INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 11187-6

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Information technology — International Standardized Profiles AVT1n, AVT2n — Virtual Terminal Basic Class — Application Profiles —

Part 6:
AVT15 — A-mode Transparent Application Profile

Technologies de l'information — Profils normalisés internationaux AVT1n, AVT2n — Classe de base du terminal virtuel — Profils d'application —

Partie 6: AVT15 — Profil d'application mode A transparent

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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 Standards 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 11187-6 was prepared with the collaboration of

— Asia-Oceania Workshop (AOW);

— European Workshop for Open Systems (EWOS);

— Open Systems Environment Implementors' Workshop (OIW).

ISO/IEC ISP 11187 consists of the following parts, under the general title *Information technology - International Standardized Profiles AVT1n, AVT2n - Virtual Terminal Basic Class - Application Profiles:*

— *Part 1:Common VT Protocol Requirements List*

— *Part 2:Common Supporting Layers Requirements List*

— *Part 3:AVT22 - S-mode Forms Application Profile*

— *Part 4:AVT23 - S-mode Paged Application Profile*

— *Part 5:AVT16 - A-mode Generalized Telnet Application Profile*

— *Part 6:AVT15 - A-mode Transparent Application Profile*

Annexes A and B form an integral part of this part of ISO/IEC ISP 11187.

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Introduction

ISO/IEC ISP 11187 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.

This International Standardized Profile contains Open Systems Interconnection (OSI) Application Profiles (A-profiles) defined within the framework of ISO/IEC TR 10000 for the Virtual Terminal Basic Class Service and Protocol that is specified in ISO 9040 and ISO 9041.

This part of ISO/IEC ISP 11187 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 Asia-Oceania Workshop (AOW). It was developed under the editorship of OIW from a functional standard specified in the OIW Stable Implementation Agreements Version 5. 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 AVT1n, AVT2n - Virtual Terminal Basic Class - Application Profiles -

Part 6:

AVT15 - A-mode Transparent Application Profile

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.

Establishment of a VT-association involves the selection by negotiation of a particular Virtual Terminal Environment profile (VTE-profile), and of particular values for any arguments of that VTE-profile. The VTE-profile specification, and possibly also the values of certain VTE-profile arguments, may in turn reference the definitions of VT control object types and assignment types. These VTE-profiles, control object types and assignment types are therefore Information Objects that require explicit reference within the VT protocol.

Particular instances of these Information Objects 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 Virtual Terminal Basic Class Service and Protocol may be used to realize a wide range of distinct functions. Particular functions may be realized through the selection of appropriate VT functional units, F-Profiles and other VTE-profile argument values. The specification of the selection required to realize 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;

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— 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 11187 is applicable to environments in which a terminal population requires access to application packages running on a variety of computers. It may be used where the connection between the terminal and the computer that hosts the application package is local, is made across a Local or Wide Area Network, or is made across a concatenation of such networks.

This part of ISO/IEC ISP 11187 contains the definitions of the A-mode Transparent Profile that may be used to provide a transparent mode of operation which allows VT-users to exchange transparently uninterpreted sequences of characters with the added benefit of delivery control to enable the VT-users to determine when the character sequences are to be delivered. This A-profile specifies a mode of operation of, and a selection of options for use with, the A-mode Transparent VTE-profile FVT114. These are together designed to provide versatility and to promote interoperability between Virtual Terminal implementations which support that VTE-profile.

This part of ISO/IEC ISP 11187 also specifies a Profile ICS proforma for the A-mode Transparent Application Profile specified herein in compliance with the relevant requirements, and in accordance with the relevant guidance, given in ISO/IEC 9646-7. The supplier of an implementation which is claimed to conform to ISO/IEC ISP 11187-6 is required to complete a copy of the Profile ICS proforma as specified in 5.2 and is required to provide the information necessary to identify both the supplier and the implementation.

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 sub-class of the class of Application Profiles.

A Profile within this subclass has a Profile identifier of the form AVTab, where ab is a structured numerical identifier that identifies the position of the Profile within two levels of subdivision of the subclass. The value of a is a single digit but b 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 the permitted modes of operation of the Virtual Terminal Service as follows:

— a = 1 for Basic Class A-mode (asynchronous mode);

— a = 2 for Basic Class S-mode (synchronous mode).

Values greater than 2 are reserved for future developments.

ISO/IEC ISP 11187 contains the specifications of the Profiles with identifiers of the form AVT1b and AVT2b. The component b distinguishes between different Application Profiles that make use of the same mode of operation.

This part of ISO/IEC ISP 11187 contains the specification of the Application Profile with the Profile identifier

AVT15 - A-mode Transparent Application Profile.

