



ITS 16

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Interface technical specifications
for France Telecom's network

Directive 1999/5/EC

Inter LAN 2.0 Ethernet service: Access interface characteristics

Summary: This document gives a brief description of the Ethernet and Fast Ethernet bridging services for LAN interconnection, part of the high rate InterLAN 2.0 service, and describes the technical characteristics of the interfaces used for accessing these services.

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France Telecom
6, Place d'Alleray
75505 Paris Cedex 15
France

<http://www.francetelecom.com>

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3. the fact that a service not yet commercially open is described in this document can in no case be considered as a binding commitment on France Telecom part to actually open this service.

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1. OVERVIEW OF THE INTER LAN 2.0 ETHERNET SERVICE

1.1 INTRODUCTION

The Inter LAN 2.0 Ethernet service is a high bit rate digital link service designed to interconnect a customer's local Ethernet and Fast Ethernet networks.

The interconnection service offered is limited to OSI layer 2 (bridging service).

The links are deployed within a town with rates reaching up to 100 Mbit/s.

The Inter LAN 2.0 Ethernet service includes supervision services (proactive supervision) and Quality of Service commitments (guaranteed service restoration time, maximum service unavailability time and commissioning delays).

1.2 SERVICE ACCESS EQUIPMENT

The service is accessed on the customer site via the service access equipment (EAS) provided by France Telecom, which delivers an Ethernet/Fast Ethernet service interface to which the customer's equipment is connected. The customer supplies and receives a stream of Ethernet frames on each site and France Telecom transports these frames through its network.

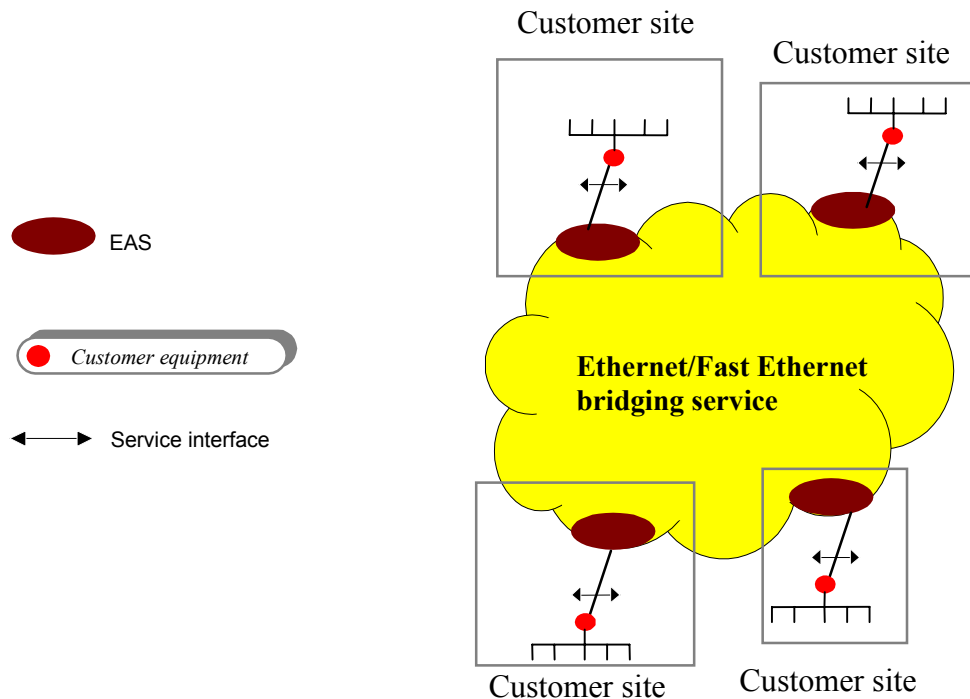


Figure 1: Accessing the service from a customer site

As illustrated in Figure 1, an EAS equipped with a single Ethernet/Fast Ethernet service is installed on each customer site. This equipment allows the customer to access interconnection links whose maximum rate can reach up to 100 Mbit/s.

The EAS Ethernet/Fast Ethernet interface is the service access interface delivered by France Telecom. This interface represents the boundary of France Telecom responsibility to the customer for the service offered.

2. CHARACTERISTICS OF THE INTER LAN 2.0 ETHERNET SERVICE

2.1 LINKS

The links implemented in the context of the Ethernet Inter LAN 2.0 service are bidirectional symmetrical links, i.e. they allow information to be exchanged in both directions at the same rate.

