Product Description
Physical Co-location

Version Control

Version	Status	Update	Effective Date
2.1		Revised (addition of CoLo for VUA)	01/10/2016
V3.0	Final	This document is based on V2.1 Implementation of Standardised Change Control.	16/06/2017

This document follows change control procedure:

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.

For information:

- Historical Document History Table located at end of Document.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. Introduction

This document defines the industry agreed Product Description to support "Physical Co-location".

The process and technical details supporting the implementation of the service are outlined in the Inter Operator Process Manual and Technical Manual for Physical Co-location.

All equipment and plant deployed as part of the implementation of the service shall comply with the relevant national and international standards, as appropriate. All installation procedures must conform to standard industry practice.

The various product elements and their relationships are diagrammatically represented in the Technical Manual for Physical Co-location.

Physical Co-location was developed to support LLU services from an open eir exchange building. This is now extended to also support taking the open eir NGA VUA (Virtual Unbundled Access) service from an 'NGA exchange', i.e. an open eir exchange which has an NGA Aggregation Node installed (see the relevant NGA/WBARO product documentation). This latter product variant is referred to as 'CoLo for VUA'.

The product documentation and ARO Service Schedule and Licence Agreement for Physical CoLocation (for LLU) also covers Physical CoLocation for VUA. The price list for CoLo for VUA is included in the ARO CoLo price list.

2. Product Description

For Physical Co-location, Open eir will provide a Serviced Exchange Footprint(s) where available.

Footprints will be provided in Co-location suites in preference to mixed suites where possible.

The Operator will choose the equipment, supply, install, operate and maintain it within the Serviced Exchange Footprint.

The Operator's equipment will connect to the customer's two wire metallic path via Open eir's MDF room and the Operator's tie cable(s).

The Operator will connect their equipment, installed in Open eir's Serviced Exchange Footprint(s) to an Operator's Distribution Frame also located within the Serviced Exchange Footprint within Open eir's premises. The details and method of connection will be determined within the Process and Technical Manuals for Physical Co-location.

In the case of CoLo for VUA, no MDF terminations will be required.

An Operator may request open eir to provide AC power or to provide DC power.

The following open eir wholesale LLU/VUA backhaul options are available into licensed CoLo LLU/VUA footprints:

- Service Schedule 013 Wholesale Ethernet Interconnect Links: Section C In-Building Handover (IBH) Wholesale Interconnect Link
- Service Schedule 014 Wholesale Symmetrical Ethernet Access In Building Handoff (IBH)
- Service Schedule 015 Wholesale LLU Backhaul Service

For further details refer to open eir wholesale Leased Line Reference Offer (LLRO) and Product documentation on http://www.openeir.ie/Products/

2.1 Product Elements.

2.1.1 Access to the Operator's network

To ensure that an Operator's equipment, located in Open eir's Serviced Exchange Footprint, can be connected to the Operator's network, the following is proposed:

- Open eir will nominate and agree a manhole with the Operator close to the Open eir exchange and where possible Open eir will nominate and agree two manholes on either side of the exchange to facilitate Operator access. The agreed manholes will, where possible, be common to those nominated for the provision of In-Span Interconnect Service.
- The Operator will construct or agree to utilise an existing Operator constructed manhole within a reasonable (recommended within ten (10) metres, otherwise to be agreed) distance of the Open eir's agreed manhole. The Operator will build a duct (25mm sub-duct unbroken in accordance with specified standards) between the two manholes and Open eir will provide a point of entry for the Operator's ducts to the Open eir manhole. Open eir will run the Operator's fibre optic cable from the Open eir manhole to the Operator's ODF in the Open eir exchange.
- The Operator will then provide, install, and maintain a fibre optic cable from the Operator constructed manhole, utilising their own ducts, to their own network.
- The Operator will be responsible for pre-commissioning acceptance tests, and to clearly with an appropriate marker or label (to provide an environmental seal) visible Operator's fibre optic cable.

