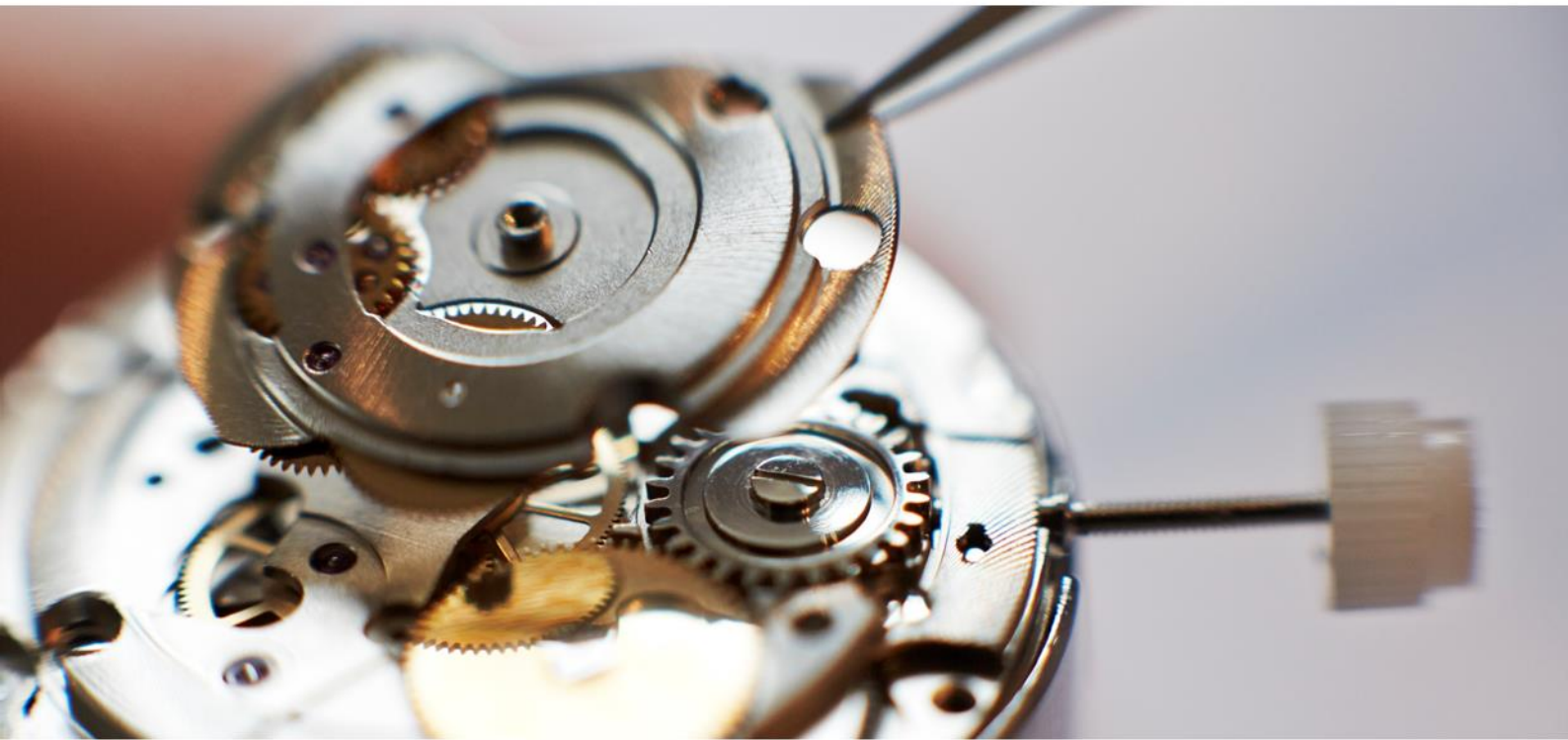# Service Description SIX x-clear Ltd

CCP Clearing Services for Equity Transactions for Members on SECOM
xcl-800

December 2019

Service Description SIX x-clear Ltd
CCP Clearing Services for Equity Transactions for Members on SECOM

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1.0 SIX x-clear Ltd as Swiss financial market infrastructure provider

SIX x-clear Ltd (hereafter referred to as "SIX x-clear") is a wholly-owned subsidiary of SIX Securities Services Ltd (hereafter referred to as "SIX Securities Services"), which is in turn fully owned by SIX Group Ltd (hereafter referred to as "SIX Group").

SIX x-clear Ltd is operationally integrated in the *Securities & Exchanges* business unit, which acts as the integrated Swiss financial market infrastructure provider for the securities business (trading – clearing – settlement).

SIX x-clear started business operations in May 2003. As a Central Counterparty ("CCP") it offers a high-quality and comprehensive range of clearing services underpinned by strong real-time risk management and operational efficiency across multiple Trading Platforms. A Trading Platform means an Exchange or MTF or Matching Service in respect of which SIX x-clear provides clearing (see the definition of clause 1.1 Definitions and references of the General Terms and Conditions of SIX x-clear).

SIX x-clear is the only CCP currently domiciled in Switzerland and licensed by FINMA (Swiss Financial Market Supervisory Authority) under the Banking Act. In view of its systemic importance, it is supervised and monitored by both the SNB (Swiss National Bank) and FINMA.

On a European level, SIX x-clear has been officially recognized as a third-country CCP based on the European Market Infrastructure Regulation (Art. 25 EMIR) by the European Securities and Markets Authority (ESMA). This authorizes SIX x-clear to continue providing cross-border clearing services in the EU and actively pursue new international business.

SIX x-clear's affiliate, SIX SIS Ltd, serves the Swiss financial market as the central securities depository (CSD) for assets and documents for the Swiss financial market and acts as an international securities depository (ICSD) in over 50 markets.

SIX x-clear provides clearing services for cash equities including Exchange Traded Funds ("ETFs"), bonds, as well as derivatives and securities lending and borrowing transactions. Clearing of fixed income transactions is offered only to Members on the SECOM platform, while clearing of derivatives and securities lending and borrowing transactions only to Members on the CLARA platform. The definitions and interpretation of the specific terms which are used in this document are described in the General Terms and Conditions of SIX x-clear, section 1.

The primary functions of central counterparties are as follows:

- To ensure post-trade anonymity in order to prevent market distortions;

- To eliminate bilateral counterparty risks from the trade date to the settlement of a trade – a requirement of increasing importance as a result of the globalization of electronic Trading Platforms and in the event of a financial crisis;

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- To permit settlement netting, also across various Trading Platforms, and, as a consequence, reduce settlement volumes and costs.

The degree of importance attached to these three functions differs between market participants and depends on the developments in the financial markets. Along with the netting functionality, risk minimization plays a major role; due to the fully-automated matching of orders on electronic Trading Platforms, a trading party is not free to choose its counterparty. In view of the continued opening up of markets, market participants find it increasingly difficult to assess counterparty risk since they no longer form part of a local, manageable group.

1.1 Scope of the document

This document covers the SIX x-clear service descriptions for the provision of clearing services for cash equities traded on various Trading Platforms. It is only applicable for Members on the SECOM platform.

For the service description of clearing for bonds, please refer to the relevant service description (see sub-chapter 19.1 *SIX x-clear's documents*).

All further reference documents mentioned in this service description are listed in chapter 19.0 *Appendix: further reference documents*). The documents are sorted alphabetically in the key words.

2.0 Concept of the central counterparty (CCP)

2.1 Clearing

Clearing is performed after a trade has been concluded (matched), but before it is settled. As a post-trade process, clearing involves the efficient handling of risks inherent in concluded, but still unfulfilled ("non-settled") contracts. The CCP steps into the contracts as an intermediary and represents the buyer to each seller and the seller to each buyer to eliminate the counterparty risk.

2.2 Clearing and settlement model

SIX x-clear offers CCP clearing services to its Members for their trades executed on Trading Platforms across pan-European market segments. The diagrams below depict the business model applicable to Members of SIX x-clear.

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Post-trade processing of non-Swiss equities

Trade execution	Broker A Seller (ICM)	**Trading platform** — 1) Trade match	Broker B Buyer (GCM)

2) Matched trades

| **CCP Clearing (netting + risk mgmt.)** / **Novation** | ICM A | **x-clear** Clearing — 3) Netting by SIX x-clear | **Co-CCP** Clearing — 3) Netting by Co-CCP | GCM B |

| **Settlement** | Settlement agent of Broker A | Settlement agent of SIX x-clear * | Settlement agent of Co-CCP | Settlement agent of Broker B |

| 4) Settlement: Broker A <> SIX x-clear, SIX x-clear <> Co-CCP | **(I)CSD according to the security origin or T2S if applicable** | 4) Settlement: Broker B <> Co-CCP, Co-CCP <> SIX x-clear |

Legend:
- → Trade details
- → Clearing reports and queries
- ↔ Interoperability
- → Net / gross instructions
- --→ PoA instructions
- → Settlement instruction details
- → Settlement status detail

*SIX x-clear has direct accounts with various (I)CSDs such as Euroclear UK&IE, Euroclear Finland, Euroclear Sweden, Iberclear, Monte Titoli and VP Denmark.

Post-trade processing of Swiss equities from SSX incl. SLS
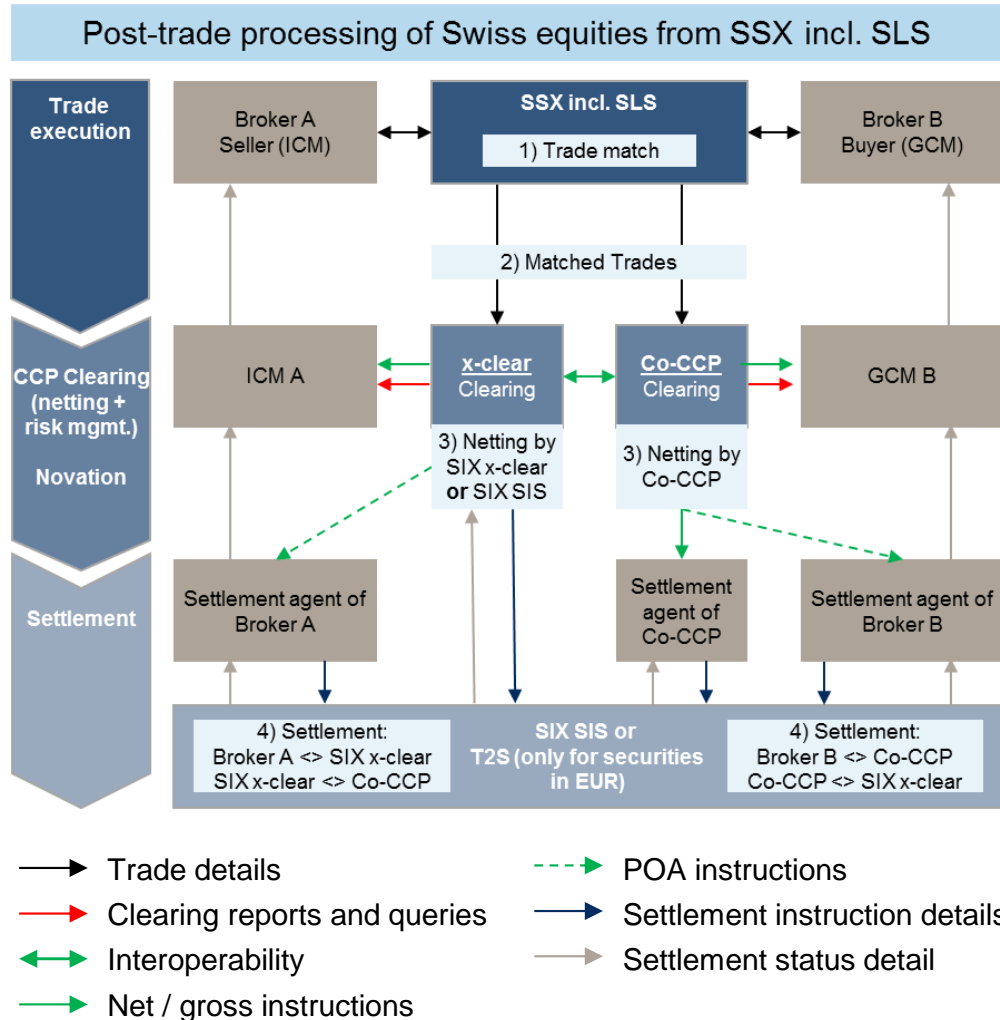
Settlement for Members is on a domestic CSD basis. Swiss securities settle at SIX SIS and non-Swiss securities settle at their respective domestic CSDs. However, settlement for London Stock Exchange (LSE) trades will always happen at Euroclear UK & Ireland (EUI).

