p>Audits cannot be conducted until a defined and proven set of rules exist. While all market participants strive to use good controls, the industry is in the early stages of defining what those controls should be. Audit capabilities and responsibilities should be discussed after standards are determined and there is significant maturity to the process to allow for cost effective audit programs to be developed.</p> <p>As discussed in question 63, each organization has a responsibility to help ensure quality controls around its business.</p>
65	Do commenters believe that risk event notifications would help to better understand and ultimately reduce sources of risk in automated trading environments? What information should be contained in a risk event notification to maximize its value?
65A	<p>FIA supports provisions that are designed to enhance and standardize risk event notifications that are of interest to all market participants. Notifications should come from the DCM that oversees the integrity of the marketplace. Market participants value notification of exchange system intrusions, flaws, glitches, or interruptions that could impact the price discovery process and cause issues with their own management of market risk.</p> <p>Risk event notifications should be concise and informative in order to allow participants to quickly determine their response and should only be generated when there is concern that market integrity may be at risk. Too many notifications may ultimately be counterproductive by desensitizing participants to the importance of incident notices and increasing the likelihood that such notices will be ignored.</p>
66	What types of risk events should trigger reporting requirements, and what entities should receive risk event notifications from market participants operating ATSSs?
66A	In the event of a significant risk event within a market such as a pause, unscheduled closure or review of trades, the DCM should disseminate the notification to all members of the exchange,

	<p>including NCMs and FCMs, as well as making the information available through a publicly disseminated feed for other market participants to monitor. FCMs have the discretion to pass risk event notifications onto their customers.</p> <p>We believe that due to the proliferation of ATS participants, it is impractical for them to notify all other market participants, and indeed they may not be in a position to do so while they address any issue that may have an impact on the market. We feel that in a situation where a participant has an issue it should liaise directly with the market control team at the DCM, who should then decide how to notify other participants according to the severity of the incident while strictly maintaining participant confidentiality.</p>
67	Which entities should receive risk event notifications?
67A	As previously stated, risk event notifications should be disseminated by the DCM through direct communication with member firms, as well as broadcast through appropriate public channels.
68	Should the Commission define ATS or algorithm for purposes of any ATS identification system that may arise from this Concept Release? If so, how should ATS or algorithm be defined? Should a separate designation be reserved for high-frequency trading algorithms and if so, what is the threshold difference?
68A	<p>As we have discussed in the response to question 1, we do not believe that any distinction can or should be made between automated trading and HFT, and as discussed in question 3 any attempt to impose an arbitrary threshold would create an artificial division of market participants that does not take into account the quality of their activity within the market. We strongly suggest that the Commission concentrate its efforts on identifying and mitigating risks and abusive practices broadly across all market participants as opposed to focusing on identifying automated trading systems based on the number of messages they may generate or other technical criteria.</p> <p>While there would not appear to be any need for the Commission to establish an official regulatory definition of ATS, any such definition should be clear and unambiguous, and as close as possible to the definitions that are already in place and that the industry understands and has incorporated into its systems and nomenclature.</p> <p>The definition of ATS is simple and has been in use for a long time. One DCM, for example, defines ATS, or automated orders, as those that are generated and/or routed without human intervention. This definition applies to orders generated by a computer system as well as orders that are routed using functionality that manages order submission by automated means (i.e. execution algorithms). By contrast, a manual order is that which is submitted to the matching system by an individual directly, typically via keyboard, mouse, or touchscreen, and which is routed in its entirety to the match engine at the time of submission. A number of DCMs require an automated/manual indicator to be placed on each order or cancellation message.</p> <p>The term “algorithm” broadly refers to a step-by-step procedure used for calculation or analysis. A wide range of computer programs—not limited to automated trading systems—are often made up of many algorithmic steps, often shared across multiple programs within the same organization. We feel that attempting to identify each calculation or decision point within a program would be impractical due to their proliferation and ability to change over time as changes are made to system behavior. Some of these changes may be only minor enhancements to address issues or adapt to external changes. Nor do we feel that such detailed identification can be sufficiently standardized to the point of being useful for regulatory purposes.</p>
69	What are the existing practices within trading firms for internally identifying ATSs or algorithms and for tracking their performance, including profit and loss? What elements of existing practices could

	be leveraged in any ATS or algorithm identification system proposed by the Commission in the future?
69A	All proprietary trading firms track the source of their profits and losses and use a variety of methods to do so. Some track particular software processes/algorithms, others track based on the Trader ID/Operator ID, or use different trading accounts to track activity. The methods that trading firms use to measure their own market performance do not provide any precedents that can be leveraged for algorithm identification.
70	The Commission understands that an ATS may consist of numerous algorithms, each of which contributes to a trading decision. If an algorithm-based identification system is proposed, which of the potentially multiple algorithms that constitute an ATS should carry the ID? In addition, what degree of change to an algorithm should necessitate the use of a new ID, and how often does this change typically occur? What is the appropriate definition of “algorithm” for purposes of an algorithm identification system?
70A	<p>The question itself highlights why we believe an effort to create an identification system based on algorithmic processes is misguided.</p> <p>Computer programs might be made up of numerous algorithms that make decisions or contribute information in a decision tree process that contributes to the ultimate decision to take action in a market. Identifying which of these individual algorithms best identifies the actions of the automated system as a whole is challenging, and the choice of how to identify a materially different automated trading system comprised of multiple algorithms should be left to the discretion of the supervisor of the system. Creating more IDs than necessary for the components of an automated trading system would also lead to an increase in data that the DCMs and the Commission would need to analyze during any review of trading activity.</p> <p>To this point, it is important to highlight that all US DCMs have rules and practices for identifying the operators, supervisors or responsible persons for any automated trading system used on their markets. These requirements—based on the concept of an Operator ID—have been in place for many years and are a data element on all orders submitted to the DCM. The Operator ID allows the DCM to clearly identify how a market participant differentiates their automated trading systems as well as individuals that may manually enter orders into the market. The CFTC Concept Release does not discuss Operator IDs, nor does it ask any questions about this valuable piece of data. The Operator ID is heavily used in market participant risk and monitoring systems, in FCM monitoring systems, and in DCM risk and regulatory systems. We encourage the Commission to look at Operator ID as a key component utilized in identification of an ATS and its supervisor, as well as identifying individual participants entering orders manually into the market.</p>
71	If the identification system resides at the ATS level, how should such IDs be structured to ensure that they are nonetheless sufficiently granular to identify components that may be leading or have led to unstable market conditions?
71A	As discussed in question 70, we feel that it is not feasible to find a universal method to identify the granular component(s) of a software process that may have led to unstable market conditions. A more cost efficient and practical way is to identify the people that are supervising the software and hold them accountable for any lapses in quality control that may have led to a disruption in the market.
72	What message traffic between an ATS and a trading platform should include the ATS or algorithm ID (all messages, orders only, etc.)?
72A	As discussed above, developing a meaningful method of algorithm identification is not practical. Instead, we suggest that the previously mentioned Operator ID be included on all orders, modifications, and cancel requests sent by a participant defined ATS to a trading platform. This will

	ensure that all market affecting messages from an ATS can be associated with the person or persons designated as responsible for oversight of the system.
73	What relationship should this ATS ID have to the legal entity identifier (LEI)?
73A	<p>We strongly discourage the Commission from making a connection between the ATS ID and the LEI. The LEI has been designed to identify the legal entity that is the principal or beneficial owner of a transaction. In the futures industry, ownership is best represented in other data points such as the firm, the account, or the connection ID. The new Account Ownership and Control (OCR) rule looks to further develop the process for identifying account owners to the Commission. The Commission should avoid a drastic change to the data model that currently works in the futures industry.</p> <p>It is important to note that an ATS may be designed and developed for use by multiple end users, particularly in the case of FCM or vendor-provided execution tools. Such tools would not have a one-to-one mapping with the beneficial owner behind the trade executed through the tool. Similarly a fund manager that used automated trading systems to trade on behalf of funds may execute all trades into a block account and allocate to the beneficial owners on a post-trade basis.</p>
78	Should firms operating ATSS in CFTC-regulated markets, but not otherwise registered with the Commission, be required to register with the CFTC? If so, please explain.
78A	<p>The FIA believes that the depth of information currently contained in the DCM’s existing audit trail satisfies the goals of registration. Depending on any additional information the Commission may seek regarding participants, expanding the information required in this audit trail, rather than creating a new registration framework, would be a more direct and efficient way to address the Commission’s concerns.</p> <p>A registration requirement is typically designed to provide a regulator, such as the Commission, with certain identification information regarding market participants or as a means to require registrants to meet certain standards or comply with requirements to which they are not already subject. As discussed in question 70, DCMs have addressed these important goals by requiring participants to use unique Operator IDs which are included as part of each order message sent to the DCM and maintained in the DCM’s automated audit trail. By also requiring identification of the supervisor behind the Operator ID assigned to an ATS, DCMs also set certain obligations for participants based on their type or level of activity, including the application of robust risk controls. We believe that the extensive information captured in the audit trail provides all necessary regulatory oversight information and that, therefore, an additional registration requirement with the Commission would not be beneficial.</p> <p>Today, among the information on each message sent to a DCM, and thus included within the DCM’s audit trail, are the following:</p> <ul style="list-style-type: none"> <li>• A unique Operator ID, such as a FIX Tag 50 or Tag 116, which can be used to identify the firm, head trader, traders or systems administered under the head trader, as well as the contact information for the firm and head trader;</li> <li>• The FCM account, execution firm ID, and client order ID;</li> <li>• A DCM code;</li> <li>• A unique sequential number, date and time;</li> <li>• An identifier indicating whether the order was generated manually or by automated means;</li> </ul>

	<ul style="list-style-type: none"> <li>• The type of message (e.g., new order, modify, cancel, execution, mass quote, quote request);</li> <li>• On execution messages, an indicator as to whether the order partially filled, completely filled, modified, rejected, expired or the trade cancelled;</li> <li>• On all cancel messages not triggered by an Order Cancel Request, an indicator of origin of cancellation;</li> <li>• For rejected messages, an indicator of the reason for the rejection;</li> <li>• The contract and maturity date, the type of order and whether it is to buy or sell, and the number of contracts;</li> <li>• The limit price or stop price, if any; and</li> <li>• The type of customer and whether it is for a customer or firm account.</li> </ul> <p>As mentioned above, the implementation of OCR will provide an additional source of information on who is behind the majority of trading activity.</p> <p>As a result, the FIA believes that the information currently collected by the DCMs in their audit trail—highlighted below and to which the Commission has access—should satisfy the Commission’s goals behind registration. For example, currently, pursuant to DCM Core Principle 2 (Reg 38.151) all market participants with access to a DCM’s markets must consent to the DCM’s jurisdiction. As such, there is regulatory oversight should the need arise to address a particular market participant’s behavior.</p> <p>The FIA would appreciate the opportunity to discuss with the Commission additional information the Commission may seek regarding participants that is not already included in the DCM’s audit trail. Rather than creating a new registration framework, expanding the information required in this audit trail may be a more direct and efficient way to address the Commission’s concerns.</p>
79	Please identify the firm characteristics, trading practices, or technologies that could be used to trigger a registration requirement.
79A	As we have previously discussed, we feel that registration does not add additional benefit to the market. Market participants deploying a new ATS that is materially different from any previous ATS that they are using should have the responsibility to clearly identify a separate Operator ID and record it with the DCM. In the case of a non-clearing member or clearing member of the DCM, this responsibility should fall with the member. In the case of an indirect participant that has no membership on the DCM, the responsibility to identify the ATS should fall to the participant, with the agency FCM responsible for recording the details with the DCM.
80	Should all firms deploying ATS be required to register, and should there be different standards for firms deploying HFT strategies? What are the appropriate thresholds levels below which registration would not be required?
80A	As described in our response to question 78, we do not believe that requiring registration of firms provides significant regulatory benefits, nor do we believe that creating artificial thresholds to categorize participants in different ways is conducive to addressing concerns around market quality. Instead we feel that if the supervisors of automated trading systems, and the FCMs that facilitate access to the market, follow the approach discussed in question 78 then the DCMs have adequate information to identify any activity that they may wish review.

