

Exhibit N

27. **Attach as Exhibit N a narrative description, or the functional specifications, of each service or function listed in item 7 and performed as a security-based swap data repository or securities information processor. Include a description of all procedures utilized for the collection and maintenance of information or records with respect to transactions or positions in, or the terms and conditions of, security-based swaps entered into by market participants.**

DDR's services or functions include:

- I. Acceptance of Data;
- II. Validation of Data;
- III. Maintenance of Data (Record Retention);
- IV. Electronic Access to Data;
- V. Public Price Dissemination of Data; and
- VI. Maintaining the Privacy of Swap Data.

I. Acceptance of Data

DDR accepts submissions by DDR's Users of data reportable to the SEC. The User may be the party with the reporting obligation ("Reporting Side" or "Reporting Party") or another party who submits data on behalf of the Reporting Party, such as a vendor, etc. A Unique Transaction Identifier (UTI) is used to uniquely identify each trade and the counterparties to the trade throughout its existence.

DDR accepts data from DDR Users using the following open-source structured data formats:

- Financial Products Markup Language (FpML)
- Comma-separated value (CSV) file.
- Extensible Markup Language (XML)

In addition, DDR Users can connect to DDR and submit data via the following channels:

Secure Shell (SSH) Secure File Transfer Protocol (sFTP) which allows for the submission of messages using either FpML, CSV, or XML file formats. sFTP is available over the internet or a dedicated network. sFTP is a network protocol that provides file access, file transfer, and file management over a secure channel such as SSH. SSH allows data to be exchanged using a secure transmission channel between two networked devices.

- Message Queue (MQ) Channels allow for submission of messages using FpML or XML. MQ is available only via a dedicated network. IBM WebSphere MQ is an assured delivery mechanism, which consists of queues managed by Queue Managers and allows

messages to be entered into and retrieved from queues. Movement of messages between queues is facilitated by components called Channels and Transmission Queues. Prior to defining a new MQ channel to DTCC, customers must ensure they have TCP/IP connectivity using either the DTCC SMART, SFTI or BT RADIANT networks. The IP addresses that the customer presents to DDR must be provisioned in DTCC's routers and firewalls (DTCC, The Depository Trust & Clearing Corporation, is the ultimate parent of DDR and is the source of infrastructure upon which DDR operates).

- Connect:Direct (previously known as Network Data Mover or NDM) allows for the submission of files using two formats: Binary mode (where no translation occurs), or in a mode where translation is used to convert an ASCII file to EBCDIC as it is moved to a mainframe (or vice-versa). Connect:Direct is available only via a dedicated network. Connect:Direct is used to transfer files between mainframes and midrange computers.
- Web Graphical User Interface (GUI) allows for the uploading of CSV files over the web. Web GUI is available over the internet using Hypertext Transfer Protocol Secured (HTTPS).

Trade Submission & Processing Rules

The final trade position for a given day for each received UTI is determined by the last “trade state” submission received for a particular UTI that day. The latest time stamp from all received submissions is used by DDR's system to form that day's final trade position. All transaction messages are recorded and made available throughout the day and the final trade position for a given day is determined after “end of day processing” takes place at 4am ET on T+1.

Message Types

DDR utilizes message templates for the ingestion of data, and submitters of data update pre-defined data fields as required by DDR to create a new trade record or update an existing trade record. DDR supports the following message types:

Trade State: This message supports regulatory non-public reporting and is used to report the full details of the trades at a certain point in time. End of day Trade State Reports will be created from the latest trade and valuation submissions made by a participant. Trade State is simply the trade with the latest submitted values and represents the current “state” of the trade.

PPD Message (Public Price Dissemination): This message is used to report the pricing information of the trade and lifecycle events publicly. The transaction type on the submission indicates if the PPD Message is for a trade or a lifecycle event. The Reporting Party will be required to use this message to instruct DDR to disseminate the record on DDR's public website. DDR's message template identifies required fields that must be populated. Upon receipt of the PPD message, DDR will timestamp the record and generate a dissemination ID for the trade record. DDR will then immediately disseminate the record to its public website.

