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DTCC DATA REPOSITORY (SINGAPORE) PTE. LTD.

**Disclosure under the Principles for Financial Market
Infrastructures**

PUBLICATION DATE:

JULY 2018

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

The information provided in this disclosure is accurate as of December 31, 2017;
Information and data are provided as of the dates specified.
This disclosure can also be found at www.dtcc.com.
For further information, please contact CPMI-IOSCO@dtcc.com

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1. 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 payment systems, central securities depositories, securities settlement systems, central counterparties, and trade repositories, each play a critical role in the financial system and the broader economy. FMIs facilitate clearing, settling, reporting and recording of financial transactions, contributing to the goal of financial stability. Trade repositories such as DTCC Data Repository (Singapore) Pte. Ltd. (“DDRS”), record and report derivatives transactions pursuant to applicable law in the jurisdictions in which they are licensed, registered or designated. CPMI-IOSCO has recognized that, when properly managed, FMIs bring great benefits to promoting market safety.

In April 2012, CPMI-IOSCO issued a report on the Principles for financial market infrastructures (the “FMI Principles”), which harmonized, and in some cases strengthened, existing international standards applicable to FMIs. The report contains 24 FMI Principles covering the major types of risks faced by FMIs, 12 of which are applicable to trade repositories. 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, a wholly-owned subsidiary of The Depository Trust & Clearing Corporation (“DTCC” or the “Company”), which 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 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’s business, and these principles will not be included in this disclosure statement.

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 the DDRS Board and DDRS Risk Committee.

This disclosure provides details in accordance with the “Principles for financial market infrastructures: Disclosure framework and Assessment methodology,” to demonstrate DDRS’s compliance therewith. Unless otherwise specified, this disclosure is current as of December 2017.

2. SUMMARY OF MAJOR CHANGES SINCE THE PREVIOUS UPDATE

DDRS published its disclosure on its compliance status in accordance with the “Principles for financial market infrastructures: Disclosure framework and Assessment methodology, on July 31, 2017. There is no major change since the disclosure.

3. GENERAL BACKGROUND OF DDRS

Overview of DDRS’s business:

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 nine¹ jurisdictions globally and continues to grow. DDRS is subject to oversight by the MAS and ASIC. MAS and ASIC have common objectives: 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 oversight:

SINGAPORE

DDRS is operating a licensed trade repository in Singapore. This enables market participants² to comply with the OTC derivatives reporting rules set out by MAS.

AUSTRALIA

DDRS is operating a licensed trade repository in Australia. This enables market participants to comply with the OTC derivatives reporting rules set out by ASIC.

General organization of the FMI:

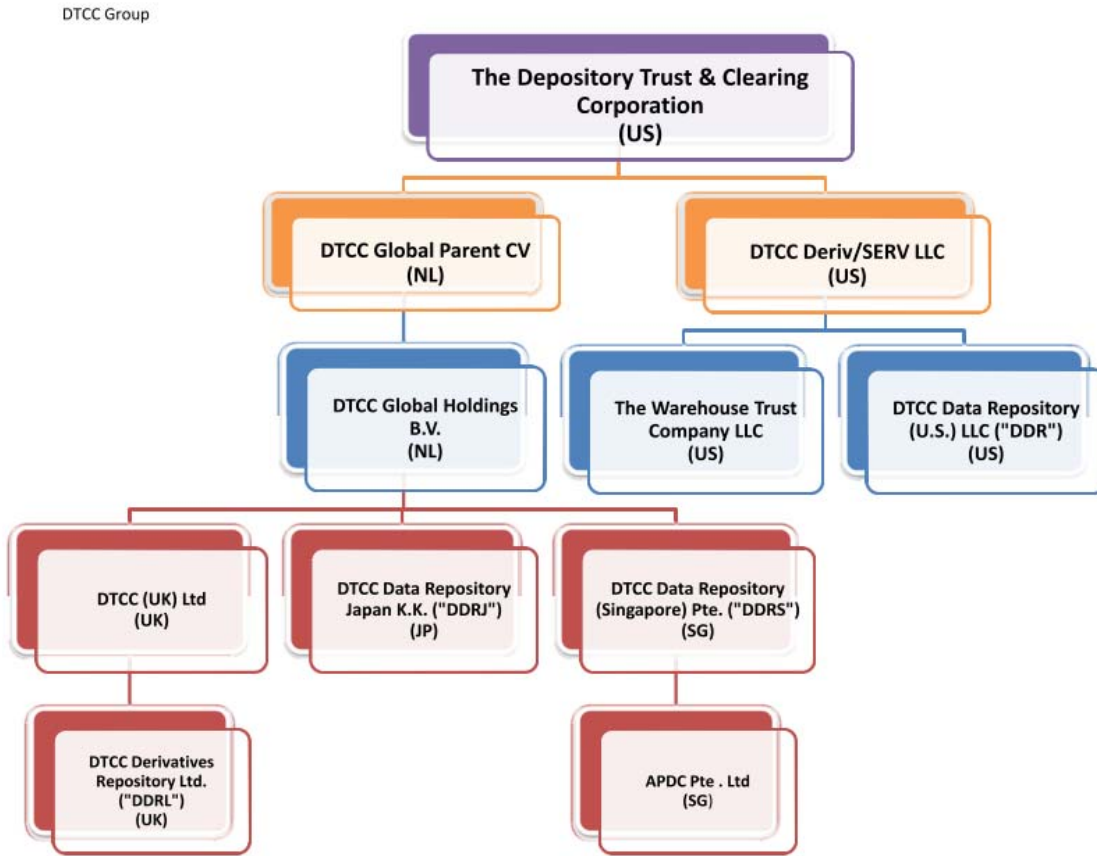
DTCC is the ultimate parent company of DDRS. DTCC is a non-public holding company that owns a number of FMIs. In addition to DDRS and OTC derivative trade repositories in the United States, the European Union and Japan, DTCC also owns The Depository Trust Company (“DTC”), the world’s largest central securities depository 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 which provides central counterparty services with respect to securities transactions in equities, corporate bonds, municipal securities and unit investment trusts in the U.S.; and Fixed Income Clearing Corporation (“FICC”), a registered clearing agency and CCP that operates two divisions, Government Securities Division which provides clearing, netting, settlement and CCP services to the U.S. government securities market, and Mortgage-Backed Securities Division which provides such services to the U. S. mortgage-backed securities market. DTCC, through its subsidiaries and joint ventures, provides critical information and transactional services 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. 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 financial system and promote the objectives of its participants. These governance arrangements are more fully described in response to Principle 2 (Governance) below.

¹ DTCC has licensed Trade repositories in eight jurisdictions namely: MAS, ASIC, JFSA CFTC, ESMA and the three Canadian jurisdictions regulated at the provincial level; Ontario, Quebec and Manitoba. DTCC also provides agency reporting services in Hong Kong for relevant clients; however, DTCC does not operate a licensed trade repository in Hong Kong.

² For the purposes herein, the term “participant” may be read as synonymous with “user”. For example, the User Guide is a guide for participants.

DTCC’s subsidiaries that are relevant to the OTC derivatives business of DTCC are shown in the following chart:³



DDRS employs a governance structure which ensures fairness and robust risk management. At the highest level, DDRS’s Board of Directors (the “Board”) is composed of 2 executive directors and up to 8 independent directors. The Board is responsible for approving high-level policies and budgets, and assessing the controls and rules of DDRS business. It 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.

³ Note: This is not a complete chart of the entire DTCC corporate structure

PRINCIPLE-BY-PRINCIPLE SUMMARY (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 relies on relevant regulations and licensing conditions set forth by the MAS and ASIC respectively. The User Agreement 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 SFA and the regulations promulgated thereunder, including the SFTRR, as well as any applicable notices issued by the 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 Rule 2013, as modified by conditions and exemptions granted by ASIC.