81	Since the floor trader distinction only addresses proprietary traders, please explain whether there is any other category of market participant, such as those deploying ATS or HFT strategies and trading on behalf of clients (aside from market participants already subject to Commission jurisdiction, such as Introducing Brokers and FCMs) that the Commission should consider with respect to potential registration requirements.
81A	<p>In today's markets, automated trading systems are used by a wide array of market participants including principal traders, hedge funds, brokers, CTAs, asset managers, pension funds and corporations. As such, FIA sees no benefit in attempting to categorize these market participants into groups for registration or other purposes based on their utilization of automated trading systems.</p> <p>As discussed above, we believe that current practice regarding the identification and recording of ATS operators provides the necessary regulatory oversight of market participants, and that audit trail information provides the Commission any necessary surveillance, analysis and research information.</p>
82	Should software firms providing algorithms be required to register, and under what authority? What standards should apply to such firms?
82A	Due to the increased proliferation of third-party and FCM-provided automated trading systems that can be used across multiple market participants, we feel that cataloguing such systems would be a complex process. As we have discussed, we feel that instead of registering the ATS, the Commission should ensure that current practice regarding identifying the operator of an ATS should be followed. It is the operator of the ATS that has responsibility for understanding the type of execution strategy being used, and ensuring that the parameters supplied to the system are appropriate to its use for a particular financial instrument. The use of such a system should be dependent upon the provider following all quality controls regarding software development discussed in Section 5 of this document.
83	Please identify the functionalities discussed in this Concept Release that could be applied to floor brokers that operate ATSs. Are there any other controls not mentioned in this Concept Release that should be under consideration?
83A	<p>In today's markets FCMs, not "floor brokers," provide market access in multiple ways, including allowing customers to route orders through their own connections to the DCM, as well as allowing customers to connect directly to the DCM under the FCM's membership. Under CFTC rule 1.73 the FCM has the responsibility to screen all orders using a selection of risk controls that we articulate further in Section 9 of this document.</p> <p>As we have already stated, FCMs increasingly provide automated trading tools to their customers using in-house developed software or third-party vendors. The FCM has the same responsibilities as Direct ATS Participants regarding quality controls around their software development, testing and implementation, as detailed in Section 5. They also have the same responsibilities that the messages generated from their ATS are subject to appropriate risk controls to minimize accidental disruption to the market.</p>
84	Please supply any information or data that would help the Commission in deciding whether firms may or may not meet the definition of "floor trader" in § 1a(23) of the Act.
84A	As we have discussed in question 2, we feel that attempts to categorize types of market participants based on their trading strategies is becoming increasingly impractical, especially as many different types of market participants are using automated trading systems. Instead we encourage the Commission to concentrate its focus on looking at Direct ATS Participants and Indirect ATS Participants, and how responsibilities regarding risk controls, supervision and identification of operators fall across the market participant, FCM and DCM.

85	Do you believe that the registration of such firms as “floor traders” would effectuate the purposes of the CEA to deter and detect price manipulation or any other disruptions to market integrity?
85A	<p>The FIA strongly believes that all market participants share responsibility to avoid disruption to market integrity and not to engage in any behavior that could be considered abusive.</p> <p>As we have articulated in the last several questions, we do not feel that registration of types of participants or automated trading tools would further contribute to the current enforcement of the CEA or the authority of the Commission. By following clearly laid out guidelines regarding the identification of the operator behind an ATS or an order manually placed on the market, any disruptive or abusive behavior can be clearly attributed, and the appropriate action can be taken by the Commission or SRO.</p>
86	Considering the broad deployment of automated trading systems across both equities and derivatives markets, the Commission seeks to understand the appropriate level of coordination between itself and the SEC in defining and applying possible standards to the ATS and HFT trading space. How closely should the CFTC and SEC coordinate on possible rules and requirements for trading firms? The Commission also seeks public comment on the appropriate level of coordinated oversight between itself and relevant Self-Regulatory Organizations such as National Futures Association and FINRA.
86A	We support the SEC and the CFTC continuing to coordinate their regulatory activity through the Joint Advisory Committee and through continued knowledge sharing and consultation on rules. This will allow the Commissions to take similar approaches where it is appropriate to do so. It is important to note that there are several fundamental differences in both market structure and regulatory approaches, and we encourage the Commissions and SROs to work with industry organizations such as FIA and SIFMA to understand where there is commonality and where there is not.
87	Using the Flash Crash as an example, is it important to have identical definitions and remedies in the case of ATS and HFT registration requirements or do the existing market controls, such as circuit breakers, provide the necessary market protections in both the equities and derivatives markets? If the rules are not coordinated, what impact would this have on market interaction and oversight?
87A	As discussed in question 86, we encourage communication between the CFTC and the SEC in the oversight of the relevant markets, and we do not feel that ATS or HFT registration across markets would be beneficial or practical. Instead, we would emphasize that common understanding of how equity and derivatives markets have evolved and interact with each other would greatly benefit both Commissions in outlining common approaches to risk controls in particular and how they may be implemented in a coordinated manner across related markets. For derivatives that are based on underlying equity instruments, or equity markets that mirror futures contracts, we suggest that the DCMs that provide these financial instruments coordinate their market protections with related instruments.
88	If trading venues apply mandatory functionalities to access derivatives markets, what benefit would a registration requirement provide to the Commission?
88A	We believe that the DCMs are best positioned to ensure mandatory functionalities are in place for the markets that they provide. As we have previously discussed in this section, we do not feel that registration of types of participants or their automated trading systems provides significant benefits to the marketplace.

Question	Section #7: Market Data, News Feeds, and Latency
Opening Remarks	<p>In this section we address questions concerning differences in latency related to the flow of information to market participants. We wish to highlight that today's electronic markets are more efficient, open, and transparent than they have ever been. While latency is normal in markets, futures exchanges have worked hard to reduce the latency and variability in their trading systems and this has led to better market quality and lower trading costs. Not all market participants are equally sensitive to latency. Reductions in latency can help a liquidity provider more efficiently manage the risk of its trading activities and enable it to offer tighter bid-ask spreads as a result. Retail investors, asset managers, and commercial hedgers are unlikely to have the same degree of sensitivity to latency. For these market participants, price and trade execution qualities are more important.</p> <p>The FIA believes that any type of market-moving data and statements produced by the federal government should be governed by processes and released through systems that ensure the accuracy of such data as well as guarantee equal access to all entities. With respect to privately developed information, including information that may potentially move markets, we emphasize that this type of information is an important component of the price discovery process. We do not support government intervention into private enterprise in this context, but we do encourage transparency with respect to the policies and mechanics of information disclosure.</p> <p>In our answers below, we include results of a survey of FIA PTG member firms about their use of market data, news feeds, and social media to inform their trading decisions. The results of this survey find that social media, such as Twitter, were not used by any responding firms to inform their automated trading decisions. Of those using market data or newsfeeds (or both) to inform their trading decisions, all responding firms indicated that they also used data reasonability checks for their data sources.</p>
5	<p>Discussions on latency often focus on the how quickly an exchange processes orders, the time taken to submit orders, and how quickly a firm can observe prices of trades transacted on the exchange. The Commission is interested in understanding whether there are other types of messages transmitted between exchanges, firms and vendors wherein differences in latency could provide opportunities for informational advantage. Recent press reports have highlighted such advantages in the transmission of trade confirmations by a specific exchange. Are there other exchanges and trading venues where similar differences in latency exist? The Commission is interested in understanding whether the extent of latency in any such message transmission process can have an adverse impact on market quality or fairness. Should any exchanges, vendors and firms be required to audit their systems and process on a periodic process to identify and then resolve such latency?</p>
5A	<p>Latency is a natural component of market structure due to the time it takes to process and disseminate information as well as the physical limitations of a marketplace that is globally accessible, utilizes a wide range of technical solutions, and has participants with a diverse set of business requirements. It is impossible to remove all latency from markets, or any system for that matter. Nonetheless, DCMs have worked hard to reduce the latency and variability in their trading systems and this has led to better market quality and lower trading costs. As a result, today's electronic markets are more efficient, open, and transparent than they have ever been.</p> <p>These latencies should be placed in historical context by comparing them to the latencies that existed prior to the widespread adoption of electronic marketplaces. When markets were exclusively traded via open outcry, only floor locals saw the execution of trades and could react in real-time to this information, while the public had to wait minutes or hours for the trades to be reported. Today's electronic trade reporting latencies should be considered in the context of other latencies currently seen in futures markets. For example, block trades are negotiated away from</p>

	<p>the central market and then reported to the wider market after a specified delay of up to 15 minutes. These block trade reporting delays are expressly sanctioned by regulators and welcomed by investors in order to provide the time necessary to manage the risk associated with executing large trades.</p> <p>For years, DCMs have invested heavily to compress the amount of time it takes to match incoming trades and transmit trade details to their customers and the public. DCMs have succeeded in dramatically slashing this amount of time, vastly improving the quality of their markets for investors and hedgers. In spite of these efforts, due to physical and technical limitations, a slight gap in time remains between when a trader receives confirmation of his own trade and when the rest of the market sees that a trade has taken place. Earlier this year, press reports had identified this as a “hidden loophole” that some trading firms were unfairly exploiting. The reality is that there is nothing hidden about these latencies; they can be measured and understood by anyone with the proper market access that wishes to do so. Similarly, any measurable latency is not a loophole; it is imperative that the broader marketplace is not notified of a trade taking place prior to those involved in the trade. If this were to happen, those providing liquidity to the market would be unaware of their market exposure and be unable to hedge their risk effectively. As a result, liquidity providers would need to widen out their markets to account for the risk associated with this dynamic, and, as a result, the cost of execution for the entire marketplace would increase.</p> <p>Not all market participants are equally sensitive to latency. Additionally, no DCM has the same latency characteristics as another DCM. As such, market participants and DCMs should not be required to periodically audit their systems for latency outliers. Instead, they should be empowered to design a process to manage latency in a manner that best suits their unique business needs and preserves the integrity of the marketplace.</p>
74	Please describe existing practices in the industry concerning how and the extent to which ATSS use (1) market data; and (2) news and information providers, including social media, to inform trading decisions.
74A	<p>Nearly all market participants using ATSS rely heavily on market data feeds (trades and quotes). These market data feeds are linked directly to trading algorithms and risk management systems. This use of market data feeds is particularly prevalent among market participants engaged in automated trading functions, although they are generally used by all firms participating in electronic markets regardless of their method of execution. A smaller subset will use machine readable news to initiate trades.</p> <p>A survey of FIA PTG firms conducted for the purpose of answering Concept Release questions on existing practices, 25 out of 26 responding firms used market data to inform their trading decisions and to automatically generate orders within an ATS. The one firm that did not use market data also did not use an ATS. The results of the survey also show that 7 out of 26 responding firms used market feeds from news and information providers to inform their trading decisions and 6 of these 7 firms use the information to automatically generate orders within an ATS. No firm reported using social media to inform their trading or to automatically generate orders within an ATS.</p>
75	The Commission requests comment regarding any risk controls, including reasonability checks, currently being used by market participants operating ATSS to review market data and news and information providers, including social media. Please describe the risk control, including the purpose of the control, the extent of its use among derivatives market participants, and any other aspects of the risk control that you believe would be helpful for the Commission to understand.
75A	Our survey of FIA PTG member firms show that of those firms using market data or newsfeeds (or both) to inform their trading decisions, all used data reasonability checks for their data sources. For market data sources, these reasonability checks included filters designed to catch outliers and

	to help prevent the possibility of trading on “bad” data. For news feeds, firms reported the ability to adjust the weighting of the news source in their algorithms depending on their confidence in the source and if a second validating source was not available.
76	The Commission requests public comment concerning the lock-up process for government economic reports, and any additional measures that might be taken to protect against inappropriate disclosure.
76A	<p>The FIA believes that any type of market-moving data and statements produced by the federal government should be governed by processes and released through systems that ensure the accuracy of such data as well as guarantee equal access to all entities. This is public information and should be treated as such. Each government agency that releases market-moving data should clearly explain the mechanics of their release procedures, including the role of media agencies. Greater transparency with respect to this process would improve public confidence in the fairness and integrity of the release processes and help to prevent misunderstandings and confusion.</p> <p>When designing a dissemination process for government economic reports, it is important to achieve two goals—accuracy of data and wide dissemination in a fair manner. Government lock-ups have been designed with these requirements in mind and have been the most successful in meeting those goals. Offering pre-dissemination access to the data to accredited media organizations in the lock-up allows those organizations the time necessary to fully digest and understand the data prior to entering it into their publishing systems. This ensures that the data can be accurately entered into their systems prior to dissemination to the public. During this pre-dissemination period, all forms of communication between the lock-up and the outside world are prevented until a government official re-establishes connectivity simultaneously for all organizations within the lock-up. This ensures that the data remains secure until it can be simultaneously distributed by all accredited media organizations to the general public.</p> <p>Other methods, such as non-lockup “media embargos,” provide accuracy similar to that of the lock-up method but have less secure, and potentially less simultaneous, dissemination protocols. In media embargos, accredited media organizations are given the government report with sufficient time to fully digest and prepare the data for dissemination to the public. The primary difference is that these media organizations are not restricted to being in the same government controlled room which could lead to less simultaneous dissemination of the data. Still other methods such as using websites to release data may promote wide dissemination in a fair manner but can be more error prone. By not providing accredited media organizations with pre-dissemination access to the data the government incentivizes on-the-fly reporting. Organizations that don’t take the time necessary to interpret and verify the data are more likely to report the data before those organizations that perform the proper amount of due diligence necessary to ensure accuracy of their report.</p> <p>As technology continues to evolve it is important that government agencies continue to contemporize their security procedures around economic reports to ensure that lock-up periods are properly enforced. For example, the ubiquity of Wi-Fi, cellular and other wireless technologies necessitates that wireless signals are properly blocked within the lock-up room. The recent Labor Department upgrades to their lock-up room are an excellent example of ensuring that lock-up integrity keeps pace with technology.</p>
77	Please describe the extent to which potentially market-moving data from non-governmental economic reports can be obtained prior to its public release for a fee. Are there specific reports or types of reports for which early disclosure should not be permitted? What process should be used for identifying non-governmental economic reports whose early release should not be permitted? Should the data release process for such reports be similar to the data lock-up process implemented for the release of government economic data?

