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# Disclosure under the Principles for Financial Market Infrastructures

**DTCC Data Repository (Singapore) Pte Ltd.**

**Date: July 2025**

**Responding Institution:** DTCC Data Repository (Singapore) Pte. Ltd. (“DDRS”)  
**Jurisdictions:** Singapore and Australia  
**Authorities:** Monetary Authority of Singapore;  
Australian Securities & Investments Commission

Except as noted, the information provided in this Disclosure Framework is accurate as of December 31, 2024; financial information and certain other data are provided as of the dates specified.

This Disclosure Framework can also be found at [www.dtcc.com](http://www.dtcc.com).

For further information, please contact [ddrsnotices@dtcc.com](mailto:ddrsnotices@dtcc.com)

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## Executive Summary

The Committee on Payment and Market Infrastructure and the Technical Committee of the International Organization of Securities Commissions (collectively, “CPMI-IOSCO”) recognize that financial market infrastructures (“FMIs”), which include central securities depositories, securities settlement systems, central counterparties, payment systems and trade repositories, each play a critical and in the financial system and the broader economy. FMIs facilitate clearing, settling, reporting, and recording of monetary and other financial transactions.

As a trade repository, DTCC Data Repository (Singapore) Pte. Ltd. (“DDRS”) collects, records and reports OTC derivatives transactions pursuant to the laws of Singapore and Australia, in which it is licensed, registered, or designated. CPMI-IOSCO has recognized that, when properly managed, FMIs bring great benefits to promoting market safety.

CPMI-IOSCO’s 2012 report on the Principles for Financial Market Infrastructures (the “FMI Principles”) contains 24 FMI Principles covering the major types of risks faced by FMIs. One key objective of the FMI Principles is to encourage clear and comprehensive disclosure by FMIs through a public “Disclosure Framework” that explains how their businesses and operations reflect each of the applicable FMI Principles.

This Disclosure Framework covers DDRS, an indirect, wholly-owned subsidiary of The Depository Trust & Clearing Corporation (“DTCC” or the “Company”)<sup>1</sup>. DDRS provides trade repository services to its customers with respect to over-the-counter (“OTC”) derivative transactions that are required to be reported in Singapore and Australia. DDRS is a licensed entity, registered with and under the supervision of, the Monetary Authority of Singapore (“MAS”) and the Australian Securities and Investments Commission (“ASIC”).

DDRS conducts trade repository services only. It does not provide settlement, collateral, margin, physical deliveries, central securities depositories, or custodian services. Consequently credit, liquidity, custodian, and investment risks are not relevant for the trade repository. As such, Principles 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16 and 20 do not apply to DDRS’ business, and these principles are not included in this disclosure statement.

This Disclosure Framework is intended to provide relevant disclosure to DDRS’ stakeholders and other interested parties on DDRS’ key services and the methods it uses to manage the risks of itself and others of providing these services.

DDRS understands the necessity of a robust and comprehensive system for risk management to fulfill its responsibility to provide data repository services. To manage the operational and other risks to which it is exposed, DDRS has established a robust risk governance structure that is incorporated into its organization, including DDRS’ Board of Directors and DDRS’ Risk Committee.

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<sup>1</sup> DTCC is a U.S. corporation.

## Summary of Major Changes Since Last Update

This Disclosure Framework has been updated as of July 31, 2025 and has been published in accordance with the “Principles for Financial Market Infrastructures: Disclosure Framework and Assessment Methodology.” No major change was made from the previous update. However, this document contains some additions and revisions to the previous document for further clarification, including:

- Principle 1, Key Consideration 3  
Clarified process for amending the DDRS Rulebook.
- Principle 2, Key Consideration 1
  - Clarified roles of DDRS and Deriv/SERV Management in monitoring DDRS’ business and operations.
  - Removed details on the DTCC Investment Management Committee as they are not critical for this disclosure.
- Principle 2, Key Consideration 2  
Clarified roles of DDRS and Deriv/SERV Management in monitoring DDRS’ business and operations.
- Principle 2, Key Consideration 3
  - Removed details on the process for resolving conflicts of interest as they are not critical for this disclosure.
  - Removed details on the span of oversight of each committee as they are not critical for this disclosure.
- Principle 2, Key Consideration 5  
Removed details on DDRS’ Annual Compliance Report as they are not critical for this disclosure.
- Principle 2, Key Consideration 6
  - Removed details on how Op Risk categorizes operational risks as they are not critical for this disclosure.
  - Clarified purpose of DDRS’ Risk Assessment.
- Principle 17, Key Consideration 1  
Removed details on Op Risk Framework as they were already mentioned under Principle 2 Key Consideration 6.
- Principle 17, Key Consideration 6  
Added mention of new Hyderabad office.
- Principle 18, Key Consideration 1  
Removed details on onboarding application process as they are not critical for this disclosure.
- Principle 22, Key Consideration 1  
Updated formats in the interface table to ISO 20022.
- Principle 24, Key Consideration 2
  - Removed mention of RDS Business Support Team as the control they perform is

undertaken by the aforementioned EAS team.

- Removed details on issues identification, investigation and escalation process as they are not critical for this disclosure.

## General Background of DDRS

### General Description of DDRS

DDRS is one of the trade repositories that make up DTCC's Global Trade Repository ("GTR") service. The DTCC GTR service operates licensed, registered, or designated trade repositories in seven<sup>2</sup> jurisdictions globally. DDRS is subject to oversight by MAS and ASIC. MAS and ASIC have a common objective to supervise market activity, improve risk management, and enhance transparency in the derivatives markets. Furthermore, these regulatory authorities put increased emphasis on the creation and use of industry data standards without which it will be difficult to achieve consistency in the information collected. DTCC has been at the forefront of the development of trade repositories building global capabilities across the spectrum of asset classes.

### Regulatory, Supervisory, and Oversight Framework

DDRS operates as a licensed trade repository in Singapore as well as Australia. This enables market participants<sup>3</sup> to comply with the OTC derivatives reporting rules set out by MAS and ASIC respectively.

### Organization

DTCC is the ultimate parent company of DDRS. DTCC is a non-public holding company that owns a number of Financial Market Infrastructures ("FMIs"). In addition to DDRS and trade repositories in the United States (also serving Canada), European Union, United Kingdom, and Japan, DTCC also owns The Depository Trust Company ("DTC"), the world's largest central securities depository ("CSD") and a registered clearing agency for the settlement of securities transactions for eligible securities and other financial assets; National Securities Clearing Corporation ("NSCC"), a registered clearing agency and central counterparty ("CCP") that provides clearing, netting, settlement, risk management, and CCP services for trades involving equities, corporate and municipal debt, exchange-traded funds and unit investment trusts in the United States; and Fixed Income Clearing Corporation ("FICC"), a registered clearing agency and CCP that operates two divisions. FICC's Government Securities Division provides clearing, netting, settlement and CCP services to the U.S. government securities market. The Mortgage-Backed Securities Division provides such services to the U.S. mortgage-backed securities market. DTCC, through its subsidiaries, provides critical information, post-trade processing, and transactional services, including through its global trade repositories, to financial market participants in the United States and globally.

DTCC is owned by the financial institutions that are participants of its registered clearing agency subsidiaries. DTCC's governance arrangements—and those of its trade repository subsidiaries—are designed to promote the safety and efficiency of the market, support the stability of the broader

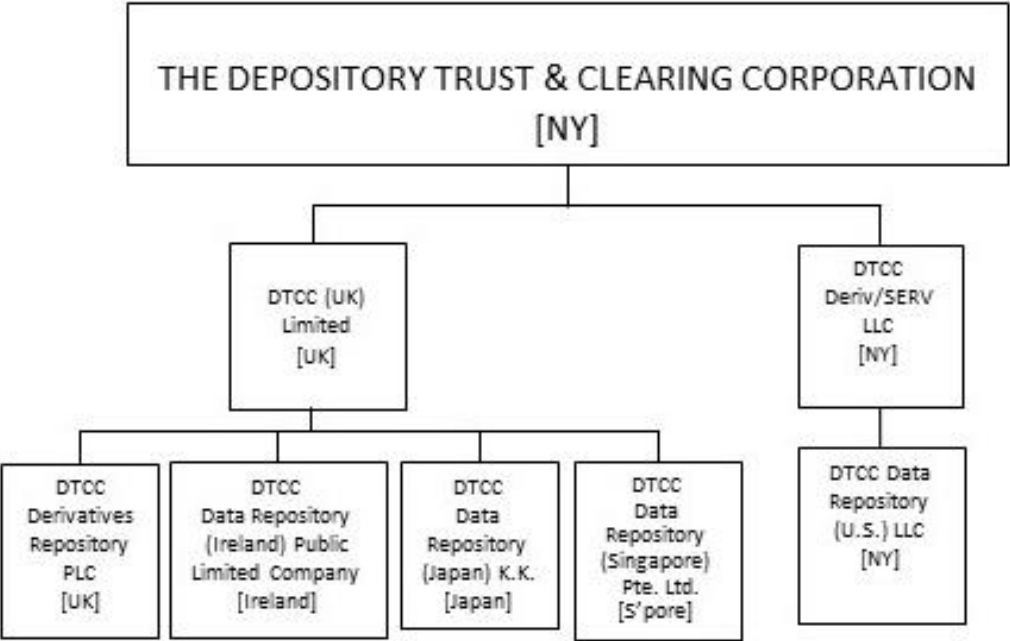
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<sup>2</sup> DTCC has five licensed trade repositories that provide recordkeeping and reporting to several jurisdictional regulators namely: MAS, ASIC, JFSA, CFTC, SEC, ESMA, FCA, FINMA, and the thirteen Canadian provinces and territories regulated at the provincial level. DTCC also provides agency reporting services in Hong Kong for relevant clients; however, DTCC does not operate a licensed trade repository in Hong Kong.

<sup>3</sup> For the purposes herein, the term "participant" may be read as synonymous with "user". For example, the User Guide is a guide for participants.

financial system, and promote the objectives of its participants. DDRS' governance arrangements are more fully described in response to Principle 2 (Governance) below.

DTCC's direct and indirect subsidiaries that are relevant to the derivatives business of DTCC are shown in the following chart<sup>4</sup>:



DDRS employs a governance structure which ensures fairness and a robust risk management framework, stemming from DTCC's corporate mission.

DDRS is required to comply with relevant laws and regulations and is subject to review by auditors. Further details are provided in the principle-by-principle section below.

<sup>4</sup> This is not a complete chart of the entire DTCC corporate structure.



## Principle-by-Principle Summary and Narrative Disclosure

### Principle 1: Legal Basis

*An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.*

#### **Key Consideration 1: The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.**

DDRS is a licensed trade repository in both Singapore and Australia and complies with relevant regulations and licensing conditions set forth by MAS and ASIC, respectively. The User Agreements and Operating Procedures, which are governed by either Singapore law or New York law as designated by the participant, require participants to represent that (a) the participant has power and authority to perform its obligations, (b) its agreement with DDRS is valid, binding, and enforceable, and (c) access does not violate any applicable law.

The legal framework governing the licensing and obligations of DDRS in its capacity as a licensed trade repository in Singapore is set out in the Securities and Futures Act (the "SFA") and the regulations promulgated thereunder, including the Securities and Futures (Trade Repositories) Regulations 2013 (the "SFTRR"), as amended from time to time, as well as any applicable notices and guidelines issued by MAS from time to time.

The legal framework governing the licensing and legal obligations of DDRS in its capacity as a foreign trade repository in Australia is set out the Corporation Act 2001 and ASIC Derivatives Trade Repository Rules 2023 ("DTRR"), as modified by conditions and incorporating the exemptions granted by ASIC.