The robust Singaporean and Australian legal frameworks for trade repositories provide legal certainty for the material aspects of DDRS’s activities in Singapore and Australia, and also set out specific obligations applicable to licensed trade repositories including recordkeeping 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 pursuant to section 46R of the SFA and represents a clear, transparent and legally enforceable pursuant to Exemption 1 of ASIC Instrument 14/0913 and part 2.2.1(1) of the ASIC DTRR. Pursuant to paragraph 1.2 of DDRS Rulebook participants are required agree to (i) enter into the User Agreement (set forth in Appendix A therein) and (ii) be bound by the terms of the User Agreement, Operating procedures (set forth in Appendix B therein).

Appendix C of the DDRS Rulebook sets out the information privacy policy of DDRS. For purposes of this policy, user information and transaction information are collectively referred to as “DDRS Confidential Information.” This policy limits the disclosure of DDRS Confidential Information and restricts access to such information to those staff members who reasonably need access to such information in order to fulfil their duties and responsibilities to the DDRS or as otherwise appropriate and consistent with this policy.

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, as defined under section 46Q of the SFA may, where relevant, require consultation with DDRS’s participants and notice to the MAS.

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

DDRS's 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, as defined under section 46Q of the SFA, will undergo the required consultation with DDRS's participants and DDRS will also provide any required notice to MAS. 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 CPSS-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's public website.

DDRS's 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/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 for regulatory related alerts relating to both MAS and ASIC, including but not limited to regulatory change announcements, legal alerts (subscription based) and industry groups. 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 our 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.

DDRS's Rulebook, Operating Procedures, User Agreements and other agreements were submitted to the MAS and ASIC as part of the process of DDRS obtaining its registration 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.

As a licensed trade repository in Singapore and Australia, DDRS is subject to the regulatory oversight of the 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 DDRS Rulebook are subject to the requirements specified in Regulation 19 of the SFTRR. To reiterate, prior to making any material amendments, internal stakeholder and DDRS Board review and approval is conducted, along with the required MAS regulatory review and approval.

The effective date following receipt of relevant approvals will conform to the requirements under the said Regulation 19.

The legal basis for DDRS's activities is set out in DDRS's Rulebook and Operating Procedures, User Agreement and various other legal documents, which were submitted and approved by MAS/ASIC. 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 DDRS's activities. In addition, the DDRS Rulebook and the Operating Procedures are published on DDRS's website and any material changes to these documents are published in advance by an Important Notice on DDRS's 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 those 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 DDRS operations are subject to internal and, as appropriate, external legal review. In addition, the User Agreement 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 DDRS is valid, binding and enforceable, and (c) access does not violate any applicable law.

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

DDRS is reasonably certain that its rules, procedures and contractual terms could be expected to be fully enforceable. In addition to a focus on conforming to applicable law and general principals of contract law, DDRS is confident that the contractual terms are unlikely to be subject to being voided/reversed/stayed based on the nature of the services provided. DDRS trade data repository services are provided pursuant to regulatory mandates, which makes it unlikely such services will be found to be contrary to public interest or policy.

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.

DDRS is of the opinion that under the principles of contract law in both Singapore and Australia, both parties to the relevant documentation (DDRS and participant bilaterally) are free to choose the governing law of the contract. Additionally, since DDRS as a Singaporean corporate entity is licensed by ASIC, on the balance of probabilities, this represents a stronger case for enforcement of the choice of law stipulated and agreed to by the parties. As DDRS is not presently aware of any reasons (public interest/policy or otherwise) preventing participants from entering into a binding contract with Singapore (or New York) law chosen as the governing law, our position is that the choice of law agreed to by the parties will be enforceable and thus obviate any risk of conflict-of-laws.

Key conclusions for Principle 1

DDRS has a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions. DDRS is licensed as a trade repository in Singapore and Australia. DDRS is subject to applicable local requirements for trade repositories and the conditions of its licenses.

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 expressly set up to serve as a trade repository for OTC Derivative Data to facilitate regulatory reporting and oversight of the OTC Derivatives Market by regulators. This objective of DDRS is clearly identified in the DDRS Rulebook. DDRS participates in an annual corporate goals process. The corporate goals are strategic in nature, focusing on key deliverables at a DTCC group level. The corporate goals are based on consultation with participants, board members, industry associations, regulators and others. On an ongoing basis, DDRS’s corporate goals will be developed through ongoing interaction with regulators, industry participants, industry associations (e.g., ISDA), industry working groups, to identify initiatives required to meet all regulatory obligations. Potential initiatives will be 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 staff, in consultation with the DDRS Board. The DDRS Board has the ultimate authority to support or deny an initiative. Oversight of DDRS’s performance is facilitated primarily by its Board. Additionally, DDRS is subject to regulatory oversight and is subject to internal and external audits. The General Auditor, or his/her deputy, shall report information and results to the Board Audit Committee and is responsible for assisting the Committee 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 are subject to periodic review. DDRS’s affiliate, DTCC Deriv/SERV LLC (“Deriv/SERV”), provides services to DDRS related to its business and operations. DDRS Management has a monthly meeting with Deriv/SERV Management. Deriv/SERV provides services to DDRS that DDRS monitors via its monthly status updates/review process. The monthly status updates/review process addresses items such as incidents, volume levels, and risk/processing indicators that are reported to the DDRS Risk Committee on a quarterly basis.

Additionally, safety and efficiency are prioritized by ensuring that initiatives are presented to the DDRS Board, and escalated where appropriate to the Deriv/SERV Board and DTCC internal committees as appropriate. The DTCC group-wide Investment and Operating Committee reviews all material initiatives to determine the overall risk, materiality, required level of review, and necessary escalation path (if needed). Additionally, the Committee also engages in post-launch reviews of all initiatives to assess current state.

DDRS’s registration as a trade repository is expressly intended to support financial stability by enhancing transparency in the OTC Derivatives markets. DDRS’s priorities and work plan are approved by its Board with this objective in mind. The DDRS Board includes representatives of certain of DDRS’s 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; resultant requirements are aligned with DDRS’s 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 management of the company. DDRS has adopted the draft Securities and Futures (Corporate Governance of Approved Exchanges, Approved Clearing Houses, Licensed Trade Repositories and Approved Holding Companies) Regulations 2005⁴ (the “CG Regulations”) with respect to corporate governance matters. DDRS also complies with ASIC’s requirements as detailed in its license.

DDRS also complies with Regulation 19 of the SFTRR, which requires DDRS to consult its participants before making any amendments to the DDRS Rulebook, unless the proposed amendment would have limited impact on its participants. In addition, the DDRS Rulebook is publicly available on the DDRS website.

DDRS management is accountable to its Board as well as to the Chief Executive Officer of DTCC Deriv/SERV (including holding monthly meetings with Deriv/SERV’s management team). Deriv/SERV provides services to DDRS that DDRS monitors via its monthly status updates/review process. The monthly status updates/review process addresses items such as incidents, volume levels, and risk/processing indicators that are reported to the DDRS Risk Committee on a quarterly basis.

DDRS provides accountability to owners, participants and other relevant stakeholders through the DDRS Board, which includes representatives of certain of DDRS’s users. DDRS’s 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 (such as the User Expulsion Rules). The Rulebook, User Agreement and Operating Procedures are published on the DDRS website. Disclosure of these documents on a public website makes governance information about DDRS available to owners, relevant authorities, participants, and the public.

The Board has established sub-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

⁴ MAS will be amending the regulations to include licensed trade repositories. In the interim, MAS’ expectation is for DDRS to comply with the draft regulations.

legal and regulatory provisions and with regulatory expectations of the role of the Company in the infrastructure for those markets, that:

The procedures for the functioning of the Board are set out in relevant documentation such as DDRS's incorporation documents, its Board Mission Statement and Charter, its Principles of Governance and the applicable company law requirements. These documents are available to DDRS's regulators, as well as board members. These documents are not subject to any fixed periodic review, but will be reviewed as and when the need arises.

