



Government Securities Clearing Corporation

New Service Bulletin

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Implementation of Enhanced Interactive Messaging and Matching Services for Real-time Trade Matching (RTTM)

Introduction

GSCC first announced its plans for introducing a series of enhancements to its Real-time Trade Matching system in a New Service Bulletin issued August 9, 2000. That bulletin outlined the central processing features to be implemented in conjunction with enhanced RTTM processing. These features include: 1) the institution of DK capabilities; 2) the introduction of demand and locked-in processing (to allow for trade matching based on unilateral input by an authorized submitter against an approved counterparty); 3) an "always submit" feature, enabling counterparties to submit trades to GSCC for matching regardless of comparison type (i.e., bilateral, demand or locked-in); 4) enhanced comparison processing (such as allowing trades to compare intra-day if all fields do not match but certain specific criteria are met); and 5) improved screen processing capabilities (particularly the ability for a participant to select an advisory on screen and use it to generate its trade input).¹ These new processing features are summarized in this bulletin.

A second objective of this bulletin is to outline a series of changes being made to GSCC's Interactive Messaging Specifications for Comparison Input and Output to support enhanced RTTM. These changes provide a number of new messaging options to better serve our participants as well as facilitate the introduction of additional changes to Interactive Messaging moving forward. While this bulletin provides a high-level overview of the Interactive Messaging changes, the complete specification (Participant Messaging Specifications for Comparison Input and Output Version 2.0) will be published within the next few weeks, fully delineating all modifications. While a central objective in developing the new specification was to minimize the impact that processing changes would have on participants already using Interactive Messaging, the changes outlined in this bulletin will go into effect immediately upon implementation of the new release and may affect participants, depending upon how they coded to the initial specification. Specifically, the following types of changes will be introduced:

- The addition of new fields and field tags in existing messages;
- The addition of new qualifiers in existing messages; and

¹ Note that the original plans for enhanced RTTM services included the ability to submit full-sized trades (rather than \$50 million blocks) to GSCC for comparison. This capability, while still under consideration, is not being included in this service release.

- The automatic generation, by GSCC, of new unsolicited messages.

All participants should therefore carefully review the Participant Interactive Messaging Specification for Comparison Input and Output (version 2.0) upon publication as well as their own internal processing mechanisms to determine how these changes will affect them.

Trade Matching Modes

RTTM matches trades in real-time and provides members with status information that allows participants to identify exceptions within minutes of trade execution. Enhanced RTTM will further allow for more trades to be matched intra-day by providing new alternatives for matching. In addition to accepting bilateral trade input from members for matching, with the new release, RTTM will also provide demand and locked-in processing capabilities to permit 100% matching on trade date for trades executed via intermediaries, even if participants are not able to submit or receive data interactively. For each of its counterparties, a participant must select one matching method to be used in conjunction with all trades executed between itself and that counterparty. Thereafter, only the matching method elected for that particular participant/counterparty combination will be employed for all trades executed between those parties. While a participant may use all three matching methods simultaneously across its various counterparties, a participant may not use multiple matching methods for a single counterparty. The three matching methods are described below.

Bilateral Matching

This method requires that the two trade counterparties submit trades to GSCC in which certain mandatory details either match or fall within predefined parameters to effect a match. A new feature of this traditional processing method is the ability for members to DK any trade they do not know (or know with different terms).

This remains the primary submission/ comparison mode for dealer-to-dealer trades, and is currently available interactively (real-time), in multi-batch and end-of-day batch. It should be noted, however, that end-of-day batch processing isn't recommended as it does not allow time for intra-day reconciliation to support 100% comparison. Members may elect to submit interactively regardless of whether their trade counterparties submit interactively or in batch or multi-batch.

Upon trade receipt, GSCC generates an acknowledgement for the submitter and an advisory (request for comparison) for the submitter's counterparty. The counterparty must also submit trade details to GSCC to effect a match. Matching runs interactively throughout the day, and once a trade is matched, GSCC generates a comparison message for both parties (along with a cancel of the request for comparison). Interactive members receive output immediately, multi-batch members receive output at various intervals throughout the day, and batch members receive output at end of day. Participants may also monitor their trades intra-day using on-screen functions available in real-time.

