InterConnect and
Symmetric Ethernet Services (SES)
Products Process Manual

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Contents

Document Control

Revision history			
Version	**Date**	**Status**	**Revision initials: Revision details**
1.0	Apr 2020	Final	Published version
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Associated Documents

Title	Location
InterConnect and Symmetric Ethernet Services (SES) Reference Offer	All available online at https://nbi.ie/industry/service-provider/
InterConnect and Symmetric Ethernet Services (SES) Service Level Agreement	or from your NBI Account Manager
InterConnect and Symmetric Ethernet Services (SES) Product Technical Manual	
NBI Portal User & Admin Guide	

Glossary of terms:

AF:	Assured Forwarding
API:	Application Programming Interface
BE:	Best Efforts
Co-Lo:	Co-Location
CoS:	Class of Service
CPE:	End User Premises equipment
CSH:	Customer Site Handover
EF:	Expedited Forwarding
E-NNI:	External - Network to Network Interface
FTTH:	Fibre To The Home
IBH:	In-Building Handover
ISH:	In-Span Handover
LAG:	Link Aggregation
LER	(MPLS) Label Edge Router
MPLS:	Multi-Protocol Label Switching
NBI:	National Broadband Ireland
NOC:	Network Operations Centre
NTU:	Network Termination Unit
ODP:	Optical Distribution Point
OLT:	Optical Line Terminal
PoH:	Point of Handover
PoP:	Point of Presence
SES:	Symmetric Ethernet Services
UWG:	Unified Wholesale Gateway
VLAN:	Virtual Local Area Network
VPLS:	Virtual Private LAN Service
VUA:	Virtual Unbundled Access
XGS-PON:	10Gbit/s Symmetric Passive Optical Network

1   Introduction

Consultation on the draft processes contained in this manual are ongoing with Industry. The processes will be presented at the monthly Industry forums for clarification and NBI has agreed to take on board changes or additions to the processes based on this valuable feedback. NBI expects the consultation process to continue until the end of Q2 2020 at which time the full suite of processes will have been consulted upon and any changes to the processes / documentation will have been agreed and completed. Any further changes to the processes will happen through NBI's product change request process.

This manual is designed to define the processes to be used between NBI and the Service Providers for InterConnect and Symmetric Ethernet Services (SES) products, so that both understand their respective roles and responsibilities.

This document is subject to review and will be re-issued to reflect changes as new developments are introduced. Any specific technology mentioned in this document is current as at date of issue and is for guidance purposes only. NBI reserves the right to adapt the technology used to deliver InterConnects and SES. It should be read in conjunction with the relevant associated NBI documents mentioned in this document.

2 Ordering Process

This section outlines the Service Provider processes to support the ordering of an InterConnect product and the ordering of Symmetric Ethernet Service (SES) products. It is expected that Site Induction and Insurance certificates will all have been provided on completion of the relevant phases of onboarding.

2.1 Order Types

The following order types are supported for both InterConnect and SES products:
- Provide
- Change
- Move
- Cease
- Cancel

2.2 InterConnect Ordering

Service Providers may place InterConnect orders on the Web Portal or using the order form in Appendix 3.

Note: The Web Portal is currently in development and so the InterConnect order form should be used in the interim.

2.2.1 Order Process Points

The provision of an InterConnect has several distinct steps and timelines:

1. Request and Provision of Site Information

2. CSH indicative quotation and estimated timescales

3. Service Provider Offer Acceptance

4. Site Survey, Order Acceptance, Project Plan and Site Preparation

5. Service Provider Equipment Installation

6. Final Sign-off

2.2.2   Order Notifications

The following notifications may be issued by NBI to the Service Provider during the InterConnect order process:

- Acceptance Notification: If the order is deemed as valid, an Acceptance Notification will be issued to the Service Provider

- Rejection Notification: If the order is deemed not valid, then a Rejection Notification will be sent to the Service Provider detailing the reasons for rejection

- Forecast Notification: Notification to a Service Provider of a delivery date of an order that has been successfully validated. Note: if new duct/poles and/or fibre build work is required then additional charges may apply to the original quotation

- Pending / Hold Notification: Notification to a Service Provider if there is an issue with order delivery

- Delivery Notification: Notification of order delivery by NBI to a Service Provider. An order is deemed to be completed on dispatch of a Delivery Notification

2.2.3   Order Process

Order Request and Validation

The Service Provider submits the InterConnect order to NBI, who will validate the order. If accepted, NBI will also provide a quotation to the Service Provider in the Acceptance Notification.

