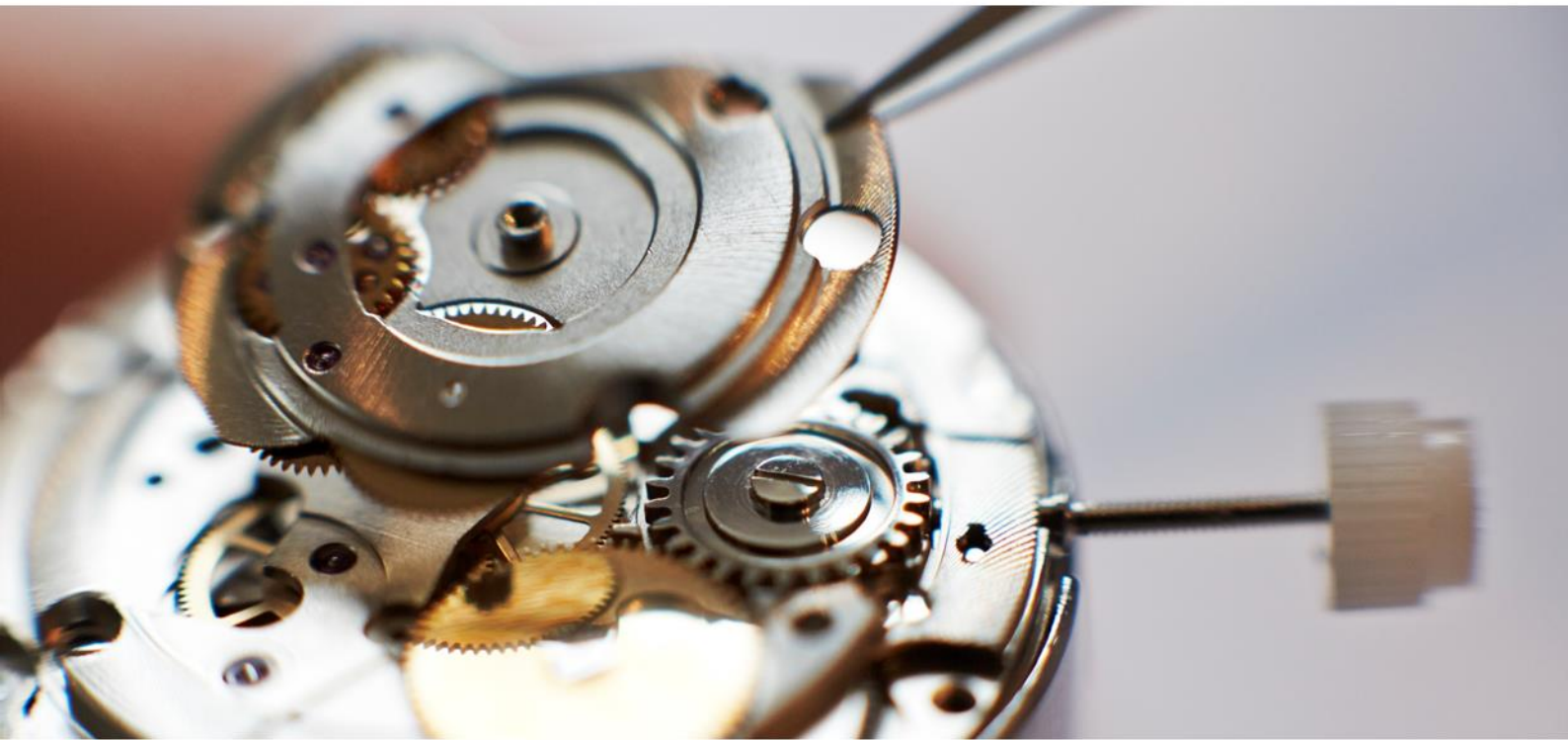




Service Description SIX x-clear AG

for Members on SIX Clearing Platform (SCP)
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Table of contents

