# Wholesale Regional Ethernet Access

# Product Description

Version Control

| Version | Status | Update | Effective Date |
|---|---|---|---|
| 1.0 | | Original | 11 November 2009 |
| V2.0 | Final | This document is based on V1.0 Implementation of Standardised Change Control. | 21/06/2017 |

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**Proposed** is defined as a document status when the approved document is uploaded to Proposals Section of open eir Website.

**Final** is defined as a document status when the approved document is uploaded to the relevant section of the open eir Website following the publication period.

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- Historical Document History Table located at end of Document.
- Publish means the action of uploading a document to the website regardless of status or location.
- If there are changes to the document between 'Proposed' and 'Final', change control operates.

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# 1 Preface

This Product Description defines the eircom Wholesale Regional Ethernet Access (WREA) Product.

This document is without prejudice to any future position that eircom may adopt in respect of eircom's provision of WREA Product. This document should be read in conjunction with the following eircom Wholesale documents:

- eircom Wholesale Leased Line Access Reference Offer
- eircom Wholesale Network Price List
- WREA & WDEA Inter Operator Process Manual

These documents are published on eircom's website www.eircomwholesale.ie. These documents may be updated and modified from time to time. For the avoidance of doubt, the latest published version of these documents on the eircom website www.eircomwholesale.ie are deemed to be the most current document governing the service.

# 2 Product Overview

The Wholesale Regional Ethernet Access Product is point to point transparent Ethernet service. It provides Ethernet connectivity over the WREA network from an Operator's end user site to an Operator Point of Presence (POP).

# 3 Product Features and Availability

The product provides a transparent Ethernet link from an Operator's end user site to a WREA node. eircom will provide a connection from the WREA node to the Operator's POP. eircom will configure a service VLAN on both the Operators end user NTU and the Operator NTU at the POP, which establishes the VLAN across the eircom network. The WREA Product is only available to Operator's end users who are within range of the relevant Regional Ethernet node. This product does not support an inter Regional Ethernet Access Product, i.e., does not support services between Regional Ethernet regions.

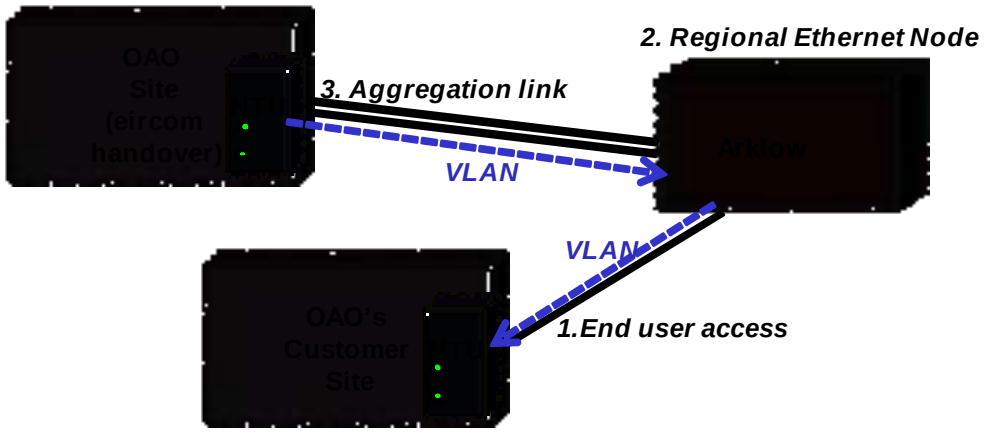

Figure 1: Network Diagram

The WREA Product is delivered over the eircom Regional Ethernet network. This is a native Ethernet based network providing coverage at fifty Regional Ethernet nodes. (Please refer to Appendix 2 for a full listing of the regional nodes).

This network supports Point-to-Point "best effort" Ethernet services. The WREA product is only available to Operator's end users located within 4km[1] of each individual WREA node.

Operator's end users located beyond 4kms[2] of the serving WREA node will be assessed on a case by case basis to determine whether service may be provided. In the event that service may be provided, the connection charge will be assessed on a case by case basis.