2.1.2 MDF Room

The Operator's equipment will be connected to the customer's two wire metallic path via Open eir's MDF in order to utilise other Open eir products e.g. Unbundled Local Metallic Path and Line Sharing. Any requirements specified in the appropriate product descriptions will also apply.

In no circumstances will Open eir's tie cables be used to provide a path for Operator's circuits from one MDF to another.

In the case of CoLo for VUA, no MDF terminations will be required.

2.1.3 Exchange Floor Cable Runways.

By agreement with Open eir, the Operator will utilise existing cable trays, and cable baskets, where available, whether overhead or under floor, which will be segregated for telecom/ signalling and electrical power cables.

Where cable runways are not available, new cable trays will be designed and provided under the Site Preparation Fee. All installation procedures must conform to best industry practice.

2.1.4 Equipment Footprint

The conforming footprint is 400mm in depth; 600mm in width and 2.2metres in height. Dual footprints will be permitted i.e. back to back installations of 800mm in depth; 600mm in width and 2.2 metres in height.

2.1.5 Aisle Space

Distance requirements are as follows:

- Free standing racks will be positioned a minimum of one metre from any wall.
- A minimum of 900mm is required between suites.

2.1.6 D.C. Power

The Operator has the option to take AC power from open eir,.

If DC power is requested, then each Operator will be provided with access to a minus 48V (Nom) DC power supply. The supply will be equipped with a maximum of 16 MCB distribution points, which may be of maximum capacity 63A. The supply will consist of rectifier units in an N+1 configuration to a maximum of 6Kwatts which includes battery re-charge and redundancy, and standby battery/ies to provide autonomy for a minimum of three hours. Open eir will supply, install and commission each distribution point subject to all information requested on the appropriate forms being provided by the Operator , including the ratings (capacity and type) of circuit breakers required, as new facilities will have to be provided. Open eir will be responsible for monitoring and maintenance of the DC power supply to but not including the Operator circuit breaker (provided and installed by the Open eir) within the distribution point. The Operator will be responsible for the provision, installation and maintenance of all power and earth cabling and ancillary equipment, excluding installation of cable trays – from the distribution point of the power supply to their equipment. This DC power does not presume the availability of AC power from the utility company. The offering of DC power is subject to Site conditions, which may vary. Note: Distribution Point refers to the "best fit" Miniature Current Circuit Breaker (MCCB) or fuse position at the site at Open eir's discretion.

A minimum DC power usage of 0.4kW applies to all open eir DC power deployments for billing puposes.

2.1.7 AC Power

Existing AC power will be available for use within the exchange areas, for test equipment only. Open eir will nominate an existing 13 AMP socket per suite for Operator use.
An Operator may choose to have an AC or DC power supply provided by open eir to service their equipment.
In all cases where CoLo for VUA or CoLo for LLU is being installed in a new site with AC power provided by open eir, or where an Operator chooses to replace the existing open eir DC power with open eir AC power, then open eir requires that a power meter be included (installed on the AC side to indicate power load). Such a power meter can be used by both parties to validate the requested power. Effective from implementation date of version 2.1 of this document.

2.1.8 Lighting

All lighting will conform to a minimum of 500 lux when measured at working level.

2.1.9 Rack Fixing

All fixing of racks must conform to existing standards within each exchange building.

2.1.10 Installation of Operator equipment and associated cabling

The equipment will conform to the relevant ITU / ETSI appropriate standards and specifications and the installation and maintenance in accordance with industry best practice.

2.1.11 Welfare Facilities

The Operator will be permitted to use all existing toilet facilities.

2.1.12 Air Conditioning

Adequate air conditioning is generally provided by Open eir at each large exchange facility; however the provision of air conditioning for a particular Operator at any exchange will be dependent on the Operator providing details of its equipment's heat dissipation ratings, as new facilities may have to be provided.

2.1.13 Security

The Operator will conform to all on site Security Requirements, as reasonably requested by Open eir's exchange managers and specified in Open eir's Access Agreement and Licence Agreement.

All access is escorted during the first six months from the date of the first Licence.