An order may be rejected for reasons such as: information being inaccurate, order form incomplete or incorrect, or duplicated order. If an order is rejected, NBI will notify the Service Provider with the reason for the rejection.

The Service Provider needs to confirm to NBI whether or not they wish to proceed with order. If the Service Provider does not wish to proceed, then the order is cancelled. If the Service Provider agrees to the quotation costs associated with the InterConnect order, they are required to confirm to the NBI Account Manager that they wish to proceed.

Once the Service Provider has confirmed that they wish to proceed with the order, NBI will assign a reference number to the order. The order reference number may be used by the Service Provider to track the order status.

Order Forecast

NBI provides a forecast to the Service Provider for the indicative date for delivery of the InterConnect. If at any point during this phase that an issue arises, a Pending / Hold notification will be issued to the Service Provider as detailed in the Order Pending / Hold notification section.

Order Pending / Hold

If an order encounters an issue on or before the forecast delivery date, NBI will notify the Service Provider with a reason and an estimated time when the issue is likely to be resolved.

Order Delivery

On the forecasted date, NBI completes all of the InterConnect order delivery tasks (e.g. allocates and reserves rack space, assigns ports, fulfils cabling etc.) and issues a Delivery Notification to the Service Provider. The Service Provider must then complete their own tasks and confirm that the service is delivered as expected. If the Service Provider deems the order has not been completed as expected, then they must contact the NBI Account Manager to arrange for a review/completion of the InterConnect order.

2.2.4   End User Delay Process

End User originated delays are a matter for Service Providers to resolve with their own End Users.
- If a Service Provider delays installation of the service for any reason, this will constitute an End User delay
- If NBI is refused right of entry by the CSH End User at appointment time or they delay installation of the circuit, the standard time will be extended by the number of working days delay incurred

The Service Provider should provide the following to ensure timely connection of service:
- Suitable space and facilities ready for NBI, which includes power supply, environmental conditions, lighting and appropriate electrical fittings at the premises to allow NBI to install and provide the circuit
- Appropriate personnel on the sites who are aware of a visit by NBI staff
- Contact person(s) or a suitable substitute who is available when NBI staff call at the site

It will be expected that every effort will be made by a Service Provider to resolve an End User delay as quickly as possible. In the event that a quick resolution is not possible, then the Service Provider must notify NBI immediately with a forecast for resolution for the delay.

2.2.5   Change Order

The Change order may be used to:
- Change Class of Service
- Change S-VLAN
- Change Port Details
- Change NTU

2.2.6   Move Order

Move order process TBC

2.2.7   Cease Order

A cease order can be submitted for the InterConnect via the Web Portal. Service Providers must provide 7 calendar days' notice of date of cessation. The cease will be executed on that date. Billing will also cease on the requested cease date.

Cease InterConnect orders should be submitted via the Web Portal quoting the InterConnect Circuit reference number. InterConnect cessation includes the decommissioning of the service and the recovery of NBI equipment from the premises. An appointment will be required to retrieve equipment. The Service Provider is liable for equipment cost if NBI is unable to recover ceased equipment.

A physical InterConnect diversity connection may be ceased in isolation (i.e. the primary physical InterConnect is left in place) or in parallel with the primary InterConnect connection (i.e. both InterConnect paths ceased at the same time).

2.2.8   Cancel Order

If a Service Provider cancels an order, NBI will invoice the Service Provider for the connection charges as set out in the NBI InterConnect Price List.

2.3   SES Ordering

Service Providers may place SES orders on the Web Portal or by using the SES Order Form in Appendix 4.

Note: The Web Portal is currently in development and so the SES order form should be used in the interim.

