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Foreword

This European Telecommunication Standard (ETS) has been prepared by the Terminal Equipment (TE) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS has been produced in the light of:

- a) Videotex services being implemented in different countries using different data syntax profiles (as described in ETS 300 072 [1]);
- b) the International Radio Consultative Committee (CCIR) expressing the view that terminal equipment compatibility should exist between broadcast Teletext¹⁾ systems for general reception and public network-based data base systems;
- c) the right of different countries to use their existing systems;
- d) the possible requirement for transcoding and/or conversion to permit interworking between Videotex services in different countries;
- e) interworking between Videotex services may be provided by using different types of network such as the Public Switched Telephone Network (PSTN), Packet Switched Public Data Network (PSPDN), Circuit Switched Public Data Network (CSPDN), Integrated Services Digital Network (ISDN), etc;
- f) the need for Videotex interworking protocols to offer a large degree of compatibility with those protocols used in other telematic services.

This ETS provides a number of technical provisions to be applied for international interworking between Videotex services. It specifies the European profile of the international interworking between gateways as defined in CEPT Recommendation T/SF-59 [2] and ETS 300 105 [3].

This ETS is based upon a number of CCITT Recommendations to facilitate the interconnection of national Videotex services. The CCITT Recommendations for Videotex interworking are part of the T.500 series of CCITT Recommendations which contain the application profiles and terminal/gateway characteristics for telematic services.

NOTE: A full list of references can be found in ETS 300 105 [3], Clause 2 (Normative references).

¹⁾ The term "Teletext" has not yet been definitively adopted by the CCIR.

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1 Scope

This ETS defines no additional features to those contained in the relevant CCITT T.500 series of Recommendations for Videotex interworking.

This ETS specifies constraints and requirements relevant to ETSI, which are in line with the application profiles and gateway characteristics defined by CCITT.

While the T.500 series of CCITT Recommendations for Videotex interworking contains an incomplete provisional section concerning Videotex administrative and charging matters, the CEPT working document TE1 (87) 87, where principles and functionalities are equivalent to the half duplex mode of operation for Gateway to Gateway Interworking (GGI), may be used as a reference when implementing the administrative and charging matters in Gateway to Gateway Videotex Interworking*.

CEPT Recommendation T/SF-59 [2] and ETS 300 105 [3] define two types of interworking between national Videotex services:

- international interworking between gateways;
- international interworking between a host and a terminal.

This ETS only applies to the international interworking between gateways.

2 Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- | | |
|-----|---|
| [1] | ETS 300 072 (1990): "Terminal Equipment (TE); Videotex presentation layer protocol, Videotex presentation layer data syntax". |
| [2] | CEPT T/SF-59 (1987): "International videotex service". |
| [3] | ETS 300 105 (1991): "Terminal Equipment (TE); International Videotex interworking". |
| [4] | CCITT Recommendation T.504 (1988): "Document application profile for videotex interworking". |
| [5] | CCITT Recommendation T.523 (1988): "Communication application profile DM-1 for videotex interworking". |
| [6] | CCITT Recommendation T.541 (1988): "Operational application profile for videotex interworking". |
| [7] | CCITT Recommendation T.564 (1988): "Gateway characteristics for videotex interworking". |
| [8] | CCITT Recommendation T.101 (1988): "International interworking for videotex services". |
| [9] | CCITT Recommendation T.415 (1988): "Office document architecture (ODA) and interchange format-open document interchange format (ODIF)". |

*These Administrative and charging functions are provisional pending the result of CEPT SF1 and Tg groups and CCITT Study Groups I, III, and VIII. They shall be brought in line with the result of the work of the above mentioned groups.

3 Abbreviations

For the purpose of this ETS the following abbreviations apply.

