SIN 293

Issue 2.3
March 2009

Suppliers' Information Note

For The BT Network

BT LAN EXTENSION SERVICE 622
Service Description

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1. Introduction

This Suppliers Information Note (SIN) describes the customer interface provided with the BT Local Area Network (LAN) Extension Service 622 (LES 622). Also provided is some general information on the LES 622 Service, and on some of the physical aspects of the NTE currently being deployed for new customer orders. This SIN is intended to provide customer interface and service information to be used by Customer Premises Equipment (CPE) manufacturers and developers.

NB - The BT Global service described in this SIN is now delivered using Openreach Wholesale End to End Extension Service 622 (WEES 622), which is described in SIN 435. However, this SIN 293 remains available for reference.

2. Service Outline

2.1 General

The LES 622 services (LES 622A & LES 622B) are made up from a number of the same basic element. This element comprises a single fibre pair link between the customer's sites and an NTE (Network Terminating Equipment) at each end of this link. This basic element also corresponds to a single LES 622B link.

The services operate at 622,080 kbit/s (± 20ppm) and provide links between customer's sites over radial distances of up to 25 km (Figure 1). The actual fibre route distance will depend on the local physical circumstances and the BT plant configuration.

Further information is available from the Advanced Data Services Helpdesk using the contact information at http://www.sinet.bt.com/usenum.htm.

Examples of these Services and using the basic elements are shown in ANNEX A – Examples of LES 622A & LES 622B Services.

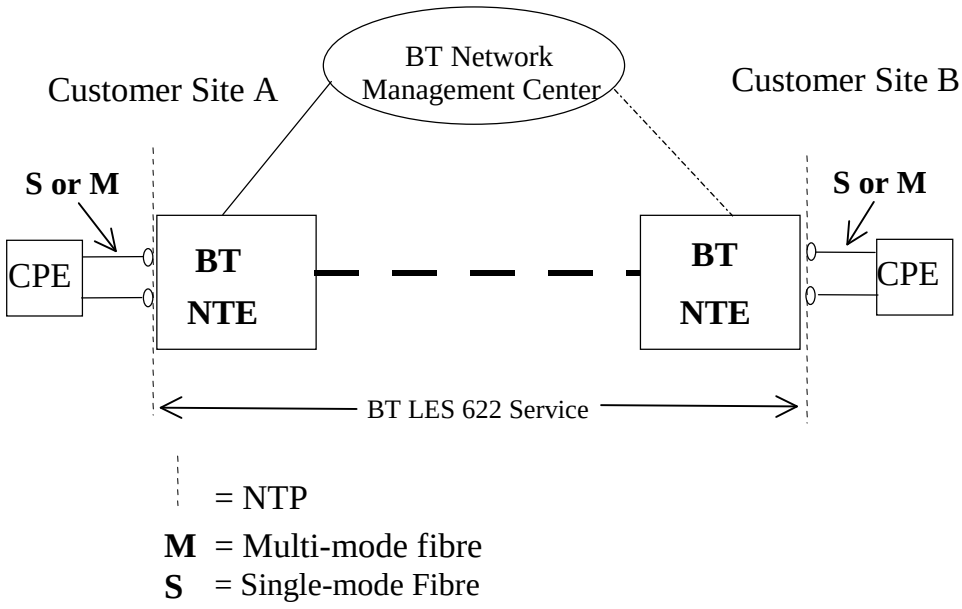

Figure 1 - LES 622B Basic Element

It is envisaged that customers will use this service for applications using and implementing the technologies of Synchronous Digital Hierarchy (SDH) and Asynchronous Transfer Mode (ATM). Framing and frame structure will be the responsibility of the customer and will be transported transparently.

Please note that the LES 622A service is no longer available for new supply.

2.2 Monitoring

The BT NTEs are connected to, and monitored by, a BT Network Management Centre and are 'polled' on a regular basis.

It is only possible to monitor the presence of optical conditions, and the physical aspects of the NTE, to determine the functional status of each transmission link for maintenance & repair purposes.

