Bank of England RTGS Renewal Programme

- ISO 20022 Migration (TS3)

Getting Started Guide for Payment System Operators

Version 1.2

This document provides Payment System Operators with Swift guidance for BoE's TS3 go-live date.

Contents

1	Intro	duction	3
	1.1	Background	3
	1.2	BoE SWIFTNet Service Names	4
	1.3	BoE ISO 20022 Message Set	4
	1.4	Milestones and Timelines	6
	1.5	Document Description	7
2	BoE	SWIFTNet Services for InterAct and WebAccess	8
	2.1	How to access to the subscription e-forms	8
	2.2	How to complete the subscription e-forms and timelines	.10
	2.2.1	InterAct live messaging service	.10
	2.3	How to complete the WebAccess subscription e-forms	. 14
3	Conr	ectivity	.16
	3.1	Introduction	.16
	3.2	Configuring to receive InterAct messages	. 17
	3.3	Configuring to send InterAct messages	. 17
	3.4	Configuring for WebAccess services	.18
4	Integ	ration	.19
	4.1	Introduction	.19
	4.2	Integration Considerations	.19
5	Swift	's Solution for BoE DNS ISO 20022 Migration	.21
	5.1	High-level overview of Swift's Solution	.21
	5.2	Message Flows	. 22
	5.3	BoE SWIFTNet Service Features	.23
6	Chec	klist	.24
7	Supp	ort	. 25
8	Lega	l Notices	.26

1 Introduction

1.1 Background

In context of the Bank of England's (*BoE*) RTGS Renewal Programme, the BoE will be renewing its Core Settlement Engine on 24 June 2024 (*TS3 milestone*). This impacts all Payment System Operators (*PSOs*).

Today's PSO settlement and cap change MT message flows are exchanged over the FIN service. For TS3, these messages will be replaced by BoE defined ISO 20022 MX messages and exchanged over the BoE TS3 SWIFTNet InterAct services.

As of November 2023, PSOs are able to subscribe to the BoE's <u>live</u> TS3 SWIFTNet InterAct service, which will also contain these BoE defined DNS ISO 20022 messages, in preparation to go live in June 2024.

In addition to InterAct messaging, the BoE has created new WebAccess live service for BERTI. BERTI, Bank of England Real-Time Interface, is the replacement of today's Enquiry Link Browse service. Therefore, all PSOs will have to subscribe to the TS3 SWIFTNet InterAct and BERTI WebAccess live services. See Table 1 below in section 1.2 for the BoE SWIFTNet services names.

This Getting Started Guide provides guidance on subscribing to the BoE SWIFTNet services, guidance on SWIFTNet connectivity and integration to back-office systems. It is aimed at the PSOs' business operations, business application development and Swift technical teams involved in the BoE ISO 20022 migration projects.

1.2 BoE SWIFTNet Service Names

The BoE deploys the following live TS3 InterAct Messaging and WebAccess services:

Table 1. Overview of the live TS3 InterAct Messaging and WebAccess services

Service Name	Purpose	e-form Availability		
InterAct Messaging service				
boe.stg.iast BoE CHAPS live		available		
WebAccess service				
boe.rti.wa	WebAccess for BERTI live	available		

1.3 BoE ISO 20022 Message Set

See tables (Table 2 and Table 3) below define and explain ISO 20022 messages for the PSO flows.

Table 2. Message set

Message Definition Identifier	Usage Identifier (contained in the Business Service element)	Original MT Equivalent
pacs.029.001.01	boe.dns.01	MT 298/060
pacs.002.001.12	boe.dns.01	MT 298/061
admi.004.001.02	boe.dns.01	n/a
camt.011.001.07	boe.dns.01	n/a
camt.025.001.05	boe.dns.01	n/a
head.001.001.02	boe.dns.01	n/a

Table 3. Message set (Messages that introduce new functionality with the move from Swift MT to ISO 20022 XML are marked with an asterisk.)