1.0	Introduction	3
1.1	SIX x-clear AG	3
1.2	Role of a CCP	4
1.3	Connected trading platforms and CSDs	4
2.0	Membership	4
2.1	Membership types	5
2.2	Membership requirements	6
3.0	Account structure	6
4.0	User interfaces: SCP web and ISO 15022 messages	6
5.0	Trade capture and processing	7
6.0	Settlement	7
6.1	Settlement netting	7
6.2	Settlement participants	8
6.3	Matching of settlement instructions	8
6.4	Failed delivery	8
7.0	Risk management	9
7.1	Introduction	9
7.2	Margin	9
7.2.1	Calculating the margin requirement	9
7.2.2	Margin calls	10
7.3	Default fund	10
7.4	Linked Margin Element	10
7.5	Collateral	10
7.5.1	Introduction	10
7.5.2	Eligible collateral	11
7.6	Default	11
8.0	Corporate actions	11
9.0	Fees and penalties	12
9.1.1	Penalties	12
9.1.2	Invoicing	12



Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP)

1.0 Introduction

1.1 SIX x-clear AG

SIX x-clear AG (hereinafter referred to as “SIX x-clear”) is a wholly-owned subsidiary of SIX Group. 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. SIX x-clear started business operations in May 2003.

The Swiss Financial Market Supervisory Authority (FINMA) accorded SIX x-clear its license as a CCP under the Swiss Financial Market Infrastructure Act (FMIA) on 28 March 2018, acknowledging SIX’s regulatory compliance with the legal framework in force in Switzerland. The FMIA mandates strict rules in order to grant such a license. SIX x-clear’s FMI license shows that SIX holds up to the high standards set by the FMIA, and will continue to serve its Members diligently in this highly regulated market.

The banking license previously in force was returned with the licensing under FMIA. Nevertheless, SIX x-clear remains subject to supervision by FINMA and the Swiss National Bank (SNB) for services of systemic importance.

On 26 March 2016, SIX x-clear was recognized by the European Securities and Markets Authority as a third-country CCP under Chapter 4 of Title III of EMIR. This recognition grants SIX x-clear the right to provide clearing services to clearing members and trading venues throughout the European Union. As a prerequisite of the recognition, SIX x-clear is also registered through the German authorities as a designated payment and securities settlement system under the European Securities Market Authority’s Settlement Finality Directive.

In order to be able to continue offering its services in the UK (since the UK has left the EU), SIX x-clear applied for recognition as a third country CCP to the BoE. As a prerequisite of the recognition, SIX x-clear is also registered through the UK authorities as a designated payment and securities settlement system under the European Securities Market Authority’s Settlement Finality Directive. This designation is expected to remain in force.



Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP)

1.2 Role of a CCP

A CCP takes on the role as the buyer versus the seller and the role as seller versus the buyer, hence replacing the original parties to the trading transaction. During the life time of the trade between trading and settlement, SIX x-clear manages or facilitates trade management, position management, risk management, collateral management, delivery management and settlement calculation, and it participates in the settlement process. The counterparty risk is mitigated through daily collateralization of the exposures, using best-practice risk models and setting high risk management standards. The primary functions of a CCP are therefore to:

- eliminate the bilateral relationship between the original parties and in doing so, remove each party's counterparty risk for correct settlement towards the other party from trade until final settlement of the contract;
- perform daily margin calculations and collateral management;
- simplify the settlement process, including the establishment of netting arrangements, and thereby reduce the volumes and costs associated with settlement; and
- facilitate post-trade anonymity.

Most European marketplaces require the use of a CCP for the clearing of equity market instruments.

1.3 Connected trading platforms and CSDs

For an overview of which markets SIX x-clear accepts trades from and which places of settlement are accepted, please refer to Form 002A, published at www.six-group.com > Products and Services > The Swiss Stock Exchange – Post-Trade > CCP Clearing > Info Center > Membership > Onboarding forms.

2.0 Membership

SIX x-clear admits participants in the capacity of a General Clearing Member (GCM) or Individual Clearing Member (ICM). A member of a marketplace that elects not to become a Member must clear its transactions through a GCM as a Non Clearing Member (NCM). The contractual party to the NCM will not be SIX x-clear, but rather the GCM, which in turn is the contractual party to SIX x-clear.