Valuation: Valuation messages are sent separately from Trade State and PPD messages and contain all valuation data as of the point of submission. Valuation messages will be processed and made available (via a searchable portal) to the Users and regulators throughout the day and will also be appended to latest received Trade State data received before the 4am ET T+1 end of day cutoff. The valuation data, together with the Trade State data, will represent the final and current “state” of the trade for a particular day and will be made available to the Users and to the regulators on daily Trade State Reports

Data Fields

Data Fields within each message type carry information (*e.g.*, data elements) to create or indicate an update to trade records. Depending on several factors, including but not limited to, Action, Lifecycle Event Type, and the Message Type, any given data field may be validated based on one of the following rules:

Required means the field is required to be included for the transaction record to be accepted. A Required field must be populated in a manner that adheres to the data formats and valid values required for such field.

Conditional means the field is subject to a conditional rule that is triggered by the population of another field and would become Required if such other field is populated. Conditionality is determined based on factors such as product or trade type.

Optional means the field may or may not be applicable to the particular trade being submitted or information may not be available to populate the field.

Key Fields within Message Types

Lifecycle Event Type: _Lifecycle Event Type is a field in Trade State message that indicates (1) whether the transaction is a trade opener or a post-trade event and (2) the type of trade opener or post-trade event. A trade opener is used to open a new trade record in DDR. A post-trade event indicates a trade record already reported to DDR has been updated.

Action: Action is a key field within both Trade State and PPD messages necessary for DDR to process submissions. In Trade State messages, valid values for the Action data element are New, Modify, and Exit. While the expectation of the value “Modify” is for data submitters to signify a modification to previously submitted messages, until regulations require specific Action Type and

Event Type validations, the system treats both New and Modify the same.

The following table describes the relationship and meaning for each Action and Lifecycle Event Type for Trade State submissions:

Action	Lifecycle Event Type	Description
New or Modify	Trade	Indicates a New Trade
New or Modify	NovationTrade	Position opener to report the trade between the remaining party and the transferee resulting from a novation
New or Modify	Novation	Reports new notional amount for an existing position based on the novation
New or Modify	Termination	Reports new notional amount for an existing position based on the termination
New or Modify	Increase	Reports new notional amount for an existing position based on the notional amount increasing
New or Modify	Exercise	Indicates an updated notional amount based on part or all of the option being exercised
New or Modify	Amendment	Reports an updated notional amount based on the restatement of the existing position notional
New or Modify	CorporateAction	Reports updated trade details based on a corporate action event occurring related to an existing position
Exit	Termination	Instruction to Exit the existing position and reports the outstanding notional amount at the time of Exit.
Exit	Error	Instruction to Exit the existing position that was originally reported in error.
Exit	Compression	Instruction to Exit the existing position and indicates a compression event where multiple trades are being exited.
Exit	CptyChange	Instruction to Exit the existing position in order to modify the counterparty or counterparties to the trade.
Exit	Novation	Instruction to Exit the existing position and reports the novated notional amount for an existing position.
Exit	Exercise	Instruction to Exit the existing position and reports the updated notional amount based on part or all of the option being exercised.
Exit	ClearedNovation	Instruction by the clearing organization to Exit the existing alpha position.

Transaction Type: Transaction Type is a key field in the PPD message that is used in conjunction with Action to understand what type of event has been reported

The following table describes the relationship and meaning for each Action and Transaction Type for PPD submissions:

Action	Transaction Type	Description
New Modify Cancel	Trade	Indicates a New Trade.
	Amendment	Reports an updated notional amount based on the restatement of the existing position notional.

	FEETRADE	Reports the fee paid by the step out party of the novation.
	Increase	Reports new notional amount for an existing position based on the notional amount increasing.
	Termination	Reports new notional amount for an existing position based on the full termination of the notional.
	PartialTermination	Reports new notional amount for an existing position based on a partial termination of the notional.
	Novation	Reports new notional amount for an existing position based on the novation

II. Validation of Data

The Reporting Party is responsible for maintaining data accuracy. DDR provides all submitted data back to the Reporting Party (or to the party submitting data on the Reporting Party's behalf) in the form of both message responses and in report format.