2.3.1   Order Process Points

The provision of an SES circuit has several distinct steps:

1. Request and Provision of Site Information

2. CSH Indicative Quotation and Estimated Timescales

3. Service Provider Offer Acceptance

4. Site Survey, Order Acceptance, Project Plan and Site Preparation

5. Service Provider Equipment Installation

6. Final Sign-off

2.3.2   Order Notifications

The following notifications may be issued by NBI to the Service Provider during the SES order process:

- Acceptance Notification: If the order is deemed as valid, an Acceptance Notification will be issued to the Service Provider

- Rejection Notification: If the order is deemed not valid, then a Rejection Notification will be sent to the Service Provider detailing the reasons for rejection

- Forecast Notification: Notification to a Service Provider of a delivery date of an order that has been successfully validated. Note: if new duct/poles and/or fibre build work is required then additional charges may apply to the original quotation

- Pending / Hold Notification: Notification to a Service Provider if there is an issue with order delivery

- Delivery Notification: Notification of order delivery by NBI to a Service Provider. An order is deemed to be completed on dispatch of a Delivery Notification

2.3.3 Order Process

Order Request and Validation

The Service Provider submits the SES order to NBI, who will validate the order. If accepted, NBI will also provide a quotation to the Service Provider in the Acceptance Notification.

An order may be rejected for reasons such as: information being inaccurate, order form incomplete or incorrect, or duplicated order. If an order is rejected, NBI will notify the Service Provider with the reason for the rejection.

The Service Provider needs to confirm to NBI whether they wish to proceed with order. If the Service Provider does not wish to proceed, then the order is cancelled. If the Service Provider agrees to the quotation costs associated with the SES order, they are required to confirm to the NBI Account Manager that they wish to proceed.

Once the Service Provider has confirmed that they wish to proceed with the order, NBI will assign a reference number to the order. The order reference number may be used by the Service Provider to track the order status.

Order Forecast

NBI provides a forecast to the Service Provider for the indicative date for delivery of the SES circuit. If at any point during this phase that an issue arises, a Pending / Hold notification will be issued to the Service Provider as detailed in the Order Pending / Hold notification section below.

Order Pending / Hold

If an order encounters an issue on or before the forecast delivery date, NBI will notify the Service Provider with a reason and an estimated time when the issue is likely to be resolved.

Order Delivery

On the forecasted date, NBI completes all of the InterConnect order delivery tasks (e.g. allocates and reserves rack space, assigns ports, fulfils cabling etc.) and will issue a Delivery Notification to the Service Provider. The Service Provider must then complete their own tasks and confirm that the service is delivered as expected. If the Service Provider deems the order has not been completed as expected, then they must contact the NBI Account Manager to arrange for a review/completion of the SES order.

2.3.4 End User Delay Process

End User originating delays are a matter for Service Providers to resolve with their own End Users.
- If NBI is refused right of entry by the CSH End User at appointment time or they delay installation of the circuit, the standard time will be extended by the number of working day delays incurred

The Service Provider should provide the following to ensure timely connection of service:

- Suitable space and facilities are ready for NBI, which includes power supply, environmental conditions, lighting and appropriate electrical fittings at the premises to allow NBI to install and provide the circuit
- Appropriate personnel on the sites are aware of a visit by NBI staff
- Contact person(s) or a suitable substitute is available when NBI staff call at the site

It will be expected that every effort will be made by a Service Provider to resolve an End User delay as quickly as possible. In the event that a quick resolution is not possible, then the Service Provider must notify NBI immediately with a forecast for resolution for the delay.

2.3.5 Change Order

The Change order may be used to:
- Change Class of Service
- Change S-VLAN
- Change Port Details
- Change NTU

2.3.6 Move Order

Move order process TBC

2.3.7 Cease Order

A cease order can be submitted for an SES product via the Web Portal. Service Providers must provide 7 calendar days' notice of date of cessation. The cease will be executed on that date. Billing will also cease on the requested cease date.

