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Interface technical specifications
for France Telecom's network

Directive 1999/5/EC

**InterLAN 2.0 Circuit Emulation Service
(CES) access interface characteristics**

Summary: This document gives a brief description of the InterLAN 2.0 Circuit Emulation Service (CES), and describes the technical characteristics of the interfaces used for accessing the service.

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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 INTERLAN 2.0 CIRCUIT EMULATION SERVICE

1.1 GENERAL DESCRIPTION

The InterLAN 2.0 service is a high bit rate digital link service used to interconnect customer Ethernet and Fast Ethernet local 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 Circuit Emulation Service (CES) is one option of the Ethernet/Fast Ethernet bridging service, part of the InterLAN 2.0 service. It allows remote equipment operating in circuit mode, notably Private Automatic Branch eXchanges (PABX), to be connected.

The service includes supervision functions (proactive supervision) and QoS commitments (guaranteed service restoration time, maximum service unavailability time and commissioning delays).

1.2 SERVICE ACCESS EQUIPMENT

The circuit emulation service can be accessed on the customer site via the service access equipment (EAS) supplied by France Telecom. The EAS has a User Service Interface (USI) to which the customer equipment can be connected. This interface is the boundary of France Telecom's responsibility.

The interface offered to the customer is a 2048 kbit/s E1 interface. It complies with ITU-T Recommendation G.703.

Table 1 gives the characteristics of this USI and the associated standards.

InterLAN 2.0 service CES interface						
Type of service interface	Signal code	Range (metres)	Type of connector	Impedance	Type of cables to be used	Reference standards
E1	High Density Bipolar order 3 encoding (HDB3)	300	ISO 8877 (RJ-45)	120 Ohms	Shielded twisted symmetrical electrical pairs	G.703/G.823

Table 1: Circuit emulation physical interface characteristics

Figure 1 describes the ISO 8877 (RJ-45) female connector present on the EAS and its wiring:

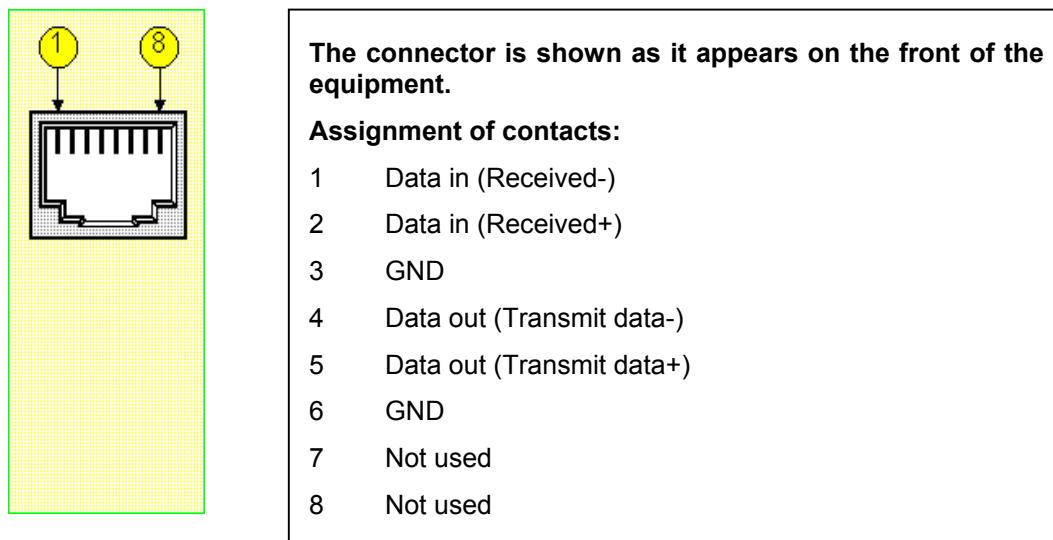


Figure 1: Description of the circuit emulation physical interface

2. INTERLAN 2.0 SERVICE CIRCUIT EMULATION SERVICE CHARACTERISTICS

2.1 LINKS

As illustrated in Figure 2, each customer site equipped with EAS is connected to France Telecom's ATM network via a Virtual Channel (VC) type ATM connection.

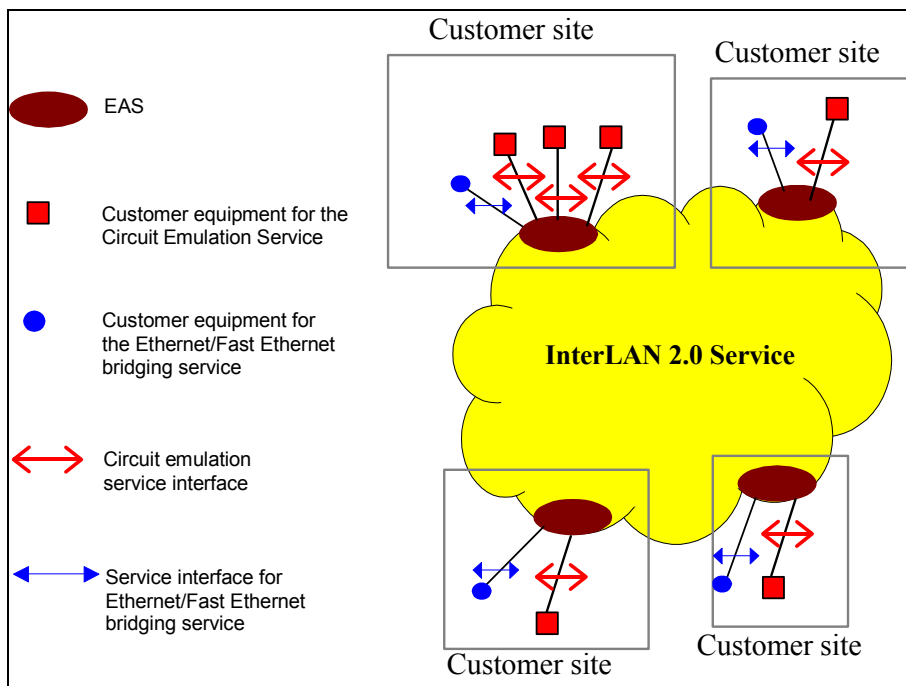


Figure 2: Accessing the InterLAN 2.0 service Circuit Emulation Service

The CES is transported on CBR-class ATM connections. Stream adaptation is carried out using the ATM Adaptation Layer, type 1 (AAL1).

2.2 CONFIGURATIONS AVAILABLE

Three types of configuration are offered:

- **point-to-point** configuration: interconnection of two remote sites,
- **point-to-multipoint** configuration with **shared** service interface: interconnection of a central site with several remote sites, with a single service interface on the central site on which all the Ethernet streams from the remote sites are centralised,
- **point-to-multipoint** configuration with **separate** service interfaces: interconnection of a central site with several remote sites, with a service interface on the central site for each remote site.

2.3 SYNCHRONISATION

With the CES, there must be synchronisation between the EAS USI and the customer equipment. All the transmission equipment of France Telecom's network is synchronised by a single reference clock. The reference timing is supplied to the USI to synchronise the customer equipment with the signal from the EAS. The customer equipment must, therefore, be able to accept the network reference timing, unless the customer equipment is already synchronised by the France Telecom reference clock.

3. STANDARDS TO BE RESPECTED

The electrical characteristics of the digital signal transmitted by the customer must comply with the specifications in Recommendation G.703.

The signals delivered to the France Telecom interface by the customer must comply with Recommendation G.823 concerning jitter and wander.

4. HISTORY

Edition	Date	Comments
1	May 2002	First version