Validations

DDR accepts or rejects (as appropriate) transactions based on the following validations for each message received:

- **Schema validations** check that a submission is consistent with the accepted format, *i.e.* whether CSV is valid and correctly formatted fields.
- **Core validations** are the basic checks that ensure the submission can be accepted, *i.e.* Permission, USI/UTI, Lifecycle Event Type and Action consistency validations.
- **Business validations** are applied at the point of in-bound submission processing to ensure integrity and logical consistency and ensure that:
 - * the messages are well-formed and provide a logical and complete description of the core trade economics; and
 - * the quality of the information held within the repository is not degraded by allowing incomplete or illogical trade descriptions to be accepted and stored.
- **Regulatory validations** are applied on top of the normal business validations. For example, if the same field is required by one jurisdiction and is optional for another, for the jurisdiction requiring the field, a regulatory validation would be applied to check for the field.

DDR will accept or reject transactions based on its validation processes. Acceptance messages are called ACKs (acceptance) and rejection messages are called NACKs (negative acceptance). Where a transaction is accepted, the submitting party will receive an electronic ACK message. Where a transaction was not accepted, the submitting party will receive an electronic NACK message along with an associated error code so that they can correct the transaction and retransmit to DDR. DDR may reject a transaction submitted due to the submission failing to

meet DDR validations, including but not limited to the submission failing to be in a format that can be ingested by DDR, failing to meet jurisdictional requirements or failing to provide required data elements. A rejected transaction and associated data elements are therefore not reported to the jurisdiction for which it was rejected (it is possible that one transaction is submitted to comply with reporting in more than one jurisdiction and may be acceptable for one jurisdiction but rejected for the other).

III. Maintenance of Data (Record Retention)

Maintenance of Swap Data

DDR's record retention process is designed to support DDR's practice of maintaining all information as required by Applicable Law, as well as maintaining swap data throughout the existence of the swap and for 15 years following termination of the swap or as otherwise required by Applicable Regulations. The records will be readily accessible throughout the life of a swap and for 5 years following its termination and shall be in an electronic format that is non-rewriteable and non-erasable. For the remainder of the retention period, the swap record will be retrievable within 3 business days.

Record Retention – General Business Records

DDR will retain one (1) copy of each final document, regardless of whether that document is in paper or electronic form. Therefore, for purposes of records retention, it is unnecessary to make hard copies of documents that are stored electronically. The record retention period varies by document type. The retention period is not less than 5 years, with the exception of swap data (noted above), legal and litigation records, which have a greater retention period.

Each DTCC or DDR employee creating or maintaining a file, whether in paper or electronic format, is responsible for classifying that file for retention or destruction in accordance with the applicable record retention policy. The employee who creates a document has the primary responsibility to retain that document in accordance with this policy. A department representative is responsible for their respective department's compliance with these directives. For administrative ease, documents are not required to be designated for destruction based on the day they were created, but rather may be designated for destruction based on the month and calendar year of their creation. For example, records that are scheduled to be destroyed on August 3, 2012, can be designated for destruction in "August 2012."

Categories of Non-Records

DTCC, pursuant to the DTCC Deriv/SERV LLC – DDR License Agreement (Exhibit O2), generates and receives data on behalf of DDR which it does not consider to be a record of DDR for records retention purposes. As a byproduct of production processing, DTCC's systems utilized by DDR run interim processing in order to generate final reports. DTCC and DDR do not consider such interim processing to be a record eligible for, or capable of, retention and does not save such data upon the completion of the final reports. Likewise, DTCC and DDR may receive real-time market data-feeds and do not consider such data to be a record of DDR eligible

for, or capable of, retention, except to the extent such data is included in reports maintained by DTCC on behalf of DDR.

IV. Electronic Access

Reporting

DDR provides regulators and Users with reports that are designed to provide visibility into positions and the status of submitted trades.