The robust Singaporean and Australian legal frameworks for a licensed trade repository provide legal certainty for DDRS' activities in Singapore and Australia and also set out specific obligations applicable to a licensed trade repository with respect to the material aspects of a trade repository's services, such as recordkeeping and reporting requirements and the rights of stakeholders with respect to access, confidentiality, and disclosure of data. Further, the DDRS Compliance Manual and DDRS Rulebook are both prepared in accordance with the Singapore and Australian legal requirements applicable to licensed trade repositories. In particular, the DDRS Rulebook is a binding contract on both DDRS and each participant<sup>5</sup> and represents a clear, transparent, and legally enforceable agreement<sup>6</sup>. Pursuant to paragraph 1.1 of DDRS Rulebook participants are required agree to (i) enter into the User Agreement and (ii) be bound by the terms of the User Agreements and the Operating Procedures.

In addition, the DDRS Rulebook, User Agreements (and accompanying Operating Procedures), policy documents and various other contractual agreements to be entered into by DDRS were reviewed and approved by MAS and ASIC as part of the licensing application. Amendments to the Rulebook<sup>7</sup> may, where relevant, require consultation with DDRS' participants and notice to MAS.

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<sup>5</sup> Pursuant to SFA, Section 46R.

<sup>6</sup> Pursuant to ASIC Instrument 2023/725, Exemption 1; and DTRR, Part 2.2.1(1).

<sup>7</sup> As defined under SFA, Section 46Q.

**Key Consideration 2: An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.**

DDRS' Rulebook, Operating Procedures, User Agreements, and other related legal documents have been reviewed and approved by the relevant jurisdictional licensing authority as part of the license application. Amendments to the Rulebook, will undergo the required consultation with DDRS' participants and DDRS will also provide any required notice to MAS and ASIC. These documents have also been reviewed internally by both the business and legal functions before submission to the relevant licensing authority for approval. In addition, user guides, along with industry white papers, reports and required regulatory self-assessments or disclosures (such as those associated with CPMI-IOSCO) help promote clarity and understanding.

DDRS continues to be engaged in significant industry outreach efforts to educate potential and current participants as to the DDRS Operating Procedures in the form of industry working groups and individual client outreach by its account management team. Furthermore, the DDRS Rulebook and Operating Procedures are published on DDRS' public website.

DDRS' rules, procedures and contracts are subject to internal and external legal review as appropriate. The rules, procedures and contracts are updated as necessary or when appropriate to reflect legal and regulatory changes or modifications to the service.

In addition, these rules, procedures, and contracts may also be updated in response to issues that have been raised by industry working groups and/or by a relevant regulator (MAS or ASIC). DDRS also seeks legal opinions and analysis on selected issues as needed.

The DDRS Compliance function is responsible for monitoring legal and regulatory changes/developments. Various channels are used to monitor regulatory related alerts relating to both MAS and/or ASIC, including but not limited to regulatory change announcements, legal alerts (subscription based) and industry working groups and associations. Such information is analyzed by DDRS Compliance as and when received. If a particular regulatory change is deemed relevant by DDRS Compliance, further assessment will be performed to determine if any changes to DDRS policies and procedures are required. Additionally, the DTCC Legal function assists in monitoring for updates to Singapore regulation and will work together with Compliance accordingly.

The DDRS Rulebook, Operating Procedures, User Agreements, and other agreements were submitted to MAS and ASIC as part of the process of DDRS obtaining its registration and licensing to operate as a trade repository in Singapore and Australia. Any amendments (as defined by the SFA) will be submitted to the regulators as well.

**Key Consideration 3: An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.**

DDRS is subject to the regulatory oversight of MAS and ASIC and its activities will comply with any regulations, guidelines or notices issued by and concomitantly subject to licensing conditions and exemptions imposed by MAS and ASIC respectively.

Relevant material changes to the DRS Rulebook are subject to internal stakeholder and DRS Board review and approval, public consultation and notification to MAS<sup>8</sup>. The effective date of the revised Rulebook would follow receipt of relevant approvals/ notifications accordingly.

The legal basis for DRS' activities is set out in the DRS Rulebook, Operating Procedures, User Agreements, and various other legal documents, which were submitted to and approved by MAS and/or ASIC, as applicable. Furthermore, user guides along with industry white papers, reports and required regulatory self-assessments or disclosures (such as those associated with CPMI-IOSCO) provide information about DRS' activities. In addition, the DRS Rulebook and the Operating Procedures are published on DRS' website and any material changes to these documents are notified to all participants through the publication of an "Important Notice" on DRS' website.

**Key Consideration 4: An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.**

Rules, procedures, and contracts related to the DRS operations are subject to internal and, as appropriate, external legal review. In addition, the User Agreements and Operating Procedures, to which participants must agree in order to participate in the services provided, are governed by Singapore Law (unless the relevant participant opts for New York law) and require participants to represent that (a) participant has power and authority to perform its obligations, (b) its agreement with DRS is valid, binding, and enforceable and (c) access does not violate any applicable law.

Furthermore, where necessary, DRS seeks written legal opinions and analyses on selected issues so that it is in compliance with applicable law.

In addition to a focus on conforming to applicable law and general principles of contract law, DRS is confident that its actions are unlikely to be subject to being voided, reversed, or stayed based on the nature of trade reporting the services provided. DRS does not engage as a counterparty to the transactions it reports and does not perform settlement or other activities related to the derivatives markets whatsoever. As a trade repository, its strict licensed purpose is to record and report relevant transactions reported to it by its participants. Therefore, DRS' actions taken under its rules and procedures are unlikely to be voided, reversed, or stayed, because it is required by its license and under regulation to record and report such transactions. In addition, because DRS trade data repository services are provided pursuant to regulatory mandates, it is unlikely that such services will be found to be contrary to public interest or policy. To date, no court has held any of DRS' relevant activities, rules, procedures, or contracts unenforceable. As a result of all of these factors, together with the opportunity for public review and comment of its rules, policies, and procedures, DRS has a high degree of certainty its actions would not be voided, reversed, or subject to stays.

**Key Consideration 5: An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.**

DRS operates in two jurisdictions, Singapore and Australia, and does so under strict licensing and regulatory rules. While ASIC deems DRS to be in compliance with certain provisions of its rules as long as it complies with the equivalent MAS rules, it is a condition of the Australian license that DRS

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<sup>8</sup> Pursuant to SFTRR, Regulation 19.

submit to the jurisdiction of Australian Courts for matters related to its operation as a Derivative Trade Repository and comply with any order of an Australian Court in related matters. DDRS also has on its Board a representative of a participant who is an Australian Deposit-taking Institution (“ADI”), who has its place of business in Australia and who is an Australian citizen, to provide for the specific Australian representation. DDRS’ experience is that MAS and ASIC cooperate to seek efficiencies in the operation of the trade repository in both jurisdictions but, should a conflict arise, DDRS would first seek to resolve it through discussions with its regulators and seek an exemption, if necessary.

In addition, while DDRS does not operate in other jurisdictions, its clients may be incorporated or domiciled in a country other than Singapore or Australia. All clients must execute user agreements which include a governing law provision (as previously noted, the client can choose either New York or Singapore law to govern the relationship between DDRS and the client). Both New York and Singapore law provide a clear and comprehensive framework for the enforceability of DDRS’ rules and contracts. DDRS has sought legal advice on key conflicts of law issues such as the recognition of Singapore or New York law by Australian Courts as to the enforceability of contractual terms against an Australian user. As the holder of an Australian derivative trade repository licence, DDRS is required to take all reasonable steps to mitigate any risk rising from any potential conflict of laws across the various jurisdictions to which DDRS is subject.

## Principle 2: Governance

*An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations and the objectives of relevant stakeholders.*

**Key Consideration 1: An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.**

DDRS is a company specifically set up to serve as a trade repository to handle OTC Derivative Data to facilitate regulatory reporting and oversight of the OTC Derivatives Market by its relevant regulators. This objective of DDRS is clearly identified in the DDRS Rulebook. DDRS participates in an annual corporate goals process, where DDRS' management formulates the goals every year, and any goals will incorporate the needs and requirements of the industry (including regulators and participants). Potential initiatives are vetted to determine if appropriate; the scope of the initiative, including regulatory, operational, financial, technical and compliance considerations; the potential benefit for industry participants and/or regulatory authorities; potential risks of the initiative; competitive considerations; and potential prioritization of the initiative against other efforts in progress or planned. This vetting process will be completed by DDRS' management, in consultation with the DDRS Board, who has ultimate oversight of DDRS' performance and ultimate authority to support or deny an initiative. Additionally, DDRS is subject to regulatory oversight and is subject to internal and external audits. The DTCC Internal Audit Department ("IAD") shall report information and results to DDRS' Audit Committee and is responsible for assisting it as needed in the performance of its duties.

DDRS has adopted policies and protocols for safety and efficiency, including information security, employee conduct and regulatory compliance and these policies are subject to periodic review. DDRS' affiliate, DTCC Deriv/SERV LLC ("Deriv/SERV"), provides services to DDRS related to its business and operations, which are monitored by DDRS and Deriv/SERV Management and are reported to DDRS' Risk Committee on a quarterly basis.

DDRS' registration (along with its licensing) as a trade repository is expressly intended to support financial stability by enhancing transparency in the OTC Derivatives markets. DDRS' priorities and business plans are approved by its Board with this objective in mind. The DDRS Board includes representatives from DDRS' user firms/participants to help ensure accountability to participants. Additionally, DDRS works closely with its regulators in the identification of public interest considerations, particularly as to the types of data the regulators need from trade repositories; and resultant requirements are aligned with DDRS' objectives.

**Key Consideration 2: An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.**

The DDRS Board is responsible for providing direction to and overseeing the conduct of the affairs of DDRS. The DDRS Board operates in accordance with applicable laws as well as the provisions set out in the DDRS Board Mission Statement and Charter, the Principles of Governance and the DDRS Rulebook. The Board has full access to the DDRS senior management and Board meetings are held every quarter in each calendar year for the purpose of overseeing management of the company. DDRS adheres to the MAS' Securities & Futures (Corporate Governance of Approved Exchanges, Approved Clearing Houses, Licensed Trade Repositories & Approved Holding Companies) Regulations 2005 (the "Corporate Governance Regulations"); as well as MAS' Guidelines on Risk Management Practices - Board & Senior Management; and MAS' Guidelines on Fit & Proper Criteria with respect to corporate governance matters. DDRS also complies with ASIC's requirements as detailed in its license.

DDRS consults its participants before making any amendments to the DDRS Rulebook, unless the proposed amendment would have limited impact on its participants<sup>9</sup>.

DDRS management is accountable to its Board as well as to the General Manager of Deriv/SERV (the “Deriv/SERV GM”). DDRS management meets with Deriv/SERV’s management team regularly in order to align DTCC trade repository activities globally. Deriv/SERV provides services to DDRS and DDRS monitors these services via a monthly status updates/review process. DDRS and Deriv/SERV Management monitor DDRS’ business and operations, and reports these to DDRS’ Risk Committee on a quarterly basis.

DDRS provides accountability to owners, participants, and other relevant stakeholders through the DDRS Board, whose users include representatives from DDRS’ user firms/participants. DDRS’ management structure is set out in the documentation provided to its regulators pursuant to its application to act as a licensed trade repository in Singapore and Australia. The DDRS Rulebook provides escalation procedures in areas that have the potential to impact Users (i.e., the Adverse Action Review). The Rulebook, User Agreements and Operating Procedures are published on the DDRS website. Such disclosure makes governance information about DDRS available to owners, relevant authorities, participants, and the public.

The Board has established committees to assist it with its duties and its functioning. Details are set forth under Key Consideration 3 below.