The procedures for management of Conflict of Interest are set out in the various policy documents, in particular the DDRS Conflict of Interest Resolution Policy and the DDRS Board Code of Ethics. The DDRS Conflict of Interest Resolution Policy and the DDRS Board Code of Ethics are available to all DDRS employees and are not subject to any fixed periodic review, but are reviewed as and when the need arises.

The DDRS Chief Compliance Officer ("CCO") is responsible for the resolution of DDRS-related conflicts of interest. Instances of conflicts of interest (including potential conflicts of interest), are escalated to the CCO (except in cases where the CCO personally has a conflict of interest, in which case the matter will be directed to the attention of the DDRS Risk Committee). Compliance may conduct the initial review of potential conflicts of interest, but the CCO (or, the DDRS Risk Committee) will be informed of all DDRS-related conflicts of interest. Any review of potential conflicts of interest will be completed under the supervision of the CCO.

The CCO will notify the DDRS CEO of any actual conflicts of interest immediately upon determining that an actual conflict of interest exists. The CCO determines whether the activity should be permitted and, if so, what measures should be put in place to mitigate the conflict appropriately. The CCO and the DDRS CEO are responsible for reviewing and analyzing all conflicts of interest involving DDRS staff. In consultation with the DDRS Risk Committee, the DDRS CEO will resolve all conflicts of interest including conflicts between business considerations and compliance requirements.

The Board has an established self-assessment process to review its overall performance and the performance of its individual members on an annual basis and formally reviews the performance of each director in determining whether to re-nominate Directors for election.

The Board has established various sub-committees facilitating in the functioning of the Board with defined roles, responsibilities. The Board analyses the requirements and decides on composition of each committee.

The DDRS Audit Committee oversees (i) the integrity of its financial statements and financial reporting; (ii) the overall effectiveness of its control environment; (iii) the performance and coverage of the internal audit function; and (iv) the external auditor's independence, performance and coverage. DDRS's registration as a trade repository is expressly intended to support financial stability by enhancing transparency in the OTC Derivatives markets. DDRS's priorities and work plan are approved by its Board with this objective in mind. The Board members include representatives of certain of DDRS's users to help ensure accountability to users.

The DDRS Nominating Committee is mandated to seek and nominate qualified candidates for election or appointment to the Board or senior management.

The DDRS Risk Committee oversees (i) enterprise risk management; (ii) the legal and regulatory compliance and risks; and (iii) general risk related matters.

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).

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 his track record, age, experience, capabilities, skills and such other relevant factors as may be determined by the Nominating Committee. The principal skills required are management experience and an understanding of the operation of the OTC derivatives markets.

DDRS Board members are selected from (i) executive directors comprised of senior DTCC/DDRS management and (ii) independent directors⁵ comprised of representatives drawn from the financial institutions which are participants. The composition of the board should comply with the Corporate Governance Regulations which govern composition of the Board (including such requirements to have a composition comprised of one-third Singapore citizens/permanent residents). All Board members are elected annually for one-year terms. All directors (executive or independent) must be approved by MAS prior to formal appointment.

None of the DDRS directors will receive any directors' fees for serving on the DDRS Board but executive members of the DDRS Board will be remunerated for their performance of an executive function. While Board members do not receive directors' fees for serving on the DDRS Board (other than remuneration given to executive members for performance of their executive function), the responsibility to oversee the strategy and operations of an important financial market infrastructure such as a trade repository, is itself incentive, particularly for member firms.

DDRS have highlighted that it does not have a compensation committee as its directors do not receive remuneration. We have also explained that in the absence of remuneration, there is still interest for directors to ensure proper governance since these directors are representatives from member firms. We quote from our response "None of the DDRS directors will receive any directors' fees for serving on the DDRS Board... the responsibility to oversee the strategy and operations of an important financial market infrastructure such as a trade repository, is itself incentive, particularly for member firms."

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 locally based resources (such as legal and compliance, technology and client/account management) and group resources (Business Risk Management ("BRM"), Finance, HR, Legal and Compliance, Infrastructure and Operations 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 CEO and the CCO. The CEO oversees the development of DDRS' business and ensures business objectives are achieved by

⁵ Independent directors are defined as independent from management and business relationships with the Company (defined in Regulation 3 of the Corporate Governance Regulations) as well as independent from any substantial shareholder of the Company (as defined in Regulation 4 of the Corporate Governance Regulations).

implementing relevant projects. The CCO in consultation with the DDRS Board and CEO, is responsible for developing and enforcing policies and procedures to reasonably ensure compliance with DDRS's legal/regulatory obligations. The responsibilities and projects undertaken by the CEO and CCO are documented in the DDRS compliance report which is submitted to MAS and ASIC annually.

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

DDRS has adopted the DTCC Corporate Risk Framework, which has been reviewed and approved by the DTCC Board, and remains subject to Board oversight. The framework is documented through a Corporate Risk Framework document and includes Risk Tolerance Statements covering Strategic Risk (which includes General Business Risk and New Initiatives Risk) and Operational Risk (which includes Financial Risk, Legal and Regulatory Compliance Risk, Processing and Operations Risk, Information Technology Risk, Cyber and Information Protection Risk, Business Continuity Risk and Human Capital/People Risk). The Framework and Risk Tolerance Statements are reviewed, updated as appropriate, and approved by DTCC's Management Risk Committee, and DTCC Board Risk Committee and the DTCC Board, annually. The Operational Risk Management group, have risk management policies and procedures addressing their specific areas of responsibility, which are also reviewed and updated (as appropriate) annually and shared with the DTCC Board. The Risk Framework is more fully described under Principle 3 (Framework for the comprehensive management of risks). Operational Risk Management Department ("ORMD") is required to implement the operational 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's day-to-day business, while meeting supervisory and regulatory expectations. Additionally, DDRS and ORMD staff identifies appropriate risk mitigants; appropriate action plans are formulated and tracked to completion.

ORMD's framework is based on Basel operational risk standards. These standards are incorporated into the methodology and tools used by ORMD to identify, assess, manage and report on operational risks.

- ORMD's Operational Risk Framework is comprised of the following elements:
 - Risk Tolerance
 - Operational Risk Incident Data Collection
 - Risk Assessment – Operational Risk Profile
 - Scenario Analysis/Lessons Learned
 - Management and Board Reporting
 - Risk Acceptances
 - Vendor Risk Management
 - Intercompany Agreements
 - New Initiatives
- ORMD employs a standard set of categories to classify operational risks, including:
 - Financial Risk
 - Legal & Regulatory Compliance Risk

- Processing & Operations Risk
- Information Technology Risk
- Business Continuity Risk
- Cyber and Information Protection Risk
- Human Capital/People Risk

A risk profile, which includes a risk summary, key risk drivers, risk statements, and risk trends has been operational since April 2014 and is used by DDRS management. All local staff are required to adhere to the policy.

The DDRS Business Risk Manager and the DDRS Technology Risk Manager are responsible for overseeing risk-related matters for services provided by DDRS.

The DDRS Business Risk Manager has the functional responsibility to manage DDRS’s risk management functions. He is in regular contact with DTCC Operation Risk management and IT Risk management functions. DDRS has adopted policies developed on the corporate level. The DDRS Business Risk Manager is responsible for the following:

- Identify, assess and monitor DDRS’s risks.
- Develop internal control system that is effective in design and operation for services provided by DDRS.
- Report to the parent company any material risks and issues that might affect DDRS and/or DTCC’s other entities

Technology risks are continually reviewed and assessed by the Technology Risk Management (“TRM”) DTCC team. In turn, DDRS TRM team leverages DTCC’s team resources to provide additional support to manage DDRS’s technology risks.

DDRS relies on DTCC’s IAD team. The General Auditor provides reporting and information directly to the DDRS Audit Committee and governed by the DDRS Audit Committee Charter.

The role of DTCC’s IAD is to provide independent, objective and advisory services to assist DTCC (and subsidiary entities including the DDRS) in maintaining effective risk management and control practices. 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 operations and 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.