1.3 Scenario

The VT Basic Class Service is defined in ISO 9040. It operates within the OSI Reference Model defined in ISO/IEC 7498-1 to provide facilities for interactive terminal-oriented communication between two application-processes. The aspects of an application-process that make use of these facilities constitute a VT-user as defined in ISO 9040. Figure 1 illustrates the elements of the OSI model that are concerned with communication between two VT-users in accordance with a VT Application Profile.

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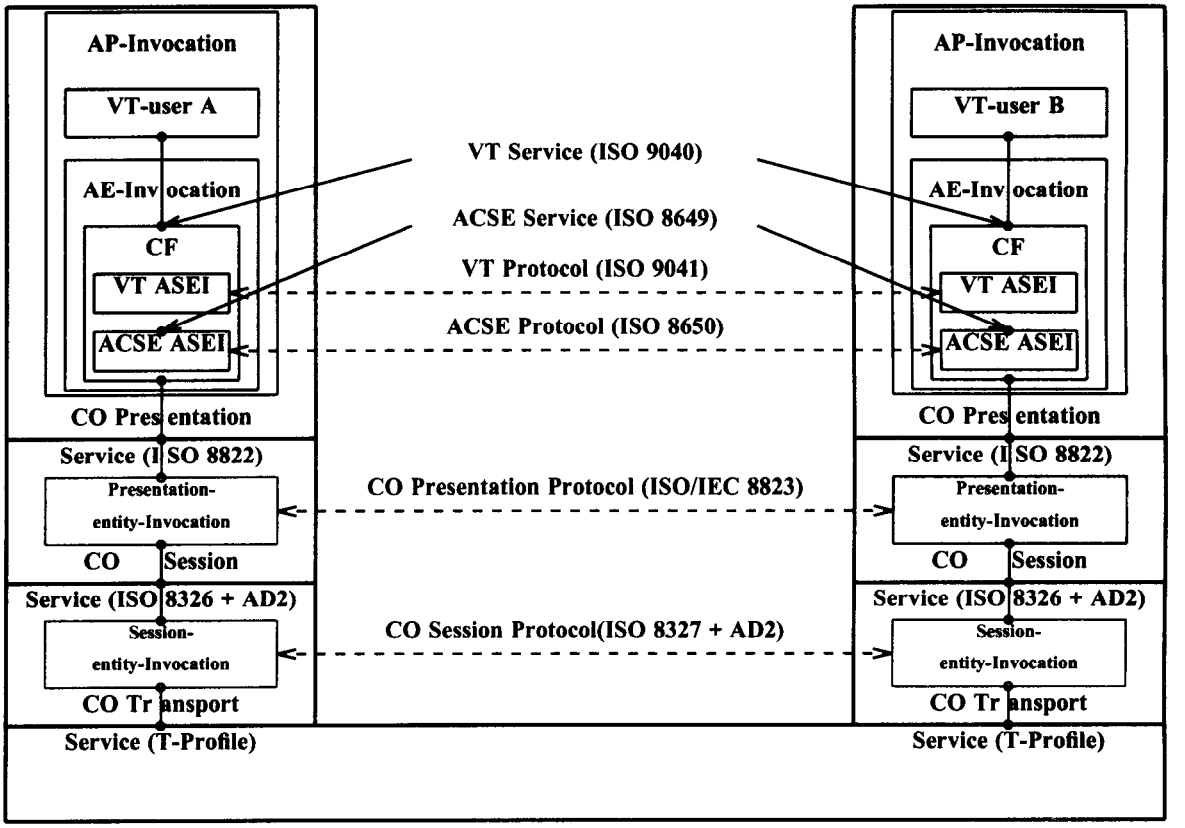

Figure 1 - Interactive VT communication between two end systems

The VT-user component of an application-process (AP) communicates by invoking an application-entity (AE) to establish a VT-association with an application-entity of a peer application-process. In order to provide the VT Basic Class Service to their VT-users, two AE-invocations (AEIs) exchange information by means of both the VT Basic Class Protocol specified in ISO 9041-1 and the ACSE Protocol specified in ISO 8650. The VT Basic Class Service enables the VT-users to exchange data that may include control information related to virtual terminal functions and to real devices.

In the model of the OSI Application Layer given in ISO/IEC 9545 the AE is a composition of two application-service-elements (ASEs)and a Control Function (CF). It is the CF that provides the VT Service to the VT-user. The ASEs are the VT ASE and the ACSE. In an AEI the CF provides the functions of the VT Service by making coordinated use of the services provided to it by invocations of each of the two ASEs. Each ASE-invocation (ASEI) in turn provides its services by an exchange of APDUs with its peer, for which it requires the use of the Connection-oriented Presentation Service. These requirements of the two ASEIs are passed to the CF, which coordinates them and makes the actual use of the Presentation Service.

An AEI operates in accordance with rules determined by an application-context. The definition of the application-context for a VT-association is provided by clause 11 of ISO 9041-1.

