SWXess Maintenance Release

Release Notes for SMR4 (Version 1.00)

SSX-SMR4-RELN-100/E, Version 1.00, 20.08.2013

This document provides all relevant information for SMR4, including functional and technical changes, relevant documents and specifications, migration plan and testing activities.

public

Table of Content

1 Introduction

1.1 Purpose & Scope

This document provides all relevant information for SMR4, including functional and technical changes, relevant documents and artefacts, configuration changes, migration plan and testing activities.

1.2 Changes Since Last Version

First Version.

1.3 Definitions & Abbreviations

Term/Abbreviation	Explanation
CTI	Capacity Trading Interface
FIX	Financial Information eXchange Protocol
FOPS	STI FIX Orders per Second
INET	Name of NASDAQ OMX platform
IMI	ITCH Market Data Interface
MOA	Member Own Application
MDI	Market Data Interface
OPS	CTI Orders per Second / OTI Orders per Second
OTI	OUCH Trading Interface
RDI	Reference Data Interface
OBM	On Book Matcher
QPS	CTI Quotes per Second / QTI Quotes per Second
QTI	New Quote Trading Interface
SCAP	SIX Swiss Exchange Common Access Portal
SMR	SWXess Maintenance Release
STI	Standard Trading Interface
SWXess	Name of the SIX Swiss Exchange trading platform
TRR	Trade Reconciliation Reports

1.4   Contacts

If you have technical questions, please do not hesitate to contact your Local Support Center.

Location	Phone	Fax	E-mail
Geneva	+41 58 399 5642	+41 58 499 5643	lsg@six-group.com
London	+44 20 7864 4364	+44 20 7864 4333	lsl@six-group.com
Zurich	+41 58 399 2400	+41 58 499 2400	lsz@six-group.com

For business related questions including set up of CTI, STI, IMI, OTI or QTI users, QPS, OPS or FOPS capacity allocation please contact Member Services:

Location	Phone	E-mail	Days and Times (Local)
Zurich	+41 58 399 2473	member.services@six -group.com	Business days 08:00 - 18:00 CET

2   SMR4 Summary

SIX Swiss Exchange is introducing a maintenance release (SMR4) on the SWXess trading platform with a first active date of **2 September 2013** in Membertest and **4 November 2013** in Production.

The key facts of SMR4 are summarised below:

- X-stream INET direct low latency interfaces for trading (OTI), quoting (QTI) and market data (IMI) introduced for OBM Partition 2 via SCAP and Co-Location Access

- New IMI Order Book Snapshot Recovery Service (GLIMPSE) introduced for both OBM Partitions

- The Capacity Trading Interface (CTI) will be **decommissioned for both OBM Partitions** six months after the SMR4 production live date. During this transition period, CTI applications will continue to be supported.

- Improved recovery mechanism introduced for MDI users

- The legacy URL links to the server-provided files accessible via SCAP will be **decommissioned** nine weeks after the SMR4 production live date.

- New Reference Data Interface (RDI) attribute "instrumentPartitionCode" added to TradedInstrument object

- The legacy MDI Rendezvous Point will be **decommissioned** six months after the SMR4 production live date.