2.3 SIX x-clear as a central counterparty

As a CCP for securities transactions, SIX x-clear assumes key risk management functions in clearing both for the Swiss financial market and for international exchanges and alternative Trading Platforms. SIX x-clear as a Swiss clearing house is fully integrated into the efficient and cost-effective Swiss Value Chain. Members of SIX x-clear benefit from this seamless extension of the Swiss Value Chain without the need for additional interfaces and from the possibility of having clearing and settlement performed under Swiss law.

As a CCP, SIX x-clear performs the following functions:

- **Assumption of counterparty risk:** SIX x-clear automatically acts as the counterparty for all its Members trading clearing-eligible securities. When a trade is accomplished on the Trading Platform (matching), a sales and purchase contract resulting from this trade is no longer concluded between the two trading participants; instead, SIX x-clear as the central counterparty steps into the trade by representing the buyer to each seller and the seller to each buyer

- **Post-trade anonymity:** As a clearing house, the CCP occupies an intermediary position between the trading parties. This ensures full post-trade anonymity.

- **(Cross-venue) settlement netting:** Settlement netting allows for the offsetting of delivery and payment obligations as well as the reduction of the overall settlement volume and the number of delivery instructions. Members have three options for settlement: gross settlement, single venue settlement netting or cross-venue settlement netting (see sub-chapter 9.2 *SIX x-clear settlement netting vs. SIX SIS settlement netting*). For Swiss equities traded on SIX Swiss Exchange (SSX) including SIX Swiss Exchange Liquidnet Service (SLS) Members can further chose between settlement netting by SIX x-clear or SIX SIS.

- **Risk management:** Central risk management serves to determine a Member's individual risk positions and margin requirements by considering trades originating from different Trading Platforms. Compared to calculation on a gross basis, net exposure – i.e. the offsetting of risk positions – reduces the total collateral to be pledged.

3.0 Membership of SIX x-clear

3.1 Member structure

Two categories of Clearing Membership are available at SIX x-clear:

- Individual Clearing Member (ICM)
- General Clearing Member (GCM)

Unlike ICMs, GCMs may provide clearing services for other participants that do not have a Clearing Membership (Non-Clearing Members, NCMs).

3.1.1 Individual Clearing Members (ICMs)

ICMs provide clearing for their own transactions and transactions effected by their clients. These include group-internal transactions effected for affiliated companies provided that the Member is fully consolidated within the group and that the other affiliated companies have no securities dealer license and/or no admission to listing on the stock exchange.

Concerning LSE, as the trading member acting as an ICM belongs to the same legal entity as the Member, the ICM is not permitted to clear trades in an agency capacity as per LSE Rules. In such a case, agency trades must be cleared through another GCM from a different legal entity.

ICMs clear trades by having contractual relationships with the CCP on a principal basis.

3.1.2 General Clearing Members (GCMs)

GCMs provide clearing for their own transactions as well as transactions effected by their clients and third parties, i.e. trading participants without direct access to a clearing house. The GCM is responsible for its NCMs' compliance with all rules and regulations of SIX x-clear. GCMs clear trades by having contractual relationships with the CCP on a principal basis.

The GCM is obliged to demand margins that equal or exceed its own margins from its Non-Clearing Members (NCMs).

3.2 Membership requirements

3.2.1 General requirements

Legal entities that are active in securities trading or settlement for third parties on a commercial basis and have been admitted to the relevant Trading Platforms may be accepted as a Member of SIX x-clear, e.g.

- Banks in accordance with the Swiss Federal Law on Banks and Savings Banks of 8 November 1934 (Swiss Banking Law);

- Foreign banks that are subject to the same degree of regulation and supervision as banks in Switzerland;

- Securities traders as defined by the provisions of the Federal Law on Stock Exchanges and Securities Trading of 24 March 1995 (Stock Exchange Law);

- Foreign securities traders who are subject to the same degree of regulation and supervision as securities traders in Switzerland.

- In addition, each Member must comply with various requirements related to hardware, software and the overall system.

The following special features have to be considered:

1. Members, for whom SIX x-clear is considered to perform clearing and SIX SIS (instead of SIX x-clear) processes settlement netting for Swiss equity trades generated on SSX/ SLS, need membership of SSX as well as membership of SIX SIS. The application for Membership with SIX x-clear must be submitted in written form,

together with a declaration issued by SSX or SIX SIS confirming the admission as a stock exchange member or SIX SIS participant respectively.

2. Members with transactions of any other Trading Platform, which SIX x-clear shall both clear and perform (cross-venue) settlement netting, can either act as trading members or as clearing-only participants of SIX x-clear. They can have their own settlement arrangements to settle the trades at a defined place of settlement.

3. In the case of LSE, Members should note that General Clearing Members (GCMs) that do not trade themselves, but only clear other parties' trades, are still required to become members of LSE. A special GCM-only membership is a requirement stipulated in the LSE Rules.

3.2.2 Minimum rating

Depending on the Member structure (see sub-chapter 3.1 *Member structure*), an external, long-term counterparty rating of A-/A3 or better is required for Individual Clearing Members, while A+/A1 or better is required for General Clearing Members. The second highest rating available from the rating agencies is considered. If no external rating is available, SIX x-clear defines an internal rating by means of key financial figures (benchmarking). Although the rating does not represent a criterion for exclusion, it has an impact on the pricing and the determination of the amount of collateral to be provided (margining).

3.2.3 Submission of annual reports

All Members are obliged to submit their annual reports to SIX x-clear without prior request.

3.2.4 Further requirements for General Clearing Members

3.2.4.1 Margining

The GCM is obliged to demand margins that equal or exceed its own margins from its NCMs.

3.2.4.2 Operational capabilities

Since GCMs are also responsible for clearing transactions of third parties (i.e. for its NCMs), they must ensure the smooth operation of their trading, operating and settlement systems as well as the availability of sufficient human resources.

3.2.4.3 Duty of disclosure

The GCM is obliged to disclose the identity of the NCMs to SIX x-clear.

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4.0 Account structure

The following account structure and accounts will be used for clearing, margining and collateral management.

	Account type	Account name	Account owner	Purposes
SIX x-clear	Clearing Account(s)	Home account(s)	Clearing Member	Clearing accounts are used to track and record the open positions.
		Client account(s)		
SIX SIS	Margin collateral account(s)	Cash account(s)	SIX x-clear	Margin accounts are used to transfer and hold the margin collateral provided. The collateral is transferred or ceded to SIX x-clear as an irregular pledge (full title transfer) with right to refund.
		Securities account(s)		
	Default fund collateral account(s)	Cash account(s)	SIX x-clear	SIX x-clear opens default collateral accounts for each member with SIS for the default fund. The collateral is transferred or ceded to SIX x-clear as an irregular pledge (full title transfer) with right to refund.
		Securities account(s)		
	Link Margin Element (LME) collateral account(s)	Cash account(s)	SIX x-clear	The Link Margin Element is used to cover Co-CCP's margin liabilities in case of SIX x-clear's default. The collateral is transferred or ceded to SIX x-clear as an irregular pledge (full title transfer) with right to refund.
		Securities account(s)		

5.0 Risk management

SIX x-clear as a CCP assumes the risk on the buy/sell side and is liable towards the respective Members for the fulfilment of obligations (both on the cash and the securities side) arising from trades routed by Trading Platforms. SIX x-clear guarantees the fulfilment of these obligations even in the event of the default of a Member; however, it does not guarantee the timely execution of the transactions on the settlement date.

Clearing information such as open positions, margin details and the collateral placed for margins as well as the collateral utilizations can be viewed via online queries sent from the user's SIX x-clear interface. The Members can choose the relevant information by using different reporting options available at SIX x-clear.

5.1 Overview and objectives

The primary objective is to minimize potential risks through effective and accurate risk management. In the event of the default of a Member, the risk should be primarily borne by the Defaulting Member itself. Correspondingly, the following measures are employed to minimize risk:

- Safeguarding against the market risk to be expected subsequent to any Default of a Member by means of the collateral deposited by the Member for margins.

- Pledging of collateral in the Default Fund to cover unpredictable losses.

5.2 Risk management process

Risk management consists of the following processes:

- Calculation, validation and calibration of margin requirements
- Valuation of collateral
- Checking of margin coverage
- Margin call in case of insufficient margins

The following diagram provides a high-level overview of the risk management process:
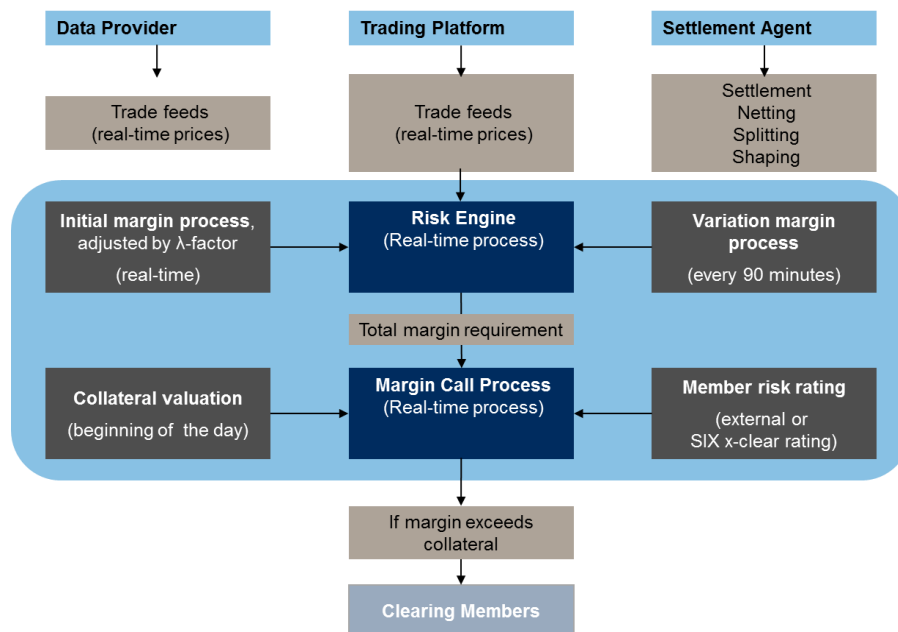
5.3 Open positions

Initial and Variation Margins are applied on a Clearing Account's open positions. All unsettled trades on a Member's Clearing Account are summarized per security and currency (of trade) into one position called an "open position". The unsettled trades may be the result of trading on different Trading Platforms. Hence, a Clearing Account normally has one open position per traded security and currency combination. Open positions are computed in real time by SIX x-clear and also include unsettled corporate action claims.

The following transactions impact a Clearing Account's open positions:

- A new clearing-eligible trade received from a Trading Platform

- Settlement of such trades

- Corporate action claim when the transaction becomes eligible for claims/compensation due to an appropriate corporate action

- Settlement/ booking of such claims/compensation

- Cancellation of settlement order (possible due to netting and during corporate action transformation)

- Settlement instruction generated due to a claim

The process of computing open positions nets all unsettled trades, provided they are on the same security, Clearing Account and currency. Hence, the open positions for a Clearing Account are the same whether a Member opts for settlement netting or not. A Member can get details of its open positions at end of day by subscribing to a daily data format report, RDXL040 or RDXL050, respectively.

5.4 Margins

The daily valuation of the collateral is normally based on the previous day's closing price. Depending on market conditions, valuation may be done more frequently.

The Initial Margin is an estimate of the market risk inherent in a Member's open positions. It is designed to cover the CCP for the market risk it becomes exposed to for the period between the last margin cycle prior to a Member's default and the close-out of the Defaulting Member's unsettled positions by the CCP.

The Variation Margin covers the mark-to-market fluctuations for a Member's open positions. The Variation Margin helps a CCP to protect itself against losses to a Member's open positions. In case of gains to a Member's open positions due to favorable price movements, the Variation Margin offsets the Initial Margin requirement.

The margin requirement of the Member is computed in CHF. SIX x-clear takes into account the currency risk during the mark-to-market process and applies the latest foreign exchange rates to compute the total margin requirement of Members. The foreign exchange rates are received using a near-real-time feed with a periodicity of once an hour.

The total margins are recomputed with a periodicity of once an hour using the latest foreign exchange rates. The total margin required is the result of the real-time Initial Margin multiplied by the Lambda factor and the risk rating coefficient, plus the Variation Margin.

5.5 Calculation of margins

Open positions are computed in real time by SIX x-clear and also include unsettled corporate action claims. Such open positions form the basis on which the Initial Margin and the Variation Margin are computed. The Initial Margin and the Variation Margin are always calculated on a consolidated basis for all Trading Platforms serviced by SIX x-clear.