**Key Consideration 3: The roles and responsibilities of an FMI’s board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.**

The DDRS Board is responsible for providing direction to and overseeing the conduct of the affairs with regard to the interests of DDRS, its shareholder and other stakeholders including the participants and the governmental and supervisory authorities responsible for regulating those markets. The Board will discharge its oversight responsibilities and exercise its authority in a manner consistent with applicable legal and regulatory provisions and with regulatory expectations of the role of the Company in the infrastructure for those markets.

The procedures for the functioning of the Board are set out in relevant documentation including DDRS’ incorporation documents, its Board Mission Statement and Charter, its Principles of Governance, and the applicable company law requirements. These documents are available to DDRS’ regulators, as well as board members. These documents are reviewed as and when the need arises.

The procedures for management of conflicts of interest are set out in the various policy documents, in particular the DDRS Conflicts of Interest Resolution Policy and the DDRS Board Code of Ethics, which are reviewed at least annually.

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<sup>9</sup> Per SFTRR, Regulation 19(2).



Generally, all potential and actual DDRS-related conflicts of interest must be escalated to the DDRS Chief Compliance Officer (“CCO”). The CCO and DDRS Senior Officer are responsible for analysis and mitigation/resolution of such matters<sup>10</sup>.

The Board undertakes an annual self-assessment process to formally review its overall performance as well as the performance of each of its individual directors, in determining whether to re-appoint its directors.

The DDRS Board has established the DDRS Audit Committee, the DDRS Nominating Committee and the DDRS Risk Committee, each with clearly defined roles and responsibilities, per their respective charters to facilitate the efficient functioning of the Board. The Board, keeping in mind the appropriate skills, knowledge, and experience necessary, selects the directors that sit on each committee.

**Key Consideration 4: The board should contain suitable members with the appropriate skills and incentives to fulfill its multiple roles. This typically requires the inclusion of non-executive board member(s).**

On an annual basis, the DDRS Nominating Committee reviews and assesses whether each directorial candidate or existing director, respectively, is or remains a fit and proper person for the office and is or remains qualified for the office, taking into account experience, seniority, industry knowledge, capabilities, skills, and such other relevant factors as may be determined by the Nominating Committee. The principal skills required are an understanding of the operation of the OTC derivatives markets, and matters related to operations, finance, technology, and risk.

DDRS’ Board members are selected from (i) executive/managing directors comprised of senior DTCC/DDRS management and (ii) independent directors<sup>11</sup> comprised of representatives drawn from the financial institutions which are participants. The composition of the Board complies with the Corporate Governance Regulations which govern composition of the Board (including the requirement to have a composition comprised of one-third Singapore citizens/permanent residents and an Australian citizen working for an Australian bank). All Board members are elected annually for (renewable) one-year terms. All directors (executive or independent) must be approved by MAS prior to formal appointment.

None of the DDRS directors receive any directors’ fees for serving on the DDRS Board but executive members of the DDRS Board will be remunerated for their performance of their related executive function. The responsibility to oversee the strategy and operations of an important financial market infrastructure such as a trade repository, is considered an important incentive in itself, particularly for the independent directors of the Board from user firms. As DDRS’ directors do not receive remuneration, DDRS does not have a compensation/remuneration committee.

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<sup>10</sup> Where the CCO has a conflict of interest, the matter will be directed to the DDRS Risk Committee for analysis and resolution.

<sup>11</sup> Independent directors are defined as independent from management and business relationships with the Company (per the Corporate Governance Regulations, Regulation 3) as well as independent from any substantial shareholder of the Company (per the Corporate Governance Regulations, Regulation 4).

**Key Consideration 5: The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.**

DDRS management assumes the overall responsibility for the operations of DDRS, receiving assistance from local resources and group resources pursuant to the License Agreement between DDRS and Deriv/SERV.

In particular, DDRS management is responsible for overseeing both the development of the business and the adherence to regulations. DDRS management is represented by the DDRS Senior Officer and the CCO. The DDRS Senior Officer oversees the development of DDRS' business and ensures business objectives are achieved by implementing relevant projects. The CCO, in consultation with the DDRS Board and DDRS Senior Officer, is responsible for developing and enforcing policies and procedures to reasonably ensure compliance with DDRS' legal/regulatory obligations.

DDRS' management also takes part in the DTCC enterprise-wide goal setting and evaluation process. This is a formal documented process implemented across all of the DTCC group companies.

**Key Consideration 6: The board should establish a clear, documented risk management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk management and internal control functions have sufficient authority, independence, resources, and access to the board.**

### ***Risk Management***

DDRS has adopted the DTCC Corporate Risk Management Policy ("CRM Policy"), which has been reviewed and approved by the DTCC Board and is subject to DTCC Board oversight. The DDRS Board discharges its ultimate responsibility for effective risk management by working closely with DDRS' management and the functions. The framework is documented through a CRM Policy document and includes Risk Tolerance Statements covering Strategic Risk<sup>12</sup> and Operational Risk<sup>13</sup>. The CRM Policy and Risk Tolerance Statements are reviewed, updated as appropriate and approved by DTCC's Management Risk Committee, and the DTCC Board Risk Committee annually. The Group Chief Risk Office ("GCRO") has risk management policies and procedures addressing its specific areas of responsibility, which are also reviewed and updated annually and shared with the DTCC Board Risk Committee. The CRM Policy is more fully described under Principle 3 (Framework for the comprehensive management of risks). The Operational Risk ("Op Risk") organization oversees implementation and adherence to the Op Risk management program and related elements.

This risk management program includes identification, assessment and management, monitoring and reporting of the risks encountered in conducting DDRS' day-to-day business, while meeting supervisory and regulatory expectations. Additionally, DDRS Embedded Risk Management/Manager

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<sup>12</sup> Including General Business Risk and New Initiatives Risk.

<sup>13</sup> Including Financial Risk, Legal and Regulatory Compliance Risk, Processing and Operations Risk, Information Technology Risk, Cybersecurity and Information Protection Risk, Business Continuity Risk, Human Capital/People Risk, Model Risk, and Third-Party Risk.



("ERM") identifies appropriate risk mitigants; appropriate action plans are formulated and tracked to completion.

The Op Risk framework is based on Basel operational risk standards. These standards are incorporated into the methodology and tools used by Op Risk to identify, assess, manage, and report on operational risks. The framework is comprised of the following elements:

- Risk Tolerance Statements
- Incident Data Collection
- Operational Risk Assessment and Metrics
- Issue Tracking
- Lessons Learned
- Management and Board Reporting
- Risk Acceptances
- Third Party Risk
- End User Computing Applications (EUCA)
- Management Control Testing
- Process, Risk & Control

The DDRS Risk Assessment, which consolidates pertinent operational risk and control data to support an overall self-assessment of inherent and residual risk is prepared quarterly.

The ERM has the functional responsibility to manage DDRS' risk management functions. The ERM is in regular contact with the DTCC Op Risk and IT Risk management functions. DDRS has adopted policies developed on the corporate level. The ERM is responsible for:

Identifying, assessing and monitoring DDRS' risks;

Developing an internal control system that is effective in design and operation for services provided by DDRS; and

Reporting to the parent company any material risks and issues that might affect DDRS and/or other DTCC entities.

Technology risks are continually reviewed and assessed by DTCC Cyber Security & Technology Risk Management ("CS&TRM"). In turn, DDRS CS&TRM leverages DTCC's team resources to provide additional support to manage DDRS' technology risks.

The DDRS Board and the DDRS Risk Committee are responsible for the oversight of risk assessment and risk management monitoring process, and reviews these through the DDRS Operational Risk Assessment and the DDRS Risk Tolerance Statement. Models and methodologies for risk management are determined by the DTCC CRM Policy and are reviewed by DTCC's Management Risk Committee. Relevant issues would be escalated to the DDRS Board and senior management<sup>14</sup>.

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<sup>14</sup> Also note the response to Principle 3, below.

The ERM reports directly to the CSS ERM Head and supervises several employees that are geographically dispersed. Day-to-day responsibilities are shared within the group and the ERM is fully supported by other in-region or out-of-region ERMs.

### ***Internal Audit***

DDRS' Board also relies on DTCC's IAD. The IAD provides reporting and information directly to the DDRS Audit Committee governed by the DDRS Audit Committee Charter.

The role of IAD is to provide independent and objective assurance to challenge the adequacy of DTCC's control environment to promote the organizations resiliency and security, through the assessment of the overall control environment, risk management and control frameworks. IAD will support the Board in its oversight of the governance, risk and control frameworks and will achieve and maintain the highest level of professional standards, while helping the company achieve its objectives.

IAD services include evaluating internal controls to validate that DTCC as a whole and its various subsidiaries provide services in a safe and sound manner, consistent with applicable regulatory requirements and guidance, that the organizations' and their customers'/clients' assets are safeguarded, and that policies, standards and procedures are being followed.

**Key Consideration 7: The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.**

DDRS is actively involved in industry outreach and ongoing conversations with its regulators to ensure it satisfies its regulatory requirements.

Independent directors on the Board have the opportunity to participate and oversee the design, rules, overall strategy and become involved in major decisions.

All formal DDRS Board and Committee meetings are memorialized in meeting minutes, which are circulated to Board or Committee members. Minutes of Board and Committee meetings are not disseminated publicly; however, matters material to DDRS' parent company, DTCC, would be disclosed to the DTCC Board.

Should a major decision result in amendments to the DDRS Operating Procedures, those changes must be approved by the DDRS Board and disclosed to customers and the public by "Important Notice".

Indirectly, results of Board decisions may be disclosed via press releases and any requisite regulatory filings, as necessary.

### Principle 3: Framework for the Comprehensive Management of Risks

*An FMI should have a sound risk management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.*

**Key Consideration 1: An FMI should have risk management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk management frameworks should be subject to periodic review.**

DTCC has established a CRM Policy that provides an overarching comprehensive structure, for the management of risk that is common across DTCC's subsidiaries, including DDRS. The risk management policy provides a conceptual structure designed to guide decisions related to risk management. This management policy identifies two major risk categories that will apply to DDRS:

- Operational Risk, which includes the following sub-components:
  - Financial Risk
  - Legal & Regulatory Compliance Risk
  - Processing & Operations Risk
  - Information Technology Risk
  - Business Continuity Risk
  - Cybersecurity and Information Protection Risk
  - Human Capital / People Risk
  - Model Risk
  - Third Party Risk
- Strategic Risk, which includes the following sub-components:
  - Business Risk
  - New Initiatives Risk

The ERM is responsible for identifying, assessing, measuring, monitoring, mitigating, and reporting the risks that may arise in the management of the trade repository and reporting on these to the DDRS Risk Committee.

The DDRS Board is responsible for overseeing the effectiveness of risk management, and it has delegated these responsibilities to the DDRS Risk Committee.

#### ***Deriv/SERV Risk Tolerance Statements***

For each key risk (or sub-type, as the case may be), management has developed a specific Risk Tolerance Statement that (i) defines the risk, (ii) establishes the amount of risk (including the quantity and type of risk) that management is willing to accept in pursuit of its business objectives and (iii) measures the risk using defined targets and thresholds. Application of the Risk Tolerance Statements requires that management communicate risk tolerance thresholds and appropriately respond to risk exposures, which are measured as deviations from risk tolerance thresholds. Senior Management is charged with developing new Risk Tolerance Statements, as applicable and reviewing and refining existing Risk Tolerance Statements, on at least an annual basis. The DDRS Risk Committee reviews the Deriv/SERV Risk Tolerance Dashboard on a quarterly basis.

### ***Operational Risk Assessment***

Operational risks are monitored using a tailored Operational Risk Assessment. The Operational Risk Assessment consolidates pertinent risk and control data (and may include incidents, audit findings, compliance testing results and risk metrics) to support an overall assessment of inherent risk (i.e., the risk that exists in the absence of any mitigating controls) and residual risk (i.e., any risk that remains after application of mitigating controls) within each key business line or functional unit. The ERM prepares the DDRS Operational Risk Assessment on a quarterly basis. The Operational Risk Assessment is part of the comprehensive Op Risk framework and discussed with the management and the DDRS Risk Committee.