- The FIX-based Trade Reconciliation file will be **decommissioned** from the Member Section nine weeks after the SMR4 production live date.
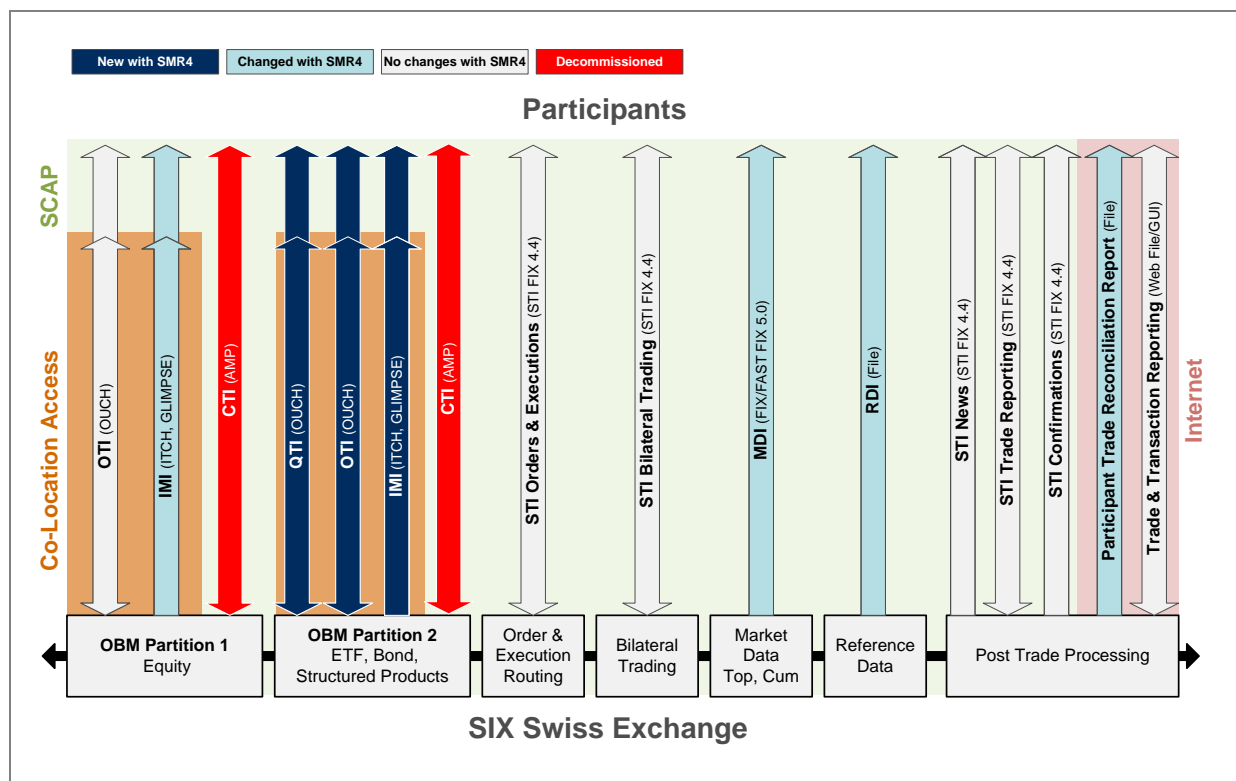
3   SMR4 Key Dates

The following table shows the key dates of SMR4 as scheduled at this stage.

Date	Mbtst	Prod	Activity
Tue 20.08.2013	☑	☑	Details on the migration and specification updates delivered
Fri 30.08.2013 - Sat 31.08.2013	☑		**SMR4 Membertest Migration weekend**
Mon 02.09.2013	☑		Start of SMR4 Membertest and first business day
Tuesdays and Thursdays 18:00 - 20:00 CET	☑		Background load tests (see section 8.5)
Sat 14.09.2013	☑		Performance Test from 10:00 to 16:00 CET (see section 8.5)
Wed 18.09.2013	☑		SWXess Intraday Recovery Test from 14:00 to 17:00 CET (see section 8.6)
October 2013	☑	☑	Publication of updated Directives
Wed 02.10.2013	☑		SWXess Intraday Recovery Test from 14:00 to 17:00 CET (see section 8.6)
Sat 12.10.2013	☑		Performance Test from 10:00 to16:00 CET (see section 8.5)
Wed 16.10.2013	☑		SWXess Intraday Recovery Test from 14:00 to 17:00 CET (see section 8.6)
Sat 26.10.2013	☑		Performance Test from 10:00 to 16:00 CET (see section 8.5)
Sat 02.11 - Sun 03.11.2013		☑	**SMR4 Production Migration weekend**
Mon 04.11.2013		☑	**SMR4 Production Live date**
Sat 23.11 - Sun 24.11.2013		☑	Contingency date for SMR4 Production Migration weekend only to be used in case of unexpected events.
Mon 25.11.2013		☑	Contingency date for SMR4 Production Live date
Nine weeks after SMR4 Production Live date	☑	☑	**Decommissioning of:** • MDI legacy URL links • RDI legacy URL links • FIX based Reconciliation file
May 2014	☑	☑	**Decommissioning of:** • Capacity Trading Interface (CTI) • Legacy Rendezvous Point

4 Overview of SMR4 Changes

This section gives an overview of the changes introduced with SMR4.

