

Recommendation T/L 02-11 (Copenhagen 1987)

**INTERFACES FOR OPERATION, MAINTENANCE AND SUPERVISION
OF TELECOMMUNICATIONS EQUIPMENT IN TELECOMMUNICATIONS CENTRES**

Recommendation proposed by Working Group T/WG 12 "Transmission and multiplexing" (TM)

Text of the Recommendation revised adopted by "Telecommunications" Commission:

"The European Conference of Posts and Telecommunications Administrations,

considering

- that telecommunications equipment is usually located in Telecommunications Centres,
- that the installation of equipment from multiple sources in a single Telecommunications Centre requires a certain degree of standardisation of interfaces for operations, maintenance and supervision,
- that the existing Recommendations of CCITT on the subject do not provide a sufficient degree of standardisation,
- that the CEPT Administrations are in favour of any harmonisation measures likely to facilitate maintenance, operations and supervision,

recommends

that the members of the CEPT should apply the specifications contained in the present Recommendation concerning the harmonisation of interfaces for operation, maintenance and supervision of telecommunications equipment."

Contents

1. OBJECTIVES	2
2. MEANS	2
3. C1 INTERFACE	2
4. C2 INTERFACE	2
5. C3 INTERFACE	3

1. **OBJECTIVES**

To define interfaces between telecommunications equipments and a data network designed to realise among others the following functions:

- To provide network management information.
- To provide network performance information.
- To assist in localising intermittent faults.
- To allow all information to be made available at remote network management and maintenance centres.
- To permit remote control functions.

2. **MEANS**

In order to attain these objectives it is necessary:

- To provide where possible, messages characterising performance of each telecommunications equipment.
- To set up a system for acquisition, processing and transmission of fault, measurement or control messages.

More particularly in the case of a Telecommunications Centre, a network structure for operation, maintenance and supervision on several levels, in accordance with Figure 1 (T/L 02-11) is envisaged.

The primary role of the central processing equipment is to control the collection device, to process and store the information received and to present it at operations terminals, if needed. The necessity for central processing equipment depends on economic considerations, the processing power of the collection devices and on the number of collection devices situated at the centre.

A collection device is an equipment which primarily collects and may distribute information/data from and to telecommunications equipment. In practice it may include additional functions which might otherwise be implemented by the central processing equipment.

These different levels constitute an area of possible harmonisation:

Interface C1: Interface primarily intended for connection between telecommunications equipments and collection devices.

Interface C2: Interface primarily intended for connection between collection devices and the central processing equipments of a Telecommunication Centre.

Interface C3: Interface between Telecommunications Centre and data transport network.

Applications different from the primary applications are not excluded where practical, operational or economic factors dictate. For example a telecommunications equipment may alternatively be provided with a C2 or C3 interface. Certain types of collection device may also be connected to the central processing equipment by a type C1 interface.

Any necessary conversion between the C2 interface and the C3 interface may be carried out in the central processing equipment.

3. **C1 INTERFACE**

Under Study.

4. **C2 INTERFACE**

4.1. **Introduction**

This interface is primarily intended for the connection between collection devices and the central processing equipments of a Telecommunications Centre.

4.2. **Interface Characteristics**

4.2.1. *Layer 1:*

- multipoint connection;
- configuration: bus;
- electrical characteristics: CCITT Recommendation V.11/EIA RS485.

Data transmission on 1 or 2 twisted pairs; an additional pair may be required for timing.

Maximum speed: 19,200 bit/s.

The requirement for higher speeds is under study.

4.2.2. *Layer 2:*

- An HDLC synchronous protocol, standard ISO 7809 in an unbalanced mode, standard 3309, 4335, done by a polling system (master/slave).
- Standard HDLC Frame with a maximum frame length of 128 bytes. (Under study.)

