



# BECS via WEIL Product Description

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## Document Control

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### Revision History

Version	Date	Revised by	Revision Details
	October 2015	open eir	Rebranded

### Associated Documents

Title	Location
Product Description Wholesale Ethernet Interconnect Link (WEIL)	www.openeir.ie
Wholesale Ethernet Interconnect Link (WEIL)	
Service Level Agreement for Wholesale Ethernet Interconnect Link (WEIL)	
Wholesale Bitstream Access Reference Offer (WBARO)	

## Table of Contents

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Document Control .....	2
1 Product Description.....	4
2 BECS via WEIL Overview .....	4
2.1 BECS via WEIL .....	4
2.2 Key Features and Availability .....	5
2.3 Product Components .....	6
3 Commercial.....	8
3.1 Pricing.....	8
3.2 Terms and Conditions .....	8
4 Service Management.....	8
4.1 Forecasting.....	9
4.2 Ordering, Provisioning and Fault Management.....	9
4.2.1 Ordering the Service .....	9
4.2.2 Migration Process.....	13
4.2.3 Fault Management Process.....	13
4.3 Billing.....	14
4.3.1 Usage Charges .....	14
4.4 Supporting Documentation.....	15
5 BECS via WEIL Service Level Agreement.....	15
5.1 BECS via WEIL (NBB/NBM).....	15
Appendix 1: Realm Form.....	16
Appendix 2: Glossary .....	17

## 1 Product Description

The purpose of this document is to provide a product description of the open eir BECS (Bitstream Ethernet Connection Service) via WEIL product. This document is subject to review and will be re-issued to reflect changes as new developments are introduced which shall be communicated in accordance with agreed practices. Any specific technology mentioned in this document is current at date of issue and is for guidance purposes only. open eir reserves the right to adapt the technology used to deliver Wholesale BECS via WEIL. This document is without prejudice to any future position that may be adopted by open eir in respect of Wholesale BECS via WEIL. It should be read in conjunction with the relevant associated open eir documents (where appropriate, reference offer, process manual and SLA).

## 2 BECS via WEIL Overview

The section provides a high level overview of the open eir BECS via WEIL Product. This product is provided via the Wholesale Ethernet Interconnect Link (WEIL). For a detailed product description refer to Wholesale Ethernet Interconnect Link product description.

