



## **Appendix 2**

# **Technical description**

## **Euroclear Sweden**

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## **1 Introduction**

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A participant of Euroclear Sweden (referred to as "Euroclear Sweden" or "ES") must be technically connected to the Euroclear Sweden system (the "VPC system") in accordance with the terms and conditions for technical communication as described in section A 7, Terms and Conditions for Technical Connection, of Euroclear Sweden's General Terms and Conditions for Account Operations and Clearing.

Nominees, clearing members and settlement banks are responsible for maintaining well-functioning technical communication between their own system and the VPC system either by being an account operator themselves or by designating an account operator to carry out the communication.

The NCSN Network enables a participant access to both Euroclear Sweden and Euroclear Finland (referred to as "Euroclear Finland" or "EFi") through a single network connection.

This document describes the technical options and the process when affiliating to Euroclear Sweden and specifies the information Euroclear Sweden requires from an applicant.

When an existing participant makes any major change in its backend system or its connection to the VPC system, the principles of this document shall be superimposed.

## 2 Technical options

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Euroclear Sweden offers different technical options. Before the IT process can be initialized, an applicant must evaluate the different connection options and decide how to proceed. This chapter describes the different possibilities. For a description of Euroclear Sweden's various services, we also refer to the document Participation in Euroclear Sweden and Euroclear Finland, available on [www.euroclear.com](http://www.euroclear.com).

### 2.1 Service options

#### 2.1.1 Euroclear Sweden services

A participant can choose between two different interfaces:

- 1) Euroclear Sweden's proprietary
- 2) ISO15022

A participant can choose between two different methods of communicating with Euroclear Sweden:

- 1) NCSN Network
- 2) SWIFTNet

The proprietary interface can be used when communicating via Euroclear Sweden's and Euroclear Finland's proprietary network solution, known as NCSN Network. The NCSN Network enables different access methods, which are described further on in the document. The ISO15022 interface can be used both via NCSN Network (provided that the applicant orders MQ Series), and via SWIFTNet.

Please see table below for clarification of the interface and communication options.

Communication	Interface	
	ISO15022	Proprietary
NCSN Network 3270 (terminal)		X
NCSN Network FTP		X
NCSN Network MQ	X	X
SWIFTNet	X	

#### 2.1.2 Euroclear Finland services

Participants connected to Euroclear Sweden via the NCSN Network may at no extra cost, communicate with Euroclear Finland via the connection to NCSN Network. The participant must request Euroclear Sweden IT Production and Technology to set up a connection for the participant to Euroclear Finland. For more information, please contact Euroclear Finland IT Production and Technology.

#### 2.1.3 NCSN Exchange Gateway

For clearing members, Euroclear Sweden offers the service NCSN Exchange Gateway. It enables the participants to have their NASDAQ OMX Stockholm trades directly routed to the VPC system. The automated and direct routing increases the participant's potential for STP. The service is free of charge. For more information, please see NCSN Exchange Gateway Product Description on [www.euroclear.com](http://www.euroclear.com).

## 2.1.4 User administration

All Euroclear Sweden applications are protected against unauthorized use. Therefore all users of these applications have to have valid user identification code and password<sup>1</sup>. User administration is normally handled by the applicant. It is optional for applicants with less than 20 users to let Euroclear Sweden manage the end user identification codes and passwords for a fee.