Message Definition Identifier *new functionality	Message Name	Use
pacs.029.001.01	Multilateral Settlement Request	Replaces the MT298/060 Sent by the DNS Scheme to the RTGS Processor to request a multilateral settlement
pacs.002.001.12	Multilateral Settlement Response	Replaces the MT298/061 Sent by the RTGS Processor to the DNS Scheme in response to a multilateral settlement request (pacs.029) to indicate that the settlement request is: • queued • rejected • settled
admi.004.001.02*	Open Close Notification	Sent by the RTGS Processor to the DNS Scheme to inform that a • settlement window has opened • settlement window has closed • funds reservation window has opened • funds reservation window has closed • settlement has been suspended • settlement has been resumed
camt.011.001.07*	Cap Change Request	Forwarded from the RTGS Processor to the DNS Scheme to action a request from the DNS participant that the amount of funding on a DNS participant's prefunded account be increased or decreased
camt.025.001.05*	Receipt	Sent from the DNS Scheme to the RTGS Processor to report the status of a CAP change request
head.001.001.02	Business Application Header	Must be combined with each of the above ISO 20022 messages to form a valid ISO 20022 business message. The Business Application Header is not a standalone message.

Full details of these messages can be found in the BoE's '<u>Technical Guidance for Schemes for the migration of Deferred Net Settlement (DNS) Schemes to ISO 20022</u>' within the MyStandards portal.

Also, see section 5.2 of this guide for a description of these message flows.

1.4 Milestones and Timelines

<u>High-level Timelines:</u> any questions on these dates must be addressed to the BoE RTGS Readiness Team - RTGSReadiness@bankofengland.co.uk

Table 5. High-level Timelines

Date	Service Name	Description
As from 27 November	boe.stg.iast	Subscription period for the registration to the
2023 till 01 March 2024	boe.rti.wa	live WebAccess and to the TS3 live InterAct
		messaging service
24 June 2024	boe.stg.iast	TS3 live cutover
	boe.rti.wa	

BERTI service. Further guidance provided in section 3.

1.5 Document Description

Section 2 - SWIFTNet Service(s) is aimed at teams who are responsible for completing the subscription e-forms on swift.com for the BoE SWIFTNet services. Further guidance provided in section 2.

Section 3 - Connectivity is aimed at Swift technical teams who are responsible for:
i) configuring their Swift messaging interface to exchange BoE ISO 20022 messages over Swift; ii) configuring their Swift messaging interface to exchange BoE ISO 20022 messages with their back-office or middleware application(s); and iii) configuring their users to access the new WebAccess

Section 4 - Integration is aimed at Swift technical teams, business application developers & business analysts responsible for configuring the connections and exchanging BoE ISO 20022 messages between the back-office or middleware application(s) and the Swift messaging interface. **Note**, PSOs will have their own specific integration requirements and solutions, which will need to be assessed by their developers and vendors on the impact of BoE ISO 20022 message flows. Further guidance provided in section 4.

Section 5 - Swift's Solution for BoE DNS ISO 20022 Migration is aimed at all teams working on the PSO's BoE DNS ISO 20022 messages migration project.

Section 6 - Checklist provides a high-level list of activities to perform for TS3 readiness.

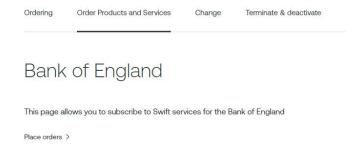
Section 7 - Support provides information on Swift and BoE support.

2 BoE SWIFTNet Services for InterAct and WebAccess

This section is aimed at teams who are responsible for completing the BoE SWIFTNet service subscription e-forms on swift.com. As previously mentioned, the BoE deploys InterAct messaging and WebAccess SWIFTNet live services for the go-live with TS3. Each service has its own service subscription e-form. See section 1.2 table of BoE SWIFTNet service names and purpose (Table 1).

2.1 How to access to the subscription e-forms

- 1. Go to BoE's dedicated web page on swift.com Bank of England | Swift
- 2. Under the Bank of England section all the BoE's services will be displayed. Under sub-section "Subscribe to Swift InterAct and WebAccess services for:..." select the required service and click the arrow.
- 3. If not already logged into swift.com, enter your account and password. If the credentials are correct, the relevant e-form opens.
- 4. Select the e-form of BERTI Live service to register for BERTI and then select BOE CHAPS Live service to register for the InterAct messaging live service.