Roles	Description
Trading platforms	An exchange or MTF, or a technical platform other than an exchange or MTF where the matching of transactions, or if applicable, bilateral transactions takes place and in respect of which SIX x-clear provides clearing services
Trading platform	A member of a trading platform or other person approved by a trading



Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP)

Roles	Description
member	platform who trades on a trading platform market; a trading platform member that is not a Clearing Member must enter into an agreement with a GCM
CCP	SIX x-clear, a co-CCP (if any) or other clearing organization contracted to act as the CCP by a trading platform and thereby to be interposed as the counterparty to its members on either or both the "buy" and "sell" legs of a trading platform transaction
Clearing Member	An entity that has entered into a Membership Agreement with SIX x-clear as an ICM or GCM
Settlement participant	Participant in a CSD system
CSD	Central securities depository

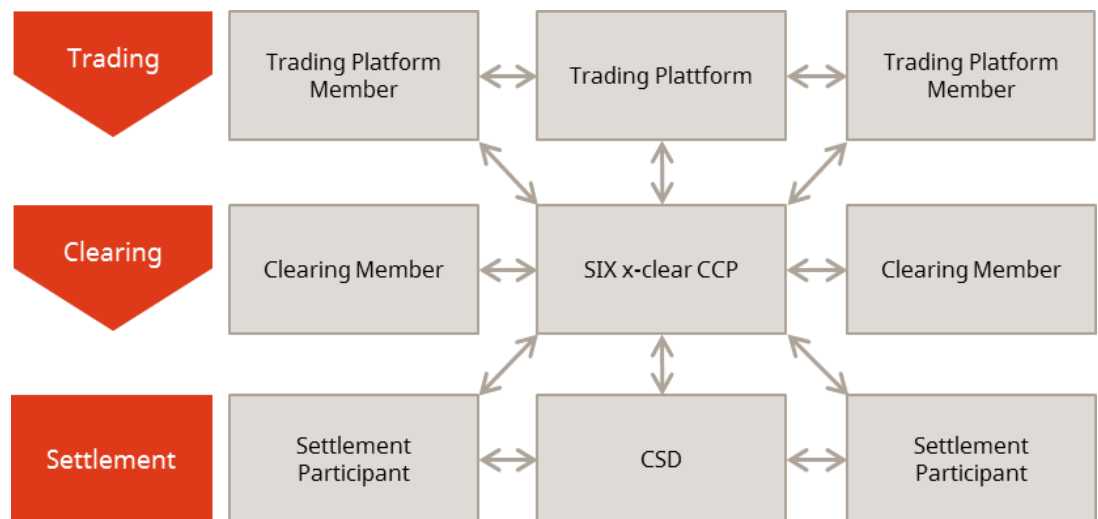


Figure 1 Participants and roles

2.1 Membership types

Institutions that satisfy the membership criteria of SIX x-clear may choose to be either:

- an Individual Clearing Member (ICM); or
- a General Clearing Member (GCM)

All Members shall enter into a Membership Agreement with SIX x-clear.

As an ICM, the Member is responsible to SIX x-clear for clearing the trades the Member has carried out in the trading platform on its own account and/or on account of its customers.

A GCM may in addition take on the responsibility for clearing trades carried out by trading platform members that are not Members. The latter are referred to as Non-Clearing Members (NCMs). There is no legal agreement or relationship between an NCM and SIX x-clear.



Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP)

Member type	Trading Member	x-clear Member	Description
ICM	Yes	Yes	Clears own business
GCM	Yes or no (not a prerequisite for a GCM)	Yes	Clears own business and/or on behalf of other Trading Members
NCM	Yes	No	Clears through GCM

2.2 Membership requirements

Please see the General Terms and Conditions of Business of SIX x-clear for membership requirements.

3.0 Account structure

The Member shall have at its disposal the structures more specifically defined in the Operational Manual. The Member shall select the structure that best suits its accounts and custody accounts for claims and liabilities from outstanding contracts as well as for depositing permissible collateral (collateral accounts) and in accordance with the applicable law.

