INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 11184-1

First edition
1995-06-01

Information technology — International Standardized Profiles FVT1nn — Virtual Terminal Basic Class — Register of VTE-profiles —

Part 1:
FVT121, FVT122 — S-mode Forms and Paged VTE-profiles

Technologies de l'information — Profils normalisés internationaux FVT1nn — Classe de base de terminal virtuel — Registre de profils VTE —

Partie 1: FVT121, FVT122 — Profils VTE mode S de formulaires et de paginés

Reference number
ISO/IEC ISP 11184-1:1995(E)

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. In addition to developing International Standards, ISO/IEC JTC 1 has created a Special Group on Functional Standardization for the elaboration of International Standardized Profiles.

An International Standardized Profile is an internationally agreed, harmonized document which identifies a standard or group of standards, together with options and parameters, necessary to accomplish a function or set of functions.

Draft International Standardized Profiles are circulated to national bodies for voting. Publication as an International Standardized Profile requires approval by at least 75 % of the national bodies casting a vote.

International Standardized Profile ISO/IEC ISP 11184-1 was prepared with the collaboration of

— OSI Asia-Oceania Workshop (AOW);

— European Workshop for Open Systems (EWOS);

— OSI Environment Implementors' Workshop (OIW).

ISO/IEC ISP 11184 forms an International Register of information objects in accordance with the procedures for the operation of OSI Registration Authorities laid down in ISO/IEC 9834. It is issued in parts, with additional parts being issued as further entries are added to the register. Each part is prepared in accordance with an approval and maintenance process laid down by the Special Group on Functional Standardization of ISO/IEC JTC 1, *Information technology.*

ISO/IEC ISP 11184 is issued under the general title *Information technology — International Standardized Profiles FVT1nn — Virtual Terminal Basic Class — Register of VTE-profiles.* At present the following parts are published or are in the course of preparation:

— *Part 1: FVT121, FVT122 — S-mode Forms and Paged VTE-profiles*

— *Part 2: FVT115 —A-mode Generalized Telnet VTE-profile*

— *Part 3: FVT114 — A-mode Transparent VTE-profile*

Annex A forms an integral part of this part of ISO/IEC ISP 11184.

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Introduction

ISO/IEC ISP 11184 is defined within the context of Functional Standardization, in accordance with the principles specified in ISO/IEC TR 10000, "Framework and Taxonomy of International Standardized Profiles". The context of Functional Standardization is one part of the overall field of Information Technology (IT) standardization activities, covering base standards, profiles and registration mechanisms.

The Open Systems Interconnection (OSI) Standard ISO 9040 for the Virtual Terminal Basic Class Service identifies a requirement for an International Register of VTE-profiles. Procedures for the operation of this International Register are laid down in ISO/IEC 9834-4. This International Standardized Profile provides this register. The individual entries in this register constitute Interchange Format and Representation Profiles (F-Profiles) within the framework of ISO/IEC TR 10000.

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a given OSI specification. Such a statement is called an Implementation Conformance Statement (ICS). The Virtual Terminal Basic Class Service is supported by the Virtual Terminal Basic Class Protocol specified in ISO 9041-1. ISO/IEC ISP 11184 includes, for each registered VTE-profile, a specification of constraints on the content of an ICS for the Virtual Terminal Protocol that shall be satisfied by any conforming implementation which claims to support that VTE-profile.

This part of ISO/IEC ISP 11184 was developed in close cooperation between the three Regional OSI Workshops, namely the OSE Implementors Workshop (OIW) of the United States, the European Workshop for Open Systems (EWOS) and the OSI Asia-Oceania Workshop (AOW). It was developed under the editorship of EWOS from a VTE-profile specification contained in the OIW Stable Implementation Agreements, Version 3 Edition 4 (September 1990). The text is harmonized between these three Workshops and it has been ratified by the plenary assemblies of each Workshop.

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Information technology — International Standardized Profiles FVT1nn — Virtual Terminal Basic Class — Register of VTE-profiles —

Part 1:
FVT121, FVT122 — S-mode Forms and Paged VTE-profiles

1 Scope

1.1 General

The concept of Profiles for OSI, and the structure of the International Standardized Profiles that document them, are defined in ISO/IEC TR 10000-1. Such Profiles are divided into a number of different classes and sub-classes. Two of these classes contain sub-classes comprising functions of the Virtual Terminal Basic Class Service and Protocol specified in the base standards ISO 9040 and ISO 9041. These are the Application Profiles (A-Profiles) and the Interchange Format and Representation Profiles (F-Profiles).

The relationship between A-Profiles and F-Profiles is described in 7.3.2 of ISO/IEC TR 10000-1 and is as follows. Application Layer base standards require, implicitly or explicitly, the structure of information carried or referenced by them to be specified for each instance of communication. It is the purpose of F-Profiles to specify such information structures. Particular functional requirements may then be met by the combination of an A-Profile with one or more F-Profiles.

The Virtual Terminal Basic Class Service and Protocol applies to applications requiring interactive communication with terminal systems through the transmission and manipulation of graphical images composed of character-box graphic elements. Through the selection by negotiation of various options, it may be used to realise a wide range of distinct functions. This process of negotiation involves the selection of a set of VT functional units together with a particular Virtual Terminal Environment profile (VTE-profile) and particular values for any arguments of that VTE-profile.

The specification of a VTE-profile and the permitted values for its arguments may themselves reference other types of object defined in accordance with ISO 9040. These are VT control object types and assignment types. The VTE-profiles, control object types and assignment types are thus information structures that require explicit reference within the VT protocol. Particular instances of these structures are fully defined within the base standards, but the base standards also provide for further instances to be defined by registration. Each registered instance constitutes an F-Profile within the framework of ISO/IEC TR 10000. The specification of the selection of options required to realise a particular function and to promote interoperability constitutes a Virtual Terminal A-Profile within the framework of ISO/IEC TR 10000.

The three International Registers of VT information structures and the specifications of VT Application Profiles are each published as a separate multi-part ISP as follows:

— ISO/IEC ISP 11184 is the Register of VTE-profiles;

— ISO/IEC ISP 11185 is the Register of control object type definitions;

— ISO/IEC ISP 11186 is the Register of assignment-type definitions;

— ISO/IEC ISP 11187 contains the specifications of VT Application Profiles.

This part of ISO/IEC ISP 11184 contains the specifications of the S-mode Forms and Paged VTE-profiles, both of which operate in the synchronous mode of the Virtual Terminal Service. These VTE-profiles make use of the ability of the Virtual Terminal Service to provide a display object with a structure of fields that have associated entry controls. This structure enables an application process to provide comprehensive facilities for local processing during data entry by a terminal. Such delegation to the terminal of the control of data entry may reduce significantly the demands placed on the application end system and the communication network and may substantially improve the response time to users' actions.

The Forms and Paged VTE-profiles differ in only one respect. The Paged VTE-profile provides a facility for the terminal to notify the application end system that its capability to process the field structure of the display object is restricted. This facility is not present in the Forms VTE-profile.

NOTE — It is intended that applications which use the Paged VTE-profile should be capable of use with terminal end systems based on real block-oriented, as distinct from character-oriented, terminals. Certain real block-oriented terminals implement a field handling mechanism in hardware in a manner that prevents a character being displayed in the character-box display element immediately preceding a field. The additional facility in the Paged VTE-profile enables a terminal to notify the application end system that it is of this type.

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This specification includes Profile Requirements Lists (Profile RLs) for the S-mode Forms and Paged VTE-profiles in compliance with the relevant requirements, and in accordance with the relevant guidance, given in ISO/IEC 9646-7. These RLs apply to the PICS proforma for the VT protocol that is given in ISO/IEC 9041-2. They provide constraints on the answers that may be given in that proforma for an implementation of the VT protocol which claims to support the VTE-profile concerned.

1.2 Position within the taxonomy

The taxonomy of International Standardized Profiles for OSI is laid down in ISO/IEC TR 10000-2. Within the classification scheme of this taxonomy, the OSI Profiles specified in this International Standardized Profile are in the Virtual Terminal Registered Object sub-class of the class of Interchange Format and Representation Profiles.

A Profile within this subclass has a Profile identifier of the form FVT*abc*, where *abc* is a structured numerical identifier that identifies the position of the Profile within each of the three levels of subdivision of the subclass. The values of *a* and *b* are single digits but *c* is an integer that is not necessarily a single digit.

In principle the ISO Virtual Terminal model allows for multiple classes of operation, although at the time of publication of this International Standardized Profile only the Basic Class has been defined. The value of the identifier component *a* distinguishes between distinct types of information object as follows:

— *a* = 1 for Basic Class VTE-profiles;

— *a* = 2 for Basic Class Control Objects;

— *a* = 3 for Basic Class Assignment Types.

Values of *a* greater than 3 are reserved for future developments.

ISO/IEC ISP 11184 contains the specifications of the Profiles with identifiers of the form FVT1*bc*. For this form of identifier, the component *b* distinguishes between the two modes of operation of the Virtual Terminal Service as follows:

— *b* = 1 for A-mode (asynchronous mode) operation;

— *b* = 2 for S-mode (synchronous mode) operation.

Values of *b* greater than 2 are reserved for new modes of operation that may be defined in future amendments to ISO 9040. The identifier component *c* distinguishes between different VTE-profiles with the same mode of operation. The procedures of ISO/IEC 9834-4 require a single register of VTE-profiles to be maintained without regard to their mode of operation. The value of the component *c* is therefore not directly related to the serial number of the VTE-profile in the register.

This part of ISO/IEC ISP 11184 contains the specifications of the VTE-profiles with the Profile identifiers

FVT121 — S-mode Forms VTE-profile;

FVT122 — S-mode Paged VTE-profile.