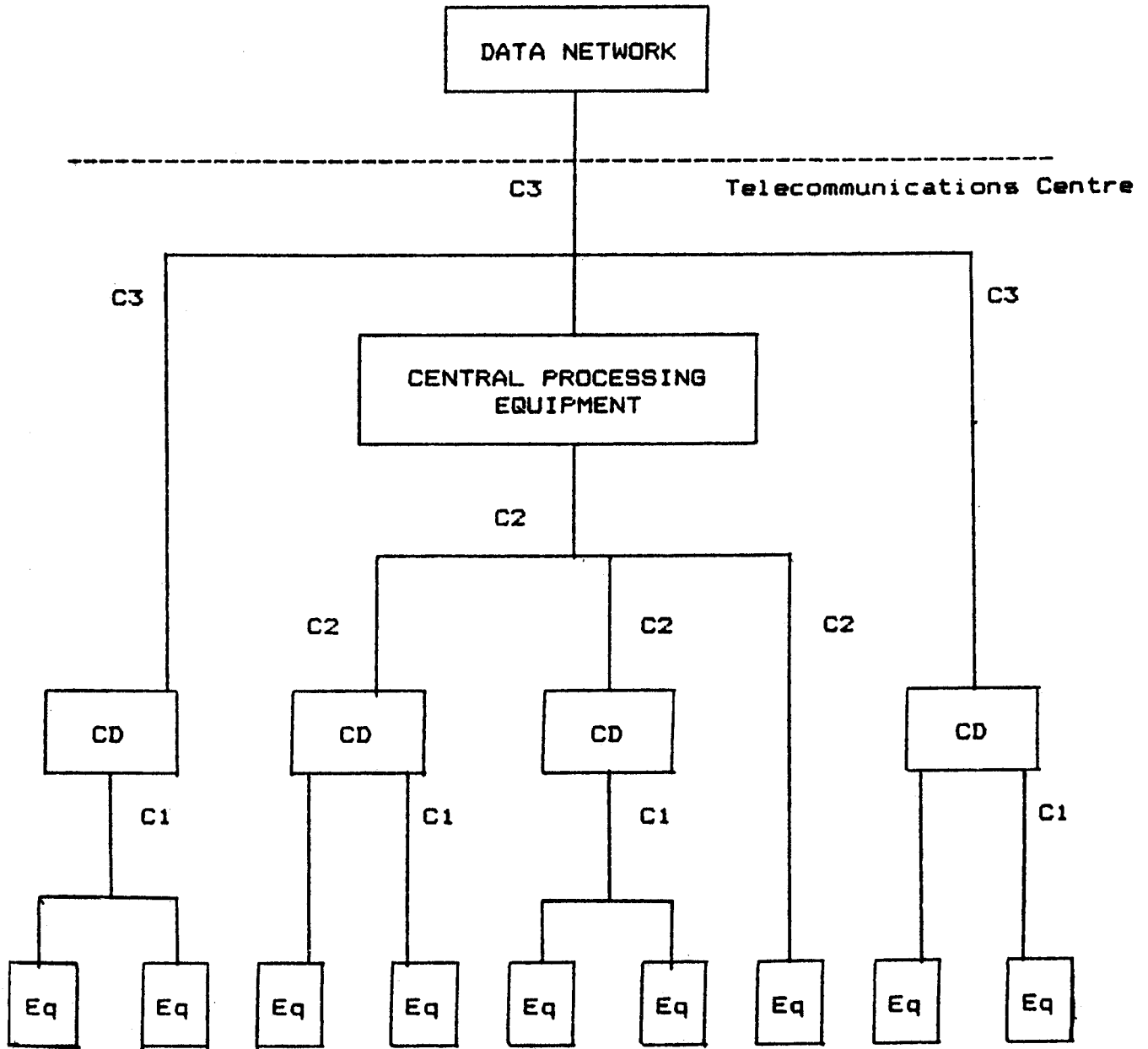
4.2.3. *Layer 7:*

This is the Application Level. Examples of the main functions which might be implemented are as follows:

- Maintenance Functions:
 - transfer of alarm state messages
 - transfer of fault location data
 - control of alarm thresholds
- Performance Functions:
 - transfer of performance data
 - control of performance calculation algorithms
- Operations Functions:
 - database upgrading
 - updating of collection device configuration
 - transfer of software
- Remote Control Functions:
 - initiation of protection switching
 - change of equipment set-up conditions

5. **C3 INTERFACE**

Under study.



CD: Collection Device
Eq: Telecommunications Equipment

Figure 1 (T/L 02-11).