5.5.1 Real-time Initial Margin (IM)

Calculation of the real-time Initial Margin is based on the Value at Risk (VaR) of the underlying securities. According to this model, margins are computed in real time using the VaR of the security. SIX x-clear adopts cross-margining – by considering equity trades executed on all Trading Platforms cleared by SIX x-clear – while computing the margin requirements.

SIX x-clear calculates the open positions and margins for fixed income and equities separately. The VaR for equities and ETFs is based on the historic price changes of the securities.

VaR is defined as the maximum possible loss for a given financial portfolio with a given confidence level. For example, if the two-day VaR of Vodafone is 5.6% with a 99.7% confidence level, Vodafone's two-day price changes are expected to exceed 5.6% in only 3 out of 1000 instances.

For each clearing-eligible security, the two-day VaR is periodically computed using the "historical simulation" method, by choosing the higher of either the long-term VaR based on a two-year price (i.e. approx. 500 trading days/observations), or the short term VaR based on the three-month price history (i.e. approx. 90 trading days/observations), which reflects short-term changes in a volatile equity market. The procedure for computing VaR for a security is as follows:

- Compute two-day historic returns using two-year/three-month price history
- Arrange such two-day returns in ascending order (largest negative return on top)

For 500/90 two-day returns, the instance of the negative return which has not been exceeded more than 0.3% of the times is considered as the long/short-term VaR for that security. The higher of the long-term or short-term VaR is considered as the VaR of the security. The VaR is recalculated weekly. If there are volatile market conditions, it may also be calculated daily, if required.

5.5.1.1 Risk buckets

Securities are grouped in risk buckets based on their VaR values. The same risk bucket structure is used for grouping the securities of all the stocks which are cleared by SIX x-clear, irrespective of the exchanges on which they are traded. Currently, there are six risk buckets with the following parameters for equities and ETFs.

Risk bucket	VaR range (%)	Initial margin (%)
BU01	0 to 5	3.5
BU02	5 to 10	7.5
BU03	10 to 15	12.5
BU04	15 to 20	17.5
BU05	20 to 25	22.5
BU06	25 or more	27.5

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The process of forming the risk buckets always follows the computation of VaR, which is calculated weekly during normal market conditions. However, this set-up could undergo changes based on the back-testing results and the confidence level achieved.

5.5.1.2 Risk netting coefficient I (intra-bucket netting coefficient or Intra-BNC)

Opposing open positions on different stocks originating from different Trading Platforms within a risk bucket have the effect of reducing the market risk posed by such open positions. Intra-BNC is designed to give effect to the high level of correlation between various securities contained in a risk bucket, especially during volatile market moves. Opposing open positions within a risk bucket are netted off using the Intra-BNC.

Assume that stock "A" is traded on SIX Europe and stock "B" is traded on MTFs; the following example uses an Intra-BNC value of 0.80:

Risk bucket	Security	Long or short	Open amount (CHF)	Initial margin (%)	Initial margin (CHF)	Bucket initial margin (CHF)
BU02	A	Long	1'000	7.50	75.00	75-(52.5*0.80) **= 33.00**
	B	Short	-700		-52.50	
BU03	C	Long	400	12.50	50.00	100-(50*0.80) = 60.00

Bucket Initial Margin = (higher of "bucket IM_{Long}" or "bucket IM_{Short}") less "intra-bucket margin offset", where

- bucket IM_{Long} is the absolute sum of IM for all long positions within a risk bucket;

- bucket IM_{Short} is the absolute sum of IM for all short positions within a risk bucket;

- "intra-bucket margin offset" is the reduction of margin due to opposing positions within a risk bucket. This is equal to (the lower of bucket IM_{Long} or bucket IM_{Short} in absolute terms) * Intra BNC.

5.5.1.3 Risk netting coefficient II (inter-bucket netting coefficient, or Inter-BNC)

Similar to opposing positions within a risk bucket, opposing net positions across buckets also have the effect of reducing the market risk. Inter-BNC is applied to net positions across risk buckets and has the effect of reducing the Initial Margin in the case of opposing net positions across different risk buckets. Inter-BNC is applied at the level of margins. The objective of introducing Inter-BNC is to reduce margins to account for the existence of predominantly opposing positions in different risk buckets.

The following example uses an Inter-BNC value of 0.40:

Risk bucket	Security	Long or short	Open amount (CHF)	Initial margin (%)	Initial margin (CHF)	Intra-bucket initial margin (CHF)	Net bucket margin (CHF)	Inter-bucket margin offset (CHF)	Total initial margin (CHF)
BU02	A	Long	1'000	7.50	75.00	75-(52.5 * 0.80)	22.50	22.50*0.40 = 9.00	33+60-9 = 84.00
	B	Short	-700		-52.50	= 33.00			
BU03	C	Long	400	12.50	50.00	100-(50*0.80) = 60.00	-50.00		
	D	Short	-800		-100.00				

Each bucket can have a positive or negative "net bucket IM". Positive values of "net bucket IM" should be added across all risk buckets to arrive at the "total net long IM". Similarly, negative values of "net bucket IM" should be added across all risk buckets to arrive at the "total net short IM". The smaller of these two figures (in absolute terms) multiplied by the Inter-BNC is the value by which margins would have to be offset (inter-bucket reduction).

Total IM = ∑ (IM for each bucket) less "inter-bucket margin offset", where

- "∑ (IM for each bucket)" is the sum of margins for all risk buckets. "IM for each bucket" incorporates the effect of Intra-BNC.

- "inter-bucket margin offset" is the amount by which margins would be reduced to account for the opposing nature of net positions across buckets = (lesser of "total net long IM" or "total net short IM") * Inter-BNC;

- "total net long IM" is the absolute sum of the net bucket IM where the net bucket IM is positive;

- "total net short IM" is the absolute sum of the net bucket IM where the net bucket IM is negative;

- "net bucket IM" is the arithmetic sum of the IM of all securities within a risk bucket (with plus/minus sign).

5.5.2 Initial Margin validation and calibration

The real-time Initial Margin computation is supplemented by a margin validation and calibration process performing up to six daily (and if required on an ad hoc basis) risk-factor-based Monte Carlo simulations of the margin requirement. This approach allows for an independent and comprehensive portfolio-based assessment of the margin requirement and a comparison with the Initial Margins calculated by the real-time margining module. SIX x-clear reserves the right to adjust the margin requirements based on the outcome of this margin validation.

5.5.2.1 Simulation technique

The real-time Initial Margin computation is mainly based on historical volatilities of the underlying instruments, volatility buckets and static intra-bucket and inter-bucket netting. SIX x-clear's margin validation and calibration module employs a risk-factor-based Monte Carlo simulation technique for a state-of-the-art portfolio-based assessment of the replacement risk of the clearing portfolios. This technique takes into account the prevailing volatilities and correlations between the risk factors. It further reflects the prevailing regression mapping of the returns of the underlying securities within the clearing portfolios to the returns of the risk factors, as well as the residual intrinsic risk of the securities.

The methodology underlying SIX x-clear's Initial Margin validation and calibration module is described in greater detail in the Clearing Terms of SIX x-clear.

5.5.2.2 Adjustment of Initial Margins

SIX x-clear may adjust the Initial Margin requirement based on the outcome of the margin validation process mentioned in sub-chapter 5.5.2.1 *Simulation technique*.

For this purpose, a scaling factor λ (lambda) has been implemented in order to align the Initial Margins with the portfolio VaR (calculated by the margin validation module) of the open positions of the Member.

The adjustment of the margin requirement through lambda is based on a comparison of the Initial Margin (computed in the real-time margining process) with the portfolio VaR resulting from the margin validation module. That is to say, the real-time Initial Margin (IM) is compared to the Portfolio VaR of the open positions and the lambda value to be used to adjust the margin requirement is:

$$\lambda = \frac{VaR}{IM}$$

Example: Assume a Member's Initial Margin (as computed in the real-time margining process) is CHF 5 million, whereas the portfolio VaR resulting from the margin validation module equals CHF 5.5 million. In order to adjust the Initial Margin requirement to the level of the portfolio VaR, the Member's Initial Margin will be scaled by the factor 1.1 (= CHF 5.5 million / CHF 5 million) so that the adjusted Initial Margin equals CHF 5.5 million.

In order to avoid procyclical effects, the lambda-value applied to scale the Initial Margins will never be smaller than 1.

Adjustments of lambda and the risk rating coefficient are principally independent of each other, i.e. the regime for adjusting the risk rating coefficient is not affected by the margin calibration through the lambda factor.

5.5.3 Real-time Initial Margin (IM)

When the net open amount of a Member, including the consolidated position across all Trading Platforms cleared by x-clear, exceeds CHF 750 million, the Member's existing risk rating coefficient is increased for the period in which this situation persists, i.e., the Initial Margin requirements are accordingly higher (see the table below). The Member will be informed of its increased Initial Margin requirements in such an event.

Net open amount (CHFm)	Initial risk coefficient	Temporary risk coefficient increase
0 ≤ 750	1.00	-
750 ≤ 1,000	1.25	0.25
1,000 ≤ 1,250	1.50	0.50
1,250 ≤ 1,500	1.75	0.75
1,500 ≤ 2,000	2.00	1.00
2000 <	2.25	1.25

5.5.4 Risk rating coefficient

The risk rating coefficient has been designed to increase the amount of defaulter-pay resources rather than mutualized resources. It is dependent on the Member's credit rating and has a direct bearing on the Initial Margin requirements. The risk rating coefficient is the factor by which the Initial Margin is multiplied to arrive at the Initial Margin requirement. SIX x-clear accepts credit ratings from the following external rating agencies:

- Standard & Poor's
- Moody's
- FITCH/IBCA

The risk rating coefficient takes into account the probability of non-performance on the part of a Member. The risk rating coefficient is determined on the basis of the Member's credit rating and is used to weight the Initial Margin, i.e. Initial Margin requirements increase or decrease depending on Member's credit rating.

The level of the risk rating coefficient is reviewed at least once a year and is determined as follows:

Rating			Risk rating coefficient
Standard & Poor's	Moody's	FITCH	
AAA to A-	Aaa to A3	AAA to A-	1.00
BBB+ to BBB-	Baa1 to Baa3	BBB+ to BBB-	1.50
BB+ to BB-	Ba1 to Ba3	BB+ to BB-	2.00
B+ or lower	B1 or lower	B+ or lower	Determined case by case

SIX x-clear uses the long-term rating. If several credit ratings are available, the second-best rating is used.

If a Member does not have an external credit rating or the external credit rating deviates strongly from SIX x-clear's credit assessment, SIX x-clear will determine an internal credit rating by means of a benchmarking process.

5.5.4.1 Decomposition of the Initial Margin requirement in client reporting

Once the Initial Margin for a Member has been computed using the real-time margining model (= clean Initial Margin), the formulas below will be used to derive the additional margins applying the lambda factor and the risk rating coefficient.

$$IM_\lambda = IM_{CL} \times (\lambda - 1)$$

$$IM_{RC} = (IM_{CL} + IM_\lambda) \times (RC - 1)$$

The total Initial Margin as reported to the Members will be broken down into the following three additive components:

$$IM = IM_{CL} + IM_{RC} + IM_\lambda$$

where:

λ = Lambda factor for the Member credit group

RC = Risk rating coefficient of the Member

IM_{CL} = Clean Initial Margin computed by the real-time margining module

IM_λ = Incremental Initial Margin due to lambda

IM_{RC} = Incremental Initial Margin due to RC

For a more detailed explanation of the margin calibration through lambda, please refer to the respective chapters of the clearing terms of SIX x-clear (see sub-chapter 19.1 SIX x-clear's documents).

5.5.5 Variation Margin (VM)

The Variation Margin is calculated hourly during the trading day and also during end-of-day processing. Intraday VM cycles use the latest market prices while the end-of-day VM cycle is based on closing prices as well as on the net positions of all open contracts per security. Additionally, a Wrong Way Risk (WWR) component is added to the VM. The WWR component covers the risk that occurs when the value of open positions of a Member is adversely correlated with the credit quality of that Member.

5.5.6 Stress Margin Add-on

The Stress Margin Add-on forms part of the default waterfall of SIX x-clear. This Add-on serves as an additional protective layer for the mutualized Default Fund, i.e. contributing to the application of the Default Fund becoming more remote as large stress exposures are covered by additional resources.