1.3 Scenario

The specification of the Virtual Terminal Service is given in ISO 9040. It is based on a model in which two VT-users communicate by means of a shared Conceptual Communication Area (CCA) that is a conceptual part of the VT service-provider. Information exchange is modelled by one VT-user updating the content of the CCA and the changed state of the CCA then being made accessible to the peer VT-user. The Virtual Terminal Service has a basic capability that may be enhanced by the addition of one or more optional functional units

The CCA is structured by the Virtual Terminal Service into a number of components. There is a Conceptual Data Store (CDS) that contains one or two display objects (DOs), a Control, Signal and Status store (CSS) that contains zero, one or more control objects (COs) and in addition there may be one or more device objects. Display objects and control objects have an information content that is modified during the data handling phase of the VT Service. Device objects model certain logical characteristics of real devices. They may also provide linkages between different objects of the CCA and between such objects and real devices.

There are two modes of operation of the VT Service. In synchronous mode (S-mode) there is a single display object that is updated alternately by the two VT-users while in asynchronous mode (A-mode) there are two display objects, each VT-user having permanent update access to one of them. The mode of operation, the functional units selected and the set of objects present in the CCA at any time constitute a Virtual Terminal Environment (VTE).

The specification of the VTE, including the type definitions of the objects present, is held in the Data Structure Definition (DSD) component of the CCA. Ownership of the Write Access Variable (WAVAR) that is used during S-mode operation is held in the Access Control Store (ACS). These complete the set of components of the CCA.

A VTE is specified parametrically by a complete and consistent set of values for VTE-parameters defined in ISO 9040. The number of these VTE-parameters is large, so their values are themselves specified in a particular instance by a choice of VTE-profile and of values for any arguments of that VTE-profile. The VTE in use at any time is determined by negotiation of these choices between the two VT-users before entry into the data handling phase. This negotiation takes place by the exchange of VT service primitives that are available exclusively for this purpose, as is illustrated in figure 1. The negotation will determine whether or not the VTE is established in accordance with a VTE-profile defined in this part of ISO/IEC ISP 11184. It is possible for the VTE to be changed during the lifetime of a VT-association but only by exit from and subsequent return to the data handling phase.

The negotiation process may establish values of certain VTE-profile arguments indirectly through the use of default mechanisms. In the simplest form of this mechanism a VTE-profile may specify an explicit default value for any argument that does not have an explicitly negotiated value. However, it is possible for the default value of one VTE-profile argument to depend on the actual values of other arguments, some of which may themselves be determined by a default mechanism. A VTE-profile may also permit a default value to be specified by a VT Application Profile whenever a mutual agreement exists beween the VT-users to operate in conformance with a particular Profile.

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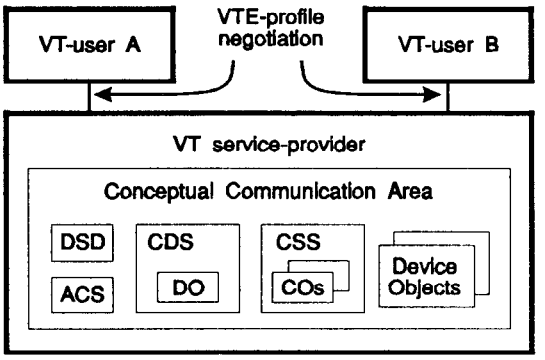


Figure 1 — Negotiation of a VTE through use of a VTE-profile

The type definitions of certain control objects may specify that particular aspects of the CO definition, such as the initial value of its information content, are to be determined by any VTE-profile that references the CO type concerned. The VTE-profile may also determine these indirectly in a manner similar to that described above for default values of VTE-profile arguments.

This part of ISO/IEC ISP 11184 defines the S-mode Forms and Paged VTE-profiles. Each of these VTE-profiles makes use of the Fields functional unit of the VT Service and of the facility of this functional unit in S-mode operation to assign asymmetric roles to the two VT-users. One is then designated as the Terminal VT-user and the other as the Application VT-user. The Application VT-user may define a structure of fields within the display object and may specify separately for each field, rules that control the entry of data into that field by the Terminal VT-user. The Terminal VT-user may be prevented from entering data outside of these defined fields.

This method of operation is particularly suited to the completion of predefined forms but it is by no means restricted to such applications. The rules available for the control of data entry are determined by negotiation through the selection of one or more Field Entry Instruction Control Objects (FEICOs) and Field Entry Pilot Control Objects (FEPCOs). The available FEICOs and FEPCOs provide sufficient flexibility for these VTE-profiles to form the basis of a powerful general-purpose terminal within the VT Service.

The S-mode Forms and Paged VTE-profiles support display devices with either monochrome or colour screens. They provide for a number of levels of emphasis, such as blink, reverse video, bold, underline and italic. Through the use of optional character repertoires, support may be provided for simple graphics such as videotex or line drawing.

The S-mode Forms and Paged VTE-profiles support the use of an auxiliary monochrome or colour printer attached to the terminal configuration. This is intended for printing screen contents or small amounts of information and not for bulk printing for which an OSI Profile of the File Transfer, Access and Management or of the Message Handling subclasses should be used.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 11184. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this International Standardized Profile are warned against automatically applying any more recent editions of the documents listed below, since the nature of references made by ISPs to such documents is that they may be specific to a particular edition. Members of IEC and ISO maintain registers of currently valid International Standards and ISPs, and ITU-T maintains published editions of its current Recommendations.

ISO 2375:1985[1], *Data Processing — Procedure for registration of escape sequences.*

ISO/IEC 8824-1:—[2], *Information technology — Open Systems Interconnection — Abstract Syntax Notation One (ASN.1) — Part 1: Specification of Basic Notation.* (See also ITU-T Recommendation X.208.)

ISO 9040:1990, *Information technology — Open Systems Interconnection — Virtual Terminal Basic Class Service.*

ISO 9041-1:1990, *Information technology — Open Systems Interconnection — Virtual Terminal Basic Class Protocol — Part 1: Specification.*

ISO/IEC 9041-2:1993, *Information technology — Open Systems Interconnection — Virtual Terminal Basic Class Protocol — Part 2: Protocol Implementation Conformance Statement (PICS) Proforma.*

ISO/IEC 9646-1:1994, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts* (second edition). (See also ITU-T Recommendation X.290.)

ISO/IEC 9646-7:—[3], *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 7: Implementation conformance statements.* (See also ITU-T Recommendation X.296.)

ISO/IEC 9834-1:1993, *Information technology — Open Systems Interconnection — Procedures for the operation of OSI Registration Authorities — Part 1: General procedures.* (See also ITU-T Recommendation X.660.)

ISO/IEC 9834-4:1991, *Information technology — Open Systems Interconnection — Procedures for the operation of OSI Registration Authorities — Part 4: Register of VTE Profiles.*

1) The Registration Authority for ISO 2375 is the European Computer Manufacturers Association (ECMA), 114 rue du Rhône, CH-1204 Genève, Switzerland, from whom the corresponding register, the ISO *International Register of Coded Character Sets to be used with Escape Sequences*, may be obtained.

2) To be published. (Revision of ISO/IEC 8824:1990.)

3) To be published.

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ISO/IEC TR 10000-1:1992, *Information technology — Framework and taxonomy of International Standardized Profiles — Part 1: Framework* (second edition).

ISO/IEC TR 10000-2:1994, *Information technology — Framework and taxonomy of International Standardized Profiles — Part 2: Principles and Taxonomy for OSI Profiles* (third edition).

ISO/IEC 10731:1994, *Information technology — Open Systems Interconnection — Basic Reference Model — Conventions for the definition of OSI services.* (See also ITU-T Recommendation X.210.)

ISO/IEC ISP 11185-1:1994, *Information technology — International Standardized Profiles FVT2nn — Virtual Terminal Basic Class — Register of control object type definitions — Part 1: FVT211, FVT212 — Sequenced and Unsequenced Application Control Objects.*

ISO/IEC ISP 11185-2:1994, *Information technology — International Standardized Profiles FVT2nn — Virtual Terminal Basic Class — Register of control object type definitions — Part 2: FVT213, FVT214 — Sequenced and Unsequenced Terminal Control Objects.*

ISO/IEC ISP 11185-13:1995, *Information technology — International Standardized Profiles FVT2nn — Virtual Terminal Basic Class — Register of control object type definitions — Part 13: FVT2111 — Waiting Time Control Object.*

3 Definitions

For the purposes of this part of ISO/IEC ISP 11184 the following definitions apply.

3.1 General OSI terminology

3.1.1 This part of ISO/IEC ISP 11184 makes use of the following terms defined in ISO/IEC 10731:

a) service primitive;

b) service-provider.

3.1.2 This part of ISO/IEC ISP 11184 makes use of the following terms defined in ISO/IEC 8824-1:

a) module;

b) object descriptor type;

c) object identifier.

3.1.3 This part of ISO/IEC ISP 11184 makes use of the following terms defined in ISO/IEC 9834-1:

a) registration;

b) registration-hierarchical-name.

3.1.4 This part of ISO/IEC ISP 11184 makes use of the following terms defined in ISO/IEC 9646-1:

a) implementation conformance statement (ICS);

b) implementation conformance statement proforma;

c) profile requirements list;

d) profile specific ICS;

e) requirements list (RL);

f) static conformance requirement.

3.2 Terminology of VT standards

3.2.1 This part of ISO/IEC ISP 11184 makes use of the following terms defined in ISO 9040:

a) A-mode (Asynchronous mode);

b) Application VT-user;

c) array element;

d) control object;

e) device object;

f) display object;

g) explicit modal default;

h) full-VTE;

i) object updating device;

j) registered control object;

k) S-mode (Synchronous mode);

l) secondary attribute;

m) Terminal VT-user;

n) VT-association;

o) VT-environment (VTE);

p) VT-user;

q) VTE-parameter;

r) VTE-profile;

s) VTE-profile argument;

t) WAVAR access-right.