### 2.1 BECS via WEIL

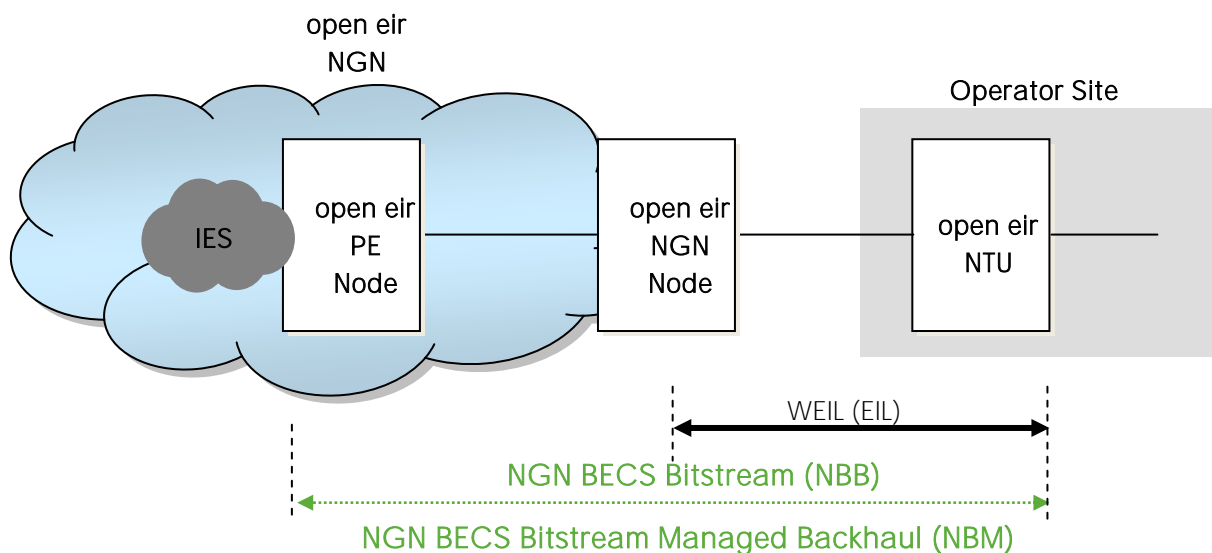


Figure 1: NGN BECS

## Products Overview BECS via WEIL

BECS via WEIL consists of two product options to cater for the different Bitstream product types, Bitstream IP and Bitstream Managed Backhaul (BMB). These are NBB and NBM

1. Wholesale Ethernet Interconnect Link (WEIL) provides (physical) connectivity from an Operator's handover site.
2. NGN BECS Bitstream logical connection (NBB) provides a logical connection from the Operator's handover site to the open eir Core IP network for the Bitstream IP products.
3. NGN BECS Bitstream Managed Backhaul logical connection (NBM) provides a logical connection from the Operator's handover site to the open eir Core IP network for the Bitstream Managed Backhaul product.
4. Radius profile set-up. This is the information required to establish an L2TP tunnel from the open eir BRAS's to the Operator LNS/HGWs; it includes the domain name, tunnel destination IP address (es) and L2TP tunnel password.

A WEIL (EIL/SAB) must be ordered or delivered before an order for BECS via WEIL can be placed.

## 2.2 Key Features and Availability

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This product will allow an Operator to have a single interconnect product, WEIL for all their traffic.

The BECS (Bitstream Ethernet Connection Service) service is used for handing over standard (NGB and Legacy) Wholesale Bitstream traffic to an Operator (using L2TP) and is not for handover of the Bitstream Ethernet Access (BEA) service. The BEA service utilises the WEIL independently of the BECS product.

For simplicity, the description is based on a NTU being deployed on the WEIL connection. However, it is possible to have a WEIL connection with no NTU.

Key Features:

- Supports legacy IP and Bitstream Managed Backhaul
- Modular bandwidth growth steps

- Dedicated bandwidth or shared bandwidth option
- Maximum frame size 9000 bytes

Each Wholesale BECS via WEIL (logical) must be associated with an Operator WEIL and associated SAB (existing or new<sup>1</sup>)

## 2.3 Product Components

The physical access is delivered via a WEIL which consists of two components, a SAB and EIL, as outlined in the WEIL product description. The latest version of the WEIL product description can be located at [www.openeir.ie](http://www.openeir.ie)

BECS via WEIL is available at the following bandwidths:

1 Gbit/s WEIL (Mbit/s)	10 Gbit/s WEIL (Mbit/s)
100	100
250	250
500	500
750	750
1000	1000
	2000
	3000
	4000
	5000
	6000
	7000
	8000
	9000
	10000

Figure 2 Bandwidth Table

An Operator, when ordering a BECS via WEIL NBB or NBM Service, will be required to specify the Service Access Bandwidth (SAB) on their relevant Wholesale Ethernet Interconnect Link (WEIL) to which an Operator wishes to have each NBB or NBM logical connection mapped.

<sup>1</sup> If new WEIL, the order must be already placed by open eir and reference number received and referenced.

An Operator must ensure that their relevant Wholesale Ethernet Interconnect Link (WEIL) and associated Service Access Bandwidth (SAB) are appropriately configured to support BECS via WEIL connections.

