



Customer Interface Publication: CIP041

KCOM Group Limited BROADBAND SERVICE INTERCONNECT LAYER (BSIL) SERVICE DESCRIPTION AND TECHNICAL CHARACTERISTICS

Issue: Version 2.0

August 2021

Definitions within this CIP are set out at paragraph 8 below.

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1 Introduction

KCOM wholesale, the wholesale division of KCOM Group Limited provides the Wholesale FibreLine Access (WFLA) to Communications Providers (CPs), enabling the delivery of their IP services between an aggregation point at a WFLA site and the service specific equipment within the End User (EU) premise.

The BSIL (the “Service”) provides a connection between a WFLA site and a CP site in the Hull Area using an ethernet 1Gbps, 10Gbps or 100Gbps connection and ethernet interface from the requested WFLA site to the CP site.

This CIP sets out the scope and technical details of the Service provided to CPs. Changes to the technical architecture and network interfaces that affect the correct working of the Service will be published by KCOM in documents made available from the address provided below. This CIP will be updated to reflect any such changes, with the most recent version available at: <https://www.kcom.com/wholesale/products/service-information/technical-interface-information/>

This document should be read in conjunction with the KCOM Wholesale Fibre Line Access (WFLA) CIP037 [13] and any associated product documents: <https://www.kcom.com/wholesale/products/broadband-and-internet/wholesale-fibreline-access-wfl/>

The Service is subject to change where there are revisions to the technical specifications applying through industry forums and standards bodies. The technical and service specification may also be impacted by a change in the associated regulatory requirements.

References to KCOM within this document refer to KCOM wholesale, unless otherwise stated.

Enquiries relating to the technical content of this document and the availability of other publications should be directed to:

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2 Product Service Description

The product is shown in concept form below in figure 2-1. The product provides ethernet connectivity between the WFLA Service and a designated POI at a CP site in the Hull Area.

The product delivers an ethernet 1Gb,10Gb or 100Gb bearer connection. The product is configured to aggregate the CP requested EU connections.

As part of each CP's WFLA core installation order, a BSIL is required to connect a WFLA site to the POI at a CP site. This BSIL is then utilised for customer traffic delivery and service management.

The Service is terminated on one of two designated KCOM WFLA sites or, for a resilient Service, both KCOM WFLA sites. A CP can choose to purchase a BSIL at both WFLA sites and distribute its EU's through LNS end point selection.

The BSIL can also be provided for use with an onward connection to a third party backhaul service from the CP's site within the Hull Area.

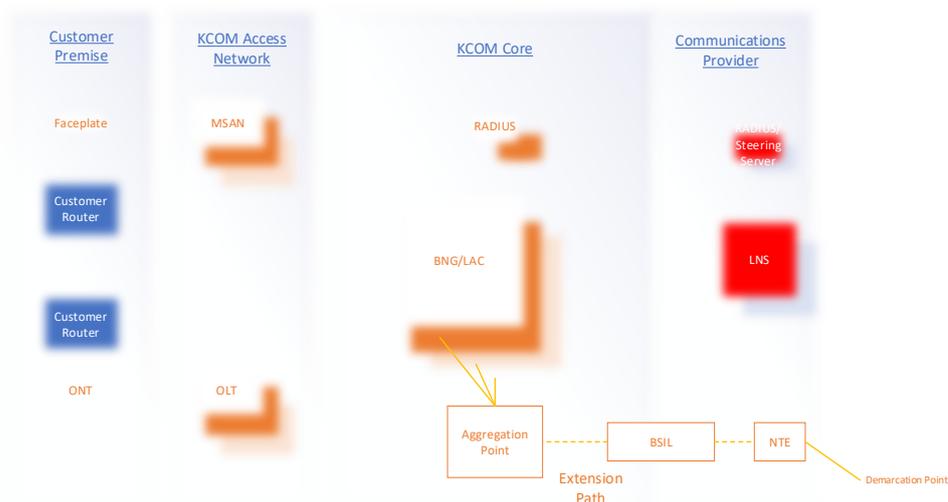


Figure 2-1

3 Interfaces

3.1 BSIL Communication Provider Access Interface and Data Rates

The following KCOM BSIL CP access interfaces are available: 1Gbps, 10Gbps or 100Gbps.

The interface is located on fibre Network Terminal Equipment (NTE) sited on the CP site or a designated POI. The NTEs are located on the CP's site and remain KCOM's property. The NTP demarcation is the port interface on the KCOM equipment. This is presented for 1Gbps interfaces as either: (i) an RJ45 socket [2]; or (ii) a 1310 Single-Mode Optical Fibre (SMF) dual fibre working Subscriber Connector (SC) / Lucent Connector (LC). It is presented for 10Gbps interfaces as a 1310 SMF dual fibre working LC. It is presented for 100Gbps interfaces as an LR-4 SMF dual fibre working LC.

The fibre NTE will require a 19" rack mount with the environmental conditions as provided for in the manufacturer specification. The fibre NTE will require a customer

supplied 240V A.C., at a Nominal 5A, supply to be available within 3m of the fibre NTE location. A standard IEC 13A lead will be supplied.

The connection between the KCOM BSIL NTP and the CP's own network equipment is the responsibility of the CP.

The ethernet interface characteristics are in accordance with the KCOM Customer Interface Publication CIP 016 [3] (available at: <https://www.kcom.com/wholesale/products/service-information/technical-interface-information/>).

The IP is presented according to the following IETF specifications:

RFC 791[4]	IETF document: Internet Protocol DARPA Internet Program Protocol Specification
RFC 826[5]	IETF document: An Ethernet Address Resolution Protocol -- or - - Converting Network Protocol Addresses to 48.bit Ethernet Address for Transmission on Ethernet Hardware
RFC 1042[6]	IETF document: A Standard for the Transmission of IP Datagrams over IEEE 802 Networks

The CP will be required to host and provide power and facilities for the KCOM NTE used to provide the connectivity at the CP site. The conditions for this are stipulated in section 4 of KCOM CIP035 [8] (available at <https://www.kcom.com/wholesale/products/service-information/technical-interface-information/>).

