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TELEMATIC SERVICES

**TERMINAL EQUIPMENTS AND PROTOCOLS
FOR TELEMATIC SERVICES**

**COMMUNICATION APPLICATION
PROFILE DM-1 FOR VIDEOTEX
INTERWORKING**

ITU-T Recommendation T.523

(Previously "CCITT Recommendation")

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation T.523 was revised by the ITU-T Study Group VIII (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

2 In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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Recommendation T.523**COMMUNICATION APPLICATION PROFILE DM-1
FOR VIDEOTEX INTERWORKING***(Melbourne, 1988; revised at Helsinki, 1993)***1 Scope**

1.1 The T.400-Series Recommendations generally defines open document architecture (ODA), document architecture operations and DTAM service/protocol for document architecture transfer and manipulation under the telematic communication environment.

1.2 This Recommendation defines a communication application profile DM-1 for document unconfirmed manipulation to specify an interactive communication profile based on DTAM between videotex gateway systems.

1.3 The use of Recommendations X.215, X.225, X.216, X.226, X.217 and X.227 for this communication profile is described in this Recommendation.

2 Field of application

2.1 The communication application profile DM-1 enables document manipulation for documents which are represented in accordance with the document application profile defined by Recommendation T.504, and the operational application profile defined by Recommendation T.541.

2.2 The ODA documents that are manipulated should be in formatted form.

2.3 The field of application of this Recommendation is the international videotex interworking service between videotex gateways, representing the external host (EH) and the local host (LH).

2.4 Videotex communication procedure is based on the model defined in this Recommendation in accordance with the Recommendation T.564 which defines gateway characteristics for videotex inter-working.

3 References

- Rec. T.101 *International interworking for videotex services*
- Rec. T.430-Series *Document transfer and manipulation (DTAM)*
- Rec. T.504 *Document application profile for videotex interworking*
- Rec. T.541 *Operational application profile for videotex interworking*
- Rec. T.564 *Gateway characteristics for videotex interworking*
- Rec. X.215 *Session service definition for open systems interconnection for CCITT applications*
- Rec. X.225 *Session protocol specification for open systems interconnection for CCITT applications*
- Rec. X.216 *Presentation service definition for open systems interconnection for CCITT applications*
- Rec. X.226 *Presentation protocol specification for open systems interconnection for CCITT applications*

- *Rec. X.217 Association control service definition for open systems interconnection for CCITT applications*
- *Rec. X.227 Association control protocol specification for open systems interconnection for CCITT applications*
- *Rec. X.208 Specification of abstract syntax notation one (ASN.1)*
- *Rec. X.209 Specification of basic encoding rules for abstract syntax notation one (ASN.1)*

4 Definitions

Terms and their definitions are defined by the Recommendations listed above.

5 Overview of communication profile DM-1

5.1 Communication profile DM-1 defines the communication functionalities which provide a real time remote document manipulation on ODA and operational structure documents by create, delete, modify and call operations between videotex gateways under OSI ACSE and presentation communication support functions (normal mode defined in Recommendation T.432). These operations are the unconfirmed type of manipulation.

5.2 This profile defines the communication model which consists of the local host DTAM user and the external host DTAM user as illustrated in Figure 1. Either the LH or the EH is capable of managing the initiation and termination of application-association. At the association establishment phase, initial VIA structures are automatically generated in both hosts.

5.3 The owner of the data token, managed by the DTAM token control function, is able to manipulate ODA and operational structure documents which are directly mapped from VIA operations defined in the Recommendation T.564.

5.4 The manipulation provides the operations which can be applied to one or more constituents of the ODA document and/or the operational structure. In this profile, these operations do effect addition, deletion or modification of constituent to a document which existed identically between both hosts.

5.5 When the data token belongs to the LH DTAM user, only modify operations on operational structure are allowed to be used by the LH DTAM user. On the other hand, the EH DTAM user is able to use all of the operations defined in DTAM when it has the data token.

6 Basic communication requirements for DM-1

DM-1 is defined under the following OSI communication environment. Mapping rules of DTAM APDUs into/out of the ACSE and presentation layer are used as defined in Recommendation T.433.

6.1 DTAM functionalities

The following DTAM functionalities defined in Recommendation T.432 are basic requirements for this communication profile DM-1:

- i) document unconfirmed manipulation by using create, modify, delete and call operations;
- ii) association use control;
- iii) token management for dialogue control;
- iv) typed data transmission.

