Rules and Regulations SIX x-clear AG

Operational Manual of SIX x-clear AG
xcl-510

January 2022
Table of contents

1.0 Purpose of the Operational Manual \hfill 7

2.0 General \hfill 7
  2.1 Scope of Trading Platforms \hfill 7
  2.2 Eligible Trading Platform Products \hfill 7
  2.3 Grey Market Stocks \hfill 7
  2.4 Technical and operational readiness \hfill 8

3.0 Clearing Systems \hfill 8
  3.1 SECOM \hfill 8
  3.2 CLARA \hfill 8

4.0 Permissible Collateral \hfill 9
  4.1 General \hfill 9
  4.2 Collateral release cut-off times \hfill 10
  4.3 Administration, proceeds and corporate actions \hfill 10
  4.4 Taxation of Permissible Collateral \hfill 11
  4.5 Collateral concentration limits \hfill 12

5.0 Account structures \hfill 12
  5.1 General \hfill 12
  5.2 SECOM Accounts \hfill 13
  5.2.1 Clearing Accounts \hfill 13
  5.2.2 Collateral Accounts \hfill 13
  5.2.2.1 Margin Collateral Accounts \hfill 14
  5.2.2.2 Default Fund Collateral Accounts \hfill 14
  5.2.2.3 Link Margin Element Collateral Accounts \hfill 14
  5.2.2.4 Request for release or substitution of Permissible Collateral \hfill 15
  5.3 CLARA Accounts \hfill 15
  5.3.1 Clearing Accounts \hfill 16
  5.3.2 Margin Accounts \hfill 16
  5.3.3 Collateral Accounts \hfill 16
  5.3.3.1 Cash Collateral Accounts \hfill 16
  5.3.3.2 Securities Collateral Accounts \hfill 17
  5.3.3.3 Release of Permissible Collateral from Collateral Account(s) \hfill 17

6.0 Segregated account structures \hfill 18
  6.1 Individual Client Segregation for X-CLEAR / Registered Clients (CLARA system only) \hfill 18
  6.2 Individual Client Segregation (ICS) \hfill 20
  6.3 Omnibus Client Segregation (OCS) \hfill 21
  6.4 Mini-Omnibus Client Segregation (Mini OCS) \hfill 22

7.0 SECOM Margining \hfill 23
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>Initial Margin</td>
<td>23</td>
</tr>
<tr>
<td>7.1.1</td>
<td>Principle</td>
<td>23</td>
</tr>
<tr>
<td>7.1.2</td>
<td>Risk netting coefficient I (intra-bucket)</td>
<td>24</td>
</tr>
<tr>
<td>7.1.3</td>
<td>Risk netting coefficient II (inter-bucket)</td>
<td>24</td>
</tr>
<tr>
<td>7.1.4</td>
<td>Initial Margin on transaction level</td>
<td>25</td>
</tr>
<tr>
<td>7.1.5</td>
<td>Extreme net open amount</td>
<td>25</td>
</tr>
<tr>
<td>7.1.6</td>
<td>Risk rating coefficient</td>
<td>25</td>
</tr>
<tr>
<td>7.2</td>
<td>Variation margin</td>
<td>26</td>
</tr>
<tr>
<td>7.2.1</td>
<td>Variation Margin component to protect from the current exposure</td>
<td>26</td>
</tr>
<tr>
<td>7.2.2</td>
<td>Wrong-Way-Risk Margin</td>
<td>27</td>
</tr>
<tr>
<td>7.3</td>
<td>Stress Margin Add-On</td>
<td>28</td>
</tr>
<tr>
<td>7.4</td>
<td>Total Margin</td>
<td>29</td>
</tr>
<tr>
<td>7.5</td>
<td>Initial margin validation and calibration module</td>
<td>30</td>
</tr>
<tr>
<td>7.5.1</td>
<td>Simulation technique of the validation module</td>
<td>30</td>
</tr>
<tr>
<td>7.5.2</td>
<td>Stress testing and defense line calibration</td>
<td>33</td>
</tr>
<tr>
<td>7.5.3</td>
<td>Adjustment of initial margins</td>
<td>33</td>
</tr>
<tr>
<td>7.5.4</td>
<td>Margin calls</td>
<td>33</td>
</tr>
<tr>
<td>7.5.4.1</td>
<td>Settlement of margin calls through a Payment Bank</td>
<td>34</td>
</tr>
<tr>
<td>7.5.5</td>
<td>Delivery into the X-CLEAR Collateral Account</td>
<td>35</td>
</tr>
<tr>
<td>7.5.6</td>
<td>Withdrawal from the X-CLEAR Collateral Account</td>
<td>35</td>
</tr>
<tr>
<td>7.6</td>
<td>Collateralization of Co-CCPs: Link Margin Element</td>
<td>36</td>
</tr>
<tr>
<td>7.6.1</td>
<td>Preliminary remarks</td>
<td>36</td>
</tr>
<tr>
<td>7.6.2</td>
<td>Link Margin Element Model</td>
<td>36</td>
</tr>
<tr>
<td>7.6.3</td>
<td>Calculation of the Link Margin Element</td>
<td>37</td>
</tr>
<tr>
<td>7.6.4</td>
<td>Margin call</td>
<td>37</td>
</tr>
<tr>
<td>7.6.5</td>
<td>Withdrawal and replacement of Link Margin Element collateral</td>
<td>38</td>
</tr>
<tr>
<td>7.6.6</td>
<td>Collateral Requirement to Co-CCPs (Add-On to Co-CCPs)</td>
<td>38</td>
</tr>
<tr>
<td>7.7</td>
<td>OTC Extended Window Clearing Service</td>
<td>39</td>
</tr>
<tr>
<td>8.0</td>
<td>CLARA Margining</td>
<td>39</td>
</tr>
<tr>
<td>8.1</td>
<td>Margins</td>
<td>39</td>
</tr>
<tr>
<td>8.1.1</td>
<td>Wrong-Way Risk-Adjusted Initial Margin</td>
<td>40</td>
</tr>
<tr>
<td>8.1.2</td>
<td>Stress Margin Add-On</td>
<td>41</td>
</tr>
<tr>
<td>8.1.3</td>
<td>Total Margin</td>
<td>41</td>
</tr>
<tr>
<td>8.1.4</td>
<td>Link Margin Element</td>
<td>42</td>
</tr>
<tr>
<td>8.2</td>
<td>Margin call</td>
<td>43</td>
</tr>
<tr>
<td>8.2.1</td>
<td>Daily margin call</td>
<td>43</td>
</tr>
<tr>
<td>8.2.2</td>
<td>Extraordinary margin call</td>
<td>44</td>
</tr>
<tr>
<td>9.0</td>
<td>X-CLEAR Default Fund</td>
<td>44</td>
</tr>
<tr>
<td>9.1</td>
<td>Calculation of Default Fund Contribution</td>
<td>45</td>
</tr>
<tr>
<td>9.2</td>
<td>X-CLEAR / Registered Client Additional Default Fund Contributions</td>
<td>46</td>
</tr>
<tr>
<td>9.2.1</td>
<td>Increase of contribution requirements</td>
<td>46</td>
</tr>
<tr>
<td>9.2.2</td>
<td>Price fluctuations</td>
<td>47</td>
</tr>
<tr>
<td>9.2.3</td>
<td>Drawdown on Default Fund Segment (replenishment duty)</td>
<td>47</td>
</tr>
<tr>
<td>9.3</td>
<td>Top-up Contribution</td>
<td>47</td>
</tr>
</tbody>
</table>
10.0 Application of collateral (Default Waterfall) 48
10.1 Permissible collateral provided by Defaulting Member (Individual Level) 48
10.2 Dedicated Capital Contribution by SIX x-clear AG (CCP Level) 49
10.3 Application of contributions made by non-Defaulting Members (Solidarity Level) 49
10.3.1 Ring-fenced Default Fund segments 49
10.3.2 Application of Default Fund Contributions 50
10.3.3 Top-up Contribution by Non-Defaulting Members 50
10.3.4 Example of collateral application in case of sequential Member defaults 51
10.3.5 The remainder of X-CLEAR's capital and reserves 52
10.4 Non-Default Loss Allocation (NDLA) 53
10.4.1 Non-Default Loss Scenarios 53
10.4.2 Non-Default Loss Allocation Application (NDLA Waterfall) 53

11.0 Suspension and termination procedures 54
11.1 Suspension and termination procedure with regard to Members 54
11.2 Required information 54
11.3 Actions and timelines 54
11.3.1 Request by the Trading Platform 54
11.3.2 Request by the Member 55
11.3.3 Request by X-CLEAR 55
11.4 Member reinstatement 55
11.4.1 Request by the Trading Platform 55
11.4.2 Request by X-CLEAR 55
11.5 Change of Member setup 56
11.6 Suspension/Default communication process 56
11.6.1 Overview 56
11.6.2 Required information 56
11.7 Trading Platform declaring a Member in Suspension/Default 57
11.7.1 Trading Platform 57
11.7.2 X-CLEAR 57
11.8 X-CLEAR declaring a Member in Suspension/Default 58
11.8.1 X-CLEAR 58
11.8.2 Trading Platform 58
11.9 Clearing Administrator declaring an X-CLEAR / Registered Client in Suspension/Default 59
11.9.1 Clearing Administrator 59
11.9.2 Required information 59
11.9.3 Actions and timelines 59
11.10 GCM declaring an NCM's Suspension 59
11.10.1 GCM 59
11.10.2 X-CLEAR 60
11.10.3 Trading Platform 60

12.0 Portability 60
12.1 General 60
12.2 X-CLEAR / Registered Clients and Back-up provisional Clearing Administrator (Members administered in CLARA only) 61
12.3 Portability process in case of segregated accounts 61
12.4 Operational requirements 62
12.5 Excess Collateral 64
12.6 Unsuccessful porting: Application of Close-out Procedure 64
12.7 Application of Close-out Procedure for X-CLEAR / Registered Clients 65

13.0 Close-out 65
13.1 Suspension of Open Offer/Novation 65
13.2 Close-out Procedure 66

14.0 Default of a Co-CCP 66
14.1 Technical Default of Co-CCP 66
14.2 Default of Co-CCP: Suspension of Open Offer/Novation and Close-out 66
14.2.1 Pre-information sharing 67
14.2.2 Cure period 67
14.2.3 Suspension and/or termination 68

15.0 Settlement 68
15.1 General remarks 68
15.2 Shaping 69
15.3 Splitting 69
15.4 Strange nets 70
15.5 Place of settlement 70
15.6 Settlement instruction generation 71

16.0 Late Settlement & Buy-In 71
16.1 General 71
16.2 Late settlement procedure 72
16.2.1 Securities Lending and Borrowing procedure 73
16.2.2 Late settlement penalty regime 73
16.3 Technical CSDR requirements 73
16.4 Buy-in procedure 74
16.4.1 Overview 74
16.4.2 Buy-in process 74
16.4.3 Consequences of non-payment of buy-in transactions 75
16.4.4 Buy-in schedule per market 75
16.5 Buy-in schedule for Single Contracts for market makers on SIX Swiss Exchange (SWX) and London Stock Exchange (LSE) 76

17.0 Corporate actions 77
17.1 General remarks 77
17.2 Timeline for the settlement of compensation payments and claims 77
17.3 Withholding tax on compensation payments and claims 78
17.4 Buyer election 78
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.5</td>
<td>Stamp Duty and Capital Gains Tax</td>
<td>78</td>
</tr>
<tr>
<td>18.0</td>
<td>Amendments to the Operational Manual</td>
<td>78</td>
</tr>
<tr>
<td>19.0</td>
<td>X-CLEAR contacts and escalation points</td>
<td>79</td>
</tr>
</tbody>
</table>
1.0 Purpose of the Operational Manual

In accordance with the Contract for Clearing Services (either under Swiss Law or English Law or German/European Law) between SIX x-clear AG (hereinafter “X-CLEAR”) and the Member of X-CLEAR (hereinafter “Member”), this Operational Manual (previously “Clearing Terms”) forms part of the Contractual Relationship between X-CLEAR and the Member and shall be read in conjunction with the Contract for Clearing Services, the Financial Collateral Agreements (including any Amendments thereof, the “FCA”), the Rulebook and the GTC of the Norwegian Branch.

The graphical overview of the Contractual Relationship of X-CLEAR is published separately on the webpage of X-CLEAR: www.six-group.com > Products & Services >The Swiss Stock Exchange > Post-Trade > CCP Clearing > Contractual Framework.

Certain requirements and procedures set out in the Rulebook and GTC Norwegian Branch will be defined in more detail in this Operational Manual. Capitalized terms used in this document shall, unless specifically stipulated otherwise, have the meanings given to them in the Rulebook and, where appropriate, any other documents of the Contractual Relationship.

The specifications of the technical infrastructure in the relationship of X-CLEAR to become a Member (such as information technology or communications) will be set during the on-boarding process. In case of additional information and needs of contact regarding the requirements for Membership are published on the webpage of X-CLEAR: www.six-group.com > Products & Services >The Swiss Stock Exchange > Post-Trade > CCP Clearing > Become a Member.

2.0 General

2.1 Scope of Trading Platforms

This Operational Manual is valid for all Trading Platforms as Exchanges, Matching Platforms and Multilateral Trading Facilities (MTF) for which X-CLEAR is offering Clearing Services and is available only in English.

2.2 Eligible Trading Platform Products

X-CLEAR decides which Trading Platform Products will be accepted/novated for Clearing in accordance with the criteria as stated in the Rulebook, and it reserves the right in individual cases to exclude certain Trading Platform Products from Clearing.

2.3 Grey Market Stocks

In the event that a "when-issued" Trading Platform Product is added to the list of tradable instruments by the respective Trading Platform, Members must note that any obligations of X-CLEAR in respect of any prospective Single Contract for that Trading Platform Product will only arise in the event that the relevant Trading Platform Product
is listed as planned. In the event that the listing does not proceed on the planned day of 
listing, X-CLEAR shall deem any prospective Single Contract registered in that Trading 
Platform Product to be null and void “ab initio”. X-CLEAR will reject it from clearing and 
adjust margin requirements accordingly. X-CLEAR will not have any obligation or 
liability whatsoever in this respect.

2.4 Technical and operational readiness

The Member may not commence operations that result in the provision of Clearing 
Services by X-CLEAR to that member until it has confirmed in writing to X-CLEAR that it 
has conducted tests that demonstrate that it is technically and operationally ready to 
avail itself of X-CLEAR's Clearing Services.

The relevant confirmation notice will be provided to the Member by X-CLEAR and will 
form part of its application for membership.

3.0 Clearing Systems

For historic reasons, X-CLEAR currently uses two different clearing systems to provide 
clearing services to its Members. Based on the information provided, the Member will 
be informed during the on-boarding process on which clearing system the Clearing 
Services will be offered.

3.1 SECOM

SECOM is the Swiss securities settlement system operated by SIX SIS AG (“SIX SIS”) and 
stands for Settlement Communication System. It offers custody and settlement for 
tradable financial instruments and is a key element in the Swiss Value Chain.

The Swiss Value Chain is the term used to describe the fully electronic integration of the 
trading, clearing and settlement of shares, bonds and structured products in 
Switzerland.

The clearing module forms part of the fully integrated SECOM system and provides 
clearing services for equities and bonds for securities transactions concluded on the 
Swiss Exchange (SSX), European Exchanges (LSE, Nasdaq OMX, CBoe) and various 
European MTFs.

3.2 CLARA

The Clearing application can be used for Clearing Services for equities which were 
concluded on the Scandinavian Trading Platforms (Oslo Børs, Nasdaq Exchanges and 
several MTFs).

X-CLEAR has developed and operates the Clearing Administration and Reporting 
Application (CLARA).
Rules and Regulations SIX x-clear AG
Operational Manual of SIX x-clear AG

Through CLARA, all relevant clearing information is provided on a real-time basis for the purpose of accessing transaction data and managing Trading Platform Transactions by performing trade allocations, give-ups and exercises.

4.0 Permissible Collateral

4.1 General

The provision and transfer of Permissible Collateral shall be effected in accordance with the Financial Collateral Agreement, the Rulebook and the following provisions and as further specified in the Lending Norms.

X-CLEAR will generally accept different types of collateral as Permissible Collateral. For further details, see the separate lending norm rules, which are set out in the “Lending Norms” document. They can be accessed on the Clearing pages of the X-CLEAR website at www.six-group.com > Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Existing Members > Lending Norms.

Permissible Collateral deposited is accounted for at market value and is subject to a Haircut. Due to the Applicable Laws, Securities and other instruments issued in the United States of America cannot be accepted as Permissible Collateral.

Securities collateral must be replaced eight days prior to the maturity of the relevant instrument posted as collateral. Following the expiry of the maturity date of an instrument posted as collateral, it shall no longer be classed as satisfying the X-CLEAR requirements.
4.2 **Collateral release cut-off times**

The following table depicts the latest collateral release cut-off times with same-day value date:

<table>
<thead>
<tr>
<th>System</th>
<th>Type</th>
<th>Collateral Service Provider</th>
<th>Currency</th>
<th>X-CLEAR execution deadline</th>
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<tbody>
<tr>
<td>SECOM</td>
<td>Cash</td>
<td>SIX SIS</td>
<td>CHF*</td>
<td>16:15 CET</td>
</tr>
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<td></td>
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<td>EUR*</td>
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<td>NOK</td>
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<td>DKK</td>
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<td>SEK</td>
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<td>JPY</td>
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<td>AUD**</td>
<td>18.00 CET value date -1</td>
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<td></td>
<td>CAD**</td>
<td>18:00 CET</td>
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<td>NZD**</td>
<td>18:00 CET value date -1</td>
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<td>NOK</td>
<td>14:00 CET</td>
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<td>CHF**</td>
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<td>Clearstream Banking Luxembourg (CBL)</td>
<td>NOK</td>
<td>15:00 CET</td>
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<td>CHF</td>
<td>15:45 CET</td>
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<td>EUR</td>
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<td>GBP</td>
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<td></td>
<td>USD</td>
<td>19:00 CET</td>
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*Best effort execution to Link Margin Element (LME) and Default Fund collateral releases:
- CHF until 16:30 CET
- EUR until 17:00 CET

** Currencies are not accepted for LME in the respective system

4.3 **Administration, proceeds and corporate actions**

Responsibility for administering the Permissible Collateral shall rest with X-CLEAR.

