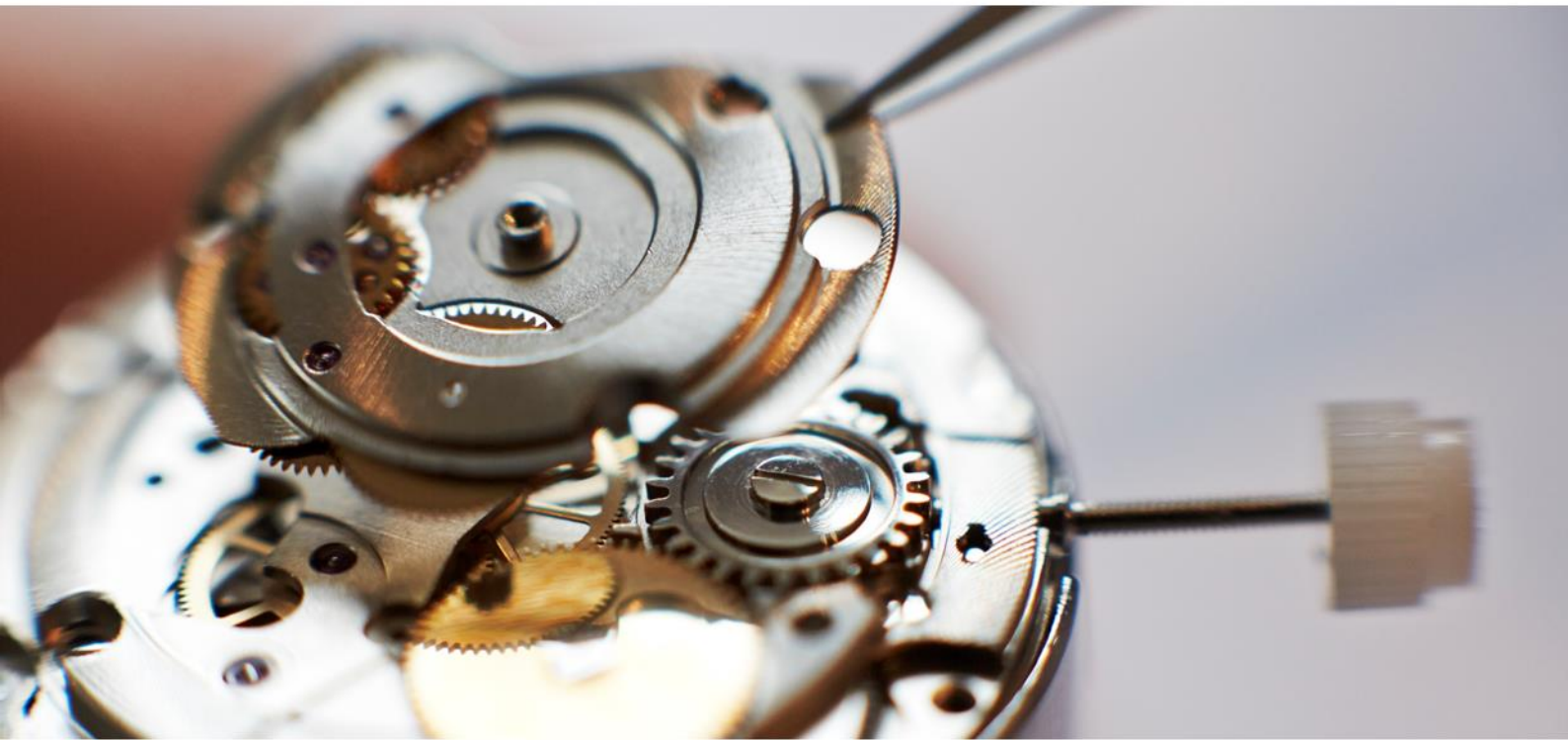




Disclosure of SIX SIS Ltd regarding the CPMI-
IOSCO principles for FMI
in accordance with “Disclosure framework and Assessment
methodology”, December 2012

September 2019





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1.0 Executive summary

SIX SIS Ltd (SIX SIS) is a wholly-owned subsidiary of SIX Securities Services Ltd, (SIX Securities Services), which itself is a wholly-owned subsidiary of SIX Group Ltd (SIX). SIX operates Switzerland's financial market infrastructure and offers comprehensive services in the areas of securities trading, clearing and settlement as well as financial information and banking services. The company is an unlisted public limited company domiciled in Zurich and owned by its users (approximately 125 national and international financial institutions of various size and orientation).

The two operational arms of SIX Securities services, the Central Securities Depository (CSD), SIX SIS Ltd (SIX SIS), and the Central Counter Party (CCP), SIX x-clear Ltd (SIX x-clear), are licensed as systemically important financial market infrastructures (FMI) subject to the supervision of the Swiss Financial Market Supervisory Authority (FINMA). Pursuant to the National Bank Act SIX SIS is also supervised by the Swiss National Bank (SNB).

SIX SIS offers, as a CSD, settlement, custody and asset servicing to clients throughout Europe. SIX SIS is both an issuer and an investor CSD, the operator of the securities settlement system (SSS) SECOM, and a provider of a wide range of CSD and International Central Securities Depository (ICSD) services, including safekeeping, custody and banking-type services. As a CSD SIX SIS is also a member of the European Central Securities Depositories Association (ECSDA) which represents about 40 national and international CSDs across Europe aiming to contribute to an efficient and risk-averse infrastructure for European financial markets.

The Principles for Financial Market Infrastructures (PFMI) set out international standards to foster effective risk management, strong governance and oversight of FMIs. As a systemically important CSD and operator of a securities settlement system, SIX SIS has to comply with all PFMI contents that are addressed to CSDs and SSSs respectively. Through the publication of this document SIX SIS intends to disclose the relevant information in order to enable the participants, authorities and the broader public to better understand SIX SIS's approach to observing the PFMI. The present disclosure basically provides:

1. a summary of the major changes since the last update of the disclosure (section 2.0);
2. a description of SIX SIS's services and markets, its organization and legal framework (section 3.0);
3. a comprehensive narrative disclosure for each applicable principle to enable the reader to understand SIX SIS's approach to observing the PFMI (section 4.0);
4. a list of publically available resources that may help the reader to better understand the narrative disclosure (section 5.0)

The cut-off date for the data used in this disclosure is 30th June 2019.



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2.0 Major change since the last disclosure update

This is the third issue of SIX SIS’s assessment regarding the disclosure framework based on the CPMI-IOSCO principles for FMIs (PFMI) 2012. It replaces the earlier version of 2017.

There have been no major changes since the last disclosure but Business Continuity Management, Recovery Plans, Data Security and Cyber Defence have been given special attention since. Along with the realignment of SIX as of April 2018, SIX SIS focusses on developing and operating domestic and crossborder as well as securities and digital infrastructure services. Accordingly, the Head Post Trade acts as CEO of SIX SIS whereas the Head Securities & Exchanges is the president of the board of directors.

Updates regarding the Risk Management Framework are reflected in the answers to the respective principles. Furthermore, the disclosure has been slightly adjusted to improve readability and comprehensiveness.

3.0 General background on SIX SIS

3.1 General description of SIX SIS and its services

SIX SIS is the national CSD of the Swiss financial market and an International Central Securities Depository (ICSD), providing complete services for the settlement and custody of national and international securities. It operates one of the worlds few online real-time settlement systems (SECOM) allowing market participants to settle their transactions via a single technical interface.

Domestic Custody

SIX SIS provides its clients comprehensive custody services for the Swiss market. It offers custody services including settlement, issuer services, asset servicing, repo, Swiss fund processing, queries and reporting, and tax services.

With respect to real-time online settlement, SIX SIS covers a range of activities including locked-in processing of stock exchange trades, order matching and settlement of Over the counter (OTC) transactions, real-time status intimations, standing instructions and cash settlement in CHF and foreign currencies in a single comprehensive solution.

International Custody

SIX SIS covers over 66 countries with its cross-border and international custody services. Ranging from direct access to T2S and several European CSDs, to covering all asset classes, as well as its cross-border realignment service and the de-linked account model, SIX SIS can offer international settlement services to its clients.



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Within its international custody services SIX SIS offers its clients beside the cross-border settlement a wide range of services including asset servicing, cash management, integrated exchange and settlement services as well as advanced tax services.

With respect to asset pricing, SIX SIS provides information management and processing through to rights trading, instruction flow and deadline management, to market claims, proxy voting and market information management. Its cash management services support SIX SIS's clients in Foreign Exchange (FX) conversions, payment management, reporting or five-day cash planning through a single-account approach to cross-border payments.

Securities Finance

SIX SIS operates a real-time integrated securities finance offering via its multi-faced electronic trading facility CO:RE (Collateral & Repo). It brings together trading and collateral management capabilities in a fully integrated value chain starting from trading through settlement and finally collateralization at the CSD or custodian level. Central bank and commercial bank money are both available as well as access to the SNB's primary market for the issuance of money market instruments.

Repo – Repurchase Agreements (Repo)

SIX SIS is the exclusive provider of repo services for the SNB, including General Collateral (GC), multicurrency, special and special- rate repos in its repo product portfolio. The repo transaction (Repo) is the most important type of transaction between banks and the SNB. The SNB buys securities from a commercial bank and when purchasing them, agrees that the bank will repurchase the securities later on. This enables the bank to receive liquidity from the SNB. The SNB demands interest on this loan, which is known as repo interest. SIX SIS, as the sole provider of this service for Switzerland, provides an optimal platform for this type of transaction. SIX SIS offers the automated settlement of repo transactions. As repos are traded and settled via the proven Swiss Value Chain (SIX Repo AG – SIX SIS – SNB), straight-through processing is guaranteed. Settlement is effected on a trade-by-trade basis and is irrevocable. In addition to CHF repo transactions, it is also possible to carry out repo transactions in EUR, USD, CAD, JPY, AUD, NZD, SEK, NOK, DKK, HUF, CZK and PLN.

For the term of a repo transaction, SIX SIS provides comprehensive and fully automated risk management. All outstanding debts and liabilities are assessed several times a day to offset any net exposures by automatically carrying out a margin transfer. This provides a maximum level of risk mitigation.

In principle, SIX SIS's client may use all securities deposited with SIX SIS for repo trading. SIX SIS also offers a general collateral selection mechanism (GCselect), through which the system can identify and automatically assign repo collateral securities of a specified quality that have been released for repo trading.



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Securities Lending (SecLend)

SIX SIS’s securities lending (SecLend) product enables bilateral and CCP trading. Playing the role of collateral administrator for all parties to a transaction, SIX SIS also acts as the primary settlement service provider. SecLend is fully automated – right from the trade all the way through to settlement. With SecLend, settlement risks are largely eliminated thanks to delivery-versus-delivery (DVD) settlement in real time. This opens up lending opportunities, offering new sources of income and attractive business possibilities, while ensuring the lowest possible operating risks.

Collateral Secured Instruments (COSI)

To minimize the risk associated with the insolvency of an issuer of bearer debt instruments, SIX SIS offers the collateralization of certificates. COSI services are provided in association with SIX Swiss Exchange Ltd, offering clients coverage for the default risk of the issuer. SIX SIS is able to offer this service as a means to offset any risk of issuer insolvency a party may face when acquiring non-collateralized instruments. With COSI, SIX SIS assumes the responsibility for collateral management with respect to collateral-secured instruments.

Securities Lending & Borrowing (SLB)

SIX SIS’s settlement-fails-driven offering, SLB, automatically draws assets from a centralized lending pool. The assets to be used exist in a special safe custody account of the lender – this ensures that there is never a shortfall in securities and that trades settle on time. Settlement-driven SLB is a popular service offered by SIX SIS, where clients act as either lenders or borrowers. The positions agreed for securities lending are transferred to a separate lending account, from which SIX SIS creates a virtual lending pool. Clients with short positions can then borrow the securities they require for settlement from this pool. As the principal, SIX SIS acts for its own account. It borrows the securities provided by the lender and passes them immediately on to the borrower. SIX SIS’s Securities Lending & Borrowing offering is particularly attractive in that 60% of the lending fees charged to the borrower are then passed on to the lender for a profit. Although ownership of the securities is transferred from the lender to the borrower for the period of the loan, the lender remains the beneficial owner. This means that all rights and income accruing from the securities are credited to the lender. SIX SIS ensures that the corresponding compensation payments are automatically passed on from the borrower to the lender.

Triparty Collateral Management (TCM)

Featuring real-time exposure coverage and collateral substitution, as well as full integration with other securities financing products, SIX SIS’s TCM offering can be used to define a range of criteria for a client’s specific collateral requirements. Once done, the rest is automatic – including matching for all parties – and features straight-through processing. With TCM, SIX SIS assumes responsibility for administering



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exposures and collateralizing them using assets of the same value (securities and cash). All pledged collateral positions are administered by SIX SIS acting as the pledge holder for the parties. The exposure is constantly checked to ensure it is covered by sufficient collateral. If there is a shortfall against the exposure, valid collateral is automatically drawn from the pool account of the collateral provider and transferred to the TCM account where the collateral is deposited. If there is excess coverage, collateral is booked back into the pool account.

3.2 General organization of SIX SIS

SIX SIS governance

SIX SIS is a company incorporated under Swiss Law. Its governance structure consists of a Management Committee (Chair: SIX SIS Chief Executive Officer/CEO) and a Board of Directors (BoD). The BoD comprises two representatives of the SIX Executive Board – herein representing the integration of SIX SIS within the SIX management organisation and its embedment into the business unit “Securities & Exchanges” - , the SIX Chief Financial Officer (CFO) and at minimum two further independent members. The tasks of the BoD arise from the law (e.g. code of obligations), the Articles of Incorporation, the Competency Rules and specific regulations for SIX SIS, in particular the Financial Market Infrastructure Act (FMIA). The CEO of SIX SIS is member of the Securities & Exchanges Executive Board and primarily responsible for managing the business unit within the framework of the Group’s strategy as well as the specifications of the SIX BoD and the ExB.

SIX SIS, as is the case for all units of SIX, has established high standards of professional conduct that direct its ongoing activities. These standards are formalized in the form of policies and procedures applicable to employees, senior management and directors.