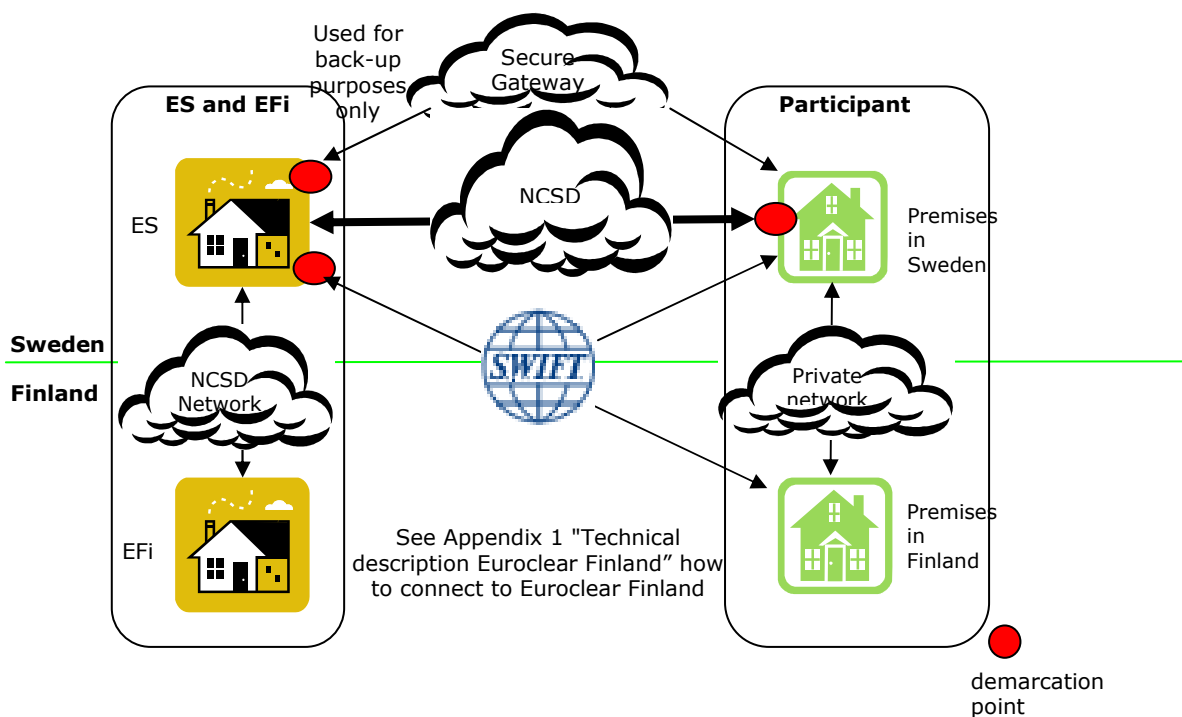
## 2.2 Network options

As previously mentioned, a participant can choose between two different methods of communicating with Euroclear Sweden:

- 1) NCSN Network
- 2) SWIFTNet

For back-up purposes, Euroclear Sweden also offers a VPN connection via the Internet, called Secure Gateway.

These options are illustrated below.



### 2.2.1 NCSN Network

Euroclear Sweden and Euroclear Finland supplies an IP service which enables communication via IP to NCSN Network. Euroclear Sweden and Euroclear Finland uses Verizon Business as supplier of the service. A Euroclear Sweden-configured router is located at the participant, and this is included in the IP services. Please see Figure 1 at the end of this document for more information. All traffic is encrypted with IP Sec, and Euroclear Sweden has responsibility to the Ethernet Interface at the router. Afterwards, it is the participant's responsibility to provide sufficient security in its own network.

<sup>1</sup> This applies also to system interface (MQ Series).

Parameters which will be exchanged are, for example, the address of the Ethernet Interface and the addresses the participant will be using. Euroclear Sweden also needs to know the gateway address to the participant's network.

Please see picture 1 in chapter 7 for more information.

Euroclear Sweden sets the proper number of connections and bandwidth according to the volume information indicated by the applicant. The current options are:

- 128 kpbs
- 256 kpbs
- 512 kpbs
- 1024 kpbs
- 2048 kpbs

A participant is required to keep the connection up-and-running continuously (production only) or at least ready for immediate start-up (test only) with regard to Euroclear Sweden's service schedules.

#### Change of capacity

The change is usually initiated by Euroclear Sweden and the participant in cooperation. Euroclear Sweden has the right to require a capacity upgrade if the participant's volumes increase.

## **2.2.2 SWIFTNet**

SWIFTNet can be used as an alternative to the NCSN Network or as a complement, depending on the applicant's needs. If the applicant intends to carry out certain functions which are not supported by SWIFTNet, NCSN Network must be used in addition.

For information about which functions can be used via ISO15022, please see Euroclear Sweden ISO15022 Interface Description on [www.euroclear.com](http://www.euroclear.com).

Please note that using SWIFTNet for receiving status and reconciliation messages generates an additional cost for Euroclear Sweden's SWIFT messages, which is invoiced separately in addition to the ordinary transaction costs. For an exact figure, please contact Euroclear Sweden. However, using ISO15022 via NCSN Network generates no extra cost, besides the ordinary transaction costs.

## **2.3 Access methods**

As previously mentioned, a participant can choose between two different interfaces:

- 1) Euroclear Sweden's proprietary
- 2) ISO15022

The proprietary interface contains the following access methods:

1. User interface
2. MQ series
3. File transfer

The access methods are described below.

### **2.3.1 User interface**

Terminal access requires the following features:

- TN3270E-client, e.g. EXTRA.
- The applicant uses a Euroclear Sweden-authorized IP address. This means that Euroclear Sweden translates the applicant's internal IP addresses to "Euroclear Sweden addresses" and gives them authority to access the Euroclear Sweden application.
- For information about which IP address to connect to, please contact Euroclear Sweden IT Production and Technology.