The DDRS Board is responsible for the oversight of risk assessment and risk management monitoring process and reviews these through the DDRS Risk Tolerance Statement. Models and methodologies for risk management are determined by the DTCC Corporate Risk Framework and are reviewed by DTCC’s Management Risk Committee. Relevant issues would be escalated to the DDRS Board and senior management. Also note the response to Principle 3, below.

DDRS BRM report directly to the head of DTCC Solutions BRM head, who has 10 employees disbursed regionally from business continuity perspective. Day-to day responsibilities are shared within the group and DDRS BRM fully supported by other in-region or out-of-region BRMs.

Additionally, the quality of staffing is enhanced through training on a broad mix of topics which include business products, technology, and/or process topics as appropriate.

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 participants' 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 meetings are minuted and circulated to Board members. Minutes of Board meetings are not disseminated publicly; however, matters material to DDRS’s parent company, DTCC, would be disclosed to the DTCC Board by the DDRS 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.

Key conclusions for Principle 2

DDRS has established governance tools and processes (including establishing various board committees and appointment of independent directors and other criteria specified in the MAS and ASIC Licenses) to comply with the relevant Corporate Governance requirements. DDRS will engage with participants on issues that affect their reporting obligations, communicating via use of the “Important Notice”. DDRS also has a well-developed process for managing conflicts of interest as detailed hereinabove.

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 Corporate Risk Framework that provides an overarching comprehensive structure, for the management of risk that is common across DTCC’s subsidiaries, including DDRS. The risk framework provides a conceptual structure designed to guide decisions related to risk management. This framework 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
 - Cyber and Information Risk
 - Human Capital / People Risk
- Strategic Risk which includes the following sub-components:
 - General Business Risk
 - New Initiatives Risk

DDRS Management is responsible for identifying, assessing, measuring, monitoring, mitigating and reporting the risks that may arise in the management of the trade repository.

While the responsibility for the pro-active management of risks lies with Management (individually and collectively), the responsibility for oversight of risk lies not with an individual, but rather with a management review. The DDRS Board has delegated to the DDRS Board Risk Committee responsibility for reviewing the overall risk tolerance and to manage the responsibility for identifying, assessing, measuring, monitoring, mitigating and reporting risks through a process of developing individual risk tolerance statements for identified risks. Risk tolerance statements provide the overall risk reduction or mitigation objectives for each of the identified risk categories. In addition to these objectives, these statements also set out the risk controls and other measures used to manage the risk, and the escalation process. At the end of the process, residual risks may be identified for either further management or “acceptance” (which follows an escalation and approval process).

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. Responses include risk avoidance, reduction, mitigation, or acceptance. 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 Board reviews the Risk Tolerance Statements at least annually.

Risk Profile: To identify and assess day - to - day risks in detail, such risks are monitored using a tailored Risk Profile. The Risk Profile 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. In collaboration with BRM, the DTCC ORMD prepares an Operational Risk Profile for DDRS on a quarterly basis. The risk profile is part of the comprehensive operational risk management framework and is discussed with the CEO. ORMD is responsible for coordinating the content and the presentation of risk information for the two DDRS risk categories including the risk families listed above.

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 various business lines and functional units, including Product Management, Operations Management, Information Technology, and other areas critical to the daily operations and functioning. Their mandate is to manage risk proactively.

The second line of defense is comprised of control functions, including Legal, Privacy, Compliance, and those areas that fall under the Group Chief Risk Officer’s purview, as outlined below. Their mandate is to provide advice and guidance to the first line of defense in adhering to established risk standards and, as applicable, to monitor compliance with those standards.

The third line of defense is IAD. Its mission is to provide independent, objective and advisory services to assist the organization in maintaining effective risk management and control practices.

Collectively, the three lines of defense are designed to ensure that key risks remain within their risk tolerance thresholds and that any deviation outside a defined risk tolerance threshold is monitored on an ongoing basis and escalated in accordance with the Risk Tolerance Statement applicable to it.

The DDRS SLA Governance Review provides oversight for the management of DDRS’s risks and operability in accordance with policies agreed 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. It also serves as a forum to review the outsourced functions and establish a proper level of governance. The meeting is scheduled on a monthly basis where all relevant functions are represented to present updates on topics such as key (metrics/risk) indicators, trends, new/group initiatives, planning and issue escalation. This allows DDRS management of drive actions and planning or remediating outstanding issues.

Consistent with its mission statement and charter, the DDRS Board is responsible for overseeing the effectiveness of risk management and it has delegated these responsibilities to the DDRS Risk Committee. The Risk Committee, which is composed of DDRS Board members, is responsible for approving the overall risk tolerance for the organization, which is derived from a portfolio view of key risks and impacts into the risk categories noted above.

The Board has given DDRS Management the responsibility for the day-to-day management of these risks as articulated through individual risk tolerance statements approved by the appropriate functions and provided to the Board for its review. The Board requires management to distribute regular risk reporting to the Risk Committee and to provide assurance of management’s effective oversight of such risks.

Additionally, the DDRS Risk Profile, which is provided quarterly, includes metrics with targets that are compared against actual performance. Anytime actual performance falls below the target, it would be investigated by DDRS management; action plans would be developed as appropriate.

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.

The BRM, working with DDRS's senior management, to review the risk framework on an annual basis. Additionally BRM provide incident update, trend analysis to management monthly and key performance and risk indicators. The DDRS Risk Profile also captures key risks of the business and associated metrics. This is reviewed on a quarterly basis with DDRS management and the ORMD. Changes in the business and/or risks would trigger a re-assessment of the metrics captured; the Risk profile would be updated accordingly.

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, DDRS does not have credit, market or liquidity exposure. DDRS has operational and strategic risk (as noted in discussion of risk categories above). To mitigate any operational risks that may be posed by DDRS's 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's trade repository services or penalized for its actions (for example, by way of 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 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.

DDRS has been established expressly for the provision of trade repository services, primarily in light of the OTC derivative regulatory reporting mandate. There is an implicit incentive for the participants to manage the risks they pose to the DDRS; any risk that impacts the ability of the DDRS to provide mandated reporting to the MAS and ASIC would negatively impact the participants, as their reporting obligations could not be facilitated by DDRS. DDRS is the only licensed trade repository in Singapore that provides reporting services for MAS. DDRS is one of two ASIC-licensed trade repositories in Australia. 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, DDRS's 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.

DDRS has been established to serve as a licensed trade repository in Singapore and Australia. In this role, DDRS facilitates mandated regulatory reporting to enable regulatory oversight of the OTC Derivatives Market.

Members are provided with a significant amount of information, and incentives, to enable them to monitor and manage the risks they pose to DDRS. By provision of trade repository services that facilitate mandated regulatory reporting under Singapore and Australia laws, DDRS effectively enables participants to manage their regulatory compliance risk.

To assist firms in understanding DDRS’s services and applications, DDRS 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 Management (“BCM”) 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.

DDRS operates as a trade repository providing regulatory reporting services. If there were an operational failure of a participant or other FMI, this does not affect DDRS.

Conversely, if DDRS 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.

DDRS could potentially incur sanction risks by virtue of the transactions that are introduced to us through our members. As DDRS acts in the capacity of a trade repository, and therefore does not facilitate trading or cash movement, the impact of any sanctions finding would be evaluated on a case by case basis.

Material service providers (third party vendors) are subject to a comprehensive vendor review and vetting process that covers both credit and operations risk reviews and controls. Mitigants may take the form of contractual protections, or additional or backup providers where deemed appropriate and feasible.

The monthly DDRS SLA Governance Review dedicated to test the risk management tools by reviewing the metrics and concerns around risk management practice. Risks and potential mitigants are evaluated by ORMD and discussed with management and/or the Board, as needed. Furthermore the 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 Committee has oversight, and management of them that shall periodically be reported by management and reviewed with the Board.

Assessment of material risks between group companies (e.g. Deriv/SERV) and DDRS are reviewed by management annually. All key risk drivers are reviewed quarterly and presented to the DDRS CEO.

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.