SIX SIS is transparent on its financial performance, governance structures, relying on media releases and the regular publication of financial statements. All relevant information is found on the website of SIX and SIX Securities Services.

Wherever possible, SIX SIS uses the services of other affiliated companies of SIX.

SIX SIS outsources the operation and maintenance of its data center to SIX Group Services Ltd (SIX Group Services). This outsourcing arrangement is governed by service level agreements (SLA) in compliance with FINMA regulations. Staff members of SIX Group Services are required to maintain banking secrecy.

Risk Framework

A “three lines of defense” governance model forms the basis of the risk governance framework. The SIX-wide standardized framework combined with the integrated risk management organization regulates the positioning of the Risk Management function



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in accordance with “Disclosure framework and Assessment methodology”, December 2012 at SIX and systematically defines responsibilities, methods, processes and reporting of the risks faced by SIX.

Senior executives of SIX SIS, as the first line of defense, are accountable for managing the specific risks faced by business management. They maintain effective processes and manage their risk properly, including comprehensive controls and documented procedures.

The second line of defense is a Group-wide unified organization consisting of a central Risk Management function headed up by the Chief Risk Officer (CRO), together with dedicated SIX Securities Services Risk Management teams. The functionally structured central Risk Management teams deal with financial and non-financial risks, Group-wide risk reporting, risk analysis and the central insurance portfolio. In addition, the risk management teams in the business areas address the business-specific risks in each area. Primary risks within SIX SIS include strategic and business risks, reputational risks, operational risks, credit risks (counterparty risks, default risks), liquidity risks, market risks, interest rate risks and foreign exchange (FX) risks.

The BoD and the internal and external auditors constitute the third line of defense. They are responsible for independently monitoring and controlling this risk management organization and the risks faces by the companies of SIX.

Further details can be found in the annual reports.

Risk policy

The scope of SIX SIS’s risk policy is determined by the risk policy of SIX, in which the principles and philosophy applied to various risks are set out. The risk policy precisely defines the organization, structures, competencies and responsibilities and provides the basis for dealing with different kinds of risk as well as outlining the readiness to assume risk. The risk policy constitutes the central framework for regulations and directives of the individual companies and for the risk categories.

Risk appetite

The Group-wide framework for risk management at SIX clearly defines the risk appetite of SIX and its business areas such as SIX SIS. The risk management concept sets limits for risk appetite and risk tolerance within the organization, monitors compliance with the defined thresholds and shows how the company’s risk profile changes over time.

3.3 Legal and regulatory framework

SIX SIS as the Swiss CSD has to comply with the following regulatory and supervisory structures, thereby providing a high degree of legal certainty.

SIX SIS is authorized as a systemically important Financial market infrastructure (FMI) by the Swiss Financial Market Supervisory Authority (FINMA) and is subject to the



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Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (Financial Market Infrastructure Act, FMIA) and the corresponding ordinance on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading (Financial Market Infrastructure Ordinance, FMIO).

In addition to the aforementioned regulation and supervision by FINMA, SIX SIS, being a systemically important FMI, is also according to art. 83 (1) FMIA subject to oversight by the SNB. The SNB-relevant regulation is outlined in the National Bank ordinance (NBO), stating various minimum requirements SIX SIS has to comply with (art. 21a (2) NBO), e.g. regarding the contractual framework (art. 23 NBO). The latter defines, among other things:

- the participation requirements as well as the criteria for the suspension and exclusion of a participant;
- the rights and obligations of SIX SIS and its participants;
- the rules and procedures for operation;
- the rules and procedures in the event of a participant’s default; and
- the reciprocal rights and obligations arising from links with other FMIs: links to other CSDs and foreign sub-custodians.

The custody of certificated and uncertificated securities by custodians and their transfer is regulated by the Swiss Federal Intermediated Securities Act (FISA), ensuring also the protection of property rights of investors (art. 1 FISA).

Relevant jurisdictions:

The most relevant legal jurisdiction of SIX SIS’ activities is Switzerland. Whenever possible, SIX SIS concludes agreements under Swiss law. Where connections with foreign parties or foreign securities exist and foreign jurisdictions and the respective laws might be applicable, SIX SIS seeks, where necessary, advice from local external lawyers to assess the legal risks and measures for mitigation.

4.0 Principle-by-principle summary narrative disclosure

4.1 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.



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4.1.1 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.

SIX SIS is a Swiss company and as such organized and regulated primarily in accordance with Swiss law. It is an authorized Financial Market Infrastructure (FMI) and mainly regulated by the Financial Market Infrastructure Act (FMIA) and the respective ordinance (FMIO). According to art. 83 (1) FMIA SIX SIS is supervised by the Swiss Financial Market Supervisory Authority (FINMA) and due to its systemic importance in Switzerland also subject to oversight by the Swiss National Bank (SNB). The SNB-relevant regulation is outlined in the NBO. FMIA as well as FMIO and NBO state various requirements SIX SIS has to comply with. E.g. art. 23 NBO defines requirements regarding the contractual framework that have been implemented by SIX SIS as follows:

- the participation requirements as well as the criteria for the suspension and exclusion of a participant are governed by art. 1 seq. General Terms and Conditions of SIX SIS (GTC SIX SIS), which are published on the website of SIX SIS;
- the rights and obligations of SIX SIS and its participants are primarily defined in the service contracts, further individual agreements and the GTC SIX SIS;
- the rules and procedures for operation are reflected in the overall body of rules of SIX SIS. The primary operative rules are listed under the definition of “Rules and Regulation” in art. 10 GTC SIX SIS;
- the rules and procedures in the event of a participant’s default are defined in art. 2 GTC SIX SIS. A distinction must be made between cases where a termination of participation is mandatory and cases where SIX SIS has a certain discretion;
- the reciprocal rights and obligations arising from links with other financial market infrastructures: links to other CSDs and foreign sub-custodians e.g. have to fulfil clear legal and operative criteria. There are also other links, for instance to central counterparties (CCPs) and trading platforms.

SIX SIS regularly reviews the effectiveness and enforceability of the aforementioned contractual framework in all relevant jurisdictions and takes the necessary measures to limit any legal risks (see art. 23 (2) NBO).

Regarding settlement finality please refer to Principle 8.

Apart from the aforementioned relevant FINMA regulation as a first element and regulation in connection with the SNB as a second element, there is, as a third element, the regulation of certificated and uncertificated securities, which is important for a Swiss CSD. The custody of certificated and uncertificated securities by custodians and their transfer is regulated by the Swiss Federal Intermediated Securities Act (FISA), which also ensures the protection of property rights of investors (art. 1 FISA).

The immobilization or dematerialization of securities and the transfer of securities by book entry is governed by FISA, in particular art. 6 seqq. FISA. SIX SIS is bound by such cogent legislation. The GTC SIX SIS are in line with FISA. The creation, conversion, and extinction of intermediated securities at SIX SIS and the disposition of securities positions are governed in more detail by art. 23 seqq. and art. 34a seqq. GTC SIX SIS.

Under this mainly three-folded robust regulation, SIX SIS may hold deposits in cash and financial instruments on behalf of its participants and extend credit to its participants as well as provide further services in connection with settlement and custody.



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The legal basis should provide a high degree of certainty for each material aspect of an FMI’s activities in all relevant jurisdictions.

Relevant jurisdictions:

The most relevant legal jurisdiction of SIX SIS activities is Switzerland. Whenever possible, SIX SIS concludes agreements under Swiss law. However, if – from a Swiss perspective – connections with foreign parties or foreign securities exist, it may be the case that foreign jurisdictions have to be considered as well and their laws might be applicable. In such constellations, SIX SIS seeks, where necessary, advice from local external lawyers to get a better understanding of possible legal risks and possible measures for mitigation.

4.1.2 Key Consideration 2

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

SIX SIS ensures that its rules, procedures and contractual arrangements are clear, comprehensive, in writing and in compliance with Swiss as well as all other applicable regulatory and supervisory requirements. It is in constant ongoing contact with its regulators. For instance, the regulators may examine the legal structures of a service or SIX SIS may want to discuss the implementation / alteration of a service before it comes into effect. In addition, internal and external audit may review the rules and regulation of SIX SIS.

SIX SIS’s compliance function has the responsibility to detect any risk of non-compliance with the obligations under relevant regulation by SIX SIS and its employees.

SIX SIS’s rules, procedures, contractual arrangements, and any accompanying material are accurate and up-to-date. Where certain expertise or technical means are not available internally, they may be obtained by the involvement of third parties outside SIX.

Certain documents, such as the GTC SIX SIS, are publicly available via the website of SIX SIS; others are available for participants only and can be found in the participant section on the website. The Swiss regulators have access to all documents.

SIX SIS identifies and analyses the soundness of its rules, procedures and contractual arrangements on an ongoing basis.

SIX SIS has adequate rules in place to make amendments to its GTC. Each participant has the right to object to amendments. The steps to be taken after an objection depend on the individual circumstances of the case. Discussions will then take place with the respective participants to get this issue resolved.

4.1.3 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.

Please refer to Key Consideration 1.2.

SIX SIS provides information on its company profile and governance, regulatory framework, products and services, financials and relevant developments/changes on its website.



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4.1.4 Key Consideration 4

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

SIX SIS has rules, procedures, and contracts in place that are enforceable in all relevant jurisdictions. To become a participant of SIX SIS, potential participants have to submit themselves to Swiss law (see art. 12 service contract and art. 49 GTC SIX SIS).

Whenever possible, SIX SIS acts under Swiss law. If, from a Swiss perspective, foreign law is applicable, SIX SIS obtains, where necessary, legal opinions from local lawyers of the relevant jurisdiction (see also Key Consideration 1.1).

4.1.5 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.

A key objective of SIX SIS is to ensure the safety and integrity of financial markets. It is fully aware of the risks arising from any potential conflict of laws across jurisdictions. Subsequently, SIX SIS identifies and mitigates those risks to the extent possible. When SIX SIS receives an indication of potential conflicts of law issues, the identified issues are analyzed. If necessary, SIX SIS contacts local law firms to provide legal opinions and take further steps based on these legal opinions (see also Key Consideration 1.1).

4.2 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.

4.2.1 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.

SIX SIS is incorporated under Swiss Law and is a wholly-owned subsidiary of SIX Securities Services, which itself is a wholly-owned subsidiary of SIX. The latter’s shares are owned by a large number of the users of its services at SIX SIS. The Board of the holding company (SIX) is composed of members drawn from these users. Therefore users’ interests and sensitivities are reflected in the activities of SIX SIS.

The vital interest of the users is manifest by the mandate of the Group BoD. As the Swiss CSD, the settlement of securities transactions as well as the custody and administration of securities are the main focus of SIX SIS. Particularly being a systemically important financial infrastructure for the Swiss market, safety, reliability, stability, and efficiency are essential to these activities of SIX SIS.

In addition, the participants of SIX SIS are involved in various bodies on strategic, operative, and technical levels.



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4.2.2 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 current structure of SIX is presented on its website. SIX SIS's governance requirements are mainly set out in the Swiss Code of Obligations (art. 698 seqq.), FMIA (art. 8), FMIO art. 7 seq. Internal documents such as the Articles of Association and the organizational rules are in line with these regulations. SIX SIS has in place adequate processes for ensuring accountability to all its stakeholders (shareholders, regulators, members and other clients).

Art. 9 (2) FMIA prescribes that the members of the BoD, containing also non-executive directors, and senior management have an impeccable reputation and possess the experience and skills to perform their mandate. FINMA has to give its consent to the members of both bodies (art. 10 (1) FMIO) and has done so.

SIX SIS and SIX publish relevant governance information via media releases and on the website of SIX, including the annual reports with their chapters on organization and responsibilities. SIX SIS publishes essential information within the meaning of art. 19 lit. c FMIO / art. 21 FMIA.

Please refer to the information under Key Consideration 2.1.

4.2.3 Key Consideration 3

The roles and responsibilities of an FMI's BoD (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.

According to art. 716a (1) Swiss Code of Obligations, the BoD has the following non-transferable and inalienable duties:

- the overall management of the company and the issuing of all necessary directives;
- determination of the company's organization;
- the organization of the accounting, financial control and financial planning systems as required for the management of the company;
- the appointment and dismissal of persons entrusted with managing and representing the company;
- overall supervision of the persons entrusted with managing the company, in particular with regard to compliance with the law, articles of association, operational regulations and directives;
- compilation of the annual report, preparation for the general meeting and implementation of its resolutions; and
- notification of the court in the event that the company is over indebted.

Furthermore, the BoD is responsible for an appropriate risk and control environment and an effective Internal control system (ICS). It appoints and monitors the internal audit, commissions the regulatory audit firm and assesses its reports.

According to the articles of association, the management of the business of SIX SIS and the execution of resolutions taken by the BoD are incumbent on the senior management (see art.



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The roles and responsibilities of an FMI's BoD (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.

716a (2), 716b (1) Swiss Code of Obligations).

The members of the BoD and third parties engaged in managing the company's business, e.g., the senior management, must perform their duties with all due diligence and safeguard the interests of the company in good faith (art. 717 (1) Swiss Code of Obligations). Conflicts of interest are to be avoided and can lead to liability claims against the corresponding member of the BoD or senior management (see art. 754 Swiss Code of Obligations). The Legal & Compliance department has to intervene in cases of (potential) conflicts of interest.

SIX SIS has established the following rules and procedural guidelines for its corporate governance and administration:

- Articles of association
- Organizational rules
- Order of competences
- Intercompany and Service level agreements (SLAs) with SIX Group Services Ltd, SIX Securities Services and SIX x-clear

In general SIX has established high standards of professional conduct which shall direct the ongoing activities of its units. These standards are formalized in the Group Code of conduct and in various policies and procedures applicable to directors, senior management and employees across the Group. The BoD of SIX SIS has its performance regularly assessed by external audit (see art. 8 (3) FMIO).

4.2.4

Key Consideration 4

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

According to art. 698 sec 2 (2) Swiss code of obligations, the shareholders' meeting, i.e. the representative of SIX as the sole shareholder, appoints the member of the BoD of SIX SIS. Currently it consists of five members, of which three are representatives of SIX and two are non-executive, external persons who are not employed by a company of SIX but represent the customers' side. Therefore, users' interests and sensitivities are duly reflected in the management of SIX SIS.