3.2.2 This part of ISO/IEC ISP 11184 makes use of the following term defined in ISO 9041-1:

a) protocol element.

3.3 Additional terminology of controlled data entry

field-control: An abstract object maintained by a Terminal VT-user that takes a symbolic value from the set ("on", "off"). It may only be present when the VTE-parameter access-outside-fields takes the value "allowed". When its value is "on" then the Terminal VT-user shall be restricted to those operations that would be permitted if access-outside-fields took the value "not allowed"; see 18.2.2 of ISO 9040. When the value is "off" then the Terminal VT-user shall be restricted to those operations that would be permitted if the VTE-parameter field-definition-capability took the value "no".

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NOTE — Within the model of a Terminal VT-user used by the FEICO and FEPCO specifications given in parts 8-11 of ISO/IEC ISP 11185, the field-control object will be located in the device control store.

4 Abbreviations

For the purposes of this International Standardized Profile the following abbreviations apply.

AOW OSI Asia-Oceania Workshop;
EWOS European Workshop for Open Systems;
OIW OSE Implementors Workshop;
OSE Open Systems Environment.

All other abbreviations used are defined in ISO/IEC 9646-1 or ISO 9040.

5 Principles of conformance to VT Profiles

An implementation of the Virtual Terminal Protocol conforms to an FVT1*nn* Profile that specifies a VTE-profile if the protocol implementation is capable of sending and receiving PDUs for the establishment of a full-VTE in which the VTE-profile name designates that FVT1*nn* Profile. If the VTE-profile specification includes the definition of any control object types in accordance with clause 14 of ISO 9040 then there is a further conformance requirement. In this case conformance to the VTE-profile requires in addition that the protocol implementation is capable of sending and receiving PDUs corresponding to all update operations permitted for that CO type whenever a CO of that type is present in the VTE.

Conformance of a protocol implementation to an FVT1*nn* Profile does not place requirements on which protocol elements of the VT Protocol may be used for the establishment of a full-VTE in accordance with that Profile.

NOTE — The conformance requirements would be satisfied, for example, if such a full-VTE could be established through use of the VT-SWITCH-PROFILE protocol elements but not through use of the VT-ASSOCIATE protocol elements.

A system that includes an implementation of the VT Protocol may be claimed to conform also to an AVT*nn* Profile. Conformance to an AVT*nn* Profile may place requirements on which procotol elements are to be used for the establishment of a full-VTE in accordance with a particular VTE-profile. Such conformance may also require that values for the emphasis attribute of a display object array element are interpreted by a VT-user in accordance with semantics defined within a VTE-profile specification in accordance with 13.2 of ISO 9040. Conformance to DO or CO semantics is not within the scope of conformance to any FVT*nnn* Profile.

The conformance requirements of the Virtual Terminal Protocol are specified in clause 13 of ISO 9041-1. The supplier of a protocol implementation which is claimed to conform to ISO 9041-1 is required to complete a copy of the protocol ICS (PICS) proforma provided in ISO/IEC 9041-2, to form a PICS for the implementation.

Annex A of this part of ISO/IEC ISP 11184 provides Profile Requirements Lists (Profile RLs) for the Profiles FVT121 and FVT122 specified herein, in accordance with ISO/IEC 9646-7. Neither of these Profiles specify a Profile Specific ICS.

By 6.5 of ISO/IEC 9646-7 both the PICS and the appropriate RL form part of the Profile ICS for any implementation of the VT protocol that claims conformance to either of the Profiles FVT121 and FVT122 specified herein. The RL specifies constraints on the answers that may be given in the PICS. The static conformance review during a conformance assessment process will verify that the PICS satisfies these constraints.

It is recognised in ISO/IEC 9646-7 that a system which includes an implementation of an OSI Application Layer protocol may be configurable to conform to a number of different OSI Profiles for that protocol by means outside the scope of any one of those Profiles. The means of configuration may be static, *i.e.* determined outside of a particular instance of communication, or dynamic, *i.e.* determined during a particular instance of communication, possibly by negotiation.

A capability or option that is implemented for the system as a whole may in fact be disabled or otherwise unavailable in some configurations of that system and so should be considered as not implemented *for those particular configurations*. An ICS proforma may be completed with reference to a particular configuration of the system, in which case the answers will be determinate, or with reference to the system as a whole, in which case the answers may be conditional answers for which the predicates reference the configuration of the system. The notation to be used for conditional support answers is given in 9.3.2 of ISO/IEC 9646-7. The static conformance review will refer to the determinate answers obtained by evaluating the conditional expressions for the configuration that is to be tested.

6 Entry number

The remaining clauses of this part of ISO/IEC ISP 11184 provide the entries for the S-mode Forms and Paged VTE-profiles in the International Register of VTE-profiles. The entries are structured in accordance with the requirements of ISO/IEC 9834-4.

The entry for FVT121 is the first entry in the International Register of VTE-profiles. The register assigns it the entry number:

VTE-01.

The entry for FVT122 is the second entry in the International Register of VTE-profiles. The register assigns it the entry number:

VTE-02.

7 Name of sponsoring authority

The entries for FVT121 and FVT122 are sponsored by the European Workshop for Open Systems (EWOS).

8 Date

The date of submission of the proposals for FVT121 and FVT122 was 1993-09-08.

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9 Identifier

The name assigned to an information object by an International Register is required by ISO/IEC 9834-1 to be a registration-hierarchical-name. A registration-hierarchical-name may have more than one form. The permitted forms include an ASN.1 object identifier as defined in ISO/IEC 8824 and a distinguished name as defined in ISO/IEC 9594-2.

In accordance with A.4 of ISO/IEC 9834-4, this register assigns the following object identifier form for the name of the register entry for FVT121:

{ iso(1) standard(0) 9834 vte-profile(4) 1 }.

In accordance with A.4 of ISO/IEC 9834-4, this register assigns the following object identifier form for the name of the register entry for FVT122:

{ iso(1) standard(0) 9834 vte-profile(4) 2 }.

This register does not assign any other form to the names of these entries.

NOTES

1 The object identifiers given here identify the VTE-profiles as information objects distinct from their operation in accordance with any particular VT Application Profile. Other object identifiers defined by registration authorities operating outside the procedures of ISO/IEC 9834-4 may identify use of one of these VTE-profiles in conjunction with a particular VT Application Profile. All such object identifiers shall be synonymous for the purposes of the VT Protocol of ISO 9041-1 when an explicit value is negotiated for each VTE-profile argument. However, the use of such an object identifier provides a means to create a mutual agreement between the two communicating VT-users to operate in accordance with a specific VT Application Profile. A VTE-profile specification may delegate the determination of default values for VTE-profile arguments and initial values for VT control objects to the VT Application Profile when such a mutual agreement exists; see for example 13.1 below.

2 By ISO/IEC 9834-1 a distinguished name for the purposes of the OSI Directory may only be assigned together with an object identifier when the object identifier form is generated under the arc { joint-iso-ccitt(2) country(16) country-name }.

10 Descriptor value

The value of the ASN.1 object descriptor type assigned to the register entry for FVT121 is:

"FVT121: S-mode Forms VTE-profile".

The value of the ASN.1 object descriptor type assigned to the register entry for FVT122 is:

"FVT122: S-mode Paged VTE-profile".

11 Mode

The VTE-profiles FVT121 and FVT122 are designed for operation in the synchronous mode (S-mode) of the Virtual Terminal Service.

12 VT functional units

The requirements of this clause apply equally to both VTE-profiles FVT121 and FVT122.

The following VT functional units are required for the operation of the VTE-profile:

— Enhanced Access-rules;

— Structured Control Objects;

— Fields.

All other VT functional units are optional. However, the operation of the VTE-profile may benefit as follows from the selection of additional VT functional units:

— from the Urgent Data functional unit by the expediting of the transmission of asynchronous terminal and application signals;

— from the Reference Information Objects functional unit by the ability to invoke registered RIOs through the use of certain VTE-profile arguments;

— from the Break functional unit by the ability to invoke a destructive interrupt if necessary.

13 Profile arguments

13.1 Interpretation

The VTE-profile FVT121 has 31 VTE-profile arguments that are named "r1", "r2",...,"r31" in accordance with A.8 of ISO/IEC 9834-4. The VTE-profile FVT122 has 32 VTE-profile arguments that are named "r1", "r2",...,"r32" in accordance with A.8 of ISO/IEC 9834-4. In both cases, some of these arguments determine the values of multiple-occurrence VTE-parameters and correspondingly may themselves occur more than once, possibly in an ordered list.

All the optional VTE-profile arguments have default values that are determined hierarchically. If there is a mutual agreement between the two communicating VT-users to operate this VTE-profile in accordance with a specific VT Application Profile then a default value specified by the Application Profile takes precedence over the default value specified in 13.2.

When a default value is defined for a multiple-occurrence VTE-profile argument and fewer occurrences are negotiated than are required by the value of a parent VTE-parameter, the remaining occurrences take the specified default value. When the occurrences of such an argument form an ordered list, that argument may have a default value which depends on its position in the list.

13.2 VTE-profile argument definitions

The definition of each argument of VTE-profiles FVT121 and FVT122, and in the case of optional arguments also the default value to be used when no other default mechanism takes precedence, is as follows.

r1 – is optional and provides for the negotiation of a value for the VTE-parameter x-bound. It takes an integer value greater than zero. It has a default value of 80.

r2 – is optional and provides for the negotiation of a value for the VTE-parameter y-bound. It takes an integer value greater than zero. It has a default value of 24.