Each participant will have the right to DK any trades it either does not know or knows with different terms. If a participant determines that a request for comparison is not valid or is incorrect, it can send a DK to GSCC, which will be forwarded to the original trade submitter. This DK will prevent the trade from comparing on the GSCC system. (Note that in order to effect comparison for a bilateral trade that has been DKed, the DK must be

removed.) DK's may be submitted using interactive messages or via an on-screen function.

Demand Submission/Matching

Demand submission/matching is a new service designed to provide participants with the ultimate flexibility and control over the matching process for trades executed via intermediaries. It is therefore the preferred matching method for these trade types. Demand processing allows for the automatic recording of trades based on unilateral input submitted to RTTM by approved intermediaries. This means that it will allow participants to achieve 100% matching of trades on trade date, even if they do not wish to submit trades or are not capable of submitting trades interactively or in multi-batch. Trade submission by participant counterparties is optional in demand processing. Participants may elect to submit corresponding trade details for matching intra-day on trade date through RTTM, or to not submit trades at all, depending on their preference. For each demand trade pending comparison at end of day, RTTM will automatically generate the participant's side of the trade and match it to the trade submitted by the approved demand submitter.

In order for an intermediary to submit demand trades against a participant, the participant must provide authorization to accept demand trades from that intermediary, and the intermediary must further be approved and authorized by GSCC to be a demand submitter.

Members can monitor trade activity within their accounts throughout the day either by taking in interactive messages or by reviewing activity on-screen or both. If the member does not know a trade or disagrees with its terms, the member may submit a DK to GSCC using an interactive message or an on-line function. A DK will preclude the trade from comparing and entering GSCC's netting and settlement processes. The DK notification will also be sent to the demand submitter to facilitate follow up. (Note that in order to effect comparison for a demand trade that has been DKed, the DK must be removed.)

Locked-in Trade Submission/Matching

This submission alternative was designed for use when trading with an electronic trading system or exchange. It presumes the participant will not elect to submit corresponding trade details to effect a match, but will instead allow the submitter's input to automatically record trades for administrative matching at end of day. (The member will still have the option of submitting trades on trade date for matching as a means of intra-day trade reconciliation.)

If the member does not know a trade or disagrees with its terms, the member may submit a DK to GSCC using an interactive message or an on-line function. Unlike DKs for bilateral or demand trades, a DK for a locked-in trade will not preclude the trade from comparing at end of day and entering GSCC's netting and settlement processes. A DK for a locked-in trade is processed by RTTM similar to a request for cancellation. To preclude the trade from netting and settling, the locked-in submitter would need to respond to the request (DK) by submitting a trade cancellation.

Only eligible intermediaries may be locked-in submitters (e.g., brokers, ETS, exchanges, etc.). In order for a trade intermediary to submit locked-in trades against another GSCC member, the member must provide its written authorization to accept locked-in trades

from that intermediary. The intermediary must also be approved and authorized by GSCC to be a locked-in submitter.

Eligibility/Authorization Requirements for Demand and Locked-In Processing

In order to become eligible for demand or locked-in submission, the intermediary (applicant) must demonstrate that it has adequate operational capabilities to participate in the service and must satisfy GSCC's stringent testing requirements. For the demand or locked-in submitter, this would include demonstrating the ability to submit and receive interactive messages. The submitter would also be required to follow any operational procedures associated with being a demand or locked-in submitter as defined in GSCC's Rules and Procedures.

In addition, each intermediary must execute an authorization form for each of its dealer counterparties specifying which type of submission/comparison the dealer has agreed to accept, i.e., demand or locked-in. Once the intermediary and the dealer enter into an agreement specifying the submission/comparison type agreed upon, all trades between the intermediary and that dealer will be processed using that specified method until another agreement is executed. GSCC will not accept demand or locked-in trade data from an intermediary on behalf of a dealer counterparty unless the dealer counterparty has executed a written agreement authorizing the intermediary.

Enhanced Matching/Comparison Features

Almost since its inception, GSCC has been using enhanced comparison processing, primarily in its end-of-day batch cycle, to bolster comparison rates by employing money tolerances and alternative matching processes that allow trades that do not match on a few, select fields to compare based on certain presumptions of accuracy. GSCC has reviewed its existing enhanced matching features and has determined that some previously performed at end of day may now be performed in real-time. Each feature is listed below – processes to be performed in real-time first, followed by those processes that will continue to be performed at end of day.