As mentioned under Key Consideration 2.2, art. 9 (2) FMIA prescribes that the members of the BoD, containing also non-executive directors, and senior management members have an impeccable reputation and possess the experience and skills to perform their mandate. Additionally, they need to provide the guarantee of irreproachable business conduct (art. 9 (1) FMIA) and FINMA has to give its consent to the members of both bodies (art. 10 (1) FMIO) and has done so.

See the SIX SIS Annual Report 2018 for more details.



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4.2.5 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.

As outlined in Key Consideration 4.2.4, the management of SIX SIS is in full compliance with the Swiss law, especially regarding the guarantee of irreproachable business conduct and the reputation and qualifications needed for the respective function. SIX SIS operates under a two-tiered structure comprising a BOD and a senior management. The senior management reports directly to the BoD. A CEO has been appointed by the BoD and is the chairman of the senior management.

According to the articles of association, the management of the business of SIX SIS and the execution of resolutions taken by the BoD are incumbent on the senior management (see art. 716a (2), 716b (1) Swiss Code of Obligations).

The members of the BoD and third parties engaged in managing the company's business, e.g., the senior management, must perform their duties with all due diligence and safeguard the interests of the company in good faith (art. 717 (1) Swiss Code of Obligations).

4.2.6 Key Consideration 6

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

Risk management

The normative, methodical and organizational principles of the risk policy are governed on the level of SIX. The risk management of SIX is executed in line with this policy. The responsibility for risk control is also set up at SIX level and executed by the CRO of SIX. He/she reports regularly to the BoD, in particular to its Risk committee and the senior management of SIX.

The BoD of SIX regulates the basic principles of risk management. It approves the plans provided for in art. 24 seq. FMIO in conjunction with art. 24 FMIA as well as the business continuity strategy in accordance with art. 32b (4) NBO. The board approved and enacted the following rulebooks and plans:

- Risk policy of SIX
- Integrated risk management SIX
- Group directive “Competences and tasks of Legal & Compliance”
- Regulation of Internal Audit of SIX

The integrated risk management approach is organized along three lines of defense:

- The first line of defense is represented by the business, incl. operational risk units, which are the owners of the risks and are responsible for managing the risks on a day-to-day basis.
- The second line of defense is comprised of the Risk Management unit on SIX level, which are responsible for defining systems, processes, standards and controls. They serve as an independent control of processes and systems and challenge and check risk assessments and control definitions.
- The third line of defense is exercised through Internal and External Audit, which report



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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.

directly to the BoD. Internal and External Audit are responsible for an assessment of the adequacy and effectiveness of the ICS.

Internal control system (ICS)

The ICS which, inter alia, ensures compliance with statutory, regulatory and internal company rules and regulations is based on systematic risk analysis. It documents all business-relevant processes, risks, systems and controls. It ensures that all identified risks are controlled according to the defined risk appetite and the defined risk tolerance and consequently are eliminated or are at least mitigated.

The tasks in connection with internal controls are executed by the following bodies:

- BoD of SIX SIS (see above)
- Senior management of SIX SIS (see above). The senior management prepares half-year reports for the BoD and, if necessary, provides information to it on an ad hoc basis.
- Compliance – for reasons of independence, the Compliance function has been delegated to the Compliance department run by SIX Group Services, another company of SIX. They ensure that internal rules and proceedings are in accordance with regulatory requirements and that management and employees are informed and adhere to these rules. In case of infringements or conflicts, Compliance intervenes and supports management in solving the situation. Compliance maintains an inventory of legal and regulatory risks.
- Internal audit at SIX is independent from the senior management of SIX SIS and reports directly to the Chairman and the Risk Committee of the BoD of SIX. It is equipped with sufficient resources and has an unlimited right of review as well as unrestricted access to all documentation, data carriers and information processing systems (see art. 9 (6) FMIO). The internal audit team cooperates with external audit. There is a coordinated schedule for the audits, audit reports are exchanged and, if necessary, ad hoc notifications of special findings are made.

SIX's internal control functions have qualified personnel and sufficient resources to fulfil their tasks. Compliance and Internal Audit have an unlimited right of review and unrestricted access to all documentation, data carriers, and information processing systems in accordance with requirements of statutory law and best practice. Internal Audit coordinates (audit schedule) and shares its work (reports and ad hoc findings) with the external auditors. It takes a risk-based approach in defining specific areas to be audited.

4.2.7 **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.

SIX SIS is an affiliate company of SIX. The latter's shares are owned by a majority of its users of the services of SIX SIS. The Board of the holding company (SIX) is composed of members drawn from these users. Therefore users' interests and sensitivities are reflected in the activities of



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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.

SIX SIS.

SIX SIS continuously enhances its products and services in line with client requirements and market opportunities. The participants of SIX SIS are involved in various bodies on strategic, operative and technical levels. In addition, SIX SIS is part of various working groups such as the Swiss Security Post-Trade Council (SWISS SPTC), Swiss Commission for Financial Standardization (SCFS), Swiss Bankers Association, International Capital Market Association (ICMA) and various bodies related to T2S. SIX SIS has mechanisms in place that allow participants’ needs with regard to services provided by it to be surveyed (see art. 8 (5) FMIO).

Major decisions or changes to the regulatory framework are communicated to

- owners (user shareholders) through the "Notice to Shareholders" for the annual general meeting and for each extraordinary general meeting. They are communicated to the users (participants) via the commercial account officers and through various publications (i.e. newsletters).
- to the public via media releases and publication on the public part of the website of SIX SIS and/or the website of SIX; and to participants via messages and/or publication on the member section of the website of SIX SIS.

4.3 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.

4.3.1 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.

SIX has a risk appetite framework creating the strategic, organizational, methodological and behavioral framework for managing risk. The risk appetite framework contains the main statements of the SIX risk strategy, which are then further specified with the help of appropriate metrics and consistently operationalized through respective limits.

Furthermore, there is a central risk policy defining the types of risk specific to SIX, the SIX risk management principles and the governance applying to the management of those risks. SIX SIS follows the model of Three Lines of Defense as governance framework to ensure an effective management of its risks.

In its capacity as a settlement agent, SIX SIS is exposed to credit risk, market risk, and liquidity risk arising out of its product and service offering. Operational risks, business risks, and strategic risks are also borne and managed by SIX SIS. Further information regarding the different risk types can be found in the respective answers to Principles 4, 5, 7, 15 and 17.

The operative credit risk management is embedded in the in-house developed SECOM system, which ensures that exposures are only taken up to the maximum approved limits per counterparty. Overstepping needs prior approval according to the competency regulations and



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can only be entered into the system under a four-eye principle. While limits are defined on entity level, SECOM also provides an aggregated view over several entities which form part of a larger financial group.

In respect of liquidity and market risk, the policies and procedures of SIX SIS ensure the availability of sufficient liquid resources to cover all payment obligations when they fall due in the respective currency on a day-to-day basis as well as under extreme but plausible market conditions, and, on the other hand, to prudently manage SIX SIS’s exposures to movements in FX rates, interest rates and security prices.

Reporting processes are aligned with the risk appetite statement. This creates a transparent information basis for business decisions.

The primary responsibility for risk management policies lies with the BoD of SIX which approves the risk policies and (central) directives and ensures that procedures and systems are implemented. The BoD is informed through regular reporting.

Risk management policies are reviewed on a regular basis, at least once a year, and updated as necessary. The effectiveness of the risk management procedures is assessed through regular tests and controls, for example, the default management test. Risk methodologies and risk parameters are regularly assessed.

4.3.2

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.

SIX SIS enables participants to manage and contain their risks through online access to the SECOM system with a suite of reports available to monitor exposures and collateral. Participants are able to monitor, manage and reduce the risk they pose to SIX SIS through extensive real-time information about settlement transactions, cash and securities positions, credit facilities available as well as the value of collateral available to secure credit lines.

Documentation and on-site training encourages SIX SIS’s participants to use the online access to SECOM and thereby manage risk in the best way possible.

Moreover, SIX SIS provides risk incentives to the participants in the following ways:

- Collateral requirements of the participants are directly proportionate to exposures (credit limit utilizations) brought to SIX SIS
- Credit limits are granted to the participants based on a risk equivalent methodology assigning a conservative loss assumption (“risk equivalent”) to each credit exposure type. I.e. the amount of credit granted to a participant differs in respect of the credit exposure type chosen by the participant.
- The aggregated amount of limits and oversteppings granted to a given participant depends on the credit worthiness of the respective participant (as expressed by its credit rating) as well as its financial capacity (reflected in the level of Tier 1 capital).
- Collateral haircuts and hence the level of collateralization (in market values) through the participants depends on the quality of the collateral provided by the participants.



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4.3.3 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.

SIX SIS continuously assesses the legal, credit, liquidity, general business and operational risks that it bears and poses to other entities. In particular, SIX SIS ensures that credit exposures from all participants are adequately collateralized, and applies a risk-based approach to managing its risks.

Pro-cyclical effects are considered by conservatively defined collateral haircuts, hence avoiding the collateral values becoming inadequate in periods of market volatility and creating an additional buffer for participants.

The risk management tools used to measure, monitor and manage risks from interdependencies also include liquidity risk-management techniques, business continuity arrangements that allow for rapid recovery and resumption of critical operations and services in the event of disruptions as well as a recovery and orderly wind-down plan.

SIX SIS creates direct settlement links to an increasing number of other FMIs in order to reduce risks from cross-border settlements.

4.3.4 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.

In line with art. 14 FMIO in conjunction with art. 13 FMIA and art. 32b NBO SIX SIS annually makes a dependency risk analysis and defines threshold values for recovery indicators which set out the recovery objectives for the business processes that are necessary for operations. In its recovery plan, SIX SIS assessed various stress scenarios, going beyond the stress scenarios applied in business-as-usual risk management, specifically targeting risk indicators with respect to regulatory capital (e.g. fulfilment ratio) and liquidity (e.g. stressed liquidity balance of SIX SIS and SIX Securities Services). In addition to the SIX SIS specific stress scenarios like the default of a placement bank or a custodian, the impact of cybercrime, the sequential default of several mid-sized banks or the simultaneous default of major clients of SIX SIS and SIX x-clear as a combined SIX Securities Services scenario were analysed.

The goal of the recovery plan is to ensure the continued service of critical operations in the event of financial resources falling close to being depleted or its viability otherwise being threatened. The recovery strategy shall therefore contribute towards maintaining the operations of systemically important services for the Swiss financial market. It comprise several recovery options, which allow SIX SIS to recover from potential severe crisis scenarios. Options foreseen by the recovery plan like rise of equity by SIX or third parties, suspension of dividends, cost reductions, increase of fees and reduction of risk weighted assets through reverse repos as well as allocation of losses to the participants etc. effect the strengthening of SIX SIS capital. Other recovery options such as the cancellation of customer credit lines and the stopping of pre-financing corporate actions assist to cover a liquidity shortfall.



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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.

The recovery plan is reviewed and submitted to FINMA on a regular basis (art. 13 FMIA / art. 14 FMIO).

4.4 Principle 4: Credit risk

An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.

4.4.1 Key Consideration 1

An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

The Credit Risk Framework contains the policies and guidelines that set the general framework applicable to the extension of credit or entering into counterparty risk at SIX SIS. Together with the work procedures, it covers all existing policies and procedures that exist to govern the processes of limit applications, counterparty risk assessments, rating assignments, credit approvals or the monitoring of counterparty risks.

Every participant with credit limits is subject to an initial credit risk assessment and rating assignment as well as a periodic review. No credit limits are granted without a prior risk assessment and rating assignment. The Credit Risk Framework adopts a risk-based approach, whereby the frequency of the regular review depends on the level of credit risk a counterparty poses to SIX SIS. Besides the regular review, the credit risk of a given exposure is monitored on an ongoing basis to ensure that events with a detrimental effect on the counterparty’s ability to meet its financial obligations towards SIX SIS are detected early.

Generally, any short-term interim financing at SIX SIS is fully collateralized by cash or marketable securities. Any credit extension is assessed and approved by an authority independent from the risk manager preparing the credit application, whereby the approval system is governed by an escalating hierarchy of approval authorities depending on the level of credit exposure.



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An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

A four-eyes principle is applied throughout the credit extension process. All credit limits granted by SIX SIS are monitored to ensure that the risk profile is still in line with SIX SIS' s risk appetite. The monitoring procedures applied depend on the level of credit risk posed to SIX SIS by the participant. The credit risk policy as well as the principles and work procedures governing the credit risk framework have been approved by the respective bodies, including the risk committee of the supervisory board.

4.4.2 Key Consideration 2

An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.

SIX SIS's lending activities are limited to extremely short-term interim finance (one business day) of cash or securities with the sole purpose of ensuring the efficient processing of transactions where SIX SIS faces a credit risk resulting from the failure of a participant to meet its obligation to repay the advance as contractually agreed. In order to mitigate this risk, SIX SIS grants credit limits for settlement purposes only against a pledge of collateral in the form of cash or high quality marketable securities.

SIX SIS performs treasury activities with a selected number of financial institutions. Although criteria for the selection of credit counterparties are strict, the treasury activities imply counterparty risk, which arises where the treasury department:

- performs overnight money market placements to earn interest income overnight;
- enters forex transactions to convert foreign currency payments in the spot market; or performs repo transactions with other banks to either invest excess cash against collateral or obtain securities it may need to meet collateral requirements.

Forex or placement limits are managed on an uncollateralized basis and are assumed to carry the full default risk of the respective counterparty. The counterparty risk is mitigated by requiring a high-grade minimum rating, but also by applying a nominal exposure limit. Counterparty risk resulting from repo transactions is mitigated through highly liquid and highly rated securities provided by the cash taker.

The credit risk framework includes a risk equivalent approach, whereby the primary metric used in measuring credit exposure to a counterparty is a conservative estimate of the amount of credit loss that might occur in the event of a default of the counterparty after considering collateral and other factors that would mitigate the size of the loss.

The credit exposure is measured and monitored on a real-time basis by the automated credit facility system SECOM. The revaluation of the collateral is performed at least daily. In addition, various stress tests are performed by the Risk Management System (RMS), considering the movements of the collateral values under numerous stress scenarios.