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r3 – is optional and provides for the negotiation of a value for the VTE-parameter z-window. It takes an integer value greater than zero. It has a default value of 1.

r4 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter repertoire-assignment. The value for the VTE-parameter repertoire-capability is set to the number of occurrences of this VTE-profile argument. There is a default value only when there are no explicit occurrences. The default value corresponds to a single occurrence with the ISO 9040 default value for the repertoire-assignment-type component and the value {2/8 4/2} for the repertoire-assignment-value component. This designates the repertoire consisting solely of the graphic character set ISO 2375 Reg. No. 6 (ASCII) in the GL position of the code table.

r5 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter font-assignment. The font-assignment-type component of a font-assignment value is an ASN.1 object identifier that designates a registered syntax and semantics for the font-assignment-value component. The value for the VTE-parameter font-capability is set to the number of occurrences of this profile argument. If there are no explicit occurrences of this profile argument then the font-capability and font-assignment VTE-parameters take the default values specified in ISO 9040.

r6 – is optional, may occur up to eight times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter DO-emphasis. The syntax and semantics for the emphasis attribute and for this VTE-parameter are defined in 15.1.1 and 15.1.2 in accordance with 13.2 of ISO 9040. The default value for each unspecified occurrence is the ASN.1 PrintableString of length 1 that consists solely of the 'space' character.

r7 – is optional and provides for the negotiation of a value for the VTE-parameters foreground-colour-capability and background-colour-capability. It has a default value of 8. This argument is identified by the identifier for the VTE-parameter foreground-colour-capability for display object A.

r8 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter foreground-colour-assignment. The default values for unspecified occurrences of this VTE-profile argument have the ISO 9040 default value for the colour-assignment-type component and the corresponding value from the ordered list {"white", "black", "red", "cyan", "blue", "yellow", "green", "magenta"} for the colour-assignment-value component. There are no default values if the value of the VTE-parameter foreground-colour-capability exceeds 8.

r9 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter background-colour-assignment. The default values for unspecified occurrences of this profile argument have the ISO 9040 default value for the colour-assignment-type component and the corresponding value from the ordered list {"black", "white", "cyan", "red", "yellow", "blue", "magenta", "green"} for the colour-assignment-value component. There are no default values if the value of the VTE-parameter background-colour-capability exceeds 8.

r10 – is optional and provides for the negotiation of a value for the VTE-parameter max-field-elements. It has a default value of 1.

r11 – is optional and provides for the negotiation of a value for the VTE-parameter access-outside-fields. The default value is "not allowed".

r12 – is mandatory and provides for the negotiation of a value for the VTE-parameter CO-access for the Field Definition, Transmission Policy, Sequenced Application, Unsequenced Application, Sequenced Terminal and Unsequenced Terminal Control Objects. If the VT-association initiator is the terminal VT-user, it should take the value "WACA", otherwise it should take the value "WACI". This argument is identified by the identifier for CO-access for the control object with name UA.

r13 – is optional, may occur a number of times and provides for the negotiation of a value for the VTE-parameter CO-name for optional registered COs, including RIOs. Each occurrence must have an associated occurrence of the next VTE-profile argument. By default no optional COs are invoked.

r14 – is optional, may occur a number of times and provides for the negotiation of a value for the VTE-parameter CO-type-identifier for optional registered COs, including RIOs. Each occurrence is associated with a particular occurrence of the previous VTE-profile argument. The generic type of the CO is determined from the CO-type-identifier by the register entry. By default no optional COs are invoked.

NOTE 1 — The S-mode Forms and Paged VTE-profiles are normally used in conjunction with a FEICO and FEPCO for controlled data entry. These should either be invoked explicitly through use of arguments r13 and r14 or implicitly through mutual agreement by the two VT-users on use of a VT Application Profile that specifies a FEICO and FEPCO as default values for these arguments; such a specification takes priority over the above null defaults in accordance with 13.1 above

r15 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter device-repertoire-assignment for device D. It has a default value of "null" for each unspecified occurrence.

r16 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a

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value for one or more occurrences of the VTE-parameter device-font-assignment for device D. It has a default value of "null" for each unspecified occurrence.

r17 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of for the VTE-parameter device-emphasis for device D. The syntax and semantics for this VTE-parameter are defined in 15.1.3 in accordance with 13.2 of ISO 9040. The default value for each unspecified occurrence is an ASN.1 PrintableString of zero length.

r18 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter device-foreground-colour-assignment for device D. It has a default value of "null" for each unspecified occurrence.

r19 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter device-background-colour-assignment for device D. It has a default value of "null" for each unspecified occurrence.

r20 – is optional and provides for the negotiation of a value for the VTE-parameter device-minimum-x-array-length for device D. It takes an integer value greater than zero. Its default value is the value of x-bound for the display object.

r21 – is optional and provides for the negotiation of a value for the VTE-parameter device-minimum-y-array-length for device D. It takes an integer value greater than zero. Its default value is the value of y-bound for the display object.

r22 – is optional, may occur a number of times and provides for the negotiation of additional values for the VTE-parameter device-control-object for device D. By default there are no additional values.

r23 – is a boolean-valued special VTE-profile argument identified by the special-profile-arg-ident "Pp-1". It is optional and provides for the negotiation of the presence or absence of device object P in the VTE. The VTE-profile arguments "r24",...,"r31" are available only if this argument takes the value "true". It has a default value of "false".

r24 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter device-repertoire-assignment for device P. It has a default value of "null" for each unspecified occurrence.

r25 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter device-font-assignment for device P. It has a default value of "null" for each unspecified occurrence.

r26 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter device-emphasis for device P. The syntax and semantics for this VTE-parameter are defined in 15.1.3 in accordance with 13.2 of ISO 9040. The default value for each unspecified occurrence is an ASN.1 PrintableString of zero length.

r27 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter device-foreground-colour-assignment for device P. The default value for each unspecified occurrence of this profile argument has the ISO 9040 default value for the colour-assignment-type component and the value "black" for the colour-assignment-value component.

r28 – is optional, may occur a number of times in an ordered list and provides for the negotiation of a value for one or more occurrences of the VTE-parameter device-background-colour-assignment for device P. The default value for each unspecified occurrence of this profile argument has the ISO 9040 default value for the colour-assignment-type component and the value "white" for the colour-assignment-value component.

r29 – is optional and provides for the negotiation of a value for the VTE-parameter device-minimum-x-array-length for device P. It takes an integer value greater than zero. Its default value is the value of x-bound for the display object.

r30 – is optional and provides for the negotiation of a value for the VTE-parameter device-minimum-y-array-length for device P. It takes an integer value greater than zero. Its default value is the value of y-bound for the display object.

r31 – is optional, may occur a number of times and provides for the negotiation of additional values for the VTE-parameter device-control-object for device P. By default there are no additional values.

IF FVT122 THEN {

r32 – is a boolean-valued special VTE-profile argument identified by the special-profile-arg-ident "Pp-2". It is optional and provides for negotiation of the manner in which the Terminal VT-user processes fields. The value "true" signifies that the real display device of the terminal may not be able to display the content of certain array elements of a field, so that a true display will be obtained only if these array elements are empty or contain only a space character. The value "false" signifies that there is no such restriction. The default value is "false".

NOTE 2 — A VT Application Profile that references this VTE-profile may place restrictions on the content and structure of fields when this VTE-profile argument has the value "true", to ensure that the content of the display object is compatible with the display capabilities of a class of real terminal devices. The devices concerned are typically block-oriented terminals that have a field capability implemented in hardware. Such fields will not

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correspond directly to the fields of the VT Service since a VT field may be constructed from a number of such hardware fields. However, the manner in which the hardware fields are implemented may have consequences for the VT Service. Some such terminals make use of an attribute byte, or series of bytes, which precede each field implemented by the hardware and each of which is displayed as a space character. Compatibility will require that the display object array elements corresponding to the positions of these attribute bytes do not contain any character other than the space character.
}

14 VTE-profile body

14.1 Specification

The values specified by the VTE-profiles FVT121 and FVT122 for all VTE-parameters are given below, using the notation defined in A.9 of ISO/IEC 9834-4.