77A	<p>Privately developed information, including information that may potentially move markets, is an important component of the price discovery process. Government reports highlight fairly static and objective economic concepts whereas private economic reports and the proprietary creation and dissemination of potentially market-moving data are a continually evolving and dynamic concept. As the economy and technologies change, the sources of data that provide insight into the state of the broad economy or a particular sector change as well. One traditional category of private economic report is the result of consumer sentiment gathered via telephone survey, but new measures and ways to view our economy continue to emerge. Examples include: 1) the aggregation of public activity patterns on the internet; 2) satellite imagery data for analysis of commercial activity levels; 3) broad sentiment analysis of social media; and 4) search engine traffic for phrases associated with economic activity.</p> <p>Given the ever-changing nature of private economic data and its interconnectedness with emerging technologies, the government should be extremely cautious when attempting to regulate the myriad of fleeting proprietary economic indicators and the mechanisms by which this private data is released. What is considered a meaningful indicator to one market participant may be meaningless to another. Similarly, what is considered a practical data delivery mechanism today may quickly become obsolete.</p> <p>Rather than having government decide which privately-developed information should be released to the market, at what time and at what price, we would encourage transparency with respect to the policies and mechanics of information disclosure. Transparency with respect to information disclosure, and the opportunity for all to access that information, enhances fairness and confidence in the markets.</p>
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Question	Section #8: Market Quality and Market Structure
Opening Remarks	<p>In this section we address questions related to market quality and market structure. We describe many measures of market quality and note that different market quality indicators have been developed and are used by market participants depending on their individual needs—an indicator that is meaningful for one market participant may be irrelevant to another market participant. Although some of these measures are offered as data products by DCMs or third-party service providers, other measures are developed on a proprietary basis by market participants using order book and transaction data from DCM data feeds as inputs. We note that work is underway by several academic financial economists to improve existing market quality measures and to extend measures to areas where quantitative measures have not previously existed. We believe that the process of developing market quality measures is best left to individual market participants or to the vendors that serve them. We do not believe that the Commission needs to require that DCMs provide additional measures of market quality.</p> <p>With respect to questions addressing market structure, we recommend:</p> <ul style="list-style-type: none"> <li>• DCMs should not impose minimum resting times on orders. Imposing such a requirement would have considerable detrimental impacts on market structure and the natural price discovery process as a result of increasing the cost and risks associated with providing liquidity to the marketplace.</li> <li>• Providing market participants with real-time access to information about the order book that extends beyond aggregate size available at a limit price creates a more transparent marketplace. This, in turn, fosters a greater understanding of supply and demand and less uncertainty in how the market will respond to external stimuli such as new incoming order flow and market events, which ultimately breeds confidence among market participants.</li> <li>• Any effort to identify cross-exchange contract pairs that are “linked to” or “a substitute for” each other would be rife with subjective analysis and could generate cascading complex relationships that span regulatory jurisdictions. Instead, we suggest that exchanges acknowledge that these cross-exchange and cross-jurisdiction relationships may exist, but focus their attention on developing policies and procedures for understanding relationships among contracts listed on their own markets.</li> <li>• Standardization and simplification of order types would not have any effect on reducing potential instability. By offering a variety of order types at the DCM level, participants are given more choice and customization opportunities for managing their portfolio or position risk while reducing the operational risk associated with manually simulating such order types. Standardization and simplification of order types is not necessary for the Commission to address at this time, other than ensuring participants have necessary transparency and information to make their own choices.</li> </ul>
89	What market quality indicators are in place today? Please describe the metrics, how and where they are deployed, and how market participants access these indicators and at what cost.
89A	Many different market quality indicators have been developed and are used by market participants depending on their individual needs—an indicator that is meaningful for one market participant may be irrelevant to another market participant. We note that some market quality indicators that may be relevant for the market structure of securities markets may not be relevant for the market structure of futures markets. Further, not all attributes of market quality can be measured quantitatively, but there have been many attempts by academics, regulators, DCMs, and market participants to measure the attributes of market quality they care about. These market quality

	<p>measures include:</p> <ul style="list-style-type: none"> <li>• <b>Pricing efficiency</b> describes how well market prices reflect information about the value of products, including whether discrepancies exist in prices across related products and markets.</li> <li>• <b>Cost of transacting</b> can include various measures, such as the bid-ask spread for top-of-book orders, market impact (or market slippage) for orders of a stipulated size, the distribution of fill percentage based on order quantity, and market depth measures that capture the difference between the average fill price and the mid-market top-of-book quoted price for an order of a stipulated size.</li> <li>• <b>Order book quality</b> can be measured by variables such as “book dispersion,” which measures the sum of all quantities associated with displayed orders for which the order’s quoted price is within a stipulated amount from the top-of-book quoted mid-price. A higher sum indicates a higher available quantity and less dispersion in the order book.</li> <li>• <b>Liquidity</b> measures are closely related to measures of the cost of transacting and order book quality at any point in time.</li> <li>• <b>Availability of a two-sided market</b> is a variable that describes how often an order book contains a two-sided market. This variable is constructed as the percentage of the time when there is no resting limit order bid or no resting limit order offer. The smaller the percentage of time without a two-sided market, the more liquid the market is.</li> <li>• <b>Intra-day microstructure volatility</b> is a measure that shows the amount of short-term volatility in prices attributable to microstructure noise. A lower measure of intraday micro-structure volatility is consistent with higher market quality.</li> <li>• <b>Rate of execution</b> measures the amount of time necessary for an order to be filled based on quantity.</li> </ul> <p>This is only a sample of the market quality indicators used today. Other measures could gauge technological reliability of markets or a market’s susceptibility to manipulation or other market abuse. Market participants retire obsolete indicators and create new indicators as markets evolve and data becomes more widely available for study by market analysts. Work is underway by several academic financial economists to improve existing market quality measures and to extend such measures to areas where quantitative measures have not previously existed.<sup>17</sup></p> <p>Although some of these measures are offered as data products by DCMs or third-party service providers, such as through the CME Group’s DataMine products, other measures are developed on a proprietary basis by market participants using order book and transaction data from DCM data feeds as inputs. Typically, market data feeds are available in a variety of options and fees will depend on the type and timeliness of the data requested.</p>
90	<p>What value would each of the market quality metrics described above [see section III.F.2] provide to market participants receiving them? If possible, please be specific about how each market</p>

<sup>17</sup> See, for example, Harris, Frederick, Aitken, Michael, Berkeley, Alfred, Overdahl, James, and Venketaraman, Kumar. “Evidence-Based Regulatory Policy Making for Financial Markets: A Panel Discussion.” *Global Liquidity: Market Structure, Regulation, and Trading Strategies*. New York: Institutional Investor Journals, Inc., 2011. – available at: <http://www.ijournals.com/doi/abs/10.3905/jot.2011.6.3.022#sthash.6274vAOj.dpuf>

	quality measure could be used to enhance reliability and risk management of ATSS.
90A	<p>Market participants use market quality metrics in different ways and the value of the metrics varies by user. Some metrics (see our response to question 89) may be used solely for informational purposes while others may drive the business decisions of DCOs, FCMs, DCMs, market participants, and regulators.</p> <p>One key use of market quality metrics is to help DCMs and regulators evaluate changes in market quality attributable to changes in market rules or market design such as recent studies driven by market quality indicators that highlight the benefits of automated trading in today's marketplace.<sup>18</sup> Market quality metrics can also help market participants decide when and how to trade. For example, pricing efficiency is a market quality attribute valued by commercial hedgers seeking futures markets that can be used to efficiently offset the price risks faced in commercial markets.</p> <p>Market quality metrics related to cost of trading and liquidity can help guide trading decisions on choice of trading venue, methods of trade execution, and can be used to evaluate other tradeoffs and risks related to manual or automated trade execution and risk management.</p>
91	Conversely, could any of the market quality metrics described above [see section III.F.2] be used by market participants to manipulate the order book, to identify competitors' trading strategies, or to engage in other trading activities that do not contribute to effective risk management and efficient discovery the traded asset's economic value? If so, please provide specific information regarding how such information could be misused. If possible, please provide recommendations regarding steps the Commission could take to prevent misuse.
91A	We are not aware of how market quality metrics can be used as a tool for order book manipulation or as a source for trading abuse. Market participants realize that measures of market quality are estimates based on data applied to analytical models. Such measures may have limitations in their applicability as they may be based on normal market conditions and trading behavior. Trading skill and judgment will always be required in order for market quality measures to be properly interpreted and applied to trading decisions. To the extent that market quality metrics are inaccurate or misleading, an incentive exists for market participants and academic economists to devise new or refined measures that are more accurate or less misleading. Certainly, intentional order book manipulation and other trading abuses must be policed and guarded against, but we are not aware of how market quality metrics can be the source of such manipulation or abuses. To the extent that the Commission or DCMs engage in analytical work related to measuring market quality, they should ensure that proprietary trading information is never revealed through public studies or reports. Similarly, they must guarantee that the anonymity of order ownership is maintained while disseminating real-time book and trade data to market participants.
92	Are there additional market quality metrics that the Commission should contemplate requiring exchanges to provide? If so, what value would they provide and how would they be used?
92A	We believe that DCMs have been very responsive to market participants' desire for useful market quality metrics. DCMs also make available, for a fee, trade and quote data that can be used by market participants to develop their own proprietary measures of market quality. We do not believe that the Commission needs to require that DCMs provide additional measures of market quality.
93	If the Commission determines that measures should be calculated in the same way by various exchanges in order to provide comparable measures of market quality, then how, specifically, should each of the above mentioned metrics be calculated in order to ensure that they are most

<sup>18</sup> See, for example, "Trade Execution Costs and Market Quality after Decimalization," Bessembinder, Hendrik, December 2003, *Journal of Financial & Quantitative Analysis*; Dec., 2003, Vol. 38 Issue 4, p747.