SIX SIS has adopted a risk-based monitoring process for its participants, involving among others daily CDS spread monitoring as well as ongoing rating change alerts for the counterparties and the relevant countries of incorporation.

SIX SIS operates a real-time gross settlement system (RTGS). A Delivery-versus-Payment (DVP) mechanism is offered for payments in Swiss francs processed through the participants' Swiss Interbank Clearing (SIC) account. The credit risk for such transactions is eliminated because a



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An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.

transaction cannot be processed if the account is not funded. In the cross-border business and for participants who use the SIX SIS SIC account, SIX SIS offers trade pre-financing. These services are offered only on a covered basis. For cross-border trades, securities, the received securities (RVP) or funds (DVP) which are to be credited to the participants’ accounts in return for the pre-advanced leg of the transaction by SIX SIS are held in a suspense account in favor of SIX SIS. Any potential exposure is also covered by collateral, which is subject to conservative haircuts. In addition, according to the GTC of SIX SIS, SIX SIS is entitled to a lien and foreclosure on all securities held in custody or booked for the participant as the participant’s own holdings.

4.4.3 Key Consideration 3

A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.

SIX SIS does not operate a DNS payment system and is not exposed to any other credit risk not already described in Key Consideration 4.2.

4.4.4 Key Consideration 4

A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.

Key Consideration 4.4 is not applicable to SIX SIS because it is not a CCP.



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4.4.5 **Key Consideration 5**

A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP's required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP's participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.

Key Consideration 4.5 is not applicable to SIX SIS because it is not a CCP.

4.4.6 **Key Consideration 6**

In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.

Key Consideration 4.6 is not applicable to SIX SIS because it is not a CCP.

4.4.7 **Key Consideration 7**

An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.

SIX SIS has developed comprehensive default management procedures, which ensure that SIX SIS can continue to operate and meet its obligations to non-defaulting participants in the event of a participant's default.

Generally, the risk that SIX SIS faces through substantial credit losses as a result of a participant default is minimized by the fact that any credit lines granted are provided on a covered basis (with the exception of uncovered treasury activities). In case of a default of a treasury counterparty, the resulting credit losses have to be borne by SIX SIS. In such a case, the credit risk is mitigated by high-grade minimum rating requirements and conservative nominal limits limited in size in relation to SIX SIS's capital.



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4.5 Principle 5: Collateral

An FMI that requires collateral to manage its or its participants’ credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

4.5.1 Key Consideration 1

An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

The acceptance of a specific asset as collateral is governed by the lending norms of SIX SIS. In principle, SIX SIS only accepts collateral in the form of cash in highly liquid currencies (CHF, EUR, GBP, USD, NOK, DKK, SEK) and securities mentioned in the list of collateral eligible for SNB repos (SNB GC basket). Such securities fulfil stringent requirements with regard to credit rating and liquidity.

To avoid wrong-way-risk, commercial bank guarantees and any security of which the issuer is a bank or other credit institution is in principle not accepted as collateral. However, bonds issued by supranational banks or development banks as well as covered bonds that have a low default correlation with the issuing bank may on a case-by-case basis be accepted as collateral. Moreover, SIX SIS does not allow its members to provide their own issues as collateral. The lending norms of SIX SIS provide further details on eligible collateral and haircuts. They are reviewed at least annually and more often in volatile markets.

Collateral assets are considered at their lending value (market value minus a conservative haircut according to the collateral type). SIX SIS has the right to recall the collateral eligibility of any single asset at any time even though the respective asset belongs to a generally eligible collateral type.

To ensure sufficient diversification of the collateral and thus allow its liquidation without significant market impact, SIX SIS has established maximum concentration limits with regard to the issue volume of bonds.

4.5.2 Key Consideration 2

An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

SIX SIS performs multiple daily revaluations (mark-to-market) of its collateral.

SIX SIS has the discretion to decide which assets may be deposited as collateral and that certain assets may be excluded as collateral. So when – in the opinion of SIX SIS – market prices do not represent the true value of the respective collateral, SIX SIS is authorized to declare such assets as non-eligible or to set higher haircuts for them. SIX SIS has the right to change its haircuts at any time and with immediate effect.

The haircuts of SIX SIS are conservative in relation to the estimated liquidation period. Before setting forth the haircuts in the lending norms, they are validated using a Value at Risk (VaR) model that also uses stressed observations in the lookback period. Hence, they take into account stressed market conditions.

The haircuts of SIX SIS are validated on a monthly basis using risk-factor-based Monte Carlo



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An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

simulations and stress tests. The validation technique takes into account the prevailing volatilities and correlations between the risk factors. It further reflects the residual intrinsic risk of the collateral securities. The objective of such validation is to test whether the haircuts applied by SIX SIS are sufficient to withstand the default of any participant on a 99% confidence level considering stressed market conditions in the look-back-period as well as potential market illiquidity. Besides Value at Risk, the haircut validation applies a couple of historical bond stress scenarios.

SIX SIS’s haircut procedures are subject to periodical reviews.

4.5.3 Key Consideration 3

In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.

The haircuts of SIX SIS consider stressed market conditions and are oriented towards the standard supervisory haircuts determined by FINMA in margin nos. 208-211 of the Circular 2017/7 Credit risk – banks. These regulatory haircuts suppose a holding period of 10 days which corresponds to a conservative assumption regarding the liquidity of SNB GC collateral. However, SIX SIS has put in place an even more conservative haircut regime in order to reduce the need for procyclical adjustments.

Before setting forth the haircuts in the lending norms, they are validated using a Value at Risk (VaR) model that also uses stressed observations in the lookback period.

The potential procyclicality of the haircuts is evaluated by means of the regular haircut validation. The results of these validations have shown that the haircuts of SIX SIS are very conservative so that the issue of procyclicality is avoided.

4.5.4 Key Consideration 4

An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.

Concentration risk in the collateral portfolios of all SIX SIS participants is measured by the liquidity adjustment of the VaR, which is used to back test the collateral positions of all participants.

In order to ensure that the collateral of SIX SIS remains sufficiently diversified to allow its liquidation without a significant market impact, SIX SIS has established issue-specific maximum concentration limits. Such concentration limits are applicable for all bond collaterals. They are based on the face value of a bond and set as a percentage of the respective issue size (total issued capital).

Collateral exceeding a concentration limit has to be replaced by the respective participant such that the concentration limit is met after the replacement.

The risk policies and procedures applicable to SIX SIS, including those for collateral management, are regularly reviewed.



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4.5.5 Key Consideration 5

An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.

In relation to cross-border collateral, SIX SIS is exposed to market risk, country risk, issuer risk and legal risk. The collateral of SIX SIS participants are directly held at SIX SIS. However, SIX SIS accepts collateral denominated in foreign currencies or collateral whose issuer is established abroad.

According to its lending norms, SIX SIS only accepts securities denominated in jurisdictions with low country risks. In addition there is no obstacle to the availability and the timely currency conversion of the collateral. The potential foreign-exchange risk of collateral positions is taken into account through the application of adequate haircut increments.

SIX SIS and SIX x-clear have defined high standards when it comes to the choice of their sub-custodians. As part of the risk assessment SIX performs a financial analysis by use of a risk scorecard to determine a credit rating. As a minimum selection criterion, a custodian has to have a minimum credit rating of A-.

While a detailed risk assessment is performed for all new custodian relationships, SIX applies a risk-based approach when reviewing the risk profile of existing sub-custodians. For this purpose, each sub-custodian is allocated to one of two exposure categories A (low exposure) or B (high exposure). The classification ensures that sub-custodians with higher exposure for SIX are reviewed and monitored more frequently in order to ensure that any evolving risks are identified at an early stage.

4.5.6 Key Consideration 6

An FMI should use a collateral management system that is well-designed and operationally flexible.

Collateral management system design

The scope of the collateral management system of SIX SIS comprises the connection to participants and external collateral locations, the assessment of collateral in relation to acceptance criteria, the deposit and substitution of collateral, the application of concentration limits, the automated computation and validation of collateral requirements, collateral valuation, and collateral inadequacy notices. Furthermore, the collateral management system tracks the extent of reuse of collateral (both cash and non-cash).

Operational flexibility

The monitoring and management of collateral positions is conducted in real time by the processing system (SECOM), the functionality of which accommodates the timely deposit, withdrawal, substitution, and liquidation of collateral.

The collateral management is monitored by Risk Management Operations, whose staffing levels are regarded as adequate even in times of market stress.

4.6 Principle 6: Margin

A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

Principle 6 does not apply to SIX SIS because it is not a CCP.



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4.7 Principle 7: Liquidity risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

4.7.1 Key Consideration 1

An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

SIX SIS manages its liquidity risks according to its liquidity concept, which determines the procedures and tools to identify, measure and manage liquidity risks. The liquidity concept defines relevant liquidity risks, available resources, monitoring tools and escalation procedures in case of liquidity stress phases including the default of the two member groups causing the largest payment obligation for SIX SIS.

Liquid resources and liquidity demands are measured and monitored on a daily basis through SECOM and by a liquidity risk module. The monitoring comprises all nostro positions at sub-custodians and cash correspondent banks in all currencies, liquid securities collateral as well as the prospective liquidity demand arising from securities settlements. SIX SIS also monitors all vostro positions from its participants including cash collateral placements in all currencies. SIX SIS applies conservative haircuts on the liquidity positions in order to account for liquidity outflows in stress scenarios. The resulting liquidity position is monitored on a daily basis and measured against a pre-defined risk appetite limit and risk tolerance limit in order to be able to always have sufficient liquidity available to effect payments when due.

The selection of liquidity stress scenarios is not only based on the regulatory requirements, as stated in Principle 7 PFMI and Art. 29 NBO, but also on a risk inventory that aims to provide a systematic and consistent reflection of the external counterparties the default of whom may potentially impose liquidity risks on SIX SIS.

Liquidity stress test scenarios include the default of the two participants or participant groups causing the largest payment obligation for SIX SIS under stressed but plausible market conditions as well as the default of the major liquidity providers in several currencies.

4.7.2 Key Consideration 2

An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

The conceptual liquidity framework of SIX SIS is supported by an operational liquidity planning tool at the Treasury department and a liquidity risk module governed by the risk management department.

The liquidity planning tool allows SIX SIS to monitor nostro cash positions at correspondent banks and settlement agents in real time. The same applies to vostro cash positions of its participants. Moreover, the liquidity planning tool supports the tracking of projected / planned cash flows up to t+4, allowing SIX SIS to conduct proactive and efficient cash management. The



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An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

main cash flows at SIX SIS are related to settlements, corporate action payments, and repo transactions. The liquidity planning tool can thereby identify liquidity shortfalls in day-to-day business at an early stage. The monitoring is not only limited to end-of-day liquidity, but is also performed on an intraday basis. The Treasury department monitors cash accounts on an ongoing basis, ensuring sufficient settlement liquidity in all markets. The management of cash deadlines and settlement windows is key in this process.

The liquidity risk module used by the risk department performs daily liquidity stress testing to ensure sufficient resources are available to cover extreme but plausible market scenarios. The liquidity module also enables SIX SIS to assess the value of its available liquid assets, taking into account appropriate haircuts on those assets.

4.7.3 Key Consideration 3

A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.

SIX SIS has various viable liquidity resources which may be used to cover its short-term liquidity requirements under extreme but plausible stress scenarios. Besides its own liquid resources such as cash funded by equity, settlement cash, settled suspense cash and collateral for secured credit lines, SIX SIS may conclude repo transactions (for SNB GC eligible securities collateral) and foreign currency swap transactions under prearranged and reliable funding arrangements. Moreover, SIX, as Grandparent Company of SIX SIS, has committed itself to provide additional resources in case of a liquidity shortfall.

The sizing of the liquidity resources – to ensure the liquidity is sufficient at all times to cover the payment obligations of SIX SIS when they fall due – is based on a rigorous stress testing framework in all currencies across settlement cycles. As part of this, extreme but plausible market conditions are assumed, such as:

- the default of the participant (including its affiliates) creating the largest aggregate payment obligation for SIX SIS
- the combined default of the two SIX SIS participants (including also SIX x-clear members) creating the largest aggregate payment obligation for SIX SIS and for SIX Securities Services on a consolidated level.
- the default of SIX SIS' largest liquidity provider

Liquidity stress tests are conducted under very conservative supplementary assumptions such as a liquidity demand markup of 25% and a DVP inflow markdown of 20%.



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4.7.4 **Key Consideration 4**

A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.

Key Consideration 7.4 is not applicable to SIX SIS because it is not a CCP.

4.7.5 **Key Consideration 5**

For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.

The main liquidity resources of SIX SIS encompass its equity capital and cash received from its participants in the form of settlement liquidity and collateral pledged to cover for multi-currency secured cash credit lines. Cash positions cover all major currencies in the context of SIX SIS's business activities.

All major liquidity positions are either held at the central bank or at creditworthy commercial banks (e.g., sub-custodians). SIX SIS invests excess liquidity in short-term reverse repos.

In respect of securities collateral, SIX SIS only accepts highly liquid securities with low credit and market risk (detailed in the lending norms of SIX x-clear), which are mentioned in the list of collateral eligible for SNB repos, and which would hence further qualify for a timely swap into liquidity on the repo market and at the central bank.

Some sub-custodians provide SIX SIS with uncommitted and undisclosed credit lines to facilitate settlement in local markets.

In its recovery plan, SIX SIS outlines further liquidity recovery options to bridge any liquidity gap which might arise in extreme but plausible market conditions.



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4.7.6 **Key Consideration 6**

An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.

The liquidity concept of SIX SIS considers a re-use of securities collateral for credit facilities to cover any liquidity need identified by the liquidity stress scenarios.

As mentioned above in Key Consideration 7.5, SIX SIS applies a conservative collateral regime, allowing members only to pledge highly liquid collateral with low market and credit risk, which also qualifies as SNB repo collateral.

In general, supplemental liquidity resources will only be drawn in very extreme scenarios, i.e. where the liquidity demand cannot be sufficiently covered by the cash reserves of SIX SIS.

The availability of emergency central bank credit is not considered in the liquidity stress test of SIX SIS.

4.7.7 **Key Consideration 7**

An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.

