Background:

Industry DAG has been in conversations with the SROs and SEC regarding exemptive relief from Rule 613. In order to provide justification for exemptive relief, the industry has been asked to determine minimum costs associated with the lack of exemptive relief based on prior industry experience with past regulatory projects. Since each of the exemptive relief requests discussed below would not impact CAT User functionality, limited cost analysis is required. An industry call was held on December 12 where the exemptive relief requests, project descriptions and methodology for cost estimates were discussed. Several firms on the call provided additional input for the cost estimates and the industry group collectively agreed to the following cost estimates.

Reference Projects/Data

- OATS for NMS Cost Study Completed February 2012
 - The average firm had upwards of 9 people involved in implementing OATS for NMS
 - Data was gathered in terms of person days. Applied \$1200/FTE to determine total spend
 - On average, over 1/3 of implementation effort is spent on business analysis (for large projects which could impact business processes and multiple systems)
 - Survey respondents spent \$15.86 million. Given that survey respondents represented
 1/3 of OATS Reportable records.
 - o Respondent cost was tripled to get an industry cost of \$48 Million.
- Large Trader Phase 1 Up Through October 2012
 - o 18 Firms participated; Total Cost: \$17 million
 - Average Cost All Firms: \$940,372; Average Cost for Self-Clearing/Clearing: \$1.14 million
- SRO Funding Model: Top 3 Tiers of CAT Reporters based on message volume represent 11% of all CAT Reporters: Appx. 250 firms

Analysis of Exemptive Relief Request for Customer Information Approach

Summary of Exemptive Relief Request

The Customer Information Approach exemptive relief request asks to use a firm's current customer identifiers (firm-designated identifiers) as the token(s) on the applicable CAT report as the means to identify the customer to the CAT. The CAT Processor would maintain linkage between firm designated identifiers and unique CAT-assigned Customer ID, so that all inquiries by CAT Users could always link to unique CAT Customer ID (and associated customer information).

Qualitative Benefits of Exemptive Relief Request

This approach has the following benefits:

- 1. The firms' current customer and account definition processes can be maintained without loss of any regulatory benefit of uniquely identifying every customer associated with every reportable CAT event. A new CAT Customer ID process can be avoided.
- 2. The Customer account information, required by Rule 613.c.7.viii.B to be specified on the CAT report of original receipt or origination of the order, would instead be provided on a new "Customer definition" CAT report.
 - a. Simplifies processing for CAT Reporters, mirroring the current New Customer Account

- definition process¹
- b. Improves overall security of the customer account information and the CAT. Sensitive customer PII data would not need to be passed to CAT systems or stored with CAT systems, but remain with Customer Information Repositories which would issue the "Customer definition" CAT Report.
- c. Reduces message traffic since the customer information data would only need to be provided once to the CAT, not on every origination order report.
- 3. The firms' current customer information repositories would not need to be expanded to store and manage a new CAT Customer ID.
- 4. The customer information repositories for the firms' CAT systems would not need to be expanded to store and manage a new CAT Customer ID and customer information (required for CAT reports of original orders).
- Post processing error processing by broker/dealers of a single customer across multiple firms identified by different CAT Customer IDs would be eliminated because only the CAT Processor would need to handle a CAT Customer ID.
- 6. There would be no delay in processing new customer's orders, waiting for return and processing of CAT Customer ID.