4.1 Direct Trading Interfaces (QTI, IMI, OTI)

The X-stream INET direct low latency interfaces for trading, quoting and market data will be made available for OBM Partition 2 via SCAP and Co-Location Access. For Market Makers, a new Quote Trading Interface (QTI) will be introduced. Price Takers can use OTI for order entry.

4.1.1 QTI – Quote Trading Interface (QTI) – (New, only for OBM Partition 2)

The Quote Trading Interface (QTI) will be the new interface for market makers based on the OUCH protocol. It defines the business message protocol for quote management functionality allowing SIX Swiss Exchange market makers to enter, replace and cancel quotes as well as receive status changes and executions (trades) for their quotes.

The capacity allocation model for the new QTI interface will be analogous to that of the Capacity Trading Interface (CTI).

QTI and OTI use the SoupBinTCP network protocols to reliably exchange messages. The table below shows the supported connectivity variants.

Interface	Via SCAP	Via Co-Location Access
QTI (via SoupBinTCP)	Yes	Yes
OTI (via SoupBinTCP)	Yes	Yes
IMI	Yes	Yes

4.1.2 IMI – ITCH Market Data Interface

The ITCH Market Data Interface (IMI) will be extended to include OBM Partition 2 (ETFs, Sponsored Funds, Bonds, Scoach (Switzerland) Structured Products) and allow participants to receive not only market data from the Equity Partition, but also from the Non-Equity Partition. Each OBM Partition has its own dedicated IMI hosts and users.

On top of that, a new IMI Orderbook Snapshot Recovery Service, GLIMPSE, will be introduced for both OBM Partitions. The new GLIMPSE Service uses the SoupBinTCP protocol only and allows users to re-connect during the trading day and rebuild the current order book state efficiently. Each OBM Partition has its own dedicated GLIMPSE hosts and users.

4.1.3 OTI – OUCH Trading Interface

The OUCH Trading Interface (OTI) will also be extended to include OBM Partition 2 (ETFs, Sponsored Funds, Bonds, Scoach (Switzerland) Structured Products) and will allow the sending of orders to this Partition. Each OBM Partition will have its own dedicated OTI hosts and users. Participants need to apply for new and dedicated OTI users for Partition 2. The OTI functionalities currently provided for OBM Partition 1 (Equities) will not be affected.

For Price Takers, the capacity provided via OTI for OBM Partition 2 will be throttled and delayed to similar levels as on the Standard Trading Interface (STI), while Market Makers will enjoy the low latency of the new QTI interface.

In addition, a global per OTI user safety limit will be implemented to protect the system from misbehaving applications submitting abnormal high number of transactions per second (e.g. >= 7000). The safety limit will be the same for all OTI users. When an OTI user exceeds the safety limit, the OTI user will be disconnected and the OTI user's orders will be deleted.

> **Further Reading on Direct Trading Interfaces:**
>
> 📄 Direct Trading Interfaces Specification (OTI, QTI, IMI) (Version 2.04)

4.2 Capacity Trading Interface (CTI)

The industry standard OTI and QTI will replace the legacy Capacity Trading Interface (CTI) for proprietary trading and market making and will be **decommissioned for both OBM partitions** six months after the SMR4 production live date. During this transition period, CTI applications will continue to be supported.

4.3 Standard Trading Interface (STI)

No changes with SMR4.

4.3.1 Trade Identification

On the outbound STI Confirmation message (MsgType=AK), a trade based on a quote entered via new Quote Trading Interface (QTI) can be identified with

- FIX tag 26558 (BusinessTransactionType) = 5 (Quote) and

- FIX tag 26559 (EntrySource) = 6 (OTI)

4.4 Market Date Interface (MDI)

4.4.1 Improved Recovery Mechanism

An improved recovery mechanism will be introduced for MDI users. The new recovery mechanism will use a recovery protocol that is analogous to that of MoldUDP64. This change is optional, so that users who do not wish to take advantage of the new recovery mechanism can continue to use their current MDI applications. Refer to the MDI specification document for more details (see box below).

4.4.2 Channel Identifier in Multicast Packet Header

With the pre-SMR4 release, the last two bytes of the Multicast packet header of every MDI packet could be ignored. With SMR4, the first of these last two bytes will be filled with the "ChannelId".

For details please refer to section 8.4 in the current MDI specification document.