3. Customer Interface

3.1 Interface Point

The customers user interface is presented at the Network Termination Point (NTP), i.e. the point of connection between the BT Network Terminating Equipment (NTE) and the customers own CPE.

3.2 Connector

The interface connector is physically located on the BT NTE in the form of a dual optical SC type sockets. A connection is made between the NTE and the CPE by using a suitable patch cable with a plug (male) to make a connection to the BT NTE.

The Service offers two types of interface options either single-mode or multi-mode.

The customer provides a suitable dual SC type patch or interconnection cable between the NTE and the CPE, of either 9/125μm single-mode fibre or 62.5/125μm multi-mode fibre depending on the requested interface type.

The SC type connector conforms to IEC 874-14 [1]. Attention is drawn to the Intellectual Property Rights (IPRs) set out in the preface of this agreed International standard. It is the responsibility of the CPE supplier to ensure that they have the necessary rights from the owner of the IPR. The IPR owner has stated that they are willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world.

3.3 Transmission

The interface complies with Table 1/G.957, Intra-office, STM- 4, of ITU-T Recommendation G.957[2].
The optical fibre presentation at the interface is conformant to (IEC) 60825-1 (2001)[3] & IEC 60825-2 (2000)[4] as a Class 1M Laser Product.

3.4 BT NTE Mounting

The BT NTE can be mounted within either BT or customer supplied equipment cabinets capable of accommodating standard 19 inch mounting practice. Alternatively, the BT NTE equipment can be positioned on a suitable horizontal, non-slip surface.

4. Power supply

The BT NTE is locally powered at each end of the link. The NTE can be supplied in either a mains power 110/220V AC or – 48V DC option.

The both types of NTEs feature duplicated power unit arrangements sharing the internal load for enhanced reliability.

An additional mains power socket outlet should be provided to power BT test equipment at initial commissioning, or for in service maintenance activities.

4.1 Mains Powered Option

This is an auto-sensing power unit accepting voltages in the range 90-264V AC, and supply frequencies of 47 to 63Hz.

Only one customer mains socket outlet is required to provide power for each NTE.

The power connection is through a standard lead, comprising a standard UK 13A 3-pin plug (BS1363) and an IEC 320 socket type connector. The NTE has a recessed shrouded IEC 320 plug type connector mounted at the rear of unit.

The phase of the AC power supply to the NTE must be the same as to other equipment housed in the same cabinet, for the usual safety reasons.

A single BT NTE has a maximum power consumption of 30W and current of 0.4 Amps.

4.2 48V DC Powered Option

4.2.1 General

This power supply accepts input voltages in the range 42 to 58V DC.

The power connection is a screw block terminal, mounted at the rear of the chassis, this is labelled ‘DC Supply 48V’.

4.2.2 Single or Dual power supplies

The NTE may be connected to either a single or to twin DC power supplies.
Where only one DC supply is used, then parallel power connections need to be made to the NTE’s screw block terminal. It is recommended that the customer uses two separate 48V DC supplies, where possible, to provide resilience.

A single BT NTE has a maximum power consumption of 30W and current of 0.4 Amps at 48VDC.

5. Further information

Contacts for further information can be found at http://www.sinet.bt.com/usenum.htm

6. References

[1]	International Electrotechnical Commission 874 /14 - Connectors for Optical Fibres and Cables. Part 14: Sectional Specification for Fibre Optical Connector Type SC.
[2]	ITU-T Recommendation G.957 - Optical interfaces for equipments and systems relating to the synchronous digital hierarchy. June 1999
[3]	(IEC) 60825-1 (2001) Safety of Laser Products Part 1 Equipment classification
[4]	(IEC) 60825 –2 (2000) Safety of Laser Products Part 2 Safety of Optical fibre communications systems.