Two separate S-VLAN's will be presented on an Operators WEIL:

- S-VLAN for legacy Bitstream
- S-VLAN for Bitstream Managed Backhaul

The Operator has the capability to manage capacity on the WEIL by either using a dedicated SAB per S-VLAN or using the same for both services as outlined in Figure 3

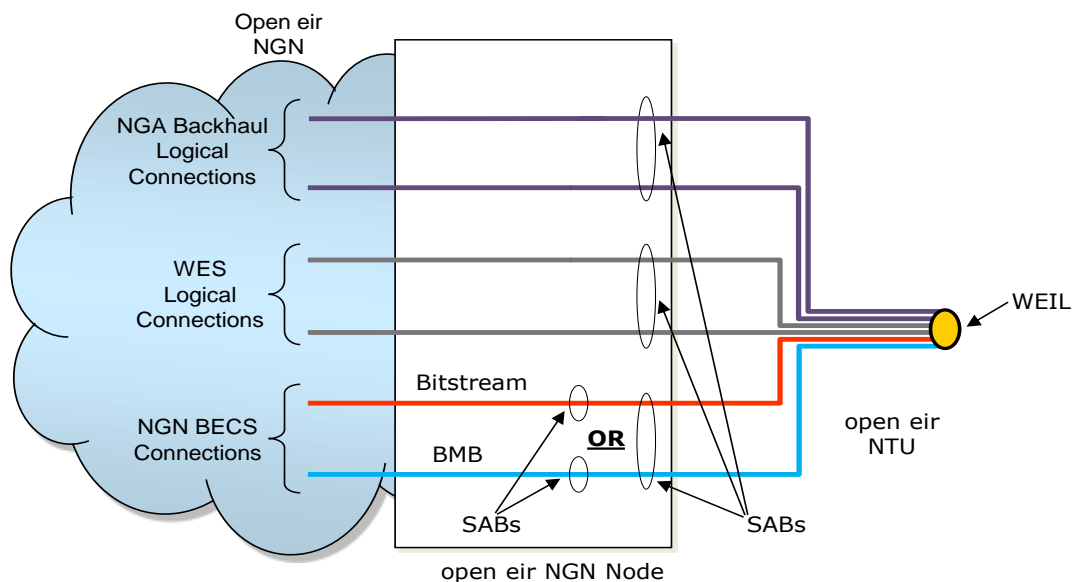


Figure 3: BECS via WEIL utilising single or multiple SAB's

BECS via WEIL traffic is classified as best effort class of service.

The technical details of the product are available in the Technical Handbook Wholesale NGN Ethernet Product available at [www.openeir.ie](http://www.openeir.ie)

### 3 Commercial

#### 3.1 Pricing

Pricing for the BECS via WEIL is published in the Bitstream Price list on [www.openeir.ie](http://www.openeir.ie).

Pricing for the WEIL product are published in the Network Price List published on [www.openeir.ie](http://www.openeir.ie).

#### 3.2 Terms and Conditions

Terms and conditions are published on the open eir website at [www.openeir.ie](http://www.openeir.ie) in the Wholesale Bitstream Access Reference Offer (WBARO). An Operator must have signed a Wholesale Bitstream Agreement, specifically Service Schedule 203 and also a Wholesale Leased Line Agreement, specifically Service Schedule 013.

### 4 Service Management

There are a number of processes that support this product from the initial forecasting and quotation through to billing as outlined in Figure 4.