A VT Application Profile specifies constraints on the operation of an AEI within the application-context defined in ISO 9041-1. It also specifies constraints on the use of the Presentation Layer by such an AEI and on the consequent use of the Session Layer by the Presentation Layer. A VT Application Profile is intended to be used in conjunction with any Transport Profile (T-Profile) of ISO/IEC TR 10000-2 that provides a

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connection-mode Transport Service for use by the Session Layer.

A VT Application Profile may also specify constraints on the exchange of control information between the VT-users and on the behavior of a VT-user in response to information exchanged.

An AP-invocation may make concurrent or consecutive use of more than one AE-invocation. An AE-invocation may be a partner in one or more application-associations, either concurrently or consecutively. A VT-association is an application-association capable of supporting communication between two VT ASEs.

The VT Application Profiles specified in ISO/IEC ISP 11187 are concerned solely with the operation of a VT- association. They place no constraint on any other application-associations of the AE-invocation concerned or on any other AE-invocation belonging to the AP-invocation concerned.

The VT Application Profile specified in this part of ISO/IEC ISP 11187 assumes a relationship between the two communicating end systems described below. One end system (the keyboard side) assumes an initiator function and the other side assumes the responder function (the application side). These two devices form part of the VT-user component of that end system and are modelled within the data structures of the VT Service.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 11187. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this part of ISO/IEC ISP 11187 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, *Data processing - Procedure for registration of escape sequences.*[1)]

ISO/IEC 7498-1:1994, *Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model.* (See also ITU-T Recommendation X.200.)

ISO 8326:1987[2)], *Information processing systems - Open Systems Interconnection - Basic connection oriented session service definition.* (See also CCITT Recommendation X.215.)

ISO 8327:1987[2)], *Information processing systems - Open Systems Interconnection - Basic connection oriented session protocol specification.* (See also CCITT Recommendation X.225.)

ISO/IEC 8327-2:[3)], *Information technology - Open Systems Interconnection - Basic connection oriented session protocol specification - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma.*

ISO 8649:1988[2)], *Information processing systems - Open Systems Interconnection - Service definition for the Association Control Service Element.* (See also CCITT Recommendation X.217.)

ISO 8650:1988[2)], *Information processing systems - Open Systems Interconnection - Protocol specification for the Association Control Service Element.* (See also CCITT Recommendation X.227.)

ISO 8650:1988/Amd.1:1990, *Information processing systems - Open Systems Interconnection - Protocol specification for the Association Control Service Element. Amendment 1.*

ISO/IEC 8650-2:1995, *Information technology - Open Systems Interconnection - Protocol*

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

2) Currently under revision.

3) To be published.

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specification for the Association Control Service Element: Protocol Implementation Conformance Statement (PICS) Proforma.

ISO/IEC 8822:1994, *Information technology - Open Systems Interconnection - Presentation service definition.* (See also ITU-T Recommendation X.216.)

ISO/IEC 8823-1:1994, *Information technology - Open Systems Interconnection - Connection-oriented presentation protocol: Protocol specification.* (See also ITU-T Recommendation X.226.)

ISO/IEC 8823-2:1995, *Information technology - Open Systems Interconnection - Connection-oriented presentation protocol: Protocol Implementation Conformance Statement (PICS) Proforma.*

ISO/IEC 8824-1:1995 *Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation.* (See also ITU-T Recommendation X.208.)

ISO/IEC 8825-1:1995, *Information technology - ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER).* (See also ITU-T Recommendation X.209.)

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

ISO 9040:1990/Cor.1:1991, *Information technology - Open Systems Interconnection - Virtual Terminal Basic Class Service.* Technical Corrigendum 1.

ISO 9040:1990/Cor.2:1992, *Information technology - Open Systems Interconnection - Virtual Terminal Basic Class Service.* Technical Corrigendum 2.

ISO 9040:1990/Cor.3:1993, *Information technology - Open Systems Interconnection - Virtual Terminal Basic Class Service. Technical Corrigendum 3.*

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

ISO 9041-1:1990/Cor.1:1992, *Information technology - Open Systems Interconnection - Virtual Terminal Basic Class Protocol - Part 1: Specification. Technical Corrigendum 1.*

ISO 9041-1:1990/Cor.2:1993, *Information technology - Open Systems Interconnection - Virtual Terminal Basic Class Protocol - Part 1: Specification. Technical Corrigendum 2.*

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 9545:1994, *Information technology - Open Systems Interconnection - Application Layer structure.* (See also ITU-T Recommendation X.207.)

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

ISO/IEC 9646-7:1995, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements.* (See also Recommendation X.296.)