### **2.3.2 MQ Series**

Euroclear Sweden delivers its application-to-application level services to participants through specific middleware technology utilizing the message queue product family of IBM WebSphere MQ Series ("MQ Series").

MQ Series requires the following features:

- The applicant uses a Euroclear Sweden-authorized IP address (see above).
- The applicant has to have its own MQ server environment (not an MQ client) and its own interface software (application) for processing messages to and from Euroclear Sweden.
- The applicant is responsible for arranging proper operation and maintenance of its MQ Series server and interface software.
- For detailed information about the connection, please contact Euroclear Sweden IT Production and Technology.

### **2.3.3 File transfer**

File transfer requires the following features:

- The applicant uses FTP from a Euroclear Sweden-authorized IP address.
- Euroclear Sweden must be able to log on to the applicant's FTP server.
- The applicant's FTP client will act in PASSIVE MODE.
- For detailed information about the connection, please contact Euroclear Sweden IT Production and Technology.

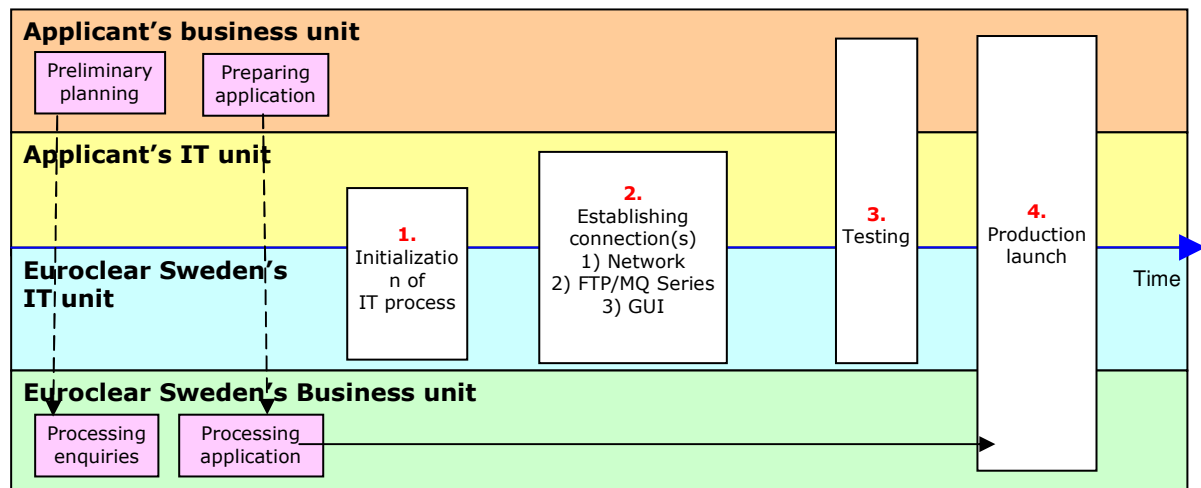
### 3 IT process

The process starts in connection with the applicant's filing of the application to become a participant of Euroclear Sweden, in order to get the communication in place for testing. If an applicant intends to have a technical connection to Euroclear Sweden, it will receive at an early stage a contact person at Euroclear Sweden IT Production and Technology.

The same connection is used for both testing and production. The following diagram describes the IT process at a high level and includes the following phases:

1. Initialization of IT process.
2. Establishing connection(s) between the applicant and Euroclear Sweden.
3. Testing of connection(s) and interface to Euroclear Sweden.
4. Production launch preparations and actual production launch.

See diagram below for clarification. Please note that it primarily describes the IT process and not the complete affiliation process.



The length of the process may vary and depends on many factors, such as the need for testing.

#### 3.1 Initialization of IT process

##### NCSD Network

The applicant initializes the connectivity process by ordering one or more connection(s). In connection to the order, the applicant must commit itself in writing to pay any costs related to connectivity, irrespective of the outcome of the membership application or whether the applicant itself decides to withdraw its application. The form for a combined order/commitment is provided by Euroclear Sweden and must be signed by an authorized signatory.

The actual order shall contain information about:

1. Company name including organisation identification number.
2. Address and telephone number where the router will be placed, district, street, room.
3. Invoice address.
4. Technical and responsible contact persons.
5. Speed of the link.

## SWIFTNet

The applicant initializes the connectivity process by a request an RMA authorisation.

### **3.2 Establishing connection(s)**

Euroclear Sweden is responsible for the establishment of connection(s), which takes approximately 6-8 weeks from the date of order.