For further information or copies of referenced sources, please see document sources at http://www.sinet.bt.com/usenum.htm#docsources

7. Abbreviations

ATM	Asynchronous Transfer Mode
CPE	Customer Premises Equipment
IEC	International Electrotechnical Commission
IPRs	Intellectual Property Rights
LAN	Local Area Network
LES	LAN Extension Service
NTE	Network Terminating Equipment
NTP	Network Terminating Point
SDH	Synchronous Digital Hierarchy
SIN	Suppliers Information Note

8. History

Issue 1	January 1998	New SIN
Issue 1.1	February 2001	Editorial changes & approval requirements now by reference to SIN 325.
Issue 2.0	October 2001	Introduction of Single-mode customer interface and –48V DC chassis.
Issue 2.1	September 2003	Major editorial update and removal of clause on terminal equipment approval.
Issue 2.2	February 2005	Information that LES 622A is no longer available for new supply added to the Service Outline section.
Issue 2.3	March 2009	Noted that the service is now delivered using Openreach WEES 622, as described in SIN 435. However, SIN 293 is being kept available for reference.

We would be grateful if you would spend a few minutes to complete an online customer satisfaction form at **http://www.sinet.bt.com/happy.htm.**

ANNEX A – Examples of LES 622A & LES 622B Services

A.1 LES 622A Service

LES 622A offers point-to-point connectivity between two sites using two LES 622B basic elements, the two elements being installed at the same time (Figure 2) to provide this service.

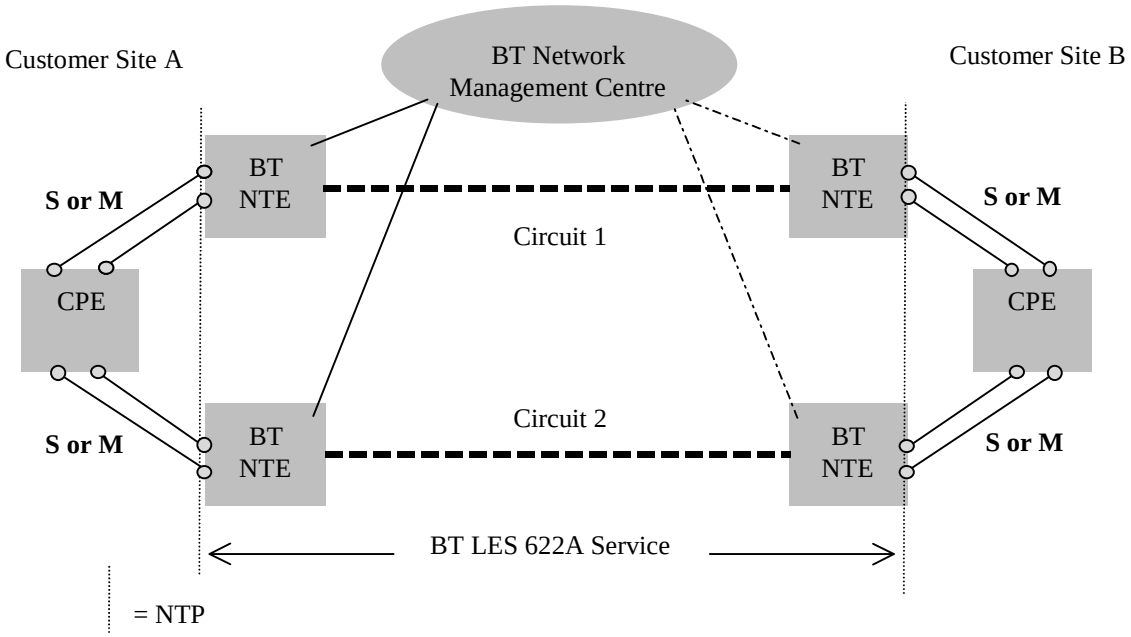

Figure 2 – LES 622A Service Topology

A.2 LES 622B Service

LES 622B Service offers point-to-point connectivity between two or more sites using the basic element between each pair of sites.

Where three or more sites are involved, the customer may take advantage of the opportunity to configure their CPE so that should there be a failure in one of the circuits, the CPE can route data over other available circuits to the correct destination. For example, in Figure 3, should Circuit 1fail the customer may be able to route data via Circuits 2 and 3.