The following rules shall apply when Intermediated Securities are provided by the Member as Permissible Collateral and are booked on the Collateral Accounts of X-CLEAR:

a. X-CLEAR shall be the holder of the participation rights (taking part in the annual general meeting, voting rights and rights of election) attached to the Intermediated Securities booked to the Collateral Accounts of X-CLEAR. If the Member wishes to exercise such participation rights, it must replace the relevant Intermediated Securities required for the exercise of such rights with Permissible Collateral of the same value within a reasonable period of time prior to the exercise of any...
participation rights. X-CLEAR shall not be liable for any loss or disadvantages suffered by the Member as a result of it being unable to exercise participation rights.

b. All earnings (dividends, interest and premiums) due on any liquidation proceeds in respect of Intermediated Securities booked to the Collateral Accounts of X-CLEAR shall entitle the Member to compensation payments from X-CLEAR of the same value (in the respective currency) of such earnings or proceeds, less any withholding tax and any expenses or charges actually incurred.

c. X-CLEAR shall be the holder of options, pre-emption rights and other rights (together, the “Attached Rights”) relating to the Intermediated Securities booked to the Collateral Accounts of X-CLEAR and shall inform the relevant Member of the existence of any attached rights. Where the attached right embodies a choice, the Member may issue instructions to X-CLEAR regarding the exercise of such choice, but must replace the relevant Intermediated Securities to which the attached right relates with Permissible Collateral of the same value within a reasonable period of time prior to the exercise of such attached right.

d. If the Member does not wish to exercise its right to issue instructions in relation to pre-emption rights, then such rights will normally be credited to the Member, unless credit entry is impossible, in which case compensation shall be paid to the Member on the basis of the average market value of these rights on the last trading day on the relevant Trading Platform before expiry of the pre-emption period.

e. X-CLEAR shall not be liable for any loss suffered by the Member as a result of it being unable to exercise pre-emption rights. If distributions in respect of Intermediated Securities transferred as Permissible Collateral are in the form of Intermediated Securities, X-CLEAR shall return these additional Intermediated Securities when the relevant Permissible Collateral is released.

4.4 Taxation of Permissible Collateral

The following rules shall apply:

a. In the case of Permissible Collateral provided by Swiss Members in the form of Intermediated Securities of Swiss issuers, X-CLEAR gives an assurance that the transfer of the Intermediated Securities as Permissible Collateral does not trigger Swiss transfer stamp taxes or Swiss withholding tax. The transfer of Intermediated Securities does not constitute a transfer of deed against consideration within the meaning of Art. 13 (1) of the Swiss Federal Act on Stamp Duty. Beneficial ownership of the Intermediated Securities of Swiss issuers according to Art. 21 ff. of the Swiss Federal Act on Withholding Tax remains with the Swiss Members. It rests with the Swiss Members to secure the refund of the withholding tax. The provisions of this sub-clause let. a. shall apply as long as the Permissible Collateral is not realized.

b. In the case of Permissible Collateral provided by non-Swiss Members in the form of Intermediated Securities of Swiss issuers, the Member accepts that (i) any taxes on
the transfer of Intermediated Securities to X-CLEAR are to be borne by the Member; 
(ii) any additional withholding tax burden is to be borne by the Member; and (iii) X-
CLEAR is not liable for any reduction or impairment of a refund of withholding tax 
payments made on such Intermediated Securities.

c. A Member wishing to use Intermediated Securities of non-Swiss issuers as 
Permissible Collateral for Margin shall clarify the tax consequences (such as 
withholding tax or transfer stamp taxes) in respect of these Intermediated Securities 
of non-Swiss issuers. A Member who deposits Intermediated Securities of non-Swiss 
issuers as Permissible Collateral in spite of any potentially adverse tax consequences 
accepts that (i) any taxes on the transfer of securities to X-CLEAR are to be borne by 
the Member; (ii) any additional withholding tax burden is to be borne by the Member; 
and (iii) X-CLEAR is not liable for any reduction or impairment of a refund of 
withholding tax payments made on such Intermediated Securities.

d. The Member shall be liable to X-CLEAR for any further tax charges (including, without 
limitation, corporate income taxes) incurred either by the Member or X-CLEAR as a 
result of the provision of Permissible Collateral in addition to the tax consequences 
cited under paragraphs a. to c. above. The same holds true for any further tax charge 
in case Permissible Collateral must be realized.

4.5 Collateral concentration limits

The concentration limits are only applicable for bonds accepted as collateral for 
Margins and the Default Fund of X-CLEAR. They are based on the face value of the bond 
and set as a percentage of the respective bond issue size (total issued capital).

In principle, concentration limits are established for each Member at the credit group 
level. Collateral exceeding the respective concentration limits has to be replaced such 
that the concentration limits are met after the replacements.

For further details, see the separate lending norm rules which are described in the 
“Lending Norms” and can be accessed on the Clearing pages at www.six-group.com > 
Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info 
Center > Existing Members > Lending Norms.

5.0 Account structures

5.1 General

Each Member is required to maintain its specific accounts for the purposes of Clearing. 
It is irrelevant whether the Member is a GCM or an ICM. A distinction is made between 
Clearing Accounts, Margin Accounts (CLARA only), Collateral Accounts for Margins 
and/or Link Margin Element as well as Collateral Accounts for the Default Fund.
5.2 SECOM Accounts

The Member’s Outstanding Contracts from Trading Platform Transactions executed on the Trading Platform (whether for itself or, if a GCM, on behalf of an NCM) connected to SECOM are recorded in Clearing Accounts. All collateral accounts (Margins, Default Fund and Link Margin Element collateral accounts) are held at SIX SIS.

![Diagram of Clearing Accounts]

5.2.1 Clearing Accounts

The Clearing Accounts are maintained at X-CLEAR. Typically, X-CLEAR will open two Clearing Accounts (House/Client) for Members in SECOM. Trading Platform Transactions which the GCM is clearing for itself will be allocated to the House Account and those being cleared by the GCM for its NCMs shall be allocated to the Client Account. In case of individual segregation for an NCM, a separate Clearing Account position shall be opened.

On the basis of the net positions of all Outstanding Contracts per Security on each Clearing Account of that Member, the required Margin is calculated and matched against the Permissible Collateral.

5.2.2 Collateral Accounts

The Member must post Permissible Collateral for Margins, Link Margin Element and Default Fund Contributions either:

a. in the form of Cash by transferring Cash to the Cash Collateral Account of X-CLEAR labelled with its name. Such Cash account will be opened by SIX SIS or at any other Collateral Institution for each eligible currency.

b. in the form of Securities by transferring eligible Securities to the Securities Collateral Account of X-CLEAR labelled with its name. Such account will be opened at SIX SIS or any other Collateral Institution.
5.2.2.1 **Margin Collateral Accounts**

For the purpose of posting Margin, X-CLEAR will open segregated Collateral Accounts (cash and/or Securities) for each Member or NCM at SIX SIS in the name of X-CLEAR. The Permissible Collateral will be provided to X-CLEAR by way of an Irregular Pledge ("full title transfer") under the Financial Collateral Agreement.

The Member shall ensure that it has sufficient credit on its regular accounts with SIX SIS and/or its SIC account in order to fulfil its obligations to provide Margins or meet margin calls at all times. X-CLEAR is entitled to transfer the corresponding credit balances (Permissible Collateral) on the basis of a respective proxy authorization, and will automatically trigger such a transfer ("direct debit"). If the available credit balances do not allow the required transfer to be carried out completely, X-CLEAR will issue a margin call, which must be covered by the Member manually.

Information on the extent of usage of the Permissible Collateral can either be requested by the Member and provided by X-CLEAR at any time or be called up via a communication medium (e.g. CC Link/webMAX Professional, SIS Web Services) by the Member at any time.

5.2.2.2 **Default Fund Collateral Accounts**

X-CLEAR will open Default Fund Collateral Account(s) (Securities and/or cash) at SIX SIS for each Member for the purpose of covering the Default Fund Contribution.

The accounts will be in the name of X-CLEAR labelled with the name of the Member. The balance of the Default Fund Collateral Accounts will stand to the credit of X-CLEAR also under an Irregular Pledge ("full title transfer") arrangement in accordance with the Financial Collateral Agreement.

5.2.2.3 **Link Margin Element Collateral Accounts**

X-CLEAR will open Link Margin Element Account(s) (Securities and/or cash) at SIX SIS for each Member.

The Link Margin Element Accounts at SIX SIS will be in the name of X-CLEAR labelled with the name of the Member. The balance of the Link Margin Element Accounts will stand to the credit of X-CLEAR under an Irregular Pledge ("full title transfer") arrangement in accordance with the Financial Collateral Agreement.

The collateral assets in the Link Margin Element accounts are used to cover margin liabilities against the Co-CCPs.
5.2.2.4 Request for release or substitution of Permissible Collateral

Each SECOM Member is required to place Cash or Securities in the respective Collateral Account by transfer from its Ordinary Securities Account at SIX SIS via webMAX or in the form of Cash via SIC/SWIFT to cover the calculated collateral requirement.

Any release of Permissible Collateral can be requested by e-mail from the Risk Management Operations Team in Zurich or a transfer of the excess collateral can be initiated by the Member itself from the Collateral Account via webMAX.

If a SECOM Member wishes to substitute Permissible Collateral for Margins or for Default Fund Contributions, the new Permissible Collateral must be delivered prior to withdrawing the old Permissible Collateral. In the case of a substitution of Securities by the Member, the Member shall keep in mind that a price re-evaluation takes place hourly from 8:00 a.m. to 5:00 p.m. (CET) and SECOM will allow the withdrawal of specific securities only after the hourly re-evaluation is completed.

The Permissible Collateral transferred by Irregular Pledge (full title transfer) covering the calculated collateral requirement will remain in X-CLEAR’s Collateral Accounts (for Securities and/or Cash) at SIX SIS. The individual contributions by Members are booked in separate Collateral-Subaccounts, each labelled with the respective Member’s name.

5.3 CLARA Accounts

Each Member is required to maintain specific accounts for the purposes of Clearing. It is immaterial for this purpose whether the Member is a GCM or an ICM. A distinction is made between Clearing Accounts, Collateral Accounts for Margins as well as Collateral Accounts for the Default Fund. All collateral accounts are held externally at custodians of excellent credit standing.

![Figure 2: CLARA Accounts](image-url)
5.3.1 **Clearing Accounts**

The Member's Outstanding Contracts from Trading Platform Transactions executed on Oslo Børs, Nordic Exchanges and MTFs (whether for itself or, if a GCM, on behalf of an NCM) are recorded in Clearing Accounts. The Clearing Accounts are maintained at X-CLEAR.

X-CLEAR will set up an account structure in accordance with the instructions given by the Member, e.g. by setting up Member and Client Accounts (Segregated Accounts).

5.3.2 **Margin Accounts**

On the basis of all Outstanding Contracts, the required Margin is calculated per Segregated Account and matched against the Permissible Collateral in the relevant Collateral Accounts. Furthermore, Margin is calculated on the total exposure for a) the Member, thus including any shortfall related to Client Accounts (for its NCMs), and b) for Clearing Administrators, thus including any shortfall related to X-CLEAR / Registered Clients' Clearing Accounts.

5.3.3 **Collateral Accounts**

As stated in the Financial Collateral Agreement, the Member may post Permissible Collateral for Margins and Default Fund Contributions

a. in the form of cash by transferring cash to a Cash Collateral Account to X-CLEAR by way of legal title transfer. A Cash Account will be opened for each eligible currency; or

b. in the form of securities held on a Securities Account, such account being Pledged to X-CLEAR pursuant to the applicable Financial Collateral Agreement.

The Member shall at all times ensure that its Collateral Accounts hold a credit balance in the amount of the deposits made by it to fulfill its obligations to provide Margin and/or Default Fund Contributions to satisfy margin calls.

5.3.3.1 **Cash Collateral Accounts**

X-CLEAR opens a cash Collateral Account held by X-CLEAR in either of the Collateral or Settlement Banks, such account being designated to a Member, a Co-CCP or an X-CLEAR / Registered Client. Cash accounts are used for recording Permissible Collateral

a. for margins in cash provided by way of transfer of title by the Member or the X-CLEAR / Registered Client and for cash settlements between X-CLEAR and the Member; or
b. X-CLEAR and the X-CLEAR / Registered Client; such accounts shall belong to X-CLEAR under the applicable Financial Collateral Agreement; and/or

c. recording Permissible Collateral for Default Fund Contributions by way of transfer of title by the Member or the X-CLEAR / Registered Client and for cash settlements between X-CLEAR and the Member; or X-CLEAR and the X-CLEAR / Registered Client; such accounts shall belong to X-CLEAR under the applicable Financial Collateral Agreement.

5.3.3.2 Securities Collateral Accounts

If the Member or an X-CLEAR / Registered Client provides Permissible Collateral in the form of Financial Instruments (pursuant to the terms of the Lending Norms) a securities account shall be opened in a Collateral Institution ("Securities Account") and such account shall be pledged (irregular pledge/ transfer of title) under the applicable Financial Collateral Agreement.

5.3.3.3 Release of Permissible Collateral from Collateral Account(s)

Each X-CLEAR CLARA Member is required to transfer Cash into Collateral Accounts or pledge Securities in its securities accounts with the designated Collateral Service Provider to cover the calculated requirement for Margins, Link Margin Element and Default Fund.

For any withdrawal, the Member is required to submit a respective request to X-CLEAR by way of the Collateral Withdrawal Form, which can be accessed on the Clearing site at www.six-group.com > Products & Services >The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Download Center > Forms. The form shall be provided by e-mail.

The Member may request X-CLEAR to release Permissible Collateral when the Permissible Collateral value exceeds the latest requirement calculation, upon which a release shall be carried out on a best-effort basis, but subject to the terms and conditions set out in the Contractual Relationship, especially the Financial Collateral Agreements.

If a Member wishes to substitute Permissible Collateral, the new Permissible Collateral must be delivered prior to withdrawing the old Permissible Collateral.

For X-CLEAR / Registered Clients, the Clearing Administrator must administer any release of Permissible Collateral, subject to the requirements set out above.

The cut-off and best-effort deadlines for Cash and Securities transfers are published in sub-chapter 4.2 Collateral release cut-off times.
6.0 Segregated account structures

X-CLEAR offers in SECOM and CLARA the following omnibus and individual client segregation models for positions and assets:

1. Individual Client Segregation for X-CLEAR / Registered Clients (CLARA system only)  
2. Individual Client Segregation (ICS)  
3. Omnibus Client Segregation (OCS)  
4. Mini-omnibus Client Segregation (Mini-OCS)

Figure 3: Segregation Models

The segregated account structures affect X-CLEAR’s Clearing Accounts (SECOM) / Margin Accounts (CLARA) and Collateral Accounts for Margins only.

The Collateral Accounts for the Default Fund will remain the property of the GCM and will be used in case the Margins for the GCM/NCM positions are not sufficient.

Please find below in this section an explanation of a detailed setup of each account structure, including a visual simplification.

6.1 Individual Client Segregation for X-CLEAR / Registered Clients (CLARA system only)

The diagram below shows the account structure at X-CLEAR / Registered Client level. The Clearing Administrator acts as agent only for the purpose of Clearing, and the X-CLEAR / Registered Client is itself the holder of the Clearing Account.

Accordingly, the X-CLEAR/ Registered Client’s positions and assets are segregated from the ones of the Clearing Administrator and its other clients (whether NCMs or other X-CLEAR / Registered Clients). The account structure for the X-CLEAR / Registered Client model allows dedicated individual and segregated Clearing, Margin and Collateral Accounts to be held at SXC, which reflect the assets (collateral) and positions of an X-CLEAR / Registered Client. No cross-netting (positions) and cross-margining (margins) take place, except for the netting of positions of the X-CLEAR / Registered Client.
(Clearing Account level). The Clearing Administrator is jointly liable with the X-CLEAR / Registered Client towards X-CLEAR.

Concerning the Collateral Accounts, the X-CLEAR / Registered Client is the account holder of Collateral Accounts in the form of Securities Accounts (optional) and has a designated Cash Account (mandatory). Accordingly, the collateral of the Clearing Administrator and its other clients is always segregated from the X-CLEAR / Registered Client's Permissible Collateral. The Clearing Administrator has to pass-through any collateral amount received from the X-CLEAR / Registered Client if the collateral fulfills the collateral eligibility requirements of X-CLEAR.

From a risk management and default management point of view, the account setup is viewed at the individual level and combines the X-CLEAR / Registered Client's Clearing Account with the respective Collateral Account(s), which in case of transfer (portability) or close-out, will be treated jointly. This applies to stress testing, default management, close-out possibilities and the portability options of the X-CLEAR / Registered Client in the case of a default of the Clearing Administrator.

**Back-up Clearing Administrator**

When opting for the X-CLEAR / Registered Client solution, an X-CLEAR / Registered Client must enter into the Contract for X-CLEAR / Registered Clients (English law) with the Clearing Administrator and X-CLEAR. To ensure that in case of Default of the Clearing Administrator, a Back-up Clearing Administrator takes over the administration of the X-CLEAR / Registered Client's assets and positions, instructions shall be submitted to X-CLEAR and a contractual agreement of the designated Back-up Clearing Administrator and the X-CLEAR / Registered Client shall be set in place.

The Back-up Clearing Administrator form (form 007) may be found under www.six-group.com > Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Download Center > Forms.
6.2 Individual Client Segregation (ICS)

The picture below depicts the account structure at NCM level. The GCM positions and assets are segregated from the ones of its NCM(s). In addition, each NCM is segregated from the other NCM(s). The account structure for the ICS model allows dedicated individual and segregated Clearing and Collateral Accounts to be held, reflecting the assets (collateral) and positions of each NCM. The cross-netting (cross-margining) of positions takes place on the Clearing Account at NCM level.

Figure 5: Individual Client Segregation (ICS)

As requested by the NCM, the Member (GCM) shall opt for each NCM to use either separate Collateral Accounts for client and house Clearing Accounts (model A) or an omnibus Collateral Account (model B) for both Clearing Accounts. The collateral of the GCM is always segregated from the collateral of its NCM(s). The GCM has to pass through the collateral amount provided by the NCM if the collateral fulfills the collateral eligibility requirements of X-CLEAR. The respective collateral requirements are calculated by X-CLEAR with respect to the NCM's positions and shall be requested by the GCM from the NCM.

From a risk management and default management point of view, the account setup is viewed at credit group level. The credit group combines, on a technical level, the Clearing Account (consisting of one or several technical accounts) with the respective Collateral Account(s) to a unit which, in case of transfer (portability) or close-out, will be treated jointly. This applies to stress testing, default management, close-out possibilities and porting options of the NCM in the case of the GCM defaulting.

Practical implementation

When opting for the ICS solution, an NCM instruction shall be given by using a standard form (form 007) of X-CLEAR. Portability shall be based on a contractual agreement of the designated Back-up GCM and the NCM to assume the latter's collateral and positions. This form can be found under www.six-group.com > Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Download Center > Forms.
When opting for the ICS account structure, the NCM can change its status in case of a GCM Default. Specifically, the NCM can choose to become an Individual Clearing Member (ICM), under the condition that the Member requirements of X-CLEAR are fulfilled. This form can be found under www.six-group.com > Exchange Services > Securities Services > Clearing > Member Information > Forms.

6.3 Omnibus Client Segregation (OCS)

The picture below depicts the account structures at GCM level. The GCM positions and assets are segregated from those of its NCM(s). The OCS will segregate positions and assets of the GCM and the NCM. The cross-netting (cross-margining) of positions takes place at the Clearing Account level. OCS is the standard solution offered by X-CLEAR.