### ***Three Lines of Defense***

To support the effective management of risk across the organization, DTCC and its subsidiaries, including DDRS, has adopted a “three lines of defense” approach to risk management.

The first line of defense is comprised of the businesses and functional units, including ERM, Product Management, Operations Management, Finance, Information Technology (“IT”) and other area critical to the daily operations and functioning. ERM specifically, works closely with business to manage and identify risks in the day-to-day functions of the business. The business has dedicated resources globally for the role of ERM to manage and identify risk in daily operation of the business. Altogether, the mandate of the first line is to proactively manage risk.

The second line of defense is comprised of the control functions, including but not limited to: Operational and Technology Risk, Compliance, and Legal. This line of defense establishes corporate standards for risk management for the company, to provide advice and guidance to the first line of defense in adhering to the standards and to monitor compliance with the standards.

The third line of defense is the IAD whose mission is to provide independent, objective assurance services to assist DDRS in the operational oversight of its risk management and control practices.

Collectively, the three lines of defense are designed to provide assurance that key risks remain within the business’ risk tolerance thresholds and that any deviations outside a defined risk tolerance threshold are understood and managed back into the business’ risk appetite.

The DDRS Service Level Agreement (“SLA”) governance review provides oversight for the management of DDRS’ risks and operability in accordance with policies agreed upon with the Board and obtaining assurance from senior management that the firm’s management culture is supported by appropriate communication, structures, staffing, policies, and procedures. DDRS conducts regular meetings on a monthly basis in principle with the relevant functions to review the quality of services provided by outsourced functions including the key indicators of risks and performance. This allows DDRS management to drive actions and planning or remediating outstanding issues.

In line with the three lines of defense that are described above (and with reference to more detail under Principle 17 below), IAD is explicitly mandated with testing the design and effectiveness of the internal control and risk management framework. Acting as the third line of defense, IAD is responsible for providing independent, objective services to assist DDRS in maintaining an effective system of risk-management and control processes, including the manner in which the first and second lines of defense operate.

As noted previously, the ERM prepares a quarterly Operational Risk Assessment. The ERM also conducts a re-baselining exercise for the risk heatmap by evaluating both inherent and residual risk, based on changing circumstances. The ERM reviews the Operational Risk Assessment with the DDRS Senior Officer. Risk metrics are discussed with outsourced functions during the DDRS SLA Governance Review monthly. Also as noted, changes in the business, which would include risk intensity, changing environments and market practices, could trigger changes in the Operational Risk Assessment.

**Key Consideration 2: An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.**

DTCC provides customers with security policies and procedures to which they have to comply. Connectivity is tested prior to any customer on-boarding and only allows customers to send data after the necessary tests are completed. As a trade repository, DRS does not have credit, market, or liquidity exposure. DRS has operational and strategic risk (as noted in discussion of risk categories above). To mitigate any operational risks that may be posed by DRS' participants, the DRS Rulebook, which is published on the DRS website, clearly sets out the circumstances under which a participant may be denied access to DRS' trade repository services or penalized for its actions (for example, by way of disconnection, termination, suspension, levying a fine or limitation of a participant's activities, functions, or operations). Such circumstances include where the participant has violated the rules in the DRS Rulebook and where the participant's account or participant's IT system is causing material harm to the normal operation of the DRS system.

DRS has been established expressly for the provision of trade repository services, primarily in response to Singapore and Australia's OTC derivative regulatory reporting mandates. There is an implicit incentive for the participants to manage the risks they pose to the DRS; any risk that impacts the ability of the DRS to provide mandated reporting to MAS and ASIC would negatively impact the participants, as their reporting obligations could not be facilitated by DRS. DRS is the only licensed trade repository in Singapore that provides reporting services for MAS. DRS is one of two ASIC-licensed trade repositories. In order to continue to meet reporting obligations, participants would have to either report directly, or become a customer of another trade repository, if one exists in the market. Either option would require significant legal, regulatory, systems and operational efforts by the participants.

Further, DRS' structure provides an implicit incentive to manage compliance risk. Each participant is required to comply with the Operating Procedures which reinforce broader regulatory compliance, impose penalties, and allow for the discharge of a participant.

Users are provided with a significant amount of information and incentives, to enable them to monitor and manage the risks they pose to DRS. To assist them in understanding DRS' services and applications, DRS also provides a number of tools, including user guides and handbooks, as well as training courses. Topics covered include not only functional and operational aspects of trade repository, but also facilitated reviews of business continuity strategy and risk management practice.

**Key Consideration 3: An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk management tools to address these risks.**

DRS operates only as a trade repository providing regulatory reporting services. If there was an operational failure on part of a participant or other FMI, it would not affect DRS' ability to meet its responsibilities.

Conversely, if DRS were to temporarily fail to operate as expected, in spite of the multiple safeguards that have been put in place to prevent such a situation from occurring, there would (at most) be delayed reporting to MAS and ASIC.

It is highly improbable (although not impossible) for DRS to incur sanctions risks by virtue of the trade reporting services provided to users who may be sanctioned entities. This is given that DRS acts in the capacity of a trade repository and therefore does not facilitate trading or cash movement, and nonetheless has strict controls in place. With regard to new user applicants, such entities are subjected to sanctions screening to prevent sanctioned entities from being admitted as users. For existing users, (i) they are subject to DRS' user qualifications and participation criteria which require users to comply with all applicable laws and regulations including those related to sanctions and (ii) they are required to notify DRS of failure to comply thereto. In addition, DTCC compliance monitors all users on a weekly basis against applicable global watch lists. Should any entity be identified against the lists, DRS compliance would be informed forthwith (to facilitate any necessary reporting

to the appropriate authorities) and DDRS would, upon evaluation, forthwith terminate the relationship with the sanctioned entity.

Critical third-party service providers are subject to a comprehensive review of controls commensurate with the risk identified in the third party risk assessment. Mitigants may include but are not limited to contractual protections, working with the third party to address control gaps or additional backup providers where deemed appropriate and feasible.

The monthly DDRS SLA Governance Review is dedicated to reviewing risk metrics and concerns. Additionally, risks and potential mitigants are evaluated and discussed with management and/or the Board, as needed. Furthermore, the DDRS Board is obligated by the charter to:

- Monitor management's activities and assess management's capabilities relating to enterprise risk management, including through regular discussion with and reports from management concerning the systems and procedures that management has developed and maintains to identify, monitor, mitigate and otherwise manage the risks to the Company's business.
- Review with management on a regular basis management's view of appropriate risk tolerances including the types and degrees of risk that are necessary and appropriate for the Company to take, assessing whether management's view is appropriate and recommend to the Board for approval the parameters of the Company's risk tolerances.
- Review, approve and reassess periodically reporting metrics reflecting the Company's risks as regards the risks for which the Risk Committee has oversight and management of them that shall periodically be reported by management and reviewed with the Board.

**Key Consideration 4: An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.**

DDRS management meet periodically to discuss/identify scenarios that may potentially prevent DDRS from providing its core reporting services or continued existence, thus necessitating recovery options or orderly winding-down. These key disruption scenarios include (but are not limited to) extreme or massive expenses incurred to maintain the core reporting services such as:

- Adverse business environment (e.g., OTC trading volume in that jurisdiction dwindles due to unforeseen business reasons).
- Competition from other service providers reduces the market share below a sustainable level);
- Operating expenses (e.g., regulatory compliance costs grow to an extent where the service is unsustainable);
- Unanticipated expenses (e.g., regulatory fines, legal liabilities);
- Physical disruption which threatens personnel/property;
- Critical technological disruption (e.g., cyber security or technology outage); and
- Severely critical market/credit/liquidity disruptions.

DDRS has developed a plan to address the continued operation of critical services and operations and has reviewed the feasibility of orderly wind-down options. DDRS contemplates that the divestiture and wind-down process would be conducted through communication with appropriate regulators and participants and in a manner that permits the orderly transfer to other registered Trade Repositories, if they exist, or to the appropriate regulators, with minimum systemic disruption and commits to the notification schedule of six months wind-down.

Dissolution would be conducted in accordance with regulations applicable to DDRS. Bylaws require board action and majority vote to dissolve the Firm. The board of directors would convene a final meeting where quorum is needed to determine the following:

- Disposition of remaining assets.
- Decision to satisfy debts and liabilities;
- Appointment of officers who carry out the closure;
- Communications strategies with regulators, clients, third parties, and employees; and
- Determination of the minimal staff and board members remaining in order to provide the necessary operations and services until the dissolution is completed.

Remaining staff would have to ensure that all required filings are completed with the regulators and that correspondence with stakeholders, clients and third parties is handled professionally. They would be fully involved in the closure as necessary for required length of time after DDRS ceases day-to-day operations.

As a regulated provider of a technical platform for the gathering and dissemination of financial data, DDRS' resolution scenarios are focused on the orderly transfer of reported data in the event that DDRS must cease to provide trade reporting services in a jurisdiction.

DDRS has committed to comply with the regulatory requirement to maintain capital equal to a minimum of six months of operating expenses. DDRS has also committed to providing six months' notice to its regulators in the event DDRS plans to terminate services in the respective jurisdiction and to provide support for an orderly transfer of reported data to an alternative provider.



## Principle 15: General Business Risk

*An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialize. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.*

**Key Consideration 1: An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.**

DTCC collectively identifies general business risks through analysis of business performance, Key Performance Indicators (“KPIs”), the market environment and through comparison of the financial performance versus the entities’ budget and forecast for each of its subsidiaries, including DDFS.

DTCC considers those general business risks to include potential impairment to DDFS’ financial position that results in a loss that would be charged against capital. The potential for impairment could be affected by a variety of factors, including, but not limited to, an unexpected downturn in business volumes or in the economic cycle; external market events and trends; competitive forces, such as competitor’s entry that causes margins to erode; changes in regulatory requirements that impact DDFS and/or DDFS’ participants; and unexpectedly large operating expenses.

In order to adequately identify, monitor and manage these risks, the capital management strategy for DTCC and its subsidiaries, including DDFS, focuses on the following key objectives:

- Provide financial resources that are sufficient to support DDFS’ business, in terms of both current and forecasted needs;
- Allow DDFS to maintain adequate capital to protect against risks that may arise under adverse scenarios;
- Satisfy current and anticipated regulatory capital requirements; and
- Maintain access to financial resources to be able to take advantage of strategic/growth opportunities, as well as for business continuity purposes.

DTCC also maintains a disciplined approach to financial planning and management, which it views as a critical element to ensuring sustainability of the operations of DDFS and its other subsidiaries. Key aspects of this approach include DTCC’s annual budget process, during which DTCC creates comprehensive and detailed business operational plans for each of its business lines and functional area. These business plans, which are updated periodically throughout the year, include an assessment of the relevant business environment. Additionally, DTCC’s financial planning approach includes development of a 3-year long-range financial plan on an annual basis for the overall enterprise and each operating business. Capital requirements are regularly reviewed at the individual subsidiary level, as well as DTCC in the aggregate.

The detailed and comprehensive nature of the annual business plans, coupled with the business reviews and other tools as mentioned above, allow DTCC and DDFS to quickly identify relevant events and emerging trends and to assess their potential financial impact. Based on this information, management takes appropriate measures to minimize business risk. Such measures may include, among other actions, making changes to existing products and services, introducing new products or services, reprioritizing planned or ongoing projects and reallocating resources accordingly, taking cost-reducing measures, and modifying fee structures. These elements are brought together to create a comprehensive financial plan that projects DDFS’ ability to generate the required level of earnings and cash flows to manage and protect against business risks and to support overall business strategies.