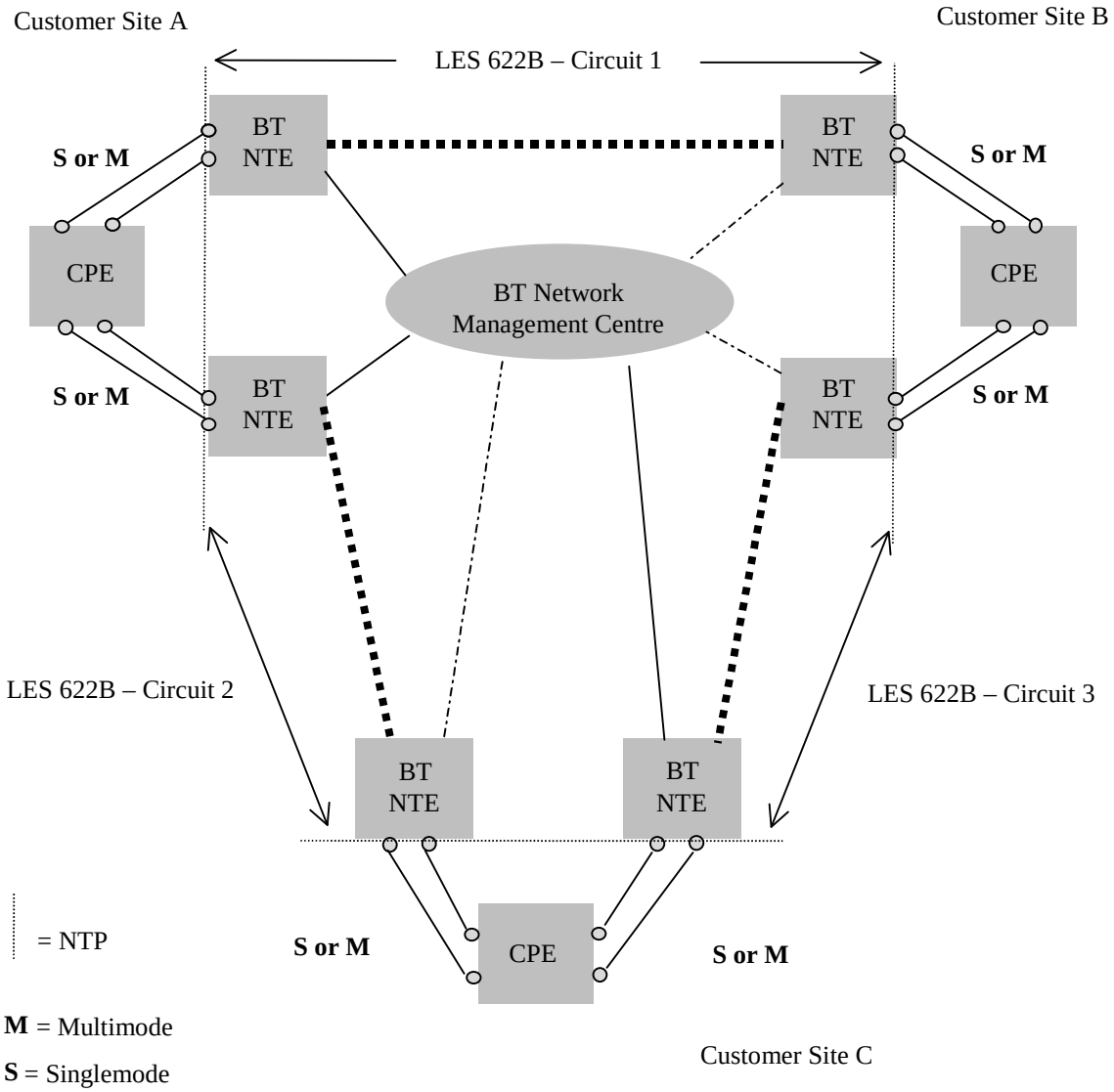

Figure 3 – LES 622B Service Topology using Three basic elements

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