For clients who have correctly ignored these last two bytes there is no impact to their MDI receivers.

4.4.3 Value Added Data Message after End of Trading

After end of trading, value added information on the MDI interface will only be distributed for securities which had at least one trade on that day and for all securities with an SSX order book.

For details please refer to section 4.5.1 in the current MDI specification document.

4.4.4 Decommissioning of Legacy URL links

The legacy URL links to the server-provided files accessible via SCAP will be **decommissioned nine weeks after the SMR4 Production live date.** The valid URLs for server-provided files are published in section 6 of the Market Data Interface specification (see box below).

> **Further Reading on Market Data Interface:**
>
> 📄 Market Data Interface (MDI) Specification (Version 1.16)

4.5   Reference Data Interface (RDI)

4.5.1   Additional Attribute

The following minor specification change will be introduced to the Reference Data Interface (RDI):

- An additional attribute will be introduced to identify on which Partition a security is traded: The RDI File `TradedInstrument.txt` is extended with an additional column `instrumentPartitionCode`.

Note that this change is compliant with the specified flexibility for field changes as described section 2.2. of the RDI specification document (see box below).

4.5.2   Decommissioning of Legacy URL links

The legacy URL links to the reference data download files in the Member Section and via SCAP will be **decommissioned nine weeks after the SMR4 Production live date.** The URLs for reference data download valid today are published in section 4.2 of the current RDI specification document (see box below).

> **Further Reading on Reference Data Interface:**
>
> 📄   Reference Data Interface (RDI) Specification (Version 1.19)

4.6   Participant Trade Reconciliation Report (TRR)

4.6.1   Decommissioning of FIX-based Trade Reconciliation Files

The FIX-based Trade Reconciliation file (currently available on the Member Section) will be **decommissioned nine weeks after the SMR4 Production live date**. It has been replaced with a newer, improved human-readable Participant Trade Reconciliation Report, which was already introduced with SMR3.

4.6.2   Enhancement of Participant Reconciliation Report

The Participant Trade Reconciliation Report has been further enhanced and made available at regular time intervals during the trading day. For the time intervals details please see the "Overview Trade Reconciliation" or the "Best Practices Guide" in the Member Section:

https://www.six-swiss-exchange.com/member_section/trade_reconciliation/overview.html

https://www.six-swiss-exchange.com/member_section/it/manuals.html

The "contraFirmPartyID" field is now populated not only for Reported Trades but also for on book trades without counterparty anonymity.

> **Further Reading on Participant Trade Reconciliation Report:**
>
> 📄   MSC Message No. 07/2013
> 📄   Participant Trade Reconciliation Report Specification (Version 1.10.0)

4.7   Trade and Transaction Reporting

No changes with SMR4.

4.8   Sponsored Access Service

Several enhancements to the RiskXposure Graphical User Interface (RX GUI) and the FIX Drop Copy service will be implemented. For the RX GUI, these include the suppression of duplicate e-mails to users and the ability to set e-mail options for various events without simultaneously needing to edit specific

public

limits. All minor issues currently listed in the Sponsored Access FAQ/Known Problems area of the Member Section will be corrected.

4.9   Bilateral Trading Platform

No changes with SMR4.

4.10   Connectivity Changes

4.10.1   Co-Location

With the Co-Location Service also available for OBM Partition 2, Participants with market making obligations should evaluate whether, given their business modes, it makes sense for them to go into co-location and benefit from the lower latency.

4.10.2   Bandwidth Requirements

All connectivity options and bandwidth requirements will remain unchanged. For bandwidth details, please refer to Appendix A "Bandwidth Requirements for SWXess" in the Connectivity Guide (see box below).

4.10.3   Decommissioning of Legacy Rendezvous Point

Participants still using the legacy MDI Rendezvous Point are requested to modify their SCAP router configuration accordingly to use a dedicated Rendezvous Points for each data center instead. The legacy MDI Rendezvous Point will be **decommissioned after a transition phase of six months** after the SMR4 production live date.