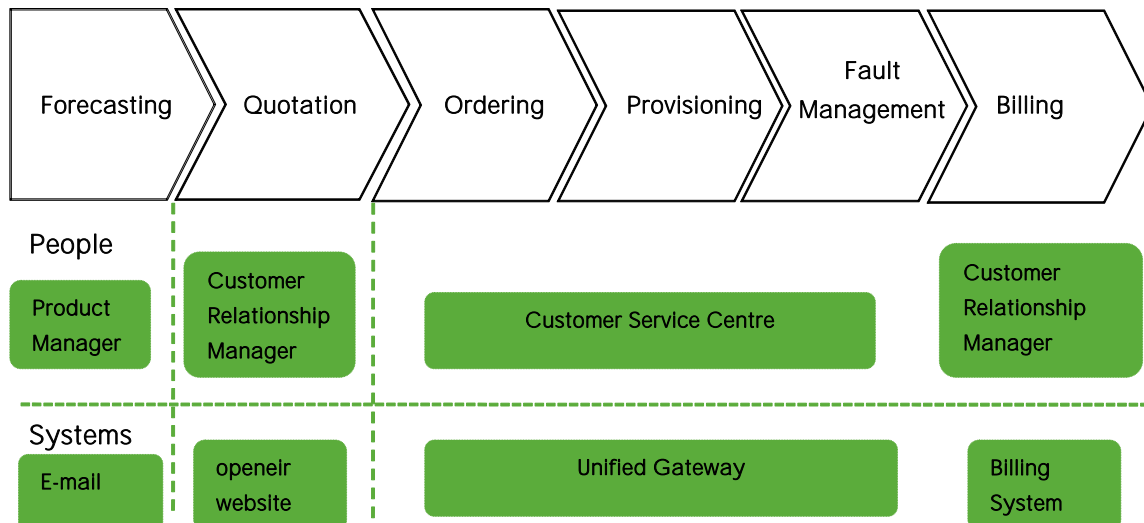


Figure 4: Process, people and systems overview

Prior to requesting the service an Operator may find product information on the open eir website at [www.openeir.ie](http://www.openeir.ie) or discuss their requirements with their Customer Relationship Manager.



Ordering, Provisioning and Maintenance processes are supported by the Unified Gateway and the open eir Customer Contact Centre. After provision of the WEIL any queries regarding billing should be directed to an Operator's Customer Relationship Manager. Each of these processes is outlined in further detail below.

## 4.1 Forecasting

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Operators are requested to provide forecasts on a rolling 12 months basis via the standard open eir forecasting form. These forecasts should be verified by an Operator on a rolling quarterly basis and provided to the Ethernet Product Manager.

## 4.2 Ordering, Provisioning and Fault Management

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The Ordering, Provisioning and Maintenance processes will be supported by the Unified Gateway (UG) which will be used to log orders and report faults for the product via the UG web GUI. The UG is an order management and fault handling system designed to be the primary interface between open eir and an Operator. Operators' will be able to enter all the necessary data via structured GUI screens for both ordering and fault reporting. Once all the data has been entered the order or fault can be submitted. The UG will process and validate the relevant orders and faults and will provide appropriate notifications in response. Order status updates through to completion will be provided from the Wholesale SLA Manager (WSLAM).

Fault status updates will be provided back to an Operator and can be viewed via the UG order and fault tracking screens.

### 4.2.1 Ordering the Service

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An Operator can place an order via the Unified Gateway

Provide order options:

- NGN BECS Bitstream
- NGN BECS Bitstream Managed Backhaul

Radius profile setup requests are not submitted via the UG and must use the form in Appendix 1 and email them to the Bitstream Product Manager. The Operator must ensure the information in the realm form matches the information provided on the UG. The forms must be emailed at the same time as the order is submitted via the UG.

The following fields are mandatory for submitting an order:

- EIL reference (EIL58xxxx) and SAB reference (SAB58xxxx)
- Bandwidth

- LNS IP address (at least 1 must be provided max 15) (note this must align with radius form submitted via email)
- AS Number and BGP Password, (note this must align with radius form submitted via email)
- Contact information
- Welcome pack email address.
- The following fields are optional:SVLAN ID
- Remarks

The SVLAN ID is optional but if Operator provides SVLAN ID for other NGN Ethernet orders (WSEA) they must continue to manage the SVLAN allocation to avoid conflict. If a SVLAN ID is not provided by the Operator the next available ID (between 10 and 999) will be assigned by open eir's network management system.

The welcome pack will include confirmation of what was configured on network, SVLAN ID, LNS addresses and is issued once NGN BECS is fully configured on the network and the order completed.

The following fields will be listed for information but cannot be changed:

- SLA
- MTU Size
- PE-CE Routing

#### 4.2.1.1 Radius Profile Order Form

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The Radius form is required in order to set up the Operator domain names on the open eir Radius servers. open eir Radius servers must contain the tunnel profile that the BRAS require to build the tunnel to the Operator's Home Gateway. The open eir Radius servers do not contain individual user information of the Operator's end users, i.e., open eir will not perform AAA authentication for the Operator's internet traffic. The Operator's Home Gateway is responsible for user authentication and will allocate the authenticated end user with an IP address.