Key Considerations for CAT Customer ID Project

To estimate the difference in cost between implementing the current Rule 613 Customer ID requirement versus the Exemptive Relief Request for Customer Information Approach, consider that a "CAT Customer ID project" would need to be initiated at each firm. The CAT Customer ID project would require business analysis of the customer and account definition process(es) used within the firm to determine the impact to those processes to accept, update and manage CAT Customer IDs for those customers for whom CAT regulatory reporting is required. Key implementation activities would include:

- Determining impact on systems across the account and trade lifecycle
- Expanding the firm's Customer Information reference data
- Modifying CAT systems to accept and store the customer information that must be passed on CAT report of original order
- Workflow and system changes to ensure an account has a CAT Customer ID before accepting orders
- Maintenance/Management of CAT Customer IDs including updates to an accounts CAT Customer ID if necessary
- Educating clients and staff on the CAT Customer ID

Cost Estimate Methodology

- Identify average amount of business analysis time (person months) required for CAT Customer ID project
- Multiply number of person months by 21.67 (52 weeks * 5 work days a week divided by 12 months) to get number of person days
- Using OATS for NMS Study assumption that business analysis accounts for a third of project time, multiply business analysis time by 3 to get person days to complete the project
- Multiply person days to complete the project by \$1200 (Assuming average daily staff cost of \$1200/day)

¹ The assumption is that the Exemptive Relief Request for Customer ID Approach includes a new CAT Report for defining customers to the CAT Processor.

 Multiply by 250 to determine a minimum cost to the industry (Top 3 Tiers of the SRO CAT Cost & Funding model comprised of appx. 250 firms.)

Cost Estimate for Exemptive Relief Request on CAT Customer ID

The consensus from the industry call was that implementing the "CAT Customer ID" project would require changes to multiple business lines that often have unique customer on-boarding processes and associated systems. The consensus on the call was the project would require on average 10 person months of business analysis with a total implementation time of 30 person months accounting for a per firm cost of \$780,120. Based on the above assumptions, without exemptive relief the industry would spend at least \$195 million (10*21.67*3*\$1200*250) in additional costs. This is a conservative estimate for the following reasons:

- Estimate only includes costs for firms representing the top 11% of all CAT message volume
- Estimate does not include costs for educating clients on the CAT Customer ID as that would be an additional cost outside of business analysis, development and testing.

Analysis of Exemptive Relief Request for Existing Identifier Approach for CAT Reporter ID

Summary of Exemptive Relief Request

The exemptive relief request for Existing Identifier Approach for CAT Reporter asks to use the industry's current identifiers as the token(s) on the applicable CAT reports as the means to identify the CAT Reporter to the CAT. The CAT Processor would maintain the repository between current identifiers and unique CAT-assigned Reporter ID, so that all inquiries by CAT Users could always link to unique CAT Reporter ID (and associated CAT Reporter information).

Qualitative Benefits of Exemptive Relief Request

This approach has the following benefits:

- The industry's current business processes and identifiers can be maintained, without loss of any regulatory benefit of uniquely identifying each CAT Reporter associated with every reportable event. A new CAT Reporter ID process can be avoided throughout the industry by localizing the impact to only the CAT Processor.
- 2. The current SRO and FINRA assigned identifiers, in use today by the SROs and FINRA and all participating broker dealers, would be supplied when defining any new CAT Reporter, and represent the token(s) to be used by CAT Reporters on subsequent CAT reports. The CAT Processor would assign a CAT Reporter ID and manage the translation between the current SRO and FINRA-assigned tokens and the CAT assigned Reporter ID. The CAT Processor would resolve all tokens for CAT Users to the uniquely assigned CAT Reporter ID (and associated CAT Reporter information).
- 3. The SROs, FINRA and broker dealer information repositories would not need to be expanded to store and manage a new CAT Reporter ID.
- 4. Definition of new business processes and coordination of a single identifier to be used across all SROs and FINRA for broker dealer identification would not be needed. The CAT Processor would manage the unique CAT Reporter ID and supply that identifier to the CAT User.
- 5. Post processing error processing by CAT Reporters conflicts are identified by the CAT Processor on assignments of unique CAT Reporter IDs, including changing of CAT Reporter IDs would be eliminated. Only the CAT Processor need be sensitive to assignments of CAT Reporter IDs.