Deriv/SERV and DDRS management meet periodically to discuss/identify scenarios that may potentially prevent DDRS from providing its core reporting services or continued existence as a going concern, thus necessitating recovery options or orderly winding-down.

There key disruption scenarios include (i) 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;

(ii) physical disruption which threatens personnel/property; (iii) critical technological disruption (e.g. cyber security or technology outage); (iv) 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. Based on the scenarios outlined above, 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 6 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 convenes a final meeting where quorum is needed and would decide 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, vendors and employees.
- 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 will have to ensure that all required filings are completed with the regulators, and that correspondence with stakeholders, clients, and vendors is handled professionally. The winding down process may require several months—those who remain will be fully involved in the closure as necessary for required months after the Firm ceases day-to-day operations. Further information is detailed out in the DDRS Recovery and Resolution Policy.

As a regulated provider of a technical platform for the gathering and dissemination of financial data, DDRS’s 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.

Concomitantly, DDRS has committed to comply with the regulatory requirement to maintain capital equal to a minimum of 6 months of operating expenses. DDRS has also committed to providing 6 months notice to our regulators in the event we plan to terminate services in the respective jurisdiction and to provide support for an orderly transfer of reported data to an alternative provider.

Key conclusions for Principle 3

DDRS reviews its policies and procedures annually. The Risk Tolerance statement will be assessed quarterly and will be reviewed annually by the DDRS’s Board if there are any material changes.

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, the market environment, and through comparison of the financial performance versus the entities' budget and forecast for each of its subsidiaries, including DDRS.

DTCC considers those general business risks to include potential impairment to DDRS's 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 DDRS and/or DDRS's 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 DDRS, focuses on the following key objectives:

- Provide financial resources that are sufficient to support DDRS' business, in terms of both current and forecasted needs;
- Allow DDRS to maintain adequate capital to protect against risks that may arise under adverse scenarios;
- Satisfy current and anticipated regulatory capital requirements in light of evolving global risk management standards for financial market utilities in markets in which DDRS operates;
- 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 DDRS 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 also includes development of a 3-year long-range financial plan annually 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 yearly business plans, coupled with the business reviews and other tools as mentioned above, allow DTCC and DDRS 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

DDRS’ 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 DTCC business planning process, the business financial results are presented to relevant subsidiary Boards, including, Deriv/SERV and DDRS for review on an ongoing basis.

In addition to the annual business planning process, DDRS management works with Finance, Operational Risk Management, Information Technology (“IT”), Operations, Legal, Compliance, and other internal areas on an ongoing basis to review and assess the business risks faced by DDRS. This includes:

- Ongoing review of the DDRS finances, including revenues, expenses, actual versus target performance, financial projections and funding.
- Quarterly review of the Operational Risk Profile, including any changes in internal risk ratings.
- Ongoing meetings with Information Technology 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.
- DDRS also engages in 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 to internal meetings and assessments, 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.

DDRS holds sufficient liquid net assets funded by equity as per Principle 15 of the PFMI so it can continue operations and services as a going concern if it incurs general business losses. 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 also satisfies the capital requirements of the MAS which is to hold sufficient financial resources, including a buffer, to meet its total risk requirements as defined under DDRS’s license conditions with MAS.

In order to meet the requirements of Principle 15, 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 6 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. Further, DDRS would have access to financial resources from its ultimate parent, DTCC.

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 Requirement⁶ plus Investment Risk Requirement⁷). In addition, DDRS has a minimum capitalization requirement, which as of December 31, 2017 is 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 6 months wind-down.

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 only, i.e. overnight reversed repurchase agreements, bank deposits, and money market mutual funds investments. This policy ensures that there is very little 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.

With the corporate structure of the group, DDRS would not raise additional equity. However, the framework for assessing current and future capital needs will occur under the direction of the DTCC Board, which has oversight of DTCC's financial strategy and assess performance against that strategy. At the ultimate parent level, the DTCC Board oversees all finance and capital matters at a group level. Any plans to make changes to DTCC's capital structure or decisions on funding are reviewed and approved by the DTCC Board.

Therefore, the DDRS Board is responsible for the review of DDRS's financial status and would be involved in plans to raise capital for 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.

⁶ "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;

⁷ "Investment risk requirement" is $8\% \times$ amount of investment and shall be applied to capital investments to acquire up to and including the first 20% of shares in every associate.

Key conclusions for Principle 15

DDRS, through the capital and financial planning and management activities of its ultimate parent company, DTCC, manages its general business risk in several ways, primarily among them include: a robust governance and oversight structure at the subsidiary and parent level, ongoing active management reviews of business performance, and an ability to adapt to environmental changes.

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.

DTCC’s fundamental approach to risk management is outlined in the Corporate Risk Framework. The Corporate Risk Framework is an enterprise 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. Risks framework is a process in which risks of the types listed in the Framework are assessed on an inherent basis (that is, in the absence of any mitigating controls) and then evaluated against the strength of the existing controls (and, as appropriate, for new and additional controls).

To enable management to effectively identify, understand and mitigate risks, DDRS has adopted an approach that includes three lines of defense:

- The first line of defense is the businesses and functional units, including Product Management, Operations, Finance, Technology, Legal, Human Resources, and others. It also involves the business risk manager who works closely within business to manage and identify risks in the day to day functions of the business. The business has identified resources globally for the role of Business Risk Manger to manage and identify risk in daily operation of the business. Their mandate is to proactively manage risk.
- The second line of defense is comprised of the control functions, including Operational Risk Management (“ORM”), the Compliance Department, TRM, Privacy and BCM. Their mandate is to establish 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. IAD’s mission is to provide independent, objective assurance services to assist DDRS in maintaining an effective risk management and control practices, including the manner in which the first and second lines of defense operate.

In addition, ORMD and DDRS senior management lead DDRS’s overall strategy for identifying internal and external sources of risks, assessing the implications, prioritizing and developing plans to address such risks and leading jointly with the DDRS business unit the remediation of such risks, to the extent possible. The ORMD Operational Risk Framework, which has been applied for DDRS, is comprised of multiple elements, including:

- Risk Tolerance
- Operational Risk Incident Data Collection
- Risk Assessment – Operational Risk Profile
- Scenario Analysis/Lessons Learned
- Management and Board Reporting
- Risk Acceptances
- Vendor Risk Management

- Intercompany Agreements
- New Initiatives

DDRS has implemented the operational risk management framework and related elements in accordance with the standards established by the ORMD and set forth in the ORM policies and procedures. At least annually, the policies and procedures are reviewed, and as appropriate, updated. These framework components have resulted in a profile and it 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 develop an annual risk based audit plan that allocates audit resources according to the risks in the organization. IAD maintains an inventory of all auditable entities 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 to developing the annual risk-based plan. Each auditable entities 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 auditable entities, which is used to drive the frequency of audit coverage ranging from 12 to 48 months.

The finalized risk assessments and resulting annual plan are documented and discussed with management and regulators prior to being presented to. In addition, the department monitors the business’s key performance indicators and key risk indicators to understand changes in the business environment, and may perform ad hoc audit procedures when warranted. As 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 ORMD framework components and to manage issues and action plans. The Operational Risk Profiles provide a comprehensive analysis of Inherent Risks, Controls, Residual Risks, Metrics, Risk Incidents, Vendor Risk Profiles. DTCC also has established policies and procedures on its major focus areas, including:

- ORM Policy
- Vendor Risk Management Policy
- Operational Risk Management Procedures
- VRM Procedures

DTCC Compliance owns the Standard for the Issuance and Maintenance of Policies and Procedures, which states this process. In short, the procedures cover the following:

- Policy document categories
- When to issue or amend a policy document
- Maintaining and approving policy documents on a regular (one to three year) basis
- Approval process
- Disseminating and communicating policy documents to employees
- Policy document template

The Enterprise Policy Repository automates the workflow for the annual review and approval of all policies and procedures in accordance with the corporate wide Standards for the Issuance and Maintenance of Policies and Procedures. DDRS will adhere to the above listed policies and procedures.