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5.5.7   **Total margin**

The total margin requirement for each credit group is calculated as follows:

$$TM_j = \sum_{i=1}^{n} \max\left(RC \cdot \lambda_j \cdot IM_i + VM_i, 0\right) + \text{SAO}_j$$

where

TM _j_ **=** Total margin per credit group j and per Member respectively;

RC = Risk rating coefficient of the Member;

λ **j =** Margin scaling factor for credit group j;

IM _i_ **=** Initial margin calculated for Clearing Account I (belonging to credit group j);

VM _i_ **=** Total Variation margin calculated for Clearing Account I (belonging to credit group j);

n = Number of Clearing Accounts belonging to the credit group/Member j;

SAO _j_ **=** Stress Add-On for the credit group/the Member j.

Hence, if a Member has a "gain" from the Variation Margin due to favorable market movements, this has the effect of reducing the total margin, provided that the total margin does not sink below zero.

A risk rating coefficient of 1.0 is usually applied, provided that the rating of the Member is at least A. The risk rating coefficient may be increased for Members with a lower rating. It may also be temporarily increased

- for Members with substantial open positions;

- for all Members during periods with extraordinary market conditions or due to instructions from regulators.

5.5.8   **Margin Calls**

If a Member's calculated margin requirements exceed the Member's deposited collateral value, a Margin Call is automatically triggered in real time to settle the difference. Each Margin Call must be met within the following deadlines.

- Margin Calls issued no later than 5:00 pm CET have to be met on the same day, and within a maximum of sixty minutes after the call is issued.

In case of insufficient margins, the Default Fund contribution of the Defaulting Member, SIX x-clear's contribution and/or the Default Fund contributions from all other Members will be used to fulfil the obligations of the Defaulting Member.

Contributions to SIX x-clear Default Funds are to be made in the form of money or securities. Members must meet the Default Funds requirement within the specified number of days from the date and time of the Default Fund requirement notice. If the Member does not maintain the required Default Fund contribution, a direct debit is executed on the Member's SIC account or an account held with SIX SIS.

Contributions to the Default Fund can be made by depositing securities eligible as collateral in a safe custody account. The securities are subject to daily mark-to-market valuation and must not fall below the value of the contributions required. The value of the deposited securities is calculated on the basis of their market value less a haircut, and not on the basis of their par value.

Should the mark-to-market valuation reveal that market values have fallen below the minimum value, the Member is required to replenish the Default Fund contribution by a given deadline, i.e. 60 minutes or end of month within two Business Days upon notification. Default Fund contributions are secured by means of an irregular (full title transfer) pledge.

5.7 Adjustment duties

5.7.1 Replenishment Contribution

Any drawdown – be it partial or full – of the Default Fund Segment effected by a Member Default gives rise to an obligation on each non-Defaulting Member to replenish this Default Fund Segment by additional contributions and thus restore its total amount to the level as required at the time of its reassessment by a "Replenishment Contribution". This additional contribution is calculated on a proportional basis (membership contribution as a percentage of the total Default Fund Segment's required volume). Further details are defined in the Financial Collateral Agreement.

5.7.2 Top-up Contribution

If an Extraordinary Default causes a loss exceeding that Default Fund Segment's current size ("Exceeding Drawdown"), the one-time Top-up Contribution (in the same size as of the individual Default Fund contribution at the time of default) to be provided by the surviving Members covers such losses according to the Contractual Relationship. Such an Exceeding Drawdown may result either from the Extraordinary Default's own loss or by aggregation of the loss of such Extraordinary Default with the loss of one or the losses of several precedent Extraordinary Default(s). The details are regulated by the Financial Collateral Agreement.

5.8 Defense lines

The Initial Margin, Variation Margin and Default Fund are not the only means for SIX x-clear to absorb losses.

For the defense lines of SIX x-clear's collateral ("waterfall of resources") please refer to clause 18.2 of the GTC.

The defense lines are intended to help prevent systemic risks (domino effect) for the entire financial market.

5.9 Accepted collateral types

SIX x-clear will generally accept different types of collateral as Permissible Collateral. For further details see the separate lending norm rules which are described in the "Lending Norms" published in the private Member section of SIX x-clear.

Permissible Collateral deposited is accounted for at market value and subject to a haircut. Due to applicable laws, securities and other instruments issued in the United States of America cannot be accepted as permissible collateral.

Permissible Collateral must be replaced 8 days prior to maturity of the respective instrument deposited as collateral. If an instrument submitted as collateral reaches maturity, it shall no longer be considered as sufficient to fulfil the margin requirements of the SIX x-clear's Member.

In principle, bonds must be eligible for repo transactions with the Swiss National Bank (SNB).

Upon request, other types of collateral can be examined for eligibility by SIX x-clear.

5.10   **Competitive clearing and Link Margin Element**

SIX x-clear operates clearing services for cash equity transactions for various Trading Platforms together with a cooperating CCP ("Co-CCP"). If Members trade in interoperable markets, an interoperable CCP ("Inter-CCP") exposure may arise between two or more CCPs due to the various CCP memberships of the parties concerned. An Inter-CCP exposure of this type must be covered in the form of additional assets, independently and separately from other collateral provided by the Member. Thus, SIX x-clear can fund its own margin requirements towards its Co-CCP(s).

In addition to the provision of margins and Default Fund contributions, every SIX x-clear Member is obliged vis-à-vis SIX x-clear to provide contributions to finance Inter-CCP Collateral.

The collateral requirements for the Inter-CCP exposure from the Co-CCP(s) shall be collected from Members in the form of a Link Margin Element (hereafter referred to as "LME").

The amount defined by SIX x-clear to cover the overall Co-CCP collateral requirements of all Members for all interoperable markets shall be called the link margin. The individual contribution by SIX x-clear's Member shall be referred to as the LME.

The LME is determined monthly on the pro rata share of the link margin based on the Member's average Initial Margin (AIM) in proportion to the AIM of all Members.

The link margin set by SIX x-clear shall apply until a new link margin is deemed necessary, for example in a situation of unexpected fluctuations in the margin requirements applicable to SIX x-clear under the link(s).

The LME is calculated based on the average Initial Margin of the previous 30 Business Days. This is explained in further detail in the Clearing Terms.

6.0   **Open Offer and Novation**

The Single Contracts between SIX x-clear and its Members arise either by way of acceptance of the Open Offer or Novation.

In general, with the acceptance of the Open Offer SIX x-clear takes over the counterparty risk already upon trade matching in the trading system of the relevant exchange (as Liquidnet H2O, London Stock Exchange and SIX Swiss Exchange). In case of Novation SIX x-clear takes over the counterparty risk not before the entry of the matched trades from any MTF or Matching Service into SIX x-clear's clearing system.

A detailed legal explanation of the Open Offer facility and Novation as well as the attendant mechanisms is given in the GTC of SIX x-clear.

6.1   **Open Offer of exchange trades**

An Open Offer implies that only contracts between the CCP and its Members result from the matching process.

SIX x-clear as a CCP offers to step into a trade that results from stock exchange orders matched at a stock exchange, provided that the two matching parties are either a Member or an NCM of SIX x-clear or of a Co-CCP.

6.2   **Novation of trades from MTF or Matching Service**

Novation shall occur upon the entry of the matched trades into SIX x-clear's system, SIX x-clear as a CCP offers to step between the Buying and Selling Member, provided that the two matching parties are either a Member or an NCM of SIX x-clear or of a Co-CCP.

7.0   **Off-order book trades**

SIX x-clear acts as a CCP for trades concluded outside the order book, provided that these transactions take place within the trading and clearing timeframe defined by SIX x-clear, and are concluded and reported in conformity with the rules. A transaction thus concluded between two Trading Platform members entails a bilateral contract between these two trading members. Under certain conditions, the contract is cancelled and SIX x-clear steps into the trade as a CCP. This results in two new contracts: a contract between the Selling Member and SIX x-clear on the one hand and a contract between SIX x-clear and the Buying Member on the other.

For trades concluded outside the trading and clearing timeframe, SIX x-clear does not step into a transaction and no clearing is performed, i.e. transactions continue to be settled bilaterally between the two trading parties. Clearing for off-order book trades apply only to a few Trading Platforms.

8.0   **Mapping of trading capacities**

MiFID II and MIFIR have defined six trading capacities. x-clear maps all the trading capacities received from the Trading Platforms to either "PRIN" (Principal) or "AGEN" (Agency) and applies the following default mapping rules.

Trading capacities in trade feed from Trading Platforms	Mapped and reported by x-clear as
PRIN (Principal)	PRIN (Principal)
DEAL (Dealing on own account)	
MTCH (Matched principal)	
RLPR (Riskless principal)	
AGEN (Agency)	AGEN (Agency)
AOTC (Any other trading capacity)	

For SAT reporting to Euroclear UK and Ireland, x-clear uses the mapped trading capacities according to the mapping rules above.

Additionally, x-clear offers the flexibility for a non-standard mapping at the level of Trader Group ID. Form 002C can be used for this purpose.

9.0 Settlement

9.1 Introduction to settlement

SIX x-clear follows the following two models for settlement:

- Settlement agent model: settlement is performed by SIX x-clear's settlement agent (SIX SIS) to settle in the security's domestic market.

- Direct settlement model: SIX x-clear performs settlement using its own account at the local CSD. SIX x-clear may employ an account operator for certain services to SIX x-clear.

Each transaction cleared by SIX x-clear has an Intended Settlement Date (ISD). The ISD is based on the local market practices of the security. The Member must ensure that a sufficient amount of funds or securities as required is available on the ISD.

Securities transactions concluded that are excluded from clearing are settled according to the non-CCP settlement model of the Trading Platform, whereby the trading parties have to settle directly between themselves bilaterally.

9.1.1 Settlement organization

SIX x-clear offers its Members settlement at the domestic CSD of the security for transactions executed on Trading Platforms with multiple market segments. SIX x-clear participates in settlement at the settlement location on its own or through a settlement agent. Currently, SIX x-clear provides clearing services for the following places of settlement:

Market	Name of the CSD	T2S settlement	T2S settlement priority for SIX x-clear's instructions
A. Bilateral input to place of settlement			
AT	OeKB CSD GmbH	Yes	4
BE	Euroclear Belgium	Yes	4
CH	SIX SIS Ltd	Yes (only Swiss equities in EUR)	1
CZ	Central Securities Depository Prague	No	-
DE	Clearstream Banking Frankfurt AG	Yes	4
DK	VP Securities	Yes	2
EB	Euroclear Bank	No	-
FI	Euroclear Finland Oy	No	2

Market	Name of the CSD	T2S settlement	T2S settlement priority for SIX x-clear's instructions
FR	Euroclear France	Yes	4
HU	KELER Central Depository Ltd.	Yes	-
IT	Monte Titoli	Yes	2
NL	Euroclear Netherlands	Yes	4
NO	VPS	No	-
PT	Interbolsa	Yes	3
SE	Euroclear Sweden AB	No	-
B. Bilateral input to place of settlement or direct input (Member may choose)			
IE	Euroclear UK & Ireland Ltd	No	-
UK	Euroclear UK & Ireland Ltd	No	-
C. Pre-matched instruction to place of settlement by x-clear			
ES	Iberclear	Yes	2

Please refer to the relevant User Guide for details on the settlement arrangements in these markets (see sub-chapter 19.1 *SIX x-clear's documents*). Members have to indicate the settlement preference details in form 002C of SIX x-clear.

9.1.2 Settlement amount

In case that the settlement amount is not generated by the Trading Platform in the trade input, SIX x-clear will compute the settlement amount based on the Deal Price of the security for the trade and the trade size. SIX x-clear will always use simple rounding to two decimal digits to arrive at the settlement amount. For example:

A settlement amount of EUR 1,500.155 and above will be rounded to EUR 1,500.16 and a settlement amount of EUR 1,500.154 and below will be rounded to EUR 1,500.15.

9.1.3 Settlement mode

SIX x-clear offers optional net settlement to its Members for the transactions on all Trading Platforms which SIX x-clear acts as a CCP. Net settlement reduces the settlement transactions to one or more transactions per security/currency/account and trade date. Settlement netting will have no impact on the margining of the open positions.

Members have to indicate the settlement preference and the account number at the settlement organization used for settlements in form 002C of SIX x-clear (see sub-chapter 19.1 *SIX x-clear's documents*).

9.1.4 Non-standard settlement

Trading participants executing **bilateral pre-negotiated trades on-exchange** can indicate an alternative settlement currency to the traded one. If the standard CSD of the security does not support the alternative settlement currency, trading participants can request settlement to take place at an ICSD.

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The non-standard settlement currencies and/or settlement places for each security and market are subject to the determination of the relevant trading venue. Members will have to refer to the specifications of the trading venue for submitting non-standard settlements.