	valuable to market participants?
93A	<p>Unlike in the securities industry, where identical products can trade at multiple venues within a national market system, in the futures industry futures products are not fungible across DCMs and trade only where they are listed. Therefore, having comparable measures of market quality may have less utility in the futures industry than in the securities industry. In the securities industry, Rule 605 of Regulation NMS requires monthly disclosure by market centers that trade national market system securities of uniform statistical measures of execution quality—one set of measures related to market quality. However, requiring the disclosure of uniform statistical measures in the futures industry would have less utility because futures products are not fungible and do not trade as part of a national market system.</p> <p>If the Commission determines that uniform measures of market quality are necessary, then we recommend that the construction of the measures be completely transparent so that the strengths and weaknesses of the measures can be easily discerned by market participants.</p> <p>FIA supports the provision of granular, detailed data that enables market participants to construct their own measures of market quality. It is unlikely that market participants will rely on the same measures of market quality to form comparisons across products or across DCMs. The process of developing comparable measures of market quality is best left to individual market participants or to the vendors that serve them.</p>
94	What timing and mode of dissemination is appropriate for each metric? For example, should measures be provided as daily averages?
94A	The value attached to the timing and mode of distribution for market quality metrics will depend on the needs of the end user. Latency sensitive market participants will find value in market quality metrics that can be tracked in real-time and in machine-readable form. For other market participants, market quality metrics may be of little value whether distributed in real-time, at daily intervals, or even at monthly intervals. The current method of trade and quote dissemination allows individual end users to decide the value of the information relative to their trading strategies and to devise market quality metrics from market data that best suits their needs.
95	Does the liquidity of a given market impact which market quality metrics would be reliable and useful when calculated for that market? If so, which metrics are inapplicable in less liquid markets, and why? What liquidity measures and thresholds are relevant to determining which metrics should apply to a given market?
95A	Liquidity is itself a variable of interest in assessing market quality and is frequently included in market quality metrics. Liquidity will be an important factor in evaluating several measures of market quality. For example, pricing efficiency, order-book quality, the availability of two-sided markets, and the rate of trade execution will likely be lower in less liquid markets relative to more liquid markets. The cost of trading and microstructure volatility will likely be higher in less liquid markets. Illiquidity does not make these other measures of market quality inapplicable, but it will influence them in measureable ways.
96	Should exchanges impose a minimum time period for which orders must remain on the order book before they can be withdrawn? If so, should this minimum resting time requirement apply to orders of all sizes or be restricted to orders smaller than a specific threshold? If there should be a specific threshold, how should that threshold be determined?
96A	DCMs should not impose minimum resting times on orders. Imposing such a requirement would have a significant detrimental impact on market structure and the natural price discovery process. As we discuss below, imposing minimum resting times would put liquidity providers at a disadvantage and discourage their participation when they are most needed.

	<p>If minimum resting times were imposed, liquidity providers whose orders would be governed by minimum resting times would be displaying liquidity while unable to react in real time to information and events that impact markets. Forcing a liquidity provider to leave orders in the market gives one market participant an unfair advantage over another. Liquidity taking will be incentivized at the expense of liquidity providers, which will lead to wider spreads, reduced sizes, and increased execution costs for end users.</p> <p>Furthermore, in crisis periods when markets are most volatile, the negative effects of minimum resting times will be most pronounced. By raising the risks of submitting quotes to the market, such rules will likely result in many liquidity providers withdrawing from the market, or substantially reducing their activity, precisely when market risks begin to rise and the end-user's need for liquidity is the greatest.</p>
97	The Commission seeks to understand where time-weighted Pro Rata trade allocation is currently being utilized and what the effects have been. Please note examples from exchanges and, to the extent possible, please comment on the impact that such matching algorithms have had on the amount of time resting orders are left in the order book, as well as on other aspects of market quality.
97A	We believe DCMs are in a better position to respond to this question.
98	If exchanges aggregated multiple, small orders entered by the same entity with the intent of abusing rounding conventions to gain a disproportionate share of allocations, what criteria should exchanges use to distinguish such orders from those that are entered by the same legal entity for legitimate trading purposes? Are there empirical patterns that could be used to reliably identify such manipulative intent?
98A	Given the prevalence of legitimate trading practices that result in many small orders being submitted to a pro-rata matching engine by the same legal entity at the same price, it is very difficult, if not impossible to identify empirical patterns of behavior that could be used to reliably identify manipulative intent. The benefit of attempting to identify such behavior in real-time would be outweighed by the costs of implementing real-time monitoring tools, the risk introduced as a result of such a system generating false positives, and the complexity introduced to order management systems which must then be able to seamlessly handle a DCM's unsolicited consolidation of orders. All attempts to identify manipulative behavior within the marketplace should be based on the facts and circumstances on a case-by-case basis as opposed to real-time analysis of trading activity in a vacuum.
99	Would batched order processing increase the number of milliseconds that are necessary for correlations among related securities to be established? If so, what specific costs would result from this change and how do those costs compare to the potential benefits described in recent research?
99A	<p>The FIA believes that the DCMs are in the best position to design their marketplace based on the requirements of their participants. This includes the decision on the most suitable matching algorithm for a specific product; for example price/time, pro rata, batched order processing, or a hybrid.</p> <p>We note that DCMs have changed their matching algorithms on several occasions based on consultation with their participants and a cost benefit analysis of what the change would mean to market quality. In some situations, the change has been rescinded because it has not benefited market quality in the manner anticipated.</p> <p>There have been several academic papers released discussing the pros and cons of batched order</p>

	<p>processing, and we are aware of only one matching engine (outside of the Commission’s immediate jurisdiction) that has recently started using this type of matching algorithm for some of its products. Although we have reservations regarding how such a mechanism would reduce market transparency and affect continuous price discovery—particularly around correlated financial instruments—we acknowledge that it is still too early to draw any conclusions about the effects that the change has had on market quality.</p> <p>However, as we have stated several times within this document, we feel that the Commission should work with the DCMs to oversee market integrity and circumvent any abusive activity through improved surveillance, rather than changing market structure based on perceptions of inequality regarding market access.</p>
100	<p>What costs and benefits result from providing market participants with real-time access to information about the order book that extends beyond aggregate size available at a limit price? Is there a legitimate economic benefit that results from market participants (both human participants, and ATs) accessing such information? Is it possible for market participants to use such information to manipulate the order book?</p>
100A	<p>The FIA feels that it is and should remain the decision of the DCM to provide information that it feels benefits the quality of the markets its provides, and we encourage as much transparency regarding real-time market data as possible without jeopardizing the anonymity of individual market participants.</p> <p>Broadly speaking, providing market participants with real-time access to information about the order book that extends beyond aggregate size available at a limit price creates a more transparent marketplace. This, in turn, fosters a greater understanding of supply and demand and less uncertainty in how the market will respond to stimuli such as incoming order flow and market events which ultimately instills confidence among market participants, and has tangible economic benefits in the price discovery and risk transferal processes.</p> <p>More specifically, the more information available to a market participant the better equipped they are to accurately value a product. This increased accuracy of valuation leads to a price discovery process that is less prone to transitory price spikes that may emerge as a result of faulty pricing brought on by a lack or imbalance of information in the marketplace. For example, a price level that has an aggregate available size of 1000 as a result of a single order is very different than a price level that has an aggregate available size of 1000 as a result of 1000 individual orders.</p> <p>We are cognizant that some market participants have expressed concern that other participants may use information provided by the DCM in a manipulative or abusive manner. We feel that increased transparency regarding market information actually aids market integrity, and that appropriate surveillance will identify and remove manipulative or abusive conduct.</p> <p>It is difficult to say if such information may be used to manipulate the order book. What we can be certain of is that a lack transparency regarding the structure of the order book beyond the aggregate size available at a limit price makes it easier for a market participant with manipulative intentions to obfuscate their trading activity. Frequently DCMs leverage observations and reports from their market participants to initiate investigations into the presence of potentially manipulative behavior by another market participant. By limiting available information to aggregate size available at a limit price it will be very difficult for market participants to aid in the policing of the markets in which they are active.</p>
101	<p>The Commission seeks to understand whether any of the recommendations above [see section III.F.3] are inapplicable or irrelevant to markets subject to the CEA. If so, please indicate which</p>

	recommendation(s) and what makes it inapplicable or irrelevant to those markets.
101A	<p>As we have discussed in questions 99 and 101, the FIA feels that the mechanics of how a market works, including those financial instruments covered under the CEA, should be decided by the DCM responsible for implementation and oversight of the market.</p> <p>The DCM will perform a full cost benefit analysis of a financial instrument covered under the CEA when deciding to list the product and will regularly review the quality of the market and—as we have mentioned in question 99—will make decisions on how the product is matched based on consultation with key market participants to ensure that the needs of end users and liquidity providers are suitably addressed. We believe that a key responsibility under the CEA is to ensure that such markets function fairly, and that the Commission and DCM ensure that manipulative or abusive practices cannot detract from market quality.</p>
102	If you are a DCM, please address whether you have (i) identified all contracts that are linked to, or are a substitute for, other contracts either listed on your market or on other trading venues; and, if so, (ii) coordinated your risk controls with any similar controls placed on those other contracts. If you have not identified such contracts and coordinated risk controls on such contracts, please address any other means by which you are addressing risk controls applicable to contracts that are linked to, or are a substitute for, other contracts listed on your exchange or on other trading venues.
102A	We believe DCMs are in a better position to respond to this question.
103	Please explain whether it would be beneficial for exchanges to develop and document policies and procedures for regularly reviewing contracts on other exchanges in order to identify those that are “linked to” or that are “a substitute for” contracts listed on its own market.
103A	<p>Any effort to identify cross-exchange contract pairs that are “linked to” or “a substitute for” each other would be rife with subjective analysis and generate cascading complex relationships that span regulatory jurisdictions. For example a futures contract representing the S&amp;P 500 Index would be linked to each of the single-name equity securities that comprise the Index. Each of those single-name equities would, in turn, be linked to each ETF that they are contained within. Each of those ETFs would then be linked to each single-name equity and futures contracts that are contained within that ETF, and so on. When derivatives on those underlying securities are included in the analysis of these relationships it quickly becomes impractical to attempt to objectively identify and enumerate all possible relationships let alone institute reasonable policies and procedures to govern such efforts.</p> <p>Instead, we suggest that exchanges acknowledge that these cross-exchange and cross-jurisdiction relationships may exist, but focus their attention on developing policies and procedures for understanding relationships among contracts listed on their own market. With a proper understanding of these internal relationships exchanges may ensure that policies governing the trading of these contract are not contradictory.</p>
104	Please explain whether the standardization and simplification of order types that have complex logic embedded within them would reduce the potential for instability and other market disruptions. If not, what other measures could achieve the same effect?
104A	Standardization and simplification of order types would not have any effect on reducing potential instability. In fact, having a variety of order types exist at the DCM level has served as a means of standardization and simplification of order types that previously existed and were managed in various forms at the broker or participant level. By offering a variety of order types at the DCM level, participants are given more choice and customization opportunities for managing their portfolio or position risk while reducing the operational risk associated with manually simulating such order types. At the same time, any necessary risk checks for such order types can be done at

	<p>the DCM which offers a level playing field for those same participants.</p> <p>Providing transparency and ensuring participants are properly and correctly informed are key components to instilling confidence regarding order types. It is unfortunate that the Concept Release stated “BATS Global Markets alone listed more than 2,000 different order types”. A report published by industry research firm Rosenblatt Securities investigating this found the real number to be just 252 across all exchanges. Additionally, of those 252, only 36 could be labeled “unique”, or different, across those 13 exchanges.<sup>19</sup> One reason order types have proliferated at securities exchanges is because of the market structure that has evolved for securities trading in response to the requirements of the national market system. The market structure for the trading of futures products, where products tend to trade on a single DCM, is much different than the market structure for securities products. As a result of this difference in market structure, order types have not proliferated at DCMs to the degree they have at securities exchanges.</p> <p>In the cash equities markets, exchanges have attempted to explain order types, their applications, and usage statistics prominently on their websites. This is a proper model for DCMs to follow.</p>
105	<p>If the Commission were to consider the standardization and simplification of order types in a future rulemaking, please identify who should conduct this review (i.e., the Commission, trading platforms, or other parties).</p>
105A	<p>Standardization and simplification of order types is not necessary for the Commission to address at this time, other than ensuring participants have necessary transparency and information to make their own choices. That being said, the Commission should consider utilizing a reputable and informed third party to do such a survey.</p>

<sup>19</sup> See Andrew Upward and Justin Schack, “An In-Depth Look at Exchange Order Types,” Rosenblatt Securities, June 26, 2013.