To estimate the difference in cost between implementing the current Rule 613 CAT Reporter ID requirement versus the Exemptive Relief Request for Existing Identifier Approach for CAT Reporter ID, consider that a "CAT Reporter ID project" would need to be initiated at every applicable broker dealer firm, and the SROs and FINRA. Each SRO and FINRA would need to decide if their current identification mechanisms would stay in place or would it be replaced by a common unique identifier across all SROs and FINRA - the CAT Reporter ID. If this path was chosen, a migration plan would need to be defined on how the industry would transition to this new identification structure. If the current identification processes were kept in place, but CAT Reporter ID was added as a second identifier, then the processes of managing the two distinct identifiers must be defined.

The CAT Reporter ID project would require business analysis within the SROs, FINRA and participating broker dealers to determine the impact to those processes to accept, communicate, update and manage CAT Reporter IDs. Key considerations would include:

- Decisions at each SRO and FINRA if the current identification processes would persist or be replaced by the CAT Reporter ID
- Changes that would be needed to exchange matching engines due to new CAT Reporter identifiers
- Changes required to FIX to accommodate the new CAT Reporter identifier
- Changes required to exchange order entry specifications to accommodate the new CAT Reporter identifiers
- Expansion of any Information Repository(s) to accept and store the CAT Reporter IDs
- Definition of business processes for managing both identifiers, if the current identification mechanisms were kept in place
- CAT error processing when a change is required of a CAT Reporter ID

Cost Estimate Methodology (Same as used for CAT Customer ID)

- Identify average amount of business analysis time (person months) required for CAT Reporter
 ID project
- Multiply number of person months by 21.67 (52 weeks * 5 work days a week divided by 12 months) to get number of person days
- Using OATS for NMS Study assumption that business analysis accounts for a third of project time, multiply business analysis time by 3 to get person days to complete the project
- Multiply person days to complete the project by \$1200 (Assuming average daily staff cost of \$1200/day)
- Multiply by 250 to determine a minimum cost to the industry (Top 3 Tiers of the SRO CAT Cost & Funding model comprised of appx. 250 firms.)

CAT Reporter ID Cost Estimate

The industry participants on the December 12 call indicated that the cost of not getting the exemptive relief on CAT Reporter ID was dependent on the extent to which the CAT Reporter ID would be embedded in order routing and trading systems.

- 1. If the CAT Reporter ID would only need to be saved and reported to CAT on the CAT reports submitted by the firm, then the business analysis time would be an average of 4 person months, with total implementation time at 12 person months accounting for a per firm cost of \$312,048² and an industry cost of \$78 million across 250 firms.
- 2. If the CAT Reporter ID would need to be supplied on every route and destination interface,

² \$312,048 = 12 person months * 21.67 person days per person month * \$1,200 per day

much like MPIDs are today, then this would impact the routing and trading infrastructure for every execution. This would be especially burdensome for service bureaus handling hundreds of broker dealers. Due to the number of systems impacted, the business analysis time for this implementation would be 12.5 person months with a total implementation time of 37.5 months accounting for a per firm cost of \$975,150 and an industry cost of \$244 million across 250 firms.

These are conservative estimates because they do not include costs associated with every CAT Reporter.

Analysis of Exemptive Relief Request for Optional Use of Order ID on CAT Allocation Reports

Summary of Exemptive Relief Request

The exemptive relief request for Optional Use of Order ID on CAT Allocation Reports asks for relief from specifying Order ID on CAT Allocation Reports when order information is not available. Rather, in those cases when Order ID is not available, a firm-designated ID (corresponding to the sub-account) would be specified on the CAT Allocation Report. In combination with the related exemptive relief request on Customer Information Approach, the CAT Processor can establish the CAT Customer ID associated with that allocation. (The firm-designated ID associated with the sub-account would have been defined as a customer identifier when the customer was defined to the CAT by the CAT Reporter and thereby linked by the CAT Processor to the CAT-assigned Customer ID). Therefore, the linkage of allocations would be back to the customer, not the order.