NOTE — The value of 2**31–1 for z-bound is intended in practice to be indistinguishable from the value "unbounded". Values for the z-coordinate that exceed this value would violate the general constraints on ASN.1 encodings that are specified in the common upper layer requirements of ISO/IEC ISP 11188-1. In addition, use of the Context Control Object is not consistent with a value "unbounded" for z-bound since there is no corresponding value for the CO-size parameter of an integer-valued control object data element. A defect report will be raised on ISO 9040 concerning this matter, as use of the CCO is not intended to place constraints on the permitted values of display object VTE-parameters.

```
{
display-objects *(single occurrence)* = {
    {
    display-object-name = A,
    DO-access = "WAVAR",
    dimensions = "three",
        x-dimension = {
            x-bound = profile-argument-r1,
            x-addressing = "no constraint",
            x-absolute = "yes",
            x-window = x-bound},

        y-dimension = {
            y-bound = profile-argument-r2,
            y-addressing = "no constraint",
            y-absolute = "yes",
            y-window = y-bound},

        z-dimension = {
            z-bound = 2147483647  *(i.e. 2**31 - 1)*,
            z-addressing = "no constraint",
            z-absolute = "no",
            z-window = profile-argument-r3},

    erasure-capability = "yes",

    character-attributes = {
        repertoire-capability  *(implicitly defined by r4)*,
            repertoire-assignment = profile-argument-r4,
                font-capability  *(implicitly defined by r5)*,
                    font-assignment = profile-argument-r5,

        DO-emphasis = profile-argument-r6,

        foreground-colour-capability = profile-argument-r7,
            foreground-colour-assignment =
                                profile-argument-r8,
        background-colour-capability = profile-argument-r7,
            background-colour-assignment =
                                profile-argument-r9},

    block-definition-capability = "no",
    field-definition-capability = "yes",
        max-fields = "unbounded",
        max-field-elements = profile-argument-r10,
        access-outside-fields = profile-argument-r11}
    },

control-objects *(multiple occurrence)* = {
    {*(Field Definition CO)*
    CO-name = FD,
    CO-type-identifier = { iso standard 9040 controlObject(0)
        fdco(3) },
    CO-structure = "non-parametric",
    CO-access = "WAVAR" & profile-argument-r12,
    CO-priority = "normal",
    CO-trigger = "not selected"},

    {*(Context CO)*
    CO-name = CC,
    CO-type-identifier = { iso standard 9040 controlObject(0)
        cco(2) },
    CO-structure = 6,
    CO-access = "WAVAR",
    CO-priority = "normal",
    CO-trigger = "not selected"},
    data-elements *(multiple-occurrence)* = {
        {*(field label z coordinate)*
        CO-element-id = 1,
        CO-category = "integer",
        CO-size = 2147483647},

        {*(field label f coordinate)*
        CO-element-id = 2,
        CO-category = "integer",
        CO-size = 65535},

        {*(field k coordinate)*
        CO-element-id = 3,
        CO-category = "integer",
        CO-size = 65535},

        {*(entry-control index)*
        CO-element-id = 4,
        CO-category = "integer",
        CO-size = 65535},

        {*(device-object index)*
        CO-element-id = 5,
        CO-category = "integer",
        CO-size = 65535},

        {*(FEPR index)*
        CO-element-id = 6,
        CO-category = "integer",
        CO-size = 65535}}
        },

    {*(Transmission Policy CO)*
    CO-name = TP,
    CO-type-identifier = { iso standard 9040 controlObject(0)
        tpco(4) },
    CO-structure = 1,
    CO-access = "WAVAR" & profile-argument-r12,
    CO-priority = "normal",
    CO-trigger = "not selected",
```


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```
    CO-category = "boolean",
    CO-size = 4},

    {*(Multiple occurrence of optional COs. All unspecified
    VTE-parameters of such COs are determined by their CO-
    type-identifier through their registered definition. They
    may include parameters specified to be additional VTE-
    profile arguments, which should follow the appropriate
    CO-type-identifier argument value)*

    CO-name = profile-argument-r13,
    CO-type-identifier = profile-argument-r14},

    {*(Waiting Time CO, FVT2111)*
    CO-name = WT,
    CO-type-identifier = { iso standard 9834 vt-co-def(5)
        misco(0) 11 },
    CO-structure = 1,
    CO-access = "WAVAR",
    CO-priority = "normal",
    CO-trigger = "not selected",
    CO-category = "integer",
    CO-size = 65535},

    {*(Sequenced Application CO, FVT211)*
    CO-name = SA,
    CO-type-identifier = { iso standard 9834 vt-co-def(5)
        misco(0) 1 },
    CO-structure = 1,
    CO-access = "WAVAR" & profile-argument-r12,
    CO-priority = "normal",
    CO-trigger = "not selected",
    CO-category = "integer",
    CO-size = 1},

    {*(Unsequenced Application CO, FVT212)*
    CO-name = UA,
    CO-type-identifier = { iso standard 9834 vt-co-def(5)
        misco(0) 2 },
    CO-structure = 1,
    CO-access = profile-argument-r12,
    CO-priority = "urgent",
    CO-trigger = "not selected",
    CO-category = "integer",
    CO-size = 1},

    {*(Sequenced Terminal CO, FVT213)*
    CO-name = ST,
    CO-type-identifier = { iso standard 9834 vt-co-def(5)
        misco(0) 3 },
    CO-structure = 1,
    IF r12 = "WACI" THEN {
    CO-access = "WAVAR" & "WACA", }
    IF r12 = "WACA" THEN {
    CO-access = "WAVAR" & "WACI", }
    CO-priority = "normal",
    CO-trigger = "not selected",
    CO-category = "integer",
    CO-size = 65535},

    {*(Unsequenced Terminal CO, FVT214)*
    CO-name = UT,
    CO-type-identifier = { iso standard 9834 vt-co-def(5)
        misco(0) 4 },
    CO-structure = 1,
    IF r12 = "WACI" THEN {
    CO-access = "WACA", }
    IF r12 = "WACA" THEN {
    CO-access = "WACI", }
    CO-priority = "urgent",
    CO-trigger = "not selected",
    CO-category = "integer",
    CO-size = 65535}
    },

device-objects *(single or double occurrence)* = {
    {
    device-name = D,
    device-default-CO-access = "WAVAR",
    device-default-CO-priority = "normal",
    device-default-CO-trigger = "not selected",
    device-default-CO-initial-value = 1."true",
    device-repertoire-assignment = profile-argument-r15,
    device-font-assignment = profile-argument-r16,
    device-emphasis = profile-argument-r17,
    device-foreground-colour-assignment =
                                    profile-argument-r18,
    device-background-colour-assignment =
                                    profile-argument-r19,
    device-minimum-x-array-length = profile-argument-r20,
    device-minimum-y-array-length = profile-argument-r21,
    device-control-object = FD,
    device-control-object = CC,
    device-control-object = ST,
    device-control-object = UT,
    device-control-object = WT,
    device-control-object = TP,
    device-control-object = profile-argument-r22,
    device-display-object = A,
    device-termination-event-list =
                < CO update with CO-name = ST, 1 >
    },

    IF r23 = "true" THEN
    {
    device-name = P,
    device-default-CO-access = "NSAC",
    device-default-CO-priority = "high",
    device-default-CO-trigger = "not selected",
    device-default-CO-initial-value = 1."false",
    device-repertoire-assignment = profile-argument-r24,
    device-font-assignment = profile-argument-r25,
    device-emphasis = profile-argument-r26,
    device-foreground-colour-assignment =
                                    profile-argument-r27,
    device-background-colour-assignment =
                                    profile-argument-r28,
    device-minimum-x-array-length = profile-argument-r29,
    device-minimum-y-array-length = profile-argument-r30,
    device-control-object = profile-argument-r31,
    device-display-object = A,
    },