Place orders

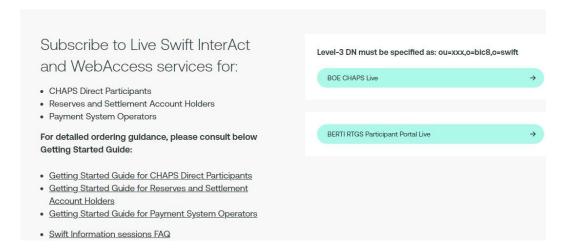


Table 6: overview of the TS3 live services e-order forms

e-form name	Purpose	Service name	
Live services			
BERTI RTGS Participant Portal Live	WebAccess to BERTI in live environment	boe.rti.wa	
BOE CHAPS Live	InterAct Store-and-Forward messaging service in live environment	boe.stg.iast	

For the opening of the subscription form:

- 1. Click on **Subscribe** to select the e-form. If not already logged into swift.com, enter your account and password. *N.B. Only registered swift.com users can access the order form and must have the e-ordering profile for being able to submit e-orders.*
- 2. If the credentials are correct, the relevant e-form opens, showing the SWIFTNet service name.

2.2 How to complete the subscription e-forms and timelines

See below details in completing each part of the subscription e-forms:

2.2.1 InterAct live messaging service

Order Information



- 3.01: enter the reference that Swift has to use for communication related to this service (e.g. invoices)
- 3.02: leave the default value "S.W.I.F.T SC"
- 3.03: leave the field empty
- 3.04: enter the email address of your Swift account manager

Institution that you order for

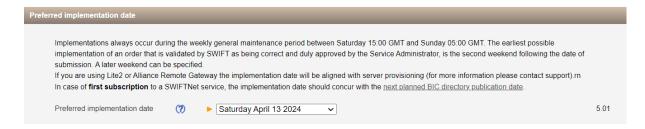


• 4.01: Specify the BIC8 you use for your operations.

Either it will be the default displayed or select your BIC8 from the drop-down list. It will be the same BIC8 as the level-2 BIC8 of your Distinguished Name in field 6.01 of this e-form.

Preferred implementation date

5.01: enter the preferred implementation date of 13 April 2024

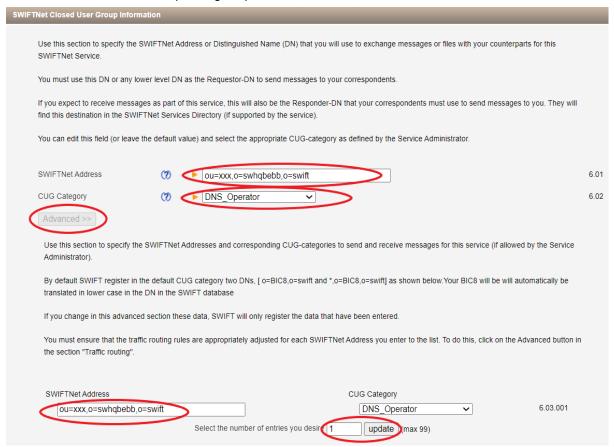


SWIFTNet Closed User Group

 6.01: The SWIFTNet Address is the Distinguished Name (DN) that is used as Requestor DN to send messages. By default, your Level-2 DN will be displayed in the e-form, <u>but a Level-3 DN</u> <u>must be specified</u>.

To do this please specify a Level-3 DN in field 6.01, as defined below:

• For the Live service (boe.stg.iast): ou=xxx,o=BIC8,o=swift



6.02: select "DNS_Operator" value for 'CUG Category'
 Additional step is required: Please click on "Advanced", update the number of entries to "1" and click on "update":

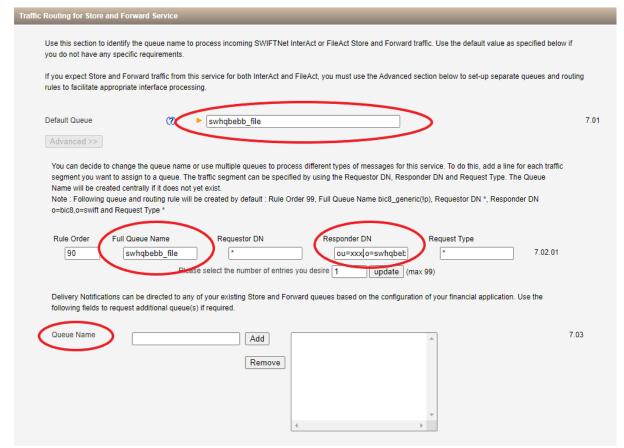
Please select the number of entries you desire	1	update	(max 99)

Traffic Routing for Store and Forward Service

In this section you can specify the queue for your <u>incoming</u> InterAct Store and Forward (SnF) messages.