9.2 SIX x-clear settlement netting vs. SIX SIS settlement netting

In general, settlement netting is performed by SIX x-clear. For trades in Swiss Equities from SSX in the Swiss Blue Chip Segment and Mid & Small Cap Segment (incl. ETFs), Members can opt to use the settlement netting service of SIX SIS ("SIX SIS Settlement Netting") or, instead, use the netting services of SIX x-clear ("SIX x-clear Settlement Netting").

The following chart and table illustrate the difference between these two settlement netting procedures.
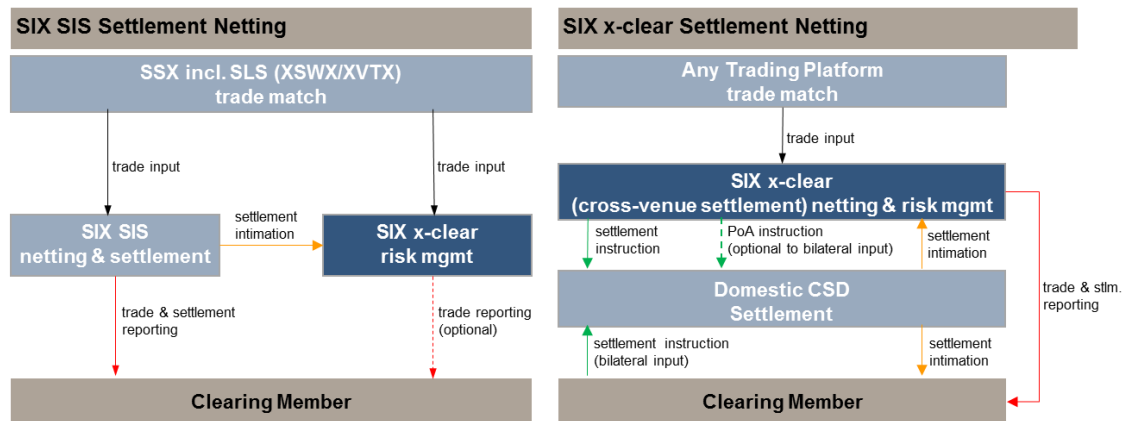
Different functions are applicable to those two settlement netting procedures as follows:

Function	SIX SIS Settlement Netting	SIX x-clear Settlement Netting
Asset class	Only Swiss equities traded on SSX incl. SLS (XSWX/ XVTX)	All equity transactions from all trading venues (e.g. MTFs, exchanges etc.) including Swiss equities traded on SSX incl. SLS
Settlement netting	SIX SIS	SIX x-clear
Cross-venue settlement netting	NA	Yes (optional)
PoA as settlement instructions	NA	Yes (optional)
Settlement match/ T2S settlement	Locked in pre-matched	Bilateral or PoA
Settlement reporting	NA	Yes
Trade reporting	Yes	Yes

For Swiss equities and ETFs which are settled at SIX SIS, SIX SIS participants receive upon request report RDOS802 indicating those gross transactions that are based on the original net transaction. The report specifications, which are based on those of the SWIFT message MT537, are explained in the Business Partner Specifications of SIX SIS.

For non-Swiss Securities which are settled at the domestic CSDs, SIX x-clear offers its Members a variety of reporting options. There are sent during the intraday/end-of-day processing at SIX x-clear (see sub-chapter 19.1 *SIX x-clear's documents*).

To opt for SIX SIS Settlement Netting or SIX x-clear Settlement Netting for the above-mentioned Swiss transactions from SSX incl. SLS, Members have to submit the form of SSX "CCP SIX x-clear: Clearing and Settlement Standing Instructions (CSSI) Notification Form" (see sub-chapter 19.3 *SSX form*).

To use SIX x-clear Settlement Netting, Members have to indicate the netting preference details in form 002 of SIX x-clear (see sub-chapter 19.1 *SIX x-clear's documents*).

By using cross-venue settlement netting via SIX x-clear, Members can enhance settlement efficiency and optimize liquidity requirements.

9.3 SIX x-clear Settlement Netting for equity trades of all Trading Platforms

9.3.1 Settlement netting

The settlement netting model from SIX x-clear to its Members is based on trade date netting (TDN). The netting parameters used for such trades are as follows:

Netting Criteria	1st Level Net Settlement Types	2nd Level Net Settlement Types
	for Swiss securities	only for non-Swiss securities
1. Trade place 2. Trade date 3. Settlement agent 4. Clearing account 5. Settlement account 6. Money account 7. Settlement currency 8. ISIN 9. Settlement date 10. NCM ID 11. Place of settlement 12. Place of safekeeping[1] 13. Trading capacity (PRIN/ AGEN)	• DVP • RVP • DFP[2] • RFP[2] *(after netting)* • DSM • RSM • NLD • PMO • RMO	*(after 1st level netting)* • DVP • RVP • DFP • RFP

[1] Applicable if Member is using custodian services for the market.
[2] DFP/RFP will be instructed as DVP/RVP.

Netting will be performed around 8:00 pm CET, once the Trading Platform is closed for the trading day. All exotic settlement types such as DSM (delivery of security and

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money), RSM (receipt of security and money), PMO (pay money only), RMO (receive money only) or NLD (null deliveries) are supported. For non-Swiss securities, the net orders will be further netted at a second level to break them into a combination of **versus payment** and **free of payment** instructions.

9.3.2 Strange nets (aggregation)

The aggregation model resolves the strange net positions by unwinding the strange net settlement types and performing aggregation of the delivery and receipt transactions separately in order to instruct them as independent DVP and RVP orders. In this model the Member has the flexibility to restrict the strange net processing for null deliveries.

Members are required to choose between two different parameters:

- Strange net model
- Instruct NLD/NLR or not

For example, consider the following Member:

Member	Trading place	Strange net model	NLD/NLR instructed	Member type
B124	CHIX	Aggregation model	Yes	GCM

Assume that the following transactions are sent to the system for each of the Members. Other parameters such as trade date, settlement date, trading place and ISIN etc. are assumed to be the same for the Member.

Member	Trade place	TRX type	ISIN	Quantity	Currency	Amount
B124	CHIX	DVP	ISIN1	50	GBP	500
B124	CHIX	DVP	ISIN1	50	GBP	500
B124	CHIX	RVP	ISIN1	100	GBP	1,050
B124	CHIX	DVP	ISIN2	100	GBP	1,000
B124	CHIX	RVP	ISIN2	50	GBP	500
B124	CHIX	RVP	ISIN2	45	GBP	500
B124	CHIX	DVP	ISIN3	100	GBP	1,030
B124	CHIX	RVP	ISIN3	100	GBP	1,030

After the first level of netting, the transactions above would result in the following strange nets:

Member	Trade place	TRX type	ISIN	Quantity	Amount	Net references (pre aggregation)
B124	CHIX	PMO	ISIN1	0	-50	ABC01
B124	CHIX	DFP	ISIN2	-5	0	ABD01
B124	CHIX	NLD	ISIN3	0	0	ABE01

None of these transactions are acceptable for settlement; therefore, they have to be further netted into acceptable transaction formats.

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As per the aggregation model, DVP and RVP are aggregated to two instructions per ISIN and Member and passed on for settlement.

Member	Trade place	TRX type	ISIN	Quantity	Amount	Net references (pre aggregation)
B124	CHIX	DVP	ISIN1	100	1,000	ABC01001
B124	CHIX	RVP	ISIN1	100	1,050	ABC01002
B124	CHIX	DVP	ISIN2	100	1,000	ABD01001
B124	CHIX	RVP	ISIN2	95	1,000	ABD01002
B124	CHIX	DVP	ISIN3	100	1,030	ABE01001
B124	CHIX	RVP	ISIN3	100	1,030	ABE01002

9.3.3 Shaping

As a result of the offsetting of gross settlement transactions, the net settlement transaction may be worth an undesirably large amount of money. To prevent such large amounts, the Member may instruct SIX x-clear to define a maximum amount per currency. In case of the net transaction amount exceeding this cap, a "shaping" process takes place in which the net transaction is divided into net transactions with smaller amounts. The Member can define the shaping limits for each currency.

Example: The netting process results in a net DVP transaction with a payment amount of CHF 120 m. The cap for shaping is fixed at CHF 100 m. This net transaction is divided into two transactions of CHF 60 m each.

9.3.4 Settlement netting across Trading Platforms

SIX x-clear offers the possibility for Members to net transactions executed on multiple order books as well as OTC on an optional basis. The standard netting parameters as mentioned in sub-chapter 9.3 *SIX x-clear Settlement Netting for equity trades of all Trading Platforms* apply in this scenario also, with the exclusion of the trade place.

1. Cross-venue settlement netting for Trading Platforms

   SIX x-clear offers cross-venue settlement netting for Trading Platforms which have been opted by the Member.

   A technical pre-requisite to facilitate cross-venue settlement netting of UK and Irish transactions is the matching and settlement capability using the "TSO Code "9" for CCP cross-venue settlement netting" (TSO: Trade System of Origin). Members are encouraged to consult their settlement agents or in-house settlement teams to confirm this capability prior to activation. Additionally, Members should be aware that the LSE settlement calendar may in certain cases differ from that of alternative Trading Platforms that also list UK and Irish Securities. In such cases, cross-venue settlement netting of UK and Irish LSE flows against the flow of alternative Trading Platforms may result in separate nets for the same ISIN currency combination due to differing settlement dates.

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2. Cross-order book settlement netting of UK and Irish transactions on Bats/Chi-X of Cboe Europe equities

SIX x-clear offers its Members an optional cross-order book settlement netting between Bats and Chi-X trades for the UK/Irish markets. A single TSO code "B" or "N" is used for the order books of Bats and Chi-X respectively, even when the trading participants' gross executions are made exclusively on the Bats or Chi-X order book throughout the trading day. The order books of Bats and Chi-X are offered on the Trading Platform of Cboe Europe Equities.

Members opting for cross-venue settlement netting and/or cross-order book netting are required to provide the necessary standing instructions to SIX x-clear using form 002 (see sub-chapter 19.1 *SIX x-clear's documents*).

9.4 SIX SIS Settlement Netting for Swiss equities from SSX incl. SLS

As described in sub-chapter 9.2 *SIX x-clear settlement netting vs. SIX SIS settlement netting*, the settlement netting for Swiss equities including ETFs from SSX incl. SLS can be performed either by SIX x-clear (see sub-chapter 9.3 *SIX x-clear Settlement Netting for equity trades of all Trading Platforms*) or by SIX SIS. If the Member has opted for the SIX SIS Settlement Netting, the trades netted at SIX SIS are locked-in trades. SIX SIS processes the settlement instructions on the basis of existing booking instructions. No manual order input by the Member is required.

For detailed information on settlement at SIX SIS, please refer to the SIX SIS Operational Guide (see sub-chapter 19.1 *SIX x-clear's documents*).

9.4.1 Settlement netting procedure at SIX SIS

The description in this chapter is restricted to settlements involving SIX x-clear (i.e. no NCM-GCM settlements).

SIX SIS applies trade date netting for Swiss shares and ETFs. As a result, the individual trades are deleted and a netting order is generated. Settlement is only effected for the net order. The gross transactions and the net order are linked with a POOL reference.

Netting is effected at the end of the trading day at approximately 6:30 pm (CET). Transactions in status "hold" at this point of time are not netted. Transactions that are not netted are forwarded for gross settlement.

Netting criteria: transactions with identical content in the following fields are netted:

- Business partner ID
- Custody account
- Money account
- Counterparty (which is always SIX x-clear)
- ISIN

- Currency
- Trade date
- Settlement date
- Settlement priority
- Compensation indicator
- Clearing account

Field :22F::NETT//YNET in a status intimation indicates that a trade has been admitted to the netting process.

Field :22F::SETR/SCOM/NETT in a status intimation indicates a net order.

During the netting process, the gross transactions are deleted and allocated status 412 "cancelled due to netting". A five-digit reference, the so-called net reference, is entered in field :20C::POOL//… of the status intimation. An example is provided in the next chapter.

The status intimation contains the same net reference in field :20C::POOL//…. Net orders are possible for the order types indicated in the table below.

	Transaction		Transaction type for MT598-910	Message type for SWIFT
	Securities	**Money**		
1	Delivery	Receipt	DVP	MT547
2	Receipt	Delivery	RVP	MT545
3	Delivery	0	DFP	MT546
4	Receipt	0	RFP	MT544
5	0	Receipt	RMO	MT547
6	0	Delivery	PMO	MT545
7	Delivery	Delivery	DSM	MT547
8	Receipt	Receipt	RSM	MT545
9	0	0	NLR	MT545

DVP (delivery versus payment), PMO (pay money only) and DSM (delivery of security and money) net transactions are allocated status "201 – matched". RVP (receive versus payment), RMO (receive money only), RSM (receipt of security and money) and NLR (null receipt) net transactions are allocated status "207 – matched generated". The transactions run through the normal succession of statuses until status "601 settled/executed" is reached.