3.2 Line rates

The KCOM BSIL product supports the line speeds at 1Gbps, 10Gbps and 100Gbps. These rates are inclusive of all traffic type and packet sizes so actual throughput will be lower than the stated line rate. This is normal for varying traffic types and frame sizes.

A service management overhead is required and included. CPs must allow for the following management overheads:

- a) the L2TP session setup, breakdown, and keepalives
- b) the RADIUS keepalives and session information.
- c) RADIUS accounting traffic at the rate of one update per 60 minutes per EU session.

The line speeds are the maximum possible and the performance of components outside of KCOM's control may impact these rates.

4 Ethernet Layer Aspects

4.1 Traffic Shaping

The Service operates a first in / first out (FIFO) system within the CP requested Service at all interfaces.

4.2 Management MTU

The MTU allowed on the PPP [9] is 1,492 bytes. However, there will be communication between the KCOM LAC and the CP network that may be more efficiently communicated with larger packets. This is particularly useful for L2TP and route distribution in EBGP. Therefore, the communications between the two networks will allow up to 2,000 bytes for network management communication only. All other traffic should obey the PPP restrictions.

5 Safety & EMC Information

5.1 Safety

Where the CP customer interface takes the form of an optical presentation this is classified as a class 1M laser product as defined in the laser safety product standards BS EN 60825-1/2 [10].

The 10Mbps and 100Mbps interfaces are classified as unexposed as defined in CENELEC Reports/ETSI Guide ROBT-002/EG 201 212.[11]

5.2 EMC

KCOM's network equipment, including the relevant network terminating equipment, complies with the current EMC regulations.

The Service will often be installed in commercial and light industrial environments. However, this does not preclude the customer interface or EU NTEs being installed in other environments.

6 Availability

The Service is available to CPs within the Hull Area on reasonable request.

7 Interconnection Arrangements

Interconnection with other networks does not form part of the Service.

8 Definitions

This section includes terms used in this document.

BNG	Broadband Network Gateway
BSIL	Broadband Services Interconnect Links
CIP	Customer Interface Publication
CP	Communications Provider
EBGP	External Border Gateway Protocol
EMC	Electromagnetic Compatibility
EU	End User

Hull Area	The geographic boundary that is defined by KCOM's original license granted on 30 November 1987 by the Secretary of State under Section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM.
IETF	Internet Engineering Task Force
IP	Internet Protocol
KCOM	KCOM Group Limited
L2TP	Layer 2 Tunnelling Protocol
LAC	L2TP Access Concentrator
LNS	L2TP Network Server
MTU	Maximum Transmission Unit
NGA	Next Generation Access
NTE	Network Terminating Equipment
NTP	Network Termination Point
POI	Point of Interconnect
PPP	The Point-to-Point Protocol
RADIUS	Remote Authentication Dial-In User Service
RFC	Request For Comment – IETF Publications

9 References

[1]	RFC 2866	RADIUS Accounting	
[2]	KCOM CIP 016	Technical Characteristics of the 10Mbit/s, 100Mbit/s digital leased line and 1Gb, 10Gb Digital interfaces - RJ45 details in section 2	
[3]	KCOM CIP 016	Technical Characteristics of the 10Mbit/s, 100Mbit/s digital leased line and 1Gb, 10Gb Digital interfaces	
[4]	RFC 791	Internet Protocol DARPA Internet Program Protocol Specification	
[5]	RFC 826	An Ethernet Address Resolution Protocol – or – Converting Network Protocol Addresses to 48.bit Ethernet Address for Transmission on Ethernet Hardware	
[6]	RFC 1042	A Standard for the Transmission of IP Datagrams over IEEE 802 Networks.	
[7]	KCOM CIP 021	Technical Characteristics of the ADSL Interface	
[8]	KCOM CIP 035	KCOM Ethernet Connect Access Service (ECAS) and Ethernet Direct Access Service (EDAS) Service Description and Technical Characteristics	
[9]	RFC 1661	IETF: The Point-to-Point Protocol (PPP) [15]	
[10]	BS EN 60825-1/2	Safety of laser products – Part 1: Equipment classification and requirements	2007
[11]	ROBT-002/EG 201 212	Electrical Safety; Classification of interfaces for equipment to be connected to telecommunications networks	1998
[12]	RFC 1994	IETF: PPP Challenge Handshake Authentication Protocol (CHAP)	
[13]	KCOM CIP 037	WHOLESALE FIBRELINE ACCESS SERVICE DESCRIPTION AND TECHNICAL CHARACTERISTICS	

References [1], [4], [5], [6], [9], and [12] may be found at: www.ietf.org/standards/rfcs/

Reference [2], [3], [7], [8] and [13] may be found at: <https://www.kcom.com/wholesale/products/service-information/technical-interface-information/>

Reference [10] may be obtained through: www.standardsuk.com

Reference [11] may be found at: www.etsi.org/standards

10 History

Date	Issue	Comments	Author
18/07/2018	1.0	Version 1. New CIP to support new broadband Wholesale Reference Offer	TSO KCOM Group Limited
27/09/2019	1.1	Version 1.1. Final CIP updated from draft	Technology KCOM Group Limited

August 2021	2.0	Fully reviewed and revised document, main changes include: <ul style="list-style-type: none">• Re structured the document to make it clearer for the reader• Removed information that is already contained in WFLA CIP 037• Addition of 100Gbps BSIL option	Product Architecture KCOM Wholesale
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