Question	Section #9: General Questions Regarding All Risk Controls
Opening Remarks	<p>In this section we address general questions regarding risk controls. Risk controls are designed to provide protection against disruptive market behavior and we support the Commission’s efforts to strengthen market safeguards. As we have demonstrated throughout this document, the industry has been proactive in the development and adoption of good risk management practices and will continue to look for ways to improve the integrity of markets. We believe that in order to maximize the effectiveness of a suite of risk controls their requirements should be principles-based and consideration should be given to its proper implementation location within the trading lifecycle. Any risk control that is overly prescriptive may fail to take into account the unique characteristics of the diverse market participants, DCMs, trading strategies, and products that exist today thus adding, rather than reducing, risk. Furthermore, prescriptive requirements may stifle innovation and quickly become obsolete as markets, technology and trading strategies evolve.</p> <p>In this section we enumerate the types of risk controls that currently represent best practice within the industry. In addition, we report results of a survey we conducted of principal trading firms and FCMs to gauge current practice with respect to risk controls.</p> <p>As we have noted elsewhere in this document, all market participants have a responsibility to implement risk controls appropriate to their role in the life of an order, whether initiating the trade, routing the trade, executing the trade or clearing the trade. As electronic trading has evolved, several of these focal points may now overlap where they have been historically distinct. We believe It is important to implement risk controls that are only appropriate to the role of the participant, and efforts should be made to avoid introducing unnecessary complexity.</p>
106	<p>For each of the specified controls described above [see sections III.C-F], please indicate whether you are already using the control on customer and/or proprietary orders. If applicable, please also indicate how widely you believe the control is currently being used in the market, and how consistent the application of the control is among firms.</p>
106A	<p>In a survey of FIA PTG member firms conducted to better understand existing industry practice with respect to risk controls, 26 out of 26 responding firms reported that they used pre-trade maximum order size screens as a risk control. Of the 26 responding firms, 22 firms used maximum order screens based on some combination of the firm’s own technology and the exchange’s technology. Of the responding firms, four firms reported relying exclusively on their own firm’s technology to conduct pre-trade maximum order size screens.</p> <p>The survey also asked about the use of message and execution throttles used by FIA PTG firms. The results showed that 25 of 26 responding firms used such throttles.</p> <p>For volatility awareness alerts, 20 of 26 responding FIA PTG firms used this control. Of those not using this control, survey respondents indicated that they did not believe that such alerts added value over other risk controls they had in place or they believed that such alerts would not be useful to firms serving as market makers that were expected to provide liquidity under all market conditions.</p> <p>As we discussed in our response to question 17, we believe exchange-sponsored self-trading controls are being widely used in the market. In our survey of FIA PTG member firms, all 26 responding firms indicated that they were using some form of self-trading control. Of the 26 responding firms, 25 firms indicated that they were using exchange-sponsored self-trading controls. The one firm not using exchange-sponsored controls indicated that they were using another type of self-trading control. In addition, 21 of the 26 responding firms indicated that they were also using other types of self-trading controls in addition to exchange-provided controls.</p>

	<p>With respect to price collars, and trading pauses, all 26 responding firms either used such a control, or achieved similar results through other means. Of the 26 responding firms, 24 indicated that they used price collars or trading pauses and the two that did not indicated that they achieved similar results through other risk controls or relied on exchange platforms for this control.</p> <p>With respect to credit risk limits, 19 of 26 responding firms indicated that they used such a control. Those that do not stated that they used other types of limits, relied on DCM controls, or that a credit risk control was not applicable to their business model as a principal trading firm.</p> <p>With respect to drop copy functionality, all 26 firms were either using this control or were contemplating its use. The survey results show that 25 out of 26 responding firms currently use drop copy functionality as a risk control and the one firm that is not is exploring the addition of this functionality.</p> <p>With respect to repeated automated execution throttles, all firms use some sort of control. The survey results show that 25 out of 26 responding FIA PTG firms use such a control and the one that does not uses message throttles and maximum position limits to achieve a similar result.</p> <p>Finally, all responding FIA PTG firms indicated that they used data reasonability checks as a risk control.</p> <p>The FIA also conducted a survey of risk controls used by FCMs with results also showing that risk controls are widely used by responding firms. The representative sample of differently-sized FCMs indicated that all responding firms use the following controls either administered internally or at the exchange level: message and execution throttles; price collars, maximum order sizes; order, trade and position drop copy; and order cancellation capabilities. In addition, all responding firms use some form of a kill switch or other means to stop order submission where necessary.</p>
107	If possible, please indicate specific costs associated with implementing each of the risk controls described above [see sections III.C-F]. Please include detailed estimates, distinguishing between the cost of developing the functionality, the cost of implementation, and the cost of ongoing operations.
107A	Many of the risk controls in sections III.C-F of the Commission’s Concept Release are already used in the futures industry and their benefit is clearly understood. The implementation cost to individual firms varies widely based on the systems they have and the markets and products they trade. We don’t believe a cost-benefit analysis of existing risk controls is necessary at this time.
108	Please describe the specific benefits associated with each of the risk controls. Where possible, please indicate the market participant category(ies) to which the benefit would accrue.
108A	See Table
109	Please comment on the appropriate order of implementation and timeline for each risk control, including any distinctions that should be made based on the category of registrant or market participant implementing the same or similar control, whether the market participant is using DMA, and whether implementation is already in place for certain categories.
109A	See Table
110	Are any of the risk controls unnecessary, impractical for commercial or technological reasons, or inadvisable? If so, please note the control and provide reasons why.
110A	See Table
111	A number of the pre-trade risk controls contemplated above are similar protections at distinct

	<p>points in the life of an order. (a). Please comment on the utility of redundant pre-trade risk controls and the desirability of risk control systems in which controls are placed at one or more than one focal points. (b). If pre-trade risk controls should reside at one or more than one focal point, then please identify, for each risk control, what that focal point should be?</p>
<p>111A</p>	<p>As previously stated in question 6, all market participants have a responsibility to implement risk controls appropriate to their role in the life of an order, whether initiating the trade, routing the trade, executing the trade or clearing the trade. As electronic trading has evolved several of these focal points may now overlap where they have been historically distinct.</p> <p>Introducing redundant risk controls at more than one focal point in the trading lifecycle may increase the integrity of the marketplace when careful consideration is given to their differences in roles, implementations and configurations. In general, we caution against a mandated proliferation of redundant risk controls because the existence of similar but not identically implemented risk controls may do more harm than good. Each new implementation of a control will increase complexity and may cause misunderstanding between traders and risk managers as a consequence of conflicting risk limits.</p> <p>Traditionally, FCMs have facilitated market participants’ electronic access to a DCM through their own systems (as Indirect ATS Participants) and have the responsibility under CFTC rule 1.73 to screen such orders before electronically routing them to the market. Where an FCM facilitates access through electronic order routing or automated order execution, the focal point remains with the FCM to implement pre-trade risk controls whether through their own technology or that provided by third-party vendors.</p> <p>An FCM should implement pre-trade risk controls on its own systems on receipt of an order rather than relying solely on a DCM to provide risk management tools. This is especially important as FCM-provided automated trading tools play a larger role in how customers choose to trade (for example, execution algorithms such as VWAP, TWAP or Percentage of Volume, as well as more complicated liquidity seeking or liquidity taking algorithms).</p> <p>However, as electronic trading has evolved market participants may now access a DCM directly without passing through the FCM’s infrastructure (as Direct ATS Participants). For these cases, the only consistent opportunity for risk control is at the DCM and the market participant. Additionally, Direct ATS Participants and FCMs may work together to ensure there is a level of risk management present within trading systems that is commensurate with the system’s intended use. Such risk management controls may include:</p> <ul style="list-style-type: none"> <li>• Message Rate Limits--DCM level, which may be supplemented by additional controls at the market participant level</li> <li>• Self-Trade Controls--DCM level, which may be supplemented by additional controls at the market participant level</li> <li>• Price Collars--DCM level</li> <li>• Maximum Order Sizes (or equivalent, such as Globex Credit Controls)--DCM level, including a DCM-hosted tool that allows FCMs to configure limits for their customers where their infrastructure is bypassed, FCM level when their infrastructure is used, and market participant level.</li> <li>• Trading Pauses--DCM level</li> </ul>

	<ul style="list-style-type: none"> <li>• Credit Risk Limits--FCM and market participant levels</li> <li>• Order Trade and Position Drop Copy--Provided by DCMs and FCMs, used by FCMs and market participants</li> <li>• Trade Cancellation or Adjustment Policies--DCM level</li> <li>• Controls Related to Order Placement <ul style="list-style-type: none"> <li>○ Order Cancellation Capabilities--DCM and market participant level</li> <li>○ Repeated Automated Execution Throttle--DCM and market participant level</li> </ul> </li> <li>• Data Reasonability Checks--DCM and market participant levels</li> </ul>
112	Are there risk controls that should be implemented across multiple entity types? If so, which controls and for which types of entities should they apply? Also, please comment generally on the factors the Commission should consider when determining the appropriate entity(ies) upon which to place a risk control requirement that could pertain to more than one entity.
112A	See table
113	Are there controls that should not be considered for overlapping implementation across exchanges, clearing members and market participants? If so, please explain which ones and why.
113A	<p>There are many risk controls that may be implemented at various levels, including at the DCM, at the FCM or at the market participant level. However it is important to implement risk controls that are appropriate to the role of the participant, and efforts should be made to avoid introducing unnecessary complexity.</p> <p>We believe that trading pauses and trade cancellation and adjustment policies are more effective when implemented and enforced by a DCM, thus creating an equitable marketplace.</p> <p>Certain types of controls – for example, maximum order size or intraday positions -- may be implemented at both market participant and FCM levels without redundancy because they reflect the different responsibilities of each participant. If the FCM has implemented customer-specific controls within their infrastructure, it would be redundant to use the same controls at a DCM level, though it is permissible to set higher limits at the DCM that apply across all customers as additional protection.</p> <p>As already discussed, we feel that controls such as message rate limits should be set at the DCM level, with the caveat that market participants and FCMs may choose to implement supplemental limits within their own infrastructures. If an FCM implements such controls they should be clearly communicated to their customers.</p>
114	Each of the risk controls is described in general, principles-based terms. Should the Commission specify more granular or specific requirements with respect to any of the controls to improve their effectiveness or provide greater clarity to industry participants? If so, please identify the relevant control and the additional granularity or specificity that the Commission should provide. Are any of the controls, as currently drafted, inadequate to achieve the desired risk-reduction?
114A	We believe that in order to maximize the effectiveness of a suite of risk controls their requirements should be principles-based and consideration should be given to each control’s proper implementation location within the trading lifecycle. Any risk control that is overly prescriptive may fail to take into account the unique characteristics of the diverse market participants, DCMs, trading strategies, and products that exist today thus adding rather than reducing risk. In addition,

	prescriptive requirements may quickly become obsolete as markets, technology and trading strategies evolve.
115	To the extent that there is any need to standardize or provide greater specificity regarding any measures discussed in this Concept Release, including those that reflect industry best practices, please describe the best approach to achieve such standardization ( <i>i.e.</i> , through Commission regulation, Commission-sponsored committee or working group, or some other method).
115A	As we have demonstrated in our responses above, we believe that the best approach to achieve standardization is to reflect industry best practices through working groups of DCMs, FCMs and market participants. Participation from all groups is necessary to develop new risk management controls, keep current with advances in the industry, and perform necessary cost benefit analyses.
116	How should risk control monitoring be implemented? Should compliance be audited by internal and external parties? For each control, please identify the appropriate entity(ies) to monitor compliance with the control. Also, please describe what an acceptable compliance audit would entail for each control.
116A	<p>Effective risk and compliance programs should have systems, policies, and procedures reasonably designed to achieve compliance with applicable rules and regulations and should be flexible and able to be tailored to the specific activity particular to the entity, or group within an entity, at a given point in time. This is currently overseen at various levels. Under CFTC Rule 1.73, for example, FCMs must screen orders for automated execution on a pre-trade basis as well as review risk management procedures on a regular basis, but the rule is not prescriptive regarding the types of controls used. SROs regularly audit member firms regarding their implementation of risk management controls.</p> <p>The entity required to have such risk and compliance programs in place should be responsible for its compliance with the applicable rules and regulations and should monitor the activity of those covered by the applicable risk and compliance program. Because of the uniqueness of individual market participants' ATs, a third-party auditor is not in a position to certify that the systems, policies, and procedures that are in place are reasonably designed to achieve compliance with the applicable rules and regulations. Accordingly, because the relevant entity is responsible for the activity of those subject to the applicable risk compliance program, that entity is best situated to comment on the effectiveness of any risk and compliance program and its application to the activity for which the entity is responsible.</p>
117	Are there additional controls that should be considered, or other methods that could serve as alternatives to those described above [see sections III.C-F]? If so, please describe the control, its costs and benefits, the appropriate entity(ies) to implement such control, and whether there is any distinction to be drawn in the case of DMA.
117A	The industry has spent considerable time and resources designing risk controls to safeguard the markets at DCM, FCM and market participant levels. Although we believe the list is thorough given today's trading environment, we expect and support further innovation in this area.
118	Would any of the risk safeguards create a disincentive to innovate or create incentives to innovate in an irresponsible manner? If so, please identify the control, the concern raised, and how the control should be amended to address the concern. Responses should indicate how an amended risk control would still meet the Commission's objectives.
118A	Risk controls are designed to provide protection against disruptive market behavior and we support the Commission's objective to safeguard markets. As illustrated throughout this document, the industry has been proactive and will continue to look for ways to improve the integrity of markets. We encourage principles-based rules that support the development and use