7.01: the default value of the 'Full Queue Name' will be automatically filled in the e-form. This
needs to be customised as per your own preferred SnF queue name. For the customisation
please click on "Advanced" and specify your own preferred SnF queue name in 7.02.01.

- 7.02.01: in this section you need to specify your preferred 'Full Queue Name'. Please note that
 the Responder DN, i.e. your receiving address must be identical with the Level-3 DN indicated
 under 6.01 (ou=xxx,o=bic8,o=swift)
- 7.03: in this section you can indicate (if required) a separate queue (other than the SnF queue specified under 7.01 and 7.02.01) for the reception of the Delivery Notification messages. If no separate queue is required for the Delivery Notification messages, this section can remain empty.



Forms Validation and Subscription

Once the e-form has been completed scroll down and click on the "**Continue**" button for initial validation of the e-form.



If valid, then confirm your subscription request and click on "Order now".



Your e-form will be further validated by Swift, before forwarding to the Bank of England for approval.

Your subscription status can be monitored using the order tracking tool of swift.com.

Timelines

Please consider the following timelines for the subscription to the TS3 InterAct messaging live service:

Table 7. boe.stg.iast live service subscription timelines

	Date	Comment
Submit the subscription e-order form for the boe.stg.iast live service	Latest by 01 March 2024	Preferred implementation date in the subscription e-order form must be 13 April 2024
Provisioning Weekend for the subscription in the boe.stg.iast live service (i.e. Preferred implementation date in the e-order form)	13 April 2024	As from the implementation date, the participant is subscribed to the live service but will be permitted to use the service only from theTS3 go-live and briefly during the Dress Rehearsals in production environment. Participant can connect to the SnF queue as from the implementation date.

2.3 How to complete the WebAccess subscription e-forms

- Access to the new user interface, BERTI (Bank of England Real-Time Interface) replacing Enquiry Link Browse is supported by web browser through Swift WebAccess.
- BoE has deployed SWIFTNet service for the live BERTI WebAccess service.
- PSOs will need to subscribe to the BERTI WebAccess live service (boe.rti.wa) via Swift in order to access BERTI live environment.
- For the subscription to the boe.rti.wa live service, PSOs shall consider the following timelines:

Table 8. WebAccess BERTI live service subscription timelines

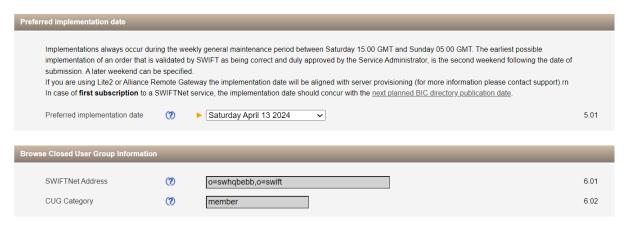
	Date
Availability of the e-order form of WebAccess live service on BoE dedicated ordering page on swift.com	As from 27 November 2023
Submit the subscription e-order forms for the WebAccess live service	Latest by 01 March 2024
Required Provisioning Weekend for the subscription in the WebAccess Live service (i.e. Preferred implementation date in the e-order form)	13 April 2024

Please consider the following guidelines when completing the order forms:

- In 3.01: enter your own reference that Swift has to use for communication related to this service (e.g. invoices).
- In 4.01: Specify the BIC8 you will use for the operations (same BIC8 as the level-2 BIC8 of your Distinguished Name in field 6.01 of this e-form)



- In 5.01: enter implementation date agreed with Bank of England. Please note: the <u>e-form for</u> the new live BERTI WebAccess service will need to refer to 13 April 2024 as preferred implementation date
- In 6.01: keep the default value for SWIFTNet Address, your Level-2 DN
- In 6.02: keep the default value for 'CUG Category' "Member".



3 Connectivity

3.1 Introduction

This section is aimed at the PSO's Swift technical teams who are responsible for: configuring their Swift messaging interface for connectivity to SWIFTNet; integrating their Swift messaging interface with their back-office or middleware application(s); and configuring end users for the new WebAccess BERTI service.