Net orders may be subject to shaping (see sub-chapter 9.3.3 *Shaping*) and splitting (see sub-chapter 9.4.6 *Automatic splitting for Swiss securities at SIX SIS*).

9.4.2 Settlement between GCM and NCM

In a GCM/NCM structure, the NCM has the option of having transactions settled directly against SIX x-clear or against the GCM. This has, however, no impact on the contractual

situation since the GCM remains the only contracting counterparty of SIX x-clear, even on an individual trade level.

Settlement via the GCM entails two settlements: SIX x-clear against a GCM and a GCM against an NCM. All appendant settlement instructions are automatically routed to the CSD. Transactions between the GCM and the NCM are always effected on a gross basis.

The parties involved (NCM and GCM) must indicate in the CSSI form of SSX the party against which settlement is to be effected.

When transactions are settled at SIX SIS, it is possible that the NCM has a so-called Assigned Business Partner (ABP) relationship. In this case, the ABP can use the account of another SIX SIS participant (e.g. its GCM's account). Settlement between the ABP and SIX x-clear means that transactions are directly settled between the NCM and SIX x-clear. Even in the case where the GCM makes its account available to the ABP, the GCM must characterize itself in the CSSI form as "not participating in the settlement chain". The NCM must indicate its wish to directly settle against SIX x-clear.

9.4.3 Shaping at SIX SIS

Please refer to sub-chapter 9.3.3 *Shaping*.

9.4.4 Settlement instructions with SIX SIS Settlement Netting

SIX SIS participants maintain their own custody account for securities at SIX SIS. The SSX trades in the relevant Swiss equities (see sub-chapter 9.2 *SIX x-clear settlement netting vs. SIX SIS settlement netting*) are transmitted as locked-in transactions directly from the Trading Platforms to SIX SIS. These locked-in transactions also contain information about whether they are to be settled on a gross or on a net basis. Securities and money accounts are defined according to participant master data, on the basis of the so-called booking instructions. Changes to these booking instructions must be communicated to SIX SIS directly.

9.4.5 Gross settlement at SIX SIS

Transactions that are not intended for netting are settled individually (on a gross basis). The process is identical to the current in-house settlement. SIX x-clear is always the counterparty in these transactions.

9.4.6 Automatic splitting for Swiss securities at SIX SIS

The splitting process and the reference fields are explained in the SIX SIS Operational Guide (see sub-chapter 19.2 *SIX SIS documents*).

9.5	**Settlement instructions at CSDs**

9.5.1	**Settlement of Swiss securities**

Settlement of transactions in Swiss securities happens on an OTC basis at SIX SIS, the domestic CSD for Swiss securities. For the settlement of Swiss securities, SIX x-clear will instruct on its behalf and optionally on behalf of the Member to SIX SIS. For instructing on behalf of the Member, SIX SIS requires a power of attorney (PoA) from the Member. The Member can also input their settlement instruction directly to SIX SIS on a bilateral basis.

Based on market practice, SIX SIS will settle all settlement instructions on T2S-eligible securities which are traded in EUR at T2S. Trades cleared with the trade currency CHF will continue to settle at SECOM.

For T2S settlements, for bilateral matching by Directly Connected Participants (DCPs) of T2S, the settlement instructions have to be routed as per the details provided in the relevant Settlement User Guides of SIX x-clear. The matching criteria at the technical place of settlement SECOM and T2S may differ.

9.5.2	**Settlement of non-Swiss securities**

Settlement of transactions in non-Swiss securities happens on an OTC basis at the domestic market CSD for the security. For the settlement of these securities, SIX x-clear participates directly in the respective market by maintaining its own CSD account or uses SIX SIS as its settlement agent.

Based on market practice, for trades cleared with the trade currency EUR and DKK via T2S, the settlement instruction will be settled at T2S or in the local CSD.

Members or their settlement agents for non-Swiss markets should issue instructions on an OTC basis against the settlement details of SIX x-clear outlined in the relevant User Guide.

SIX x-clear informs its Member or the settlement agent of the settlement details by sending a copy of the settlement instruction (MT540 – 543 based on settlement type) for the generated net/gross transactions. The Member or its settlement agent can use the instructions from SIX x-clear to input the settlement instructions at the place of settlement.

SIX x-clear offers an optional service for generating the settlement instruction on behalf of the Member to the settlement agent of the Member in the local market. To use this service, the Member needs to provide a PoA with SIX x-clear's form 004 to SIX x-clear. A PoA allows SIX x-clear to send the settlement instruction (in ISO 15022 format based on the settlement type) on behalf of the Member to the settlement agent of the Member.

9.5.3   Settlement of UK and Irish securities

9.5.3.1   Direct input services and SAT reporting

The Direct Input Service is a service provided by Euroclear UK & Ireland (EUI). Before the service may commence, it is necessary for the Member to technically enable SIX x-clear's Central Sponsor in the CREST Graphical User Interface (GUI).

By technically enabling the service in the CREST GUI, the CREST Member grants the CREST Central Sponsor of SIX x-clear the authority to input settlement instructions into the CREST system in relation to trades cleared by SIX x-clear.

The Central Sponsor of SIX x-clear does not have a general authority in relation to the securities accounts but only effectively to input the DELs by way of the MT518 feed.

The legal mechanisms of this service are set out in the CREST documentation.

SIX x-clear supports the EUI direct input service as an optional service to its Members settling at EUI. The direct input service is offered by EUI, by which settlement instructions in the EUI-CREST system are created on the participant's behalf in relation to trades conducted on a particular Trading Platform or across multiple Trading Platforms.

By opting for the direct input option provided by SIX x-clear through a central sponsor, the Member doesn't need to submit settlement instructions at EUI-CREST.
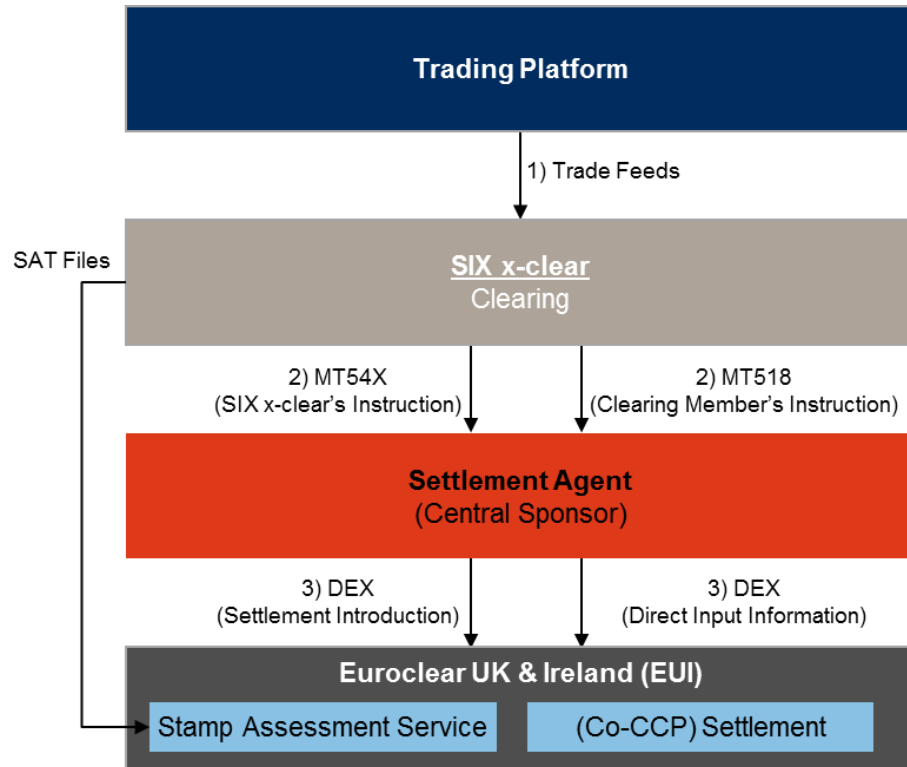
Various TSO codes are employed in the SIX x-clear direct input service for Members, e.g.:

- LSE SETS trades settling at EUI (TSO "S")
- Cross-venue settlement netted trades settling at EUI (TSO "9")

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Members that do not opt for Direct Input should match SIX x-clear's instruction in CREST bilaterally.

For Members that opt into Direct Input, SIX x-clear will send MT518 messages through its central sponsor to create settlement instructions at EUI.

When a Member elects to use Direct Input in conjunction with TSO "9" for cross-venue settlement netting, it is at the Member's discretion to choose the venue scope for inclusion in the settlement net.

Should the Member elect to exclude certain Trading Platforms from the cross-venue settlement netting, the excluded flow must be matched bilaterally in CREST against the relevant TSO of the individual Trading Platform.

9.5.3.2 Stamp status for agency business in Irish securities

For buy-side trades in Irish securities with the trading capacity "agency", SIX x-clear populates the status "Q" (Irish exempt, for any other reason) in the field "Transaction Stamp Status Buyer". This transaction stamp status in the SAT reporting to EUI is based on the Member's choice.

To opt for this service, the Member has to specify its preference in the SSI form (form 002C) of SIX x-clear. In addition, the Member needs to conduct the necessary set-up

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with EUI in order to facilitate technical activation in the CREST Graphical User Interface (GUI).

9.5.4 Settlement of Spanish equities

9.5.4.1 Overview of the Spanish market

The settlement of cash equity transactions in the Spanish market has specific features in terms of the securities registration, account set-up, reporting and functionalities.

Iberclear as the Spanish central securities depository maintains a two-tier book entry register of securities:

1. **General Register** as the first tier is kept by Iberclear and contains the aggregated security balances. The General Register is used for all account types of Iberclear. The following structure of the General Register is relevant for SIX x-clear Clearing Members or their settlement agents:

   a. Proprietary accounts of the entities: For each settlement participant and with reference to each ISIN, Iberclear will hold one or more accounts which reflect the balance held by the entity itself.

   b. General third-party accounts: For each settlement, participants authorized to maintain third-party accounts and with reference to each ISIN, Iberclear will hold one or more accounts which reflect the global balance of the securities that the authorized entities have registered on behalf of their third-party clients. General third-party accounts are omnibus accounts with the aggregated balance of different clients.

   c. Individual accounts: Accounts opened on behalf of an owner, be it a natural or a legal person. Individual accounts can only have the securities of one single party.

   d. Financial intermediary special accounts: It is mandatory for the financial intermediaries who use the optional settlement procedure of orders to keep at least one individual account in the General Register.

2. **Second-Tier Register:** The second-tier register is managed by the settlement participants. Iberclear will have a strict control over the balances of the securities accounts in the General Register corresponding to each settlement participant, as well as the consistency between the sum of these balances and the total number of securities included in each ISIN. Iberclear will also ensure that the total balance of the general third-party accounts matches the sum of the balances from all third-party second-tier accounts into which they are broken down. Clearing Members or their settlement agents have to report the relevant information (e.g. ownership information for the gross trades) to SIX x-clear, which further reports this information to the Post-Trade Interface (PTI).

Iberclear operates a standardized information system, the Post-Trade Interface (PTI). PTI guarantees the traceability of trades from trading to settlement and registration.

SIX x-clear supports various functionalities, such as Ownership Update and Correction, Account Update, Hold and Release, for the settlement process, which are described in sections 9.5.4.3 *Ownership Information, Ownership Update and Ownership Correction* to 9.5.4.6 *Mandatory pre-matched instructions*.

9.5.4.2 SIX x-clear's business model for CCP Clearing of the Spanish cash equities

SIX x-clear is a direct participant of Iberclear and maintains a proprietary safe custody account for the settlement of Spanish equities. It supports all account types of Iberclear as follows. For definitions of the account types, please refer to the website of Iberclear.

- Proprietary account
- General third-party account
- Individual account.
- Financial intermediary special account

The diagram below shows SIX x-clear's business model for clearing and settlement of Spanish equities. It focuses on the special features of the Spanish market and does not include the interoperable procedure, which works in the same way as for other markets.