CCIR: International Radio Consultative Committee

CCITT: International Telegraph and Telephone Consultative Committee

CEPT: Conférence Européennes des Postes et Télécommunications

CSPDN: Circuit Switched Public Data Network

DTAM: Document Transfer Application Management

EH: External Host

ETS: European Telecommunication Standard

ETSI: European Telecommunication Standard Institute

GGI: Gateway to Gateway Interworking

ISDN: Integrated Services Digital Network

LH: Local Host

ODA: Office Document Architecture

PSPDN: Packet Switched Public Data Network

PSTN: Public Switched Telephone Network

SE: Structure Element

TE: Terminal Equipment

TFI: Terminal Facilities Identifier

VIA: Videotex Interworking Architecture

4 Relationship with CCITT Recommendations

CCITT Recommendations for Videotex interworking:

- CCITT Recommendation T.504 [4], defines the document application profile;
- CCITT Recommendation T.523 [5], defines the communication application profile;
- CCITT Recommendation T.541 [6], defines the operational application profile;
- CCITT Recommendation T.564 [7], defines the gateway characteristics;
- CCITT Recommendation T.101 [8], contains the principles of interworking architecture, protocols and the data syntaxes.

CCITT Recommendation T.564 [7] contains the specification of all features that may occur in the communication between gateways for international videotex interworking, and needs no further clarification by ETSI.

CCITT Recommendations T.504 [4] and T.541 [6] select the document oriented features from the T.400 series of CCITT Recommendations by qualifying these features as mandatory, optional, or not used.

CCITT Recommendation T.523 [5] selects the communication oriented features from the T.400 series of CCITT Recommendations by qualifying these features as mandatory, optional, or not used.

ETS 300 105 [3] is in accordance with the CCITT Recommendation T.101 [8].

This ETS contains:

- a) a document oriented Clause (see Clause 5) which specifies details on the use of the features qualified as optional in CCITT Recommendations T.504 [4] and T.541 [6];
- b) a communication oriented Clause (see Clause 6) which specifies details on the use of the features qualified as optional in CCITT Recommendation T.523 [5].

A full list of references is contained in ETS 300 105 [3].

5 Constraints and requirements on the use of document oriented features

5.1 Overview

The Videotex Interworking Architecture (VIA) consists of five data structures:

- display structure including the document profile;
- data entry structure;
- application control memory structure;
- administrative structure;
- special terminal facilities structure.

5.2 Display structure and document profile

The features of the display structure and of the relevant document profile for Videotex Interworking are defined in CCITT Recommendation T.504 [4].

5.2.1 Document profile

The document profile is implicitly created at connection establishment time. All attributes qualified as mandatory in CCITT Recommendation T.504 [4] are initialised with the values specified in table 4 of CCITT Recommendation T.504 [4]. The attribute "Document application profile default" is initialised with the values specified in table 3 of CCITT Recommendation T.504 [4].

The value of the attribute "ODA version" is initialised to:

- (T.400, 25. November 1988).

The attribute "Unit scaling" is initialised by the Local Host (LH) in accordance with the requirements of the national Videotex system it represents.

This ETS specifies constraints for the modification of the attributes of the document profile during the association as follows:

- no attribute qualified as mandatory in table 4 of CCITT Recommendation T.504 [4] shall be modified during the association;
- the modification of the attributes "ODA version" and "Unit scaling" during the association is for further study.

Every attribute qualified as non-mandatory in table 4 of CCITT Recommendation T.504 [4] (document management attributes) may be modified during the association. No additional constraints are imposed on the modification of the document management attributes.

5.2.2 Display structure

The features and attributes that may be used in the display structure are described below. Tables 1 and 2 of CCITT Recommendation T.504 [4] specify the attributes that may be used in the display structure. All attributes that are qualified as mandatory shall be supported.

When using a D-MODIFY or D-DELETE operation, the attribute "object identifier" may be omitted, if only one constituent of the relevant type exists in the display structure.

If a D-CREATE operation is used, the attribute "object identifier" may be omitted under conditions specified in CCITT Recommendation T.504 [4].

Additional constraints on the transmission sequence of Document Transfer Application Management (DTAM) operations are for further study.

The attribute "default value list" should not be used. The use of this feature for the 'document layout root' is for further study.

All default values shall be derived from the 'document profile' or from CCITT Recommendation T.504 [4] (see tables 3 and 6 of CCITT Recommendation T.504 [4]).