ORMD staff is aligned to staff and business areas; similarly ORM staff is aligned with DDRS BRM. ORMD stays in regular contact with DDRS staff and business counterparts via frequent phone calls and meetings, including staff meetings and quarterly meetings with DDRS senior management.

ORMD's framework encompasses many key recommendations introduced by the Basel operational risk standards and CPMI-IOSCO recommendations. These standards are incorporated into the methodology and tools used by ORMD to identify, assess, manage and report on operational risks. This framework also applied 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: operational risk management; legal and regulatory compliance and risks; and related matters. Accordingly DDRS issued a Risk Committee Charter, which outlines the Committee's roles and responsibilities for operational risk management.

The Risk Committee Charter clearly defines the administrative structure, authorities, responsibilities, self-evaluation and reporting. As per their authority, subject to the direction of the Board, the 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 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 Committee will have such other and further duties and powers as may be delegated to it by the Board.

The committee meets quarterly and the Risk profile is discussed with the members. DDRS officers also provide an update about compliance, audit and business continuity matters. The Committee will, at any time, examine the conduct of the Company's affairs and report to the Board. The Committee also has the right to contract for the services of such person or persons as the Committee may deem necessary in order to meet its mandate.

The 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 Committee reviews, approves and reassesses periodically reporting metrics reflecting the Company's risks with respect to the risks for which the Committee 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 guide the discussion of risk, and the 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 Risk Profile management review is initiated by the Operational Risk Manager. DDRS's Risk Profile is discussed with the CEO in order to review key risks and related risk tolerances. 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 operational risk management framework. However, the operational risk management framework is reviewed by IAD, which provides an independent and objective view. IAD reports directly to the DTCC Audit Committee and provides reporting directly to the DDRS Audit Committee to ensure independence. Further, as a regulated entity, DDRS will be subject to continuous monitoring by its regulator, MAS and the ASIC.

Lastly, DDRS financial statements will be subject to external audit; the auditors will have access to ORMD information to perform their audit.

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.

DDRS monitors operational reliability through multiple processes, including an Annual Risk Assessment, incident reporting, monitoring for lifecycle processing, system availability and data reporting; a metrics review of incidents-related key risk indicators 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.

To continuously maintain high levels of quality, DDRS uses several concurrent improvement methodologies that, when integrated, provide the company with a powerful quality management toolkit. DDRS 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 the DDRS’s risk appetite and risk mitigation practices.

The key performance indicators (“KPI”) and key risk indicators (“KRI”) are also agreed with the management and approved by the Board. Key objectives include system uptime and timeliness of report availability. Additionally, the Risk Tolerance Statements also captures a number of metrics, including General Business Risk, New Initiatives Risk, Processing and Operations Risk, Information Technology Risk, Cyber and Information Protection Risk, Legal and Regulatory Compliance Risk and Human Capital Risk. Target and Actual performance is tracked for each of these categories quarterly.

ORMD has created and maintains an operational risk management 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 Operational Risk Management’s framework via ORMD’s Operational Risk Profiles, 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 “2nd Line of Defense” (e.g. Compliance and 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 and support of frameworks intended to identify, manage and remediate certain specific risk types 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.

DDRS participates in the robust DTCC-wide framework for the review and analysis of capacity plans, demands, performance, and extreme conditions are in place. This includes daily, weekly and monthly metrics and an annual review of anticipated business volumes. Enterprise Infrastructure team (“EI”) provides daily analytics on the volume processed by the US, Netherlands and Singapore Data center and reporting facilities. These volume figures are benchmarked to the projected forecast and capacity requirements and being adjusted based on the peaks monitored throughout the month.

Thresholds are agreed with Technology and measured through metrics. The metrics include data base capacity such 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. The Corporate Capacity Planning and Performance Management 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 Enterprise Infrastructure presenting capacity planning to the management for discussion. Issues are escalated immediately to DDRS senior management, when identified. Additionally, capacity testing conducted annually and any situation in which operational capacity is neared or exceeded 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.

TRM manages 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 annual 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 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
- 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 DTCC Board.

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. As there is no single relevant international or industry-level standard by which guidance can be solely taken, select guidance is taken, as applicable, from a number of recognized information security standards, including:

- 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. On the IT side, there is a full vulnerability detection program that covers platform vulnerabilities using standards based schemes. Additionally, a comprehensive program for threat management is also in place.

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.

BCM is concerned with 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 Business Continuity Management Policy establishes requirements for how DTCC as a whole, including DDRS, will effect 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 BCM process.

Given the nature and breadth of significant business disruptive events, BCM 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 ranking. 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 and include 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 product line criticality to the enterprise and clearing agency subsidiary based on a potential impact
- Assessment and prioritization of product line functions and processes, including their internal and external dependencies
- Estimation of maximum allowable downtime (“MAD”) associated with the institution’s business functions and processes
- Estimation of recovery time objectives, recovery point objectives and recovery of the critical path
- Identifying dependencies that a product line has and ranking them to align with the process criticality for recovery
- Product lines are ranked based on their criticality to the enterprise:
 - o Tier 0 High Availability—require an infrastructure with virtually no downtime.
 - o Tier 1 Severe—required resumption of operations is within two hours.
 - o Tier 2 High—required resumption of operations is within four hours.
 - o Tier 3 Moderate—required resumption of operations is next day.
 - o Tier 4 Low—required resumption of operations is three days.
 - o Tier 5 Immaterial—reserved for support functions that have non-essential recovery timeframes greater than five 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)
- 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. Two sites have synchronous updates; one out of region site has asynchronous update. In the event of an incident resulting in the simultaneous loss of *all* data centers in the primary and alternate locations, the out of region locations would come up in automatic recovery mode and resume processing. Once processing was 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 at the out of region site, 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 of region, this process is augmented with steps outlined in a recovery guide issued to participants and managed by the operations staff.

The BCM 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 BCM Policy includes definitions of the types of communications necessary, the methodology and some template text to execute the plans. Moreover, the regional BCM 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 BCM and include a cross section of individuals from various departments throughout the organization, including senior management (decision making), facilities management (locations and safety), human resources (personnel issues and travel), marketing (media contact), finance/accounting (funds disbursement and financial

decisions), Operations (Settlement) and Risk Management (Collection of Clearing Fund), among others. In a crisis, BCM will immediately disseminate a message to internal and external audiences to ensure consistent communication to key audiences.

DDRS specific BCP 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, vendors, suppliers and regulators emergency contact information furthermore the WAR strategy 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 table top exercise and transference exercises are activated annually. Documentation also reviewed by the BCM coordinator and re-approved by the management annually.

DTCC uses deploys various work area recovery (“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 London, Manila, Chennai and New Jersey. In a business continuity event, staff at unaffected sites would provide required support.

In a business continuity event in which a site became unavailable, the event management framework would be initiated. An event management team, which is comprised of representatives from key areas including Senior Management, Business Continuity, 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 at home to continue support of the functions performed at that location, with ongoing support from US, London, Manila, Chennai and Tokyo to ensure all functions were completed. If work at home were not a viable option for the Singapore based staff, it is expected that the Tokyo, US, London, Manila, Chennai, service provider staff would cover the functions until either the Singapore office became accessible or alternate arrangements were made for the Singapore staff.

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.

Generally, DDRS offers trade 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 does not act in a settlement capacity, so there would be no settlement impact.

DDRS’s material service providers including Deriv/SERV, our internal (affiliated) service provider, are subject to a comprehensive vendor review and vetting process that covers both credit and operations risk

reviews and controls. Mitigants may take the form of contractual protections, or 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 manner in which these services are provided. Further, for any additional outsourcing, DDRS would have extensive contractual protections in place.

DDRS, as a reporting entity, does not pose risks to other FMIs. Its function is to receive data and report the data to the relevant regulatory authorities. In the event DDRS could not perform this function (and with due consideration of BCM planning), it would not pose a risk to another FMI's functions as submission could potentially be shifted to other DTCC trade repositories, which, while not registered with MAS and ASIC, could under emergency conditions be authorized to provide data until an alternative submission can be arranged. Portal availability and issues with submission are monitored daily and measured through metrics.