	<p>of risk controls; however, we believe prescriptive rules in this area would stifle innovation. For instance, although we generally support message rate limits, prescriptive rules could inhibit price discovery by limiting a participant’s ability to react in real-time to changes in market conditions. Putting prescriptive rules in place moves the focus away from innovation and toward simply complying with the rules.</p>
119	<p>Should the Commission consider any pre-trade risk controls, post-trade reports, or system safeguards appropriate exclusively to market makers or to ATSs used by market makers? If so, please describe such controls or safeguards.</p>
119A	<p>We believe that pre-trade risk controls, post-trade reports and system safeguards should be available to, and utilized by, all market participants as appropriate, regardless of the methodology of accessing the markets. The Commission should not limit the expected use of these tools to any one type of market participant as this would create an unfair and potentially less safe marketplace. Controls and their associated costs applied exclusively to designated liquidity providers could potentially discourage them from performing the critically important role of providing liquidity.</p>
120	<p>Should the Commission or Congress revisit its approach to issuing civil monetary penalties for violations of the Act, particularly as they relate to automated trading environments? Currently, the maximum civil monetary penalty the Commission may issue is capped at \$140,000 “per violation.” Is such a civil monetary penalty sufficient to deter acts that constitute violations of the Act, given that an individual violation could impose costs to the market and the public well in excess of \$140,000?</p>
120A	<p>The reputational risk of being sanctioned by the Commission is a stronger detriment than the size of the fine.</p>
121	<p>Please describe the documentation (or categories of documents) that would demonstrate that a market participant operating an ATS has implemented each risk control addressed in this Concept Release, including, for example, computer code, system testing results, certification processes and results, and calculations.</p>
121A	<p>See response to question 116</p>
122	<p>Would a fee (collected by, for example, the DCM or SEF) on numbers of messages exceeding a certain limit be more appropriate than a hard limit on the number or rate of messages?</p>
122A	<p>DCMs currently have policies addressing message rates that have evolved over the past several years into effective mechanisms for controlling excessive messaging.</p> <p>Typically, these policies are two-tiered in order to address two different aspects of message rate limits. The first level of limits is usually calculated and enforced on a daily or monthly basis as a means to deter market participants from consistently sending orders that are unlikely to be matched for execution. Although specific implementations of such a policy differ from DCM to DCM, repeated violations of the policy typically lead to a fine, which acts as a deterrent to similar behavior in the future as well as to recoup the costs incurred by the DCM to maintain systems capable of handling high levels of messaging.</p> <p>The second level of limits is usually calculated and enforced on a real-time basis to prevent market participants from sending a large number of orders in a short enough period of time as to potentially harm the integrity of the DCM. This limit is usually implemented as a short-term hard limit that prevents an offending market participant from sending additional orders for some</p>

	<p>amount of time.</p> <p>It is difficult to standardize these types of policies across DCMs because trading systems and products vary among DCMs. Any regulation in this area should acknowledge the differences in markets and give DCMs the flexibility to configure their messaging policies, keeping in mind the unique characteristics of their products and the way they are traded. Requiring a messaging policy but allowing DCM-by-DCM and product-by-product flexibility will ensure the sound functioning of a liquid marketplace while meeting the objectives of the Commission.</p>
123	Should such a penalty be based on a specified number or rate of messages or on the ratio of messages to orders filled over a specified time period?
123A	As we have discussed above and in questions 8-13, we believe that DCMs should have the ability to determine what works best for their markets when deciding which indicators to use when enforcing a messaging policy.
124	Recent disruptive events in securities markets illustrate the importance of effective communication between exchanges' information technology systems. The Commission requests public comments regarding relevant systems in its regulated markets, including both DCMs and SEFs. What data transfers or other communications between exchanges are necessary for safe, orderly, and well-functioning derivatives markets? What additional measures, if any, would help promote the soundness of such systems (e.g., testing requirements, redundancy standards, etc.)?
124A	We believe DCMs are in a better position to answer this question.

Risk Control (106)	Specific Benefits (108)	Who Benefits (108)	Implementation Order (109)	Market Participation Distinction (109)	Already in Place for Whom (109)	Reason Unnecessary or Impractical (110)
<b>Message/ Execution Throttle</b>	Reduces Disruptive Events	End-users, DCMs, FCMs who provide access	Primary	End-Users, DCMs, FCMs who provide access	End-users, DCMs, FCMs who provide access	n/a
<b>Volatility Awareness Alerts</b>	Helps end users who don't have market structure analytics	End-users who are not analyzing market structure	Tertiary	Non-member end users	End-users, DCMs	Data is freely available already
<b>Self-Trade Controls</b>	Prevents inadvertent and inappropriate self trading	End-users and DCMs	Primary	Member end users	End-user member, DCM	Too complex for FCMs to administer automatically
<b>Price Collars</b>	Prevents unintended and disruptive trades	End-users, DCMs, DCOs, FCMs	Primary	Set at exchange level for all users	DCM	n/a
<b>Max Order Size</b>	Reduces incidence of fat finger and price mistakes	End-users, DCMs, DCOs, FCMs	Primary	All end-users	All end-users, set at DCM level, FCM level, end-users level	n/a
<b>Trading Pauses</b>	Enables liquidity to reenter markets after time to reassess	End-users, DCMs, DCOs, FCMs	Primary	DCMs	DCMs	n/a
<b>Credit Risk Limits</b>	Prevents taking on positions that are too large to handle	End-users, DCMs, DCOs, FCMs	Primary	End-users, FCMs, DCOs	End-users, FCMs, DCOs	Credit controls at DCMs are more operational and risk controls are not truly credit controls.
<b>Order, Trade, Position Drop Copy</b>	Enables market participants to reconcile actual trades with reported trades	End-users, FCMs	Primary	End-users, FCMs	End-users, FCMs	n/a

<b>Self-Certification and Clearing Firm Notification</b>	Ensure that market participants adequately test ATSS	End-users, FCMs, DCMs, DCOs	Secondary	DMA End-Users, FCMs	DMA End-users, FCMs	End-users vary so widely that comprehensive certification impractical - continue to focus on major risk events
<b>Risk Event Notification</b>	Immediately informs all market participants of disruption event	All market participants	Tertiary	n/a	n/a	Would be costly and impractical to derive and deliver such indicators
<b>ATS Notification</b>	Differentiates automated trades from slower manual trades	DCMs, Regulators	Secondary	Member end users	Member end users, DCMs, FCMs	n/a
<b>Algorithm Notification</b>	Simplifies analysis of market disruption and manipulation	Regulators	Tertiary	End-users		Impractical – algorithms typically do not work in isolation, they generally work in conjunction with other algorithms to achieve a common goal. Current methods of identifying operators and whether a system is automated should provide enough identification to enable analysis.
<b>Data Reasonability Checks</b>	Ensures that prices not distorted	Possibly end users	Tertiary	Non-member end users		Can already be implemented with existing data - notification would be difficult to implement effectively
<b>ATS Firm Registration</b>	Enables regulators to identify those who employ ATS	DCMs	Secondary	All end-users	End-users using ATS must register with exchange	End-users who employ ATS already must indicate with exchange - further registration cost prohibitive and unnecessary
<b>Market Quality Data</b>	Informs market participants of potential market structure problems	Some end users	Tertiary	Some end-users	n/a	Would be costly and impractical to derive and deliver such indicators
<b>Market Quality Incentives</b>	Informs market participants of potential market structure problems	Some end users	Tertiary	Some end-users	n/a	Would be costly and impractical to derive and deliver such indicators
<b>Standardization/ Simplification of Order Types</b>	Ensures that all end-users achieve fair access to order book	End-users	Tertiary		n/a	Not required on futures side - order types well understood for all users

<b>Data Reasonability Checks</b>	Ensures that prices not distorted	Possibly end users	Tertiary	Non-member end users		Can already be implemented with existing data - notification would be difficult to implement effectively
<b>ATS Firm Registration</b>	Enables regulators to identify those who employ ATS	DCMs	Secondary	All end-users	End-users using ATS must register with exchange	End-users who employ ATS already must indicate with exchange - further registration is unnecessary due to existing information at DCOs
<b>Market Quality Data</b>	Informs market participants of potential market structure problems	Some end users	Tertiary	Some end-users	n/a	Would be costly and impractical to derive and deliver such indicators
<b>Market Quality Incentives</b>	Informs market participants of potential market structure problems	Some end users	Tertiary	Some end-users	n/a	Would be costly and impractical to derive and deliver such indicators
<b>Standardization/ Simplification of Order Types</b>	Ensures that all end-users achieve fair access to order book	End-users	Tertiary		n/a	Not required on futures side - order types well understood for all users

Question	Section #10: Credit Controls
Opening Remarks	<p>In this section, we emphasize the difference between risk controls and credit controls. Although both are critically important to the integrity of the marketplace, they have distinct functions. To this point, it is important to note how futures markets have evolved over the last decade to provide customers and proprietary traders with the following choices:</p> <ul style="list-style-type: none"> <li>• The choice in <b>where</b> to execute a trade depending on financial instrument availability.</li> <li>• The choice in <b>how</b> to execute a trade - for example on the floor (where still available), over the phone with a broker's desk, electronically through a single dealer platform, electronically via a third party vendor system, or directly to the exchange.</li> <li>• The choice in <b>who</b> to execute and/or clear a trade through depending on the competitive services that a broker provides as well as the need to minimize counterparty risk.</li> <li>• The choice in <b>when</b> to allocate trades (if applicable) to a beneficial owner, either at-trade or post-trade depending on the complexity of the execution.</li> </ul> <p>Risk controls are used to manage trading activity; for example, pre-trade risk controls are used to manage what is acceptable in terms of order size, number of orders, and other controls discussed within this paper.</p> <p>Credit controls, by contrast, are a key feature of how an FCM manages its exposure to its customers through the different types of market activity in which they participate. Due to the choices that customers have regarding how to execute and whom to execute with, customer activity is constantly monitored at near-trade and post-trade levels to avoid the possibility of a customer being unable to meet its margin requirements. Such monitoring is both quantitative and qualitative. We believe that it is not possible to completely automate pre-trade credit limits without a major change to existing market structure.</p> <p>FIA believes it is localized pre-trade risk controls -- not credit-controls -- that should be used to prevent market disruption due to a malfunctioning ATS. Such localized controls can use various approaches and act on a very granular level to detect unusual activity and to prevent excessive trading.</p>
34	<p>What positions should be included in credit risk limit calculations in order to ensure that they are useful as a tool for limiting the activity of a malfunctioning ATS? Is it adequate for such a screen to include only those positions entered into by a particular ATS or should it include all the firm's positions?</p>
34A	<p>FIA believes it is important for the Commission to distinguish between risk controls and credit controls. Risk controls are used to manage trading activity; for example, pre-trade risk controls are used to manage what is acceptable in terms of order size, number of orders, and other controls discussed within this paper. Credit controls, by contrast, are a key feature of how an FCM manages its exposure to its customers. Credit controls comprise part of the post-trade risk management that an FCM uses in conjunction with pre-trade risk controls. Both types of controls are covered under CFTC rule 1.73.</p> <p>It is important to note that CME Globex Credit Controls, despite its name, is a type of pre-trade risk control that neither reflects nor manages the entire credit exposure of a customer. Actual credit</p>