The legacy configuration on a participant's SCAP router may look like this, where `146.109.111.254` is the IP address of the legacy Rendezvous Point:

```
! OLD: single RP for both Datacenter-A and Datacenter-B
ip host swx-rp 146.109.111.254
ip pim rp-address 146.109.111.254 SWX-IPMC-GROUP-A
```

The required new configuration for SCAP routers with a line to **Datacenter A** looks like this, where `146.109.111.252` is the IP address of the Rendezvous Point for Datacenter A:

```
! NEW: RP for Datacenter-A
ip host swx-rp-a 146.109.111.252
ip pim rp-address 146.109.111.252 SWX-IPMC-GROUP-A
```

The required new configuration for SCAP routers with a line to **Datacenter B** looks like this, where `146.109.111.253` is the IP address of the Rendezvous Point for Datacenter B:

```
! NEW: RP for Datacenter-B
ip host swx-rp-b 146.109.111.253
ip pim rp-address 146.109.111.253 SWX-IPMC-GROUP-B
```

Please also refer to SWXess Public Config for Rendezvous Point IP addresses.

Starting with SMR4, downloadable router configurations will include the dedicated Rendezvous Points.

> **Further Reading on Connectivity:**
>
> 📄   Connectivity Guide (Version 18.00)

5 Known Issues

Known problems are published and tracked in the SIX Swiss Exchange Member Section at:

https://www.six-swiss-exchange.com/member_section/it/faq.html

5.1 Deviation from Specification

SWX_IC_68725: Quote Token is not mapped to FIX tag 11(ClOrdId)

In contrast to the QTI Quote Mapping Table in section 7.3 of the current Direct Trading Interfaces specification document, the QTI Field "Token" will not be mapped to the FIX tag 11(ClOrdId) of the outbound STI Confirmation message (MsgType=AK) by start of SMR4 Membertest phase. Instead, the FIX tag 11 contains "UNDEFINED".

This issue affects QTI and STI and will be fixed during SMR4 Membertest phase.

6 Overview of Documents and Artefacts

Please find below the updated lists of all technical documents and artefacts relevant to SMR4.
New and changed items since MSC Message 30/2013 (25.06.2013) are marked with an asterisk (*).

All items can be downloaded from the Member Section Manuals or Downloads pages at:

https://www.six-swiss-exchange.com/member_section/it/manuals.html

https://www.six-swiss-exchange.com/member_section/it/downloads.html

Status	Date	Subject	Reference
General			
* NEW FOR SMR4	20.08.2013	Release Notes for SWXess Maintenance Release 4 (Version 1.00)	This document.
NEW FOR SMR4	To be delivered	SWXess Business Recovery Guide for Participants (SMR4)	-
NEW FOR SMR4	To be delivered	Best Practice Guide for SWXess	-
Direct Trading Interfaces (OTI, QTI, IMI)			
NEW FOR SMR4	07.05.2013	Direct Trading Interfaces Specification (OTI, QTI, IMI) (Version 2.04)	SSX-DIR-TRD-SPEC-204/E
Capacity Trading Interface (CTI)			
UNCHANGED	01.10.2010	Capacity Trading Interface (CTI) Specification (Version 5.10)	SWX-VCA-SPEC-CTI-510/E
UNCHANGED	10.12.2012	CTI Configuration Files for Unix and Linux	see Member Section Downloads page
UNCHANGED	10.12.2012	CTI Configuration Files for Windows	see Member Section Downloads page
UNCHANGED	19.11.2010	X-stream Client SDK 5.9.0	see Member Section Downloads page
UNCHANGED	27.06.2012	X-stream Client SDK 7.4.49	see Member Section Downloads page
Standard Trading Interface (STI)			
UNCHANGED	30.10.2012	Standard Trading Interface (STI) Specification - Orders and Executions (Version 2.4.1)	SWX-SPEC-STI-PRE-2.4.1
UNCHANGED	18.12.2012	Standard Trading Interface (STI) Specification - Post Trade (Version 2.23.0)	SWX-SPEC-STI-POST-2.23.0
UNCHANGED	27.04.2012	Standard Trading Interface (STI) Specification - Session Layer (Version 2.2.0)	SWX-SPEC-STI-SES-2.2.0
UNCHANGED	17.05.2013	Standard Trading Interface (STI) Specification - Bilateral Trading (Version 1.7.0)	SSX-SPEC-STI-BTR-1.7.0
UNCHANGED	29.05.2013	Standard Trading Interface (STI) FIX 4.4 Repository (Version for SMR4)	see Member Section Downloads page