type-of-delivery-control = "simple-delivery-control"
}
```

14.2 CO type definitions

Each value of the CO-type-identifier VTE-parameter specified in 14.1 is an ASN.1 object identifier. The CO types whose object identifiers are arcs from the node { iso standard 9040 } are standard CO types for which the type definition is given in ISO 9040. The CO types whose object identifiers are arcs from the node { iso standard 9834 } are registered CO types for which the type definition is given in a part of ISO/IEC ISP 11185. The part of that ISP containing the type definition for each CO is as follows, where a CO is identified by its value for the CO-name VTE-parameter:

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— ISO/IEC ISP 11185-1 for the COs named SA and UA;

— ISO/IEC ISP 11185-2 for the COs named ST and UT;

— ISO/IEC ISP 11185-13 for the CO named WT.

15 Additional information

15.1 Emphasis specification

By 18.2.6 and 23.3.2 of ISO 9040 a VTE-profile may define a generic functionality for the emphasis attribute. It may also provide VTE-profile arguments to allow negotiation from this of a specific functionality for the emphasis attribute in respect of a particular display object or device object. This clause provides the appropriate definitions for the VTE-profiles FVT121 and FVT122.

15.1.1 Emphasis attribute definition

A value for the DO emphasis attribute shall be an ASN.1 PrintableString; see 19.2.1.3 of ISO 9040. For the VTE-profiles FVT121 and FVT122 the maximum length of the character string shall be eight characters. The individual character positions each specify a value for a separate subattribute. These subattributes are named "a", "b", "c", "d", "e", "f", "g" and "h" corresponding to successive positions from the start of the character string.

The values defined for each subattribute are given in table 1. The values available in a particular VTE are determined by the DO-emphasis VTE-parameter; see 15.1.2. The 'Sub' column gives the subattribute name and also indicates by the symbol "*" the explicit modal default value for each subattribute. The 'Value' column gives the character values defined for the subattribute. The 'GR' column gives for each subattribute value, where applicable, the corresponding parameter value as used for SET GRAPHIC RENDITION by ISO 6429:1988. The 'Description' column gives the ISO 6429:1988 description of the graphic rendition aspect, or an equivalent description when there is no direct equivalent.

Each emphasis subattribute other than subattribute "h" is intended to affect the representation on a real display device of the content of an individual array element. Subattribute "h" is intended to affect the representation on a real display device of a group of array elements selected from a single field. For this purpose an array element is defined to be within frame (f,z) if it is in the field with coordinates (f,z) and has either the framed or the encircled attribute. A group then consists of a set of array elements with the following properties:

— all array elements of the group are within the same frame;

— if any array element within that frame has primitive coordinates which differ from those of an element of the group only by an increment or decrement of 1 in either x or y, then that element also belongs to the group;

— no subset of the elements of the group satifies these properties.

NOTES

1 The manner in which each subattribute value is represented by a real device is outside the scope of a VTE-profile specification.

Table 1 — Emphasis subattribute values

Sub	Value	GR	Description
"a"	"B"	1	Bold or increased intensity
	"F"	2	Faint, decreased intensity or second colour
*	"N"	22	Normal colour or normal intensity (neither bold nor faint)
	" "	–	No change/null
"b"	"U"	4	Underlined
	"D"	21	Doubly underlined
	"O"	53	Overlined
*	"N"	–	Not underlined or overlined.
	" "	–	No change/null
"c"	"S"	5	Slowly blinking (less than 150 per minute
	"F"	6	Rapidly blinking (150 per minute or more)
*	"N"	25	Steady (not blinking)
	" "	–	No change/null
"d"	"N"	7	Negative image
*	"P"	27	Positive image
	" "	–	No change/null
"e"	"D"	9	Crossed out (characters still legible but marked as to be deleted)
*	"N"	29	Not crossed out
	" "	–	No change/null
"f"	"C"	8	Concealed characters
*	"N"	28	Revealed characters
	" "	–	No change/null
"g"	"I"	3	Italicized
	"F"	20	Fraktur (Gothic)
*	"N"	23	Not italicized, not fraktur
	" "	–	No change/null
"h"	"F"	51	Framed
	"C"	52	Encircled
*	"N"	54	Not framed, not encircled
	" "	–	No change/null

NOTES

1 The symbol * in the first column indicates the explicit modal default value for the subattribute; see 18.2 of ISO 9040.

2 The 'space' character represents the value "null" in attribute operations with attribute-extent value "global" or "modal", otherwise it has the semantics of 'no change'.

2 A typical representation of a group of array elements distinguished by subattribute "h" would be to outline the edges of the group with one or more continuous lines. More than one line will be required when the group contains 'holes'. The effect on such a line of the distinction between the framed and encircled values is outside the scope of a VTE-profile definition.

Each subattribute permits a 'space' character to be used as a subattribute value. When this is used in an ATTRIBUTE or LOGICAL-ATTRIBUTE update operation with an attribute-extent that is an address-extent, this value has the semantics of 'no change'. It provides partial update capability for the emphasis attribute. If the attribute extent takes either of the values "global" or "modal" then the 'space' character denotes the attribute-value "null" for the subattribute concerned.

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There is in this case no value with the semantics of 'no change'. This effect should instead be achieved by explicit use of the current value. In either context, trailing 'space' characters may be omitted.

NOTE 3 — When the attribute-extent is an address-extent, the option is not available of achieving a 'no change' effect by explicit use of the current value. The current value may vary between the different array elements included in the address-extent. Since the attribute-value "null" is not available with an attribute-extent that is an address-extent (see 19.2.1.3 of ISO 9040), no problem is caused by this dual use of the 'space' character.

15.1.2 VTE-parameter values for DO-emphasis

A VTE established by means of either of the VTE-profiles FVT121 or FVT122 has eight occurrences of the DO-emphasis VTE-parameter whose values are set, explicitly or by default, by up to eight occurrences of profile-argument-r6. The occurrences form an ordered list and correspond successively to the subattributes "a" to "h" defined in 15.1.1. The value of each occurrence is an ASN.1 PrintableString.

The occurrence corresponding to a particular subattribute shall be composed of distinct characters that are specified in table 1 as values defined for that subattribute. The maximum length is thus equal to the number of distinct values defined for that subattribute.

The VTE-parameter value specifies those values for the subattribute that shall be available for use in emphasis attribute operations. If a VTE-profile argument value for an occurrence of this VTE-parameter specifies a character string of zero length, that occurrence shall be treated as unspecified; the VTE-profile default value determined in accordance with 13.1 then takes effect.

NOTE — The set of values available for use in emphasis attribute operations is not identical to the set of values that may occur in emphasis attribute values for array elements. The explicit modal default value is always valid as a subattribute value for an array element; the 'space' character is never a valid value. If the VTE-parameter value does not include the explicit modal default value then this value can only be set by the default mechanism of 19.2.1.1 of ISO 9040 and not by explicit attribute operations. If it does not include the 'space' character then partial update capability will not be available for the emphasis attribute.

15.1.3 VTE-parameter values for device-emphasis

There is a separate device-emphasis VTE-parameter for each device. A VTE established by means of either of the VTE-profiles FVT121 or FVT122 has eight occurrences of each device-emphasis VTE-parameter whose values are set, explicitly or by default, by up to eight occurrences of a corresponding VTE-profile argument. The occurrences form an ordered list and correspond successively to the subattributes "a" to "h" defined in 15.1.1. The value of each occurrence is an ASN.1 PrintableString.

The occurrence corresponding to a particular subattribute shall be a character string composed of zero or more distinct characters that are included in the value of the corresponding occurrence of the DO-emphasis VTE-parameter, but excluding the 'space' character. If the character string is not of zero length then it specifies which of the subattribute values that are available for the display object have an unambiguous representation by the device. If the character string is of zero length then it signifies the absence of restriction for the subattribute concerned; all values of the subattribute that are available for the display object are capable of unambiguous representation by the device.

15.2 Application signals

15.2.1 Restrictions on signal values

The control objects with CO-name values 'SA' and 'UA' are Sequenced and Unsequenced Application Control Objects defined in accordance with ISO/IEC ISP 11185-1. These are integer-valued COs whose data elements are used to convey signals for device control from an application to a terminal.

By 6.6 and 7.6 of that ISP part, a VTE-profile that includes COs of these types should specify the value of the CO-size VTE-parameter for each such CO. For the VTE-profiles FVT121 and FVT122 the value CO-size = 1 is set in 14.1 above for each of the two COs concerned, so that the only permitted values for the data elements are 0 and 1.

15.2.2 Signal semantics

When the terminal VT-user receives an update to one of these COs, it is required by 6.7 and 7.7 of ISO/IEC ISP 11185-1 to signal this reception to the appropriate device as an event and the VTE-profile is required to specify the semantics of each such event.

Table 2 — Names assigned to application signals

Integer value	Signal name
0	"audible alarm"
1	"visual alarm"

The VTE-profiles FVT121 and FVT122 assign names to the possible events as given in table 2. The semantics of each event is that the event is required to be signalled to the human user of the terminal end system in a manner that enables it to be identified and distinguished from other signals.

NOTE — It is not required that an "indication of audible alarm" should be signalled by sounding a real alarm, although this will typically be the case. A terminal designed for deaf users may, for example, wish to signal an "indication of audible alarm" and an "indication of visual alarm" by two distinguishable visual signals.

15.3 Terminal signals

15.3.1 Restrictions on signal values

The control objects with CO-name values 'ST' and 'UT' are Sequenced and Unsequenced Terminal Control Objects defined in accordance with ISO/IEC ISP 11185-2. These are integer-valued COs whose data elements are used to convey uninterpreted terminal signals to the application. For this purpose a terminal signal comprises three distinct items of information, namely