	<p>limits are determined by an FCM’s assessment of the customer’s credit history and assets, and are monitored across a customer’s entire portfolio. Monitoring of customers’ credit limits includes their utilization of margin on positions carried by the FCM, executed through the FCM, those “given in” from other executing brokers, as well as the collateral posted in customers’ accounts at the FCM.</p> <p>The FIA does not believe that credit limits provide a useful tool for controlling the activity of a malfunctioning ATS. Credit controls are currently employed on a post-trade basis due to the diversity of information needed to properly perform credit calculations and the fragmented nature of execution where market participants have the ability to use multiple systems and multiple brokers to access the market. It would be impractical to introduce pre-trade credit controls that aggregate activity across this complex and fragmented trading environment.</p> <p>However, suitable pre-trade risk controls can provide a tool to prevent accidental trading in the event of a localized ATS failure. As with all risk controls, flexibility is important because of the variety of technologies and strategies used by market participants. DCMs support this required flexibility by providing visibility and control of activity at various levels including by firm or by session. This DCM-provided functionality addresses the market’s need for risk controls and is commonly used by market participants to control and monitor trading activity. As such, we do not believe that any further regulation in this area is necessary and may be counterproductive if it interferes with the already existing and important flexibility that is available through DCM-provided functionality.</p>
35	Should pre-trade credit screens require a full recalculation of margin based on the effect of the order?
35A	<p>As discussed in question 34, the FIA believes that it is important to differentiate between credit controls and pre-trade risk controls. Pre-trade controls that offer margin-based calculations are proxies for managing the exposure on a particular trading session and should not be considered a true measure of the credit exposure of the market participant because they cannot reflect all activity, open positions, and collateral of the market participant.</p> <p>Rather than requiring full recalculation of margin after an order is submitted, we believe active monitoring of positions by both the FCM and the DCO on a near real-time post-trade basis provides the most flexibility and the most valuable information to risk officers in managing credit risk.</p>
36	In light of your answers to the previous two questions, where in the lifecycle of an order should the credit limits be applied and what entity should be responsible for conducting such checks?
36A	We believe that the most accurate credit controls will always occur at the FCM on a post-trade basis as near as possible to when the trade happens and will require qualitative human involvement.
37	If credit checks are conducted post-trade, what should be done when a trade causes a firm to exceed a limit?
37A	We do not believe that there is a single answer to this question; instead, breaches of credit limits should be dealt with on a case-by-case basis. Best practices around credit controls dictate that the FCM should use thresholds to monitor credit utilization and should be in communication with the customer before a hard limit is breached. There could be unique variables and factual circumstances relevant to a particular trade or customer, so we strongly recommend that the Commission does not take a one-size-fits-all approach to this question. Instead, giving FCMs the flexibility to manage each of their customers’ credit issues individually will achieve the best results. This is consistent with our answers to questions 34 and 35 concerning the flexibility to monitor and

	deal with risk management in various ways as allowed for in CFTC rule 1.73. We do not believe that additional Commission regulation on this topic would be useful to the market and, in fact, could harm the market.
38	Please describe any technological limitations that the Commission should be aware of with respect to applying credit limits.
38A	<p>Market participants currently have the choice of where to execute, whom to execute with, how to execute and who they would like to have clear their trades. These choices create a challenge with regards to completely automating pre-trade credit checks because the industry would have to develop a framework for querying and applying credit limits across a variety of trading systems.</p> <p>As we have stated, we believe that credit controls are best applied on a post-trade basis, as close to real-time as possible, based on consolidated information across different trading venues (both open outcry and electronic) and trades given up from an executing broker to a clearing broker. Pre-trade risk management controls - including intraday position checks, or CME Globex Credit Controls - are a suitable proxy to limit activity in the event of an ATS failure or other accidental trading.</p>
39	The Commission is particularly interested to receive public comment on the “hub” model and its applicability to different types of pre-trade risk controls. What are the strengths and weaknesses of this approach relative to other pre-trade or post-trade approaches to checking trades against credit limits? How would the latency between the “hub” and the exchanges be managed to provide accurate limits for high-frequency ATS?
39A	<p>Credit hubs are being developed for use in the OTC derivatives market as one of many approaches to manage credit limits. Those supporting this model believe it is an efficient way to manage limits across multiple trading venues (SEFs) and DCOs. The hub model’s purpose in cleared swaps is twofold: 1) to facilitate the allocation of credit lines across multiple trading platforms and DCOs listing similar/identical products and 2) to allow for “clearing certainty” by facilitating pre-trade limit screens.</p> <p>As we have stated, futures markets have evolved over the years to allow for a choice in where to execute, how to execute, with whom to execute and with whom to clear. Although there is no fragmentation across DCMs and DCOs for futures markets, participants trade a variety of financial instruments and often offset their risk across global markets.</p> <p>We feel that introducing a central credit hub to the futures trading process would have the following impact:</p> <ul style="list-style-type: none"> <li>• All DCMs would have to implement a standardized check against the credit hub for Direct ATS participants.</li> <li>• All FCMs would have to implement a standardized check against the credit hub for Indirect ATS participants.</li> <li>• For consistency, non-ATS participants should also incur a check against the credit hub for their order flow through third-party trading systems and single dealer platforms.</li> <li>• All orders would incur additional latency as they are checked against a central credit hub.</li> </ul> <p>The use of a centralized credit hub would create a complex environment across participants, DCMs, DCOs and FCMs, and would also introduce a potential single point of failure for the entire marketplace. A technology failure at the credit hub could have major implications for both market integrity and the ability of participants to manage their risk.</p>

	<p>We feel that such a solution would be costly, difficult to implement, and the cost-benefit would be negligible. It is still too early in the evolution of SEFs to determine whether a credit hub model will meet all of its design objectives for trading OTC derivatives, however, introducing such an approach into the complex and mature futures markets would be a major undertaking and could leave US futures markets at a competitive disadvantage globally. Instead, we feel that the emphasis—as permitted by CFTC rule 1.73—should remain on automated pre-trade controls that are not credit related and on qualitative post-trade credit checks by the FCM across all activity regardless of DCM, vendor or executing broker.</p>
40	<p>If you believe that post-trade credit checks would be an effective safeguard against malfunctioning ATSS, what is the maximum amount of latency that should be allowed for conducting such checks? What technological or information flow challenges would have to be addressed in order to implement post-trade checks with that degree of latency?</p>
40A	<p>As discussed, the FIA does not believe that post-trade credit checks should be considered an effective safeguard against a malfunctioning ATS.</p> <p>Instead, we believe that localized pre-trade risk controls—not credit-controls—should be the primary tools used to prevent a market disruption due to a malfunctioning ATS. Such localized controls can use various approaches and act on a very granular level to detect unusual activity and act to prevent aberrant trading. Such controls may include intraday position limits and message limit rates, as discussed elsewhere in this document. The FIA has also advocated the benefits of Drop Copy functionality as a post-trade risk control and thinks it could be used for the purpose of better holistic risk management, including credit controls, without injecting latency into the pre-trade control systems.</p>
41	<p>With respect to any entity that you believe should be responsible for applying credit risk limits, please describe the technology necessary to implement that risk control and the cost of such technology.</p>
41A	<p>FCMs and DCOs both use their own implementations of credit risk management technology, often using services provided by third-party technology vendors. Such systems are currently designed to work on a post-trade basis only and do not look at the contribution of any resting (unfilled) orders. However, such systems have analysis tools to look at different risk scenarios, particularly regarding valuation of a portfolio. Since October 1, 2012, FCMs have been required to conduct certain stress tests on customer accounts under CFTC rule 1.73.</p> <p>At a high level, FCM credit risk management technology requires a comprehensive set of static data to record initial margin data on a per contract basis, as well as using a calculation methodology such as SPAN that may be employed by a DCO for margining purposes. An FCM’s risk system aggregates customer trading positions executed through different platforms, including trades given in to the FCM for the customer from other brokers, and calculates the margin requirement. This margin requirement is compared to the credit limit set for the customer. Alerts are typically generated when margin utilization hits various thresholds (for example 70%, 80%, 90%), leading to a qualitative evaluation of the customer’s activity which may include conversations with the customer, and could lead to the disabling of trading access or requiring liquidation of positions in extreme circumstances.</p> <p>To implement this analysis on a pre-trade basis, such a system may also need to look at the contribution to margin utilization of any resting orders that are unfilled and reject any new orders that might breach the credit limit. The challenges arising from integrating this into various trading systems are discussed in questions 38 and 39.</p>

## GLOSSARY OF TERMS

### A

#### ***Acceptance Testing***

A type of testing in which the software is tested by an individual familiar with the purposes of the software to verify conformance of a system to the stated business requirements. Acceptance testing should be done in an environment that adequately represents the environment in which the software will be released.

#### ***Aggressing order***

An aggressing (or aggressor or aggressive) order is one that is marketable and can be immediately matched when it is received by the DCM's matching engine against a passive order resting in the Central Limit Order Book.

#### ***API***

Application Programming Interface. The term is commonly used to describe a standard used to exchange information between different systems. FCMs and DCMs provide APIs to participants to allow them to electronically route orders and receive trade information, though APIs can also provide information such as market data, risk management parameters and post-trade confirmations. The FIX Protocol is commonly used as a message standard for APIs.

#### ***ATS***

Automated Trading System.

#### ***Algorithm***

The term "algorithm" broadly refers to a step-by-step procedure used for calculation or analysis. A wide range of computer programs—not limited to automated trading systems—are often made up of many algorithmic steps, often shared across multiple programs within the same organization.

#### ***Autospreader***

An autospreader is a type of trading tool using algorithms to automatically execute spread trades between two or more futures instruments.

## **B**

### ***BaFin***

The German Federal Financial Supervisory Authority, Bundesanstalt für Finanzdienstleistungsaufsicht.

### ***Batched Order Processing***

Batched Order Processing is a trade matching model where orders placed within the DCM's matching engine are held until later matched at a specific time (e.g., each second). It stands in contrast to a continuous matching model where orders will be filled immediately upon a match becoming possible.

### ***Bid/Ask***

The prices displayed that represent the levels that a financial instrument can be bought or sold for. The bid/ask can be quoted directly, or derived from resting orders in a Central Limit Order Book, depending on the type of market. The spread (difference) between the bid/ask is an indicator of liquidity.

### ***Block Trade***

A Block Trade is a privately negotiated futures, options or combination transaction that is permitted to be executed apart from the public auction market. DCMs set specific rules around block trade eligibility and reporting under rules dictated by the Commodity Exchange Act.

## **C**

### ***Cancel on Disconnect***

Cancel On Disconnect (COD) is a service provided by DCMs that monitors for a loss of connectivity between a participant's trading session and the DCM's trading platform. If a loss of connection is detected, COD initiates a best-effort attempt to cancel all resting futures and options orders for the disconnected session.

### ***CEA***

Commodity Exchange Act. The authorizing statute governing futures trading in the United States.

### **Central Limit Order Book**

The Central Limit Order Book (CLOB) is provided by the DCM as a mechanism for price discovery. Orders can be placed at various price levels and the DCM matching engine will execute trades based on the appropriate algorithm for the market, for example Price/Time Priority, Pro Rata Trade Allocation or Batched Order Processing.

### **CFTC Rule 1.73.**

CFTC Rule 1.73, CFR 21306, April 9 2012. Clearing Futures Commission Merchant Risk Management.

### **Circuit Breakers**

A circuit breaker is a type of trading curb where trading at the DCM is halted for some period of time if the market for a product moves by a substantial predetermined amount. The term is usually applied to the stock market or the stock index futures market where trading in these products will be halted for some period of time if a stock market index \*e.g., the S&P 500 index) moves by a stipulated amount relative to the prior day's settlement price.

### **Consumer**

An end user of a particular service, for example a market participant or FCM using a Drop Copy provided by a DCM.

### **Credit Hub**

A credit hub is a central (that is, across DCM or DCO) pre-trade credit screening platform designed to ensure that a participant's orders, if executed, will be backed by sufficient capital to clear.

## **D**

### **DCM**

Designated Contract Market.

### **DCM-Based Conformance Testing**

A type of testing utilized to confirm a system's functionality while interacting with a DCM. This process is often guided by a script of tests provided by the DCM and is performed in a DCM-provided testing environment to simulate the production trading environment.

### **DCO**

Derivatives Clearing Organization.

### ***Decrement Order Quantity***

A potential implementation of self-match prevention functionality that would cancel the smaller of the potentially self-matching orders within the Central Limit Order Book and would reduce the larger order by the size of the smaller order.

### ***Direct ATS Participant***

A market participant characterized by use of an ATS directly connected to a DCM without using an FCM's infrastructure to route orders.

### ***DR/BCP***

Disaster Recovery / Business Continuity Planning.