Cease SES orders should be submitted via the Web Portal quoting the SES Circuit reference number. SES cessation includes the decommissioning of the service and the recovery of NBI equipment from the premises. An appointment will be required to retrieve equipment. The Service Provider is liable for equipment cost if NBI is unable to recover ceased equipment

A physical SES diversity connection may be ceased in isolation (i.e. the primary physical SES is left in place) or in parallel with the primary SES connection (i.e. both services ceased at the same time).

2.3.8 Cancel Order

If a Service Provider cancels an order, NBI will invoice the Service Provider for the connection charges as set out in the NBI SES Price List.

3 Service Fault Management Process

The fault management process is yet to be defined and will be updated after consultation with industry.

3.1 Service Fault Definitions

Expected service fault definitions are as follows (to be updated upon review with industry):

Service Fault:

Repair Time:

Pending Clear:

Clear Permanent:

Single Point of Contact: The Single Point of Contact, (SPOC) is available 24 hours a day, 7 days a week.

Non-Availability:

3.2 Service Fault Reporting

All InterConnect and SES service faults should be logged by a Service Provider via the UWG / Web Portal. If the service fault is found to be in a Service Provider network (including its CPE), NBI conditions regarding recovery of costs for reported service faults found not to be in the NBI network shall apply.

A Service Provider, after proving the service fault is not in their network, should log a service fault for this service against the circuit reference number via the UWG / Web Portal.

Service faults relating to performance or intermittent service faults can be logged on the UWG / Web Portal under the intermittent error report type (TBC).

Service Providers are responsible for reporting service faults to NBI. Service Providers must prove that the service fault lies with NBI to a sufficient level of certainty before reporting to NBI.

The Service Provider shall provide NBI with as much guidance as possible to the potential cause of the problems, based on any alarm information it might have received. Each service fault will get its own reference number and the Service Provider shall be informed of the latest response time for the diagnosis of the service fault.

There will be no pro-active service fault reporting by NBI on behalf of Service Providers and/or End Users. However, if there is a Major Service Outage (MSO) (e.g. issues impacting multiple services) then NBI will report and resolve the outage, and a Major Service Outage (MSO) notification will be notified to Service Providers via the UWG / Web Portal or email.

3.3   Target Repair Times

When a service fault has been correctly logged and acknowledged, NBI will undertake preliminary testing and service fault localisation. Following this, service fault clearance will be instigated.

The NBI Target Repair Times of the InterConnect and SES products are described in the InterConnect and SES Product Service Level Agreement.

3.4   Out of Hours Charging Principles
TBC

3.5   Escalation Procedures

The purpose of escalating a service fault should be to inject urgency or expediency into the resolution of a service fault. The escalation process has been standardised and regulated so that escalations are effective and product an outcome. Escalations should always take place at a "peer-to-peer" level i.e. the designated escalation level single point of contact (SPOC). A Service Provider should only escalate to their corresponding designated escalation level SPOC in NBI and vice-versa.

If the Target Repair Times have elapsed and the fault is not cleared, the NOC can be notified, and appropriate action taken to resolve the fault. This is 1st Level escalation.

Where the fault is still not cleared, and no evidence of progress exists, the second level of contact, the Management, shall be used to agree appropriate action to clear the fault. This is 2nd Level escalation.

See Section 3.7 for Support Contact details.

3.6   Service Fault Clearance

Full process TBC with industry.

A Service Provider may check the status of a service fault via the UWG / Web Portal at any time throughout the lifecycle of a service fault.

Service shall be deemed to have been restored when the service fault condition is resolved in the NBI network and service availability restored to the Service Provider. Notification will be provided by NBI to the Service Provider. NBI reserves the right to put in place temporary service restoration while repairs to a service fault are undertaken.

On completion of repair, a service fault report is given an "Pending Clear" status (TBC) and it is parked (TBC). Please see Appendix 1 for an overview of the Service Fault Handling Process. Service faults are only cleared when the problem has been fully remedied by NBI.