The segregation of the Clearing Account referable to the NCM and the Clearing Account of the GCM, as well as the segregation of the Collateral Accounts containing the GCM’s collateral assets and its NCMs’ assets will ensure clear segregation. The segregated Collateral Accounts shall cover the Margin requirements in respect of the Outstanding Contracts referable to the NCM(s) and the Outstanding Contracts of the GCM.

From a risk management and default management point of view, the account setup is viewed at credit group level. The credit group combines, on a technical level, the Clearing Account with the respective Collateral Account(s) to a unit which, in case of transfer (portability) or close-out, will be treated jointly. This applies to stress testing, default management, close-out possibilities and porting options of the NCM in the case of the GCM defaulting.

Practical implementation:

If opting for the OCS solution, an NCM instruction shall be given by using a standard form (form 007) of X-CLEAR to initiate client segregation. Portability shall be based on a contractual agreement of the designated Back-up GCM and the GCM in respect of the NCMs’ assets and positions. This form can be found under www.six-group.com > Products & Services >The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Download Center > Forms.
6.4 **Mini-Omnibus Client Segregation (Mini OCS)**

The picture below depicts the account structure at NCM level. The GCM positions and assets are segregated from those of its NCMs. The Mini OCS is similar to the OCS model and offers the GCM the possibility to use more than one OCS structure. The Mini OCS will segregate positions and assets of the GCM and each of its NCM structures. The cross-netting (cross-margining) of positions takes place at the Clearing Account level.

![Figure 7: Mini-Omnibus Client Segregation (Mini OCS)](image)

The Clearing Accounts referable to each NCM structure are segregated from each other as well as from the Clearing Account of the GCM. Similarly, assets held on the Collateral Accounts of each NCM structure are segregated from each other and against the assets held on the Collateral Accounts of the GCM. Each of the segregated Collateral Accounts shall cover the Margin requirements for the Outstanding Contracts referable to the NCMs, or the Outstanding Contracts of the GCM, respectively.

From a risk management and default management point of view, the account setup is viewed at credit group level. The credit group combines, on a technical level, the Clearing Account with the respective Collateral Account(s) to a unit which, in case of transfer (portability) or close-out, will be treated jointly. This applies to stress testing, default management, close-out possibilities and porting options of the NCM in the case of the GCM defaulting.

**Practical implementation**

When opting for the Mini OCS solution, a GCM instruction shall be given and NCM instructions shall be given for each structure by using a standard form (form 007) of X-CLEAR. Portability for each NCM structure is conditional on a contractual agreement of the designated Back-up GCM and the GCM to assume the NCMs’ assets and positions.

The form can be found under www.six-group.com > Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Download Center > Forms.
7.0 SECOM Margining

Real-time margins are calculated for each product type considering the risk characteristics of the respective asset class, i.e. the real-time margining module calculates the open positions and margins for bonds and equities separately using an individual methodology to calculate the respective market risk and the asset-class-related margins.

Margin requirements are basically calculated at the Clearing Account level and then aggregated across all Clearing Accounts belonging to the same credit group. Credit groups are used for margin collection; they allow for a segregation of the margining and collateral management process.

7.1 Initial Margin

7.1.1 Principle

The Initial Margin requirement is continually calculated for each security and currency held in a Clearing Account on the basis of the net positions in all Outstanding Contracts of Exchanges and MTFs for which X-CLEAR provides Clearing.

In the case of multiple listed Securities, the Member's open positions as well as the Initial Margin will be computed by taking into account that Member's net position from Outstanding Contracts on all Exchanges and MTFs in respect of which X-CLEAR provides Clearing.

In so doing, the maximum value resulting from the calculation of the short-term and long-term VaR is decisive. For the calculation of the Initial Margin, Securities are allocated to different risk buckets.

Using the historic Value-at-Risk (VaR) model, the current VaR is calculated per Security. For this purpose, the historic data of the previous two years (approximately 500 working days) are adopted for the long-term VaR and the previous three months (approximately 90 days) for the short-term VaR, by calculating the two-day VaRs for equities and ETFs and the seven-day VaR for bonds, based on a confidence interval of 99.7% for equities, ETFs and bonds.

The VaR is generally calculated on a weekly basis. However, in case of difficult market conditions, it may also be calculated daily.

If the same Securities are traded on different Exchanges and MTFs, they are subject to the same risk bucket structure. Risk buckets are formed at intervals of 5% for equities and ETFs.

Securities eligible for Clearing with similar risks (defined by the VaR) are allocated to the same buckets and, for this purpose, the respective differentiated Initial Margin is calculated on the basis of the positions that have been netted per bucket.
Clearing-eligible instruments which are considered high risk by x-clear Risk Management are allocated to the “High Risk” bucket 7 with a fixed margin rate of 50%, irrespective of the historical VaR of individual instruments. Currently, the “High Risk” bucket includes certain exotic exchange-traded products (ETPs) such as ETPs with underlying cryptocurrencies. As of September 2021, only Bitcoin ETPs from certain issuers are accepted for clearing if they cover the risk model set by SIS x-clear Risk Management.

In future, SIX x-clear reserves the right to allocate new product types to the newly introduced “High Risk” bucket and/or modify its risk parameters based on internal assessments and reviews.

<table>
<thead>
<tr>
<th>Equities &amp; ETFs</th>
<th>Bonds</th>
<th>High risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk bucket</strong></td>
<td><strong>VaR range %</strong></td>
<td><strong>Initial margin %</strong></td>
</tr>
<tr>
<td>1</td>
<td>0 to 5</td>
<td>3.8</td>
</tr>
<tr>
<td>2</td>
<td>5 to 10</td>
<td>8.8</td>
</tr>
<tr>
<td>3</td>
<td>10 to 15</td>
<td>13.8</td>
</tr>
<tr>
<td>4 (default)</td>
<td>15 to 20</td>
<td>18.8</td>
</tr>
<tr>
<td>5</td>
<td>20 to 25</td>
<td>23.8</td>
</tr>
<tr>
<td>6</td>
<td>25 or more</td>
<td>28.8</td>
</tr>
<tr>
<td>7</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

For all securities where trading prices are not available for a period of at least 250 Exchange or trading days, the VaR usually amounts to 15.01% to 20.00% for equities and ETFs, and between 4.51% and 6.00% for bonds.

### 7.1.2 Risk netting coefficient I (intra-bucket)

Due to the fact that the Securities contained in a risk bucket do not correlate perfectly, a risk netting coefficient (based on the average correlation) is used to net the respective Securities positions within the same bucket (risk netting coefficient I). For each Security, the Initial Margin is therefore calculated first on the basis of the net position (long or short) in that Security. Subsequently, the total of all net long positions and the total of all net short positions within the same bucket are netted using the risk netting coefficient I for the smaller of both values. Due to a specific risk profile of products allocated to the “High Risk” bucket 7, there is no margin offsetting between net long and net short positions in this bucket.

### 7.1.3 Risk netting coefficient II (inter-bucket)

Additionally, a second risk netting coefficient is applied between the risk buckets of the same asset class. The net Initial Margins per risk bucket (positive/negative values) are aggregated across all buckets, taking into account the algebraic sign (plus/minus). This results in the total of the Initial Margins net long and the total of the Initial Margins net
short. The smaller of these two figures is multiplied by the inter-bucket coefficient and the Initial Margin is reduced by that amount.

7.1.4 Initial Margin on transaction level

Initial Margin requirements vary in real time with each transaction in a Security. The total amount of the Initial Margin per Clearing Account is derived from adding up all results on transaction level from the risk buckets which contain the net positions of all Outstanding Contracts relating to Securities and arising from transactions on all Exchanges and MTFs cleared by X-CLEAR.

7.1.5 Extreme net open amount

In the case of an extreme net open amount (NOA) of a participant (i.e. the absolute values of a net long open minus a net short open amount) which exceed CHF 750 million (taking into account the consolidated position of the Member across all Exchanges and MTFs cleared by X-CLEAR), the participant'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 table below).

<table>
<thead>
<tr>
<th>Net Open Amount in CHF m</th>
<th>IRC = 1.00</th>
<th>IRC = 1.50</th>
<th>IRC = 2.00</th>
<th>RC Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 ≤ 750</td>
<td>1.00</td>
<td>1.50</td>
<td>2.00</td>
<td>-</td>
</tr>
<tr>
<td>750 ≤ 1000</td>
<td>1.25</td>
<td>1.75</td>
<td>2.25</td>
<td>0.25</td>
</tr>
<tr>
<td>1000 ≤ 1250</td>
<td>1.50</td>
<td>2.00</td>
<td>2.50</td>
<td>0.50</td>
</tr>
<tr>
<td>1250 ≤ 1500</td>
<td>1.75</td>
<td>2.25</td>
<td>2.75</td>
<td>0.75</td>
</tr>
<tr>
<td>1500 ≤ 2000</td>
<td>2.00</td>
<td>2.50</td>
<td>3.00</td>
<td>1.00</td>
</tr>
<tr>
<td>2000 &lt;</td>
<td>2.25</td>
<td>2.75</td>
<td>3.25</td>
<td>1.25</td>
</tr>
</tbody>
</table>

The X-CLEAR Member will be informed in the event that its Initial Margin requirements are increased on this basis.

7.1.6 Risk rating coefficient

The risk rating coefficient has been designed to increase the amount of defaulter-pay resources rather than mutualized resources. It depends 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. X-CLEAR accepts credit ratings from the following external rating agencies:

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

Additionally, the internal rating is taken into account. The internal rating is derived on the basis of a dedicated internal model.
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 the Member's credit rating.

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

<table>
<thead>
<tr>
<th>Rating</th>
<th>Standard &amp; Poor's</th>
<th>Moody's</th>
<th>FITCH</th>
<th>Internal rating</th>
<th>Risk rating coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA to A-</td>
<td>Aaa to A3</td>
<td>AAA to A-</td>
<td>AAA to A-</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>BBB+</td>
<td>Baa1</td>
<td>BBB+</td>
<td>BBB+</td>
<td>1.25</td>
<td></td>
</tr>
<tr>
<td>BBB</td>
<td>Baa2</td>
<td>BBB</td>
<td>BBB</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>BBB-</td>
<td>Baa3</td>
<td>BBB-</td>
<td>BBB-</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td>BB+ to BB-</td>
<td>Ba1 to Ba3</td>
<td>BB+ to BB-</td>
<td>BB+ to BB-</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>B+ or lower</td>
<td>B1 or lower</td>
<td>B+ or lower</td>
<td>B+ or lower</td>
<td>determined case by case</td>
<td></td>
</tr>
</tbody>
</table>

X-CLEAR uses the long-term rating. If several credit ratings are available, the second-best rating is used.

### 7.2 Variation margin

The Total Variation Margin $VM_i$ for a clearing account $i$ consists of the following two cumulative components:

$$VM_i = VM_i^{CE} + WWR_i$$

Equation (1)

where:

$VM_i^{CE}$ = Variation Margin component covers market price fluctuations of the current exposure of the clearing account $i$; and

$WWR_i$ = Wrong-Way-Risk Margin for the clearing account $i$

#### 7.2.1 Variation Margin component to protect from the current exposure

The Variation Margin component covers market price fluctuations of current exposure that have already been incurred upon open positions per Security. The Variation Margin component to protect from the current exposure is marked to market several times daily, normally every 90 minutes, on the basis of the net position of all Outstanding Contracts of the X-CLEAR Member per security. The level of the Variation Margin component protecting the current exposure depends solely on the market valuation. Positive and negative values (price gains/losses) are netted out across all Securities. Based on these values, negative values are charged additionally while positive values may offset Initial Margin requirements.
Wrong-Way-Risk Margin

The Wrong-Way Risk Margin covers the risk that occurs when the value of open positions of a Member is adversely correlated with the credit quality of that Member. Assuming such adverse correlations, the portfolio VaR of the open positions of a Member is calculated as follows:

1. The process for calculating the Wrong-Way-Risk Margin considers all open equity-instruments (including ETFs), while positions in the asset class bonds are not regarded.

2. The total portfolio of open equity positions in a clearing account \( i \) is decomposed into three sub-portfolios:
   a. The equity instruments issued by the financial group (or any of its subsidiaries) of the Member (\( \Rightarrow \) sub-portfolio of own-stocks)
   b. The sub-portfolio of equity instruments issued by other companies within the financial sector (\( \Rightarrow \) sub-portfolio of financial stocks)
   c. The sub-portfolio of equity instruments issued by companies from non-financial sectors (\( \Rightarrow \) sub-portfolio of non-financial stocks).

3. To calculate the sub-portfolio VaR under the assumption of adverse correlations between the open positions and the default risk of the Member, all instruments within the same sub-portfolio are netted to a single net position for each of the three sub-portfolios. If the net position in a sub-portfolio is long, then it will be multiplied by the margin rate \(^1\) for the respective sub-portfolio to get the sub-portfolio VaR. If the net position is short, then the VaR of the sub-portfolio is zero. Only in the calculation of the sub-portfolio VaR for non-financial instruments will both a net long or a net short position be multiplied by the margin rate of the sub-portfolio.

\(^1\)The margin rates for the sub-portfolios are calculated under the normality assumption on a 99% confidence level using volatilities in historic stress periods where adverse correlations between the own stocks and the default risk of banks prevailed.

4. Having computed the VaR for each sub-portfolio, the VaR of the total portfolio in the clearing account \( i \) under the assumption of adverse correlations between the open positions and the default risk of the Member is calculated as:

\[
VaR^\text{WRM}_i = \sqrt{\mathbf{v}^T \mathbf{\Sigma} \mathbf{v}}
\]

where:

\( \mathbf{v} \) is the vector with the VaR values of the three sub-portfolios under the assumptions made in step 3 above.
Σ is the correlation matrix derived empirically from historical stress periods where adverse correlations between the own stocks and the default risk of banks prevailed.

Since the portfolio VaR calculated by the initial margin validation and calibration module partly considers periods of stressed marked conditions (including bank stress), some Wrong-Way-Risk is already incorporated in the calibrated initial margin. Hence, to avoid a margin double charge, the calibrated initial margin is deducted from the Wrong-Way-Risk Margin.

\[
WWR_i = \max\left(VaR_{i}^{WWR} - RC \cdot \lambda_j \cdot IM_i^{E}, 0\right)
\]

Equation (3)

where:

\(WWR_i\) = Wrong-Way Risk Margin for clearing account \(i\);

\(VaR_{i}^{WWR}\) = VaR of the total portfolio in the clearing account \(i\) under the assumption of adverse correlations between the open positions and the default risk of the Member;

\(RC\) = Risk rating coefficient of the Member;

\(\lambda_j\) = Lambda factor for credit group \(j\); and

\(IM_i^{E}\) = Clean SECOM initial margin for all open positions in the clearing account \(i\).

All Margin requirements are computed in Swiss francs (CHF).

7.3 Stress Margin Add-On

The Stress Margin Add-On forms part of the default waterfall of X-CLEAR. This add-on serves as an additional protective layer for the mutualized Default Fund, since the usage of the Default Fund becomes more remote when large stress exposures are covered by additional defaulter-pays resources.

Stress Margin Add-Ons will be charged whenever stress losses calculated under extreme but plausible market scenarios on a credit group level exceed a certain threshold of the Default Fund.

For those members connecting to the SECOM platform, the Stress Margin Add-On is computed as:

\[
\min\left(SL_j + \max\left(RC \cdot \lambda_j \cdot IM_j + WWR_j ; -VM_j^{EE}\right) + SIG + 45\% \cdot DF; 0\right)
\]

Equation (4)

where:
SL\textsubscript{j} is the most severe Stress Loss for the credit group \textit{j} (negative value)

\( \lambda_j \) is the margin scaling factor

IM\textsubscript{j} is the SECOM initial margin for the Member’s net open position

\( WWR_j \) is the Wrong-Way Risk Margin for credit group \textit{j}

\( VM^C_E \textsubscript{j} \) is the Variation Margin component to cover the current exposure of the credit group \textit{j}

SIG is the “skin in the game” as available on the X-CLEAR website (rolling average of 25% of (X-CLEAR’s required capital + wind-down capital) over the past four quarters).

DF is the applicable Default Fund size.

### 7.4 Total Margin

After the initial and variation margins for each Clearing Account have been calculated, the total margin per credit group and per Member, respectively, is computed using the risk rating coefficient to scale the margins:

\[
TM_j = \sum_{i=1}^{n} \max\left( RC \cdot \lambda_j \cdot IM_i + VM_i, 0 \right) + SAO_j \]

where

\( TM_j \) is the Total margin per credit group \textit{j} and per Member, respectively;

\( RC \) is the Risk rating coefficient of the Member;

\( \lambda_j \) is the margin scaling factor for credit group \textit{j} (as explained in sub-chapter 7.5.3 Adjustment of initial margins);

\( IM_i \) is the Initial margin calculated for Clearing Account \textit{i} (belonging to credit group \textit{j});

\( VM_i \) is the Total Variation margin calculated for Clearing Account \textit{i} (belonging to credit group \textit{j});

\( n \) is the number of Clearing Accounts belonging to the credit group/Member \textit{j} and

\( SAO_j \) is the Stress Add-On for the credit group/the Member \textit{j} as explained in sub-chapter 8.1.2 Stress Margin Add-On.
The required amount of Permissible Collateral to be provided by a Member is reviewed by X-CLEAR on a regular basis so as to promptly respond to market developments and to any changes of an individual Member's situation.

If a Member is a participant/trading member at several Exchanges and MTFs where X-CLEAR provides Clearing, the Margin requirement for all these Exchanges and MTFs can be consolidated on the basis of all Outstanding Contracts\(^1\) (on such Exchanges and MTFs).

\[^1\) For the purpose of the Operational Manual, this term refers to unsettled contracts with X-CLEAR as the Central Counterparty arising from transactions on all Exchanges and MTFs in respect of which X-CLEAR provides Clearing.

7.5 Initial margin validation and calibration module

X-CLEAR's SECOM margining module is supplemented by a margin validation and calibration module performing several daily runs (and, if required, additional ad hoc) 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 SECOM margining module. X-CLEAR reserves the right to adjust the margin requirements based on the outcome of this margin validation.

7.5.1 Simulation technique of the validation module

X-CLEAR's SECOM margining module is mainly based on historical volatilities of the underlying instruments, volatility buckets, static intra-bucket and inter-bucket netting. X-CLEAR's margin validation and calibration module employs a risk-factor-based Monte Carlo simulation technique for a 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 X-CLEAR's initial margin validation and calibration module consists of the following five main elements:

I. Risk factor set definition

A consistent set of potential risk factors is defined which displays a high explanatory power for the return of the securities in clearing. The chosen risk factors represent the following asset classes:

- Cash: Cash risk factors capture the FX risk based on portfolio currencies. All key currencies are represented.
- Equity: A variety of country-specific and regional (mostly emerging-market) stock indices as well as a full set of sector indices (developed countries) is chosen.

- Fixed Income: Aggregate indices with an average duration of 5-7 years are taken for the long leg, while the short leg is represented by the corresponding cash risk factors.

- Alternative Investments (AI) and Commodities: AI and commodity indices are included because they can be particularly useful in explaining the return dynamics of certain equity instruments, such as oil-related firms. Also, the risk dynamics of ETFs and Funds can often be determined by commodity price movements.