### ***Drop Copies***

Drop Copy is a report that summarizes a participant's execution activity on a trading venue and is generated in as close to real-time as possible. Drop Copy feeds are different from cleared trade feeds in that they (a) may contain additional information to aid a participant's risk management, such as order state changes, modifications, rejections and cancellations, and (b) are generated at the point of execution, rather than when the trade has been cleared.

## **E**

### ***Error Trade Policies***

Error Trade Policies are DCM policies that describe the conditions under which trades that are made in clear error can be cancelled (i.e., "busted") after execution. The policy is often referred to as a "bust policy."

### ***ETF***

Exchange Traded Fund.

### ***Execution Algorithm***

An ATS provided by an FCM for the use of its customers to execute orders using a variety of trading strategies and parameters that allows the customer to decide how to trade within the market.

## **F**

### ***Fat-Finger***

The term “fat finger” describes a type of trading error caused by mistyping on a computer keyboard. The term has come to capture more generally any trading error caused by simple human error.

### ***FCM***

Futures Commission Merchant

### ***FIA***

Futures Industry Association.

### ***FIA EPTA***

Futures Industry Association European Principal Traders Association

### ***FIA PTG***

Futures Industry Association Principal Traders Group.

### ***FINRA***

Financial Industry Regulatory Authority, self-regulatory organization for brokers in the United States.

### ***FIX Protocol***

Financial Information eXchange. An industry standard for exchanging messages for financial instruments. The FIX protocol is commonly used for routing orders between participants and FCMs, and has also been adopted as a standard API for DCMs.

### ***Flash Crash***

The Flash Crash refers to the sudden drop and immediate rebound in futures and securities prices that occurred shortly after 2:30pm Eastern Standard Time on May 6, 2010.

### ***Functional Testing***

A type of testing in which well-defined software modules are combined to have their functionality tested as a group. Two types of functional testing that may be considered are “integration” and “regression” testing.

## **G**

### ***Give Up/Give In***

A trade that is executed through one FCM and cleared with another is said to be “given up” to the clearing broker. The executing broker “gives up” the trade, while the clearing broker receives the trade as a “give in”.

### ***Granularity***

Firm level, group level, trader ID level, customer account level and strategy level.

## **H**

### ***HFT***

High Frequency Trading. An execution methodology that is commonly considered a subset of automated trading.

## **I**

### ***Indirect ATS Participant***

A market participant characterized by the use of an ATS that routes orders through an FCM’s infrastructure before they are sent to the DCM.

### ***Intra-day microstructure volatility***

Is a measure that shows the amount of short-term volatility in prices attributable to microstructure noise. A lower measure of intraday micro-structure volatility is consistent with higher market quality.

## **J**

### ***JAC***

Joint Advisory Committee to the CFTC and SEC.

## **K**

### ***Kill switches***

A kill switch disables at least some trading access under certain conditions. It can also be considered a way of terminating trading.

## **L**

### ***Latency***

Latency is a natural delay in a system due to the time it takes to process and disseminate information.

### ***LEI***

Legal Entity Identifier. The LEI has been designed to identify the legal entity that is the principal or beneficial owner of a transaction.

### ***Limit Up/Limit Down***

This refers to a predetermined price level set by a DCM for a particular product which, when breached, stops trading beyond that price level for the day. A limit is set as the amount a product's price may increase or decrease from the previous day's settlement price. When a limit is breached in a rising market, the market is said to be "limit up" and when the limit is breached in a falling market, the market is said to be "limit down."

### ***Liquidity***

Liquidity is a market attribute that describes the degree to which a financial instrument can be bought or sold in the market without affecting the price for that financial instrument. In a Central Limit Order Book liquidity can be partially determined by the spread between the bid/ask for the volume that the participant wishes to trade.

### ***Liquidity Provider***

A type of professional trader whose orders more often than not supply liquidity to the market instead of demanding it. Liquidity providers typically perform a market making function.

### ***Lock-up***

Government lock-up procedures offer pre-dissemination access to the soon-to-be publicly released data to accredited media organizations in the lock-up. This allows those organizations the time necessary to fully digest and understand the data prior to entering it into their publishing systems which ensures that the data can be accurately entered into their systems prior to dissemination to the public. During this pre-dissemination period all forms of communication between the lock-up and the outside world are prevented until a government official re-establishes connectivity simultaneously for all organizations within the lock-up. This ensures that the data remains secure until it can be

simultaneously distributed by all accredited media organizations to the general public.

## **M**

### ***Mass Quote***

A mass quote is a function within some DCM systems that allows authorized client systems to submit Mass Quotes messages to generate bid/ask pairs and two-sided markets for multiple instruments.

### ***Matching Engine***

The matching engine refers to the allocation algorithms embedded in a DCM's computers to match marketable buy and sell orders within the Central Limit Order Book and convert them into executed trades. Several types of matching algorithm exist, for example Price/Time Priority, Pro Rata Trade Allocation and Batched Order Processing, and are chosen by the DCM on a product by product basis to match the requirements of the financial instrument and its participants.

### ***Media Embargos***

In media embargos accredited media organizations are given a government report with sufficient time to fully digest and prepare the data for dissemination to the public at a set time in the future.

### ***Message and Execution Throttles***

Throttles on message traffic and trade executions are controls that limit the number of orders (and cancellation or revision of orders) submitted and the number of trades executed. Also a subset of the broader term "message rate limits."

### ***Message Rate Limits***

A message rate limit is set by a DCM and refers to a limit based upon the total messages submitted to a DCM. Implementation details of the message rate limit is done by the DCM based on their business judgment.

### ***Minimum Resting Time***

A requirement that orders must remain on the Central Limit Order Book for a minimum amount of time before they can be withdrawn.

## **N**

### **NCM**

Non Clearing Member.

### **NFA**

National Futures Association.

### **No Bust Range**

A range of market prices, within which, trades executed at those prices will not be cancelled, or “busted.” See Error Trade Policies.

### **Non-Functional Testing**

A type of testing in which well-defined software modules are combined to have their non-functional aspects tested as a group. Such non-functional aspects might include scalability, performance, stability, and usability.

## **O**

### **OCR**

Ownership and Control Report.

### **One-Lot Order**

An order placed by a market participant to buy or sell a single futures contract.

### **Operator ID**

The Operator ID is a key concept regarding identification of individual participants entering orders manually into the market, as well as identifying an ATS and its supervisor. The Operator ID is included as part of each order message sent to the DCM and maintained in the DCM’s automated audit trail.

### **Order Cancel Request**

A message sent to the DCM’s matching engine requesting that a previously submitted order be cancelled and that a confirmation of cancellation be sent.

## **Order Types**

An order type is an instruction that a DCM provides to participants to allow different interaction with the Central Limit Order Book. For example, a “market order” is an order to buy or sell that is to be executed at the best price currently available, and may trade at several price levels within the order book to be fully executed. A “limit order” is an order to buy or sell that cannot trade beyond its limit price. More complex order types have evolved within the Equities markets as a way of meeting requirements under Regulation NMS.

## **P**

### ***Pre-Trade Maximum Order Size Screens***

This is a pre-trade risk control set at the firm level or DCM level (or both) that sets limits on the size of an order submitted to the DCM’s matching engine.

### ***Price Adjustment***

To alter the price of an executed trade because the order was entered or filled in error and fell outside the Non-Reviewable Trading Range (a price range) for that product. Trades are adjusted according to strictly followed established rules in the DCM’s Error Trade Policy.

### ***Price Collar***

A price collar is a system safeguard aimed at preventing errors in order entry. A price collar determines a range around current prices within the Central Limit Order Book such that trades cannot occur outside of that range. For example, a price collar could be set where a trade cannot occur at a price level that differs by more than 10 percent from the last trade price.

### ***Pricing efficiency***

Describes how well market prices reflect information about the value of products, including whether discrepancies exist in prices across related products and markets.

### ***Price Protection***

Price protection is a system safeguard commonly implemented at a DCM to apply a price limit to a market order or a stop order that triggers a market order when the stop price is reached. The price limit sets the maximum level that the market order can trade to, and any unfilled quantity becomes a resting order in the Central Limit Order Book.

### ***Price/Time Priority Allocation***

A DCM matching engine algorithm that fills buy and sell orders according price and time priority, also known as “First-In-First-Out” (FIFO). An incoming order’s quantity immediately matches against each resting order at the same price within the Central Limit Order Book queue, decrementing each resting order based on its position within the queue. Resting orders at the same price level are given matching priority based on the time they arrive at the DCM with the oldest order having the highest priority.

### ***Producer***

A provider of a particular service, for example, a DCM providing data through a Drop Copy to a market participant or FCM.

### ***Pro Rata Trade Allocation***

A matching engine continuous algorithm implemented by DCMs that will fill orders according to price, order size and time within the Central Limit Order Book. An aggressing order's quantity is multiplied by each resting order's pro-rated percentage to calculate allocated trade quantity. An order's pro-rata percentage is calculated by taking order quantity divided by total quantity at a certain price. Excess lots, which occur as a result of the rounding down of the original allocated trade quantity, may be allocated on a first in, first out basis.

## **R**

### ***Rate of execution***

A measure of the amount of time necessary for an order to be filled based on quantity.

### ***Resting order***

An order that has been submitted to the Central Limit Order Book but has not yet been executed. Resting orders are often placed using a limit price and are said to be passive since they do not trade immediately and will only trade when another participant aggresses to their price level.

## **S**

### ***SEC***

Securities and Exchange Commission.

**SEF**

Swap Execution Facility.

***Self-Match Prevention Functionality***

Self-Match Prevention (SMP) Functionality is a type of trading control designed to prevent a trader's order from inadvertently being matched against another of the participant's orders within the DCM's matching engine. SMP controls can reside at the DCM level or the firm level, and have been implemented differently across DCMs.

**SIFMA**

Securities Industry and Financial Markets Association.

***SMP Functionality***

See Self-Match Prevention Functionality.

**SRO**

Self Regulatory Organization.

***Standby Systems***

Hardware and software that is immediately available to be utilized for business continuity purposes should primary production systems encounter a problem. This may include computers, network circuits, and communication mechanisms.

***Stop Logic Functionality***

Stop Logic detects potential market movements caused by the triggering and trading of stop orders where the resulting price move would extend beyond an exchange specified threshold. When triggered stop orders attempt to move the market to an executing price beyond a pre-established value, a stop Logic event occurs. Stop Logic detects these situations and responds by placing the identified market in a reserved state for a predetermined period of time, usually 5 to 10 seconds, depending on the instrument. During the reserve period, new orders are accepted and an Indicative Opening Price (IOP) is published, but trades do not occur until the Reserve period expires, thereby providing an opportunity for participants to respond to the demand for liquidity. At the end of the reserve period, the instrument will re-open and matching will resume.

### ***Stop Price***

A stop price is the price in a stop order that triggers creation of market order. In the case of a sell on stop order, when the market price of the contract reaches or falls below the stop price a market sell order will be triggered for that contract. In the case if a buy on stop order, when the market price of the contract reaches or rises above the stop price a market buy order will be triggered for that contract.

### ***Stop-Spike Functionality***

Stop Spike Logic prevents the excessive price movements caused by cascading stop orders by introducing a momentary pause in matching when triggered stops would cause the market to trade outside predefined values. This momentary pause allows new orders to be entered and matched against the triggered stops in an algorithm similar to market opening.

### ***Supervisor***

The head trader or other person responsible for an ATS.

### **T**

#### ***TAC***

The CFTC's Technology Advisory Committee

#### ***Tag 50***

A value within the FIX Protocol that can be used to identify the participant submitting an order.

#### ***Tag 116***

Assigned value used within the FIX Protocol to identify specific message originator (i.e. trader) if the message was delivered by a third party, for example a third-party vendor or FCM.

#### ***Trader ID***

An identifier attached to an order that uniquely identifies the participant submitting the order, often submitted in Tag 50 or Tag 116 of the FIX Protocol.

## U

### ***Unit Testing***

A type of testing in which discrete units of source code are tested to verify they work as desired. These tests may be configured to run automatically throughout the development process.

## V

### ***Velocity Logic***

Velocity Logic is designed to detect market movement of a predefined number of points either up or down within a predefined time. Velocity Logic introduces a momentary suspension in matching by transitioning the futures instrument(s) and related options into the Reserved/Pause State

### ***Volatility Alarms***

A volatility alarm is an alert sent by the DCM to system users when price volatility exceeds certain predetermined volatility thresholds.

## W

### ***Wash Trades***

Intentional self-matches.