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Interface technical specifications
for France Telecom's network

Directive 1999/5/EC

Intra-city Network service access interface characteristics

Summary: This document describes the technical characteristics of the interfaces used for accessing the **Intra-city Network** services.

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1. timer values are indicative and can be subject to modification,
2. due to various technical constraints, some services or service options may not be available on some interfaces,
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 INTRA-CITY NETWORK SERVICE

The Intra-city Network service consists of France Telecom providing a **high bit rate link network** for both Private Automatic Branch eXchange (PABX) interconnection and Ethernet/Fast Ethernet Local Area Network (LAN) interconnection.

This service is available as standard for towns with more than 20, 000 inhabitants.

The maximum distance allowed between the central site and the remote sites is 3 km, with a minimum of four remote sites.

The service is provided in the form of **single A, B, C or D type links**, or in the form of a **predefined package with two links, AB, AC or AD**.

NB: Throughout this document, Network refers to all the links and packages supplied to the customer by France Telecom in the context of an Intra-city Network agreement.

Regardless of whether single links or packaged links are used in the Network, the following link configurations are available:

isolated point-to-point configuration, for:

- A links
- single B, C or D links (only one in the Network)

In a point-to-point configuration, each link has its own interface on the central site (see § Erreur ! Source du renvoi introuvable.).

multipoint configuration, for:

- multiple B, C or D links (at least two in the Network)

In a multipoint configuration, the links have a single shared interface on the central site (see § Erreur ! Source du renvoi introuvable.).

Link type	Requirements	Service interface provided	Maximum rate provided	Configuration
A or A Plus (1) or A Plus Plus (1)	Speech	G.703	2048 Mbit/s	Point-to-point
B or B Plus (1) or B Plus Plus (1)	LAN interconnection	Ethernet 10 Base-T	1.7 Mbit/s	Point-to-point or multipoint
C or C Plus (1)	LAN interconnection	Ethernet 10 Base-T	10 Mbit/s	Point-to-point or multipoint
D or D Plus (1)	LAN interconnection	Fast Ethernet 100 Base-TX	100 Mbit/s	Point-to-point or multipoint

1- The technical characteristics of Plus and Plus Plus type links are identical to those of standard links, but the conditions for provision are different.

2 LINK CONFIGURATIONS

There are two possible link configurations:

- isolated point-to-point,
- multipoint.

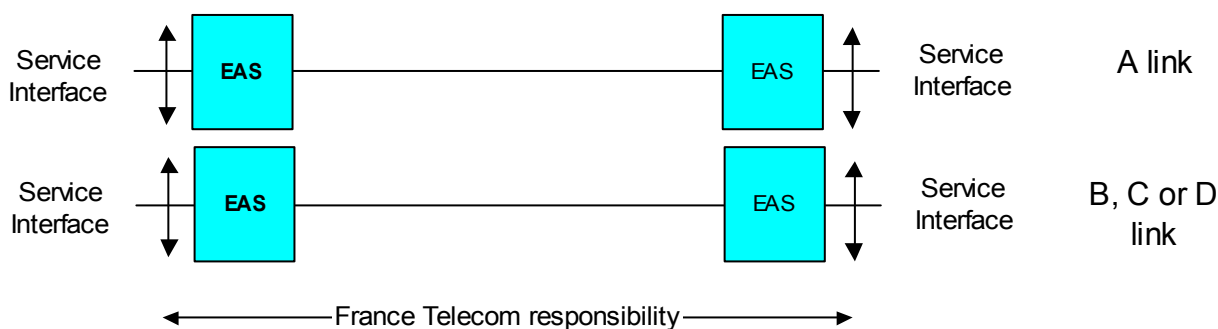
For LAN interconnection links (B, C or D), the customer equipment connected to the service interfaces at each end is on the same local logical network.

NB: A local logical network is made up of local 'physical' networks interconnected by 'bridge' type equipment.

2.1 POINT-TO-POINT LINKS

Point-to-point links are used to interconnect two remote sites. In the Intra-city Network service, the point-to-point link interconnects the central customer site to one of the remote sites in the network. This configuration applies to A type links and single B, C or D type links in the network.

France Telecom supplies a service interface at each end of the link.



2.1.1 POSSIBLE USER INTERFACE COMBINATIONS FOR A POINT-TO-POINT CONFIGURATION

Central customer site	Remote site x
G.703	G.703
Fast Ethernet	Fast Ethernet
Ethernet	Ethernet

2.2 MULTIPOINT LINKS

A multipoint are used to interconnect a shared site (central site) and at least two separate end sites (remote sites). France Telecom provides a single service interface for each remote site.

This configuration applies to multiple B, C or D type links (where there are at least two in the network).