The collateral accounts mirrors the Member's collateral held by the supported collateral service provider to meet the margin requirements on the associated margin account.

SIX x-clear will enable NCMs to decide on the degree of protection they require in relation to the risk of default by the Member. The NCM accounts shall be insulated from losses on the Member accounts and netting between segregated accounts shall be prevented. NCMs will therefore be permitted to choose between the following three categories in the account structure provided by the Member:

- a. Omnibus client segregation (OCS): All NCMs of a GCM will be margined together.
- b. Mini omnibus client account segregation (Mini OCS): Two or more NCMs will be margined together.
- c. Individual client account segregation (ICS): An NCM will be margined by itself and not together with any other NCMs.

4.0 User interfaces: SCP web and ISO 15022 messages

SCP comprises an online web application and a standard interface for ISO 15022 messages.

The application provides all relevant clearing information on a real-time basis for the purpose of accessing information about and managing clearing transactions. Information about daily margin requirements, settlement information, default fund contributions and collateral is also provided for in the application. The application



Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP)

includes functionality for downloading the clearing information in various formats, supporting Members' internal procedures for reconciliation and reporting.

Logging on to the web application will require a username, password and token. This will be provided by SIX x-clear upon request after signing the applicable agreements.

In addition to the web application, SIX x-clear provides general clearing information to its Members via standardized messages based on the ISO 15022 format (MT messages) as well as a range of flat-file reporting options. The service allows Members to subscribe to one or several of the messages and reports provided.

MT messages will be distributed via dedicated communication channels making use of Message Queuing ("MQ"), SWIFT, C-C Link and SIX Web Services. Members communicating via MQ must set up separate local message queues for communication with SIX x-clear. Reports will be distributed via the following channels: SIX Web Services, SFTP and C-C link. Further information on how to set up communication with SIX x-clear will be provided upon request.

5.0 Trade capture and processing

All trades that are matched in the trading systems and eligible for clearing will be submitted by the trading platform in real time to SIX x-clear's clearing system SCP. The trading platform will also notify SIX x-clear of any corrections or cancellations in accordance with its rules.

6.0 Settlement

The CSD carries out settlement both in terms of delivery of financial instruments (securities settlement) and payments (cash settlement). Securities settlement is registered on the settlement participant's account with the CSD.

6.1 Settlement netting

SIX x-clear aggregates and nets all gross clearing transactions of the Member registered during a clearing day and creates one net clearing transaction per ISIN, currency and settlement date on the respective clearing account.

If the netting process results in delivery or receipt of both cash and securities, only cash or securities, or neither cash nor securities ("strange net"), SIX x-clear will instead aggregate and net buy and sell gross clearing transactions separately and create two net clearing transactions, one DvP and one RvP transaction. In the figure below, scenarios 1 and 2 are clean nets and scenarios 3-9 strange nets.



Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP)

	Stock	Cash
1. Receive stock versus cash payment	+	-
2. Deliver stock versus cash payment	-	+
3. Receive stock without cash payment	+	0
4. Deliver stock without cash payment	-	0
5. Receive stock with cash payment	+	+
6. Deliver stock with cash payment	-	-
7. Receive cash payment but no stock	0	+
8. Deliver cash payment but no stock	0	-
9. No delivery or payment	0	0

Figure 2 Clean and strange nets

6.2 Settlement participants

A settlement participant is a party that has entered into an agreement with the CSD to participate in the securities settlement system in order to settle trades carried out on its own account and/or trades carried out by other parties. SIX x-clear is a direct settlement participant in the CSD or it settles through a settlement agent.

A Member may choose to be a settlement participant in the CSD itself, or arrange to have its clearing transactions settled through a third party (settlement agent).

6.3 Matching of settlement instructions

Members of SIX x-clear have the following two options on how to create and match settlement instructions:

- SIX x-clear may generate settlement instructions on behalf of the member and sends them to the Member or its agent for further amendments and distribution.
- The Member will, either acting on its own behalf or through a settlement agent, submit its own settlement instructions and thereby match the settlement instructions that SIX x-clear submits into the local CSD as its counterparty.