II. Mapping the underlying securities to the risk factors

The returns of all securities of the clearing portfolios are mapped to the risk factor returns via a regression technique:

\[
\text{Security Return} = \sum (\text{Risk Factor Return}_i \times \beta_i) + \text{Intrinsic Risk}
\]

The vector of exposures \( \beta \) is recalibrated on a daily basis.

III. Scenario generation of security returns

Potential future distributions of the security returns are derived from daily combined Monte Carlo Simulations of risk factor return distributions and distributions of the intrinsic risk of security returns. Each Monte-Carlo-simulated security return consists of a set of Monte-Carlo-simulated risk factor returns multiplied by the securities exposure vector \( \beta \) plus a Monte Carlo-simulated uncorrelated intrinsic risk component.

In order to calibrate the Monte Carlo simulations of the risk factor returns, the risk model considers historical observations of the risk factor returns from a rolling non-overlapping time window using a Filtered Historical Simulation approach.

The variance-covariance matrix of risk factor returns is derived from an Exponentially Weighted Moving Average (EWMA) model. The model is performed on a daily basis. The residual intrinsic risk of the regression of the securities returns to the risk factor returns is simulated using a Student's t-distribution.

IV. Scenario generation of clearing portfolio returns

The potential future distribution of clearing portfolio returns is computed by aggregating the simulated security returns of the positions of a Member. This aggregation takes place at the credit group level, i.e. the open positions of all Clearing Accounts belonging to the same credit group are considered to be one single portfolio. Hence, X-CLEAR's margin validation and calibration module fully takes into consideration the potential diversification benefit between the various asset classes.
V. Measuring the clearing portfolio risk

In order to validate and calibrate the initial margin calculated by the real-time margining module, X-CLEAR applies a portfolio VaR at 99% confidence level.

In addition, the simulation approach of X-CLEAR's margin validation and calibration module makes it possible to take into account further risk components as required by the applicable regulations in the EU and Switzerland. X-CLEAR reflects the following additional risk components in its margin validation and calibration process:

c. Stressed VaR

The initial margin model applied by SECOM does not have a procyclicality mitigation factor. To address this issue, X-CLEAR assigns a 25% weight to stressed observations in the lookback period underlying the VaR computation of the margin validation and calibration module. The feature of Stressed VaR allows periods of stressed marked conditions (i.e. stressed variance-covariance matrices) to be incorporated into the Monte Carlo Simulations of the risk factor scenarios.

d. Liquidity-adjusted VaR

The initial margins calculated by the SECOM margining module do not consider market liquidity risk due to open position concentrations. For this reason, X-CLEAR's margin validation and calibration module takes into account the adverse price movements of holdings concentrated in single securities within a clearing portfolio. This liquidity premium depends on

- the relative position size of the underlying instruments compared to their market capacity; and

- the current and simulated market risk of the underlying instrument and on its bid/ask spread.

The liquidity risk component of the margin validation and calibration module implements the liquidity uncertainty as a function of the simulated market scenario, which results in increased VaRs for the clearing portfolios.

e. Variable close-out periods

X-CLEAR's margin validation and calibration module allows for an asset-class-specific setting of VaR horizons. X-CLEAR sets these asset-class-specific VaR horizons in accordance with its prevailing assumptions about realistic close-out periods per asset class.
7.5.2 Stress testing and defense line calibration

X-CLEAR's margin validation and calibration module is also used for the calculation of historical and hypothetical stress tests as required by the applicable regulations in the EU and in Switzerland. X-CLEAR reflects the respective stress test results in the design and calibration of its defense lines.

7.5.3 Adjustment of initial margins

X-CLEAR may adjust the margin requirement based on the outcome of the margin validation process described in sub-chapter 7.5.1 Simulation technique of the validation module.

To this end, a scaling factor $\lambda_j$ for every credit group $j$ of a Member has been implemented in order to align the initial margins with the portfolio VaR of the open positions in the respective credit group $j$. The portfolio VaR is computed by the margin validation module, as explained in chapter 7.4 Total Margin.

The adjustment of the margin requirement by $\lambda_j$ is based on a comparison of the initial margin (computed by the SECOM margining module) with the portfolio VaR resulting from the margin validation module in the following way: For each credit group $j$, the sum of initial margins of all Clearing Accounts $\sum_{i} IM_i$ in credit group $j$ is compared to the Portfolio VaR ($PVaR$) for the set of open positions in credit group $j$. The value of $\lambda_j$ that is entered into equation (4) in chapter 7.4 Total Margin to adjust the margin requirement is determined by:

$$\lambda_j = \frac{PVaR}{\sum_{i} IM_i}$$

Equation (6)

In order to avoid procyclicality, $\lambda_j$ entered in equation (5) will never be less than 1.

The adjustment of $\lambda_j$ and the risk rating coefficient $\mathbf{RC}$ are independent of each other, i.e. the regime for adjusting $\mathbf{RC}$ is not affected by the margin calibration through the scaling factor $\lambda_j$.

7.5.4 Margin calls

If, at any time, the Margin provided is insufficient or if the value of the Default Fund falls below X-CLEAR's requirements for whatever reason such that there are outstanding obligations of a Member to pay Contributions, X-CLEAR will automatically issue a margin call in real time denominated in Swiss francs (CHF).
The following rules apply:

1. The margin call is in principle to be met in the form of cash.

2. Every member is required to designate an account which X-CLEAR is entitled to debit with the amount of the margin call in accordance with the Rulebook. The following types of account may be used:

   a. SIX Interbank Clearing Account ("SIC account"); or

   b. Ordinary money account at SIS SIX AG ("SIX SIS account").

   - The Member may designate one charge account only (SIC or ordinary money account at SIX SIS). Generally, a SIC account is required for margin calls. Usage of an ordinary money account of SIX SIS is only accepted on an exceptional basis.

   - X-CLEAR will open an X-CLEAR money collateral account at SIX SIS for each member in accordance with this Operational Manual to place the requested collateral.

   c. Account denominated in British pounds (GBP) or Euro (EUR) at the Member’s Payment Bank.

3. Each margin call must be met within the deadline communicated by X-CLEAR. Margin calls issued no later than 5:00 p.m. (CET) have a deadline on the same day. All deadlines have to be met within a maximum of sixty minutes after the call is issued. If a margin call after 5:00 p.m. (CET) cannot be satisfied on the same day, it has to be fulfilled by no later than 9:00 a.m. (CET) on the next business day. Under extraordinary circumstances, margin calls may also be issued after 5:00 p.m. (CET).

4. If the Member has opted for the OTC Extended Window Clearing Service (see subchapter 7.7), the Member has to provide margin collateral due to a margin call in USD or securities by 9:00 p.m. (CET) at the latest on the same day.

5. If the margin call is not satisfied by the Member within the stipulated time as outlined above, Clearing by X-CLEAR of future transactions to which that Member is a counterparty shall be suspended henceforth and X-CLEAR shall cease to act as the Central Counterparty for that Member. Additionally, X-CLEAR reserves its right to place this Member in Default by issuing a respective Default Notice in accordance with the Rulebook. Please note in particular that any such Default Notice will also be transmitted to the Trading Platforms cleared by X-CLEAR for this Member.

7.5.4.1 Settlement of margin calls through a Payment Bank

As a membership requirement, a Member which decides to satisfy margin calls through a Payment Bank must have an account denominated in British pounds (GBP) or Euro (EUR) at its Payment Bank. Margin calls will be processed by SIX SIS (on behalf of X-CLEAR) by directly debiting the Member’s GBP or EUR account at its Payment Bank, in
favor of X-CLEAR’s cash collateral account at SIX SIS. Before Clearing by X-CLEAR can commence for a Member, SIX SIS (on behalf of X-CLEAR) requires an appropriate direct debit authority/mandate signed by both the Member and its Payment Bank.

Upon a Member’s request for the withdrawal of cash, subject to the availability of sufficient underlying Permissible Collateral to meet Margin and Default Fund Contribution requirements (so that such requirements would continue to be satisfied after such withdrawal), X-CLEAR shall arrange for the return of cash to the Member’s account denominated in GBP or EUR at its Payment Bank. Such available cash collateral is transferred/paid by SIX SIS (on behalf of X-CLEAR) via its Payment Bank (whether a concentration or a correspondence bank) in London.

X-CLEAR will secure the co-operation of several financial institutions with regard to the required margin call settlement services if there is any customer need for such a solution. The Member is responsible for meeting all banking charges imposed or charged by its Payment Bank.

7.5.5 Delivery into the X-CLEAR Collateral Account

Every Member may transfer Margins deposited in its respective Collateral Account as required by the Margin requirements of X-CLEAR ("Margin Deposits") to the X-CLEAR Collateral Account at all times. The delivery of Securities can be initiated through SIX SIS or Euroclear UK and Ireland. The delivery of cash can be initiated through SIX SIS or Payment Banks by Members. The transfer is effected via an ATF (MT542 or MT598-100) instruction for Securities or MT202 instruction for cash transfers, which is to be issued by the Member. X-CLEAR only accepts as Margin Deposits the Permissible Collateral which is defined in chapter 5.0 Account structures of this Operational Manual as Margin Deposits and the Lending Norms.

7.5.6 Withdrawal from the X-CLEAR Collateral Account

The withdrawal of Margin Deposits may be instructed automatically by each member (ATF or MT 202/200) or manually by X-CLEAR. The Member is, in the case of manual processing, required to submit an appropriate signed request in writing by e-mail to X-CLEAR. Margin Deposits may be withdrawn only when no longer required to satisfy the Member’s Margin requirements. If a Member wishes to replace the Margin Deposits, the new Permissible Collateral must be delivered prior to withdrawing the old Permissible Collateral.

The Member must be aware that any replacement or withdrawal of collateral under certain circumstances can be delayed by X-CLEAR. For example, the replacement or withdrawal of collateral may be delayed when pledged cash collateral is placed into short-term repurchase agreements.

The cut-off and best-effort deadlines for Cash and Securities transfers are published in sub-chapter 4.2 Collateral release cut-off times.
7.6 Collateralization of Co-CCPs: Link Margin Element

7.6.1 Preliminary remarks

When Members trade in inter-operable markets, inter-CCP exposures arise between the two Co-CCPs involved due to the different CCP memberships and inter-CCP Collateral requirements (in accordance with the Pledge Agreement with the respective Co-operating Clearing House [Co-CCP]). Regulators require that these credit exposures are measured, monitored and mitigated separately by the holding of collateral. Such inter-CCP collateral has to be funded and covered by additional assets, which must be independent and be segregated from the collateral provided by the Member.

The Link Margin Element will be levied in the case of X-CLEAR providing clearing services to a Member on Trading Platforms which are also cleared by a Co-CCP. The amount defined by X-CLEAR to cover the overall Co-CCP collateral funding requirements of all Members for all interoperable markets is referred to as the “Link Margin”. The individual contribution by the Member is the “Link Margin Element”.

As a consequence, each Member shall, in addition to providing Margin and making Default Fund Contributions, provide the so-called “Link Margin Element” to X-CLEAR. The Link Margin Element shall exclusively be applied to finance the Inter-CCP Collateral which is set out by the respective Co-CCP – all in accordance with and subject to the Financial Collateral Agreement.

7.6.2 Link Margin Element Model

The following parameters regulate the Link Margin Element model:

a. The Link Margin Elements shall enable X-CLEAR to meet the Collateral requirements (in the form of Margin) from the Co-CCP under the respective Link Agreement.

b. The Link Margin Element shall be based on the Link Margin set by X-CLEAR. X-CLEAR shall calculate the Link Margin based on the recent margin requirements applicable to X-CLEAR according to X-CLEAR’s obligations under the Link Agreements with the Co-CCPs. When deemed necessary for objective reasons, such as but not restricted to triple witching days, a temporary requirement may be necessary, as well as for events with recurring patterns.

c. The Link Margin set by X-CLEAR shall apply until a new Link Margin is deemed necessary, for example in a situation of unexpected fluctuations in the Collateral requirements applicable to X-CLEAR under the Link Agreement(s).

d. The Link Margin Element payable by the respective Member shall be the Link Margin distributed between the relevant Members on a pro rata basis. The percentage ratio shall be defined mainly at the end of day (EOD) or exceptionally on an intraday basis.
e. X-CLEAR may, if required and at any time, vary the Link Margin and Link Margin Element, including but not limited to satisfying intra-day margin calls made by a Co-CCP. The Link Margin Element shall be posted in cash or securities as defined in the Lending Norms (see website: www.six-group.com > Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Existing Members > Lending Norms).

7.6.3 Calculation of the Link Margin Element

The Link Margin Element (LME) liability is established by means of an Irregular Pledge based on the Contractual Relationship, especially the Financial Collateral Agreement, which is governed by Swiss law. The LME is determined mainly on a daily basis on the pro rata share of the Link Margin based on the Member’s end-of-day (EOD) Total Initial Margin (TIM) in proportion to the EOD TIM of all Members in markets where an interoperable arrangement exists. In case of an intraday change of the Link Margin, X-CLEAR will apply the same distribution logic by taking the respective TIM at the time of distribution as the basis for allocating the Link Margin to the Members. This will allow a fair distribution of the Link Margin according to the recent risk level of each Member.

The LME minimum contribution is CHF 0.1 million. The LME is rounded up to the next CHF 0.1 million increment.

The LME is calculated on a daily/intraday basis and has to be delivered within 60 minutes after the receipt of a margin call. X-CLEAR may recalculate the Link Margin at any time and initiate a margin call if the Link Margin has to be resized.

The value of the Securities and/or currencies provided for the purpose of financing the LME is calculated on the basis of their current market value after applying the applicable Haircut (see Lending Norms published on the X-CLEAR website) and not on the nominal value of the Securities or currencies deposited in the Collateral Accounts.

X-CLEAR may issue a margin call to a Member in order to top up the LME if the value of the LME made available by the Member has been reduced (whereby this value is calculated on the basis of the current market value less the applicable Haircut) and this reduction in value has caused the value of the LME to fall below the level required from the respective Member.

The transfer is effected via an ATF (MT542 or MT598-100) instruction for Securities or MT202 instruction for cash transfer, which is to be issued by the Member. The Member is, in the case of manual processing, required to submit an appropriate request in writing by e-mail.

7.6.4 Margin call

The same rules as in sub-chapter 7.5.4 Margin Call, para 3 apply for a margin call for the LME. In case the Member is set up for direct debit for Margin Calls in the Swiss Interbank Clearing System (SIC), the Margin Call will be automatically executed in SIC.
Withdrawal and replacement of Link Margin Element collateral

The withdrawal of Excess Collateral (as set forth in the Financial Collateral Agreement) may be instructed manually by each Member or by X-CLEAR. The Member is, in the case of manual processing, required to submit an appropriate request in writing to X-CLEAR either by e-mail or letter. Upon receiving a written request for a withdrawal from the Member, X-CLEAR will retransfer any Excess Collateral.

If a Member wishes to replace Securities and/or Currencies deposited for the purpose of the Link Margin Element, the new Securities and/or Currencies must be delivered prior to withdrawing the old Securities and/or Currencies (see chapter 4.0 Permissible Collateral).

The cut-off and best-effort deadlines for Cash and Securities transfers are published in sub-chapter 4.2 Collateral release cut-off times.

The Member must be aware that any replacement or withdrawal of collateral under certain circumstances can be delayed by X-CLEAR. For example, the replacement or withdrawal of collateral may be delayed when pledged cash collateral is placed into short-term repurchase agreements.

Eligible Securities provided for the purpose of the Link Margin Element must be replaced fifteen days prior to their maturity date or redemption.

Collateral Requirement to Co-CCPs (Add-On to Co-CCPs)

Under the “Pledge Agreement for X-CLEAR as a Collateral Receiver”, X-CLEAR is entitled to receive a pledge from the respective Co-CCP over the security items claimed as Collateral Requirement (as defined in the Pledge Agreement with the respective Co-CCP) for the coverage of the risk of its actual credit exposure to that Co-CCP (“Balance Position” as defined in the MCLA).

The Collateral Requirement shall be assessed and claimed by X-CLEAR as follows:

i. X-CLEAR shall effect a calculation of the Collateral Requirement in accordance with its methodology for the calculation of Total Margin as described in chapter 8.1.3 Total Margin and additional add-ons as agreed between interoperating CCPs (the “X-CLEAR Collateral Reference”).

ii. For the corresponding credit exposure (Balance Position), X-CLEAR will receive and acknowledge the Collateral Requirement as calculated, assessed and submitted by the respective Co-CCP under the “Pledge Agreement for X-CLEAR as a Collateral Giver” (the “Co-CCP Collateral Reference”).

iii. X-CLEAR shall compare its X-CLEAR Collateral Reference with the Co-CCP Collateral Reference and shall fix the higher of the two amounts as its Collateral Requirement.
to the Co-CCP. The Collateral References compared shall be adjusted for variation margins.

For the claiming (by margin call), administration and release of the security items of the Collateral Requirement provided by the Co-CCPs, the rules of the MCLA (including the Pledge Agreements and the Inter-CCP Procedures) shall apply.

7.7 OTC Extended Window Clearing Service

If the Member has opted for a Trading Platform for which X-CLEAR provides the OTC Extended Window Clearing Service (6:30 p.m. to 7:30 p.m. (CET)), the respective Member has to cover the additional risk.

The following Trading Platforms provide OTC Clearing transactions during the extended clearing window:

- Traiana
- Cboe ETR

Members which have opted for the Trading Platform with OTC Extended Windows Clearing Service have to ensure support for margin calls until 9:00 p.m. (CET) as in sub-chapter 7.5.4 Margin Call.

8.0 CLARA Margining

8.1Margins

The margin methodology is based on the following:

- The collateral value of eligible equity instruments

- Any Daily Market Settlement, the collateral value, any interest settlement, compensation settlement, or equivalent settlement to be performed as a contractual obligation relative to the Single Contracts shall be included in the margin.

X-CLEAR can make adjustments to reflect corporate actions in eligible equity instruments.

Initial margin is calculated using Monte Carlo VaR, with a confidence level of 99%, based on margin prices on all underlying instruments and risk parameters defined by X-CLEAR. The margin takes into consideration all open and unsettled positions.

The margin calculated shall include the difference between the market value for each instrument and its Trading Platform Transaction price ("Variation Margin"). The Variation Margin may be negative, positive or zero. X-CLEAR may calculate a Concentration Add-On vis-à-vis Members in order to take into account risks that are not taken into account to a sufficient degree by the normal margin methodology due
8.1.1 Wrong-Way Risk-Adjusted Initial Margin

The Wrong-Way Risk addresses the risk that occurs when the value of open positions of a Member is adversely correlated with the credit quality of that Member. Assuming such adverse correlations, CLARA uses a Gaussian Copula Model to help mitigate this risk.

The copula model addresses the joint probability distribution for a Member’s probability of default and market risk as described by the instrument return distribution. This allows for a flexible framework that can incorporate dependencies based on industry and location in addition to the relationship to own stocks.