An Operator will aggregate their traffic on the Aggregation Link. An Operator is solely responsible for capacity management (bandwidth/contention) on the Regional Aggregation Link.

The eircom WREA product is being provided on a transitional basis as the supporting network is currently planned to be decommissioned on a phased basis as the replacement NGN is rolled out. This will be implemented in conjunction with the Operator in order to minimise end user disruption.

# 4 Product Components

The product consists of the following components:

- Regional Ethernet Access Circuit
- Regional Aggregation Link

[1] This is measured using the radial distance from the Operator's end user site to the WREA node
[2] The technically feasible maximum distance is circa 30kms and is subject to full survey and physical testing

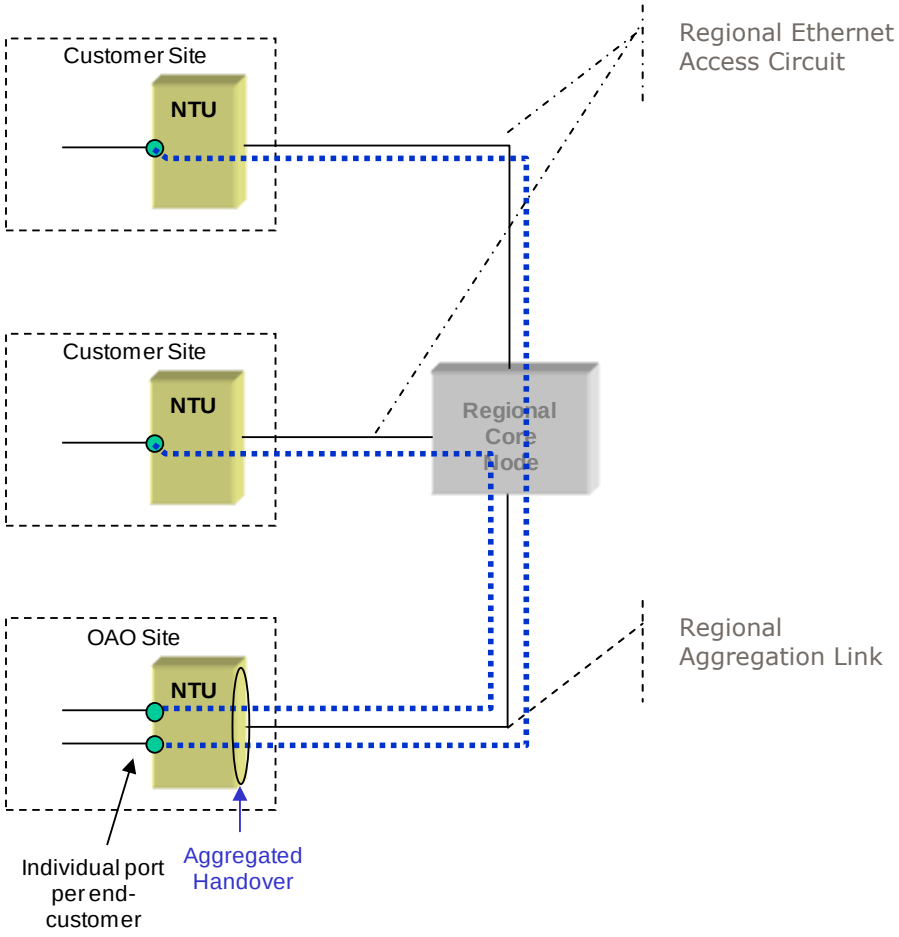


Figure 2: Regional Network

## 4.1 Regional Ethernet Access Circuit

The Regional Ethernet Access Circuit is delivered as a dedicated fibre access from the Operator's end user site to the WREA node.