Users and regulators must be configured with the proper authorizations in order to view and query data and request reports. With certain exceptions, all Trade State reports are created once a day during the DDR batch cycle which starts at 04:00 am ET T+1. Activity data will be available as Activity records are processed, periodically throughout the day, via a searchable portal. All standard reports include header records containing both the business date for which the report was generated and the actual date that the report ran. Such information on the reports enables regulators and Users to ensure that they are using the latest reports available. Ad-hoc queries of specific data can be achieved by searching the Global Portal, which accesses all processed data, including all Activity and Trade State details.

Direct Electronic Access

Regulator reports will be made available once per day after completion of the DDR batch cycle, which starts at 04:00 am ET T+1.

Trade State, Activity, and PPD reports will be provided in downloadable format (.csv) and can be downloaded from the portal or can be directly delivered through sFTP upon request.

Trade Activity Report

- The Trade Activity Report is an end of day report that contains reporting date activity in the regulator view, with field names corresponding to the Regulation Field name.
- The report is available for the Submitter, Submitted for party, Execution Agent, and Regulators.
- All submissions that have ACKed for the reporting date are included.
- All Message Types are represented (independent of whether they are submitted via CSV, FpML, or XML).
- The report format is the same for all asset classes. Where a field does not apply to an asset class, that field value will be blank.
- Applicable client-submitted and DDR-generated timestamps are included.

Trade State Report

- The Trade State Report is an end of day report that contains the end of day state of live trades in the regulator view, with field names corresponding to the Regulation Field Name.
- A trade is considered live
 - Up to and including the expiration date or
 - Up to but not including the date a trade was intentionally exited
- The report is available for the Submitted for party, Execution Agent, and Regulators.
- Alleges against the Submitted for Party are included, with some values, such as valuation data, masked.

- The latest valuation for the trade is included.
- The report format is the same for all asset classes. Where a field does not apply to an asset class, that field value will be blank.
- Where there is more than one submitted for party and/or more than one reporting Jurisdiction or Province, there will be a separate line in the report for each.
- Applicable client-submitted and DDR-generated timestamps are included.

PPD Status Report

- The PPD Status Report is an end of day report that contains reporting date PPD dissemination data in the regulator view, with field names corresponding to the Regulation Field Name.
- The report is available for the Submitter and Regulators.
- All submissions that have ACKed for the reporting date are included.
- All PPD submissions are represented (independent of whether they are submitted via CSV, FpML, or XML).
The report format is the same for all asset classes. Where a field does not apply to an asset class, that field value will be blank.
- Applicable client-submitted and DDR-generated timestamps are included.

V. Public Price Dissemination

DDR's Public Price Dissemination solution provides Users with a way to report prices publicly pursuant to the SEC regulations for security-based swaps. Reporting Parties are provided with a specific message, the PPD Message, with which to provide the information required to be disseminated. Publicly disseminated data from a security-based swap data submission must be marked for dissemination by being included in a PPD Message. Provided that a security-based swap data submission includes a PPD message type, certain pre-determined data fields will be disseminated by DDR. The PPD Message is available for dissemination if the fields "Trade Party 1 - Reporting Destination" or "Trade Party 2 - Reporting Destination" are populated with "SEC" and the message passes validations. DDR may reject a PPD message submitted due to the submission failing to meet DDR validations, including but not limited to the submission failing to be in a format that can be ingested by DDR, failing to meet jurisdictional requirements or failing to provide required data elements. A rejected transaction and associated data elements are therefore not reported to the jurisdiction for which it was rejected (it is possible that one transaction is submitted to comply with reporting in more than one jurisdiction and may be acceptable for one jurisdiction but rejected for the other).

The PPD platform will perform validations on every PPD Message submitted. Based on the result of that validation, the PPD application will issue a response to the relevant parties indicating a positive or negative validation result. The possible message responses are identified as the acknowledgement ("ACK") and negative acknowledgement ("NACK") messages, discussed in more detail below.