In addition to the annual business planning process, DDRS senior management works with ERM, Finance, Op Risk, IT, Operations, Legal, Compliance and other internal stakeholders to review and assess the business risks faced by DDRS. This includes:

- Ongoing review of DDRS' finances, including revenues, expenses, actual versus target performance, financial projections and funding;
- Quarterly review of the Operational Risk Assessment, including any changes in internal risk ratings.
- Ongoing meetings with IT to review and assess application development, ongoing application maintenance, performance testing and infrastructure;
- Ongoing meetings with Operations to review support levels and any potential risks or issues; and
- Ongoing consultation with Legal and Compliance to ensure DDRS meets all legal and regulatory requirements.

As part of its governance and oversight responsibilities, the DDRS Board, along with the DTCC and Deriv/SERV Boards, are kept informed of the status and developments on the above business risk identification, reporting and mitigation measures. In addition, the business financial results are presented to relevant subsidiary Boards, including, Deriv/SERV and DDRS for review on an ongoing basis.

DDRS' management and staff are actively involved in industry forums and working groups, as noted in response to Principle 2, to identify current and future business and regulatory requirements and their potential impact on DDRS.

**Key Consideration 2: An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.**

DTCC, as part of its overall capital management framework, reviews the regulatory capital position of DDRS monthly to ensure DDRS holds sufficient liquid net assets funded by equity to continue operations and services as a going concern if it incurs general business losses. DTCC develops and maintains forecasts of DDRS' revenues, expenses, and regulatory capital position. These forecasts are part of the overall budgeting and financial planning activities of DTCC and include projections of DDRS' profitability, financial resources, and capital requirements. Through these activities, DTCC projects DDRS' ability to generate capital necessary to protect against business risks.

DDRS also satisfies the capital requirements of MAS, which is to hold sufficient financial resources, including a buffer, to meet its total risk requirements as defined under DDRS' license conditions with MAS. If necessary, DTCC, the ultimate parent company of DDRS, should prove a source of strength to contribute additional capital, as may be approved by the DTCC Board.

DDRS has analyzed and evaluated the costs that it may incur in order to achieve a recovery or to wind-down its critical operations and services and has determined that holding liquid net assets equivalent to six months' operating expenses plus a buffer or SGD 10 million, whichever is higher, would allow the company to execute the recovery or wind-down process.

DDRS also determines its financial resource standards per DDRS' license conditions with MAS:

Financial Resources must be greater than 120% of its Total Risk Requirement (defined as its Operational Risk Requirement<sup>15</sup> plus Investment Risk Requirement<sup>16</sup>). In addition, DDRS has a minimum capitalization requirement of SGD 10 million.

**Key Consideration 3: An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.**

DDRS has developed a plan to address the continued operation of critical services and operations and has reviewed the feasibility of orderly wind-down options. DDRS contemplates that the divestiture and wind-down process would be conducted through communication with appropriate regulators and customers and in a manner that permits the orderly transfer to other registered Trade Repositories, if they exist, or to the appropriate regulators, with minimum systemic disruption and commits to the notification schedule of six months wind-down. Sufficient liquid net assets are maintained as described in Key Consideration 2 above.

**Key Consideration 4: Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.**

The Investment Policy of DTCC and its subsidiaries, including DDRS, is underpinned by a prudent and conservative investment philosophy that places highest priority on maximizing liquidity and risk avoidance. It allows for a very narrow range of eligible investments, i.e., reverse repurchase agreements, bank deposits and money market mutual funds' investments. This policy ensures that there is minimal volatility associated with its holdings of liquid net assets.

**Key Consideration 5: An FMI should maintain a viable plan for raising additional equity should its equity falls close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.**

Pursuant to the corporate structure of the group, DDRS does not envision independently raising additional equity. However, the framework for assessing current and future capital needs would be escalated to and occur under the direction of the DTCC Board, which has oversight of DTCC's financial strategy and assesses performance against that strategy. Being at the ultimate parent level, the DTCC Board oversees all finance and capital matters at a group level. Any plans to make

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<sup>15</sup> "Operational risk requirement" shall be 50% of annual operating expenses, where annual operating expenses is calculated as the annualized average of the aggregated operating expenses over the immediately preceding 12 financial months.

<sup>16</sup> "Investment risk requirement" is 8% × amount of investment and shall be applied to capital investments to acquire up to and including the first 20% of shares in every associate.

changes to DTCC's capital structure or decisions on funding are reviewed and approved by the DTCC Board.

The DDRS Board is responsible for the review of DDRS' financial status and would raise any need for additional capital to the Deriv/SERV Board and DTCC Board and would be involved in plans to raise capital needed by DDRS. Further, any such plan to raise capital for DDRS would be presented to the DDRS Board for review before the action would be taken.

## Principle 17: Operational Risk

*An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfillment of the FMI's obligations, including in the event of a wide-scale or major disruption.*

**Key Consideration 1: An FMI should establish a robust operational risk management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.**

DDRS adheres to DTCC's fundamental approach to risk management outlined in the CRM Policy. The CRM Policy is an enterprise-wide policy on the governance of risks arising from business activities and operations. This includes a core set of common processes for identifying, assessing, measuring, monitoring, mitigating, and reporting risk.

This Policy articulates the Organization's risk management approach and describes how the Organization manages risk in a comprehensive, consistent, and effective manner, enabling DTCC to achieve its strategic business objectives while remaining consistent with its risk tolerances.

To enable management to effectively identify, understand, and mitigate risks, DDRS has adopted an approach that includes three lines of defense as described in Principle 3 above.

In addition, GCRO and DDRS senior management lead DDRS' overall strategy for identifying internal and external sources of risks, assessing the implications, prioritizing, and developing plans to address such risks.

DDRS has implemented the Op Risk framework and related elements in accordance with the standards established by the Op Risk Group and set forth in DTCC's policies and procedures. At least annually, the policies and procedures are reviewed and, as appropriate, updated. These framework components have resulted in a profile, which is used by DDRS to conduct business reviews with stakeholders and risk tolerance owners.

The DTCC IAD's annual planning and risk assessment processes are designed to facilitate the development of an annual risk-based audit plan that allocates audit resources according to the risks in the organization. IAD maintains an inventory of auditable entities ("AE") of DTCC, its subsidiaries and joint ventures known as the "Audit Universe." The Audit Universe is risk assessed through an auditable entity risk assessment and used as a key input in developing the annual risk-based plan. Each AE is risk assessed at least annually to determine the Inherent Risk rating and rating for the strength of the Control Environment that, when taken together result in a Residual Risk score for the AE's; that is used to drive the frequency of audit coverage ranging from 18 to 48 months.

The finalized risk assessments and resulting annual plan are documented and discussed with management prior to being presented to DTCC Audit Committee for final approval in December of each year. In addition, IAD monitors the business' KPIs and Key Risk Indicators ("KRIs") to understand changes in the business environment and may perform ad hoc audit procedures when warranted. Although IAD is considered the third line of defense, certain business areas and other control functions (e.g., Compliance, Privacy) also review and test the design and effectiveness of controls.

DDRS uses multiple products to collect, store and report on data relating to the Op Risk framework and to manage issues and action plans. The Operational Risk Assessments provide a comprehensive analysis of Inherent Risks, Controls and Residual Risks by considering factors such as key metrics, and incidents.

DTCC Compliance owns the DTCC Corporate Document Management Framework (“DMF”). The DMF provides a holistic structure for the development, management and maintenance of DTCC policies and procedures. Among other things, the DMF requires that each policy and procedure be assigned a frequency for its review, which creates a mechanism for the regular review of those documents’ effectiveness.

The Policy and Document Management System automates the workflow for the ongoing review and approval of all policies and procedures in accordance with the DMF. DDRS will adhere to the above-mentioned policies and procedures.

Op Risk staff are aligned to staff and business areas, including DDRS. Op Risk stays in regular contact with DDRS staff and business counterparts and has quarterly meetings with DDRS senior management.

The Op Risk framework encompasses many key recommendations introduced by the Basel operational risk standards and CPMI-IOSCO recommendations. These standards are incorporated into the methodologies and tools used by Op Risk to identify, assess, manage, and report on operational risks. This framework also applies to DDRS.

**Key Consideration 2: An FMI’s board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI’s operational risk management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.**

The DDRS Board has established and delegated authority to a Risk Committee to assist the Board in overseeing: Op Risk management; legal and regulatory compliance and risks; and related matters. Accordingly, DDRS issued a Risk Committee Charter, which outlines the Risk Committee’s roles and responsibilities for Op Risk management.

The Risk Committee Charter clearly defines the administrative structure, authorities, responsibilities, and reporting. As per their authority, subject to the direction of the Board, the Risk Committee is authorized to act on behalf of the Board with respect to any matter necessary or appropriate to the accomplishment of the purpose and responsibilities set forth in this Charter. The Risk Committee’s job is one of oversight, recognizing that the DDRS management is responsible for identifying, managing, and mitigating risks as appropriate and implementing and maintaining systems to assist it in these tasks. Further, the Risk Committee will have such other and further duties and powers as may be delegated to it by the Board.

The Risk Committee meets quarterly where the Operational Risk Assessment is discussed with its members. DDRS officers also provide an update on business continuity, business risk, technology risk and compliance-related matters. The Risk Committee will, at any time, examine the conduct of the Company’s affairs and report to the Board. The Risk Committee also has the right to contract for the services of such person or persons as it may deem necessary in order to meet its mandate.

The Risk Committee is responsible for overseeing the establishment and the operation of the risk management framework for managing risks at the DDRS level and the adequacy of the Company’s risk management function, including ensuring that it is sufficiently resourced to monitor risk by the various risk categories. The Risk Committee reviews, approves, and reassesses periodic reporting metrics reflecting the Company’s risks with respect to the risks for which it has oversight. Identified risks are managed by DDRS management and the status of such risks is periodically reported to and reviewed with the DDRS Board by DDRS Management.

DDRS has adopted DTCC’s Framework using risk families to drive the discussion of risk management and this framework forms the basis of the Risk Tolerance Statements. Support services provided to DDRS pursuant to SLAs are reviewed monthly with the leadership team during the regularly established SLA Governance Review. Furthermore, the Operational Risk Assessment management review is initiated by the ERM. DDRS’ Operational Risk Assessment is discussed with the DDRS Senior Officer in order to review key risks. During the meeting, accepted risk, residual risk themes and

action items are also discussed in detail. Future action plans and management self-identified actions are determined accordingly.

There is no direct external audit of the Op Risk framework. However, the Op Risk framework is subject to review by IAD, which provides an independent and objective view. IAD reports directly to the DTCC Audit Committee to ensure independence. Further, as a regulated entity, DRS will be subject to continuous monitoring by its regulators, MAS and ASIC.

**Key Consideration 3: An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.**

DRS monitors operational reliability through multiple processes, including a quarterly Operational Risk Assessment, incident reporting, monitoring for lifecycle processing, system availability and data reporting; a metrics review of incidents-related KRIs that have been identified for event processing, data reporting, system availability and other key processes. These monitoring activities are performed regularly and evaluated by management as required, with appropriate procedures and controls applied as needed. The ERM provides an update about the key indicators and any breach of the thresholds to the DRS Board as part of the risk update.

To continuously maintain high levels of quality, DRS uses several concurrent improvement methodologies that, when integrated, provide the company with a powerful quality management toolkit. DRS uses a number of performance measurements to track reliability which is documented in the Risk Tolerance Statement. The tolerance statement provides an overall view of DRS' risk appetite and risk mitigation practices.