The qualifying liquidity available to SIX SIS originates from its participants, posting cash for settlement purposes or in the form of liquid credit facility collateral. As a supplemental means for receiving liquidity in multiple currencies, prearranged funding arrangements with external counterparties are maintained to perform foreign currency swap transactions. All such counterparties are also participants of SIX SIS which undergo initial assessments and regular reviews. Moreover, SIX SIS regularly tests the prearranged funding arrangements for accessing liquidity at the respective liquidity providers.

4.7.8 **Key Consideration 8**

An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.

Practically all inhouse transactions of SIX SIS are settled in central bank money via SIC (SNB), TARGET2 or via Euro SIC (Swiss Euro Clearing Bank). For cross-border transactions, SIX SIS largely uses its sub-custodians or cash correspondent banks.



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4.7.9 Key Consideration 9

An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.

SIX SIS assesses the adequacy of its liquidity resources (liquidity waterfall) in all currencies by means of daily liquidity stress testing. As part of this, SIX SIS assumes the default of the two participants (including their affiliates) causing the highest aggregate liquidity demand under extreme but plausible market conditions. The stressed liquidity demand is calculated based on net RVP-settlements of the defaulting participants per security, currency and settlement day, mainly originating from the cross-border business.

As mentioned above in Key Consideration 7.3, the liquidity stress tests are conducted under very conservative supplementary assumptions such as a liquidity demand markup of 25% and a DVP inflow markdown of 20%.

Early warning indicators as well as limits and subsequent escalation procedures have been put in place. Breaches of early warning indicators are immediately escalated in accordance with procedures to respective decision makers, including a reassessment of the level of liquidity resources. The results of the daily liquidity stress tests are reported on a monthly basis being a part of the regulatory reporting to the SNB and FINMA and a part of the management reporting to decision makers such as the management committee and the risk committee of SIX.

A periodical risk inventory aims to provide a systematic and consistent reflection of the stress events that may potentially impose liquidity stress on SIX SIS. In this context, SIX SIS has considered some other stress scenarios (than participant default scenarios) that might possibly threaten the viability of SIX SIS in respect of liquidity. However, such other stress scenarios are of minor relevance and do not involve a level of liquidity risk that would justify a daily monitoring and the implementation of corresponding daily liquidity stress tests respectively.

The stress testing procedure is assessed annually by the Risk Management department of SIX Securities Services. Breaches of liquidity indicators and limits trigger an immediate reassessment.



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4.7.10 **Key Consideration 10**

An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.

SIX SIS has established internal default procedures outlining the plan of actions in a default event as well as the respective responsibilities. This also includes the establishment of contact with the national regulators.

The default procedures address any unforeseen liquidity shortfall aiming to avoid an unwinding, revoking, or delaying of payment obligations. The default procedures are regularly tested and assessed via test cases. Further information can be found in the answers to Principle 13.

In the event of uncovered liquidity shortfalls the recovery plan of SIX SIS sets forth the procedures and measures to address such shortfalls and for replenishing the liquidity resources (e.g. make use of instruments for receiving additional liquidity etc.).

The established rules and procedures enable SIX SIS to fulfil its payment obligations at all times when they are due, even in times of market stress scenarios, so that it can continue to operate in a safe and sound manner.

4.8 **Principle 8: Settlement finality**

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

4.8.1 **Key Consideration 1**

An FMI's rules and procedures should clearly define the point at which settlement is final.

The settlement procedure is Simultaneous Final and Irrevocable Delivery Versus Payment (SFIDVP) and executed in real time. This process involves the rapid, secure and properly recorded transfer of a securities position from the seller to the buyer with simultaneous payment from the buyer to the seller. The booking of orders on a trade-by-trade basis serves to significantly enhance efficiency and reduces the fail rate to practically zero.

SIX SIS settles transactions on a true DVP basis in their own SECOM system and in T2S. Trades only settle if both securities and cash are available. Cash and securities are booked simultaneously and irrevocably. Real-time online processing is a matter of providing real-time notifications on trade status to participants. These status intimations provide participants with information reflecting the most current status of the transactions.

Regarding securities kept in final custody outside of Switzerland, revocability depends on the relevant market. If and as long as SIX SIS can revoke vis-à-vis a CSD or a sub-custodian, the participant can instruct a revocation. In markets where settlement finality exists, the revocation of instructions is no longer possible when settlement is final.

Regarding settlement finality, the legal set-up is as follows (see also art. 62 lit. 4 and 5 FMIA): Relevant for the finality of instructions regarding securities in the relation of SIX SIS to its



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An FMI's rules and procedures should clearly define the point at which settlement is final.

participant are art. 34c GTC SIX SIS and the information of the security settlement system SECOM and T2S. The transfer of securities positions effected due to an instruction is completed when a custody account has been credited accordingly. The transfer is final with the credit; the disposing participant loses its rights to the intermediated security that was disposed of (art. 34c lit. a GTC SIX SIS).

The revocability of instructions regarding Swiss intermediated securities is governed by art. 88 FMIA in conjunction with art. 27 Swiss Banking Act, art. 20 FISA as well as art. 34 lit. a and b GTC SIX SIS. An instruction of a participant shall be legally binding and effective against third parties even in the event of winding-up proceedings against the instructing participant, provided that the instruction was accepted by SIX SIS's system before the commencement of such proceedings or it was accepted by SIX SIS's system after the commencement of such proceedings and carried out on the day of commencement, if SIX SIS can prove that it was not aware, nor should have been aware, of the commencement of such proceedings (art. 34b lit. b GTC SIX SIS repeating art. 20 Federal Intermediated Securities Act). Art. 20 FISA (and art. 34b lit. b GTC SIX SIS) correlates with art. 6 EU Directive 98/26 on Settlement Finality in Payment and Securities Settlement Systems.

Regarding instructions concerning securities kept in final custody outside of Switzerland, the revocability depends on the relevant market. If and as long as SIX SIS can revoke vis-à-vis a CSD or a sub-custodian, the participant can instruct a revocation (see art. 34b lit. c GTC SIX SIS).

Finality and revocability regarding money instructions are governed by art. 38 lit. e and f GTC SIX SIS: Payment instructions issued by a participant become irrevocable as soon as the payment amount has been debited to the instructing participant's account. When the payment amount is credited to the account of the payee participating in SIX SIS, the payment becomes final.

The GTC SIX SIS are publically available on the website of SIX SIS.

4.8.2 Key Consideration 2

An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.

SIX SIS reduced the settlement cycle from T+3 to T+2 in 2014. This shortened settlement cycle covers all securities tradable on SIX Swiss Exchange and SIX Structured Products Exchange and settling through SIX SIS. Although the settlement cycle for off-exchange trades is freely negotiable, most trades follow the standard T+2 cycle. This means the Swiss settlement cycle is harmonized with other major European markets while SIX SIS has been processing settlements in T2S since June 2015.

The settlement day in T2S begins on S-1 in the evening. All transactions that have been matched and released at this time are sent for settlement. There is a "night time settlement" and a "real-time settlement". The "night time settlement" takes place in several cycles. Within each cycle there are several sequences. Participants that communicate directly with T2S (DCP) receive reports with the settlement confirmations or status intimations after each sequence. With "real-time settlement", the reports are sent in real time after they have been successfully settled by T2S.

As the Swiss market is highly automated with a settlement rate of nearly 100%, SIX SIS does not process any manual interventions. Incorrect transactions are rejected in real time and a SWIFT message with the reason for the rejection will be sent to the participant at the same time.



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An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.

SIX SIS has not experienced any deferral of final settlement to the next business day that was not covered by its rules, procedures or contracts.

SIX SIS provides real-time notifications on the trade status to participants. Final settlement is confirmed by MT544/545/546/547 in real time.

4.8.3 Key Consideration 3

An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.

The participant can revoke instructions sent to SIX SIS until the moment at which SIX SIS debits the participant's custody account pursuant to the instruction. If the participant revokes an instruction after the custody account has been debited, SIX SIS shall not respond to this revocation (see art. 10 and art. 34a GTC SIX SIS).

SIX SIS does not allow unilateral cancellation after the matched status has been reached. Deletions after matching have to be instructed by both parties (bilateral cancellation).

4.9 Principle 9: Money settlements

An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risks arising from the use of commercial bank money.

4.9.1 Key Consideration 1

An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

In its home market of Switzerland, SIX SIS settles payments in CHF via sight deposits with the SNB. Transactions in foreign currencies processed “inhouse” SIX SIS in its role as a CSD are settled via commercial bank money accounts of the participants with SIX SIS, or via direct Euro SIC account of the participant. Transaction in T2S settle via the T2S dedicated cash account (DCA) of SIX SIS or via the direct DCA of the participant (EUR only).

Securities transactions with international custodians are covered over a network of CSD-Links and depository banks Cash settlements for such transactions in foreign currencies are therefore mainly conducted through cash accounts with correspondent banks.

SIX SIS settles in central bank money where access to the central bank is available and commercially reasonable.

4.9.2 Key Consideration 2

If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.

For international settlements, SIX SIS uses commercial bank money held with CSDs and custodians which are themselves regulated and that are subject to strict selection criteria as well as regular creditworthiness checks conducted by SIX SIS.



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For further information about the international custodian links, please refer to the replies to Principle 16.

4.9.3 Key Consideration 3

If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.

Before selecting a custodian, an initial credit review is performed by SIX SIS. The custodians are subject to ongoing or at least annual credit verification procedures.

To avoid cluster risks in the daily business, large cash balances remaining at the end of the day are divided up into smaller amounts and deposited overnight with selected banks (cash sweep instructions). These banks are also subject to strict credit assessments. The granting of the respective investment limits is conducted according to the order of competence of SIX SIS.

According to art. 43 lit. b GTC SIX SIS, every participant of SIX SIS shall bear a proportional share of the effects of economic and legal consequences on the total balances of SIX SIS in the country of the currency in question or the investments as a result of official measures. Hence, SIX SIS may pass on potential losses to its participants if there is a failure of any of its settlement banks.

4.9.4 Key Consideration 4

If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.

SIX SIS manages its credit and liquidity risks by carefully selecting and monitoring its custodians, avoiding cluster risk as well as using the liquidity of the SIX SIS participants. In order to conduct cross-border settlements, the participants of SIX SIS have to deposit the necessary cash amounts with the respective custodian or correspondent bank of SIX SIS first. In addition, the cross border settlements of the participants are subject to a settlement line, which limits the amount of settlements. In case of a lack of funds on the settlement day, the corresponding counter legs of the transaction are booked into a suspense account, therefore eliminating credit risk for SIX SIS.

4.9.5 Key Consideration 5

An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.

The legal agreements with the custodians of SIX SIS contain provisions about the timing of money settlements and the laws of the relevant jurisdictions support the conduct of transfers and finality (Settlement Finality Directive, Insolvency Law).

Provisions about the timing of money settlements are primarily governed by local market practice and the rules of the payment system in the respective jurisdictions.

Within the opening times of the various national payment systems, the money transfers of



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SIX SIS can basically be conducted at any time, i.e. except for the effect of time zone differences, money transfers can always be conducted intraday.

4.10 Principle 10: Physical deliveries

An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

4.10.1 Key Consideration 1

An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

SIX SIS defines the guidelines and all operational aspects for the settlement of national and international securities transactions in its Operational Market Guides. The GTC of SIX SIS contain rules about the issuance, condition, and deliverability of physical instruments (art. 14 seqq.).

SIX SIS's internal control processes and work procedures define the process of remittance and withdrawal of physical instruments as well as the process of ownership transfer.

4.10.2 Key Consideration 2

An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.

SIX SIS has strict internal controls in place to ensure the four-eyes principle is applied to all processes associated with the storage and delivery of physical instruments. Regular inventory inspections and reconciliations take place to ensure the integrity and physical verification of securities held in the vault. Internal Audit regularly reviews and assesses these processes.

SIX SIS has insurance policies in place to cover losses of physical securities.

4.11 Principle 11: Central securities depositories

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

4.11.1 Key Consideration 1

A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

SIX SIS administers Swiss securities in Switzerland and abroad according to art. 973a Swiss Code of Obligations:

- SIX SIS holds fungible certificated securities of different participants in custody together with other participants' holdings, except if the participant explicitly requests separate safekeeping of its certificated securities.
- When a participant delivers fungible certificated securities (own and client holdings) to SIX SIS



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A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

for collective custody, the participant or its client on whose behalf the custody account is held acquires a right of co-ownership over all certificated securities of the same kind held in collective custody. The participant’s interest shall be proportional to the nominal value or, failing such value, to the quantity of the securities deposited by the participant.

According to art. 973b Swiss Code of Obligations, SIX SIS handles global certificates as follows: A global certificate deposited by a participant and held in safe custody at SIX SIS is a certificated security of the same kind as the rights it represents. The depositors (the participant's clients or the participant with respect to its own holdings) have a co-ownership interest in the global certificate in proportion to their respective interests.

SIX SIS maintains a well-defined and comprehensive system of internal controls and procedures to avoid operational risks of fraud and negligence. SIX SIS is a FMI under Swiss legislation and therefore internal audits in terms of operational risks are requested and are part of regular reviews of the ICS by the Internal Audit department. All physical documents and physical vault inventories are checked and reconciled with client accounts at least monthly by Internal Control. Reconciliations are reported to Senior Management and Group Internal Audit and audited by external audit annually. Certificates received physically are cross-checked against the database of SIX Financial Information prior to crediting the client’s safekeeping account. Should the crosscheck reveal any stolen or lost securities, SIX SIS immediately informs clients either by phone or MT599. The vault tracking and bookkeeping system is separated from the participants' bookkeeping system and is reconciled daily.

4.11.2 Key Consideration 2

A CSD should prohibit overdrafts and debit balances in securities accounts.

SIX SIS in its function as the Swiss CSD does not allow uncovered short positions in securities accounts. Transfer instructions remain pending until sufficient cover is provided in the money or custody account. If a security position can be partially delivered, SIX SIS may make a partial delivery where this is permitted in the relevant market (partial settlement). SIX SIS reports unexecuted or partially executed instructions immediately to the participant concerned. Non-executable or partially executable instructions that have been transmitted to SIX SIS via a stock exchange or a clearing agent shall be reported to the stock exchange or the clearing agent in accordance with the applicable regulation or practice.

4.11.3 Key Consideration 3

A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.