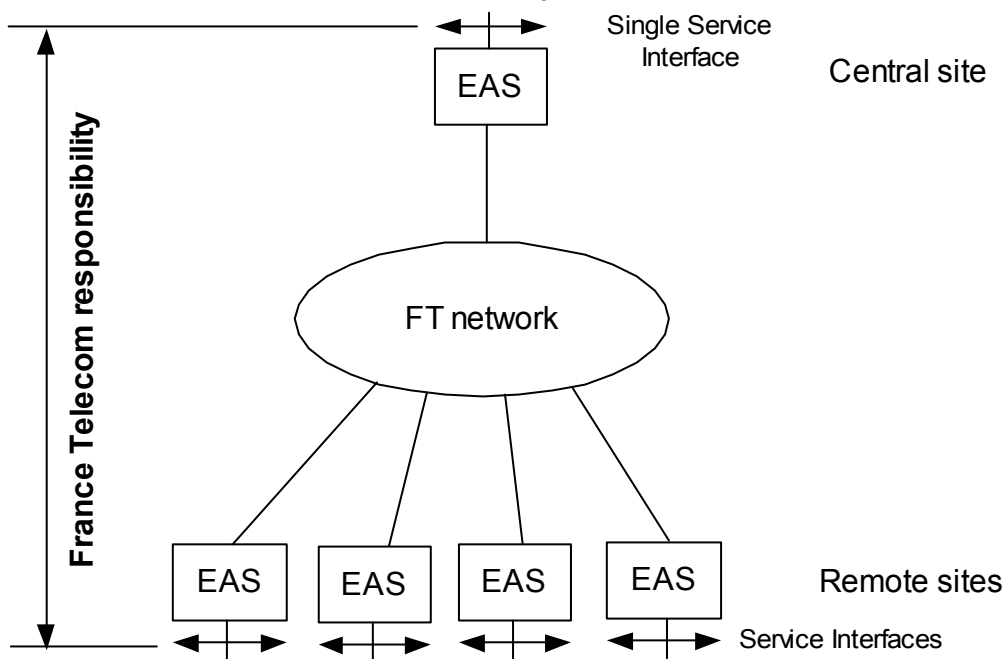


Figure 3: Multipoint configuration

In a multipoint link, all the interfaces provided belong to the same OSI layer 2 network, thus forming a single local logical network.

In OSI layer 2, a logical network is equivalent to a single broadcast domain.

2.2.1 POSSIBLE SERVICE INTERFACE COMBINATIONS FOR A MULTIPOINT CONFIGURATION

CENTRAL site	REMOTE sites
Ethernet	Ethernet
Fast Ethernet	Ethernet
Fast Ethernet	Ethernet or Fast Ethernet
Fast Ethernet	Fast Ethernet

2.3 RATES

Link type	Maximum rate provided
A or A Plus or A Plus Plus	2048 Mbit/s
B or B Plus or B Plus Plus	1.7 Mbit/s
C or C Plus	10 Mbit/s
D or D Plus	100 Mbit/s

3 INTERFACES AVAILABLE

3.1 G.703

This interface only applies to A type links.

- 4-wire symmetrical pair interface.
- The physical connection interface is made by a connecting strip supplied by France Telecom which allows symmetrical pair cables to be connected with individual shields for each pair.
- The local customer equipment should supply a clock frequency of 2048 kHz $\pm 50 \cdot 10^{-6}$ to the remote customer equipment to ensure correct operation.
- The maximum authorised jitter output from the customer equipment must comply with ITU-T Recommendation G.823.
- Applicable standards: G.703, G.823.

3.2 ETHERNET

This interface applies to B and C type links.

- Ethernet 10 Base-T.
- The interdependent RJ-45 connector of the EAS represents the MDI or MDI-X (Medium Dependent Interface or Medium Dependent Interface with internal crossover) service interface depending on the EAS deployed by France Telecom.
- The signal transmission mode must be full-duplex for the C type links only. In this case, it must comply with IEEE standard 802.3x.
- The France Telecom network transports the Virtual Local Area Networks (VLAN) **transparently**, if the frames received by the EAS comply with IEEE standard 802.1q. In all cases, the network does not manage the VLANs.
- Applicable standards: IEEE 802.3, IEEE 802.3x.

3.3 FAST ETHERNET

This interface only applies to D type links.

- Ethernet 100 Base-TX.
- The interdependent RJ-45 connector of the EAS represents the MDI or MDI-X service interface depending on the EAS deployed by France Telecom.
- The signal transmission mode must be full-duplex for the D type links only. It must comply with IEEE standard 802.3x.
- The France Telecom network transports the VLANs **transparently**, if the frames received by the EAS comply with IEEE standard 802.1q. In all cases, the network does not manage the VLANs.
- Applicable standards: IEEE 802.3, IEEE 802.3x.

4 HISTORY

Edition	Date	Comments
1	May 2002	First version