— a base value that is an integer in the range from 0 to 255 inclusive;

— a base type that is an integer in the range from 0 to 3 inclusive;

— the status "on" or "off" of each of a set of six modifier flags numbered from 1 to 6.

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By 6.8 and 7.8 of that ISP part, a VTE-profile that includes COs of these types may restrict the base types and modifier flags or flag combinations that are permitted for a value of the data element of these COs.

Each of the VTE-profiles FVT121 and FVT122 places the following restrictions on these values for both of these COs:

— the base type shall only take values 0, 1 or 2;

— the only modifier flags permitted to be set "on" are flags 1, 2 and 3, which may be set "on" singly or in any combination;

— at least one of modifier flags 1, 2 and 3 shall be "on" if the base type has value 0.

NOTE — All values of the data element permitted by these restrictions fall in the range from 256 to 8191 inclusive.

15.3.2 Signal titles

The VTE-profiles FVT121 and FVT122 assign the names given in table 3 to the permitted base types and modifier flags for convenience in reference. No semantic meaning is to be attached to these names, whose use by documentation that references this ISP part is optional.

Table 3 — Names of signal items

Item	Name
base type 0	"character" type
base type 1	"special" type
base type 2	"function" type
modifier flag 1	"control" flag
modifier flag 2	"shift" flag
modifier flag 3	"alternate" flag

These VTE-profiles also assign names as follows to certain base values of each base type, again without semantic implication:

— for the "character" type, names are assigned for base values 33 to 126 inclusive, the name being that of the character that is represented by the base value in the IRV of ISO/IEC 646:1991;

— for the "special" type, names are assigned for base values 0 to 42 inclusive in accordance with table 4;

— for the "function" type, the name for any base value is "Function *nn*", which may be abbreviated to "F*nn*" when there is no possible ambiguity, where *nn* is the base value.

NOTE — The names of base types are modelled on the three distinct classes of keys that are commonly present on keyboards and the names of modifier flags on commonly present modifier keys. The names of the base values for each base type are appropriate for the corresponding key class. These assignments of names are made without prejudice to the means by which the signals may be generated in a real implementation.

15.4 Semantics of the Waiting Time CO

The control object with CO-name value 'WT' is a Waiting Time CO defined in accordance with ISO/IEC ISP 11185-13. This is an integer-valued CO that starts a count-down timer for the number of seconds specified by the data element of the CO whenever WAVAR is received by the Terminal VT-user. A data element value of 0 signifies that the timer does not operate. The timer is stopped when WAVAR is relinquished and started again at the initial setting when WAVAR is next received.

Table 4 — Names for base values of the "special" type

Value	Base name	Value	Base name
0	Break	22	Home
1	Bell	23	End
2	BackSpace	24	PageUp
3	Tab	25	PageDown
4	BackTab	26	PA1
5	LineFeed	27	PA2
6	CarReturn	28	PA3
7	Cancel	29	Help
8	Substitute	30	StatusProcess
9	Escape	31	InterruptProcess
10	Plus	32	TerminateProcess
11	Minus	33	AbortOutput
12	Multiply	34	FormFeed
13	Divide	35	Clear
14	LeftArrow	36	Print
15	RightArrow	37	Refresh
16	UpArrow	38	SystemRequest
17	DownArrow	39	EndOfRecord
18	Insert	40	EndOfFile
19	Delete	41	SuspendProcess
20	InsertLine	42	Enter
21	DeleteLine		

By clause 12 of that ISP part, a VTE-profile that includes a CO of this type should specify the semantic significance of expiry of the timer. For the VTE-profiles FVT121 and FVT122, the CO provides a mechanism for the Application VT-user to specify a time within which data entry must be completed. When the timer expires, the Terminal VT-user shall forward to the VT service-provider a sequence of VT service primitives representing the net effect of all updates that have been accepted by the local processing function during controlled data entry but not yet forwarded. It shall follow these with a VT service primitive to update this CO with a value equal to the current value of the data element. Finally it shall issue a VT-GIVE-TOKENS service primitive.

NOTES

1 In accordance with clause 12 of ISO/IEC ISP 11185-13, the Application VT-user shall interpret the reception of an update to this CO as notification that this timer has expired. It shall interpret the value of the update as specifying in seconds the time period that has expired. Only the Application VT-user may issue an update to this CO to reset the timer to a different value.

2 The forwarding of data as a result of the expiry of this timer is an occurrence that is outside of any procedures for controlled data entry that may be determined by FEICOs and FEPCOs present in the VTE. In consequence there is no verification of data entry rules for field content when such forwarding occurs, even if such verification takes place before data is forwarded during controlled data entry.

15.5 Semantics of the Device Default COs

The default control object associated with each device object is of category "boolean" with eight booleans defined. The semantics of device default control objects is not defined within ISO 9040 and should be supplied for each device by

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the VTE-profile concerned. Within the VTE-profiles FVT121 and FVT122, only the first boolean is given specified semantics.

The first boolean of the device default CO is defined as an "on/off" switch for the associated real device, with value "true" corresponding to the device being "on" and value "false" to the device being "off". A device in the "off" state should be considered as disconnected from the rest of the Terminal VT-user.

15.6 Access restrictions

15.6.1 Access outside fields

The value of the VTE-parameter access-outside-fields is negotiated for the VTE-profiles FVT121 and FVT122 by a VTE-profile argument. When this VTE-parameter takes the value "allowed", these VTE-profiles require the Terminal VT-user to maintain a field-control variable as defined in 3.3.

The object updating devices of the Terminal VT-user shall have update access to the field-control. In addition, field-control shall be set to the value "on" whenever an update to the Context Control Object (CCO) is received by the Terminal VT-user from the VT service-provider.

The local processing function is active, and controlled data entry takes place, only when field-control is "on". The setting of field-control to the value "off" shall cause the Terminal VT-user to forward to the VT service-provider a sequence of VT service primitives representing the net effect of all updates that have been accepted by the local processing function during controlled data entry but not yet forwarded.

The linkage of a device object to the FDCO is considered to be active only when field-control is "on". In accordance with 23.5 of ISO 9040 the device termination VTE-parameters are thus enabled or disabled according as field-control is "off" or "on".

15.6.2 CO updates during controlled data entry

When controlled data entry is in operation, which is so either if the VTE-parameter access-outside-fields has the value "not allowed" or if it has the value "allowed" and field-control is "on", then the VTE-profiles FVT121 and FVT122 place restrictions on the update of COs by devices of the Terminal VT-user. Such devices shall not generate update operations for any COs or RIOs that have "normal" update priority.

NOTE — During controlled data entry such update operations may be generated by the local processing function in accordance with any FEPCOs present in the CCA. This restriction gives the local processing function the exclusive right to generate such updates. Updates to COs with "high" or "urgent" update priority are not covered by this restriction and may always be generated by the devices of the Terminal VT-user.

15.7 Optional control objects

Two VTE-profile arguments are available to negotiate the invocation of additional control objects beyond those that are specified in the bodies of the VTE-profiles FVT121 and FVT122. The type definition of a control object invoked in this manner may leave certain VTE-parameters to be specified by the referencing VTE-profile.

For these VTE-profiles, if there is a mutual agreement between the two communicating VT-users to operate either of them in accordance with a specific VT Application Profile then such VTE-parameters shall take the values, if any, specified by the Application Profile. If no value is specified or there is no such agreement, the following default values shall be used. The default value of the VTE-parameter CO-access for any CO invoked in this way is the value that this VTE-parameter takes for the FDCO. The default value for the VTE-parameter CO-repertoire-assignment has the ISO 9040 default value for the repertoire-assignment-type component and the value {2/8 4/2} for the repertoire-assignment-value component. This designates the repertoire consisting solely of the graphic character set ISO 2375 Reg. No. 6 (ASCII) in the GL position of the code table. The default values for all other CO VTE-parameters are as specified in clause 20 of ISO 9040.

16 Usage

The VTE-profiles FVT121 and FVT122 are each intended to be used in conjunction with a FEICO and FEPCO that will provide facilities for controlled data entry. The FEICOs with taxonomy identifiers FVT221 and FVT222, and the FEPCOs with taxonomy identifiers FVT231 and FVT232, are particularly suitable for this purpose. Their specifications are given in parts 8–11 of ISO/IEC ISP 11185. These, or any other such COs, should be invoked by means of the VTE-profile arguments provided for this purpose.

The VT Application Profiles with taxonomy identifiers AVT22 and AVT23 that are specified respectively in parts 3 and 4 of ISO/IEC ISP 11187 prescribe a manner of use of the VTE-profiles FVT121 and FVT122 that is designed to enhance interoperability. These Application Profiles provide a mechanism by which two communicating VT-users can mutually agree on their use. When such use is so agreed, AVT22 invokes by default the FEICO FVT221 and the FEPCO FVT231 for use with FVT121 while AVT23 correspondingly invokes FVT222 and FVT232 for use with FVT122.

When used in accordance with Application Profile AVT22 or AVT23 as appropriate, these VTE-profiles each provide powerful general facilities for controlled data entry which make them particularly suitable for form-filling applications. Such forms may have more than one page and each page may be larger than the size of the display screen. Due to their operation in synchronous mode, there should be an excellent response time to data input by the human user of the terminal even when the application is accessed over a congested network or on a heavily laden remote computer. Facilities are provided for the local printing of each form as it is completed.