The credit risk is modelled using a Merton-type structural approach. The credit risk and instrument return distribution are then correlated using a Gaussian copula model:

\[
C(u_1, u_2) = \Phi_2(\Phi^{-1}(u_1), \Phi^{-1}(u_2), \rho)
\]

Where:

\[\Phi = \text{the cumulative standard normal distribution function}\]
\[\Phi_2 = \text{the two-dimensional standard normal distribution}\]
\[\rho = \text{the scalar correlation parameter}\]

The correlation parameter depends on the classification of the instrument as follows:

- Own stock
- Same sector as Member and Member is large-cap title
- Same sector, small cap

The wrong-way risk-adjusted initial margin is defined by the 1% quantile of the PnL distribution conditional on the default event being realized within the margin period of risk:

\[
IM_{WWR} = Q_{1\%}[S_{cur} \times C(r_{Sim} | Default)]
\]

Within the Merton Model, the default event occurs when \(U_1 < \text{Default Probability}\)

For options, the original underlying simulations are replaced by the conditional simulations:
\[ Und_{Sim} = S_{cur} \times (C(r_{Sim} | Default) + 1) \]

Where:

- \( S_{cur} \) = the current price of the underlying instrument

All other parameters, including the implied volatilities, are unchanged. Option price simulations are obtained using the Black-Scholes pricing formula on simulations. Markov Chain Monte Carlo simulations are used to generate sufficient samples where a Default occurs in order to reliably estimate the quantile of the copula return distribution.

Thus, the margin add-on addressing wrong-way risk can be given by:

\[ WWR_{Capula} = IM_{WWR} - IM_{\rho=0} \]

Where:

- \( WWR_{Capula} \) = the difference between the wrong-way risk-adjusted initial margin and the regular initial margin calculation.

8.1.2 Stress Margin Add-On

The Stress Margin Add-On has been designed to protect the mutualized Default Fund through an increase of defaulter-pay resources. A Stress Margin Add-On will be charged whenever stress losses calculated under extreme, but plausible market scenarios on a credit group level exceed a certain threshold of the Default Fund, as detailed below. The daily Margin shall include the Stress Margin Add-On.

Stress Margin Add-On:

\[ \text{Min} (SL_j + IM_j + SIG + 45\% \times DF; 0) \]

where

- \( SL_j \) is the Stress Loss for credit group \( j \) (negative value)
- \( SIG \) is the “skin in the game” of X-CLEAR (as defined in Chapter 8.1.2 Stress Margin Add-On).
- \( DF \) is the applicable Default Fund size

8.1.3 Total Margin

The total margin requirement calculation in CLARA can be summarized as follows:
\[ TM_i = \max(IM_i + ConcAddOn_i + STMA_i + WWR_i + VM_i, 0) \]
\[ TM_j = \sum_{i=1}^{n} TM_i \]

where
- \( TM_i \) = Total Margin per clearing account \( i \) and clearing member \( j \)
- \( IM_i \) = Initial Margin calculated for clearing account \( i \)
- \( ConcAddOn_i \) = Concentration Add-On calculated for clearing account \( i \)
- \( STMA_i \) = Stress Margin Add-On calculated for clearing account \( i \)
- \( WWR_i \) = Wrong-Way Risk Margin Add-On calculated for clearing account \( i \)
- \( VM_i \) = Variation Margin calculated for clearing account \( i \)
- \( n \) = number of clearing accounts \( i \) belonging to clearing member \( j \)

8.1.4 Link Margin Element

For Members participating in a Product Segment subject to a Link Agreement with one or more Co-CCPs, the daily Margin shall include a Link Margin Element, as further regulated below:

- The Link Margin Element shall enable X-CLEAR to meet the margin requirements from the Co-CCP under a Link Agreement.

- The Link Margin Element shall be based on the link margin set by X-CLEAR. X-CLEAR shall calculate the Link Margin based on the maximum of the margin requirements applicable to X-CLEAR under the Link Agreement, in addition to an add-on for expected fluctuations above the margin requirement. If deemed necessary, for objective reasons, such as but not restricted to triple witching days, a temporary requirement may be required, and for events with recurring patterns. The Link Margin set by X-CLEAR shall apply until a new Link Margin is deemed necessary.

- The Link Margin Element payable by the respective Member shall be the Link Margin distributed between the relevant Members on a pro rata basis. The percentage ratio shall be defined mainly at the end of day (EOD) or exceptionally on an intraday basis. The LME is determined mainly on a daily basis on the pro rata share of the Link Margin based on the Member’s end-of-day (EOD) Total Initial Margin (TIM) in proportion to the EOD TIM of all Members. In case of an intraday change of the Link Margin, X-CLEAR will apply the same methodology by taking the respective TIM at the time of distributing the Link Margin to the Members. This will allow a fair distribution of the Link Margin according to the recent risk level of each Member. The LME minimum contribution is CHF 0.1 million. The LME is rounded up to the next CHF 0.1 million (NOK 1 million) increment. The calculation of the Link Margin Element is described under chapter 7.6.3 Calculation of the Link Margin Element.

- X-CLEAR may, if required, at any time vary the Link Margin Element, including but not limited due to intra-day margin calls made by a Co-CCP. The Link Margin Element
shall be posted in accordance with the Financial Collateral Agreement concluded between X-CLEAR and the Member and the Lending Norms/Permissible Collateral (see website: www.six-group.com > Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Existing Members > Lending Norms).

- X-CLEAR shall disclose the Margin requirement and individually notify the concerned Members of the pro rata distribution ratio and the Link Margin Element.

- For Members which are Clearing Administrators, the calculation of the Link Margin Element will include positions held by X-CLEAR / Registered Clients for which it is a Clearing Administrator.

8.2 Margin call

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

If, at any time, the Margin provided is insufficient, X-CLEAR will automatically issue a margin call in real time denominated in Norwegian krone (NOK).

The following rules apply:

1. The margin call is in principle to be met in the form of cash.

2. Permissible Collateral to satisfy margin calls in the form of cash shall be transferred to the Cash Account designated to the Member or the X-CLEAR / Registered Client by X-CLEAR.

3. The daily margin call is calculated each Business Day after completion of the first settlement in VPO and is notified to the Member. Margin calls for X-CLEAR / Registered Clients are notified to its Clearing Administrator.

4. X-CLEAR calculates the margin continuously through the Business Day in accordance with its margin methodology. The margin methodology is available on the X-CLEAR website.

5. X-CLEAR will continuously recalculate the Margin and the value of the Permissible Collateral during the Business Day.

If the margin call is not satisfied by the Member or the X-CLEAR / Registered Client within the stipulated time, the Default rules pursuant to the GTC of the Norwegian Branch shall apply.

8.2.1 Daily margin call

The daily margin call is calculated each Business Day after completion of the first settlement in VPO and is communicated to the Members. Margin calls for X-CLEAR /
Registered Clients are notified to the relevant Clearing Administrator. The margin call needs to be fulfilled by 11:00 am CET at the latest.

X-CLEAR calculates the margin continuously during Business Hours in accordance with its margin methodology.

8.2.2 Extraordinary margin call

X-CLEAR will continuously recalculate the Margin and the Permissible Collateral value during the Business Day.

X-CLEAR may define limits on risk exposure applicable to the Members. Upon a breach of such limits, X-CLEAR will issue an Extraordinary Margin call.

X-CLEAR may issue an Extraordinary Margin call if the Permissible Collateral provided by a Member or the X-CLEAR / Registered Client is deemed to be insufficient to cover the risk of the Member or the X-CLEAR / Registered Client, or due to prevailing market conditions, or for any other imperative reason (including prior to a Business Day which is not a Norwegian banking day).

Each margin call must be met within the deadline communicated by X-CLEAR. Margin calls issued by no later than 5:00 p.m. (CET) have a deadline on the same day. All deadlines have to be met within a maximum of 60 minutes after the call is issued. Under extraordinary circumstances, margin calls may also be issued after 5:00 p.m. (CET). If a margin call after 5:00 p.m. (CET) cannot be satisfied on the same day, it has to be fulfilled by no later than 9:00 a.m. (CET) on the next business day.

9.0 X-CLEAR 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. Members are required to participate in and contribute to the Default Fund of X-CLEAR.

X-CLEAR has one single Default Fund, which may have various Default Fund Segments.

The following Default Fund Segment(s) are active:

a. Cash Markets (equities/bonds)

Based on the Trading Platform Product segment(s) which the Member is clearing through X-CLEAR, it shall be assigned to the corresponding segment of the Default Fund.

The total size of the Default Fund is the sum of the sizes of the respective Default Fund Segments. The sizes of the Default Fund Segments are defined to cover the default of the two largest participants or participant groups (“cover 2 principle”) of each Default
Fund Segment. The size of the Default Fund is published as part of the CPMI-IOSCO quantitative reporting (16.1) on the official website: www.six-group.com > Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Regulatory Disclosure.

The Default fund collateral in the form of cash or securities are transferred under an irregular pledge (full title transfer).

9.1 Calculation of Default Fund Contribution

The amount of the Default Fund Contribution payable by the Member into the respective Default Fund Segment of X-CLEAR is dependent on the membership category (X-CLEAR ICM or X-CLEAR GCM) and on the median of the Initial Margin (MIM) over the last 30 Business Days or over the last 90 Business Days (whichever is higher) and the credit rating. The respective MIM is calculated monthly on the daily EOD open amount.

The following minimum contributions apply (with no upper cap limit) based on the membership category:

X-CLEAR ICM: Swiss francs (CHF) 0.5 million
X-CLEAR GCM: Swiss francs (CHF) 5.0 million

Calculation of Default Fund Distribution

The following minimization (under constraints) of loss function with respect to Default Fund Contributions $DF_c$ will be used for the optimization of the individual Default Fund Contribution by taking into account the Member’s default probability:

$L = \sum_{d=1}^{M} \frac{1}{N-d} \sum_{c=1}^{\binom{N-d}{d}} q_c q_c \left[ P M_{c} - IM_{c} - DF_c \right]^{+}$

Parameters

N: total number of Members

d: number of defaulting parties

M: maximum number of defaulting parties; in cover 2 setup M=2

c: possible combinations of $d$ defaults, $N - d$ members are non-defaulting

$Q_c = \prod_{i=1}^{d} q_i$ probability of common defaults, PD aligned with SIX credit risk model
**Rules and Regulations SIX x-clear AG**

**Operational Manual of SIX x-clear AG**

\[ \bar{Q}_c \]: probability of non-defaults

\[ PnL^{\text{sim}} \]: simulated profits and losses adapted to the Member's risk profile

\[ [A]^+ = \max(A, 0) \]: optionality of possible losses

All Default Fund Contributions are rounded up to the next Swiss franc (CHF) 0.1 million increment.

An upfront Default Fund Contribution defined by X-CLEAR will be required for the initial phases of the Clearing of Trading Platform Transactions. For new Members, X-CLEAR may determine the upfront Default Fund Contribution based on expected Clearing volumes.

The value of the Securities and/or currencies (in relation to cash) deposited by way of Default Fund Contribution is calculated on the basis of their current market value after applying the applicable Haircut (as published in the Lending Norms on the X-CLEAR website) and not on the nominal value of the Securities or currencies deposited.

The types and the release of Permissible Collateral and their respective values are specified in chapter 5.0 *Account structures* of this Operational Manual.

### 9.2 X-CLEAR / Registered Client Additional Default Fund Contributions

Members are obliged to make additional Default Fund Contributions to X-CLEAR's Default Fund if one of the following situations occurs:

#### 9.2.1 Increase of contribution requirements

The Median of the Initial Margin (MIM) is calculated on a monthly basis according to sub-chapter 9.1 *Calculation of Default Fund Contribution* of this Operational Manual. A change in the MIM (increase/decrease) will necessitate an adjustment to the Default Fund Contribution to be made.

If the contribution needs to be adjusted, the relevant Member shall be notified. The adjustment must be effected within two calendar days of the notification. If the additional Default Fund Contribution is not made within the stipulated period of two calendar days, X-CLEAR will issue a margin call and perform a direct debit.

The debit is made to the Member's designated account for direct debits applicable to Margin requirements. The provisions of chapter 7.0 *SECOM Margining* and chapter 8.0 *CLARA Margining* apply to margin calls issued.
9.2.2 **Price fluctuations**

If the Default Fund requirements are not met as a result of a decrease in the value of the Permissible Collateral in the Default Fund, X-CLEAR will notify the Member accordingly. The Member shall provide additional Permissible Collateral within 60 minutes of being notified by X-CLEAR.

9.2.3 **Drawdown on Default Fund Segment (replenishment duty)**

Any drawdown, whether partial or full, of the respective Default Fund Segment affected by a Member Default gives rise to an obligation on each non-Defaulting Member to replenish this Default Fund Segment through Supplementary Contributions, thus restoring the Default Fund to the required level following a reassessment ("Replenishment Obligation").

Following any full or partial drawdown of a Default Fund Segment, a grace period ("Cooling-off Period") sets in for a time of 20 Business Days. During this period, non-Defaulting Members are relieved from making Supplementary Contributions in respect of that drawdown. A reassessment of the Default Segment size will be effected five Business Days prior to the end of the Cooling-off Period.

![Diagram](https://via.placeholder.com/150)

The Replenishment Obligation of the respective Default Fund Segment will continue throughout the entire Membership duration of a Member. Notifications requiring the Member to provide additional Permissible Collateral in favor of the Default Fund Segment will be made by X-CLEAR to Members in writing.

Permissible Collateral to restore the Default Fund Segment to its required size must be transferred to X-CLEAR one Business Day before the end of the Cooling-off Period, i.e. at the latest T+20. Should X-CLEAR not receive sufficient eligible Collateral to cover the Replenishment Obligation of the Default Fund, X-CLEAR will send a Margin Call on T+20, which must be covered within 60 minutes.

9.3 **Top-up Contribution**

In cases of an Extraordinary Default causing a loss which exceeds that Default Fund Segment's current size ("Exceeding Drawdown"), a Top-up contribution as coverage for such exceeding loss as defined in 4.4 b of the Financial Collateral Agreement and the respective provisions of the Contractual Relationship will be requested from non-Defaulting Members. The Top-up Contribution will only come into effect as a resource...
in the event of a very large loss as a result of one or several Member Default(s) – but only if all preceding layers of collateral (in particular the entire Default Fund Segment) have been exhausted.

The amount of the Top-up Contribution is limited per default event to the amount of the individual Default Fund Contribution by the Member to the entire Default Fund Segment at the time of the Default leading to an exceeding loss beyond the size of the Default Fund Segment ("Exceeding Drawdown"). A Top-up Contribution can be requested up to 3 times within a 6 month timespan.

The Top-up Contribution shall be collected through a Margin call and must be provided by the Members within 24 hours.

10.0 Application of collateral (Default Waterfall)

In the event of one or several Events of Default, a) the contributions from the defaulting Member, b) X-CLEAR’s dedicated own equity contribution, c) the Default Fund and d) the Top-up Contributions shall be used for the coverage of such Event of Default(s) in the following order of priority:

1. Defaulter’s Margin Collateral
2. Defaulter’s Default Fund Contribution
3. Dedicated Capital contribution (DCC)
   - Contribution Part 1
   - Contribution Part 2
4. Default Fund
   - Default Fund Segment 1
   - Default Fund Segment 2
5. Top-Up Contribution
   - Top-Up Contribution 1
   - Top-Up Contribution 2
6. Remaining financial resources of SIX x-clear

Figure 8: X-CLEAR Default Waterfall

10.1 Permissible collateral provided by Defaulting Member (Individual Level)

Firstly, X-CLEAR shall apply all contributions provided by the defaulting Member in the following sequence:
- the Permissible Collateral (and any other collateral) provided as Margin and Link Margin Element by the defaulting Member; and

- the Permissible Collateral (and any other collateral) provided as Default Fund Contribution by the defaulting Member.

10.2 Dedicated Capital Contribution by SIX x-clear AG (CCP Level)

Secondly, in the event of a Member default, X-CLEAR shall apply its own available dedicated resources (i.e. “skin in the game”) amounting to:

Max. (25% of X-CLEAR’s required capital; rolling average of 25% of (X-CLEAR’s required capital + wind-down capital) over the past four quarters).

The allocated amount shall be proportionally split into:

a. X-CLEAR Contribution Part I, which shall be used in the case of Default(s) of a Member participating in Default Fund Segment 1.

b. X-CLEAR Contribution Part II, which shall be used in the case of Default(s) of a Member participating in Default Fund Segment 2.

c. In case of further Default Fund Segments the same methodology used as outlined in a. and b. above will be used.

The allocation of the Dedicated Capital Contribution between X-CLEAR Contribution Part I, X-CLEAR Contribution Part II etc. shall be proportionate to the defined sizes of the different segments of the Default Fund in relation to the overall size of the Default Fund.

10.3 Application of contributions made by non-Defaulting Members (Solidarity Level)

10.3.1 Ring-fenced Default Fund segments

First, when a Default occurs and the defaulting Member is a Member in Segment 1 only, X-CLEAR shall use the allocated funds in X-CLEAR Contribution Part I. When a Default occurs and the defaulting Member is a Member in Segment 2, X-CLEAR shall apply the funds in X-CLEAR Contribution Part II.

Second, funds in X-CLEAR Contribution Part II cannot be used when a Default occurs for a Member participating only in Segment 1 and vice versa.

As only one Default Fund Segment is active, these two rules do not currently apply.

Third, X-CLEAR shall separately utilize the portion of the funds on a pro rata basis of the Default Fund Segment where the defaulting Member is a participant.
10.3.2 Application of Default Fund Contributions

The Default Fund Contributions from the non-Defaulting Members shall always be applied pro rata, based on the size of each Member’s Default Fund Contribution requirement relative to the total Default Fund, excluding the defaulting Member, at the time the Event of Default occurred. The Member may provide cash as an alternative to the realization of such Collateral, subject to prior consent by X-CLEAR. In such cases, the Member must post cash on its own initiative within the deadline set by X-CLEAR for the expected utilization of the Default Fund Contribution.

X-CLEAR shall notify Members in writing if the Default Fund is applied in whole or part. X-CLEAR may, irrespective of any duty of confidentiality otherwise applicable, provide the non-Defaulting Members with information on its losses caused by the defaulting Member. Upon later recovery by X-CLEAR of any losses for which X-CLEAR has applied Default Fund Contributions, X-CLEAR shall allocate and distribute the recovery amount to the Members proportionally to their coverage ratio.

10.3.3 Top-up Contribution by Non-Defaulting Members

If the Default Fund is not sufficient to cover losses, X-CLEAR will, in writing, call for a Top-up Contribution from each Member. The Top-up Contribution could therefore be claimed for each exceeding (uncovered) loss in the following two possible scenarios:

a. An individual Default exceeds all preceding resources (pursuant to the “order of realization” in the Rulebook), i.e. the Defaulting Member’s own Margins, the Defaulting Member’s own Default Fund Contribution, the Dedicated Capital Contribution of X-CLEAR as well as the entire amount of the aggregated Default Fund Contributions of the non-Defaulting Members to the relevant Default Fund Segment.