The Regional Ethernet Access Circuit is available in the bandwidths outlined in the table below.

| Standard (Mbit/s) |
|---|
| 10 |
| 20 |
| 30 |
| 40 |
| 50 |
| 75 |
| 100 |
| 200 |
| 300 |
| 400 |
| 500 |
| 600 |
| 700 |
| 800 |
| 900 |
| 1000 |

**Table 1: Availalble Bandwidths**

The Regional Ethernet Access Circuit is available to Operator's end users located within 4kms [3] of the serving eircom Regional Ethernet node. The standard price applies where the customer's premises is served by useable eircom owned duct and is within 500 metres of an available eircom access fibre which can connect to the eircom access node

Operator's end users located beyond 4kms [4] of the serving eircom Regional Ethernet node will be assessed on a case by case basis to determine whether service may be provided. In the event that service may be provided, the connection charge will be assessed on a case by case basis.

All Regional Ethernet Access Circuit are subject to survey. Regional Ethernet Access Circuit resilience is not offered.

The fibre access is terminated on an eircom NTU located at the Operator's end user site. The NTU is a Cisco Catalyst 3560G-24TS.

The NTU specifications are located in Appendix 1.

The end user access physical service termination point is defined as the eircom NTU located at the Operator's' end user site.

[3] This is measured using the radial distance from the Operator's end user site to the WREA node
[4] The technically feasible maximum distance is circa 30kms and is subject to full survey and physical testing

### *4.1.1* Service VLAN

The Wholesale Regional Ethernet Access Service is a point to point service. The service uses port mapping on the eircom Regional Ethernet node in conjunction with port mapping on the Operator end user site NTU and the Operator POP NTU.

The Wholesale Regional Ethernet access product provides VLANs with associated bandwidth options.

eircom, as part of service provisioning ,will establish the VLAN on a physical port on the NTU at the Operator POP. eircom will establish a corresponding service VLAN (with the same ID) on the NTU located at the Operator's end user site thus establishing the VLAN across the eircom network.

Operator's end user traffic within the Service VLAN may be tagged or untagged.

Multiple Service VLANs may be provisioned on an NTU, however each Service VLAN requires a dedicated port at both the end user NTU and the Operator Point of Presence site NTU.

The same Service VLAN may be configured on more than one NTU port the at Operator end user site.

### *4.1.2* VLAN - Class of Service Options

The VLAN only supports one class of service option, standard:

The standard class of service option is an NTU port based class of service, providing "best effort" quality of service (QoS) across the network. . All Ethernet frames entering the standard class of service designated port on the NTU at the Operator end user site will be placed in one standard priority queue.

## 4.2 Regional Aggregation Link

The Regional Aggregation Link is delivered as a dedicated link from the eircom Regional Ethernet node to the Operator's Point of Presence (POP). Handover is always customer sited.
The Regional Aggregation Link service will be available at a bandwidth of 1 Gb/s.
The Regional Aggregation Link is available to an Operator POPs located within 4kms[5] of the serving eircom Ethernet Regional node. The standard price applies where the customer's premises is served by useable eircom owned duct and is within 500 metres of an available eircom access fibre which can connect to the eircom access node.

[5] This is measured using the radial distance from the Operator's end user site to the WREA node

Operator POPs located beyond 4kms[6] of the eircom Regional Ethernet node will be assessed on a case by case basis to determine whether service may be provided. In the event that service may be provided, the connection charge will be assessed on a case by case basis.

All Regional Aggregation Links are subject to survey. Regional Aggregation Link resilience is not offered.

The fibre access is terminated on an eircom NTU located at the Operator's POP. There is one eircom NTU available. The NTU specifications are located in Appendix 1.
The Regional Aggregation Link physical service termination point is defined as the eircom NTU located at the Operator's POP.