6.4 Failed delivery

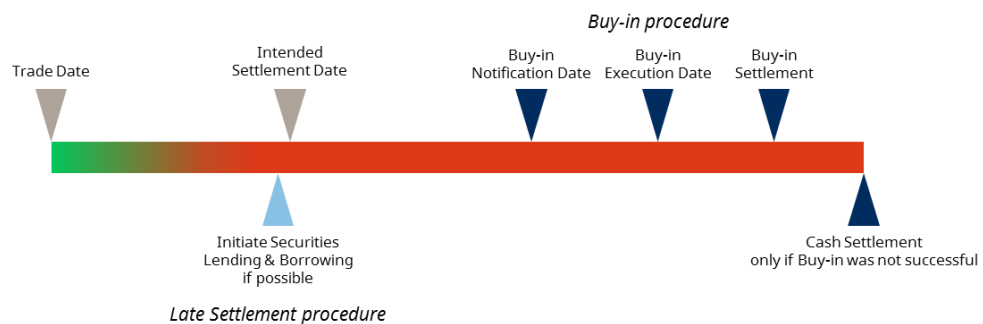
Settlement shall at the outset take place as originally agreed with the Member. CCP clearing, however, presupposes that the CCP receives the securities from the delivering Member in order to perform delivery of the securities to the receiving Member.



Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP)

Consequently, should the delivering Member fail to deliver, the CCP will at the outset fail to deliver to the receiving Member.

If the seller has not delivered the securities on the intended settlement date (ISD), a buy-in process will be started after a certain market-specific period of time (ISD+4). For the non-delivery of instruments, SIX x-clear, as the formal counterparty to the buyer, will acquire the missing securities in the market and pass on the costs incurred to the seller that has failed to fulfill the transaction. The aim of performing a buy-in process is to ensure liquidity in the market and to fulfill agreed trades in a reasonable timeframe.



For more detailed information, please refer to the Operational Manual of SIX x-clear.

7.0 Risk management

7.1 Introduction

SIX x-clear provides robust risk management in order to secure continuity on the cleared market places and in order to perform its obligations towards non-defaulting Members in the event of a default. SIX x-clear has set up a risk model with several layers to mitigate the risk of being a CCP. Members are required to post collateral to SIX x-clear for the estimated risk based on the daily activity (margin). Members are also requested to contribute to the default fund and Linked Margin Element.

7.2 Margin

7.2.1 Calculating the margin requirement

SIX x-clear will require its Members to transfer or pledge collateral to meet their margin requirement. Margins are calculated to cover current and potential exposures on all cleared (open) positions.

The margin takes into consideration all open and unsettled positions.

Margin is calculated continuously during a clearing day, and Members have access to the information related to the margin calculations as well as collateral values via the clearing system.



Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP)

The margin methodology, including models to determine margin rates, volatilities, correlations, risk free rate(s) is subject to regular reviews. Please consult the Operational Manual.

7.2.2 **Margin calls**

A margin call will be raised by SIX x-clear to Member(s) to post additional collateral to offset credit risks in case of unsecured margin requirements.

SIX x-clear will continuously recalculate the margin and the permissible collateral value during the business day. SIX x-clear may define limits on risk exposure applicable to the Members. Upon a breach of such limits, SIX x-clear will issue an extraordinary margin call.

Margin calls will be available on the SCP web application. Members may also subscribe to MT messages.

7.3 **Default fund**

The default fund represent the Members' funded contributions towards the CCP's mutualized loss sharing arrangement as agreed in the respective Financial Collateral Agreements. According to the Rulebook, Members are required to participate in and contribute to the default fund. SIX x-clear operates a common default fund.

7.4 **Linked Margin Element**

SIX x-clear has a clearing link with LCH Ltd (LCH) and EuroCCP N.V. (EuroCCP).

Member participating in a product segment (e.g. cash products) which is subject to an interoperable link or clearing co-operation is required to post additional margin as part of their daily margin requirement, enabling SIX x-clear to meet its margin requirement under a link or clearing co-operation agreement.