Today PSOs' settlement and cap change MT message flows are exchanged over the SWIFTNet FIN service. For TS3, these messages will be replaced by BoE defined ISO 20022 MX messages and exchanged over the BoE TS3 SWIFTNet InterAct service. As of November 2023, PSOs are able to subscribe to the BoE's live SWIFTNet InterAct service, which will also contain these BoE defined DNS ISO 20022 messages, in preparation to go live in June 2024.

As a brief comparison of SWIFTNet connectivity between FIN and InterAct-Store & Forward. With FIN, Logical Terminals are used to connect to the FIN service for exchanging MT messages. MT messages are received via FIN Delivery-Subsets. See the FIN Service Description for detailed information on features and operations of FIN messaging. With InterAct, Input Channels/Sessions are used to connect to the BoE SWIFTNet InterAct service for sending the BoE ISO 20022 messages. For receiving messages, InterAct-Store & Forward Queues, Output Channels/Sessions are used for receiving BoE ISO 20022 messages. See the SWIFTNet Service Description and SWIFTNet Messaging Operations Guide for detailed features and operations of InterAct Store and Forward messaging.

Depending on your connectivity to Swift, i.e. via own Swift infrastructure, via Alliance Lite2/Cloud, or via a service bureau, you'll need to consider both connectivity and integration with your Swift infrastructure provider. By way of high-level guidelines and understanding, as the BoE SWIFTNet services for ISO 20022 messages use InterAct-Store & Forward, like Swift's FINplus service for CBPR+ ISO 20022 messages, then parts of the document created for the CBPR+ ISO 20022 Programme, i.e. the ISO 20022 Programme Customer Adoption Guide (ISO-CAG), equally apply for BoE's ISO 20022 migration. Therefore, see below information from the ISO-CAG providing connectivity configuration guidance for receiving and sending messages using InterAct-Store & Forward.

In addition to InterAct messaging, the BoE has created new WebAccess service for BERTI. BERTI, Beank of England Real-Time Interface, is the replacement of today's Enquiry Link Browse service. So, end users will need to be configured to access the new WebAccess service.

3.2 Configuring to receive InterAct messages

The below steps have been taken from the ISO-CAG document section 5.1 -

- 1. Create and configure your store-and-forward queues (including delivery notification queues, as described in section 2 of this Getting Started Guide on e-forms).
- 2. Define your message routing rules at network level.
- 3. Configure your store-and-forward output channel.
- 4. Prepare the certificate to receive your BoE DNS ISO 20022 traffic.
- 5. Configure your SWIFTNet connection on your SWIFTNet messaging interface.

Further details on receiving messages available in section 5.3.1.* of the ISO-CAG document.

3.3 Configuring to send InterAct messages

The below steps have been taken from the ISO-CAG document section 5.1 -

- Complete BoE ISO 20022 InterAct registration e-forms (as described in section 2 of this Getting Started Guide).
- 2. Choose a Delivery Notification Queue (existing or create a new one in the e-form).
- 3. Prepare a SWIFTNet PKI certificate to sign your BoE DNS ISO 20022 traffic.
- 4. Configure your store & forward input channel(s).
- 5. Configure your SWIFTNet connection on your Swift messaging interface.
- 6. Determine the use of optional features, like delivery notifications and non-delivery warnings.
- 7. Configure your BoE DNS ISO addressing rules. (The BoE has specified that the Live DN will be a level-3 fixed DN, i.e. ou=xxx,o=bic8,o=swift)
- 8. Install the latest Application Service Profiles (ASP) file on your messaging interface (available from the Download Centre on swift.com)
- Install the BoE ISO 20022 format library/message standards (available from the Download Centre on swift.com)

Further details on sending messages available in section 5.3.2.* of the ISO-CAG document.

3.4 Configuring for WebAccess services

BERTI is standard WebAccess service, so end-users should be configured just as for any other WebAccess service, e.g. BoE Enquiry Link Browse service. Related URL information is as follows:

Environment	Service	URL
Live	boe.rti.wa	boe-rtgs-portal-live.browse.swiftnet.sipn.swift.com

If you connect to Swift via...

- ...your own Swift infrastructure, then your SWIFTNet Security Officers need to setup your endusers for BERTI services, Your Swift technicians can use the SWIFT WebAccess Configuration & Troubleshooting Guide for WebAccess setup if required.
- ...Alliance Lite2, then your Lite2 Security Officers need to setup your end-users for BERTI services like for Enquiry Link Browse
- ...a service bureau, then your SWIFTNet Security Officers need to setup your end-users for BERTI services they could be delegated to your service bureau?