Numerical example: Total loss from a Default exceeds the Default Fund Segment by 50. A Top-up Contribution of 50 is requested from the remaining Members.

b. One or more additional Defaults that impact the Default Fund Segment occur within the ongoing Cooling-off Period (i.e. the period of 20 Business Days in which a Default Fund Segment that has been used in full or in part does not have to be replenished).

The loss from the ongoing Default Procedure and the newly incurred loss(es) resulting from this/these further Default(s) lead to a combined loss that exceeds the remainder of the Default Fund Segment not yet used.

The Top-up Contribution must be provided by the Members within hours. This means that during the Cooling-off Period of 20 Business Days, the Contributions (Top-ups) from the Members could cover a loss that exceeds the size of the Default Fund Segment.
10.3.4 **Example of collateral application in case of sequential Member defaults**

The chart below shows a potential evolution of the last four layers of the Waterfall of resources, using the hypothetical example of an extreme total loss of CHF 475 million due to four Default events occurring within 20 days (i.e. within the Cooling-off Period following the first Default).

![Diagram](Image)

**Figure 9: Multiple Member Defaults in a short time period (theoretical example)**

**T₀ = 0:** We assume that X-CLEAR’s dedicated capital contribution (“skin in the game”) is 7 million and that the Default Fund (DF) is 220 million. Theoretically, maximum possible Top-up Contribution = 220 – smallest DF Contribution (in million).

However, following a default it will decrease by the initial DF Contribution of the defaulting Member.

**T₁:** M1 defaults; we assume that the induced loss after the reduction of the Initial and Variation Margins of M1 is 95 million; entirety of X-CLEAR’s “skin in the game” is used and absorbs 7 million of the loss; DF Contribution of M1 was 18 million; DF absorbs remaining 70 million and reduces to 132 million (220 million – 18 million – 70 million); maximum available top-up capacity is 202 million (220 million – 18 million).

**T₂:** M2 defaults; DF Contribution of M2 was 20 million; we assume that the induced loss after the reduction of the Initial and Variation Margins of M2 is 122 million;
remaining DF (132 million) absorbs the loss and reduces to 10 million; maximum available top-up capacity is 182 million (202 million – 20 million).

T₃: M3 defaults; DF Contribution of M3 was 14 million; maximum available top-up capacity is 168 million (182 million – 14 million); we assume that the induced loss after the reduction of the Initial and Variation Margins of M3 is 96 million; the remaining DF (10 million) absorbs 10 million and is depleted. A Top-up Contribution of 86 million ¹ (96 million – 10 million) is called (1st top-up).

Every non-defaulting Member ₖ (4 ≤ _k_ ≤ _N_) provides \( \frac{w_k}{\sum_{i \neq k} w_i} \times (86 \text{ million}) \), where \( w_k \) is the proportionality coefficient of the Member \( k \) determined in the distribution of the DF at time \( T_3 \) and \( N \) is the initial number of non-defaulting Members. Individual Top-up Contribution amounts in the next top-ups are determined analogously.

T₄: M4 defaults; DF Contribution of M4 was 18 million; maximum available top-up capacity is 150 million (168 million – 18 million), DF has been depleted; we assume that the induced loss after the reduction of the initial and variation margins of M4 is 162 million; (maximum possible) Top-up Contribution of 150 million is called (2nd top-up); remaining loss of 12 million is absorbed by the last defense layer (X-CLEAR's remaining provisions, capital and reserves).

T₁₊₁₄: New DF size is calculated and reduced from 220 million to 170 million (Reassessment).

T₁₊₁₉: Non-defaulting Members replenish 88 million of the DF (Replenishment).

T₂₊₁₄: New DF size is calculated and reduced from 170 million to 150 million (Reassessment).

T₂₊₁₉: Non-defaulting Members replenish 62 million (150 million – 88 million) of the DF (remaining required amount to fill the DF to the newly reassessed level).

A third Top-up Contribution within 6 months is available in case the loss following a further default event exceeds the available Default Fund resources.

10.3.5 The remainder of X-CLEAR's capital and reserves

In case all defense lines are unable to absorb the losses, the remainder of X-CLEAR's own reserves and capital will be used to cover any remaining losses. The use of the remaining reserves and capital of X-CLEAR may trigger the prearranged, legally required recovery and resolution procedures.
10.4 Non-Default Loss Allocation (NDLA)

10.4.1 Non-Default Loss Scenarios

In the case of uncovered losses that were not caused by a Default of a Member or a Co-CCP and are thus not covered by Permissible Collateral, a Non-Default Loss Allocation (NDLA) is charged. The NDLA covers the financially quantifiable losses incurred by X-CLEAR (to the extent that they result from a direct loss), for which X-CLEAR is not liable pursuant to the Rulebook – specifically in cases caused by the following events:

a. **Loss of Permissible Collateral due to the Default of the Collateral Service Provider:**
   The affected Members shall bear the loss of Permissible Collateral incurred by X-CLEAR as a consequence of a Default of a Collateral Service Provider (pursuant to the Rulebook), but only if they placed Permissible Collateral to that specific defaulting Collateral Service Provider and provided further that this Permissible Collateral cannot be segregated under bankruptcy law or replenished in any other way in good time. The specific provisions are contained in the Financial Collateral Agreement.

b. **Loss of Permissible Collateral and/or capital due to an Other Loss Event:**
   The affected Members shall bear the loss of Permissible Collateral and/or X-CLEAR's capital incurred by X-CLEAR as a consequence of an Other Loss Event (pursuant to the Rulebook, in particular an Event of Force Majeure) which was invested at a financial institution for concentration purposes on a collective basis or within the scope of Investment Usage, provided this Permissible Collateral and/or capital cannot be segregated under bankruptcy law or recaptured in any other way in good time. This remains subject to any potential liability on the part of X-CLEAR (pursuant to the Rulebook). The specific provisions are contained in the Financial Collateral Agreement.

10.4.2 Non-Default Loss Allocation Application (NDLA Waterfall)

In case of any event that falls under an Other Loss Event (b.), the following NDLA waterfall (pursuant to the Rulebook) is used to cover the losses:

1) **X-CLEAR's Dedicated Capital Contribution (Rulebook sub-chapter 12.2)**
   X-CLEAR maintains an independent "skin in the game" (separate from the skin in the game maintained for in the event of a Member Default), which is first used to cover non-default losses. The size of the Dedicated Capital Contribution equals the overall dedicated capital contribution as defined in sub-chapter 10.2 *Dedicated Capital Contribution by SIX x-clear AG (CCP Level)*.

2) **NDLA to the Members (pursuant to the Financial Collateral Agreement)**
Once the skin in the game is depleted, any remaining losses will be distributed across X-CLEAR’s Members. The distribution of these losses to the individual Members is based on each Member’s relative default fund contribution. The total contribution of all Members is capped at CHF 40 million for each non-default loss event.

3) Remaining Losses

Should any uncovered losses remain, the remainder will be covered by X-CLEAR.

11.0 Suspension and termination procedures

The Rulebook refers to the suspension and termination applicable to Members, X-CLEAR / Registered Clients and Co-CCPs.

The respective procedures are set forth hereafter.

11.1 Suspension and termination procedure with regard to Members

A request for suspension and/or termination may come from either:

- the Trading Platform;
- the Member; or
- X-CLEAR.

11.2 Required information

Any requesting party is required to provide the following:

- Name and member ID (if available) of the ICM or GCM concerned
- Names and member IDs (if available) of relevant NCMs in the case of a GCM
- Reason(s) for suspension/termination
- Date and time of suspension/termination
- Trading Platforms and/or Product Segments where the Member was active
- Any regulatory announcement regarding the Member, if available
- Any other steps required.

11.3 Actions and timelines

11.3.1 Request by the Trading Platform

The Trading Platform, in accordance with its stock exchange rules, can suspend a Trading Platform Member. Following a decision to suspend a Trading Platform Member, the procedure of X-CLEAR for a Member Default will be prompted (see subchapter 11.6 Suspension/Default communication process).
11.3.2 Request by the Member

A Member can only have its Membership at X-CLEAR suspended or terminated by sending a written notice to X-CLEAR via e-mail, providing the necessary information as specified in sub-chapter 11.2 Required information.

X-CLEAR verifies the request.

A valid request is confirmed to the Member and forwarded together with X-CLEAR's endorsement to the relevant body of the Trading Platform (e.g. market control or compliance) via e-mail within 30 minutes of receipt.

The Trading Platform confirms the receipt of the request via e-mail within 15 minutes.

The Trading Platform then takes all necessary steps to ensure that the relevant Trading Platform Member can no longer conclude Transactions in the name of the Member from the date and time indicated on the request. Until the date and time indicated on the request, the existing setup remains in full force.

The Trading Platform confirms to X-CLEAR via e-mail that the appropriate measures have been taken. In addition, the Trading Platform is supposed to inform the Trading Platform Member of the execution of its request via e-mail.

X-CLEAR adapts its internal systems accordingly.

X-CLEAR confirms to the Member via e-mail that the request has been/will be executed with the date and time indicated on the request. Until the date and time indicated on the request, the existing setup remains in full force.

11.3.3 Request by X-CLEAR

X-CLEAR, in accordance with the Applicable Laws, the Contractual Relationship and its internal regulations and processes, can suspend a Member. Such a suspension may be followed by the Close-out Procedure for a Member's Default if deemed necessary and as regulated in the Rulebook.

11.4 Member reinstatement

11.4.1 Request by the Trading Platform

To reinstate a Trading Platform Member as a Member, the rules and processes of the respective Trading Platform are followed.

11.4.2 Request by X-CLEAR

To reinstate a Member, the rules and processes for a new Member are followed, including the completion of the required forms.
11.5 Change of Member setup

If the Member wishes to change its setup (alter or extend the scope of its Membership) with X-CLEAR, a form with the relevant information needs to be completed and sent to X-CLEAR.

X-CLEAR validates the request and upon acceptance, confirms this to the Member via e-mail within 24 hours of receipt. X-CLEAR forwards the relevant information to the Trading Platform concerned within 24 hours of receipt.

X-CLEAR and the Trading Platform carry out the changes for the relevant setup for the Member for the indicated date and time and confirm the execution of the change to each other via e-mail.

X-CLEAR confirms the execution of the changes to the Member.

11.6 Suspension/Default communication process

11.6.1 Overview

The parties (X-CLEAR or the Member) may mutually declare a Suspension or Default when a Member (from X-CLEAR's perspective) and/or a Trading Platform Member (from the Trading Platform's perspective) / when X-CLEAR has failed or appears likely to fail to meet its obligations according to the respective rules and regulations. The Rulebook provides more information on this.

A GCM has the right to temporarily suspend or permanently terminate its Clearing Services for its NCM(s) independently and take such measures as it deems appropriate. The GCM shall inform X-CLEAR immediately of such a decision. X-CLEAR will follow the instructions of the GCM, unless directed otherwise by the competent authority or bankruptcy liquidator.

11.6.2 Required information

Any party declaring a Member or NCM in Suspension and/or Default has to provide the following information:

- Name and member ID (if available) of Member
- Names and member IDs (if available) of relevant NCM in the case of a GCM
- Reason(s) for Suspension / Default
- Effective time of Suspension / occurrence of Default
- Trading Platforms and/or Product Segments that the Member was active on
- Statutory reporting obligations, if applicable
- Any other steps required
11.7 Trading Platform declaring a Member in Suspension/Default

11.7.1 Trading Platform

The responsible officials from the Trading Platform will decide whether to declare a Member in Suspension and/or Default in compliance with the applicable stock exchange regulations.

In the event that the Trading Platform declares the Member in Suspension and/or Default, it shall disable any associated dealing relationships for the Member and its NCMs (in the case the Member is a GCM) within 15 minutes. Furthermore, the Trading Platform shall disable order entry and delete any existing orders of the member in the X-CLEAR markets, where appropriate.

Immediately (within a maximum of 15 minutes) after the declaration of Suspension and/or Default (Default Notice), the Trading Platform informs X-CLEAR via telephone that it has done so, followed by an e-mail with the required information (see subchapter 11.6.2 Required information).

The responsible officials of the Trading Platform issue a notice to the market containing this information about the Suspension or Default of the relevant Member via e-mail within 30 minutes.

11.7.2 X-CLEAR

X-CLEAR verifies the declaration of Suspension and/or Default by a confirmatory call to the respective body within the Trading Platform.

X-CLEAR initiates its own Suspension and Default procedures in accordance with the Rulebook and its internal Default Procedure Handbook. In particular, it informs the involved Member, the trading venues, the regulators, its Co-CCPs and the European Association of Clearinghouses (EACH).

X-CLEAR takes all necessary steps to disable the appropriate Member (i.e. suspend Open Offer/Novation for that Member) within 15 minutes of verification. After successful disabling, it is confirmed to the Trading Platform via e-mail (within a maximum of 15 minutes). In the event that X-CLEAR declares a Member Default, it will provide the Trading Platform with the required information immediately by telephone followed by an e-mail.

X-CLEAR informs its own regulator (FINMA and the Swiss National Bank) about the Suspension or Default of a Member with the information specified in subchapter 11.6.2 Required information.

If the Defaulting Member is active in markets where X-CLEAR interoperates with other CCPs, X-CLEAR will inform the relevant foreign regulator(s) via its home regulator...
(FINMA) as well as the involved Co-CCP(s) directly of the details according to sub-
chapter 11.6.2 Required information.

Furthermore, X-CLEAR, as a member of the European Association of Central
Counterparty Clearing Houses (EACH), is also obliged to inform EACH's members of the
Default of a Member. The information is to be provided to EACH along the lines as set
out in sub-chapter 11.6.2 Required information.

11.8 X-CLEAR declaring a Member in Suspension/Default

11.8.1 X-CLEAR

Responsible officials and senior management of X-CLEAR and SIX Securities &
Exchanges decide whether to declare the Member in Default in compliance with the
Applicable Laws, the Contractual Information and X-CLEAR's rules and processes.

In the event that X-CLEAR declares a Member Default, it shall inform the defaulting
Member and the Trading Platform(s) immediately by telephone followed by an e-mail
with the required information (see sub-chapter 11.6.2 Required information.).

After 15 minutes, X-CLEAR implements all the steps necessary to disengage the
Defaulting Member's access to the Clearing Services (i.e. suspension of Open
Offer/Novation for that Member) and the relationship to the Member. Upon
completion, the successful disengagement is confirmed to the Trading Platform via e-
mail (within a maximum of 15 minutes). In the case of Oslo Børs, the whole
disengagement process may take up to 60 minutes.

X-CLEAR informs its own regulator (FINMA and the Swiss National Bank) about the
Default of a Member.

If the Defaulting Member is active in markets where X-CLEAR interoperates with other
CCPs, X-CLEAR will inform the involved Co-CCP(s) with the details according to sub-
chapter 11.6.2 Required information.

X-CLEAR, as a member of European Association of Central Counterparty Clearing
Houses (EACH), shall inform the other EACH members of the Default of a Member. The
shared information will be the same as set out in sub-chapter 11.6.2 Required
information.

11.8.2 Trading Platform

The Trading Platform shall verify the declaration of Default by returning the call to the
respective body within X-CLEAR (Risk Operations team).

The Trading Platform shall implement all steps necessary to disable any associated
dealing relationships for the Member and its NCMs (in case the member is a GCM)
within 15 minutes. Furthermore, the Trading Platform disables order entry and deletes
any existing orders of the Member in the X-CLEAR markets, where appropriate. In the case of Oslo Børs, the whole disengagement process will take 60 minutes.

Upon completion, the successful disablement is confirmed to X-CLEAR via e-mail (within a maximum of 15 minutes).

11.9 Clearing Administrator declaring an X-CLEAR / Registered Client in Suspension/Default

11.9.1 Clearing Administrator

Responsible officials from the Clearing Administrator will decide whether to declare the X-CLEAR / Registered Client in Suspension and/or Default in compliance with the contractual relationship, in particular with the Rulebook of the Norwegian Branch.

11.9.2 Required information

The Clearing Administrator who will declare an X-CLEAR / Registered Client in Suspension and/or Default has to provide the following information:

- Name of X-CLEAR / Registered Client
- Reason(s) for Suspension / Default
- Time of Suspension / Default
- Any other steps required

11.9.3 Actions and timelines

Upon Suspension or Default of an X-CLEAR / Registered Client, the Clearing Administrator shall immediately inform the X-CLEAR / Registered Client of the situation and the consequences.

11.10 GCM declaring an NCM’s Suspension

11.10.1 GCM

Responsible officials from the GCM will decide whether to suspend the NCM from their clearing services through X-CLEAR in compliance with their contractual relationship with the NCM.

They inform X-CLEAR, the relevant Trading Platforms(s), Settlement Agent(s) and Central Securities Depositaries accordingly.

- **London Stock Exchange (LSE):** The LSE has to be informed directly by the GCM according to the rules of the stock exchange.
- **SIX Swiss Exchange and MTFs**: X-CLEAR has to be informed immediately by the GCM by telephone followed by an e-mail with the required information (pursuant to sub-chapter 11.6.2 *Required information*).

- **SIX SIS (only SECOM user)**: X-CLEAR has to be informed immediately by the GCM by telephone followed by an e-mail with the required information (pursuant to sub-chapter 11.6.2 *Required information*). SIX SIS will relay the information to the central custodians (in particular, SIX SIS) if needed.

The liability of the GCM for unsettled contracts and any other outstanding obligations of the NCM are set out in the Rulebook.

### 11.10.2 X-CLEAR

X-CLEAR verifies the declaration of Suspension or Default by returning the call to the respective body within the GCM and the Trading Platform. After verification, X-CLEAR takes all steps necessary to disable the respective NCM (i.e. suspension of Open Offers/Novation) within 15 minutes, where necessary.

The successful disengagement will be confirmed back to the GCM and the Trading Platform by e-mail (within a maximum of 15 minutes).

### 11.10.3 Trading Platform

The Trading Platform verifies the Default Notice by returning the call to the respective body within the GCM and X-CLEAR (x-clear Risk Operations team). After verification, the Trading Platform takes all necessary steps to disable any dealing relationships associated with the NCM within 15 minutes. The Trading Platform disables the order entry function and deletes any existing orders of the respective member where appropriate. This will be confirmed to the GCM and X-CLEAR via e-mail.

### 12.0 Portability

### 12.1 General

In case of the default of a Member, a CCP can be committed to trigger the procedures for the transfer of positions and collateral held by the defaulting direct Member (GCM) for the account of its clients (Non-Clearing Member or NCMs) to a transferee, i.e. the “Back up GCM”. The process is known as Portability or Porting.

X-CLEAR offers portability services exclusively for its General Clearing Members (GCMs) and their clients (NCMs) as well as its X-CLEAR / Registered Clients (“Registered Clients”). The following jurisdictions are currently supported by X-CLEAR with respect to portability:

- Denmark
- France
For the countries outlined above, X-CLEAR has verified the legal soundness and enforceability of the offered segregation and portability by obtaining external legal opinions (in particular, based on the applicable insolvency law) in the country of domicile of the respective GCM.