Status	Date	Subject	Reference
Market Data Interface (MDI)			
* NEW FOR SMR4	**09.08.2013**	**Market Data Interface (MDI) Specification (Version 1.16)**	**SWX-VCA-SPEC-MDI-116/E**
* NEW FOR SMR4	**14.08.2013**	**MDI Channel Configuration Production (P01) - SMR4 (Version 1)**	see Member Section Downloads page
* NEW FOR SMR4	**14.08.2013**	**MDI Channel Configuration Membertest (M01) - SMR4 (Version 1)**	see Member Section Downloads page
UNCHANGED	25.05.2012	MDI FAST Templates Version 1.04	see Member Section Downloads page
Reference Data Interface (RDI)s			
* NEW FOR SMR4	**17.05.2013**	**Reference Data Interface (RDI) Specification (Version 1.19)**	**SWX-VCA-SPEC-RDI-119/E**
Sponsored Access Service			
UNCHANGED	06.05.2013	Sponsored Access FIX Drop Copy Interface Specification	SSX-SA-FDC-SPEC-1.8.
UNCHANGED	20.03.2013	Sponsored Access File Interface (SFI) Specification	SSX-SA-SFI-SPEC-1.0.2
Participant Trade Reconciliation Report			
* NEW FOR SMR4	**21.06.2013**	**Participant Trade Reconciliation Report Specification (Version 1.10.0)**	**SSX-SWXS-SPEC-TRR1.10.0/E**
Trade and Transaction Reporting			
UNCHANGED	18.12.2012	Transaction Reporting Interface Specification	SWX-PTP-TRX-INT-2.7.0
UNCHANGED	27.05.2013	Transaction and Trade Reporting User Manual	SIX-SSE-MAN-REP-312/E
Bilateral Trading Platform			
UNCHANGED	21.05.2013	Valuation Price File Specification (Version 1.1.0)	SSX-SWXS-SPEC-VPF110/E
Connectivity			
UNCHANGED	17.07.2013	Connectivity Guide (Version 18.00)	SWX-CNTY-GUID1800/E

7 Migration Activities and Transitional Periods

7.1 Overview

The central SWXess infrastructure and all associated interfaces will be upgraded to SMR4 over a single migration weekend. The SMR4 changes become active on the Monday after the migration weekend.

All order books will be migrated transparently by SIX Swiss Exchange. No active orders will be deleted. On Monday at the start of business day, Execution Reports will be sent out for all active orders.

Participants, ISVs and ASPs will need to upgrade their trading applications and other infrastructure on the migration weekend or within the transitional periods given below for each migration activity.

Interface	Migration Activity	Transitional Period	Start	End
CTI (see section 4.2)	OBM Partition 1: Migrate to the OUCH Trading Interface (OTI) OBM Partition 2: Migrate to the new Quote Trading Interface (QTI)	Yes	Migration Weekend	May 2014
MDI (see section 4.4)	Modify MDI application to use improved recovery mechanism	No, since optional		
	Modify MDI applications to use specified URL links to the server-provided files.	Yes	Today	Nine weeks after SMR4 Production Live Date
RDI (see section 4.5)	Modify RDI application to use additional attribute	No	Migration Weekend	
	Modify RDI applications to use specified URL links to the reference data download files.	Yes	Today	Nine weeks after SMR4 Production Live Date
Connectivity (see section 4.7)	Modify SCAP configuration to use the site specific Rendezvous Points.	Yes	Today	May 2014
	Move into Co-Location	Optional*		
TRR (see section 4.6)	Modify applications to use the Participant Trade Reconciliation Report instead of the FIX-based Reconciliation file	Yes	Today	Nine weeks after SMR4 Production Live Date

*) With the Co-Location Service also available for OBM Partition 2, Participants with market making obligations should evaluate whether, given their business modes, it makes sense for them to go into co-location and benefit from the lower latency.

7.2 Preparation for Migration Weekend

7.2.1 User Application

Participants wishing to use any of the new interfaces (IMI, GLIMPSE, OTI or QTI) are required to apply for User IDs by filling in the appropriate form available on the Forms page (as from 23.08.2013) and returning it to Member Services.

7.2.2 IP Addresses

The IP addresses for all new interfaces and services are shown in SWXess Public Config. The ports are available in SWXess Private Config as they are assigned individually per user.