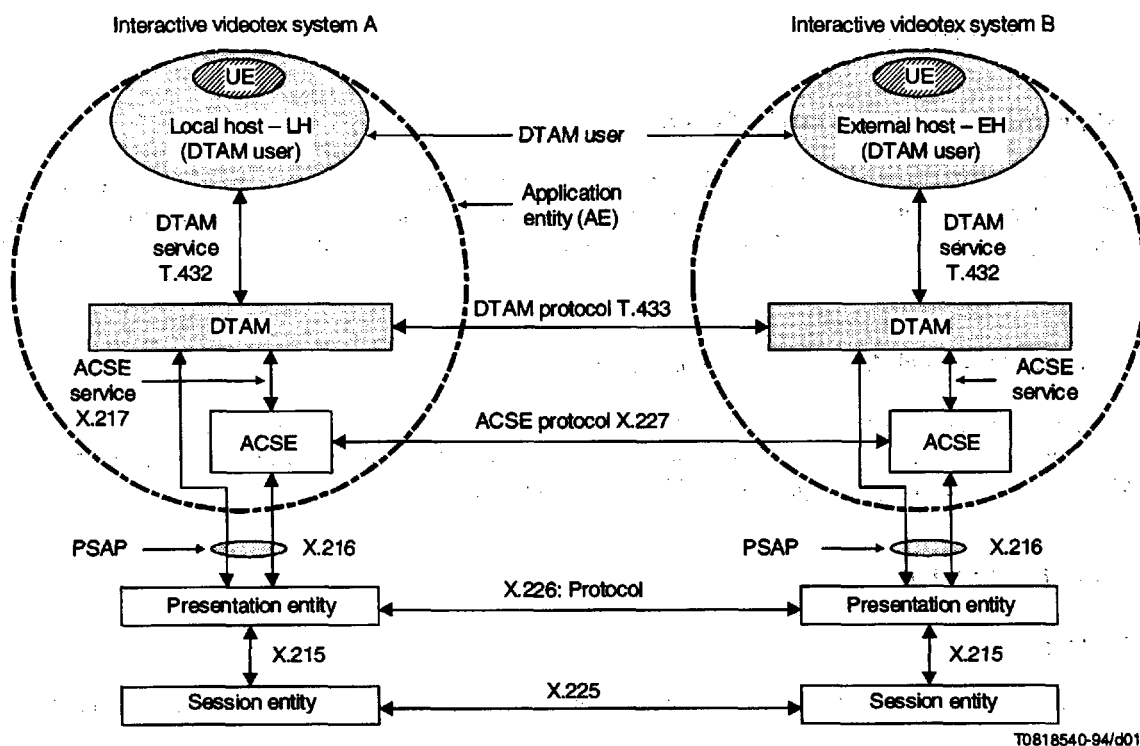


FIGURE 1/T.523

**A model of communication application profile DM-1
for videotex interworking**

6.2 ACSE functionalities

The basic functionalities of the association control service element defined by Recommendations X.217 and X.227 are used.

6.3 Presentation functionalities

The kernel functional unit is used as defined by Recommendations X.216 and X.226. Recommendations X.208 and X.209 are used for the definition of abstract notation and basic encoding rules of abstract notation respectively for DM-1.

6.4 Session functionalities

The kernel functional unit, two ways alternate functional unit and typed data functional unit are used in accordance with Recommendations X.215 and X.225.

7 Communication procedure for DM-1

7.1 General communication procedure

The general communication procedure for videotex gateway application is defined in line with the basic procedure in Recommendation T.432. The procedure consists of:

- application-association establishment;
- application-association termination;

- application-association abort;
- data transmission.

7.2 Application-association establishment

A communication normally begins with the establishment of application-association from the LH or EH DTAM user to initialize the communication environment and to set the initial parameters and the VIA structures being used. The initial data token is assigned to the EH DTAM user. After the establishment of application-association, both DTAM users move to the data transmission phase.

7.3 Application-association terminate and abort

The DTAM application-association may be normally terminated by either the LH or the EH DTAM user subject to the owning of the data token. The DTAM application-association may also be abruptly terminated by either the LH or the EH DTAM user or provider using the appropriate DTAM abort services.

7.4 Data transmission

7.4.1 General

Videotex gateway application provides the following communication functions in the data transmission phase:

- 1) manipulation of display information;
- 2) manipulation of data entry information;
- 3) manipulation of application control memory information;
- 4) manipulation of special terminal facilities information;
- 5) manipulation of administrative information;
- 6) exchange of over limit information (for further study);
- 7) transmission of asynchronous message.

7.4.2 Manipulation of display information

Display is performed by VIA operations, defined in Recommendation T.564, initiated by the external host on the display structure.

To perform VIA operations on the display structure the EH uses D-CREATE, D-MODIFY, D-DELETE or D-CALL service primitives under data token control.

7.4.3 Manipulation of data entry information

7.4.3.1 General

Recommendation T.564 defines the following four types of data entry:

- 1) data entry type 1 – information retrieval;
- 2) data entry type 2 – data collection;
- 3) data entry type 3 – data entry on the fly;
- 4) data entry type 4 – duplex data entry.

These data entry types are categorized into half duplex mode (data entry type 1, 2 and 3) and duplex mode (data entry type 4).