4 Integration

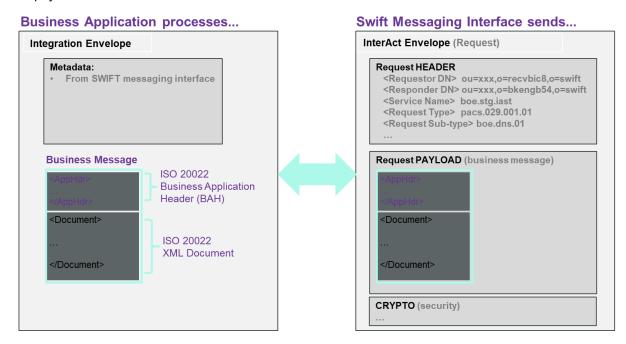
4.1 Introduction

This section is aimed at the PSO's Swift technical teams and business application developers responsible for configuring the connections and exchanging BoE ISO 20022 messages between the back-office or middleware application(s) and the Swift messaging interface.

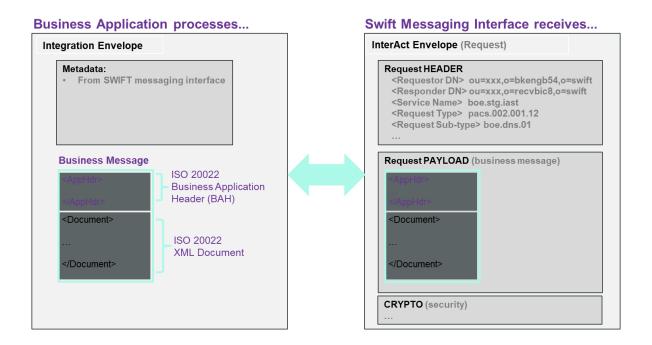
PSOs will have to re-integrate their business or middleware application(s) with their Swift messaging interface to support the BoE ISO 20022 message flows. They will have to consult their internal application development team, and/or their application provider / vendor, and/or their Swift messaging interface provider to assess and implement their integration solution.

4.2 Integration Considerations

See ideal case below for the sending flow, the business application (or middleware) generates the business message (BAH and XML document) and metadata, encapsulating both within the integration envelope. Using the metadata, the Swift messaging interface generates the InterAct message, including the Request Header for transmission purposes, leaving the business message untouched in the payload.



The reverse happens for the receive flow. An InterAct message is received on the Swift messaging interface. The business message (*payload*) is wrapped into the integration envelope and transferred to the back-office application for processing.



For Swift messaging interfaces, the integration envelope for Swift's Alliance Access interface is called *XMLV2* format and for Alliance Messaging Hub it is called the *AMP* format. For non- Swift interfaces, please check with your interface vendor for details of the integration envelope.

The metadata contains network transmission elements used by the Swift messaging interface and the business application, e.g. the *Requestor DN* (sender), *Responder DN* (receiver), *Service Name*, *Request Type* and *Request Sub-Type*.

Notes:

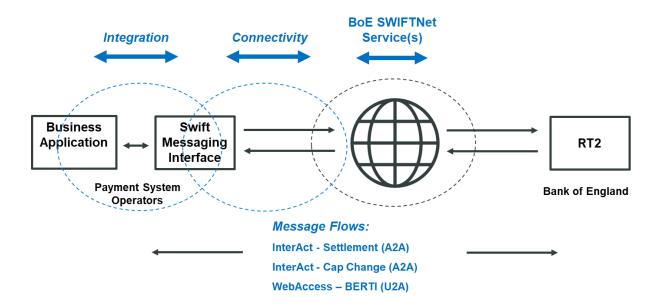
- Addressing Distinguished Names (DNs) have specific formats for the BoE SWIFTNet InterAct services, i.e for Live (ou=xxx,o=bic8,o=swift).
- See sub-section 1.2 for table of the BoE SWIFTNet service names (Table 1.).
- See sub-section 1.3 for table of BoE DNS ISO 20022 message set (Table 2. and 3.). Full details of
 these messages can be found in the BoE's '<u>Technical Guidance for Schemes for the migration of
 Deferred Net Settlement (DNS) Schemes to ISO 20022</u>' within the MyStandards portal.