Post-trade processing of Spanish equities
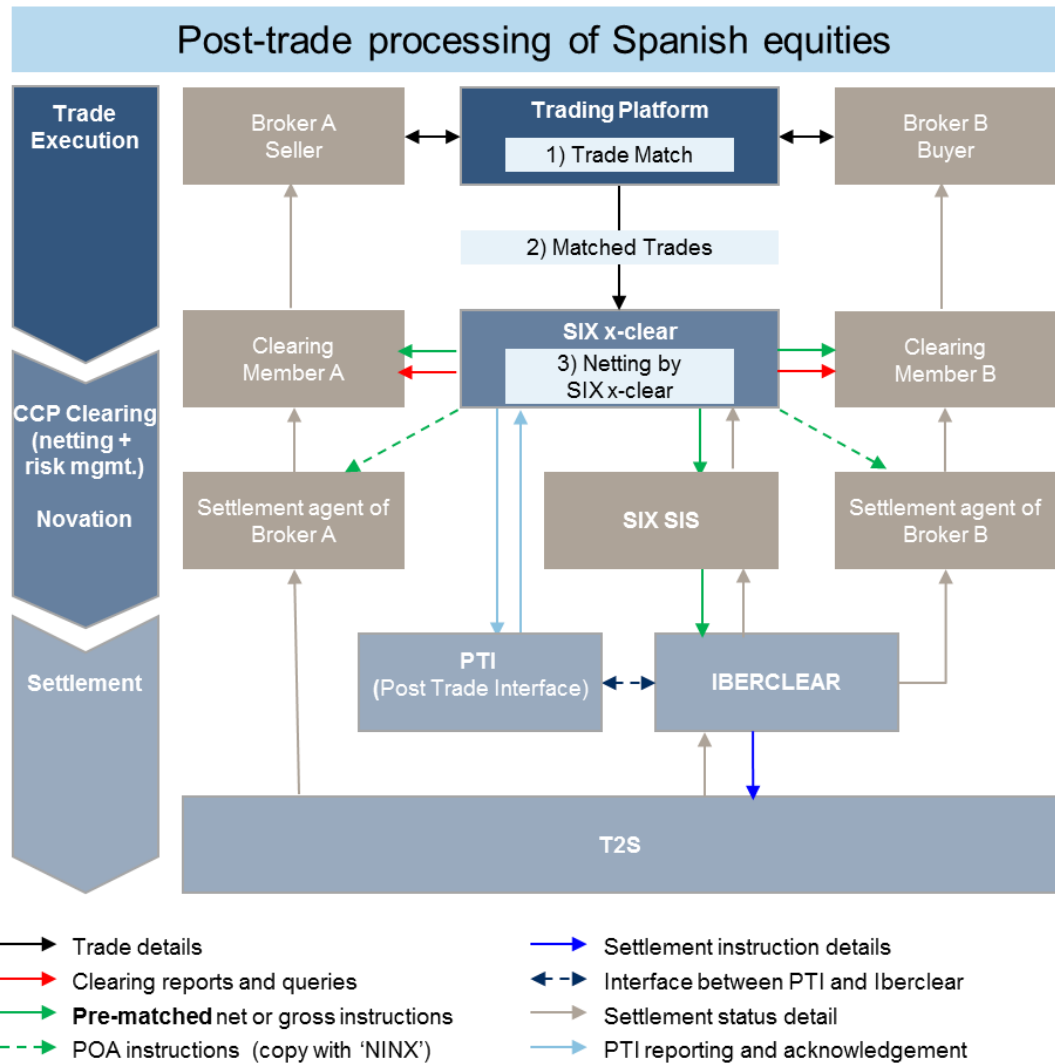
9.5.4.3 Ownership Information, Ownership Update and Ownership Correction

Trading participants and Clearing Members of Spanish equities must report the ownership of trades including information such as the account owner, trade and settlement data as well as other static data details to PTI. SIX x-clear in its role as a CCP will report all these information to PTI on behalf of its Clearing Members.

For the first time, Clearing Members have to submit all the applicable ownership details for their settlement accounts at Iberclear using form 010 – "Ownership data from Clearing Members for Iberclear settlements ". They can define a default ownership reference, which will then be applied for all gross trades received.

- **Ownership Update**

Clearing Members or their settlement agents can update their default ownership reference registered for trade legs at PTI. A gross instruction with the default

ownership reference can be modified to assign one or multiple new ownership references. In case of multiple ownership for single trades, one trade leg will be associated with multiple ownership details.

- **Ownership Correction**

  SIX x-clear supports the Ownership Correction process if the reported ownership needs to be amended after the deadline for ownership reporting. Ownership Correction is applicable only for settled instructions and not for the failed settlements.

Ownership Update and Ownership Correction are only applicable for the third-party account.

9.5.4.4 Account Update

Using the Account Update functionality, Clearing Members can update clearing and settlement accounts for the original gross instructions, and correct the accounts based on their positions at Iberclear. Accounts can be updated at the gross instruction level in full or part.

Upon trade acceptance at SIX x-clear, the trades are positioned into the default clearing account as well as into the linked settlement account. If Clearing Members wish to settle these positions through a different account from the original one and then to realign these trades, they can request an Account Update. In case of Account Updates, the gross trades on the previous accounts will be cancelled and new gross trade(s) will be created on the new account.

Details of Iberclear's settlement accounts and their linkage to SIX x-clear's clearing accounts are collected during the onboarding process. Form 002F ("Clearing and settlement account linking for settlement of Spanish securities") is used for this purpose.

9.5.4.5 Hold and Release

The Hold and Release functionality allows Clearing Members to hold the gross delivery instructions and release them in part or full for settlement based on their available positions. The gross instructions can be held in full or in part by providing the trade references and quantity in the "Hold" request. "Hold" requests sent after 19:00 CET on ISD-1 will be rejected. Clearing Members or their settlement agents can update gross delivery instructions to "Hold" until 19:00 CET on ISD-1.

Clearing Members or their settlement agents can set all their instructions to "Hold" or "Release" at the trading ID level by using the option "Hold or Release by default" in their SSI static data form (Form 002C).

The held instructions can be released until ISD+5 either in full or in part. x-clear processes Members' Release requests multiple times a day from ISD onwards. It offers multiple pseudo netting and re-netting to ease the Hold/Release process.

1. Pseudo netting

   Pseudo netting is a periodic netting simulation process to report the provisional settlement instructions. It is not actual settlement netting. The pseudo netting report (RDXO535/ MT 537) on T and ISD-1 gives an overview of all settlements, while the pseudo netting report from ISD onwards, which is produced exactly one hour before each re-netting process, includes only the held delivery instructions. Based on the available positions for settlement at Iberclear, Clearing Members or their settlement agents can plan for releasing further settlement instructions. In addition to the standard netting models, the netting model "Direct aggregation" is specifically available for pseudo netting, where all "Buys" and "Sells" are netted separately and reported on T and ISD-1.

2. Re-netting and settlement instructions to Iberclear

   SIX x-clear provides multiple intraday re-netting cycles from ISD until ISD+5 to re-net the gross delivery instructions after processing the release requests. New settlement instructions will be sent separately for held and released net obligations to Iberclear. Instructions for the held positions are only for information purposes and will be cancelled by SIX x-clear when the instructions are released in the next re-netting run.

   SIX x-clear will instigate the cash-out process for all unsettled instructions on ISD+5 after 16:00 (CET).

   The detailed timelines for Ownership Update, Account Update, the process of Hold and Release as well as pseudo netting are described in SIX x-clear's Settlement User Guide for Spain.

9.5.4.6 Mandatory pre-matched instructions

Iberclear mandates CCPs to instruct pre-matched settlement instructions.
SIX x-clear always sends a single pre-matched settlement instruction to Iberclear. Clearing Members or their settlement agents do not need to send any bilateral matching instructions to Iberclear. They receive the status advice and settlement confirmations directly from Iberclear or T2S as per their communication interface.

Clearing Members or their settlement agents have to sign form 004A "Power of Attorney to Instruct Iberclear" (hereinafter referred to as "PoA Iberclear") to authorize SIX x-clear to send the pre-matched instructions.

SIX SIS cannot be appointed as a settlement agent because SIX SIS does not allow mandatory PoA instructions via its omnibus account with Iberclear.

9.5.4.7 **Trade and settlement reporting for the Spanish market**

Two reports are designed specifically for the Spanish market transaction reporting.

- **RDXO534**: reports gross trades which are received on the current day and trades which are updated for the Spanish market on the current day due to Account Updates, Ownership Updates/Corrections as well as Hold/Release process.

- **RDXO535 / MT537**: reports the settlement details after each pseudo netting so that Members can plan to release further instructions.

Several reports have been enhanced to report trade and settlement details for the Spanish market. The details are described in SIX x-clear's reporting document.

9.5.4.8 **Preconditions for onboarding for the Spanish market**

For clearing Spanish equities through SIX x-clear, Clearing Members have to complete the following forms, along with the standard SSI form:

1. Form 010 "Ownership data from Clearing Members for settlement at Iberclear": the Excel sheet for multiple ownership references, whereas the PDF form for the single or default ownership reference.

2. Form 002F " Clearing and settlement account linking for settlement of Spanish securities"

3. Form 004A "Power of Attorney to instruct Iberclear"

9.6 **Settlement standing instructions**

Every Member eligible to have cleared trades on a Trading Platform needs to provide SIX x-clear with its settlement standing instruction details (SSI) using form 002C.

SIX x-clear will use these standing instructions to generate the settlement preference of the Member at the CSD.

10.0 **Member reporting**

SIX x-clear offers a comprehensive suite of reporting options to its Members, with a variety of delivery options available. Numerous reports exist for capturing trade details, open positions, clearing status intimations, settlement details, fee details, and for the purpose of gross/net trade reconciliation.

Form 002B "Member reporting for clearing and settlement standing instructions notification form" is used for report selection (see sub-chapter 19.1 *SIX x-clear's documents*).

11.0   Late Settlement and Buy-in

To support the settlement process and fulfill the settlement obligations, SIX x-clear may employ the following procedures:

1. Late Settlement procedures consisting of

-   Securities lending and borrowing: securities lending and borrowing can be used to settle the buyer's trade, if the seller hasn't delivered in due time.

-   Late Settlement fee: a late settlement fee for all Trading Platforms offered is in place for SIX x-clear. An according clearing notice will always be issued in due time to announce any changes concerning the late settlement fee regime.

2. Buy-in procedure: a Buy-in regime is in place for all Trading Platforms.

The chart below gives an overview of the schedule for above-mentioned procedures.
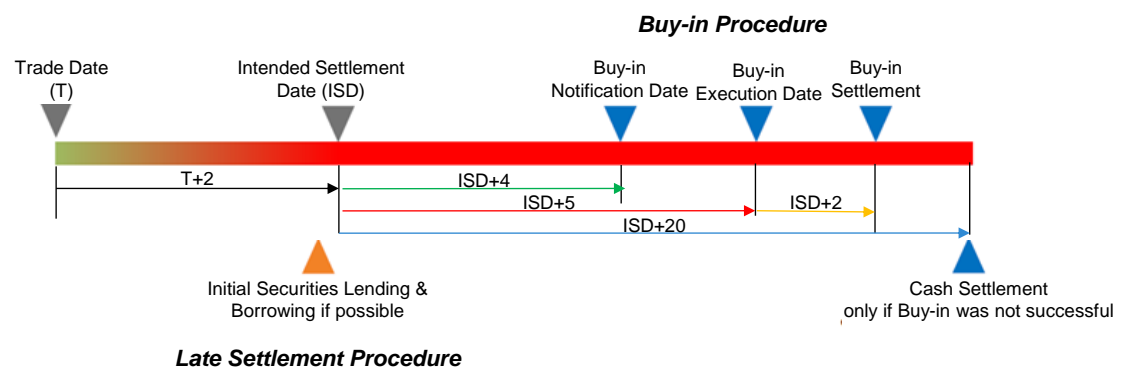
The buy-in matrix is published on the SIX x-clear website (see sub-chapter 19.1 *SIX x-clear's documents*).

12.0   Corporate actions

12.1   **Classification of typical corporate actions**

According to the standards defined by the Corporate Actions Joint Working Group (CAJWG), new harmonized terminology has been but in place.

12.1.1   **Distribution**

A distribution is a corporate action that occurs when the issuer of a security delivers a particular benefit or proceeds (e.g. cash, securities) to holders of a security and where the underlying holding gave rise to the distribution is unchanged by the corporate action in full. These corporate actions can be mandatory (such as stock dividends, bonus, issues) or mandatory with options, but cannot be voluntary. In mandatory distributions, there is no action required from the holders of the security.

When applied to an unsettled trade, distributions lead to the delivery or receipt of additional securities via market claims. Market claims are used to ensure that the benefit of a distribution reaches the contractually entitled party.