5.3 Structures mapped to operational structures

The features and attributes that may be used in the data entry structure, application control memory structure, administrative structure, and special terminal facilities structure are described below. CCITT Recommendation T.541 [6] qualifies the use of the attributes.

All attributes that are qualified as mandatory shall be supported.

When using a D-MODIFY or D-DELETE operation, the attributes "operational object identifier" and "operational element identifier" may be omitted, if only one constituent of the relevant type exists in the operational structures.

If a D-CREATE operation is used, the attributes "operational object identifier" and "operational element identifier" may be omitted under conditions specified in CCITT Recommendation T.541 [6].

Additional constraints on the transmission sequence of DTAM operations are for further study.

A default value list may optionally be used, but only as an attribute of the roots of operational structures.

5.3.1 Data entry structure

This subclause specifies the use of features that are qualified optional in CCITT Recommendation T.541 [6].

5.3.1.1 Use of character lists for checking user input

No additional constraints are defined for the use of character lists for checking user input.

5.3.1.2 Support of system fields

This feature is represented by the attributes given below:

- field type;
- protected;
- data source.

This ETS qualifies on this feature on the basis that: system fields may only be used on an international connection if there has been an agreement on their use between the administrations involved in the communication. Therefore, system fields are a feature which is optional.

5.3.1.3 Constraints on the list of valid commands

The "list of valid commands" is an attribute of the Rules-SE (Structure Element). The values of this attribute specify which of the commands defined in CEPT Recommendation T/SF-59 [2] may be used in the relevant association.

The detailed list of valid commands is described in CCITT Recommendation T.564 [4].

5.3.2 Application control memory structure

The use of an application control memory may not be supported by every Local Host (LH).

The use of an application control memory should be agreed at connection establishment time (D-INITIATE), by using the "bilateral management parameter" of the Administrative-Information-SE.

5.3.3 Administrative structure

5.3.3.1 Cost limit facility

Two different mechanisms for handling the cost limit facility are identified.

In one case the External Host (EH) is responsible for checking that information transferred to the LH does not exceed the cost limits.

In the other case the LH checks, every time it receives information from the EH, whether or not the costs exceed the limits relevant to the actual user.

At connection establishment time both hosts identify their capabilities as follows:

- the LH uses the D-INITIATE request to indicate whether or not the cost limit facility is supported. The EH uses the D-INITIATE response to indicate its capabilities in the same way;
- if neither host supports the cost limit facility, this facility shall not be handled;
- if the EH is able to handle the cost limit facility, the EH shall be responsible, irrespective of the capabilities of the LH;
- if the LH is able to handle the cost limit facility and the EH is not, the LH shall be responsible. In this case the EH shall be aware that it can receive an indication from the LH, not to apply the previous charging.

5.3.3.2 Bilateral management parameter

It is recommended that the "bilateral management parameter" of the Administrative-Information-SE consists of two parts:

- a first part which is commonly used by all ETSI members;
- a second part which is reserved for bilateral agreements between ETSI members. The use of the second part is outside of the scope of this ETS.