7.5 **Collateral**

7.5.1 **Introduction**

Members shall provide collateral to meet their margin requirement, default fund and, where applicable, Linked Margin Element contribution. Cash collateral shall be transferred to designated collateral accounts owned by SIX x-clear, or subject to other mechanisms for securing collateral acceptable to SIX x-clear. Collateral in the form of financial instruments shall be pledged to SIX x-clear.



Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP)

7.5.2 **Eligible collateral**

SIX x-clear accepts collateral in accordance with the list or criteria for eligible instruments. The following collateral types are accepted:

- Financial instruments including interest rate instruments and equity market instruments held on a securities collateral account, in accordance with the list of eligible collateral and Lending norms published on the website www.six-group.com > Login > Securities Services Private > Clearing.
- Cash held in a cash collateral account. Freely convertible currencies are accepted by SIX x-clear. The exact list can be found in the Lending norms.

Collateral to satisfy the default fund contribution is limited to interest rate instruments and cash. The collateral value is calculated as the market value for each collateral object with the deduction of a “haircut”. The collateral value of an equity market instrument approved for clearing is included in the margin calculation.

7.6 **Default**

Please see the SIX x-clear Rulebook .

8.0 **Corporate actions**

Members are responsible for the full settlement of all clearing transactions as originally agreed, inclusive of any adjustments or entitlements lost due to a clearing transaction not settling on the originally agreed settlement date and deferred past record date for a corporate event.

SIX x-clear will process elective corporate events (e.g. voluntary offers) and corporate events comprising any option (e.g. distributions with options) taking place after the original settlement date of a settlement transaction and prior to the actual settlement date of the respective transaction, on a best effort basis, pursuant to SIX x-clear’s procedure for corporate events established in accordance with local market practice.

The procedures carrying the above into effect may include the amendment of settlement transactions by cancellation of the original settlement transaction subject to a corporate event and/or registration of a new and/or an additional settlement transaction to ensure that any duties and entitlements are passed over to their rightful recipient.

SIX x-clear is also entitled to calculate a compensation settlement between SIX x-clear and its Members if it is not possible to amend the original settlement transaction or if such amendment is not considered adequate to carry out proper final settlement.



Service Description SIX x-clear AG for Members on SIX Clearing Platform (SCP)

Any loss or damages incurred by SIX x-clear as a result of corporate events in deferred settlements, including payment of any compensation settlement is the liability of the member.

SIX x-clear will not process corporate events such as voting rights etc. Corporate event entitlement of an intangible nature will be deemed to have no commercial value (and thus not give rise to claims for any compensation settlement by the receiving Member).

9.0 Fees and penalties

The fee model consists of an annual membership contribution, a variable clearing fee and a settlement fee.

The annual membership contribution has a fixed monthly element per ICM, GCM and NCM.

The clearing fee is a monthly volume-based tariff structure that applies to clearing transactions (on a gross basis, i.e. before any netting). The clearing volumes of different trading relations are bundled with SIX x-clear provided that they belong to the same legal entity and/or holding company. The SIX x-clear group volume is applicable where the combined group volume defines the prices on a step-scale. The average price applies to all members of the group.

The settlement fee is a fixed transaction fee per settlement transaction.

9.1.1 Penalties

The penalty model will apply for all failures to deliver securities (or cash) to SIX x-clear on the intended settlement date, and is designated in order to be transparent and predictable.

9.1.2 Invoicing

SIX x-clear will invoice all fees on a monthly basis within the first three (3) clearing days after the expiry of the previous calendar month. Payment shall be made within 30 days of the date of the invoice.

This Service Description is for information purposes only. SIX x-clear AG reserves the right to make changes at any time. SIX x-clear AG disclaims all liability for the inaccuracy or incompleteness of the information given therein.

In this context, SIX x-clear AG draws the Members' attention to **clause 7.1, chapter 17.0 and clause 24.1** (liability) of the Rulebook of SIX x-clear AG stipulating that the Member is responsible for compliance with the applicable laws (in particular domestic and foreign tax, foreign exchange and stock market regulations as well as with company law and articles of association) with respect to the Clearing services obtained from SIX x-clear AG.

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