5 Swift's Solution for BoE DNS ISO 20022 Migration

5.1 High-level overview of Swift's Solution

The diagram below shows a high-level overview of Swift's BoE ISO 20022 migration solution for the PSOs. It highlights the BoE SWIFTNet services for the InterAct settlement and cap change flows; the new WebAccess BERTI service, which is replacing today's Enquiry Link Browse.

It also shows the three parts of the Swift solution – *BoE's SWIFTNet Service(s), Connectivity* and *Integration*, as described in the previous sections.



In general, a SWIFTNet service is a closed user group (*CUG*) consisting of the **Service Administrator** (in this case the Bank of England, BoE) and **Service Participants** (in this case the Payment System Operators, PSOs).

The Service Administrator defines the various features of their services, e.g. what SWIFTNet messaging is used (*InterAct, WebAccess...*), what message types are used, the direction of message flow between participants and BoE, messages validation...etc.

A Service Participant must register to each service using a service subscription e-form on swift.com, which must be approved by the Service Administrator to participate in the service. Each service has its own service subscription e-form as described in section 2 of this guide.

5.2 Message Flows

Settlement message flow

DNS Scheme Providers - Settlement flow

OpenCloseNotification (admi.004)

OPEN

MultilateralSettlementRequest (pacs.029)

MultilaterSettlementResponse (pacs.002)

REJECTED/QUEUED/SETTLED

OpenCloseNotification (admi.004)

Figure 1 Settlement Request/Response

Cap change Message Flow

DNS Scheme Providers - Cap Change flow

OpenCloseNotification (admi.004)

OPEN

CapChangeRequest (camt.011)

CapChangeResponse (camt.025)

REJECTED/ACCEPTED

OpenCloseNotification (admi.004)

CLOSE

Figure 2 Cap Change Request/Response

5.3 BoE SWIFTNet Service Features

BoE have defined the following features for their SWIFTNet services:

- SWIFTNet InterAct Store-and-Forward messaging
- ISO 20022 standards with BoE defined Usage Guidelines
- Message Validation the BoE DNS ISO 20022 messages will be validated centrally by Swift against the BoE Usage Guidelines.
- Addressing PSOs must subscribe with a <u>fixed</u> Level-3 DN for the live service (ou=xxx,o=bic8,o=swift).
- Requestor DN-Business Application Header (BAH) BIC consistency check on the live service,
 i.e. the BICs in level-2 of the addressing DNs will be validated with the BICs in the 'From' and 'To' fields in the BAH
- Test &Training (T&T) BICs Only live BICs will be allowed in the InterAct payload of a BoE defined ISO 20022 message in TS3.
- Reverse Billing PSOs will be invoiced by Swift for all DNS ISO 20022 messages exchanged within the BoE SWIFTNet services.
- RMA is NOT used for the BoE DNS ISO 20022 SWIFTNet services.

6 Checklist

Activity	Responsible
Section 2: Service Subscriptions	
Subscribe to BoE SWIFTNet live TS3 InterAct	swift.com registered user with e-order access
service by 1 March 2024	
Subscribe to BoE SWIFTNet live BERTI	swift.com registered user with e-order access
WebAccess service by 1 March 2024	
Section 3: Connectivity	
Configure send & receive connections between	Swift messaging interface administrator
Swift messaging interface and Swift	
Configure routing of BoE ISO 20022 messages	Swift messaging interface administrator
on Swift messaging interface to / from business	
application. This can be tested using the	
boe.stg.iast!pu2 service during the connectivity	
testing window (27 November – 13 December	
2023) and participant acceptance testing	
window (3 January – 8 March 2024).	
Section 4: Integration	
Configure connection between Swift messaging	Swift interface administrator
interface and business application	Business application administrator
Integration of the BoE DNS ISO 20022 message	Business application administrator/developer
flows. This can be tested using the	
boe.stg.iast!pu2 service during the connectivity testing window (27 November – 13 December	
2023) and participant acceptance testing	
window (3 January – 8 March 2024).	

7 Support

- For Swift technical questions, please contact the Swift Support Centre:
 - o through Case Manager on swift.com
 - o mention "CHAPS ISO Migration" in the subject field
- For any other Swift -related questions, contact your Swift service manager or account manager.
- For questions related to BoE RTGS Renewal Programme, please contact RTGSReadiness@bankofengland.co.uk

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