Please see Appendix 1 for a copy of the Bitstream Radius profile (REALM) form. In order to add the profile for a Bitstream Operator to Radius the following mandatory information is required:

- Operator information details
- Domain name = "@provider"
- Number of Home Gateways (HGWs)
- Home Gateway address(es)
- Tunnel-password for HGW

The Operator domain name is mapped into two different Tunnel profiles in the Radius server. Each Tunnel profile will be used for a specific product type.

- Existing Tunnel profile will be used for the legacy Bitstream IP product
- New Tunnel profile will be used for the Bitstream MB product

The Tunnel profile must contain the Tunnel source end point which is the source IP address of the Tunnel (loopback IP address of the BRAS).

The Radius server identifies which tunnel profile to send to the BRAS using the NAS-Port-Id in the Radius request sent by the BRAS, which contains the VLAN ID used between the DSLAM and the BRAS. Radius checks if the VLAN ID in the NAS-port-ID string is in the range 4000 to 4049 and if so, returns the tunnel profile associated with the Bitstream MB product. Otherwise it will return the tunnel profile associated with the legacy Bitstream IP product. (The VLAN 17 to 3999 is assigned for the legacy Bitstream IP product.)

1. open eir Operations are responsible for setting up the domains and Radius profiles and notify the open eir Bitstream Backhaul product manager of the date and time of implementation.
2. open eir Bitstream Product Manger advises the Bitstream Operator of the date and time of implementation and request a point for contact for eir net Operations.
3. open eir Operations complete the job on the agreed date and notify the Bitstream Operator point of contact so that they can complete their testing and confirm that the domain names have been set up correctly.

#### 4.2.1.2 Delivery Timelines

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The completion timeline will be 15 working days

#### 4.2.1.3 Confirmation of Delivery

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A welcome pack is issued when the NBB / NBM order is completed. This will notify Operators the new service is available for testing.

#### 4.2.1.4 Other orders – change, move, cancel or cease

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Following the delivery of the BECS service the Operator can request changes to the service as outlined below.

- Change bandwidth
- Re-associate SAB – change to a different SAB on same WEIL / different WEIL
- Change S-VLAN number

- Change AS number
- Change LNS
- Change BGP password

For change orders the following fields are mandatory:

- Circuit ID (NBB500xxxxx, NBM500xxxxx)
- Bandwidth
- Contact information

Other mandatory fields (dependent on option selected)

- LNS IP address (at least 1 must be provided max 10)
- AS Number
- BGP Password
  
- Welcome pack email address

Optional field

- Time to implement changes

Note Operators must enter all LNS addresses they wish to use with this service i.e. list existing and new LNS addresses

#### 4.2.1.5 Add/Remove Domain Names or Home Gateways

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Below are the outline steps to be followed when adding or removing domain names on the open eir Radius server

1. The Operator submits a REALM order form to their open eir Account Manager including the additional domain name(s) or specifying the one (s) that need to be removed.
2. Their Account Manager forwards the REALM form to the Bitstream Product Manager who validates that all the correct information has been included on the form.
3. If no additional HGWs are being added or if none are being removed then the Bitstream Product Manager forwards the form to eir Operations to schedule the job.
4. If changes are being made to the HGWs as well as the domain names then the Operator must submit a change order to add / remove LNS addresses via the UG. Note all LNS addressees must be listed in the UG including those that are not being changed. If the Operator does not submit the change via the UG the changes will be made on Radius but not on the network so the new routes will not be available for use

5. open eir Operations updates the Bitstream Product Manager with a proposed date and time for making the change.
6. Bitstream product manager confirms date and time with the Operator.
7. On day of the change, eir net Operations contact the Operator Point of Contact prior to and after implementing the change on the Radius servers.
8. The Operator point of contact performs own internal testing and confirms that the implementation has been successful or that further testing is required.
9. Operator confirms to open eir Operations and the Bitstream Product Manager that set up is complete or if no correspondence from the Operator within twenty four hours then order is completed by eir net

#### 4.2.1.6 Delivery Timelines

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The completion timeline for a change or cease order will be 15 working days

#### 4.2.2 Migration Process

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There is no migration path from BECS or BCS to BECS via WEIL. A BECS via WEIL must be provided and traffic routed via this prior to ceasing a BECS circuit. Once the BECS via WEIL is delivered open eir will advertise all LNS provided the Operator and routing the Operator can route traffic to the BECS via WEIL. Therefore they can manage the migration of traffic from BECS in a seamless manner

#### 4.2.3 Fault Management Process

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A fault for this service is logged via the Unified Gateway after an Operator has proven the fault out of their network. Please refer to section 5 of the WEIL Process Manual for the fault handling process for this service.