# 5 Product Parameters

| PARAMETER | VALUE |
|---|---|
| Max Frame Size | 1600 Bytes |
| Multicast Traffic | No limit on existing network.<br>Default limit of 2% of Service VLAN bandwidth but can be increased in increments of 10 from 10% to 100% on migrated NGN service. |
| Broadcast traffic limit | 2% of Access Bandwidth |
| Unknown Unicast traffic limit | 2% of Access Bandwidth |
| MAC Address Limit | Default limit of 100 MAC addresses per NTU port. This limit can be increased up to 5,000 MAC addresses subject to engineering approval. |
| Max no. of sites | No Limit |
| Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP) | Tunnelled |
| Cisco Discovery Protocol (CDP) | Tunnelled |
| VLAN Trunking Protocol (VTP) | Tunnelled |
| Link Aggregate Control Protocol (LACP) | Discarded |
| Port Aggregation Protocol (PAgP) | Discarded |
| UniDirectional Link Detection (UDLD) | Discarded |
| PAUSE (802.3x) | Discarded |
| Marker Protocol | Discarded |
| Authentication (802.1x) | Tunnelled |
| All LANs Bridge Management Group Block of Protocols | Tunnelled |
| Generic Attribute Registration Protocol (GARP) Block of Protocols | Tunnelled |

**Table 2: Product Parameters**

[6] The technically feasible maximum distance is circa 30kms and is subject to full survey and physical testing.

# 6 Service Management

## 6.1 Order Handling and Provisioning

Orders for the WREA Service will be processed using the WREA Service order form.

Order forms may be obtained on www.eircomwholesale.ie or from the eircom account manager.

The process for order handling and provisioning is set out in the Order section of the WREA & WDEA IPM published on www.eircomwholesale.ie.

## 6.2 Upgrade / Downgrade

The process for upgrades and downgrades is set out in the Upgrade/Downgrade section of the WREA & WDEA IPM published on www.eircomwholesale.ie

## 6.3 Forecasting

It is recommended that OPERATOR's forecast their requirements for Regional Ethernet Aggregation Links. The process for forecasting is set out in the Forecasting section of the WREA & WDEA IPM published on www.eircomwholesale.ie.

## 6.4 Fault Handling and Repair

The process for fault handling and repair is set out in the Fault section of the WREA & WDEA IPM published on www.eircomwholesale.ie.

## 6.5 Billing

Billing will be quarterly in advance.

Bills will be available in hard copy format.

## 6.6 Service Termination Process

In the case of Service termination, the Operator shall grant or secure eircom reasonable access to recover eircom Equipment from the End User Premises. The Service shall be ceased in accordance with the processes outlined in the Wholesale Regional Ethernet Access Inter Operator Process Manual.

# 7 Price

Prices are published in the Network Price List on www.eircomwholesale.ie.

# 8 Terms and Conditions

Terms and conditions are published on the eircom website at www.eircomwholesale.ie in the Leased Line Reference Offer

# Appendix 1 - NTU Specifications

- Cisco Catalyst 3560G-24TS
- AC Power
- Optional Redundant Power Supply Unit (External Unit)
- NTU – Core Uplinks
    - Standard: 1000 Base LX SFP (10km max. range)
- Customer Facing Ports:
    - Default: 10/100/1000 Base-T
    - Default Setting: 100M full duplex but can be changed if required.
    - Optional: 1000 Base SX or 1000 Base LX
    - Connector: LC
- Service specific pre-allocation of ports on NTU:

**NTU Ports**

| 1 – 6<br>Not available | 7 – 25<br>TLI Service | 26 – 27<br>Not available | 28<br>Up-link |
|---|---|---|---|

# Appendix 2 - Locations

| | |
|---|---|
| Arklow | Killorglin |
| Athlone | Letterkenny |
| Ballinasloe | Longford |
| Bantry | Mallow |
| Beggars Bush | Mervue |
| Belcamp | Monaghan |
| Blanchardstown | Mullingar |
| Bray | Naas |
| Carlow | Navan |
| Castlebar | Nenagh |
| Castletroy | Portlaoise |
| Cavan | Quaker Road |
| Churchfield | Rathedmond |
| Citywest | Roches Street |
| Clonakilty | Roscommon |
| Clonmel | Shannon |
| Crown Alley | Shantalla |
| Drogheda | Summerhill |
| Dun Laoghaire | Swords |
| Dundalk | Tallaght |
| Dundrum | Tralee |
| Ennis | Tullamore |
| Fermoy | Waterford |
| Kells | Wexford |
| Kilkenny | |
| Killarney | |

**Table 3: Available Locations**

# Version Control History

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|---|---|---|---|
| 1.0 | | Original | 11 November 2009 |
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