DDR requires a separate message for public dissemination and DDR does not determine whether a PPD message should be disseminated publicly. Any PPD message received with a Reporting Destination of "SEC" is disseminated publicly if it passes validations and is directed to the SEC

as discussed above. DDR requires that the Reporting Party only provide PPD messages that are required to be disseminated under the regulations.

The dissemination of an accepted PPD Message will be immediate upon receipt and processing. In addition to timestamps provided by the data submitter, the following timestamps will be recorded:

- Timestamp of when message was received.
- Timestamp of when message was processed by the PPD Platform.
- Timestamp of when message was expected to be disseminated.
- Timestamp of when message was actually disseminated.

Timestamps can be used by regulators and Users to determine the time a message is received by DDR, the time DDR publicly disseminated data and the time the trade was executed.

The Dissemination ID is a DDR generated identifier used to uniquely identify a message without exposing the UTI. The Dissemination ID will be used to manage cancellations and corrections. On any PPD Message with an action of modify or cancel, the "Original Dissemination ID" will also be provided so that the original message impacted is identified.

The PPD Platform will receive messages with the following values in the Action field for a UTI:

- New - A participant must submit an Action of New for each Transaction Type when submitted for the first time per UTI/transaction type/submitted for party. Examples of Transaction Types are: Trade, Novation, Partial Termination, Amendment, Termination.
- Modify – An Action of Modify instructs the PPD application to modify the last submission on that UTI/transaction type/submitted for party. An Action of Modify is used to correct errors in a prior message and will appear as both as Action of “Cancel” and “Correct.” “Cancel” represents a cancellation of the previous submission and “Correct” represents a modification of that submission. If an Action of Modify is submitted on a UTI that does not exist on the PPD Platform, the submission will receive a NACK message response.
- Cancel – An Action of Cancel instructs the PPD Platform to cancel the last submission on a particular UTI. If the previous submission has been disseminated, the PPD Platform will disseminate a cancel along with a link to the original dissemination ID. If an Action of Cancel is submitted on a UTI that does not exist on the PPD Platform, the submission will receive a NACK message response.

VI. Maintaining the Privacy of Swap Data

Consistent with Applicable Law, information received or maintained by DDR as part of the SDR Services, other than data to be publicly reported, is treated as non-public and held strictly confidential (“DDR Confidential Information”).

DDR Confidential Information generally may not be accessed, used, or disclosed to any affiliated or non-affiliated third party for purposes not related to SDR Services. However, in

connection with the provision of services by an affiliated or non-affiliated third-party to DDR, DDR may provide such third-party service provider with access to data maintained by DDR, including DDR Confidential Information, in accordance with the procedures set for in the DDR Rulebook.

DDR Staff and DDR Support Staff (this term refers to DTCC staff that are not DDR employees, for example, DTCC staff that provide services to DDR pursuant to the License Agreement entered into between DDR and DTCC Deriv/SERV LLC) may only use or access DDR Confidential Information as is reasonably required to perform their job functions related to the support of DDR and the SDR Services and in a manner consistent with applicable operating procedures. In addition, DDR Staff and DDR Support Staff accessing DDR Confidential Information must adhere to other policies as may be applicable.

DDR Staff and DDR Support Staff are prohibited from sharing DDR Confidential Information with anyone who does not have a legitimate business need for knowing or having access to that information. The scope and extent of access to DDR Confidential Information that is shared pursuant to this "need to know" principle in each particular case must always be kept to a minimum. DDR Staff and DDR Support Staff are prohibited from utilizing DDR Confidential Information to trade for their personal benefit or for the benefit of another.

Due to the fact that any disclosure, misuse or misappropriation of DDR Confidential Information may adversely affect DDR's Users, compromise the reputation of DDR and leave DDR open to regulatory censure, DDR has developed controls to safeguard such information. These "access controls" consist of a combination of administrative, technological, and physical safeguards designed to prevent the unauthorized access to or use or disclosure of DDR Confidential Information by DDR Staff, DDR Support Staff or other individuals who do not require the information to perform specific job functions. These safeguards are intended to limit access to DDR Confidential Information to those with a legitimate business need for knowing or having access to the information and on a need to know basis.