The following table shows the availability of the new IP addresses:

Environment	Available to ping	Available to connect
Production (P01)	as of Sat 31 Aug 2013	see section 7.3.3
Production (P01) Disaster Backup Site	not applicable*	not applicable
Membertest (M01)	as of Sat 31 Aug 2013	as of Tue 03 Sep 2013

*) The P01 Disaster Backup Site IP addresses will be available to ping as part of the Production Migration schedule. SIX Swiss Exchange will inform participants in due course regarding further testing opportunities.

7.3 Migration Weekend

The main activities during the migration weekend will be:

- Upgrade of trading platform to SMR4

- Update of MOAs by Members

- Verification of connectivity and login by Members after upgrade (see footnote in section 7.4)

The following migration procedures are preliminary and subject to change. For the final SMR4 Migration Procedures please refer to the MSC Messages for the Final Migration Confirmation.

During the platform migration SIX Swiss Exchange will inform participants about the current status via System Status in the Member Section (see section 7.3.2).

7.3.1 Membertest Migration Schedule

On Saturday and Sunday your Local Support Center will be available between 10:00 - 16:00 CET

Date	Time (CET)	Who	Activity
Thu 29.08.2013 (Simulated Friday)	22:30 - 23:00	SIX Swiss Exchange	Closing respectively closing auctions in the various segments
	until 23:00	Participants	Reporting of Off Order Book transactions and Trade Reversals possible
	23:00	Participants	"End of Business" **Remain connected with your STI application until after you receive the logout message from the exchange (about 23:15 CET)**
	23:30 onwards	SIX Swiss Exchange	Upgrade of SWXess trading platform to SMR4
Fri 30.08.2013 (Simulated Saturday)	all day	SIX Swiss Exchange	Upgrade of SWXess trading platform to SMR4 continues
Sat 31.08.2013 (Simulated Sunday)	until 11:00	SIX Swiss Exchange	Upgrade of SWXess trading platform to SMR4 continues
	all day	Participants	Upgrade of MOAs continues
	approx. 11:00	SIX Swiss Exchange	Confirmation published on the system status page in the Member Section (and by MSC Alert for subscribers) that the upgrade has been completed. SWXess systems are running, connectivity is possible, however markets are closed and orders/quotes will be rejected.
	following confirmation until 20:00	Participants	Check connectivity, login and migration (see sections 7.2.2 and 7.4).
Sun 01.09.2013	All day	SIX Swiss Exchange	SWXess Systems are closed, SCAP available
Mon 02.09.2013	as from 06:00	Participants	First trading day on SMR4. Usage of new interfaces (IMI, OTI and QTI on Partition 2) not yet possible.
Tue 03.09.2013	as from 06:00		Participants can login to the new interfaces

7.3.2 Information during Membertest Migration Weekend

	For the current status of the migration, please visit the **membertest status** page in the Member Section at: https://www.six-swiss-exchange.com/member_section/system_status_test.html
	If you wish to receive **MSC Alerts by SMS or e-mail regarding this migration**, please subscribe to priority "**2-Medium**" alerts on the "My Subscription" page in the Member Section at: https://www.six-swiss-exchange.com/member_section/user_subscriptions.html

7.3.3 Production Migration Schedule

The detailed plan for the Production migration will be published in due course.

7.4   Connectivity Testing Checklist During Migration

On the migration weekend after the SWXess trading platform upgrade has been completed, the interfaces will be available for testing according to the schedule in section 7.3 as shown in the following table:

Interface	Available via	Status	Recommended Testing Activities
SCAP	-	**Fully available:** • SCAP network and VPN tunnel connectivity re-established	• Test SCAP network is up • Test VPN tunnel status is up (e.g. ping 146.109.99.254)
Co-Location Access (P01 only)	-	**Fully available:** • Network connectivity established	• Test Co-Location Access network status is up
STI	SCAP	**Available without business functionality:** • Session management tests can be performed • SenderCompIDs are enabled • Application messages are rejected (Error D Input disabled for this connection/ClOrdID780)	• Test network connectivity • Test login
CTI	SCAP	**Available without business functionality:** • Prop Traders and Market maker logins enabled • Application messages are rejected ('orderNotAccepted' with the error infoMessage '(293) Orders are not being accepted at this time')	• Test network connectivity • Test login
MDI	SCAP	**Available without market updates:** • Empty Order Book Snapshot messages are sent • Heartbeat messages are sent	• Join MDI Channels • Test your set-up and reception of messages
RDI	SCAP	**Fully available:** • Production reference data can be downloaded	• Download RDI files • Process RDI files
IMI	SCAP and Co-Location Access (P01 only)	**Available without market updates:** • User logins enabled* • Heartbeat messages are sent • Reference Data available	• Test network connectivity • Test login* • Test your set-up and reception of messages
OTI	SCAP and Co-Location Access (P01 only)	**Available without business functionality:** • User logins enabled*	• Test network connectivity • Test login*
QTI	SCAP and Co-Location Access (P01 only)	**Available without business functionality:** • User logins enabled*	• Test network connectivity • Test login*