2.2 INTERFACES OFFERED

Two types of Ethernet interfaces are offered to the customer:

- ◆ Ethernet 10 Base-T
- ◆ Ethernet 100 Base-TX

2.3 TRANSMISSION MODE

The customer has a choice between half-duplex or full-duplex transmission mode.

2.4 CONFIGURATIONS OFFERED

Three types of configuration are offered:

- ◆ Point-to-point configuration to interconnect two remote sites,
- ◆ Mutualized point-to-multipoint configuration to interconnect several remote sites and a central site where all the Ethernet flows from the remote sites are mutualized on a single access service interface.
- ◆ Not mutualized point-to-multipoint configuration to interconnect several remote sites and a central site with as many interfaces as of remote sites.

For each configuration, the possible combinations of access service interfaces are:

For a point-to-point configuration		For a point-to-multipoint configuration (Mutualized or not mutualized)	
Site 1	Site 2	Central site	Remote site
Ethernet	Ethernet	Ethernet	Ethernet
Fast Ethernet	Fast Ethernet	Fast Ethernet	Fast Ethernet
Ethernet	Fast Ethernet	Fast Ethernet	Ethernet

2.5 TRANSPARANCY TO VIRTUAL AREA NETWORKS

The Inter LAN 2.0 Ethernet service is transparent to the VLANs that the customer can implement between sites. In this case, the Ethernet frames must comply with IEEE standard 802.1q.

2.6 STANDARDS TO BE RESPECTED

The Ethernet frames generated from the customer equipment must comply with IEEE standard 802.3. This standard specifies the hardware level and the MAC level for Ethernet 10 base-T networks using the CSMA/CD access method.

The Fast Ethernet frames generated from the customer equipment must comply with IEEE standard 802.3u. This standard specifies the hardware level and the MAC level for Fast Ethernet 100 base-TX networks using the CSMA/CD access method.

The VLANs that the customer can implement from this equipment must comply with IEEE standard 802.1q.

The tagging of Ethernet frames used in a VLAN context must comply with IEEE standard 802.3ac.

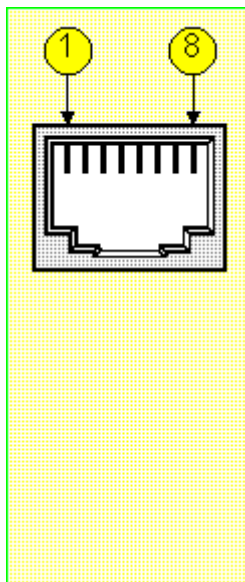
The following table summarises the main characteristics of the Inter LAN 2.0 Ethernet service:

Main characteristics of the Inter LAN 2.0 Ethernet service	
<i>OSI reference model layer</i>	Bridging offer limited to layer 2 of the OSI reference model
<i>Possible user interfaces</i>	Ethernet 10 Base-T Ethernet 100 Base-TX
<i>Configurations</i>	Point-to-point Mutualized point-to-multipoint Not mutualized point-to-multipoint

The following table describes the service interfaces available for the Inter LAN 2.0 Ethernet service and their characteristics:

Inter LAN 2.0 Ethernet service interfaces					
Possible service levels	Type of service interface	Range (metres)	Type of connector	Impedance	Type of cables to be used
INFIX (best effort) OPEN 2, 4 Mbit/s INTEGRA 10 Mbit/s	Ethernet (10 Base-T)	100	ISO 8877 (RJ-45)	100 Ohms	UTP 3 or above
OPEN 2, 4, 20, 40, 60 Mbit/s INTEGRA 100 Mbit/s	Fast Ethernet (100 Base-TX)	100	ISO 8877 (RJ-45)	100 Ohms	UTP 5

The following figure describes the Inter LAN 2.0 Ethernet bridging service ISO 8877 (RJ-45) connector and its wiring:



The connector is shown as it appears on the front of the equipment.

Assignment of contacts:

- 1 Data out (Transmit data+)
- 2 Data out (Transmit data-)
- 3 Data in (Received+)
- 4 Not used
- 5 Not used
- 6 Data in (Received-)
- 7 Not used
- 8 Not used

3. HISTORY

Edition	Date	Comments
1	March 2000	First version
2	October 2000	Title changed and minor modifications made
3	April 2002	New name: « Inter LAN 2.0 Ethernet service » New configuration: Not mutualized point-to-multipoint
4	January 2005	The comply of Ethernet/FastEthernet full-duplex transmission mode with IEEE standard 802.3x is removed of the ITS16