Solution with Exemptive Relief Request

Since sub-account information will be supplied on CAT Allocation reports and because sub-accounts are linked back to the CAT Customer-ID through the CAT customer definition (assuming the exemptive relief request on Customer Information Approach is granted) the CAT now has linkages among all of a customer's orders, executions and allocations for a single day, although there may not always be sufficient linkage information to relate a specific order, execution and allocation for a customer within that day.

Key Cost Considerations of Exemptive Relief Request

Cost avoidance of significant system and process re-engineering, which would be required to implement the current Rule 613 requirement of linking specific orders, executions and allocations is the benefit of this exemptive relief request. Elements of cost include:

- Potential changes to buy-side allocation messages to include related order IDs
- Workflow changes to accommodate order bunching at order entry and post-trade bunched order processing, e.g., many to many scenarios.
- Reengineering front and back office systems to systems passing Order ID and execution information to the systems that handle allocations

Cost Estimate Methodology

- Review Large Trader Phase 1 Costs
 - o 18 Firms participated; Total Cost to Survey Participants: \$17 million
 - o Average Cost All Firms: \$940,372
 - Average Cost for Self-Clearing/Clearing: \$1.14 million
 - Median Cost for Self-clearing/Clearing Firms: \$600,000

- Discuss a reasonable multiplier to use over the median cost of Large Trader Phase 1 in determining the average cost of supplying Order ID on allocations accounting for the fact that:
 - Large Trader Phase 1 focused on just proprietary trading and sponsored access. The CAT requirement would be on all trading.
 - Average price processing issues were not addressed in Large Trader Phase 1
 - Many to many issues were not addressed in Large Trader Phase 1
- Multiply Average Cost of Supplying Order ID on Allocations by 250 to reach conservative industry estimate (based on the SRO CAT Cost & Funding model, where the top 3 tiers are comprised of appx. 250 firms). This would be a conservative estimate for the following reason:
 - o Larger scope of CAT reporting which applies to all broker dealers.
 - Does not account for cost to the buy-side

Cost Estimate for Exemptive Relief on Optional Use of Order ID on CAT Allocation Reports

The consensus industry estimate for linking executions to allocations, as specified in Rule 613, would be 3.5 times the cost of Large Trade Phase 1 - \$525 million (\$600,000*3.5*250). Factors contributing to the costs include:

- Need for re-engineering front and back office systems in a manner not required by Large Trader Phase 1
- Availability of subject matter experts required to modify these systems

Please note this is a conservative estimate because it does not include potential costs to the buy-side that may be required to accommodate this change.

Conclusion

Based on industry experience with past large-scale projects, the industry estimates associated with the costs of not receiving exemptive relief are as follows:

Exemptive Relief	Industry Cost Incurred if Exemptive Relief is Not Granted
CAT Customer ID	\$195 million
CAT Reporter ID	\$78 million, if changes limited to reporting to CAT
	\$244 million, if every order and execution interface is impacted
Allocation Linkage	\$525 million

It should be noted that the estimates provided above are significantly higher than CAT project costs identified in the SRO CAT Cost Study discussed in the September 30 CAT NMS Plan. While the industry has not yet had the opportunity to review the SRO Cost Study in depth, the industry believes the following are factors should be considered in comparing the SRO Cost Study to the estimates above:

- The SRO Cost Study included assumptions that these exemptive relief requests would be accepted.
- These exemptive relief requests, in addition to Options MM Quote relief and Manual Order timestamp relief, represent some of the most burdensome and costly aspects of Rule 613 implementation.
- The methodology used by the SRO cost study needs to be reviewed by the industry DAG with the SROs. It is our understanding that some survey results were excluded as "outliers".
- Individual firm interpretation of CAT requirements likely yielded a wide variance in responses to the SRO Cost Study. Without CAT specifications, the value of survey-based analysis may be limited.