Enhanced Features to be Employed in Real-time

- 1. Money Tolerance** - GSCC currently employs a real-time money tolerance of \$1 per million on final money to account for calculation differences stemming from members' different rules for rounding, decimal precision and truncation. (Note that the vast majority of these trades reflect penny differences.) This tolerance will continue to be employed in real-time.
- 2. Correspondent Firm** - When a clearing member submits a trade on behalf of a correspondent, the clearing member is supposed to enter the exchange symbol of its correspondent in the correspondent firm field. Frequently trades remain unmatched at end of day because the clearing member's counterparty does not submit the correspondent firm on its input. When all other mandatory fields match, GSCC will compare these trades based upon the relationship between the clearing member and the correspondent firm as defined in GSCC's database. This process, formerly performed during the end-of-day comparison process, will be performed in real-time with the implementation of the new release.
- 3. Trade Date** - Trade date mismatches may occur when processing dates are submitted in lieu of trade dates (for example, if trades are done in different time

zones). During enhanced comparison, GSCC presumes the earlier of the two trade dates submitted to be correct. This process does not apply to repos as trade date is not matched on repos. This process, formerly performed during the end-of-day comparison process, will be performed in real-time with the implementation of the new release.

Enhanced Comparison Processes Performed at End of Day

- 1. Final Money/Commission Differences** - The end-of-day final money tolerance was designed primarily to accommodate commission differences on brokered trades (for example, if the dealer leaves the broker's commission off the trade). This tolerance is set at the prevailing broker commission rate. This process will continue to be performed at end of day.
- 2. Counterparty Flip** - Some entities have identified specific affiliate accounts that they designate as approved accounts for counterparty flip. That means that during this process, GSCC will compare a trade where a member has submitted the wrong counterparty ID on its input if: 1) all other mandatory trade details match; **and** 2) the counterparty ID on the nearly-matched trade is an approved, designated account of the counterparty ID submitted on the input. For example, if a dealer submits a repo against a broker's buy/sell account in error, if all other mandatory fields match, GSCC will flip the trade to the broker's repo account to effect comparison. This process will continue to be performed at end of day.
- 3. Par Summarization** - This process allows for the comparison of one or two buy sides with one or two sell sides when the total par amount and final money on the aggregated buy and sell sides are equal. (In practice, the usual combination is two trades on one side comparing to a single trade on the other side.) This process will continue to be performed at end of day.

Improved On-Screen Capabilities

Enhancements to the existing terminal facility will also be activated in conjunction with the implementation of the new RTTM release. Most notably, participants will have the ability to review trades submitted against them (advisories) and submit corresponding trade details to effect a match with minimal keying required (i.e., will have affirm-like capabilities). Participants will also have the ability to DK trades using either an on-line command or by reviewing trades submitted against them and DKing trades directly from trade advisories. (Note: DKs may also be performed using machine-readable interactive input.) It should also be noted that the ability to remove a previously submitted DK or Cancel ("Un-DK" and "Un-Cancel" respectively) will only be available on-line.

GSCC is currently in the process of developing an RTTM Web User Interface that will allow participants to enter all trade-related activity and obtain real-time status information for all transactions received by the RTTM system. It will further give participants more robust query and list capabilities, and will additionally provide a facility for retrieving and viewing end of day and print image reports. A separate bulletin will be published describing the service in detail closer to implementation.

Participant Interactive Messaging Specification for Comparison Input and Output (Version 2.0)

Interactive Messaging for Real-time Trade Matching (RTTM) was implemented in December, 2000. Currently, more than 65% of all trades are submitted to GSCC on an intra-day basis, either through interactive messaging or via multi-batch. A new version (2.0) of the Participant Interactive Messaging Specification for Comparison Input and Output will be published within the next few weeks. Version 2.0 has been developed to accommodate the processing changes associated with enhanced RTTM services, to provide new messaging options to participants, and to facilitate the introduction of additional changes to the specification in the future. Wherever possible, changes to the specification were developed to provide participants with maximum flexibility, allowing them to select the changes they'd like to implement according to their specific business needs and programming resources. Version 2.0 does, however, contain certain changes that will go into effect immediately upon implementation of the new release. These may affect participants depending upon how they programmed the initial specification. All participants should therefore thoroughly review Version 2.0 and their own internal processing mechanisms to determine how the changes will affect them.