If NBI cannot clear the service fault in the target time but can provide a work-around, the service fault report can be closed for reporting purposes. For this the Service Provider must be informed:
- That the service fault clearance is conditional
- Of the timing for the full restoration of service
- Any associated maintenance that may be required at that time and possible impacts on the Service Providers equipment

3.7   Support Contacts

All orders and service faults must be submitted by the Web Portal / UWG platform. If the Service Provider has a query on an order, they should contact the Support Centre. As part of the initial onboarding process, all Service Providers will be informed of the relevant Support Centre contact details.

- Support Desk support is 8am – 8pm, Monday - Saturday

- Network support is 24/7/365

Escalation Level		Contact	Phone	Email
Service-Hours	**Out-of-Hours**			
First	**First**	NBI Service desk	+353 (01) <TBC>	<TBC>
Second		Wholesale Customer Operations Manager	+353 (08X) <TBC>	<TBC>
	Second	On Call Management Escalation	+353 (01) <TBC>	<TBC>
Third	**Third**	Operations Director	+353 (08X) <TBC>	<TBC>
Fourth	**Fourth**	COO	+353 (08X) <TBC>	<TBC>
Fifth	**Fifth**	CEO	+353 (08X) <TBC>	<TBC>

4 Maintenance

4.1 Maintenance Definitions

Maintenance is the act of maintaining or the state of being maintained, reducing the occurrence of service fault conditions. Maintenance notification is the notice to withdraw plant from service and will be given to a Service Provider NOC.

4.2 Planned Maintenance Notification

Planned maintenance work is a regular and normal occurrence. Sufficient notification will be provided for any planned maintenance work that may result in the temporary interruption of any of the Services offered by the InterConnect or SES.

4.3 Planned Maintenance Procedure

Notification to withdraw plant from service will be given to a Service Provider NOC when NBI plan to carry out maintenance work. NBI will issue a reference number for all planned maintenance works.

To avoid issues, it is essential that the planned work is planned and notified well in advance and is performed within preferred hours as agreed with industry. When it is not practicable and for certain categories of planned work (e.g. for urgent service fault investigations) relaxation of the preferred hours may apply. This shall be decided on a per case basis.

Periods allocated for planned maintenance work, which may require a system down-time and where traffic will be disrupted will be notified as part of the planned maintenance notification.

4.4 Notification Process

NBI will notify a Service Provider of the planned maintenance work by email and/or UWG / Web Portal (TBC) in advance and the Service Provider should review and object to the proposal to the NBI Account Manager if they have any concerns.

On completion of the planned maintenance work, NBI will notify a Service Provider that the work was completed as planned.

4.5 Escalation Process

If the date or timing of the planned maintenance work is unsuitable then a Service Provider must contact NBI Account Manager so that a suitable date and time can be agreed. In this instance, NBI will attempt to accommodate the Service Provider, however, if the Planned Maintenance work is critical and essential to the operation of NBI, then a Service Provider must accommodate the Planned Maintenance.

4.6   Unplanned Maintenance

Unplanned maintenance is the procedure designed to minimise the effect of service faults on the InterConnect / SES service, of essential maintenance, or of alteration or improvement to the InterConnect / SES service, whereby services are temporarily suspended in an unplanned manner.

Where possible NBI will give a Service Provider notice prior to such suspension and NBI will restore service as soon as possible after such suspension.

While striving to keep the unplanned maintenance to a minimum, when this does occur, NBI will endeavour to supply a Service Provider with as much notification prior to the work commencing.

5   Billing

There are connection and rental charges associated with the InterConnect/SES products, as detailed in the InterConnect / SES Price List.

Billing will start once the order is completed and the InterConnect / SES product is Ready for Service. Billing for SES rental and connection charges shall be carried out on a monthly basis in advance and the service shall be identified on the bill.

Billing for InterConnect rental and connection charges shall be carried out quarterly in advance and the service shall be identified on the bill.

Billing is issued to the Service Provider as per the agreed method during the onboarding process.

5.1   IBH and ISH Installation

IBH and ISH installations will be charged at the standard rate. A survey may be required to work out specific site details, but these will not incur an extra charge. IBH and ISH connection and rental charges are detailed in the InterConnect / SES Price List.