When used in accordance with AVT22, the S-mode Forms VTE-profile FVT121 is particularly suited for use with terminal end systems that are based on a real character-oriented terminal, *i.e.* a terminal from which input data is forwarded to a local processing system on a character-by-character basis. Real block-oriented terminals, in which input data is forwarded to the local processing system as complete blocks or pages, may not have the flexibility to enable the processing system to operate in accordance with AVT22. The Application Profile AVT23 is designed specifically to provide powerful facilities that can be implemented in conjunction with a real block-oriented terminal. Its use of the S-mode Paged VTE-profile FVT122 instead of FVT121 enables it to take account of the variation between block-oriented terminals in the manner in which they handle field structures.

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Both VTE-profiles have the capability to invoke additional optional control objects to enhance the facilities that are provided by a FEICO and FEPCO. There are control object types defined in the various parts of ISO/IEC ISP 11185 that extend this into a general-purpose VTE-profile capable, for example, of efficient editing of remote files that are larger than the size of the display object. These optional control objects also provide for efficient downloading and local storage of form templates, for improved control of local printing and for comprehensive 'help' facilities that are specific to a particular application.

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Annex A
(normative)

Profile Requirements List

A.1 Protocol requirements

This annex provides a Profile Requirements List (Profile RL) for the Profiles FVT121 and FVT122 specified in this part of ISO/IEC ISP 11184. All items of this RL apply equally to both Profiles. This RL is to be used in conjunction with the Protocol ICS (PICS) proforma for the Virtual Terminal Protocol that is given in ISO/IEC 9041-2. The relationship between the Profile RL and the Protocol ICS is described in clause 5 of this part of ISO/IEC ISP 11184.

The requirements of this RL are given in tables A.1 to A.10. The notation used in the tables is as follows. Individual items in a PICS proforma are referenced by the means specified in 9.3.8.3 of ISO/IEC 9646-7. Such a reference has the form *x-y/z*, where *x* is the number of the ISO Standard that specifies the protocol, *y* is a reference within the PICS proforma of this Standard to the smallest subclause that contains the item concerned, and *z* is the reference number of the item within that subclause. Where this RL needs to present the constraints on a particular item as two or more separate cases, a suffix of the form '.*n*' is added to the item reference where *n* is a serial number that labels the different cases.

The item name is taken from the PICS proforma. The "status" columns of the RL tables take priority over the corresponding "status" columns of the PICS proforma and they use the notation of that proforma. They refine the PICS proforma status values by evaluating conditional expressions or converting optional values to a more specific form. The following conditional values are used in these tables:

c1 If application implementation then m else -;
c2 If terminal implementation then m else -.

Where an RL table has a "Profile values" column, the status value applies separately to each listed Profile value. For example, in the case of the item A.3.7.13/13 listed in table A.4, to satisfy this RL the answers in the Supported Values column of the PICS proforma must include all eight values listed in the Profile Values column of table A.4.

For any column in an RL table that corresponds to an answer column in the PICS proforma, the values listed are the acceptable answers for the item concerned. The following special notation is used in these columns:

Any The RL places no constraint on the answer;
n/a The column is not relevant to this item.

Table A.1 — VT Service requirements

Item reference no. 9041-	Name of item	Status	Profile values	Negotiable
A.2.1/6	Enhanced Access-rules	m	n/a	n/a
A.2.1/7	Structured Control Objects	m	n/a	n/a
A.2.1/9	Fields	m	n/a	n/a
A.2.2/1	S-mode	m	n/a	n/a
A.3.9	type-of-delivery-control	m	"simple-delivery-control"	No

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Table A.2 — VTE requirements for display object

Item reference no. 9041-	Name of item	Status	Profile values	Negotiable
A.3.1/1	display-object-name	m	A	No
A.3.1/2	erasure-capability	m	"yes"	No
A.3.1/3	DO-access	m	"WAVAR"	No
A.3.1/4	block-definition-capability	m	"no"	No
A.3.1/6	field-definition-capability	m	"yes"	No
A.3.1/7	max-fields	m	"unbounded"	No
A.3.1/8	max-field-elements	m	Any	Yes
A.3.1/9	access-outside-fields	m	Any	Yes
A.3.4/1	dimensions	m	"three"	No
A.3.4/2	x-bound	m	Any	Yes
A.3.4/3	x-addressing	m	"no constraint"	No
A.3.4/4	x-absolute	m	"yes"	No
A.3.4/6	y-bound	m	Any	Yes
A.3.4/7	y-addressing	m	"no constraint"	No
A.3.4/8	y-absolute	m	"yes"	No
A.3.4/10	z-bound	m	2147483647	No
A.3.4/11	z-addressing	m	"no constraint"	No
A.3.4/12	z-absolute	m	"no"	No
A.3.4/13	z-window	m	Any	Yes
A.3.7.1/2	repertoire-assignment	m	Any	Yes
A.3.7.1/4	font-assignment	m	Any	Yes
A.3.7.1/5	emphasis	m	Any	Yes
A.3.7.1/6	foreground-colour-capability	m	Any	Yes
A.3.7.1/7	foreground-colour-assignment	m	Any	Yes
A.3.7.1/8	background-colour-capability	m	Any	No
A.3.7.1/9	background-colour-assignment	m	Any	Yes

NOTE — Items A.3.7.1/6 and A.3.7.1/8 are constrained by this VTE-profile to take the same value, which is negotiated as a value for item A.3.7.1/6.

Table A.3 — Attribute support

Table reference no. 9041-	Name of table	Item	Profile answer
A.3.7.7	Emphasis support	Is the scheme in S B.17.3 supported (ans: yes or no)	Any
A.3.7.7	Emphasis support	If other schemes are supported give a detailed description of each such scheme	See 15.1 of ISO/IEC ISP 11184-1

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Table A.4 — VTE requirements for main device

Item reference no. 9041-	Name of item	Status	Profile values	Negotiable
A.3.7.13/1	device-name	m	D	No
A.3.7.13/2	default-CO-access	m	"WAVAR"	No
A.3.7.13/3	default-CO-priority	m	"normal"	No
A.3.7.13/4	default-CO-trigger	m	"not selected"	No
A.3.7.13/5	default-CO-initial-value	m	1."true"	No
A.3.7.13/6	repertoire-assignment	m	Any	Yes
A.3.7.13/7	font-assignment	m	Any	Yes
A.3.7.13/8	emphasis	m	Any	Yes
A.3.7.13/9	foreground-colour-assignment	m	Any	Yes
A.3.7.13/10	background-colour-assignment	m	Any	Yes
A.3.7.13/11	minimum-x-array-length	m	Any	Yes
A.3.7.13/12	minimum-y-array-length	m	Any	Yes
A.3.7.13/13	control-object	m	FD, CC, ST, UT, WT, TP	Yes
A.3.7.13/14	display-object	m	A	No
A.3.7.13/15	termination-event-list	m	<CO update with CO-name=ST, 1>	No

Table A.5 — VTE requirements for secondary device

Item reference no. 9041-	Name of item	Status	Profile values	Negotiable
A.3.7.13/1	device-name	m	P	No
A.3.7.13/2	default-CO-access	m	"NSAC"	No
A.3.7.13/3	default-CO-priority	m	"high"	No
A.3.7.13/4	default-CO-trigger	m	"not selected"	No
A.3.7.13/5	default-CO-initial-value	m	1."false"	No
A.3.7.13/6	repertoire-assignment	m	Any	Yes
A.3.7.13/7	font-assignment	m	Any	Yes
A.3.7.13/8	emphasis	m	Any	Yes
A.3.7.13/9	foreground-colour-assignment	m	Any	Yes
A.3.7.13/10	background-colour-assignment	m	Any	Yes
A.3.7.13/11	minimum-x-array-length	m	Any	Yes
A.3.7.13/12	minimum-y-array-length	m	Any	Yes
A.3.7.13/13	control-object	m	Any	Yes
A.3.7.13/14	display-object	m	A	No

Table A.6 — VTE requirements for Control Object Types

Item reference no. 9041-	Name of item	Status	Numbers supported	Extra Info Ref.
A.3.8/1	default device COs	m	2	
A.3.8/4	Field Definition CO (FDCO)	m	1	
A.3.8/7	Context CO (CCO)	m	1	
A.3.8/8	Transmission Policy CO (TPCO)	m	1	
A.3.8/11	Parametric COs	m	≥5	FVT211, FVT212, FVT213. FVT214, FVT2111

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Table A.7 — VTE requirements for Control Object Parameters

Item reference no. 9041-	Name of item	Status	Profile values	Negotiable
A.3.8.1/1	CO-name	m	FD	No
A.3.8.1/2	CO-type-identifier	m	{1 0 9040 0 3}	No
A.3.8.1/3	CO-structure	m	"non-parametric"	No
A.3.8.1/4	CO-access	m	"WAVAR" & v1	No
A.3.8.1/5	CO-priority	m	"normal"	No
A.3.8.1/6	CO-trigger	m	"not selected"	No
A.3.8.1/1	CO-name	m	CC	No
A.3.8.1/2	CO-type-identifier	m	{1 0 9040 0 2}	No
A.3.8.1/3	CO-structure	m	6	No
A.3.8.1/4	CO-access	m	"WAVAR"	No
A.3.8.1/5	CO-priority	m	"normal"	No
A.3.8.1/6	CO-trigger	m	"not selected"	No
A.3.8.1/1	CO-name	m	TP	No
A.3.8.1/2	CO-type-identifier	m	{1 0 9040 0 4}	No
A.3.8.1/3	CO-structure	m	1	No
A.3.8.1/4	CO-access	m	"WAVAR" & v1	No
A.3.8.1/5	CO-priority	m	"normal"	No
A.3.8.1/6	CO-trigger	m	"not selected"	No
A.3.8.1/1	CO-name	m	WT	No
A.3.8.1/2	CO-type-identifier	m	{1 0 9834 5 0 11}	No
A.3.8.1/3	CO-structure	m	1	No
A.3.8.1/4	CO-access	m	"WAVAR"	No
A.3.8.1/5	CO-priority	m	"normal"	No
A.3.8.1/6	CO-trigger	m	"not selected"	No
A.3.8.1/1	CO-name	m	SA	No
A.3.8.1/2	CO-type-identifier	m	{1 0 9834 5 0 1}	No
A.3.8.1/3	CO-structure	m	1	No
A.3.8.1/4	CO-access	m	"WAVAR" & v1	No
A.3.8.1/5	CO-priority	m	"normal"	No
A.3.8.1/6	CO-trigger	m	"not selected"	No
A.3.8.1/1	CO-name	m	UA	No
A.3.8.1/2	CO-type-identifier	m	{1 0 9834 5 0 2}	No
A.3.8.1/3	CO-structure	m	1	No
A.3.8.1/4	CO-access	m	v1	Yes
A.3.8.1/5	CO-priority	m	"urgent"	No
A.3.8.1/6	CO-trigger	m	"not selected"	No
A.3.8.1/1	CO-name	m	ST	No
A.3.8.1/2	CO-type-identifier	m	{1 0 9834 5 0 3}	No
A.3.8.1/3	CO-structure	m	1	No
A.3.8.1/4	CO-access	m	"WAVAR" & v2	No
A.3.8.1/5	CO-priority	m	"normal"	No
A.3.8.1/6	CO-trigger	m	"not selected"	No
A.3.8.1/1	CO-name	m	UT	No
A.3.8.1/2	CO-type-identifier	m	{1 0 9834 5 0 4}	No
A.3.8.1/3	CO-structure	m	1	No
A.3.8.1/4	CO-access	m	v2	No
A.3.8.1/5	CO-priority	m	"urgent"	No
A.3.8.1/6	CO-trigger	m	"not selected"	No

v1: "WACA" OR "WACI"

v2: IF v1 = "WACA" THEN "WACI" ELSE "WACA"

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Table A.8 — VTE requirements for Control Object Data Elements

Item reference no. 9041-	Name of item	Status	Profile values	Negotiable
	CO-name = CC			
A.3.8.2/1	CO-element-id	m	1	No
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	2147483647	No
A.3.8.2/1	CO-element-id	m	2	No
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	65535	No
A.3.8.2/1	CO-element-id	m	3	No
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	65535	No
A.3.8.2/1	CO-element-id	m	4	No
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	65535	No
A.3.8.2/1	CO-element-id	m	5	No
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	65535	No
A.3.8.2/1	CO-element-id	m	6	No
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	65535	No
	CO-name = TP			
A.3.8.2/2	CO-category	m	"boolean"	No
A.3.8.2/4	CO-size	m	4	No
	CO-name = WT			
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	65535	No
	CO-name = SA			
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	1	No
	CO-name = UA			
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	1	No
	CO-name = ST			
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	65535	No
	CO-name = UT			
A.3.8.2/2	CO-category	m	"integer"	No
A.3.8.2/4	CO-size	m	65535	No

Table A.9 — PDU requirements

Item reference no. 9041-	Name of item	Profile values	SENDING Status	RECEIVING Status
A.4.2/8	HDQ VT-HIGH-PRI-DATA	n/a	m	m
A.5.15.4/2.1	coName	D, P, CC, WT	m	m
A.5.15.4/2.2	coName	FD, TP, SA, UA	c1	c2
A.5.15.4/2.3	coName	ST, UT	c2	c1

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Table A.10 — Special VTE-profile argument requirements

Item reference no. 9041-	Name of item	Profile values	SENDING Status	RECEIVING Status
	ProfileArgumOfferList			
A.6.1/1	specialProfileArgums		m	m
A.6.1/2	identifier	1 (for FVT121) 1, 2 (for FVT122)	m	m
	offeredValues(CHOICE)			
A.6.1/3	boolean	all	m	m
	ProfileArgumValueList			
A.6.2/1	specialProfileArgums		m	m
A.6.2/2	identifier	1 (for FVT121) 1, 2 (for FVT122)	m	m
	value(CHOICE)			
A.6.2/3	boolean	all	m	m

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