If the GCM is domiciled in a jurisdiction other than those stated above, this GCM shall provide a legal opinion as to the legal soundness and enforceability of the selected solution.

12.2 **X-CLEAR / Registered Clients and Back-up provisional Clearing Administrator (Members administered in CLARA only)**

The Back-up provisional Clearing Administrator shall act as a Back-up provisional Clearing Administrator until all Outstanding Positions of the X-CLEAR / Registered Client have been closed. As set out in the Rulebook for the Norwegian Branch, the Back-up provisional Clearing Administrator is not jointly liable with the X-CLEAR / Registered Client in the provisional period.

The provisional period begins on the first Business Day that the connection with the Back-up provisional Clearing Administrator is established and ends following another four Business Days, provided the X-CLEAR / Registered Client, within this period, does not enter into a Contract for X-CLEAR / Registered Clients with the provisional Clearing Administrator or another Member (that is prepared to take on the role of the Clearing Administrator) or closes all outstanding positions of the X-CLEAR / Registered Client by means of a Close-out Procedure.

12.3 **Portability process in case of segregated accounts**

The objective of Portability is to protect the positions (from Outstanding Contracts) and assets (in particular, Permissible Collateral) of NCMs and X-CLEAR / Registered Clients, recorded on a Segregated Account, in case of the Default of the GCM.

This shall be achieved, in the case of NCMs, by transferring Outstanding Contracts and Permissible Collateral (provided as Margin) to another Member (“Back-up GCM”) in accordance with the Contractual Relationship. A transfer is also effected in case the NCM is admitted to Membership at X-CLEAR and is now acting as an ICM to its own accounts. In the case of X-CLEAR / Registered Clients, positions and assets in their segregated accounts are placed under the administration of another Clearing Administrator. Consequently, continuous Clearing of the NCMs’ Trading Platform Transactions and the X-CLEAR / Registered Clients’ Single Contracts will be ensured.
The scope of Portability is limited to Outstanding Contracts in the Clearing Accounts and Permissible Collateral in the Collateral Accounts (whether cash or securities), which are recorded in an individual account segregated for the relevant NCM / X-CLEAR / Registered Client (Segregated Account). Such transfers shall be effected on the NCM's or the X-CLEAR / Registered Client's (as the case may be) request and shall not require the consent of the defaulting GCM or defaulting Clearing Administrator.

Porting is based on pre-arranged contractual agreements and orders given by the GCM and/or the Back-up GCM by proxy of the NCM, or, in case of X-CLEAR / Registered Clients, orders given by the Back-up Clearing Administrator or by X-CLEAR for the porting to a Back-up provisional Clearing Administrator. Only full portability will be supported by X-CLEAR, which means that all Outstanding Contracts in the Segregated Accounts and all Permissible Collateral will be transferred to the designated Back-up GCM, the designated Back-up Clearing Administrator or the Back-up provisional Clearing Administrator.

12.4 Operational requirements

All of the following operational requirements for Portability have to be fulfilled to initiate the transfer process:

1. The Back-up GCM's or the Back-up Clearing Administrator's Membership is firmly established in all respects at the time of porting.

2. The same granularity of account and settlement segregation of the current GCM or Clearing Administrator (as the case may be) is established with the Back-up GCM, the Back-up Clearing Administrator or the Back-up provisional Clearing Administrator (as the case may be) or the NCM itself, if henceforth acting as ICM.

3. All pending settlements with the Defaulting GCM (or its Settlement Agent) will be cancelled and settlement instructions will be re-instructed and redirected to the Back-up GCM (or its Settlement Agent) such that any risk of time discrepancies can be excluded.

4. An instruction by the GCM which is co-signed by the NCM must be given to X-CLEAR stating the option which shall be executed in case of the GCM's Default, and in the case of X-CLEAR / Registered Clients having elected porting to a Back-up Clearing Administrator, an instruction which is co-signed by the X-CLEAR / Registered Client to that effect shall be given by the Clearing Administrator to X-CLEAR. The options available are set out in the Rulebook.

For the different segregation solutions, the following specialties for porting and close-out apply in case of Default of the GCM:

a. Individual Client Segregation:

- NCM with admitted Individual Clearing Member (ICM) status
All Outstanding Contracts in the Clearing Accounts and Permissible Collateral in the Collateral Accounts held by the GCM on behalf of the NCM will be transferred to an active account structure established with the NCM now acting as an ICM. All legal, technical and operational arrangements (including for settlement) under the Contractual Relationship with X-CLEAR have to be fulfilled by the NCM, henceforth acting as ICM, before any porting can be executed.

- **Porting all positions and assets to a Back-up GCM**

  All Outstanding Contracts in the Clearing Accounts and Permissible Collateral in the Collateral Accounts held by the GCM on behalf of the NCM will be transferred to an active account structure established with the Back-up GCM. The legal contracts between the NCM and Back-up GCM shall be in place, and the technical and operational requirements (including for settlement) for X-CLEAR have to be fulfilled, including testing by the respective NCM before any Portability can be executed.

  In case no porting solution is in place or chosen by the NCM, the standard close-out procedure will be performed in accordance with the Rulebook.

**b. Omnibus Client Segregation:**

- **Porting all omnibus positions and assets to a Backup GCM**

  All Outstanding Contracts in the Clearing Accounts and Permissible Collateral in the Collateral Accounts held by the GCM on behalf of the NCMs will be transferred as a whole package (“bulk transfer”) to an active account structure established with the Back-up GCM. The agreement between the GCM and the Back-up GCM must be in place (GCM/Backup GCM Agreement). The technical and operational requirements (including for settlement) have to be fulfilled by the Back-up GCM before any porting can be executed.

  In case no porting solution is in place or chosen by the NCM, the standard close-out procedure will be performed in accordance with the Rulebook.

**c. In case of x-clear / Registered Client Segregation**

- **Porting all positions and assets to a Back-up Clearing Administrator**

  All Outstanding Contracts in the Clearing Accounts and Permissible Collateral in the Collateral Accounts of the X-CLEAR / Registered Client will be connected to the Back-up Clearing Administrator. All legal, technical and operational arrangements (including for settlement) under the Contractual Relationship with X-CLEAR have to be fulfilled by the X-CLEAR / Registered Client and the Back-up Clearing Administrator before any porting can be executed.
- **Porting all positions and assets to a Back-up provisional Clearing Administrator**

  Upon an order from X-CLEAR appointing a Back-up provisional Clearing Administrator pursuant to the Rulebook, all Outstanding Contracts in the Clearing Accounts and Permissible Collateral in the Collateral Accounts of the X-CLEAR / Registered Client will be connected to the Back-up provisional Clearing Administrator. All legal arrangements (including for settlement) under the Contractual Relationship with X-CLEAR have to be fulfilled by the X-CLEAR / Registered Client as a precondition for connection to a Back-up provisional Clearing Administrator. The X-CLEAR / Registered Client is obliged to enter into a Contract for X-CLEAR / Registered Clients with the Back-up provisional Clearing Administrator or another Member (acting as Clearing Administrator) within such deadline, as is set out in the Operational Manual.

  In case the requirements for porting are not in place for the X-CLEAR / Registered Client, the standard close-out procedure will be performed in accordance with the Rulebook.

  Within **eight Business Hours** after the Default Notice has been published to the Members, the requirements outlined above must be fulfilled as a precondition for porting on a best-effort basis.

12.5 **Excess Collateral**

In case of Default of a GCM, any excess of Permissible Collateral which is remaining after the Close-out Procedure has been executed and is standing in the Member’s own designated Collateral Account will be returned to the Defaulting GCM, or, in case of bankruptcy, to its bankruptcy liquidator. The Close-out Procedure of a GCM takes into account (includes) any Portability transfers of its NCMs as well as any separate Close-out Procedures of its NCMs. Excess Collateral shall be calculated in accordance with the Contractual Relationship.

Under Individual Client Account segregation, any excess of Permissible Collateral will be fully ported by the NCM to the NCM’s Collateral Accounts after designating the Back-up GCM, or in the case of NCM with admitted ICM status, to the Collateral Account of the NCM now acting as ICM.

12.6 **Unsuccessful porting: Application of Close-out Procedure**

In case of the non-fulfillment of the porting requirements outlined in sub-chapter 12.4 Operational requirements, X-CLEAR will employ the Close-out Procedure for such Segregated Accounts, upon which a Close-out Settlement Amount is calculated, which is offset against the Permissible Collateral and any excess value is paid out as follows:

- in the case of Omnibus Client Segregation: Excess value is paid to the defaulting GCM or – in case of an event of Insolvency – to its liquidator / bankruptcy liquidator (“Resolution Agent”); or
12.7 Application of Close-out Procedure for X-CLEAR / Registered Clients

In the case of non-fulfilment of the operational requirements outlined in sub-chapter 12.4 Operational requirements, or if porting to a Back-up provisional Clearing Administrator is not possible for other reasons, X-CLEAR will employ the Close-out Procedure for the X-CLEAR / Registered Client Account, upon which a Close-out Settlement Amount is calculated which is offset against the Permissible Collateral and any excess value is paid out to the X-CLEAR / Registered Client, unless any restrictions of the Applicable Laws of the jurisdiction of the Defaulting Clearing Administrator apply.

In the case that the X-CLEAR / Registered Client is ported to a Back-up provisional Clearing Administrator, but the X-CLEAR / Registered Client has not concluded the Contract for X-CLEAR / Registered Clients (English law) within four Business Days after the porting took place with the provisional Clearing Administrator or another Member (that is prepared to act as Clearing Administrator), X-CLEAR will employ the Close-out Procedure for such X-CLEAR / Registered Client Accounts pursuant to Rulebook.

13.0 Close-out

The Close-out Procedure is based on the rules set out in the Rulebook. The operational details of this procedure are described below:

13.1 Suspension of Open Offer/Novation

As described above, in the case of a Default of a Member, the Open Offer/Novation process will immediately be suspended. This means that from the moment the Default Notice or the compulsory Event of Default becomes effective as defined in the Rulebook, Trading Platform Transactions for the relevant Members are no longer accepted by X-CLEAR and will be rejected. In the event of a compulsory Event of Default, the time the insolvency authority publicly issues the relevant decree or the time X-CLEAR receives the corresponding advance announcement shall apply.

The process is designed in a way that the Trading Platform should suspend the Member before X-CLEAR does. This ensures that in principle, no Trading Platform Transactions will have to be rejected. However, if the Trading Platform cannot suspend the Defaulting Member in due time, X-CLEAR will suspend the Member in any case to prevent additional risk.
13.2 **Close-out Procedure**

Within the scope of the Close-out Procedure, the Outstanding Contracts are, whenever possible in consultation with the restructuring agent or bankruptcy liquidator, fulfilled or settled for cash products by means of the relevant buy-in or sell-out orders with brokers.

14.0 **Default of a Co-CCP**

PLEASE NOTE
The statements in this chapter are for information purposes only for Members.

14.1 **Technical Default of Co-CCP**

Technical Default arises when one CCP, for reasons generally out of its control and for a short period, is unable to meet the collateral call of another CCP, but is able to demonstrate the overall solvency of the business and its ongoing ability to operate in every other sense. Examples of this could be a problem with another part of the payment and settlement system, for instance with the third-party collateral agent, a temporary problem with treasury operations or an unavoidable delay in settlement processes.

In addition, Technical Default could include circumstances when the transfer of collateral is not made due to the small amount of additional collateral called by one CCP from the other, making it apparent that the risk and/or cost to respective operations would outweigh the risk represented by not transferring the incremental amount of collateral in question. Reference should be made to respective Link Agreement that sets out the full definition of these circumstances. These rules are subject to the disruption event and/or force majeure event provisions within the Link Agreements and are collectively known as "Technical Default events" within the Inter-CCP Procedures.

14.2 **Default of Co-CCP: Suspension of Open Offer/Novation and Close-out**

In the case of a Default of a Co-CCP, which is not a Technical Default as defined in the Link Agreement with the Defaulting Co-CCP (including its Co-CCP Regulations), the Open Offer and/or Novation process will immediately be suspended with this Co-CCP.

The Co-CCP must be in breach of the Link Agreement, in particular with its obligation to provide collateral. It should not include anything outside of the Link Agreement that may seemingly be related to collateral (e.g. provision of intra-day margin).

The Co-CCPs agree that a *de minimis* threshold should apply to enable the delivering CCP to request a waiver without being at risk of being set into Default by the other CCP.
14.2.1 **Pre-information sharing**

Any CCP considering setting a Co-CCP in Default has to inform its home regulator in its jurisdiction before taking any action.

The CCPs only consider suspending a defaulting Co-CCP from co-clearing before setting it into Default to allow clarification and potentially a less restrictive resolution of the situation.

14.2.2 **Cure period**

Where reference is made to End of Day (EoD) T+2, this time shall be determined as 4.30 p.m. (GMT) in the case of equities.

1. Where a CCP suffers a Technical Default event and this has been communicated to the relevant interoperating CCP(s), a cure period can be requested by the Defaulting CCP.

2. The cure period would provide the defaulting CCP with the ability to delay the provision of collateral to other CCPs to allow the relevant issue to be resolved.

3. To prevent misuse, a maximum of three cure periods for the same underlying cause is allowed in any one calendar quarter.

4. The use of the cure period would require written notification to be given to the relevant interoperating CCP(s) by the defaulting CCP.

5. The defaulting CCP would need to request a cure period during business hours of T+1 and the length of the cure period would allow a delay in making the collateral deposit until EoD T+2.

6. At noon of T+2, the defaulting CCP that has requested the cure period due to a Technical Default can ask for a further extension if it is known that the Technical Default event will continue. However, at this point the CCP's home regulator would have to be informed by the defaulting CCP requesting the cure period.

7. If an extension is not granted by EoD T+2, the CCP requesting the waiver would be in Default and could be suspended pending resolution of the issue. Before suspending the defaulting CCP, the relevant interoperating CCPs would have to inform all relevant regulators of their intentions.

8. An interoperating CCP has the right to set the defaulting CCP into Default if a Default event has proven not to be of a "technical" nature only.
14.2.3 **Suspension and/or termination**

In accordance with X-CLEAR’s rules and regulations, the Inter-CCP procedures and the applicable Link Agreement, the responsible officials and senior management of X-CLEAR, SIX Securities & Exchanges and SIX Group decide about a Suspension and/or Default declaration of the Co-CCP.

In the event that X-CLEAR declares the Co-CCP in Suspension and/or Default, it informs the relevant Trading Platform immediately via telephone followed by an e-mail with the required information (see sub-chapter 11.6.2 *Required information*).

After 15 minutes, X-CLEAR takes all necessary steps to disable the appropriate Co-CCP from its Co-Clearing Services where necessary. This is confirmed to the Trading Platform via e-mail (within a maximum of 15 minutes).

X-CLEAR informs its own regulator (FINMA and the Swiss National Bank) about the Default of a Member with the information specified in sub-chapter 11.6.2 *Required information*.

X-CLEAR simultaneously informs the relevant foreign regulator(s) as well as the Co-CCP(s) involved with the information specified in sub-chapter 11.6.2 *Required information*.

X-CLEAR, as a member of EACH, will inform EACH's members via EACH about a Default of a Co-CCP of X-CLEAR. The shared information is the same as that laid out in sub-chapter 11.6.2 *Required information*.

15.0 **Settlement**

15.1 **General remarks**

Trading platform transactions subject to clearing by X-CLEAR will be settled on the basis of the Applicable Laws, market rules and practices prevailing in the market of the relevant security. Each Member must have appropriate settlement arrangements in place to enable settlement to take place in accordance with the below rules.

Members shall notify X-CLEAR of their settlement arrangements for different countries and markets. X-CLEAR will use SIX SIS as its settlement agent and account operator for settling its leg of the settlement instruction in different settlement markets.

In this chapter, the term "transaction" will be understood as meaning the settlement of contracts arising from an Open Offer or from Off-Order-Book Trades.

In the event of a Member defaulting, X-CLEAR may place on “hold” any contracts arising from an Open Offer or Off-Order-Book Trade from the settlement process. X-CLEAR will notify the Member accordingly by e-mail, followed by formal written confirmation.
Settlement netting

X-CLEAR offers optional settlement netting to its Members. Net settlement reduces the number of settlement transactions per security/currency and trade date. Settlement netting will have no impact on the margining of outstanding contracts. The Member must indicate the netting preference details in the static data form of X-CLEAR.

X-CLEAR allows optional trade date netting ("TDN") for Members for trading platform transactions subject to clearing by X-CLEAR. Such netting will be performed after the clearing window at the respective Trading Platform is closed for the Trading Day.

Based on Members’ preferences, TDN can be extended to:

- Cross-order book settlement netting between the two order books of Cboe Europe on the UK/Irish market and cross-platform netting with a free choice of the trading platforms cleared by X-CLEAR, based on the Member’s preferences indicated in the static data form of X-CLEAR.

- In the case of settlement netting of trades concluded on SSX, the gross/net settlement instructions are instructed to SIX SIS by X-CLEAR on behalf of Members upon completion of TDN at X-CLEAR. Members authorize X-CLEAR to submit settlement instructions to SIX SIS on their behalf.

15.2 Shaping

This service is only available for settlements at SIX SIS (the Swiss domestic CSD). As a result of the netting, the net settlement transaction may represent a substantially large size in terms of amounts payable in respect of it (as determined by X-CLEAR at its sole discretion). To prevent such large sizes, the Member may instruct X-CLEAR to specify a maximum amount per currency for the net settlement transaction. Where the net transaction amount in relation to a net settlement transaction exceeds this cap, a "shaping" process takes place, in which the net settlement transaction is divided into a number of net settlement transactions of smaller amounts. X-CLEAR will support net settlements in SIX SIS up to a cap of CHF 100 million per settlement transaction.

This service is not supported by CLARA.

15.3 Splitting

X-CLEAR will endeavor to forward the securities received from the seller to the buyer as quickly as possible. For this reason, X-CLEAR uses the splitting functionalities made available by the approved settlement systems (CSD).

If the CSD does not support automatic splitting of settlement transactions, X-CLEAR or its Members may request manual splitting if:

- the settlement transactions represent a substantially large size;
- splitting would reduce the trade size for an upcoming corporate action deadline; or

- splitting would reduce the trade size for an upcoming buy-in which has already been advised.

In any case, X-CLEAR may refuse the split request from Members, if it would not be possible to forward positions to a third party on the same settlement date.

15.4 Strange nets

If the netting of settlement instructions results in any of the following exotic instructions, namely, security and money transactions, money-only transactions or null deliveries, then a special treatment is applied to such “strange nets”, “exotic instructions” or “odd settlements”.

X-CLEAR offers Members the choice as to how strange nets are handled. The options offered include:

- Direct strange net settlement: Only where the local CSD allows for strange net settlement.

- Second-level shaping, which divides the strange nets into a combination of versus-payment and free-of-payment instructions.

- Segregation, which separates securities and cash to independent instructions.

- Aggregation, which separately aggregates gross buys and nets to net RVPs and DVPs.