The "bilateral management parameter" is coded as an Octet String, and carries the bilateral information, coded as defined below:

```

bilateral Information      ::= IMPLICIT SET {
etsi Agreement            [0] Etsi Agreement,
bilateral Agreement      [1] Bilateral Agreement OPTIONAL,
                          -- other values may occur and should be
                          -- ignored
                          }

etsi Agreement            ::= IMPLICIT SEQUENCE {
support Of Appl Cntrl Memory [0] IMPLICIT BOOLEAN,
                          -- true indicates that an application control
                          -- memory is supported;
                          -- false that it is not supported.
support Of Spec Term Facilities [1] IMPLICIT BOOLEAN,
                          -- true indicates that a special terminal
                          -- facilities structure is supported;
                          -- false indicates that it is not supported.
}

-- In the D-INITIATE request and response each of the hosts set the cost Limit Supported,
-- parameter value according to its capabilities. Depending on the value of this parameter,
-- different procedures for handling the cost limit apply.

cost Limit Supported      [2] IMPLICIT BOOLEAN,
                          -- false means not supported
                          -- true means supported

-- D-INITIATE Request      D-INITIATE Response

--false                    fals                    costlimit not supported
--false                    true                    costlimit if any handled by EH
--true                     fals                    costlimit if any by LH
--true                     true                    costlimit if any handled by EH

-- With the value true false, the EH shall be aware that it can receive an indication
-- meaning not to apply the previous charging (see also subclause 5.3.3.1).
```

```
tFI Information          [3] IMPLICIT OCTET STRING OPTIONAL,
                        in ETS 300 076 format

-- The absence of any of the following parameters indicates that any value is supported.
-- The parameters are derived from CCITT Recommendation T.564 [7], Annex B.

size Of Display And D.-E.  [4] IMPLICIT INTEGER OPTIONAL,
                        -- the size is given in K bytes (it should not
                        -- be smaller than 2)
size Of Fields            [5] IMPLICIT INTEGER OPTIONAL,
                        -- the value of this parameter indicates the
                        -- maximum number of characters that may
                        -- be input into the fields
                        -- (it should not be smaller than 500)
number Of D.-E.Subprograms [6] IMPLICIT INTEGER OPTIONAL,
                        -- the number of D.-E. subprograms (should
                        -- not be smaller than 24)
number Of Fields          [7] IMPLICIT INTEGER OPTIONAL,
                        -- the number of fields (should not be smaller
                        -- than 24)
number Of Rules           [8] IMPLICIT INTEGER OPTIONAL,
                        -- the number of rules (should not be smaller
                        -- than 24)
number Of Prompts        [9] IMPLICIT INTEGER OPTIONAL,
                        -- the number of prompts (should not be
                        -- smaller than 24)

-- other values are for further study
                                }
Bilateral Agreement          ::= IMPLICIT OCTET STRING
```

5.3.4 Special terminal facilities structure

Clarifications on the use of the Terminal Facilities Identifier (TFI) and other relevant features are for further study.

5.4 General clarifications on the defaulting mechanism

The defaulting mechanism only applies when objects are created. In the case of modifying an object, attribute values which are missing in the D-MODIFY operation retain their previous values.

6 Constraints and requirements on the use of communication oriented features

Videotex interworking makes use of the communication application profile defined in CCITT Recommendation T.523 [5]. This clause specifies constraints and requirements on the use of CCITT Recommendation T.523 [5] within ETSI.

6.1 Management of data entry modes

CCITT Recommendation T.523 [5] specifies that the data entry mode, which is selected at the DTAM association establishment phase, has one of the following values:

- half duplex mode;
- duplex mode;
- half duplex and duplex mode.

CCITT Recommendation T.523 [5] specifies how to handle the different data entry types.

6.2 D-INITIATE parameters

6.2.1 VI initiate information

No additional constraints are defined on the D-INITIATE information.

6.2.2 Storage capacity

The values contained in CCITT Recommendation T.564 [7], Annex B should be supported as a minimum. The values can be indicated at connection establishment time by using the "bilateral management parameter".

6.3 Constraints on the use of DTAM operations

6.3.1 Relationship between VIA operations and DTAM operations

When using a Videotex Interworking Architecture (VIA) operation, this operation applies to one Structure Element (SE) of the VIA. A sequence of one or more VIA operations of the same type may be mapped to one DTAM operation.

6.3.2 Meaning of interchange format class B CCITT Recommendations (T.415 and T.504)

Interchange format class B, defined in CCITT Recommendation T.415 [9], which is relevant for the information exchange by the Videotex interworking application, only applies to the objects of the display structure.

When conformance of the data stream to the interchange format class is checked, operational descriptors shall be ignored.

The interchange format class B only applies to the interchange data elements carried by one DTAM operation.

Instead of transferring a new document, it is possible to transfer the modifications to an already existing one, using DTAM operations. In this case the data stream within one DTAM operation need not form a complete interchange format class B (e.g., a profile descriptor is not necessarily included) but the order of the interchange data elements shall not conflict with the order as defined in CCITT Recommendation T.415 [9].

History

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