5.2   CSH Installation

The standard installation rate (excluding civil works costs to the communication room) applies for a CSH where the Service Provider premises is within the IA. If the CSH premises is outside the IA, the costs will be subject to the full charges of the third-party fibre provider used and all civil works and ducting installation charges.

A full survey is required to determine the access elements from the PoH to the CSH premises. This will include determining:
- if it is an existing or greenfield site
- if there is fibre at the End User site
- the distance from the PoH, cabinet or ODP to the CSH premises
- if existing duct can be cleared
- the new duct/pole and/or fibre build work required
- the civil costs to connect to the CSH premises communications room

A final quote will be provided once the full survey has been completed.

Standard CSH connection and rental charges are detailed in the InterConnect / SES Price List.

6   Forecasting Process

Full forecasting process is TBC. However, it is expected that Service Providers are requested to provide forecasts for InterConnect and SES on a rolling 12-month quarterly basis.

Service Providers shall provide NBI with a 12-month forecast broken into 4 quarters. The forecasts should be submitted one quarter in advance, therefore not detailing a forecast for the quarter following submission.

Service Providers should submit the updated forecast form by email to their NBI Account Manager.

Appendix 1 - InterConnect and SES Fault Handling Process Overview

Fault Handling process is to be confirmed upon consultation with industry.

Appendix 2 - Performance Reporting

Performance Reporting TBC and upon consultation with industry.

It is expected that InterConnect and SES Performance Reporting will provide the Service Provider with a view of:

1. Individual circuit (service) performance parameters:
- Bandwidth utilisation (peak and average values)
- Service availability
- Dropped traffic, both ingress and egress, on a per queue basis

2. Network Performance parameters
- Download/ Upload achieved speeds
- Latency / Delay (Round trip)
- Jitter / Delay Variation (One-way)
- Packet/Frame Loss
- Availability

Performance data provides Service Providers with an indicative view of network Performance between nodes of interest. The Performance Reporting data may be used in conjunction with other data when logging a service fault but cannot be the sole source of service fault information.

Network Performance parameters are listed in the InterConnect & SES Product Technical Manual.

Appendix 3 - InterConnect Order Form

InterConnect Order Form	
General Information	**To be populated:**
Service Provider Name	
Service Provider Code	
Contact name	
Contact email address	
Service Provider Billing account number (wholesale a/c no.)	
Service Provider Order Reference (NBI create if not populated)	
Product Speed (10GB)	
Product Resilience (Yes / No)	
Resilience Type	
Handover Type	**To be populated:**
ISH / CSH / IBH	
Handover Address	**To be populated:**
Handover ODF position	
Handover address 1	
Handover address 2	
Handover address 3	
Handover address 4	
If CSH - Rack location / PoH in Service Provider premises	
If ISH - Nominate Chamber	
If IBH - Nominate Co-Location	
Technical Specification	**To be populated:**
Ether type: OX88A8 OX8100	
Optic Type: Short Range (up to 10km) Long Range (up to 30km)	
NNI COS	**To be populated:**
EF %	
AF %	
CSH NTU Power Requirements	**To be populated:**
AC / DC	

Appendix 4 - SES Order Form

SES Order Form to be confirmed

SES Order Form	
General Information	**To be populated:**
Service Provider Name	
Service Provider Code	
Contact name	
Contact email address	
Service Provider Billing account number (wholesale a/c no.)	
Service Provider Order Reference (NBI create if not populated)	
Product Speed (10GB)	
Product Resilience (Yes / No)	
Resilience Type	
Handover Type	**To be populated:**
ISH / CSH / IBH	
Handover Address	**To be populated:**
Handover ODF position	
Handover address 1	
Handover address 2	
Handover address 3	
Handover address 4	
If CSH - Rack location / PoH in Service Provider premises	
If ISH - Nominate Chamber	
If IBH - Nominate Co-Location	
Technical Specification	**To be populated:**
Ether type: OX88A8 OX8100	
Optic Type: Short Range (up to 10km) Long Range (up to 30km)	
NNI COS	**To be populated:**
EF %	
AF %	
CSH NTU Power Requirements	**To be populated:**
AC / DC	