The KPIs and KRIs are also agreed with the management. Key objectives include system uptime and timeliness of report availability. Additionally, the Risk Tolerance Statements also captures a number of metrics, covering risk families such as Business Risk, New Initiatives Risk, Processing and Operations Risk, Information Technology Risk, Cybersecurity and Information Protection Risk, Legal and Regulatory Compliance Risk, Human Capital Risk, Model Risk and Third-Party Risk. Target and Actual performance is tracked for each of these categories monthly and reported in quarterly dashboards.

Op Risk has created and maintains an operational risk program that enables the identification, assessment, management, monitoring and reporting of the risks encountered in the conduct of day-to-day business.

Where appropriate, reliability objectives are integrated into the Op Risk framework via the Operational Risk Assessment, which aid in the identification, assessment, measurement, mitigation and reporting of operational risks in a systematic way via Internal Incident collection, Issue Tracking and metrics.

Risk and control functions within DTCC's second line of defense (e.g., Compliance, Technology Risk Management) are responsible for the development and execution of processes which support the management of risk within the Company. Such functions are accountable for the implementation of frameworks used to identify, manage and remediate related risks falling within the overall definition of 'operational risk' but which, due to their complex, specialized or otherwise specific nature, require dedicated support and focus to effectively manage.

Responsibility for the development and implementation of frameworks to manage these risk types resides with the dedicated risk and control function.

**Key Consideration 4: An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.**

DRS participates in the robust DTCC-wide framework for the review and analysis of capacity plans, demands, performance and extreme conditions. This includes daily, weekly, and monthly metrics and an annual review of anticipated business volumes. DTCC's Enterprise Product & Platform



Engineering team provides daily analytics on the volume processed by the data centers and reporting facilities. These volume figures are benchmarked to the projected forecast and capacity requirements and adjusted based on the peaks monitored throughout the month.

Thresholds are agreed upon with Technology and measured through metrics. The metrics include data base capacity such as memory, disk storage and CPU utilization. The core assumption, which is applicable for mature services, is that capability will not exceed two times the historical peak period without prior signs of market growth/volatility. Models trigger re-assessment if new historical peaks are approached.

DTCC's capacity planning and performance management framework provides a governance structure for meeting the requirements of ordinary course business. This framework utilizes trend analysis, augmented by annual reviews of business application changes, to forecast the following year's capacity demand for both processor and storage capacity for all data centers.

The framework incorporates business forecasts, application throughput, current capacity and scalability, SLAs, performance management, capacity utilization and capacity modeling and forecasts. The annual reviews encompass business defined factors (i.e., growth, new product lines, new applications, etc.) to adjust the trend projection. Furthermore, the framework's scope gives priority to and addresses the largest business areas and the associated production processing environments.

The Capacity and Performance group monitors capacity resulting in daily, weekly, and monthly usage reports for review by IT Management and utilizes several real-time performance monitoring tools to identify anomalies and opportunities for efficiency improvements.

Capacity management information and metrics are provided to the DDRS SLA Governance Review on a monthly basis with capacity planning information for discussion. Issues are escalated immediately to DDRS senior management when identified. Additionally, capacity testing is conducted annually and any situation in which operational capacity has neared or exceeded a threshold will be addressed to meet the immediate requirement to continue processing.

**Key Consideration 5: An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.**

DTCC's internal security department, Global Security Management ("GSM"), utilizes a comprehensive security assessment tool as part of an overall program aimed at developing and maintaining a consistent, structured, and integrated methodology for identifying, monitoring, managing, and reporting on security risks across physical sites and locations throughout the organization.

The process consists of several components, which include: (a) a Security Vulnerability Assessment checklist that is "risk-specific" and facilitates the analysis and reporting of risk information using a common language; and (b) quantitative information, including internal theft events and security breaches, area threat analysis and local area crime statistics to ascertain the effectiveness of current security control structures.

DDRS participates in the robust DTCC-wide framework for the identification of vulnerabilities. This covers physical assessments by GSM to review all critical facilities. An internal review of potential operating locations is performed.

CS&TRM provides the second line function for information security within DTCC, including the trade repository subsidiaries. This includes responsibility to:

- Establish and maintain an information security management framework and an organization with the resources, expertise, and training to support DTCC's security strategy;
- Define roles, responsibilities and accountabilities for information security and coordinate information security efforts throughout the enterprise;

- Establish, maintain, communicate, and periodically reassess information security policies and a comprehensive information security program that is approved by management and the DTCC Board and that (1) incorporates relevant industry information security standards and (2) is published and communicated to all employees and relevant external parties;
- Review security policy and security control standard exception requests and approve (or reject) them based on a risk assessment that includes a review of the secondary controls;
- Coordinate and periodically assess the implementation of information security across DTCC;
- Be the source of information security advice for new implementations of, and changes to existing information assets;
- Provide ongoing information security awareness, education, training, and communication for DTCC employees and relevant external parties;
- Identify current and potential legal and regulatory issues affecting information security;
- Perform enterprise-wide threat/vulnerability assessments to facilitate the determination of CS&TRM's investment and remediation priorities;
- Establish and maintain contacts with external security specialists or groups, including relevant authorities, to keep up with industry trends, monitor standards and assessment methods and provide suitable liaison points when handling information security incidents; and
- Establish metrics to evaluate the effectiveness of the security program and alignment to risk tolerance statements and report overall status quarterly to the Management Risk Committee and the Risk subcommittee of the DTCC Board of Directors.

The objective of the DTCC Information Security Policy is to provide management direction and support for information security in accordance with business requirements and relevant laws and regulations. DTCC utilizes several industry-accepted frameworks to develop its policies and standards and provide the foundation of its Information Security strategy. These frameworks include:

- The internationally recognized standard “ISO/IEC 27001:2013—Information technology—Security techniques—Information security management systems—requirements”;
- The FFIEC Information Technology Examination Handbook, which is comprised of several booklets covering a variety of technology and technology-related risk management guidance for financial institutions and examiners; and
- The NIST cyber security framework consisting of standards, guidelines, and practices to promote the protection of critical infrastructure.

DDRS adopted DTCC-wide information security policies and processes. DTCC provides DDRS with a range of information security services including but not limited to: Identity and Access Management, Risk Assessment, Vulnerability Management, Threat Intelligence, Insider Risk Management, and Security Awareness and Training.



**Key Consideration 6: An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.**

Business Continuity and Resilience (“BC&R”) manages the governance and implementation of proactive and reactive measures that help ensure that enterprise and business functions have resilience and recovery capabilities to continue, should a serious event occur. This is done through the: (1) integration and alignment with the various risk functions throughout the organization and sector, (2) development of guidance and standards relating to business continuity and environmental risk, (3) monitoring of compliance and (4) promotion of awareness and education.

DTCC’s Global BC&R Policy establishes requirements for how DTCC as a whole, including DDRS, will affect and maintain controls that address defined threats that, if not otherwise implemented, could result in a high level of risk to the continuity of enterprise operations. This policy defines the governance structure, high-level roles and responsibilities and framework for DTCC’s business continuity process.

Given the nature and breadth of significant business disruptive events, BC&R aligns its controls at the regional, enterprise, business, and support levels. DTCC provides a set of core business processes for each trade repository, including DDRS.

The business processes have a relative importance based on the provision of trade reporting services. DDRS falls into the Tier 2 (High) ranking, which requires the resumption of operations within four hours. The ability to deploy sensible and balanced controls, the assignment of criticality regarding recovery efforts, is based on this relative importance.

On an annual basis, business continuity plans are updated to include any modifications identified through a business impact analysis (“BIA”). The BIA validates the criticality of business areas to ensure the appropriate level of controls. The key elements of an effective BIA are:

- Assessment of the product’s criticality to the enterprise subsidiaries based on a potential impact;
- Assessment and prioritization of the product’s functions and processes, including their internal and external dependencies;
- Estimation of maximum allowable downtime (“MAD”) associated with the institution’s business functions and processes;
- Assessment of recovery time objectives (“RTO”), recovery point objectives (“RPO”) and recovery of the critical path; and
- Products are ranked from Tier 0 to Tier 5, based on their criticality to the enterprise. Tier 0 (High Availability) is the highest ranking, requiring an infrastructure with virtually no downtime, while Tier 5 (Immaterial) is reserved for support functions that have non-essential recovery timeframes greater than 5 days.

DDRS leverages this robust DTCC business continuity planning process and systems recovery. DTCC maintains the necessary facilities, personnel, and processes at all times to allow it to provide continuity of critical technology and operational functions (i.e., either continued operation or the recovery and resumption of such functions within the Tier 2 defined 4 hours timeframe).

Additionally, DDRS maintains a DDRS specific business continuity plan to allow all necessary critical technology and operational functions to be carried out in the case of a business continuity event. This plan includes:

- Identification of key applications and required resumption times;
- Critical staff dispersion - Alternate work arrangements in the event premises at any location are not accessible (work at home, work at alternate sites); and
- Contact lists and call trees.

The DDRS business continuity plan will continue to be modified to reflect any changes to key processes, functions, or staffing.

DDRS uses IT infrastructure which includes multiple data center sites. In the event of an incident resulting in the simultaneous loss of data centers in the primary and alternate locations, the operating data center would come up in automatic recovery mode and resume processing. Once processing has resumed, transactions would be processed from the remote location. In this scenario, DDRS would activate procedures which would include identification of start time of interruption, system recovery procedures to initiate processing, identification of processing resumption time and notification to participants and regulators. DDRS would attempt to resume all processing, including time critical processes, as close to normal schedules as possible. This would afford participants the standard reporting and data which could be used to reconcile transactions, i.e., confirm submitted transactions were processed.

All data centers have emergency monitoring and backup systems including: fire detection and suppression systems, uninterruptable power supply, standby generators, and dual path telecommunications. All sites are operational and have sufficient capacity to process the entire core production workload so any data center can function as the sole production site within four hours in case one or more data centers experience an outage.

Daily data processing operations and monitoring of emergency systems is conducted continuously from “Command Centers”. During a disaster where data center operations are forced out, this process is augmented with steps outlined in a recovery guide issued to participants and managed by the operations staff.

The business continuity plan enables DTCC to effectively and efficiently assess the impact of the disruption, organize communication and decision making and coordinate the company’s response effort. The BC&R Policy includes definitions of the types of communications necessary, the methodology and some template text to execute the plans. Moreover, the regional business continuity coordinator is typically responsible for the actual declaration of a crisis event and its duties internally are to implement the crisis management procedures.

In addition, individual product line and support units are responsible for working with BC&R and include a cross section of individuals from various departments throughout the organization, including senior management, facilities management, human resources, marketing, finance/accounting, Operations and Risk Management, among others. In a crisis, BC&R will immediately disseminate a message to internal and external audiences to ensure consistent communication with key audiences.

DDRS specific business continuity planning and the DTCC corporate crisis management plans include the definitions of the type of communications necessary and the methodology. It has an enhanced call list that includes DDRS employees, third party suppliers, and regulators emergency contact information furthermore the Work Area Recovery (“WAR”) strategies and crisis management procedures. The document is kept by the crisis management team members in a safe location outside of the office.

Fire drill and other crisis management exercises scheduled to be conducted annually where tabletop exercises and transference exercises are activated annually. Documentation is also reviewed by the business continuity coordinator and re-approved by the management annually.

DTCC uses various WAR strategies to mitigate the loss of primary workspace and/or associated desktop technology as well as for social distancing. It provides a means by which DTCC is able to recover its most critical functions in the most efficient and cost-effective manner. The allocation of WAR solutions is based on the relative criticality of the product line to the enterprise.

In addition to multiple processing sites, DDRS has geographically dispersed support through its service provider in Tokyo, London, Manila, Chennai, Hyderabad, Tampa, Dallas, and New Jersey. In a business continuity event, staff at unaffected sites would provide required support.