Key conclusions for Principle 17

DDRS has implemented appropriate operational risk management processes to identify, manage and mitigate operational risk.

Principle 18: Access and 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 administered and enforced by the MAS or the U.S. Department of the Treasury’s Office of Foreign Assets Control (“OFAC)). To mitigate any operational risks that may be posed by DDRS’s 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’s trade repository services or penalized for its actions (for example, by way of 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 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, 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 membership agreements. Each applicant for participation must (i) complete the necessary membership documents which establish the contractual relationship between the applicant and DDRS; (ii) provide important static data about the applicant (including applicant’s legal name and contact information and such other information as may be required in order to “know your customer”); and (iii) inform DDRS as to which jurisdiction the applicant will be submitting data. All applicants are subject to the same terms (such as those in the User Agreement, Operating Procedures and Rulebook) in order to maintain a fair and equitable relationship between DDRS and each participant.

DDRS’s services are provided in a fair and objective manner, and the requirements to use DDRS’s services are provided in a transparent, 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’s 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 executed membership agreements.

There are no limitations on the types of entities who can be direct participants, as long as they on-board and agree to abide by the 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.

Participant requirements for DDRS 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 technical requirements for use of the system or record submissions will be rejected;
- Industry working groups and the DDRS Board will identify system inefficiencies and market developments, including where such system inefficiencies and market developments will result in a change in the security or technical requirements applicable to participants, and recommend modifications to the system and/or participation requirements to address the foregoing;
- 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 business purposes; and (e) DDRS’s technical specifications are confidential. In accordance with DDRS’ obligations under the respective legislation to ensure that the respective regulator is provided with access to all information on transactions reported to DDRS for the respective jurisdiction, the terms of use also permit DDRS to disclose the transaction information submitted to DDRS to the respective regulators.

Pursuant to Section 46I(1)(d) of the SFA, DDRS will ensure 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.

All participants are subject to the same access requirements and user agreements. Entities 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 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 DDRS Rulebook:

- Terms of use state that DDRS retains exclusive control over the system and its services; and
- The Rulebook contains extensive review, termination and appeal procedures for participants which breach participation requirements.

Access to DDRS will be denied if a participant uses the DDRS services in such a manner that violates applicable sanctions laws in relevant jurisdictions (i.e., the U.S. OFAC Sanctions and sanctions administered and enforced by the MAS). DDRS monitors participants' ongoing compliance through:

- Sanctions screening will be performed on a scheduled basis;
- DTCC Compliance updates and compliance testing;
- Security will be monitored; any security breaches will be identified and raised to senior management; and
- A proposed change to the DDRS Rulebook will impose on participants the duty to notify DDRS of failure to comply with participation criteria (pending regulatory approval as at 5 Mar 2018).

Any issues identified as part of the planned sanctions screening process would be addressed on a case by case basis. Furthermore management can terminate user agreement in case billed services are not settled by the client.

Key conclusions for Principle 18

DDRS fully supports fair and open access as well as facilitating suspension and orderly exit to its services.

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.

The DDRS support direct, delegated and third party submission (noting specifically that tiered participation is thus limited to situations of delegated and third party submissions). Any party that seeks to access the trade repository to report or view data must execute an agreement to obtain such access. There are different types of parties that access the trade repository including but not be limited to, clearing organizations, service providers, middleware providers and 3rd party service providers which submit trades on behalf of DDRS participants. The form of agreement to be executed will be determined by the role of the party. The level of risk each type of party presents to the trade repository has been accounted for in the agreement to be executed.

Dependent upon the type of tiered arrangement, different information would be required; this would be gathered as part of the on-boarding process for the indirect participant⁸.

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

It is expected that DDRS would have minimal risk from these arrangements as DDRS's obligation is limited to acceptance of the data and provision of reports on such data to the regulators as necessary. DDRS would have to provide correct on-boarding, but this is not a unique or material risk; this risk is mitigated through standard on-boarding procedures and processes.

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.

Submission capacity for the overall system is monitored monthly and forecasted transaction volume is provided annually to enterprise infrastructure team. Threshold of required capacity is set to 80% where remediation for breaching this threshold is applied monthly.

DDRS Technology Operations have set up volume alerts (monitored 24/7). In case unexpected volume breaches the agreed capacity threshold, transactions from the submitter will be put on hold until clarification is received from the submitting participant. Additionally Enterprise Infrastructure team monitors disk space and file server capacity and escalate any anomaly immediately to BRM

Nevertheless, there is still a risk in case unexpected volume submitted either by direct or indirect participant but DDRS will mitigate this risk through the above mentioned monitoring processes.

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

With reference to the foregoing, DDRS does not anticipate material risks from tiered participation activity, there has not been a need to specifically address this issue. However, as we regularly review our rules and procedures, should risk from tiered participation agreements be introduced, we would review and revise the procedures as necessary.

DDRS established a Risk Profile which identifies both the inherent and residual risks from its operations. Tiered participations are included in the Risk Profile in the appropriate risk categories. In situations where the residual risks are not sufficiently mitigated by existing controls, a determination will be made to consider such other controls as might be appropriate.

Key conclusions for Principle 19

DDRS applies appropriate processes for the identification and mitigation of risks associated with tiered participation arrangements.

Principle 21: Efficiency and 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 a trade repository, clearing and settlement arrangements are not applicable to DDRS.

As an entity regulated by the MAS and ASIC, DDRS is structured to be in compliance with applicable regulations and licenses granted by the 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 owned by The Depository Trust & Clearing Corporation (“DTCC”).
 - DTCC is a U.S. holding company of several financial services utilities.
 - The composition of the DDRS Board complies with the CG Regulations, and will include representatives of certain of DDRS’s participants to help ensure the industry perspective is represented.
- Strategic Planning:
 - The Deriv/SERV Board undertakes annual strategy meetings which establish priorities for Deriv/SERV and affiliated trade repositories, which will include DDRS.
 - Additionally, 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.
- Finance:
 - The Deriv/SERV Board oversees the financial strategy and execution of that strategy for Deriv/SERV and advises the financial strategy of affiliated trade repositories.
- Participant Involvement in Product Development:
 - DDRS ensures participant 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’s service provider, utilizes a Relationship Management (“RM”) team, which is charged with regular interactions with both new and established participants. Included in this team is RM staff located in Singapore, Australia, Hong Kong, Manila and Tokyo, which supports 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. Further, as noted above, DDRS is very actively 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 the DDRS’s regulator, the 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.

DDRS’s goals and objectives are driven by the OTC Derivatives Market requirements for enhanced transparency in this market, and associated mandatory regulator 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 DDRS, its other participants, other FMIs, or regulators. This would include support for market participants, FMIs, 3rd party service providers, etc., subject to any applicable laws.
- Provide support for all OTC derivatives asset classes.
- Support internationally accepted communications interfaces and formats.
- Provide reporting that meets all regulatory requirements.
- Provide all services as cost effectively as is feasible, while maintaining risk management and compliance controls.
- Provide participant support on an ongoing basis (Operational, Technical, Account Management, etc.)

The above cited 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.

DDRS evaluates its efficiency and effectiveness at least monthly through the DDRS 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 DDRS Board regularly through project/initiative updates, financial reporting, and operational risk reporting (via Risk Profiles and Operating Reports). Metrics that tie to efficiency and effectiveness is 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 profile. SLA metrics are divided into 6 major categories starting with technology performance such as ingestion, report timeliness, incident resolution time, and followed by information security, BCM, human resource, compliance, audit and finance KRI, KPIs. The assessment on the performance indicators are 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 (and see also details set out under Principle 17 (i.e., via Operating Reports and Risk Profiles).

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 EI organization, which will provide infrastructure services for DDRS, uses the ITIL framework for continued improvement in relation to IT services management.