CLARA members do have to apply for aggregation. For Single Contracts in Equity Products netted, which result in a strange net for CLARA members, X-CLEAR will aggregate all purchase transactions and all sales transactions separately in order to create two Single Net Contracts that both involve delivery against payment, and chain these instructions to the extent permitted by the settlement system in question.

15.5 Place of settlement

X-CLEAR will participate in settlement at the settlement location on the basis of the home market on its own or through a Settlement Agent. The member must indicate the settlement preference details in the static data form of X-CLEAR.

X-CLEAR’s own settlement arrangements and the operational handling of transactions in relation to the various markets are set out in the User Guide - Market overview (settlement and corporate events) published at www.six-group.com > Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Existing Members > Settlement information > User Guides
15.6 Settlement instruction generation

The settlement of transactions happens at the predefined place of settlement. The Member may choose to receive either a settlement allegement message (MT578) in SECOM only or a copy of the settlement instruction (MT54x) from X-CLEAR for the generated net/gross transactions. The instructions from X-CLEAR can be used by the Member to input the settlement instructions at the place of settlement.

X-CLEAR can generate the settlement instruction for the Member for onward transmission to that Member’s Settlement Agent in the local market if the Member so requests. The Member must provide an appropriate power of attorney to X-CLEAR. This allows X-CLEAR to send the settlement instruction on behalf of the Member to its Settlement Agent.

The Member is solely responsible and liable for meeting the functional requirements, time deadlines and other requirements with respect to its settlement arrangements at the place of settlement.

X-CLEAR will use SIX SIS as its Settlement Agent for the settlement of transactions in the local markets. SIX SIS, in turn, will use its custodial network or direct links with Central Securities depositories (CSDs) to effect settlement on X-CLEAR’s behalf. With the input of the settlement instructions from the Member and/or its Settlement Agent and from the Settlement Agent of X-CLEAR at the place of settlement, Settlement will be sought to be effected on the Intended Settlement Date. Upon settlement of Single Contracts, Members will receive the settlement information through their Settlement Agents only. X-CLEAR will not send any settlement-related information to Members or their Settlement Agents.

Members are solely responsible for:

- reporting transactions appropriately for applicable stamp duty purposes and keeping records if required by local tax authorities; and

- obtaining UK stamp duty reserve tax relief and Irish stamp duty relief.

16.0 Late Settlement & Buy-In

16.1 General

To support the Settlement discipline and fulfill the settlement obligations of securities in time, X-CLEAR may take the following disciplinary measures with regards to penalties:

a. Late settlement procedure
- Securities lending and borrowing fee
- Late settlement fee
b. Buy-in procedure
- CCP Buy-in administration fee
- Late Matching Buy-in fee

The securities lending and borrowing functionality in the Swiss market will be used automatically in case securities are available. A buy-in regime is in place for all Trading Platforms offered for clearing.

The graphic below depicts the schedule for these procedures.

If Settlement is not anticipated on the Intended Settlement Date ("ISD"), X-CLEAR may engage in securities lending and borrowing to enable the trade to settle despite the seller's non-delivery. X-CLEAR may charge a late settlement fee to the failing Member (the Selling Member) where it was not possible to borrow the relevant products. There is no compensation scheme in place to credit the buyer.

If the Selling Member has not delivered securities in time, a buy-in process will be started. X-CLEAR, as the legal counterparty to the Buying Member, will acquire the missing securities in the market and pass on the costs incurred to the Selling Member that has failed to fulfill the transaction. Additionally, X-CLEAR will charge a buy-in administration fee for manual intervention as well as a late matching buy-in fee in case the counterparty will not match the buy-in instruction in the requested time.

In the event that both X-CLEAR and the Member are late in delivering the same securities with the same or different due date and the instructions will block one another, the Member may ask for manual netting.

The aim of performing a late settlement and buy-in process is to ensure liquidity in the market and to fulfil the agreed trades in a reasonable timeframe between the counterparties. In the event that securities lending and borrowing or a buy-in facility are not successful, the transaction that is not performed will be cancelled and replaced by a payment for compensation (cash out).

16.2 Late settlement procedure

Where the contractual delivery of the securities is not made by the time indicated as “late” (see sub-chapter 16.3.4 Buy-in schedule per market) on the intended settlement
date (ISD), X-CLEAR will use the **Securities Lending and Borrowing procedure** or the **late settlement penalty regime**.

### 16.2.1 Securities Lending and Borrowing procedure

Where the contractual delivery of the securities is not made in time, the place of settlement (PSET) is Switzerland and the Member uses SECOM, X-CLEAR uses the Securities Lending and Borrowing service and is entitled to charge, at the selling Member's expense, all external costs (expenses, commissions and other charges) to acquire the securities that are lacking in order to guarantee delivery to the buying Member. In principle, this option may be taken for all securities insofar as they are available and the market rules and regulations allow.

The payment obligations of the Member, based on the securities lending and borrowing effected by X-CLEAR, are due, performable and payable with immediate effect. As a SIX SIS participant, X-CLEAR will acquire the required securities on SIX SIS's standard terms for securities lending and borrowing. The cost of borrowing securities may be charged to those sellers who failed to deliver their securities to X-CLEAR by 5:00 p.m. (CET) on the intended settlement date (ISD).

### 16.2.2 Late settlement penalty regime

If settlement is not carried out by the ISD, a late settlement fee may be charged to the selling Member. There will be no compensation scheme in place to credit the buyer on the Clearing level.

Late settlement can be caused by the non-delivery of securities by the seller as well as non-matching instructions in a bilateral input model. X-CLEAR may debit a late settlement fee (see fee schedule) if the Member fails to deliver the securities in time.

There will be no late settlement fees between interoperable Co-CCPs. Late Settlement fees cannot be passed back to Co-CCPs.

### 16.3 Technical CSDR requirements

As participants of CSDs, CCPs must meet the matching criteria for settlement instructions as laid out by CSDR and the corresponding RTS. CCPs and their clearing Members are particularly impacted by the following matching fields:

- Trade date
- Transaction type
- Place of clearing
- Place of trading

CCPs and their clearing Members are obliged to complete these fields in their settlement instructions. X-CLEAR ensures settlement instructions are completed appropriately with all necessary fields in all of their own settlement instructions as well
as in Members’ instructions that are created by X-CLEAR under a PoA (Power of Attorney) agreement. For Members that do not have a PoA agreement in place with X-CLEAR, the Member itself or the Member’s settlement agent will be responsible for populating the appropriate transaction type in the settlement instruction.

As X-CLEAR utilizes a trade date netting model (TDN), Members must populate the trade date field with the day of trading. The full list of values that are and will be used by X-CLEAR as transaction types can be found in the Business Partner Specifications – Volume 5 (SIX SIS Private site > Business Partner Specifications). X-CLEAR will use the BIC to specify the PoC (place of clearing), TRAD for transaction type and VARI for place of trading, unless the PoT is an SME growth market and the change of netting rules applies for the SME growth market accordingly. Settlement instructions related to SME growth market transactions will need the actual segment MIC of that growth market as the PoT.

16.4 Buy-in procedure

16.4.1 Overview

If the selling Member does not deliver securities after a certain market-specific amount of days beyond the intended settlement date (ISD), a buy-in procedure will be started. The schedules detailing when a buy-in notification will be sent to the selling party and when the execution of the buy-in will be started is market-specific as summarized in sub-chapter 16.3.4 Buy-in schedule per market.

X-CLEAR is also entitled to charge the selling Member external and internal costs (expenses, commissions and other charges) where buy-ins are used. The payment obligations of the Member, based on the buy-in effected by X-CLEAR, are due, performable and payable with immediate effect.

Buy-ins cannot be initiated against a selling CCP, but the selling CCP will initiate a buy-in against its members based on their procedures in place. In the event that securities lending and borrowing or the buy-in facility are not successful, the transaction that is not performed will be cancelled and replaced by a payment for compensation. In case X-CLEAR and the Member are late in delivery of the same securities, no buy-in will be instigated against the Member.

16.4.2 Buy-in process

A separate X-CLEAR administration fee (see price schedule) per buy-in will be charged to the failing seller. After the buy-in has been executed, the failing seller must match the instruction from X-CLEAR by the settlement date of the buy-in. If the buy-in instruction from X-CLEAR remains unmatched against the failing Member until Settlement day EOD, a late matching buy-in fee is charged. This fee is charged for each additional day on which the buy-in instruction remains unmatched by EOD of the respective day.
If the buy-in is not successful due to a lack of liquidity in the market, the buy-in will be repeated according to market-specific schedules. If the buy-in attempts of X-CLEAR are not successful after a market-specific time, the two Single Contracts in which there is a lack of Securities are to be cancelled, i.e. the Single Contracts between the selling Member and X-CLEAR, and X-CLEAR and the buying Member with respect to the Securities that are lacking, become void and an additional cash compensation claim is due as described below (cash out). This will only happen if securities lending in the late settlement process was not used. The standard cash settlement process (cash out) will be initiated on ISD+20 for all markets.

The additional cash compensation to be paid by the selling Member to X-CLEAR will be claimed at 20% of the last publicly available closing price for such an eligible instrument on the principal stock exchange where it is listed and is forwarded in full to the buying Member or interoperable CCP. No further claims arise for the buying Member towards X-CLEAR from the respective Single Contract. Once the cash compensation has been finalized, no deliveries will be accepted for the compensated trade.

Where settlement or a buy-in cannot take place because of a court, administrative or regulatory order, or because of an insolvency or Default affecting the issuer of the securities or a Member, the transactions in such securities will be cash settled immediately or by the standard cash settlement process at such a price as may be set at reasonable discretion and agreed between X-CLEAR and the counterparty. In such circumstances the reference price may be null.

16.4.3 **Consequences of non-payment of buy-in transactions**

The payment obligations of the Member arising from the buy-in effected by X-CLEAR shall be due and payable immediately upon notification by X-CLEAR. If the Member fails to satisfy such a payment obligation, X-CLEAR may at its discretion treat such a failure as a Default event pursuant to the Rulebook.

16.4.4 **Buy-in schedule per market**

In the event of a purchase and sale between X-CLEAR and the same counterparty in the same ISIN, regardless of the value date and during the late settlement phase, netting can be instigated and no buy-in will take place.

So-called “buy-backs”, which are used to avoid buy-ins, can only be taken into account if they are carried out by EOD on the notification date. Any buy-backs performed by the failing seller on the buy-in date cannot be taken into account.

<table>
<thead>
<tr>
<th>Place of settlement (market)</th>
<th>Intended settlement date (ISD)</th>
<th>Notification (ISD)</th>
<th>Execution (CET)</th>
<th>Cash settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>T+2</td>
<td>ISD+4</td>
<td>ISD +5 16:00</td>
<td>ISD +20</td>
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<tr>
<td>Belgium</td>
<td>T+2</td>
<td>ISD+4</td>
<td>ISD +5 16:00</td>
<td>ISD +20</td>
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<tr>
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<tr>
<td>Denmark</td>
<td>T+2</td>
<td>ISD+4</td>
<td>ISD +5 16:00</td>
<td>ISD +20</td>
</tr>
</tbody>
</table>
### Place of settlement (market) | Intended settlement date (ISD) | Notification (ISD + n) | Execution (CET) | Cash settlement
---|---|---|---|---
Finland | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
France | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
Germany | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
Hungary | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
Ireland | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
Italy | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
Netherlands | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
Norway | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
Portugal | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
Spain** | T+2 | ISD+4 | n/a | ISD + 5
Sweden | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
Switzerland | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
United Kingdom | T+2 | ISD+4 | ISD +5 16:00 | ISD +20
SWX & LSE market makers* | T+2 | ISD+10 | ISD +11 16:00 | ISD +20

* Concessions have been introduced for market maker activities in registered ISINs which have correspondingly been taken over by X-CLEAR due to the special function of the LSE & SWX market makers.

** The Spanish CSD Iberclear does not allow trades which remain open for more than five days. On the 5th day after the “intended settlement”, all "failing trades" must be settled. Therefore, no buy-ins will be carried out in the Spanish market. Should there be any trades unsettled at 17:00 (CET) on ISD + 5, the relevant trades will be cancelled by X-CLEAR and the cash-out will immediately be initiated. All members are obliged to complete the cash-out payment in EUR by no later than 16:30 (CET) on ISD + 6. SIX X-CLEAR will closely monitor these cash-out payments and reserves the right to impose a penalty fee if the members fail to meet their requirements.

T = Trade date  
ISD = Intended settlement date  
SWX = SIX Swiss Exchange  
LSE = London Stock Exchange

#### 16.5 Buy-in schedule for Single Contracts for market makers on SIX Swiss Exchange (SWX) and London Stock Exchange (LSE)

Due to their special function, market makers benefit from a later introduction of the buy-in process and reduced failed settlement costs. The corresponding fees are reimbursed at the end of the month.

The market maker rule will be applied if the relevant ISIN and the Member of a trade had been registered at SWX/LSE as an SWX/LSE market maker on the trade date of the trade in question. If registered market makers on SWX and/or LSE have also opted for cross-venue netting, these counterparties benefit similarly across all MTF Trading Platforms for those specific securities (ISINs).
17.0 Corporate actions

17.1 General remarks

The execution of corporate actions for Securities that are already held in a custody account ("existing positions") differs from the execution for Securities that have been purchased but not yet delivered ("open transactions"). Distributions on existing positions are made in accordance with the rules of the approved settlement system with which the Securities are deposited.

With respect to distributions on open transactions, two types of corporate actions may apply:

- Mandatory corporate actions
- Voluntary corporate actions

These distributions are made in accordance with the applicable laws and local market practices.

As a general rule, X-CLEAR offers corporate claims processing, reorganization processing as well as buyer protection throughout the markets cleared by it. X-CLEAR mandates the local Settlement Agent or Account Operator of X-CLEAR in the home market of the security to handle any corporate actions processing on outstanding contracts which are eligible for corporate action benefits. Where no local agent or Account Operator is mandated, X-CLEAR processes corporate actions on its own. X-CLEAR always acts as the counterparty for corporate action transactions in relation to Members, and therefore these transactions fall under X-CLEAR's risk management until they are booked or settled.

The basis for initiating a claim or compensation procedure can be on an ex-date or record-date basis. Both the initiation and booking of corporate action transactions are dependent on the local market practices and applicable laws.

Reorganization events which result in a transformation of the underlying instructions and/or compensation, will be initiated on the underlying instructions of the holders registered in the CSD at the end of the Record Date or Effective Date in accordance with the local market practices and applicable laws.

X-CLEAR's corporate action service levels in relation to the various markets are set out in the country-specific User Guides published on the website of SIX Securities & Exchanges. Additional market-specific details are described in the MarketGuides.

17.2 Timeline for the settlement of compensation payments and claims

Compensation payments will be booked on either the settlement date of open transactions or the payment date of the corporate action, whichever is later. X-CLEAR applies bookings only after relevant bookings have been credited/debited with the local
Rules and Regulations SIX x-clear AG
Operational Manual of SIX x-clear AG

Settlement Agent or Account Operator. Compensation payments related to fund transfers outside a CSD will be performed upon bilateral agreement. X-CLEAR will only pay such cash amounts once relevant amounts have been credited by agent banks/CSDs or payment has been received from delivering counterparties.

17.3 Withholding tax on compensation payments and claims

X-CLEAR applies the standard withholding rate for compensation payments (tax rate without consideration of any double taxation treaty).

17.4 Buyer election

If, with respect to a voluntary corporate action, X-CLEAR delivers Securities late to a Member, and the latter is then unable to forward these Securities on time to the main paying agent, that member may contact X-CLEAR and have the voluntary corporate action settled via X-CLEAR. In turn, for the purpose of this settlement, X-CLEAR will seek out those Members responsible for the delay.

All deadlines and information on the process are published in the market-specific User Guides available on the website at: www.six-group.com > Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Info Center > Existing Members > Settlement Information > User Guide.

17.5 Stamp Duty and Capital Gains Tax

If a liability to pay any tax relating to dividends or other income and/or benefits from Securities arises or any liability to pay tax due to corporate events arises, X-CLEAR will have the right to require compensation for such tax liabilities and for any related costs or expenses from the relevant Member. X-CLEAR is entitled to debit the amount of such compensation from the relevant Member’s cash collateral account. Upon entry into the contractual relationship, the Members confirm that they are familiar with all relevant applicable laws, requirements and procedures of the place of settlement regarding withholding and taxes.

Distribution in collateral positions

Distributions on Securities deposited with X-CLEAR as collateral are directly credited by the main paying agent to the Members (and not via X-CLEAR).

18.0 Amendments to the Operational Manual

This Operational Manual may be amended unilaterally and at any time by X-CLEAR in accordance with the Contract for Clearing Services. Members will be given appropriate advance notification of any such amendments.
19.0 **X-CLEAR contacts and escalation points**

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Contact</th>
<th>Escalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-CLEAR Risk Operations Team ZH/Swiss &amp; International Clearing</td>
<td><a href="mailto:xclearops@sisclear.com">xclearops@sisclear.com</a></td>
<td>To be added in any communication</td>
<td></td>
</tr>
<tr>
<td>X-CLEAR Risk Operations Team Norwegian Branch Clearing</td>
<td><a href="mailto:xclearops.no@six-securities-services.com">xclearops.no@six-securities-services.com</a></td>
<td>To be added in any communication</td>
<td></td>
</tr>
<tr>
<td>Anita Bregy Sakouid Head Risk Operations Zurich</td>
<td><a href="mailto:Anita.BregySakouid@six-group.com">Anita.BregySakouid@six-group.com</a></td>
<td>First contact</td>
<td>Escalation step 1</td>
</tr>
<tr>
<td>Bettina Bakke Head Risk Operations Oslo</td>
<td><a href="mailto:bettina.bakke@six-group.com">bettina.bakke@six-group.com</a></td>
<td>First contact</td>
<td>Escalation step 1</td>
</tr>
<tr>
<td>Markus Heiniger Head Risk Operations</td>
<td><a href="mailto:markus.heiniger@six-group.com">markus.heiniger@six-group.com</a></td>
<td>Second contact</td>
<td>Escalation step 2</td>
</tr>
<tr>
<td>Marcus Harréus Head SIX x-clear AG</td>
<td><a href="mailto:Marcus.Harreus@six-group.com">Marcus.Harreus@six-group.com</a></td>
<td>Third contact</td>
<td>Escalation step 3</td>
</tr>
</tbody>
</table>

The contact addresses for X-CLEAR are:

- **SIX x-clear AG**
  - Hardturmstrasse 201
  - CH-8005 Zurich
  - Switzerland
  - xclearops@sisclear.com

- **SIX x-clear AG**
  - Rosekrantzgate 20
  - NO-0160 Oslo
  - Norway
  - xclearops.no@six-securities-services.com

Further contact details are mentioned in the list of SIX x-clear AG contacts published at www.six-group.com > Products & Services > The Swiss Stock Exchange > Post-Trade > CCP Clearing > Contact.

In this context, SIX x-clear AG draws the Members' attention to **clause 7.1 and chapter 16.0 (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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