More than 98% of the Swiss securities market is dematerialized. As per 1 January 2010, the FISA became effective, introducing intermediated securities (“Bucheffekten”). Intermediated securities refer to rights which arise from the credit of securities to a securities account with SIX SIS or any other intermediary. Intermediated securities are created by

- depositing certificates of securities (global certificates, collectively deposited securities); or
- registering uncertificated securities (“Wertrechte”) as underlying instruments and simultaneously crediting such intermediated securities to a securities account. The



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uncertificated securities are (completely dematerialised) securities to be evidenced otherwise than by a certificate (they must be registered by the issuer in the so-called main register maintained by SIX SIS or another intermediary in order to create intermediate securities).

Physical certificates can be immobilized and transferred to SECOM. Physical holdings stored with SIX SIS could be delivered in physical form, although this is not market practice since the Swiss market is mostly dematerialized. Certificates are transferable and physical deliveries are carried out within 24 hours. Only certain companies offer the physical issuance of certificates. It depends on the company whether the shareholder has already been registered or not.

Issuers do not need to bear the cost of physical issuing (printing) when immobilizing or dematerializing the securities. Deferred or relinquished printing will release companies from the obligation to print physical share certificates and deliver them to shareholders in every single case. The share register therefore only prints and delivers securities upon request of the shareholder. In the case of relinquished printing, the company no longer prints and delivers securities regardless of any requests to do so from shareholders. Registered shares accepted for custody by SIX SIS can only be transferred by assignment.

4.11.4 Key Consideration 4

A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.

SIX SIS's vault is a high security area with access restricted to authorized SIX employees. SIX's Legal & Compliance oversees the consistency of rules and procedures within the legal framework. SIX SIS has concrete directives to comply with the corresponding legal framework.

Furthermore, SIX and SIX SIS in particular have accounting rules and internal controls in place which properly separate participants' and SIX's own assets. Regular reconciliation (see Key Consideration 11.1) ensures the correct safekeeping and swift resolution of any mismatches between inventories.

Physical access, compliance with guidelines and legislation, and state-of-the-art security standards are validated through regular audits across SIX.

4.11.5 Key Consideration 5

A CSD should employ a robust system that ensures segregation between the CSD's own assets and the securities of its participants and segregation among the securities of participants. Where supported by the legal framework, the CSD should also support operationally the segregation of securities belonging to a participant's customers on the participant's books and facilitate the transfer of customer holdings.

SIX SIS operates a fully automated securities vault system and does not hold any of its own assets in its vault. SIX SIS holds fungible certificated securities of different participants in custody together with other participants' holdings, except if a participant explicitly requests separate safekeeping of its certificated securities (see art. 973a (1) Swiss code of obligations). Therefore, client assets can be physically segregated if requested. At the depository level, participants' assets are held in an omnibus account, segregated from the assets of other clients of the depository in accordance with local legal and regulatory requirements.

SIX SIS offers so-called "Separate Safekeeping EVA" as a service for the remittance of items. Service details are decided individually with clients. Remittances and withdrawals can be sent to



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clients and, on request, to third parties. SIX SIS can digitize documentation and make it digitally accessible to depositors.

Assets belonging to different participants are properly segregated through SIX SIS's bookkeeping system in book-entry form. Client assets are segregated on dedicated vostro accounts. Clients can open multiple vostro accounts to reflect their inhouse segregation needs directly within the SIX SIS bookkeeping system. Transfers of holdings between customers/participants can be done via simple transfer instructions by the participants or their liquidators. Transfers take place gross, simultaneously in cash and securities, in finality, in realtime (DvP Model 1) and in central bank money. Participants receive realtime status intimations as well as daily reconciliation reports of securities and cash positions as well as transactions.

4.11.6 Key Consideration 6

A CSD should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.

SIX SIS's core business is the settlement of securities transactions as well as the safe custody and administration of securities both in Switzerland and abroad. As the Swiss domestic CSD, the company is a key element of the Swiss Value Chain. No other activities are currently performed.

4.12 Principle 12: Exchange-of-value settlement systems

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

4.12.1 Key Consideration 1

An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.

The settlement of securities transactions involves a cash component and a securities component. The settlement system used to settle these transactions (SECOM and T2S) ensures DVP. Accordingly, the cash component will not be settled unless the securities component is settled. Finality is therefore reached at the same time for the cash transfer as well as for the securities transfer and principle risk is eliminated for all participants of the CSD. Settlement takes place gross, simultaneously in cash and securities, in finality, in realtime (DvP Model 1) and in central bank money.

The finality of settlement of linked obligations is simultaneous (see Principle 8).



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4.13 Principle 13: Participant default rules and procedures

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

4.13.1 Key Consideration 1

An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.

SIX SIS’s default rules and procedures define certain events which are the trigger points to set a member in default leading to a suspension or termination of participation. The events are defined in art. 2 GTC SIX SIS, which are publicly available on its website. As can be seen by these definitions, some of these events lead to an automatic default, e.g., a withdrawal of a license of a participant by the corresponding supervisory authority (art. 2.2 lit. c GTC SIX SIS), while in other cases SIX SIS has discretion in deciding whether an event of default has occurred or not. Trades accepted by SIX SIS’s systems before suspension or termination of the participation or before the notice of termination of the participation takes effect will be settled. No new transactions may be instructed after the suspension or termination of participation (art. 2.2 lit. h GTC SIX SIS).

The determination of a default and the handling of cases of default are governed by the internal document “SIX Default Management Process”. It particularly governs the organization and competences of the corresponding people, the decision taking and the steps in all phases of a default procedure.

To cover any losses, SIX SIS may rely on the realization of assets/collateral being pledged according to its GTC and/or the respective Pledge Agreement. The exact order for the realization is defined by the Risk Management Operations team depending on the then current market situation and the liquidity of the collateral. A main goal is the minimization of possible market value losses exceeding haircuts.

4.13.2 Key Consideration 2

An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

The SIX Default Management Process defines the responsibilities, roles, and measures to be taken in the event of default of a counterparty. This is of particular importance for the business functions that involve systematically important processes. SIX SIS reviews and tests the default rules and procedures at least annually (see art. 21a (2) in conjunction with 24a (3) NBO).

If a participation expires, SIX SIS informs its regulators FINMA and SNB as well as, within the framework of its contractual obligations, stock exchanges of all types, recognized clearing houses as well as CSDs with which SIX SIS cooperates (art. 2.2 lit. i GTC SIX SIS, being publically available on its website).



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4.13.3 **Key Consideration 3**

An FMI should publicly disclose key aspects of its default rules and procedures.

Art 2.2. lit. h and i GTC SIX SIS give a general outline about the treatment of open transactions and information obligations for SIX SIS. Liens, rights of retention, and rights of set-off, which allow SIX SIS to cover its exposure in the event of a default of a participant, are governed by Art 48 lit. a to c GTC SIX SIS.

SIX SIS Operating Procedures and GTCs are publicly available on its website and detail all aspects that are relevant for participants in the case of default.

4.13.4 **Key Consideration 4**

An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.

SIX SIS does not test its default procedures with its participants and other stakeholders because most of the procedures to be tested are internal procedures and the interactions with participants are limited to communications with the appointed insolvency administrators of the relevant defaulted participants. These administrators are generally persons or entities external to a defaulted participant and as they are never known in advance of a default and only appointed at the time after a default, testing with these persons and entities is unfeasible.

SIX SIS reviews and tests the internal part of the default rules and procedures at least annually (see art. 21a (2) in conjunction with 24a (3) NBO).

Moreover, SIX SIS has dealt with several bankruptcy / insolvency cases of participants which allowed SIX SIS to put in practice its participant default procedures. The internal procedures have proven to be adequate.

4.14 **Principle 14: Segregation and portability**

A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.

Principle 14 does not apply to SIX SIS because it is not a CCP.

4.15 **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 materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.



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4.15.1 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.

The BoD of SIX is responsible for risk management. The Risk Committee of the BoD of SIX is responsible for internal controls with respect to risk and the BoD of SIX approves the risk policy and delegates risk management tasks. The overall responsibility for risk management lies with the members of the ExB of SIX, which is supported at Group level by Risk, Legal and Compliance functions including Risk Management, Corporate Security, Legal, Compliance, Public & Regulatory Affairs. The risk control measures at SIX are executed by both 1LoD and 2LoD with independent line management structures. Risk management and controlling are monitored by internal and external auditors. The management of specific risks faced by SIX SIS is assumed by senior executives of SIX Securities Services.

General business risks, including strategic, operational, project-related, and legal risks are identified and summarized in risk inventories. This bottom-up approach under the involvement of the relevant corporate functions ensures that all relevant risks are identified, measured, and quantified (see art. 21a (2) in conjunction with art. 27 (1) NBO). SIX SIS has SLAs with its corporate functions to ensure that risks are monitored by the relevant specialists.

The SIX Risk Policy defines the organization, structures, competencies, and responsibilities and provides the basis for dealing with different kinds of risk. It outlines the readiness to assume risk. The risk policy constitutes the central framework for regulations and work instructions of the individual companies and for the risk categories.

4.15.2 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.

Swiss regulations require SIX SIS to hold sufficient equity and liquid net assets to cover losses from business risks (see art. 66 FMIA) taking into account the costs of a voluntary cessation of business or restructuring which must be at least sufficient to cover ongoing operation expenditure for six month (art. 56 (2) FMIO in conjunction with art. 48 (3) FMIO).

SIX SIS exceeds the regulatory requirements by far and holds sufficient equity and net liquid assets to be able to continue operations and services as a going concern if it incurs general business losses.

Further details can be found in SIX SIS’s annual report.



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4.15.3 **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.

SIX SIS has established a recovery plan. The objective of the recovery plan is to ensure the survival of SIX SIS and that the FMI is able to continue to provide its critical processes and services. Recovery options were evaluated in terms of feasibility and the financial, regulatory, operational, and external impact of the options in order to identify potential barriers that could prevent SIX SIS from successfully implementing the respective recovery option in a crisis situation. SIX SIS identified a number of options which are deemed feasible in respect of the timing of implementation and the impact they pose. The options include strengthening the capital base as well as options to improve the liquidity position of SIX SIS.

With regard to the requirement to cover six months’ operating expenses, please see Key Consideration 15.2. SIX SIS’s capital requirements are calculated according to Basel III standards and cover credit, operational, market, and business risk.

4.15.4 **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.

SIX SIS’s capital is primarily held as cash at the SNB. Its investment guidelines are outlined in the CRO Regulation BXS Financial Risk and the BXS Treasury Work Instruction. The minimum requirements refer to a minimum credit rating and eligibility as central bank basket collateral. This enables SIX SIS to receive liquidity at any time via the Interbank Repo market or via the SNB in case of extreme market events.

The investment criteria are reviewed on a regular basis.

4.15.5 **Key Consideration 5**

An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the BoD and updated regularly.

Please refer to the replies under Key Considerations 3.4 and 15.3.

In line with current Swiss regulations, SIX SIS has capital planning in place which supports the current and future capital requirements of SIX SIS in relation to its strategic objectives.

4.16 **Principle 16: Custody and investment risks**

An FMI should safeguard its own and its participants’ assets and minimise the risk of loss on and delay in access to these assets. An FMI’s investments should be in instruments with minimal credit, market, and liquidity risks.



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4.16.1 Key Consideration 1

An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.

SIX has governance documents in place to describe the selection procedure, under which a provider is selected for all or some services in connection with securities settlement and/or cash transactions, custody and asset servicing, and ensure its uniform application in line with objective quality standards and benchmarks in all cases. The selection procedure is executed in stages pursuant to internal guidelines. Changes to the custodian selection criteria need the approval of the Swiss Financial Market Supervisory Authority (FINMA).

SIX SIS applies strict internal processes and uses diligence when selecting and reviewing its custodians and cash correspondent banks. In the selection and review process, SIX SIS especially but not exclusively examines legal, financial, and operational criteria, such as the financial standing of the custodian, asset protection in case of bankruptcy, compliance with AML standards, business continuity management (BCM) requirements, or the quality of the custody services.

Regular due diligence reviews, including on-site visits, take place in order to ensure that the custodian adheres to these quality standards set out in contractually binding custody agreements.

4.16.2 Key Consideration 2

An FMI should have prompt access to its assets and the assets provided by participants, when required.

For securities kept in final custody outside of Switzerland, revocability depends on the relevant market. If and as long as SIX SIS can revoke vis-à-vis a sub-custodian, the participant can instruct a revocation. In the unlikely case of the custodian's bankruptcy, assets in the client's account(s) would be recognized as client assets and would not form part of the liquidation portfolio. Under this main account, segregated sub-accounts are opened on a relationship level, thus client assets are not only segregated from the custodian's own assets but also from assets of other customers.

4.16.3 Key Consideration 3

An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.

The operational settlement system which SIX SIS uses allows a close-to-real-time view of the risk exposure which SIX SIS faces to any counterparty, including custodian banks, be it in the role of a custodian or be it in the role of a settlement participant or a correspondent bank for overnight cash deposits.

SIX SIS diversifies its custodians in order to avoid concentration risks and has more than 50 local depositories worldwide. In certain markets, assets might even be split between more than one local custodian.



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4.16.4 Key Consideration 4

An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.

SIX SIS's investment policy is consistent with its conservative risk management approach and only allows investments in securities with a low credit, market, and liquidity risk. These securities need to be eligible as collateral with the SNB in order to be able to timely receive liquidity if needed.

Cash is held either at the central bank or is diversified over several highly creditworthy financial institutions. In order to minimize counterparty risk from cash deposits at financial institutions, SIX SIS uses reverse Repos.

The investment criteria are reviewed on a regular basis.

4.17 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 fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.

4.17.1 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.

The operational risks in SIX SIS are identified according to the Basel II definition and structured accordingly. There are no single points of failure identified. Any potential single point of failure would be eliminated through mitigating actions.

SIX SIS has a conservative approach to operational risk management outlined in an Operational Risk Framework (ORF) with clearly specified principles. The Operational Risk Framework defines the operational risk management at SIX SIS according to the SIX Risk Policy. This includes the risk appetite and risk limits on Group level that were approved by the ExB and the SIX BoD.