Each of the processes above has would have periodic evaluation applied. At the very least, evaluation is performed and communicated to DDRS Senior Management quarterly (via the Risk Profile and Operating Report) and provided to the DDRS Board and/or Board Committees as a standing item quarterly.

Key conclusions for Principle 21

DDRS actively endeavor to meet the requirements of its participants, the market and its regulator, the MAS and ASIC.

Principle 22: Communication procedures and 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's participants, if authorized by the participant, are eligible to use any one or combination of the communications interfaces supported.

Participant users of the DDRS services (or their service providers or customers, assuming access has been authorized by the participant) identify their communications interface(s) during the on-boarding process; 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.

| Interface | Type | Format |
|-------------|--------------------------|--|
| Direct line | MQ | Financial Product Markup Language (FpML) |
| Direct line | sFTP/FTP/NDM (push/pull) | Comma Separated Value (CSV) |
| Direct line | sFTP/FTP/NDM (push/pull) | Financial Product Markup Language (FpML) |
| Internet | GUI (Upload/Download) | Comma Separated Value (CSV) |
| Internet | sFTP (push/pull) | Financial Product Markup Language (FpML) |
| Internet | sFTP (push/pull) | Comma Separated Value (CSV) |

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. DDRS provides full support for industry standard identifiers for financial instruments and for counterparties when available.

Key conclusions for Principle 22

DDRS supports industry accepted international communications standards and procedures.

Principle 23: Disclosure of rules, key procedures, and 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 Guides and relevant onboarding documentation, set forth the operative rules and procedures of DDRS. These documents are published on DDRS’s public website. The DDRS Operating Procedures 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’s regulators; any material amendments to the Operating Procedures must be approved by DDRS’s Board and are submitted to the regulators as well. Additionally User Guides are reviewed by Product Management staff, as well as internal counsel.

The DDRS Operating Procedures govern all events, including any non-routine events including any business continuity events. Internal procedures further clarify escalation paths and procedures management will follow in specific events. A Business Continuity Plan under BCM 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.

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 customer agreement 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 Notice 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 Document made available via the website;
- User Guides made available via the public website;
- DDRS staff is available to guide participants regarding their rights and obligations, and to escalate any issues to the legal, compliance and management groups as appropriate;
- Product documentation provided to participants through learning center, published on secured website, accessible by member firms.
- The Onboarding Team has detailed discussions with participants regarding the on-boarding process and requirements; and
- DDRS participate in Industry working group discussions as needed.

DDRS has ongoing discussion and consultation with potential participants to address any potential lack of understanding. Further, as noted above, DDRS staff and the On-boarding Team work closely with participants and potential participants, and escalate any issues identified as appropriate. There are also industry working group discussions and review.

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

DDRS maintains a robust communication with participants through participant-facing groups such as the Customer Operations Team 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 the 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 Board (and relevant regulators accordingly) 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. Regulation 15 of the SFTRR requires 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. DDRS 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 through industry working groups will be made aware of proposed changes to services typically far in advance of a formal “Important Notice”; 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.

Material amendments to the Operating Procedures, including fees, require prior approval of the Board.

- Regulation 15 of the SFTRR requires 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. DDRS has published such information on its website. In addition, the Operating Procedures specify 10 business days' notice of material changes to the Operating Procedures.
- In addition, participants through industry working groups are aware of changes to services.

Material amendments to the Rulebook or Operating Procedures, including fees, require prior approval of the DDRS Board.

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 CPSS-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.

The CPSS-IOSCO disclosure was updated and made public in July 2017.

Under its ASIC License, DDRS is required to provide cumulative, weekly statistical data publicly. This information is provided on the DDRS public website.

Key conclusions for Principle 23

DDRS has disclosed rules for use of service and products, as well as fees and charges on its website.

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 collects data for Singapore and for 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, licensing conditions. In the premises, DDRS meets the disclosure of data requirements required by 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 the regulators. Timely delivery is ensured through the usage of automated system generated reports, which is produced according to pre-determined schedules.

Regulatory reporting team monitors the timeliness of the regulatory reporting posting based on the target delivery time agreed with Technology team. They also run daily reconciliation where regulatory reports are validated against participant submission and some critical attributes such as selective counterparty disclosure making sure DDRS abides its legal responsibilities.

Regulatory Reporting Team also generates a daily report indicating any late items or issues with the content of the reports. Related KPIs reported to the management on a monthly basis and included in the DDRS Risk profile.

DDRS has at its disposal technical resources via its services agreements with affiliates for operational and technical support so that reporting is continuously supported.

Notwithstanding the foregoing processes and procedures, it is possible that there will be occurrences in which reporting will not meet requirements. In those instances, 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.

In particular, when issues are identified, initial investigation is initiated between regulatory reporting team and production support team and escalated further if necessary. In circumstances where regulatory requirements or internal DDRS policy have been breached, the matter is escalated to management, the Chief Compliance Officer, Legal and BRM. The BRM, in consultation with the DDRS CEO, DDRS Chief Compliance Officer, Legal and other appropriate functions, determines the regulatory impact and when necessary DDRS Chief Compliance Officer will notify the impacted regulators.

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 TRM, including teams within the parent company to ensure robustness.

With reference to Principle 22, DDRS utilizes international standards. For analytical purposes, DDRS provides transaction and position based reports to market participants which support easy analysis.

Public reporting provided by DDRS is available via a public website, with open access to the public.

Key conclusions for Principle 24

DDRS has at its disposal legal, technical and operational resources sufficient to support both the immediate need for regulatory reporting as well as public reporting.

DEFINITION OF KEY TERMS AND ABBREVIATIONS

| Abb | Description |
|------------|---|
| ADM | Application Development and Maintenance group |
| ASIC | Australian Securities and Investments Committee |
| ASIC DTRR | ASIC Derivative Transaction Rules (Reporting) 2013 |
| BCM | Business Continuity Management |
| BIC | Bank Identification Code |
| BRM | Business Risk Management |
| CCP | Central counterparty |
| CPMI | The Committee on Payment and market Infrastructure |
| CSV | Comma Separated Values (submission file format) |
| DDRS | DTCC Data Repository Singapore Pte. Ltd. |
| Deriv/SERV | DTCC Deriv/SERV LLC |
| DTCC | The Depository Trust & Clearing Corporation |
| EI | Enterprise Infrastructure |
| FICC | Fixed Income Clearing Corporation |
| FMI | Financial Market Infrastructure |
| FpML | Financial Product Markup Language |
| GUI | Graphical User Interface |
| HKMA | Hong Kong Monetary Authority |
| IAD | Internal Audit Department |
| IOSCO | International Organization of Securities Commissions |
| ITIL | Information Technology Infrastructure Library |
| LEI | legal Entity Identifier |
| MAD | Maximum Allowable Downtime |
| MAS | The Monetary Authority of Singapore |
| MQ | Message Queuing |
| NSCC | National Security Clearing Corporation |
| ORM | Operational Risk Management |
| OTC | Over the Counter (derivative transactions) |
| ROC | Regulatory Oversight Committee |
| RTO | Recovery time objective |
| SFA | Securities and Futures Act (Cap 289) |
| sFTP | SSH File Transfer Protocol |
| SFTRR | Securities and Futures (Trade Repositories) Regulations |
| SIFMU | SIFMU Systemically Important Financial Market Utility |
| SLA | Service Level Agreement |
| TRAM | Trade Repository Account Management |
| TRM | Technology Risk Management |
| USI | Unique Swap Identifier |

| | |
|-----|----------------------------|
| UTI | Universal Trade Identifier |
| VRM | Vendor Risk Management |
| WAR | WAR Work area recovery |

4. LIST OF PUBLICLY AVAILABLE INFORMATION

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| DTCC Documents www.dtcc.com |
| DTCC By-Laws |
| DTCC Mission and Vision Statement |
| Principles of DTCC Governance |
| DTCC Annual Report |
| DDRS Documents |
| DDRS Operating Procedures |
| DDRS Rulebook |
| DDRS User Agreement. |