2.1.14 Health and Safety

The Operator will conform to all Health and Safety aspects as directed by Open eir's health and safety officers and the General Health and Safety requirements as specified in the Access Agreement.

2.1.15 Earthing

A common earth is provided in all Open eir exchange buildings for telecommunications equipment. It will be the responsibility of the Operator to ensure that all their equipment is earthed within the exchange floor and conforms to the practice within the particular exchange.

If it is necessary to undertake changes to the common exchange earth due to the installation of the Operator's equipment, its associated cables and any new cable runways, the Operator will be advised of this, following an exchange survey, which will be undertaken by Open eir.

2.1.16 Floor Loading

Where false floors are provided, they are capable of a loading up to 20 kn./m2 max.

Determination of floor loading will be subject to Site conditions.

2.1.17 Environmental Conditions

The temperature of Open eir's 'exchanges is normally maintained within ANSI/ASHRAE recommendations.

The temperature alarms in Open eir's exchanges are monitored by the Network Management Centre (NMC).

Humidity levels vary between 20% and 80% and dehumidification is provided as part of the cooling process. Humidification is not provided due to the risk of water leaks.

2.1.18 Telephone Service

Upon request Open eir will provision a telephone line for voice communication as part of this product; however, the provision of a telephone and any restrictive telephony services will be as per Open eir's

retail offerings. Procedures for ordering are as per the Inter Operator Process Manual for Physical Co-location.

2.1.19 Fire and Smoke Detection Systems

The detection systems for fire and smoke will vary depending on the size of exchange.

Large exchanges have automatic fire detection systems covering the exchange floor area.

In smaller exchanges, only manual fire alarms i.e. manual call points are available.

2.1.20 Heat Dissipation

The individual heat dissipation per footprint must not exceed 2 kW. Heat dissipation in excess of this may affect the operation of other exchange equipment and reduce the effect of the air conditioning plant.

The Operator's equipment racks must have their own fans to draw in cool air once heat dissipation exceeds 1kW per footprint.

The Operator must advise Open eir of the heat dissipated per footprint.

Physical co-location may be refused if the heat dissipated per footprint is considered excessive (i.e. greater than 2 kW per footprint) by Open eir and therefore likely to affect Open eir or other Operator's equipment.

3. Product Availability

If the service cannot be provided on the grounds of feasibility or the need to maintain network integrity or lack of capacity because of the unavailability or unsuitability of an exchange floor space, the product will not be available.

At no time should this product be considered available throughout all of Open eir's exchanges, as it will be dependent on individual exchange characteristics.

4. Service Responsibilities

The appropriate responsibilities of each party are as outlined in the Site specific Licence Agreement.

At all times Open eir will be responsible for the exchange building(s) and the Open eir staff within them.

The Operator will specify relevant equipment to be installed as per the Inter Operator Process Manual.

The Operator will be responsible for identifying any faults that may occur on its equipment or service and localising any faults into Open eir's network in line with the fault repair process as outlined in the Inter Operator Process Manual.

If the Operator purchases equipment that cannot be installed utilising the facilities provided by Open eir, the responsibility for the purchase is the Operator's.

5. Services Management

5.1.1 Ordering

The interface between the Operator and Open eir for the submission of orders is as per the Process Manual for Physical Co-location.

5.1.2 Service Provisioning

Service provisioning will be as per the Process and Technical Manuals for Physical Co-location.

5.1.3 Network Operation and Maintenance

Processes for network operation and maintenance will be as per the Process Manual for Physical Co-location.

5.1.4 Fault Repair

Processes for fault repair will be as per the Process Manual for Physical Co-location

5.1.5 Service Levels

Specific service levels are outlined in the Service Level Section at Annex A Section A to the Access Agreement.

Version Control History

Version	Status	Update	Effective Date
2.0		Final	26/5/2011
		Rebranding final	30/09/15
2.1		Revised (addition of CoLo for VUA)	01/10/2016
V3.0	Final	This document is based on V2.1 Implementation of Standardised Change Control.	16/06/2017