Below is the list of reports for faults that will be available for the BECS via WEIL

- Circuit hard down
- Intermittent error
- Run an alarm check
- L2TP tunnel down/not establishing
- BGP down.

## 4.3 Billing

There is connection and rental charges associated with the BECS via WEIL product which cannot commence until the underlying and associated component products are in place. Once an order is completed and the BECS via WEIL is commissioned billing shall commence. Billing shall be carried out on a monthly basis in advance and the service shall be identified on the bill.

### 4.3.1 Usage Charges

Usage based charges will only apply to the Bitstream MB product set. There are no usage-based charges associated with the other Bitstream or Backhaul Service products. (The associated port rentals are contained in the Bitstream Bill).

#### A. Bitstream MB Usage Charges

The Bitstream MB Usage Charges appear on the Backhaul Bill. Bitstream MB Usage for all end users with a Bitstream MB Product attached is aggregated together and charged using the 95th percentile method and will not be charged at an individual level.

#### B. Usage Billing Model: 95th Percentile

For the NBM the measurement point for usage calculation is outlined in Figure 5

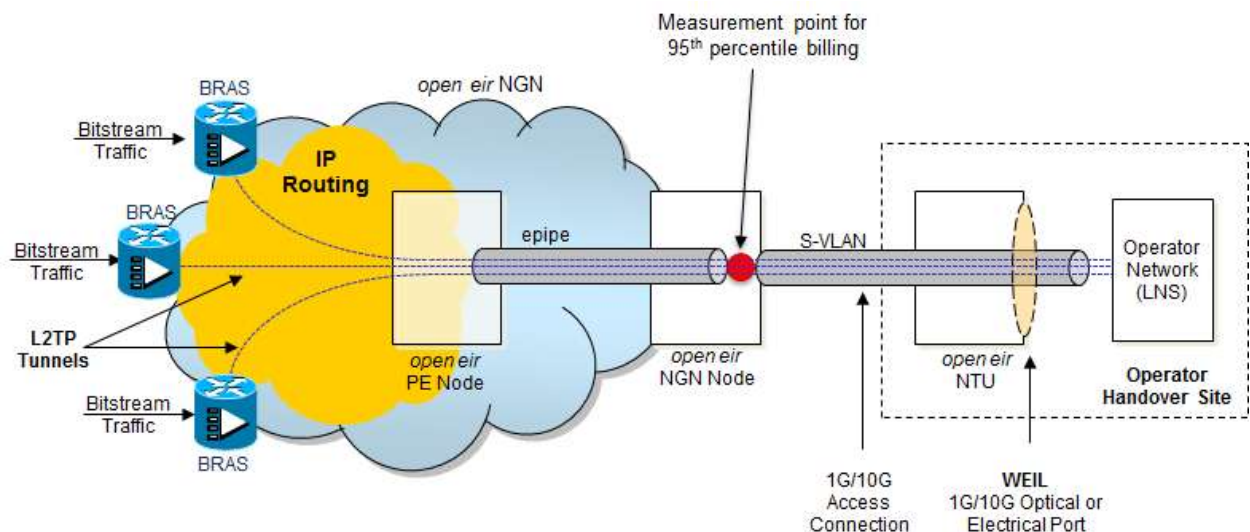


Figure 5 Usage charge measurement point

95th Percentile Billing is a standard way in which bandwidth is billed by ISP's. Typically it means that samples are taken every 5 minutes for a month and the top 5% are discarded. This allows the Operator to have short periods (less than 36 hours total for the month) where higher than normal bursts in traffic do not count against the amount being charged. The 8Mb and 24Mb Bitstream MB traffic will use the same VLAN and the usage will be based on an aggregate figure using the existing calculation. The Usage will be included on the Backhaul Bill. In the event that an Operator has a query regarding the bill they should contact their open eir Account Manager.