*) Please note that participants can login to the new interfaces (IMI, OTI and QTI on Partition 2) in Membertest (M01) as of Tue 03 Sep 2013. During migration weekend only the network connectivity to the new interfaces can be tested.

8   Testing Activities During Member Test Phase

8.1   Scope of Member Test Phase

We strongly recommend that all participants, ASPs and ISVs test their Member Own Applications (MOAs).

Goals during Member Test phase:

- Test your Member Own Applications and verify that they are in-line with the latest SMR4 interface specifications, including full loop test with clearing and settlement.

- Optional: participate in the performance tests organised by SIX Swiss Exchange.

- Highly recommended: participate in one of the scheduled SWXess Intraday Recovery Tests organised by SIX Swiss Exchange.

8.2   Clearing and Settlement During Member Test Phase

The SIX SIS link for Clearing and Settlement is available during the Member Test phase except during performance tests and background load tests. We recommend running full loop tests as soon as possible with your MOAs and back office system.

8.3   Trading Hours and Availability

The trading hours and the availability of the Membertest environment remain unchanged for the SMR4 Membertest phase. Please refer to the following links for details:

Environment calendar:	http://www.six-swiss-exchange.com/participants/participation/environment_calendar_en.html
Trading hours:	http://www.six-swiss-exchange.com/member_section/download/public/Trading_Hours_Membertest.pdf

8.4   On Book Trading Testing Services

Preliminary Remark:
This service will become available with start of SMR4 Member Test Phase on 2 September 2013.

For testing On Order Book functions, there are two types of testing services available in the Membertest environment:

1	OrderBook depth service	There is a list of dedicated instruments with order book depth where liquidity is being provided continuously. Service hours: Monday - Friday 08:00 - 20:00 CET
2	Automatic matching service	There is a list of dedicated instruments for which new inserted orders will be matched automatically. Service hours: Monday - Friday during continuous trading hours with the exception of Load Tests

Please find all details concerning testing services available on the Member Section:

https://www.six-swiss-exchange.com/member_section/swxess_testing.html

8.5   Performance Tests and Background Load Tests

During the SMR4 Membertest phase, SIX Swiss Exchange will hold **performance tests** on the Membertest infrastructure on the dates given in the table below.

Date	Time	Load Generated
Sat 14.09.2013	10:00 to 16:00 CET	The detailed load pattern will be published in a separate MSC Message before each test.
Sat 12.10.2013		
Sat 26.10.2013		

You are invited to participate in these tests to verify your applications under high load. You are allowed to generate limited transaction load. No registration is required. You are kindly requested to leave your MDI/IMI clients running and connected during the performance test, even if you do not participate in the test.

In addition, SIX Swiss Exchange will hold **background load tests** each Tuesday and Thursday evening from 18:00 to 20:00 CET using the following load distribution:

Time (CET)	QPS Load	OPS Load	FOPS Load
18:00 to 20:00	1500	6500	500

You are invited to participate and allowed to generate own transaction load up to your test capacity.

The SIX SIS link for Clearing and Settlement is not available during performance tests and background load tests.

8.6   SWXess Intraday Recovery Tests

We have scheduled SWXess Intraday Recovery Tests on the dates given in the table below. During these tests, you have the possibility to verify the behaviour of your applications during a business recovery.

Date	Time	Remark
Wed 18.09.2013	14:00 to 17:00 CET	A detailed test schedule will be published by MSC Message before each test event.
Wed 02.10.2013		
Wed 16.10.2013		