The Operational Risk Framework considers international standards, such as

- CPMI-IOSCO – Principles for FMIs
- Basel Committee of Banking Supervision – Principles for the Sound Management of Operational Risk
- ECB/CESR – Recommendations for securities settlement systems and recommendations for CCPs in the European Union

Potential risks posing a threat to SIX SIS are periodically identified in a systematic process, or triggered through an event (e.g., significant changes, new products, incidents, audit results or information obtained from supervisory authorities). Risk identification is proactively performed along the processes within the responsible organizational unit and considers internal and external incidents, fraudulent or unlawful activities as well as violations of regulations. Particular



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

attention is paid to risks with a potentially severe impact.

In a systematic review, risks are identified in line with the business processes within the responsible organizational unit. The processes and controls are constantly reviewed for potential weaknesses or deficiencies that might pose a possible risk. The results of the identification process are documented in the Risk Inventory.

The ICS of SIX SIS documents all business-relevant processes, risks, systems, and controls and ensures the adequacy and effectiveness of controls. The ICS is periodically reviewed and updated in a systematic process or triggered through an event (e.g., significant changes, new products, incidents or audit results). Please also refer Key Consideration 2.6 for further details regarding ICS.

The monitoring and supervision of operational risk management is performed through reporting along the following instruments of operational risk management that addresses the need for a proactive management:

- Risk inventory
- Operational risk incident database
- Key risk indicators
- ICS
- Business continuity management (BCM)

4.17.2 Key Consideration 2

An FMI's BoD 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 BoD exercises oversight through at least yearly reviews and approvals of the operational risk framework to ensure the safety and solidity of the legal entities. Specifically, this includes the definition of risk appetite and tolerance, the principles of operational risk management, roles and responsibilities and key processes. The BoD oversees senior management to ensure that the policies, processes and systems are implemented effectively at all decision levels.

The operational risk framework is reviewed and adjusted in case of significant changes of the risk situation, or in case of changes of markets, economic environment, new products, new activities or new systems in a timely manner. The operational risk framework as well as all respective policies and procedures are reassessed, updated and tested frequently – at least yearly – to remain up-to-date. The frequency depends on the identified risks and expected frequency of changes.

Therefore, the operational risk framework is subject to the following periodical events:

- Internal and external audit reviews
- Assessments of all operational risks
- Assessments of SIX Securities Services ICS
- Reviews of the adequacy and effectiveness of internal controls
- Assessments of the operational risk status
- External reviews in accordance with the SNB.



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4.17.3 **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.

The core systems are fully automated. The guaranteed recovery time in case of a site disaster is less than two hours and covers the full workload capacity as well. The different services offered by SIX SIS are classified in terms of business-critical criteria (i.e. availability requirement, SLAs). This classification serves as the basis for the respective reaction and restart times. The SLAs contain values specifying the agreed level of availability of a service at a particular time. If a malfunction occurs in a system or infrastructure relevant to production, the response time starts as soon as the malfunction is detected.

All critical locations and business functions have been identified and contingency arrangements are in place. SIX SIS ensures that its services operate in accordance with their availability objectives. For services with very high availability requirements, the necessary organizational and technical prerequisites are put in place to ensure their availability even in emergency and crisis situations.

4.17.4 **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.

The Corporate Function IT (CIT) at SIX guarantees a certain level of capacity to the business units. For projects, capacity requirements are discussed and defined between the business unit and the IT department. If the capacity utilization is close to the limit, additional capacity is discussed and agreed between the business unit and the IT department at the regularly scheduled service meetings.

4.17.5 **Key Consideration 5**

An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

SIX has established a Physical Security Policy, which covers the protection of persons, access, assets and buildings/production. Compliance with the protection of business secrets and personal data is laid down and verified in cooperation with the Group Compliance Officer.

The protection of SIX staff and customers on SIX premises is guaranteed. In the event of an incident, swift assistance is assured.

At SIX, standardized, re-usable security processes, methods, architecture and solutions are implemented. The ISO/IEC 27000 family of standards: “Information technology – Security techniques”, and in particular standards 27001, “Information security management systems – requirements”, and 27002, “Code of practice for information security management”, are of key importance.

The Information Security and its annexes as established by SIX cover all relevant areas of information security such as:

- Risk management
- Use of IT services, end-user guidelines etc.
- Data classification
- Authorization and authentication



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An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

- Security for the development and operations of IT systems.

4.17.6 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.

SIX SIS’s business continuity management (BCM) guarantees smooth productive processes and uninterrupted business operations. Business continuity organization, business continuity procedures, and the restart capability of components, applications, systems, and infrastructures are regularly tested to ensure their operability.

If one of the systems within SIX SIS fails and Incident Management is not able to remedy the fault, the matter will be escalated via the emergency and crisis organization implemented by SIX. SIX SIS will initiate the necessary measures, and further steps will be defined by the Emergency Task Force.

The different services offered by SIX are classified in terms of business-critical criteria (i.e. availability requirement, SLAs). This classification serves as the basis for the respective reaction and restart times.

All services of SIX SIS are maintained at several independent sites. All data is mirrored in real time on a 24-hour basis, 7 days a week. The infrastructure of these computer centers ensures that the full range of services offered by SECOM can continue to be provided. One of the computer centers becomes operational in the event that the productive site of SIX is unavailable. The SNB has approved the SIX SIS contingency concept and locations.

Incident Management is the first line of defense for handling small-scale incidents. Incidents may then be escalated to the corresponding business-unit Emergency Management Team in charge. Large-scale incidents are then escalated to the topmost body, the Crisis Management Team of SIX. Dedicated teams for BCM at Management and Senior Management level are fully prepared at all times in case of emergencies or disaster.

In serious situations and/or if important services suffer a loss of quality, a disaster recovery team is convened.

SIX SIS immediately notifies its customers and business partners in the event of an exceptional situation or crisis. In serious events and cases of damage, this information process is subject to the defined guidelines and processes. Customers are also notified of individual service disruptions in accordance with a defined severity and impact classification.

Business continuity is not solely focused mainly on the technical aspects of contingency planning, but also looks at staffing and organizational requirements in its arrangements. This is why the operational concept must deal with human resources and know-how as well as technical provisions such as backup solutions, fallback computer centers etc. Emergency work spaces have therefore been defined and prepared and alternative work models have been introduced, e.g., working from home, to address any loss-of-staff problems.



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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.

SIX' BCM guarantees smooth productive processes and uninterrupted business operations. Business continuity organization, business continuity procedures and the restart capability of components, applications, systems, and infrastructures are regularly tested to ensure their operability. As part of these tests, the entire documentation is reviewed and, if necessary, corrected. Moreover, updated tests are conducted with industry participants and the SNB.

SIX has defined measures – tests that form part of Business Continuity Planning – designed to restore operability. These measures must be checked regularly. The emergency drills are carried out under realistic conditions. They are used to check the effectiveness of the measures defined for the crisis scenarios. All processes are logged and any shortcomings listed.

4.17.7 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.

Potential risks caused by key participants are mainly due to operational problems of the key participants themselves and have no significant impact on SIX SIS but may pose significant risks to their counterparts and may pose risks to the efficiency of the settlement system, e.g., the settlement ratio. Risk caused by key participants is mitigated through the following:

- Clear criteria for admission and maintaining participation with SIX SIS
- Technical and operational requirements that must be met
- Continuous monitoring of system usage and the settlement ratio
- Detailed Market Guides documenting the established rules for participants
- Strong failed settlement regime to encourage participants to ensure a high settlement ratio
- Offering the option between a proprietary messaging system or SWIFT
- Clear release notes for system changes with client impact and the possibility of front-to-back testing in the integration system.

Potential risks caused by other FMIs or sub-custodians and correspondent banks are explained under Principle 20.

Wherever possible, SIX SIS uses the services of other affiliated companies of SIX. The risk management 2nd line of defense is performed by SIX Group Services (however retaining the operational management of collateral calls in SECOM in its own entity). SIX SIS outsources the operation and maintenance of the data center to SIX Group Services. This outsourcing arrangement is governed by SLAs in compliance with FINMA regulations. Staff members of SIX Group Services are required to maintain banking secrecy. The risk inherent in relying on information technology (IT) is addressed by SIX SIS's business continuity planning, a segregation of duties represented in access rights and in control mechanisms within the systems, IT general controls and a system design that ensures a high degree of security and



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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.

operational reliability and an adequate, scalable capacity.

SIX SIS provides infrastructure services to national and international participants in the Swiss financial center and abroad. The impact that a potential risk may pose to its participants or to other FMIs is part of the risk assessment in the process of risk management.

SIX SIS is represented in the national interbank alarm and crisis organization and in national working groups regarding BCM and participates actively in exercises of the alarm and crisis organization. The BCM at SIX is coordinated closely across all legal entities with a specific focus on FMIs.

4.18 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.

4.18.1 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.

SIX SIS grants non-discriminatory and open access to its services and is obliged to do so by art. 18 FMIA. The participation requirements are governed by art. 1 GTC SIX SIS. There are various categories of participants for which the participation requirements may vary to a certain extent due to the different legal backgrounds of the participants and the requested services. Within a category, all participants are treated in the same equal way subject to reasonable justifiable differentiation.

Participants of SIX SIS may be natural persons or legal entities commercially active in securities trading or settlement for third parties as listed in art 1.1 GTC SIX SIS.

- a) banks in accordance with the Swiss Banking Law, as amended;
- b) foreign banks that are subject to an adequate degree of regulation and supervision as well as adequate money laundering regulations and supervision at the time of their admission as participants and during their period of participation;
- c) securities traders as defined by the provisions of the Swiss Law on Stock Exchanges and Securities Trading of 24 March 1995 (Stock Exchange Law, as amended);
- d) foreign securities traders that are subject to an adequate degree of regulation and supervision as well as adequate money laundering regulations and supervision at the time of their admission as participants and during their period of participation;
- e) clearing houses recognized as such in accordance with the law of their countries of domicile as well as central securities depositories (CSD) which are subject to an adequate degree of regulation and supervision as well as adequate money laundering regulations and supervision at the time of their admission and for the entire duration of their participation;

For Collateral Management and Securities Financing Services and related services, SIX SIS can also admit as participants natural persons or legal entities as listed in art 1.1 GTC SIX SIS:



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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.

- a) Institutions pursuant to the Swiss Law on Occupational Retirement, Survivors' and Disability Pension Plans (LOB).
- b) Collective investment schemes as defined in the Swiss Law on Collective Investment Schemes (CISA) and foreign collective investment schemes (e.g. pursuant to UCITS or AIFMD).
- c) Insurance companies.
- d) Foreign state funds and other institutions governed by public law.
- e) Custodians of collective investment schemes (limited to SIX SIS's services in connection with transactions on off-exchange markets operated by SIX Repo Ltd or Eurex Zurich Ltd).

In line with art. 21 (1b) FMIA the participation conditions are regularly published on the website of SIX SIS.

Further requirements for participation comprise:

- a) Signing of the SIX SIS services contract.
- b) Membership of SIC, maintenance of a CHF account with SIX SIS and/or a correspondent institution that is a SIC member to enable settlement of the money side of securities transactions in case of CHF money settlement.
- c) Confirmation that technical and operational requirements are being met at the time of admission as well as, without interruption, during the period of participation.

4.18.2 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.

The requirements for participation mentioned under Key Consideration 18.1 are justified in terms of safety and aim to limit specific risks, including financial, operational, and legal risks. They have to be fulfilled by all participants.

The request for admission as participant must be submitted in written form. In addition, each member must comply with various quantitative and qualitative requirements related to hardware, software and the overall system. Necessary information to assess the member have to be provided regularly to fulfil the information duties outlined in SIX SIS's GTC.

Potential participants need to demonstrate their ability to comply with the SIX SIS requirements. Every applicant also has to comply with the technical and operational requirements as prescribed and set out in the Rules and Regulations (see also art. 10 GTC SIX SIS). They must also prove that they have the necessary facilities, equipment, operational capability, personnel, hardware, software, communication systems, and IT links to SIX SIS, which enable them to perform their business as a participant.

Every participant demonstrates and warrants from the first day of the participation and on a continuous basis throughout the duration of its participation that it meets all of the participation criteria.



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4.18.3 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.

SIX SIS monitors compliance with the participation requirements on an ongoing basis (see art. 21a (2) in conjunction of 24 (4) NBO). The state of participants is reviewed regarding legal, financial and operational aspects. A main point of this review are the business activities and continuance of a participant and raising the question whether the participant can meet its obligations vis-à-vis SIX SIS in future. It is also a condition of participation that a participant continues to meet the requirements on an ongoing basis. If compliance is doubtful, SIX SIS takes the required and suitable measures to re-establish compliance with the requirements. Where appropriate, SIX SIS is entitled to suspend participation if there are indications that the participant no longer fulfils the requirement for participation. In some cases, even termination might be an adequate measure. The principles for participation and its suspension and termination are governed by art. 1 and 2 GTC SIX SIS.

4.19 Principle 19: Tiered participation arrangements

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

4.19.1 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.

SIX SIS has a contractual relationship only with its participants. Business partners settling securities transactions through SECOM are known as "participants". Participants normally operate a securities and/or money account in SECOM, in which they keep securities and/or cash and settle securities transactions.

Indirect participants (Assigned Business Partners/ABPs) are banks who do not hold their own money and securities account with SIX SIS. An ABP uses the money or securities account of a participant (BP), which decides which services the ABP may use and enters into a contractual relationship with the ABP. There is no contractual relationship between an ABP and SIX SIS as long as the former keeps neither a safe custody nor a money account with SIX SIS.

SIX SIS does not gather information about ABPs. Risks (such as AML, credit, liquidity, market or operational risk) are monitored and assessed at the level of the participant.

4.19.2 Key Consideration 2

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

SIX SIS has no formal procedure in place to evaluate any dependencies between participants and ABPs. SIX SIS only maintains a contractual relationship with the participant and risks are monitored and assessed at the level of the participant.



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4.19.3 **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.

SIX SIS reviews the activity levels of its participants on a regular basis to identify whether there is a material concentration of activity but does not do so on the level of ABPs in relation to the direct participants’ capacity. ABP activity is not under review at all because risks are monitored and assessed at the level of the participant.