In a business continuity event, where a site becomes unavailable, the event management framework would be initiated. An event management team, comprising of representatives from key areas including senior management, BC&R, Operations, and IT, has overall responsibility for handling such crises, including providing direction for all processes and functions.

This event management plan ensures, to the extent possible, that DDRS functions would be continued as per established processing resumption times in a business continuity event.

In the event the Singapore office were inaccessible, it is expected that local staff would work from home to continue support of the functions performed at that location, with ongoing support from US, London, Manila, Chennai, Hyderabad, and Tokyo to ensure all functions were completed. If work from home were not a viable option for the Singapore based staff, it is expected that the Tokyo, US, London, Manila, and/or Chennai service provider staff would cover the functions until either the Singapore office became accessible or alternate arrangements were made for the Singapore staff.

DDRS does not act in any settlement (or clearing) capacity, so there would be no settlement impact.

**Key Consideration 7: An FMI should identify, monitor, and manage the risks that key participants, other FMIs and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.**

DDRS operates as a trade repository by providing related reporting services to its participants. Therefore, failure of a participant (its own participants or participants to other trade repositories) or other FMIs is unlikely to affect DDRS' services.

DDRS' material service providers, including Deriv/SERV, its internal (affiliated) service provider, are subject to a comprehensive third-party risk review and vetting process that covers both credit and operations risk reviews and controls. Mitigants may take the form of contractual terms/protections, or arrangements for additional or backup providers where deemed appropriate and feasible.

DDRS outsources certain critical services to other companies within the DTCC group. As such DDRS has significant control and influence on the way these services are provided. For any additional outsourcing, DDRS would have extensive contractual terms/protections in place.

DDRS, as a reporting entity, does not pose risks to other FMIs. Its function is to receive, prepare, store, and report relevant trade information to the regulators. In the event DDRS could not perform this function, it would not pose a risk to another FMI's functions.

## Principle 18: Access & Participation Requirements

*An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.*

**Key Consideration 1: An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.**

The SFA requires access for participation in DDRS to be subject to criteria that are fair and objective and that are designed to ensure the safe and efficient functioning of DDRS and to protect the interests of the investing public.

There is no mechanism for denial of participation by new participants other than failure to comply with onboarding requirements such as execution of the relevant on-boarding documentation, or where required by applicable law (e.g., sanctions). To mitigate any operational risks that may be posed by DDRS' existing participants, the DDRS Rulebook, which is published on the DDRS website, clearly sets out the circumstances under which a participant may be denied access to DDRS' trade repository services or penalized for its actions (e.g., termination, suspension or limitation of operations). Such circumstances include where the participant has violated the rules in the DDRS Rulebook and where the participant's account or participant's IT system is causing material harm to the normal operation of the DDRS system. Otherwise, usership and participation in DDRS is open to entities who are required to report derivatives transactions to the regulators in the jurisdictions where DDRS is licensed and who have executed User Agreements. All applicants are subject to the same terms (such as those in the User Agreements, Operating Procedures and Rulebook) in order to maintain a fair and equitable relationship between DDRS and each participant.

DDRS' services are provided in a fair and objective manner and the requirements to use DDRS' services are provided in a transparent and public manner. All participants accessing DDRS systems must comply with technical interface and security requirements. Competition and innovation in post-trade processing are not impaired and DDRS' service terms support interconnectivity because:

- DDRS can receive transaction update information from any source specifically identified and authorized by the participant (i.e., participant's vendor) or industry agreed trusted sources;
- Participants are not dependent on DDRS to perform post-trade processing;
- Terms of access allow for transaction records to be updated by the participant or as instructed by the participant;
- Terms of access allow for other entities (e.g., clearing organizations) to be direct participants; and
- On-boarding documentation allows the DDRS participant to identify another entity it may use to submit records and instructs DDRS to accept records from the entity on the participant's behalf.

Participation in DDRS is open to any entity that is required to report derivatives transactions to the regulators in the jurisdictions where DDRS is licensed and who have entered into and executed User Agreements. There are no limitations on the types of entities who can be direct participants, as long as they are on-boarded and agree to abide by relevant contractual obligations, which apply to all participants on a fair and equitable basis.

**Key Consideration 2: An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavor to set requirements that have the least-restrictive impact on access that circumstances permit.**

DDRS ensures that access for participation in the trade repository is subject to criteria that are fair and objective and that are designed to ensure the safe and efficient functioning of the trade repository and to protect the interests of the investing public<sup>17</sup>.

DDRS participants must meet requirements to ensure the safety and efficiency of DDRS and its role in the market:

- Participants must comply with security requirements and business continuity testing;
- Participants must comply with relevant documents (including but not limited to the DDRS Rulebook and Operating Procedures) for use of the system, failing which, their submissions will be rejected;
- Terms of use include agreement to abide by security procedures; representations and warranties that (a) participant has power and authority to perform its obligations, (b) its agreement with DDRS is valid, binding, and enforceable, (c) access does not violate any applicable law, (d) access is limited to participant's authorized personnel and used solely for participant's relevant business purposes; and (e) DDRS' technical specifications are confidential. The terms of use also permit DDRS to disclose the transaction information submitted to DDRS to the respective regulators, pursuant to regulatory obligations to grants regulators access to said information.

All participants are subject to the same access requirements and relevant User Agreements found on DDRS' website to be entered between DDRS and a user or third-party provider user as applicable ("User Agreements"). Third party providers are identified by participants as permitted to submit records on a participant's behalf are subject to standard agreements that incorporate the same participant contract provisions dealing with confidentiality, technical specifications, and security requirements. Confidentiality requirements for entities submitting on behalf of participants are modified to allow them to communicate with the trading party that is their customer.

DDRS access documentation was drafted with the intent to have the least restrictive access. Documentation is reviewed internally whenever issues arise with any participant and if modifications are warranted, they are applied to all similarly situated participants. Industry working groups, both operational and legal, identify access issues and may recommend modifications to address the issues. DDRS is tasked with ongoing self-identification of risks and development and application of appropriate controls.

**Key Consideration 3: An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating**

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<sup>17</sup> Pursuant to SFA, Section 46I(1)(d).

**the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.**

A participant that no longer meets participation requirements will be terminated pursuant to the terms of use documentation and DRS Rulebook:

- Terms of use state that DRS retains exclusive control over its system(s) and its services; and
- The Rulebook contains extensive denial of user application, termination, restrictive action and adverse action review for participants who breach participation requirements (with reference to the section on Involuntary Termination Procedures).

Access to DRS will be denied if a participant uses the DRS services in such a manner that violates applicable sanctions laws in relevant jurisdictions. DRS monitors participants' ongoing compliance through the following key methodologies:

- Sanctions screening will be performed on a scheduled basis;
- Security will be monitored; any security breaches will be identified and raised to senior management; and
- DRS Rulebook imposes a duty on participants to notify DRS of failure to comply with participation criteria.

Any issues identified as part of the planned sanctions screening process would be addressed on a case-by-case basis. Furthermore, management can terminate a relevant client in the event that billed services are not settled by the client as such behavior imposes financial risk on DRS that could impact its ability to provide services to others.

## Principle 19: Tiered Participation Arrangements

*An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.*

**Key Consideration 1: An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.**

A tiered participation arrangement is defined as “*arrangements that occur when some indirect participants rely on the services provided by direct participants to use the FMI’s central payment, clearing, settlement, or recording facilities.*”<sup>18</sup> While DDRS supports direct as well as third party reporting service provider (each or together, “user”) reporting submissions, it does not offer any central payment, clearing, settlement or recording facilities. In any event, any entity that seeks to access DDRS’ trade reporting services must execute an agreement (to be on-boarded) to obtain such access.

Therefore, “tiered” participants do not technically exist given DDRS’ onboarding requirements. In addition, as DDRS does not provide any central payment, clearing or settlement services, the dependencies and risk exposures (including credit, liquidity, and operational risks) inherent in tiered participation arrangements which present risks to a securities settlement facility and its smooth functioning, as well as to the direct participants themselves and the broader financial markets, cannot exist with regard to trade reporting. In relation to “recording” of trade reports, this is incidental to DDRS’ trade reporting business and the risks from recording user reporting would be minimal, if at all.

**Key Consideration 2: An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.**

As DDRS’ service obligation is limited to ingestion and storage of reportable trade data and provision of trade reports to the regulators as necessary, it would not be exposed to any risk arising from material dependencies between direct and indirect participants.

DDRS shall have no obligation or liability to other identified parties named in a record submitted to the DDRS other than to maintain such record and provide reporting with respect thereto (and any liability of the DDRS to other identified parties with respect to such matters shall be limited to the same extent as its liability to users).

**Key Consideration 3: An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.**

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<sup>18</sup> Per the FMI Principles, Paragraph 1.27.



The volume of trade reporting data from indirect participants, regardless of any significance in sizes, do not pose any material risks arising therefrom as this involves reporting of trade data without the attendant elements of central payment, clearing and settlement.

Nevertheless, submission capacity for the overall system (regardless of whether ingested from direct, or indirect clients) is monitored monthly and forecasted transaction volume is provided annually to Enterprise Infrastructure team. Necessary action will be taken where capacity thresholds are potentially in danger of being surpassed.

**Key Consideration 4: An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.**

DDRS does not anticipate material risks arising from user (including indirect client) reporting activities, Thus, there has not been a need to specifically address this issue.

However, as DDRS regularly reviews its rules and procedures, should risk from user participation agreements be introduced, DDRS would review and revise the procedures as necessary.



## Principle 21: Efficiency & Effectiveness

*An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.*

**Key Consideration 1: An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.**

DDRS is a MAS and ASIC licensed trade repository. As such, clearing and settlement arrangements are not applicable to DDRS.

As an entity regulated by MAS and ASIC, DDRS is structured to be in compliance with applicable regulations and licenses granted by MAS/ASIC to provide its core reporting services (using technology designed to facilitate such services). The core reporting services are designed to satisfy the regulatory reporting obligations of its participants as well as meeting the regulatory objectives of its regulators. This is evidenced by the following:

- Ownership/Governance Structure  
DDRS is a wholly owned subsidiary of DTCC. The composition of the DDRS Board complies with the corporate governance regulations and includes representatives from certain of DDRS' participants to help ensure the industry's perspective is represented.
- Strategic Planning
  - DDRS participates in an annual corporate goals process. Corporate goals, which are strategic in nature, are based on consultation with participants, industry associations, regulators, and others.
  - Additionally, the Deriv/SERV Board undertakes annual strategy meetings which establish priorities for DTCC's global derivatives businesses, including affiliated trade repositories, which will include DDRS.
- Finance  
The Deriv/SERV Board oversees the financial strategy and execution of that strategy for DTCC's derivatives businesses and advises the financial strategy of affiliated trade repositories.
- Participant Involvement in Product Development
  - DDRS ensures participant reasonable involvement in product development and ongoing product maintenance and support by leading and/or participating in industry working groups and committees.
  - DDRS participants may participate in such working groups to facilitate communication of industry requirements and focus DDRS on market and regulatory needs for recording trade information and reporting data.
  - Additionally, DDRS has ongoing discussions with its regulators regarding its current and planned requirements.

Deriv/SERV, as DDRS' service provider, utilizes a Relationship Management ("RM") team, which is charged with regular interactions with both new and established participants. Included in this team are RM staff located in Singapore, Sydney, Hong Kong, Manila, and Tokyo who support ongoing dialogue with local participants.

This interaction allows RMs to identify participant requirements, identify participant issues and disseminate this information internally to ensure DDRS is aware of existing and evolving requirements globally, including in Singapore and Australia. Further, as noted above, DDRS is very actively

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involved in industry and participant working groups and committees, as well as discussions with regulators; these forums provide valuable information regarding participant, industry, and regulatory requirements, as well as satisfaction with the services provided.