#### 4.4 Supporting Documentation

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Further information on open eir processes and supporting information may be found at [www.openeir.ie](http://www.openeir.ie)

Product Description Wholesale Ethernet Interconnect Link (WEIL)

Wholesale Ethernet Interconnect Link (WEIL)

Service Level Agreement for Wholesale Ethernet Interconnect Link (WEIL)

Wholesale Bitstream Access Reference Offer (WBARO)

## 5 BECS via WEIL Service Level Agreement

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This SLA sets out the service level which open eir offers in regard to the provision of a BECS via WEIL service in respect of the existing repair of a Wholesale Ethernet Interconnect Link (WEIL). These service levels include the provision and assurance of a NBB / NBM orders pursuant to a WBARO between open eir and the Operator ordering these services. The Wholesale Ethernet Interconnect Line IPM is a representation of how the SLA parameters are supported in practice and should be read in conjunction with this document.

### 5.1 BECS via WEIL (NBB/NBM)

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This section sets out the service level which open eir offers with regard to the provision of BECS via WEIL (NBB / NBM). BECS via WEIL will hereafter comprise the "Services". The individual Services are at all times provided subject to open eir's standard terms and conditions for the Wholesale Ethernet Interconnect link. open eir's Service Levels will apply for BECS via WEIL (NBB / NBM) delivered to an Operator as per underlying WEIL SLA addressing provisioning ([www.openeir.ie](http://www.openeir.ie)), assurance and service availability parameters. The BECS via WEIL (NBB / NBM) is a dependent logical component product of the WEIL

## Appendix 1: Realm Form

<h3>open eir Radius Profile Request</h3> <p>Include both legacy and BMB backhaul HGW IP addresses</p>					
Access Seeker Ref. No.:	<input style="width: 90%;" type="text"/>	Access Seeker Name:	<input style="width: 90%;" type="text"/>	Order Placed By:	<input style="width: 90%;" type="text"/>
Access Seeker Tel No.:	<input style="width: 90%;" type="text"/>	Open eir Account Manager Name:	<input style="width: 90%;" type="text"/>	Required-By Date:	<input style="width: 90%;" type="text"/>
Access Seeker Address:	<input style="width: 90%; height: 40px;" type="text"/>				
Domain Names Required					
Number	Domain Name	Legacy HGW IP Address	Legacy L2TP Tunnel Password	Bitstream MB HGW IP Address	Bitstream MB L2TP Tunnel Password
1					
2					
3					
4					
5					
6					
7					
8					
Specific Requirements					
<p>Static route to 84.203.128.15 should be removed after implementation of this REALM change. All above loopbacks will be advertised to open eir via BGP. open eir to load-balance PPPoE sessions across the provided two loopbacks for each domain. All domain names and static routes not mentioned in this request form should be deleted.</p>					



## Appendix 2: Glossary

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BGP	Border Gateway Protocol
BEA	Bitstream Ethernet Access
BECS	Bitstream Ethernet Connection Service
BMB	Bitstream Managed Backhaul
BRAS	Broadband Remote Access Server
CoS	Class of Service
EIL	Ethernet Interconnect Link
HGW	Home Gateways
L2TP	Layer 2 tunnelling protocol
LNS	Layer 2 Network Server
NBB	NGN BECS Bitstream
NTU	Network Termination Unit
PIR	Peak Information Rate
PM	Process Manual
POH	Point of Handover
PSU	Power supply unit
SAB	Service Access Bandwidth
STD	Standard Forwarding
S-VLAN	Service - Virtual Local Area Network
UG	Unified Gateway
UNI	User Network Interface
SLA	Service Level Agreement
WEIL	Wholesale Ethernet Interconnection Link

WSLAM	Wholesale SLA Manager
NGN Node	open eir NGN Node for Ethernet Traffic
WBARO	Wholesale Bitstream Access Reference Offer