Participants that are currently developing according to the original specification should continue their efforts. All of the messages specified in Version 1.0 will continue to be used. Although message flows have changed, additional messages have been added and new tags and fields have been added to existing messages, none of the messaging codes/mnemonics have changed. To facilitate participants' programming efforts, any additions made to Version 2.0 of the specifications will be highlighted in the document.

In developing the updated specification, GSCC worked closely with participants actively involved in interactive messaging to identify potential areas for improvement and to formulate an appropriate implementation plan. GSCC's three central objectives in developing Version 2.0 of the specification were 1) to support the processing changes being introduced as part of enhanced comparison services (described in the first section of this document); 2) to provide participants with additional information regarding comparison-related events; and 3) to minimize the number of messages being implemented and participants' associated development time and effort.

Briefly summarized, the Interactive Messaging Specification for Comparison Input and Output Version 2.0, will provide for the following:

- New messages to support DK processing;
- The generation of new messages to better inform participants of their trade statuses (e.g., MT509 Cancel Lifted by Participant, MT509 Cancel due to DK and MT518 Cancel Request Cancel);
- The inclusion of Message Reason Codes in a new field on the MT518 message to provide participants with the reason for message generation (such as the Cancellation of a Request for Comparison due to matching or contraparty action);

- The inclusion of Trader ID as a new field in the MT515 and MT518 messages to provide the counterparties of intermediaries with the identity of the trader that executed the trade;
- New qualifiers in existing messages to support Demand processing;
- New message flows being implemented in conjunction with Locked-in trade processing;
- A new message flow for MT518 Comparison Request Cancels, notifying all trade parties that a previously received advisory may be removed from their internal processing systems (potentially due to match or some other reason);
- The ability of members to receive, or not receive, Trade Advisories according to their choice.

The chart below summarizes the changes being implemented in conjunction with Version 2.0 by Message Type.

Message Type	High-Level Changes
MT515 Input Messages	<ul style="list-style-type: none"> • No mandatory changes. • Optional ability to submit a DK message. • Optional ability for brokers or other intermediaries to submit their counterparty's Trader ID in a new field. • Optional ability to support new qualifiers in an existing field to indicate if a trade is a Demand Cash or Repo trade (as opposed to a Bilateral or Locked-In trade).
MT509 Trade Status Messages	<ul style="list-style-type: none"> • New messages associated with DK processing (i.e., DK Accepted, DK Rejected, DK Processed and Trade Cancelled Due to DK). • New message, "Cancel Lifted by Participant," to the submitter of a Cancel that has been removed from the system either by the participant or GSCC. • New qualifiers in already existing fields to indicate the record type associated with the message (e.g., new trade, DK, etc.)
MT518 Advisories	<ul style="list-style-type: none"> • New messages associated with DK processing (i.e., DK Advice and DK Remove Advice). • A new message, the Cancel Request Cancel, to inform participant counterparties that a Cancel Request previously submitted to them is no longer valid (i.e., the Cancel is no longer pending in the system). • A new field to report message reason codes (e.g., in a Comparison Request Cancel message, the reason code may indicate that the message is being sent due to matching, due to counterparty action, etc.) • New qualifiers to indicate if a trade is a Demand Cash or Repo trade (as opposed to a Bilateral or Locked-In trade). • New qualifiers to support Trader ID submitted by broker counterparty. • Already defined messages will be sent to participants

	at points in the processing cycle which differ from flows originally defined.
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(Note: There will be no mandatory changes implemented in conjunction with the MT599 message, an administrative message which appripes participants of GSCC systems availability and major systems events.)

Participation in certain enhanced comparison processes are optional. If an optional service is not elected by a participant, the participant will not receive the associated interactive output. For example, participants that have not elected to subscribe to Demand or Locked-in processing, will not receive any interactive messages associated with these services.

Next Steps

As previously noted, the Interactive Messaging Specification for Comparison Input and Output Version 2.0 will be published within the next few weeks. Participant testing of the new specification will commence three months after the publication of the specification (currently projected to begin in December of 2001). Three months after the testing period begins, the new release will be implemented in production (March of 2002). When the new release is implemented in production, all services described in this bulletin will become available and all changes made to Interactive Messaging will go into effect.

For Additional Information

Additional inquiries regarding RTTM may be directed to GSCC Participant Services at (212) 855-7651/7652/7653.

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