4.19.4 **Key Consideration 4**

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

SIX SIS mitigates risks arising from tiered participations through monitoring and assessing risks at the level of the participant.

4.20 **Principle 20: FMI links**

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

4.20.1 **Key Consideration 1**

Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.

With respect to new links and FMI providers, SIX has set in place directives and procedures for the selection of FMI’s as service providers and to fulfil its risk and quality standards. Therefore when establishing a new link to an FMI or a local custodian, stringent selection guidelines are applied to ensure that the counterparty risks stemming from SIX SIS’s custodian network are well contained. In the Request for Proposal (RFP) process, a detailed risk assessment of the new relationship is performed based on a detailed due diligence questionnaire that considers the CPMI-IOSCO principles. It is coordinated by Network Management with input from Risk Management, Legal & Compliance, Client Support and Operations departments.

4.20.2 **Key Consideration 2**

A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.

SIX SIS offers direct technical links to various other international custodians, T2S and CSDs (e.g. ESES markets, Clearstream, Banking Frankfurt, OeKB, VP Securities Denmark, Keler, Euroclear Sweden, Euroclear Finland, NBB Belgium etc.).

Thanks to these direct links, participants of SIX SIS benefit from efficient and cost-effective straight- through processing across national borders and systems.

The relevant CPMI-IOSCO principles are selection criteria as well as compliance with market



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A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.

standards – both technically and businesswise. The legal basis is questioned in the RFP process too. If and when necessary, SIX SIS seeks advice in the relevant local markets resp. asks for a legal opinion. The link agreements thus create a robust contractual basis.

4.20.3 Key Consideration 3

Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.

SIX SIS applies the same standards for managing credit and liquidity risks against other CSDs as it applies to its participants. Limits apply and credit is given only against collateral, which needs to fulfil the quality criteria defined in the lending norms.

For further information, refer to Principles 4 and 5.

4.20.4 Key Consideration 4

Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.

In cases where securities transfers are provisional, the received securities are blocked by SIX SIS until a transfer is final.

4.20.5 Key Consideration 5

An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's participants.

The selection of sub-custodians take place in line with internal guidelines that have been approved by FINMA (art. 25 lit. b GTC SIX SIS).

The initial selection process for the opening of a market link is primarily based on the existence of adequate protection of participants' assets under the local market standards and legal framework.

SIX SIS entrusts the safe custody of certificated securities, global certificates, uncertificated securities or intermediated securities to suitable sub-custodians it chooses abroad. The participant's consent is not required. The participant's explicit consent is nonetheless required where the foreign sub-custodian is not subject to adequate regulatory supervision (art. 25 lit. a GTC SIX SIS mirroring art. 9 FISA). If the custody of securities with a foreign sub-custodian is not governed by the FISA, the arrangement confers upon the participant rights that are at least equal to the rights acquired by SIX SIS with the sub-custodian (art. 26 lit. b GTC SIX SIS mirroring art. 10 (2) FISA).

To protect the rights of its participants and ensure operational efficiency, SIX SIS reconciles its own transactions (daily) and balances (monthly) electronically against the statements of the CSD or local custodian. Any break is recorded, identified and allocated to the responsible unit. All breaks are monitored and reported to Operational Risk Management until resolved.



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4.20.6 **Key Consideration 6**

An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.

Please see Key Consideration 20.1.

4.20.7 **Key Consideration 7**

Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.

Key Consideration 20.7 is not applicable to SIX SIS because it is not a CCP.

4.20.8 **Key Consideration 8**

Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfil its obligations to its own participants at any time.

Key Consideration 20.8 is not applicable to SIX SIS because it is not a CCP.

4.20.9 **Key Consideration 9**

A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.

Key Consideration 20.9 is not applicable to SIX SIS because it is not a TR.

4.21 **Principle 21: Efficiency and effectiveness**

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

4.21.1 **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.

SIX and thus SIX SIS are owned by a majority of their users (see ownership listing) and all user groups are represented throughout all governance bodies and user groups. This allows SIX SIS users to define and design the services SIX SIS offers according to their needs. It allows them to establish monitoring facilities and processes to guarantee the effectiveness and efficiency of these services.

SIX SIS interacts with its users through formal panels on three decision levels to ensure proper service provision and alignment: strategic, operational, and technical. All panels are jointly comprised of representatives from SIX SIS and its owner banks, providing design, communication, and feedback channels for users.

- Strategic: The Strategic Advisory Board (comprised of the Management Committee of SIX Securities Services and the Heads of Operations of represented banks) ensures that SIX SIS



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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.

develops its strategy and service spectrum according to its users’ requirements and needs and in line with the Swiss banks’ strategies. As a basis, the Strategic Advisory Board is provided with the management’s yearly strategy assessment (assessments of markets, clients, competitors and regulation; SWOT analysis, financials etc.).

- Operational: User Groups (comprised of operational representatives from both sides) serve as the means for technical reconciliation, project coordination, service quality assurance, and the resolution of technical questions.
- Technical: Technical working groups (comprised of subject matter experts) for the definition and elaboration of details and definitions.
These panels guarantee the effectiveness and efficiency of SIX SIS functions and that their design meets user requirements and needs. SIX SIS account managers meet with participants on a regular basis in order to get feedback on service aspects and additional needs. In addition, SIX SIS conducts several client surveys every year.
The Management Committee of SIX SIS bears overall responsibility for meeting user requirements. The Committee gives advice to SIX SIS on key management issues in relation to risks and their management.

4.21.2 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.

SIX SIS’s goals and objectives are part of the overall business strategy of SIX and SIX Securities Services, and are reflected in a clearly defined strategy for SIX SIS set up by its BoD. SIX SIS monitors its performance delivery through an extensive system of Key Performance Indicators (KPIs) against its goals and objectives of which most are defined on an individual basis with participants through their respective SLAs.

SIX SIS’s core settlement and clearing system SECOM has a target availability of 99.8%, which has been exceeded consistently with an actual availability of 99.99% throughout the past years. SIX SIS’s SWIFT interface availability target is 99% and its actual availability has consistently been at 100% throughout the past five years.

To measure overall customer satisfaction, SIX SIS conducts an annual survey supported by an independent third party. The overall satisfaction of SIX SIS users with SIX SIS services as well as participants’ loyalty has have been consistently high for years. The survey results are reported to the Strategic Advisory Board and thus transparently communicated to all users.

SIX SIS also maintains a comprehensive cost management system to monitor operational effectiveness as well as a comprehensive operational risk management system (TopEase) to manage operational risks as well as to ensure compliance with internal processes, controls, and regulatory requirements.

The core and peripheral systems’ reliability is monitored by the Services management of SIX SIS on a regular basis. In addition, a Security Board supervises IT and physical security, e.g., with a cyber-security monitoring team working around the clock.

SIX SIS processes are reviewed periodically internally and externally (e.g., by the SNB).



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4.21.3 Key Consideration 3

An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.

See Key Consideration 21.1 and Key Consideration 21.2. SLAs with all participants define individual KPIs which are consistently monitored. The SLAs are reviewed regularly and at least annually.

SIX SIS has implemented the directive for ICS to ensure effective controls and efficient processes, which are reviewed periodically by internal and external audit.

This ICS is based on a systematic risk analysis. It documents all business-related processes, risks, systems and controls, and thus ensures the adequacy and effectiveness of controls. The ICS promotes and facilitates the analysis of dependencies between processes, risks and controls. It supports the reliability of financial reporting and protection of the assets. It also aims to mitigate all identified risks according to the defined risk appetite and the defined risk tolerance. The ICS is an integral part of daily business and ensures compliance with all relevant internal and external regulations. Internal audit reviews the effectiveness of measures taken in the business areas and also assesses the effective operation of the ICS.

The ICS also includes the internally outsourced functions/processes and continuously monitors the observance of the specifications and directives imposed on the internal service providers.

Additionally, the efficiency and effectiveness of the services are measured at different levels. SIX SIS uses a balanced scorecard approach to measure quantitative and qualitative topics such as financial performance, customer satisfaction, project performance, strategy, and risk exposure. The senior management’s remuneration is linked to the balanced scorecard.

SIX x-clear and SIX SIS have implemented performance management processes which align overarching company goals and operative KPIs on all levels with individual and function-specific performance goals.

4.22 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.

4.22.1 Key Consideration 1

An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

Data transfers between the participant’s application and SIX SIS’s SECOM system are based on SWIFT message types and must be executed via the following carriers:

- Finance IPNet of SIC and SIX SIS (Virtual Private Network)
- BT Radianz (Virtual Private Network)
- SWIFTNet
- Internet (e.g., with SIX SIS Web Services)

Discussions on the harmonization of SIX-wide access interfaces are on-going. These discussions might have an impact on the current SECOM communication concept, including SWIFT as a backup alternative.



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4.23 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.

4.23.1 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.

SIX SIS publicly discloses key aspects of all information relating to its services as CSD on a regular basis and in accordance with art. 21 FMIA and art. 19 FMIO and standards set by other relevant international bodies (see art. 19 lit. i FMIO).

Such disclosure includes information regarding its design and operation as a CSD (see art. 21 FMIA). SIX SIS and its parent company SIX each publish an annual report. These reports mirror the essential activities of SIX SIS and the relevant Group companies. Information regarding the offered and ancillary services is available on the website of SIX Securities & Exchanges, for instance under the categories “Custody” and “Securities Finance”.

Information regarding the organizational structure of SIX SIS (see art. 21 (1) lit. a FMIA) can be found in its annual reports. These reports particularly include information concerning the financial situation of the company as well as the principles of its risk management.

The rights and obligations of the participants (see art. 21 (1) lit c FMIA) are generally governed in the GTC SIX SIS, being part of the service contract every participant has to subscribe. Art. 10 GTC SIX SIS refers to further documents with binding characters, the so called “Rules & Regulations”. These include the Market Guides containing general and market-specific operational duties. For specific services, tailor-made contracts exist.

Upon request, interested parties and potential new participants receive the service contract, the GTC SIX SIS and further documents.

Based on feedback from regulators, its own participants and other business partners, SIX SIS considers its rules and procedures as clear and comprehensive.

The process for changing the GTC SIX SIS or its “Rules & Regulations” is included in art. 50 and art. 10.2 lit. d, respectively. Participants are notified of changes.

Please also refer also to Principle 1.

4.23.2 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.

Please refer to Key Consideration 23.1 and Principle 1.



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4.23.3 **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.

(New) participants receive introductions and training. A test system is provided so that operational procedures may be tested before going live. Participants can contact the relationship management of SIX SIS with any query they might have.

Further teams in the organization provide second- and third-level support for participants.

Due to the constant contact with the participants, the involvement of participants in various bodies and as owners of SIX (see Key Consideration 2.1), it is ensured that the participants have a good understanding of their participation at SIX SIS. Their feedback is appreciated and integrated in the development of new products and services.

Should SIX SIS notice problems in operational processes of its participants, SIX SIS will provide training to such a participant in a way that is most appropriate.

4.23.4 **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.

SIX SIS discloses its prices and fees for its services, including its conditions for discounts, in the member section of its website (see art. 21 lit. b FMIO).

4.23.5 **Key Consideration 5**

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

As mentioned above (Key Consideration 23.1), SIX SIS publicly discloses key aspects of all information relating to its services as CSD on a regular basis and in accordance with FMIA and FMIO and the standards set by the relevant international bodies (see art. 21 FMIA and art. 19 FMIO).

Quantitative information (e.g., the aggregate transaction volumes and amounts) is published in the annual reports of SIX SIS and SIX, while the numbers, nominal value and currency of issue of the securities held in central custody are published in these reports as well as on the website on a quarterly basis (see art. 19 lit. g and h FMIO).

SIX SIS publishes its updated CPMI-IOSCO disclosure every second year or earlier if material parts of the disclosure change.

Please refer to Key Consideration 23.1 for further information that is disclosed.

4.24 **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.

Principle 24 is not applicable to SIX SIS because it is not a TR.



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5.0 References

SIX website

<http://www.six-group.com/en/home.html>

SIX Securities Services website

<http://www.six-securities-services.com/en/home.html>

SIX Securities Services' Annual Reports

<http://www.six-securities-services.com/en/home/profile/annual-reports.html>

SIX SIS website

<http://www.six-securities-services.com/en/home/custody.html>

GTC SIX SIS

<https://www.six-group.com/securities-services/en/home/custody/about-six-sis/gtc.html>

SIX ownership structure

<https://www.six-group.com/en/home/company/governance.html#ownership>

SIX SIS Annual Report 2018

<https://www.six-group.com/securities-services/dam/downloads/annual-report/2018/annualreport-six-sis-2018-en.pdf>

SNB website

http://www.snb.ch/en/i/about/finstab/finover/id/finstab_oversight

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6.0 Glossary

ABP	Assigned Business Partner
BCM	Business Continuity Management
BIS	Bank for International Settlements
BoD	Board of Directors
CCP	Central Counter Party
CEO	Chief Executive Officer
COSI	Collateral Secured Instruments
CPMI	Committee on Payment and Market Infrastructure
CRO	Chief Risk Officer
CSD	Central Securities Depository
FINMA	Swiss Financial Market Supervisory Authority
FISA	Swiss Federal Intermediated Securities Act
FMI	Financial Market Infrastructure
FMIA	Financial Market Infrastructure Act
FMIO	Financial Market Infrastructure Ordinance
FX	Foreign Exchange
GC	General Collateral
GExB	Group Executive Board of SIX Ltd
GTC SIX SIS	General Terms and Conditions of SIX SIS
ICS	Internal Control System
ICSD	International Central Securities Depository
IOSCO	International Organization of Securities Commissions
ISIN	International Securities Identification Number
KPI	Key Performance Indicator
NBO	National Bank Ordinance
Repo	repurchase agreement
RVP	Receive Versus Payment
SecLending	Securities Lending
SIC	SIX Interbank Clearing Ltd
SIX	SIX Group Ltd
SIX Group Services	SIX Group Services Ltd
SIX Securities Services	SIX Securities Services Ltd
SIX SIS	SIX SIS Ltd
SIX x-clear	SIX s-clear Ltd
SLA	Service Level Agreement
SLB	Securities Lending and Borrowing
SNB	Swiss National Bank
TCM	Triparty Collateral Management
VaR	Value at Risk

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