12.1.2 Reorganization

A reorganization is a corporate action that occurs when the issuer replaces, or offers to replace, all or some of an underlying security with one or more different resource(s). These corporate actions can be mandatory (such as assimilations and exchanges), mandatory with options or voluntary.

Transformation is the process by which transactions that are open at or after the record date are cancelled and replaced by new transactions in accordance with the terms of the reorganization.

12.2 Management of corporate actions on pending trades (corporate actions on flow)

According to the corporate action events (distributions or reorganizations), there are two kinds of corporate action on flow:

Market claims: process to reallocate the proceeds of a distribution to the contractually entitled party.

Transformations: process by which pending transactions, on or after the record date, are cancelled and replaced by new transactions in accordance with the terms of the reorganization.

Corporate actions on flow are applied on matched pending or settled transactions across a corporate event. They allow the reallocation of the benefits resulting from a corporate event to the contractually entitled party. Corporate events "on flow" include market claims and reverse market claims, transformations and buyer protections.

12.3 Corporate actions processing

SIX x-clear mandates the settlement agent of SIX x-clear in the domestic market of the security to handle the corporate action processing on the open trades which are eligible for corporate action benefits.

The execution of corporate actions is different for securities that are already held in a custody account (existing positions / corporate actions on stock) and for securities that have been purchased but not yet delivered (open transactions / corporate actions on flow). Distributions on existing positions are made in accordance with the rules of the settlement organization with which the securities are deposited.

Distributions on positions deposited with SIX x-clear as collateral are directly credited by the main paying agent to the Members of SIX x-clear (not via SIX x-clear).

Further details are available in the country-specific User Guides (see sub-chapter 19.1 *SIX x-clear's documents*) and the T2S Corporate Actions Lifecycle Management (see sub-chapter 19.2 *SIX SIS documents*).

12.4 Claims

Claims on outstanding transactions due to corporate actions are handled by the settlement organizations and booked according to the local market practices of the place of settlement. With the switch to EU harmonization, claims are handled as settlement instructions. SIX x-clear in conjunction with SIX SIS as the settlement agent will adapt to EU harmonization in case the place of settlement has done so as well.

The compensation procedure applied could be based on the ex-date or record date, depending on local market practices. The necessary transactions are automatically generated by the respective settlement organizations.

SIX x-clear always acts as the counterparty in its Members' compensation transactions, and therefore these transactions fall under SIX x-clear's risk management until they are booked/ settled.

Further details are available in the country-specific User Guides (see sub-chapter 19.1 *SIX x-clear's documents*).

12.5 Mandatory corporate actions and corporate actions with a choice of options

With respect to distributions on open transactions, a distinction is made between two types of corporate actions:

- Mandatory corporate actions, such as cash dividends or bonus shares.

- Corporate actions with a choice of options (elective corporate events), such as takeover offers, repurchase offers, rights issues/capital increases.

In the case of transactions concluded on a "cum" basis (i.e. with the trade date before the ex-date) and settled on an "ex" basis (i.e. with the settlement date on or after the ex-date), compensation procedures are applied to ensure that entitlements arising from corporate actions are transferred from the seller to the buyer. The necessary transactions are automatically generated by the respective settlement organizations.

12.5.1 Mandatory corporate actions

1. Timeline for bookings of compensation payments

Compensation transactions are booked at the times fixed by the individual settlement organizations. SIX SIS books compensation payments on the later of the two pay dates of the corporate action or on the settlement date of the open transaction.

2. Withholding tax rates for compensation payments

   All taxable compensation payments are taxed at the same default tax rate (non-treaty default rate) in both settlement organizations.

3. Rounding down of compensation payments in the form of securities

   In corporate actions involving the distribution of securities, decimal places may be rounded up or rounded down. For further details, please refer to the Settlement Guide of the relevant country

12.5.2 Corporate actions with a choice of options

Corporate actions with a choice of options are also executed in accordance with the rules of the settlement organizations. Under certain circumstances, however, SIX x-clear is exposed to risks that are not covered by the margins provided by the Members. This occurs in case of so-called "buyer elections", i.e. options a buyer can choose in open transactions with SIX x-clear as the seller. Special processing rules (explained in this chapter) apply for buyer elections.

12.6 Buyer election

In the case of corporate actions with a choice of options, SIX x-clear is late in delivering securities to a Member and, as a result, the Member is not able to deliver the securities to the main paying agent on time, the buyer has the ability to protect himself through a buyer election.

Available buyer election facilities at the settlement location will be mandated by SIX x-clear.

If no buyer election facility is available at the settlement location, the buyer election process will follow the below procedure.

The Member may contact SIX x-clear and choose its preferred option via SIX x-clear. SIX x-clear, in turn, obligates the selling Member that is responsible for the delay to perform the option chosen by the buyer (delivery of securities or the corporate action related to it).

The buyer has to send his choice with a Liability Request Notice (duly signed Form 006 of SIX x-clear) by fax to SIX x-clear settlement desks. SIX x-clear will forward the buyer's choice to the failing seller. The seller is obliged to execute the instruction and to deliver the outcome according to the buyer's choice.

The following conditions apply:

1. Trades entitling buyers to buyer election with SIX x-clear:

- The buyer has to be eligible according to the conditions of the corporate action
- Election deadline = market deadline /expiration date or deposit date
- Contractual (intended) settlement date = delivery date (deposit date) or earlier
- The actual settlement does not take place until the deposit date

2. Time window for buyers to contact SIX x-clear with a Liability Request Notice:
   No later than 10 a.m. CET on the expiration / deposit date + 1

3. Time window for SIX x-clear to contact sellers with a Liability Allocation Notice:
   No later than 12 noon CET on the expiration / deposit date + 1.

A seller shall deliver the underlying stock on the deposit date at the latest. A buyer or SIX x-clear is not obliged to accept delivery of the stock after such date. Therefore, the delivery could be returned to the seller. The seller still has the obligation to fulfil the executable buyer's choice.

Settlement of the chosen option

Sellers designated by SIX x-clear must perform a delivery on the pay date according to the option chosen. The delivery must be effected in accordance with the conditions applicable to the corporate action. The sellers have to ensure that the funds/securities required for settlement are available on the pay date. The subsequent settlement between SIX x-clear and the buyer also takes place on the pay date and in accordance with the conditions applicable to the corporate action. In case the attendant settlement instructions are not automatically generated by the market, settlement instructions will be agreed on a bilateral basis between SIX x-clear and the counterparty and generated manually through SIX x-clear.

13.0 Default

The default procedure applied by SIX x-clear corresponds to the existing regulations and can be summarized as follows:

A Member that fails to fulfil its obligations under conditions defined in the GTC can be declared a "Defaulting Member" by SIX x-clear upon consultation with the Trading Platform, or will be declared in default by the respective Trading Platform(s). After having declared a Member a "Defaulting Member", SIX x-clear issues a Default Notice and transmits it to the Member. The consequences of a Default Notice take immediate effect.

After issuance of the Default Notice or the occurrence of an automatic close-out event, SIX x-clear does not register any new contracts of the Defaulting Member. In order to liquidate existing positions, a full close-out procedure is carried out, i.e. netting and compensation with the different layers of available collateral in accordance with their order of realization (see clause 5.8).

14.0   Stamp Data Provider to Euroclear UK & Ireland

Members have the option to appoint SIX x-clear as the Stamp Data Provider (SDP) to Euroclear UK & Ireland (EUI).

Once appointed, SIX x-clear will report gross components of UK and Irish net transactions for all Trading Platforms selected by the Member.

SDP reporting is appropriate for Members that have elected the SIX x-clear Settlement Netting outside of CREST.

If the Member opts for gross settlement, SIX x-clear will not report gross trades in its SAT reporting to EUI. The gross settlement instruction routed to EUI will be considered for stamp assessment within the CREST system.

Before using the SDP service, Members or their settlement agents should configure their settlement feeds to EUI with the appropriate Transaction Stamp Status (TSS) "K" SWIFT code "GIKX". This is essential to prevent duplicate allegements of SDRT or Irish Stamp (once on the net component and once on the gross component).

The status of stamp-assessed trades should be monitored by Members or their settlement agents by interfacing with EUI. In the event of an exception in EUI's reconciliation process, Members may alert SIX x-clear to exceptions that require SIX x-clear's support to resolve.

Members are required to maintain the necessary static data by submitting form 002D to fulfil all EUI requirements to appoint SIX x-clear as the SDP.

The Member is responsible for its tax reporting to HMRC and the Irish Revenue Commission and for establishing an account structure which will allow transactions to be reported correctly for SDRT and stamp purposes.

15.0   Operating calendar

SIX x-clear accepts trades for clearing purposes on all days on which Trading Platforms are open for trading.

SIX x-clear accepts settlement information from the different settlement locations on all operating days of the market (Business Day of the CSD in the domestic market). An overview of the settlement holiday calendar per market is available at SIX x-clear's website (see sub-chapter 19.1 *SIX x-clear's documents*).

Margins are calculated and margin calls sent on all operating days of SIX x-clear.

16.0   Member interface with SIX x-clear

webMAX is the interface provided for Members using SIX x-clear as their CCP for different Trading Platforms. Members can use this interface with SIX x-clear to perform online queries and receive clearing reports and margin call notices.

For receiving settlement instructions, the Member or the settlement agent of the Member can use SWIFT connectivity or any existing messaging interface with SIX SIS.

17.0   Reports

Members can receive the trade and settlement reports via SFTP. For more details on specifications please refer to SIX SIS Business Partner Specifications (see sub-chapter 19.2 *SIX SIS documents*).

18.0   Pricing

The pricing structure for post-trade services can be accessed on SIX x-clear's website (see sub-chapter 19.1 *SIX x-clear's documents*).

19.0   Appendix: further reference documents

Documents which are mentioned in this Service Description can be downloaded on the following relevant websites. They are sorted alphabetically by the relevant topic.

19.1   **SIX x-clear's documents**

1. **Accepted collateral types (lending norms)**: www.six-group.com > Login > Securities Services Private > Clearing > Download center > Operational > Lending Norms.

2. **Buy-in matrix**: www.six-group.com > Login > Securities Services Private > Clearing > Download center > Operational > Late Settlement and Buy-In Rules

3. **Clearing Terms** www.six-group.com > Login > Securities Services Private > Clearing > Download center > Operational > Clearing Terms

4. **Forms**: www.six-group.com > Exchange Services > Securities Services > Clearing > Member Information > Forms

5. **Liability request notice and liability allocation notice**: www.six-group.com > Exchange Services > Securities Services > Clearing > Member Information > Forms > I. Forms for SECOM Members > Form 005 and Form 006

6. **Membership requirements**: www.six-group.com > Exchange Services > Securities Services > Clearing > Clients

7. **Pricing**: www.six-group.com > Exchange Services > Securities Services > Clearing > Products > Pricing SIX x-clear

8. **Reporting**: www.six-group.com > Exchange Services > Securities Services > Clearing > Member Information > Customer Reporting

9. **Service description of clearing of bonds**: www.six-group.com > Exchange Services > Securities Services > Clearing > Products > Fixed Income > SIX Swiss Exchange > Document Framework > Marketing

10. **Settlement user guides**: www.six-group.com > Exchange Services > Securities Services > Clearing > Member Information > Market Information > User Guides

11. **Settlement holiday calendar per market**: www.six-group.com > Exchange Services > Securities Services > Clearing > Member Information > Market Information > Market Holiday Calendar

19.2   SIX SIS documents

1. **Business Partner Specifications**: www.six-group.com > Login > Securities Services Private > SECOM > Business Partner Specifications > SIX SIS Business Partner Specifications - Volume 5 > Member Specifications

2. **SIX SIS operational guide**: www.six-group.com > Login > Securities Services Private Market Guide > Operational Information > 2.0 Operational settlement information > chapter 2.16.1 *SECOM inhouse orders with SIX x-clear, EuroCCP or LCH as a counterparty* and chapter 2.16.2 *Cross-border orders*.

19.3   SSX form

1. **CSSI form**: www.six-group.com > Exchange Services > Swiss Exchange > Participants > Participation > Forms > Clearing & Settlement > Clearing & Settlement Standing Instructions (CSSI) - SIX x-clear.

In this context, SIX x-clear Ltd draws the Members' attention to **clauses 7.1 lit. f. and 25.3** General Terms and Conditions of SIX x-clear Ltd stipulating that the Member bears responsibility for the tax requirements and consequences of clearing with SIX x-clear Ltd pursuant to the Applicable Law and that SIX x-clear Ltd assumes no liability for any charges or other negative consequences arising in conjunction with clearing through SIX x-clear Ltd. that are a result of tax laws or ordinances issued by tax authorities pursuant to the Applicable Law.

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