### **3.3 Testing**

Euroclear Sweden provides a test environment, known as the acceptance environment. The environment is available during Euroclear Sweden's regular opening hours. The functionality is the same as in the production environment, even though most of the data (participants, securities etc.) differs.

After the connection(s) are established and a test agreement is signed, the applicant can perform the necessary testing. The applicant receives free access to all functions of the system and is, upon request, provided two identities to be able to register, match and settle trades.

Testing is available both via NCSN Network and via SWIFTNet.

For participants and applicants, all testing is free of charge. The testing is performed without the assistance of Euroclear Sweden personnel.

The applicant is obliged to present its testing plan and to continuously update Euroclear Sweden on the outcome during the testing periods. The testing plan shall contain details at a high level of which functions will be tested and the time schedule. It is absolutely essential at an early stage to notify Euroclear Sweden of any disturbances that may cause delays for the production launch.

All transactions which will be used have to be tested. Testing should not be planned to take place less than 2 weeks before production launch.

### **3.4 Production launch**

A date for the production launch cannot be decided until the applicant has been approved by Euroclear Sweden. The date is decided in co-operation with Euroclear Sweden. Affirmation of readiness is needed before the production launch. Thus the participant ensures that the testing has been properly carried out. A meeting is held with the applicant in advance of the production launch to ensure that readiness has been completed.

## 4 Fees

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Euroclear Sweden's List of Fees and Charges states:

- installation fee for connection (one-off fee)
- line capacity fee (monthly fee)
- the cost for outsourcing the user administration to Euroclear Sweden (monthly fee)

The installation fee and the following monthly fees from Verizon Business vary depending on location. For more information and a cost estimate concerning a specific location, please contact Euroclear Sweden.

## **5 Further information**

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The following documents contain further information regarding the technical options and requirements, and are available on [www.euroclear.eu](http://www.euroclear.eu):

- Euroclear Sweden General Terms and Conditions
- Euroclear Sweden Proprietary Interface
- Euroclear Sweden Routine Descriptions
- Euroclear Sweden List of Fees and Charges
- Euroclear Sweden ISO15022 Interface
- NCSD Exchange Gateway
- Forms from Euroclear Sweden:
  - Communication Form
  - Exchange Gateway Form
  - Authorisation forms

## 6 Required documentation

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If the applicant intends to have a technical connection to Euroclear Sweden, it must fulfill the technical requirements. Append the following documentation to the application.

- 1** Describe the technical organisation, including a chart and the name of the IT manager.
- 2** State the name of the legal entity to be responsible for the technical connection with Euroclear Sweden and specify the connection point (address of the physical location). If the applicant is not responsible for the connection (e.g. if the function is outsourced), please give the name of the organisation responsible.
- 3** Specify the type of technical connections to Euroclear Sweden, both primary connection and back-up solution.
- 4** Specify the protocol for file transfer and terminal traffic (SNA or TCP/IP) and whether status reporting will be made via MQ or file transfer.
- 5** Give a technical overview of the data system solutions, with the focus on the systems that have a direct connection to the VPC system. Describe in particular the back office system which will be used. Include a functional description, described on an approximate level. The information shall also contain the operative system, name of the systems owner and the systems administrator.
- 6** Specify contact persons for technical interface, for communication and file transfer, for production and technology, for helpdesk and for the user administration. For these persons, name, position, telephone number, telefax number, mobile phone number and e-mail address must be specified.
- 7** Describe the transaction flow to/from the back office, to/from the IT centre and to/from Euroclear Sweden preferably as a chart. Give an estimate of the expected number of transactions.
- 8** Specify how you intend to test the connection to Euroclear Sweden. Give the name of the entity or person responsible. Describe, on a general level, which functions in the VPC system you intend to test and a time schedule.
- 9** Give an estimate of the expected number of users and an estimate of number of offices. Specify whether authorisation will be managed locally by participant or centrally at Euroclear Sweden.
- 10** Describe the technical back-up communication, i.e. additional leased line or VPN connection via Internet. Include details of the person responsible for making decisions concerning the implementation of a back-up routine (applies to MQ, file transfer and terminal traffic). After a serious disaster event, all participants may need to resubmit transactions to Euroclear Sweden. Please confirm that you are able to resubmit the transactions from a period of at least two weeks back. If applying as a settlement bank, describe the functions and routines with regard to back-up communications with RIX.
- 11** If applying as a clearing member, please indicate which interface you intend to use (the proprietary and/or ISO15022).
- 12** If applying as a clearing member, and with an existing or future membership of the NASDAQ OMX Stockholm, please indicate if NCSD Exchange Gateway is to be used.

## 7 Figure 1