Participant satisfaction with the effectiveness and efficiency of the services provided and planned will be gauged by industry support, including funding of initiatives to meet requirements and participant participation in the services.

Lastly, regulator satisfaction will be gauged through ongoing discussions with DRS' regulators, MAS and ASIC.

**Key Consideration 2: An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk management expectations, and business priorities.**

DRS' goals and objectives are driven by the OTC Derivatives Market requirements for enhanced transparency in this market and associated mandatory OTC trade reporting. The high-level goals and objectives in terms of efficiency and effectiveness are as follows:

- Provide mandated regulatory reporting as per industry and regulator agreed requirements and schedules;
- Support participation by the broadest base of participants as is feasible, without introducing risk to DRS, its other participants, other FMIs, or regulators. This would include support for market participants, FMIs, third party service providers, etc., subject to any applicable laws;
- Provide support for all OTC derivatives asset classes defined by the relevant rules and regulations;
- Support internationally accepted communications interfaces and formats;
- Provide all services as cost effectively as is feasible, while maintaining risk management and compliance controls; and
- Provide participant support on an ongoing basis (Operational, Technical, Account Management, etc.).

These goals are included in the annual "Corporate Goals" process and the Deriv/SERV Board annual strategy meeting. DTCC uses a variety of metrics to measure efficiency and effectiveness. In addition to the metrics goals included in the Deriv/SERV Board annual strategy meeting; goals and objectives have corresponding deliverables.

DRS evaluates its efficiency and effectiveness at least monthly through the DRS SLA Governance Review. This information is communicated to senior management monthly (via metrics) and provided to the Board and/or Board Committees as a standing item during their regularly scheduled meetings.

Progress against goals is reported to the DRS Board regularly through project/initiative updates, financial reporting, and operational risk reporting (via risk assessments). Metrics that tie to efficiency and effectiveness are captured monthly and used to determine the resultant risk rating for key categories. Further, metrics related to efficiency and effectiveness are included in the monthly SLA review process and included in the risk assessment. SLA metrics are divided into seven major categories of KRI and KPI including technology performance (such as ingestion, report timeliness, incident resolution time), information security, business continuity, human resource, compliance, audit, and finance. The assessment on the performance indicators is reviewed by the management on a monthly basis as part of the SLA review.

**Key Consideration 3: An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.**

DDRS uses a variety of metrics to measure its efficiency and effectiveness, as noted in the foregoing (see also details set out under Principle 17 (i.e., via operating reports and risk assessment)).

Through DTCC's Application Development and Maintenance group which provides application development services for DDRS, DDRS measures technology process effectiveness through industry standard methodologies.

DTCC's Enterprise Product & Platform Engineering team, which will provide infrastructure services for DDRS, uses the IT Infrastructure Library ("ITIL") framework for continued improvement in relation to IT services management. ITIL provides guidance to the Enterprise Product & Platform Engineering team to use IT services to empower business change, transformation & improvement. The objective is to enhance proficiency and accomplish certain service levels. The purpose is to improve performance and achieve certain levels of IT service efficiency.

Each of the processes above have periodic evaluation applied. At the very least, evaluation is performed and communicated to DDRS senior management quarterly (via the risk assessment and operating report) and provided to the DDRS Board and/or Board Committees as a standing item quarterly.

## Principle 22: Communication Procedures & Standards

*An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.*

### Key Consideration 1: An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

DDRS supports industry standard communications interfaces, i.e., internet, direct interface (direct end to end line). The communications interfaces are available for all participants of the system. Additionally, service providers and customers of DDRS' participants, if authorized by the participant, are eligible to use any one or combination of the communications interfaces supported.

DDRS' users identify their communications interface(s) during the on-boarding process; however, the participant can modify this election throughout its relationship with DDRS (e.g., adding a direct line in addition to Internet access).

DDRS provides full support for industry standard identifiers for financial instruments and for counterparties when available. The following list illustrates the available interfaces and associated formats that are supported by DDRS.

Interface	Type	Format
Direct line	MQ	ISO 20022
Direct line	sFTP/NDM (push/pull)	ISO 20022
Internet	GUI (Upload/Download)	ISO 20022
Internet	sFTP (push/pull)	ISO 20022

The above table illustrates the message formats that are supported for each type of interface; these are the internationally accepted standards for message formats for derivatives transactions.

### Principle 23: Disclosure of Rules, Key Procedures, & Market Data

*An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.*

**Key Consideration 1: An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.**

The DDRS Operating Procedures and Rulebook, User Agreements, and relevant onboarding documentation, set forth the operative rules and procedures of DDRS. These documents are published on DDRS' public website.

The DDRS Operating Procedures are based on and harmonized with DTCC group standards, consultation with the industry and advice from internal and external counsel, as appropriate. The procedures have been reviewed by DDRS' regulators; and any material amendments to the Operating Procedures must be approved by DDRS' Board and are submitted to the regulators as well.

The DDRS Operating Procedures govern all events, including any non-routine events such as any business continuity events. Internal procedures further clarify escalation paths and procedures that management will follow in specific events. A business continuity plan under BC&R is developed to address procedures to be followed in non-routine events.

The DDRS Operating Procedures and Rulebook, which are publicly available, include (i) the procedure for changes to the Operating Procedures and Rulebook and (ii) required notification to and approval of changes to the Rulebook. Amendments to the DDRS Rulebook will be communicated to customers via "Important Notices", which will be posted on the DDRS website and may be distributed using other means commonly used by DDRS to communicate with customers.

**Key Consideration 2: An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.**

DDRS retains effective oversight over the services and system through which its services are provided as described in the Operating Procedures; all participants agree to the terms of the Operating Procedures which are incorporated by reference in their User Agreements and are publicly available on the website.

Operating Procedures will be modified when required by regulation, pursuant to system upgrades (if changes are necessary) and upon participant or business identification of new services or more efficient processes. Modifications will be described by "Important Notices" posted on the public website pursuant to the Operating Procedures notice requirements. Material changes to the Operating Procedures will require prior Board approval as described in the Operating Procedures.

The DDRS Operating Procedures contain the rights and obligations of both the participant and DDRS. The primary functions of DDRS, such as maintaining records and reporting, do not involve market, liquidity, or credit risk and, therefore, use of the services and systems result in limited risk to participants.

The Operating Procedures apply equally to all participants; and each and every participant is equally subjected to (or protected from) any risk that may arise.

**Key Consideration 3: An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.**

DDRS facilitates its participants' understanding of its rules and procedures through the following means:

- DDRS Operating Procedures and Disclosure Framework made available via the website;
- DDRS staff are available to guide participants regarding their rights and obligations and to escalate any issues to the legal, compliance and management or client support groups as appropriate;
- RMs provide ongoing support to participants;
- Product documentation and User Guides are provided to participants through learning center, published on secured website, accessible by user firms;
- The Onboarding Team has detailed discussions with participants regarding the on-boarding process and requirements; and
- DDRS participation in relevant industry working groups (including working groups organized by DDRS) and industry association discussions as needed.

Participants perform user acceptance testing prior to using the services and system; successful testing evidence acceptance of DDRS operations. Successful onboarding with continued participation and successful reporting also evidence understanding of and acceptance of the rules and procedures.

DDRS maintains a robust communication with participants through participant-facing groups and Relationship Managers who can respond to participant inquiries and escalate to senior management for additional clarification.

Industry working groups provide a means for raising issues; staff will participate in such working groups to address questions and provide clarification of processes

**Key Consideration 4: An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.**

All costs, service fees and applicable discounts, which are approved by the DDRS Board, are applied equally to all similarly situated participants.

All participants will be notified of changes to fees by the "Important Notice" posted on the DDRS website. All services of and all products that may be reported to DDRS as well as all applicable fees

and charges to be made available upon request or published in a manner that is accessible<sup>19</sup>. DRS has published the relevant information on its website. Further details on the services are described in the Rulebook and Operating Procedures and on invoices.

In addition, participants will be made aware of proposed changes to services typically well in advance of a formal “Important Notice” through industry working groups; it is anticipated that these would be driven by industry requests; system modifications to address commonly occurring issues; updates due to regulatory changes or requirements.

Technical specifications including possible connectivity (communications) options and message specifications are published and distributed to potential participants pursuant to a confidentiality agreement so that participants can separately determine their development costs.

**Key Consideration 5: An FMI should complete regularly and disclose publicly responses to the PFMI-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.**

The PFMI-IOSCO disclosure was updated and made public on a regular basis. DRS will update this disclosure document if there are any material changes to the company or its businesses and disclose the updated document at a frequency of at least once every two years.

Under its ASIC License and MAS Regulations, DRS is required to provide cumulative, weekly statistical data publicly. This information is provided on the DRS public websites<sup>20</sup>.

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<sup>19</sup> Per SFTRR, Regulation 15.

<sup>20</sup> Available on the GTR - Asia ASIC and MAS pages of DTCC's public website:

<https://www.dtcc.com/repository-otc-data/asic-reports> and <https://www.dtcc.com/repository-otc-data/mas-public-reports> respectively.



## Principle 24: Disclosure of Market Data by Trade Repositories

*A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.*

**Key Consideration 1: A TR should provide data in line with regulatory and industry expectations to relevant authorities and the public, respectively, that is comprehensive and at a level of detail sufficient to enhance market transparency and support other public policy objectives.**

DDRS receives the OTC derivatives transaction data from Singapore and Australia reporting entities, for the asset classes applicable and mandated in each jurisdiction.

Regulators are provided with reports reflecting transaction activity and resultant positions, in accordance with relevant regulations and licensing conditions. DDRS discloses data as required under applicable law or regulation.

**Key Consideration 2: A TR should have effective processes and procedures to provide data to relevant authorities in a timely and appropriate manner to enable them to meet their respective regulatory mandates and legal responsibilities.**

DDRS has implemented systems, processes, and procedures to provide relevant data to its regulators. Timely delivery is ensured through the usage of automated, system-generated reports, which are produced according to pre-determined schedules.

The Enterprise Application Solutions (“EAS”) Team is responsible for implementing robust automated systems, processes, and controls to ensure that regulatory reports are delivered in a timely, complete, and confidential manner, enabling DDRS to meet its regulatory mandates and legal responsibilities.

DDRS accesses enterprise technical resources via its services agreement with Deriv/SERV for operational and technical support so that reporting is continuously supported.

In instances where reporting does not meet requirements, DDRS Management would be notified, and the appropriate technical and operational resources would be deployed to remediate the issue. In addition to the internal reporting and escalation requirements, any required regulatory notification of such issues will be undertaken in accordance with the relevant law and/or regulations.

**Key Consideration 3: A TR should have robust information systems that provide accurate current and historical data. Data should be provided in a timely manner and in a format that permits it to be easily analyzed.**

In terms of accessibility of data, as noted in response to Principle 22, DDRS supports industry standard outbound communications interfaces, i.e., internet, direct interface (direct end to end line). The communications interfaces are available for all participants of the system.

DDRS information systems are continually monitored and assessed by relevant operational, technical and risk monitoring teams such as CS&TRM, including teams within the parent company to ensure robustness.

For analytical purposes, DDFS provides transaction and position-based reports to market participants which support easy analysis. Public reporting provided by DDFS is available via a public website<sup>21</sup>.

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<sup>21</sup> Available on the GTR - Asia ASIC and MAS pages of DTCC's public website:

<https://www.dtcc.com/repository-otc-data/asic-reports> and <https://www.dtcc.com/repository-otc-data/mas-public-reports> respectively.

## List of Publicly Available Information

DTCC Homepage

<https://www.dtcc.com/>

DDRS Documents, Rulebook, Operating Procedures & User Agreements

<https://www.dtcc.com/repository-and-derivatives-services/repository-services/mas>

<https://www.dtcc.com/repository-and-derivatives-services/repository-services/asic>