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

ISO/IEC TR 10000-1:1995, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1: General principles and documentation framework.*

ISO/IEC TR 10000-2:1995, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2: Principles and Taxonomy for OSI profiles.*

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

ISO/IEC ISP 11184-3:1996, *Information technology - International Standardized Profiles FVT1nn - Virtual Terminal Basic Class -*

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Register of VTE-profiles - Part 3: FVT114 - A-mode Transparent VTE-profile.

ISO/IEC ISP 11187-1:[3], *Information technology - International Standardized Profiles AVT1n, AVT2n - Virtual Terminal Basic Class - Application Profiles - Part 1: Common VT Protocol Requirements.*

ISO/IEC ISP 11187-2:[3], *Information technology - International Standardized Profiles AVT1n, AVT2n - Virtual Terminal Basic Class - Application Profiles - Part 2: Common Supporting Layers Requirements.*

ISO/IEC ISP 11188-1:1995, *Information technology - International Standardized Profile - Common upper layer requirements - Part 1: Basic connection oriented requirements.*

3 Definitions

For the purposes of this part of ISO/IEC ISP 11187, the following definitions apply.

3.1 General OSI terminology

3.1.1 This part of ISO/IEC ISP 11187 makes use of the following terms defined in ISO/IEC 7498-1:

a. application-entity;

b. application-process;

c. real open system.

3.1.2 This part of ISO/IEC ISP 11187 makes use of the following terms defined in ISO/IEC 10731:

a. service primitive;

b. service-provider.

3.1.3 This part of ISO/IEC ISP 11187 makes use of the following terms defined in ISO/IEC 8824-1:

a. component type;

b. module;

c. object identifier;

d. sequence type;

e. sequence-of type;

f. set type;

g. set-of type;

h. structured type.

3.1.4 This part of ISO/IEC ISP 11187 makes use of the following terms defined in ISO/IEC 9545:

a. AE-invocation;

b. application-association;

c. application-context;

d. application-service-element;

e. ASE-invocation;

f. control function.

3.1.5 This part of ISO/IEC ISP 11187 makes use of the following terms defined in ISO/IEC 9646-1:

a. dynamic conformance requirement;

b. Implementation Conformance Statement;

c. Implementation Conformance Statement proforma;

d. Profile Requirements List;

e. Profile specific Implementation Conformance Statement;

f. Profile specific Implementation Conformance Statement proforma;

g. Protocol Implementation Conformance Statement;

h. Requirements List;

i. static conformance requirement.

3.2 Terminology of VT standards

3.2.1 This part of ISO/IEC ISP 11187 makes use of the terms defined in ISO 9040 and the following term defined in ISO 9041-1:

a. protocol element.

4 Abbreviations

For the purposes of this part of ISO/IEC ISP 11187, the following abbreviations apply.

ACSE	Association Control Service Element;
AE	Application-entity;
AEI	AE-invocation

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AOW OSI Asia-Oceanic Workshop;
AP Application-process;
APDU Application-protocol-data-unit;
ASE Application-service-element;
ASEI ASE-invocation;
ASN.1 Abstract Syntax Notation One;
CF Control Function;
DO Display object;
EWOS European Workshop for Open Systems;
ICS Implementation Conformance Statement;
OIW OSE Implementor's Workshop;
OSE Open Systems Environment.
OSI Open Systems Interconnection;
PDU Protocol Data Unit;
PICS Protocol Implementation Conformance Statement;
RL Requirements List;
SCS System Conformance Statement;
VT Virtual Terminal;
VTE Virtual Terminal Environment;
VTPM Virtual Terminal Protocol Machine.

All other abbreviations used are defined in ISO/IEC TR 10000 or ISO 9040.

5 Conformance

5.1 Conformance requirements

This Application Profile provides a specification for the use of the Virtual Terminal protocol in combination with supporting upper layer OSI protocols, with a VTE-profile and with a number of VT control objects. The protocols are specified by International Standards, the VTE-profile and VT control objects are information objects specified by International Standardized Profiles in accordance with the taxonomy of ISO/IEC TR 10000-2. Where the specification of an information object delegates certain elements to a referencing Application Profile, the additional information required is specified in clause 6 of this part of ISO/IEC ISP 11187.

This Application Profile distinguishes between initiator and responder end systems in its requirements. It is applicable to a real open system that includes:

— an implementation of each OSI protocol listed in table 1;

— an application-process or terminal-process which implements the control of virtual terminal functions and real devices in accordance with the semantic definition of the information objects listed in table 2.

Table 2 specifies VT information objects by their taxonomy identifiers as given in ISO/IEC TR 10000-2. The table also gives the general classification of the object within the taxonomy, together with a reference to the ISP part that contains the specification.

A system claiming conformance to this Application Profile shall satisfy:

a. the conformance requirements contained in the specifications of each of the OSI protocols listed in table 1;

b. the conformance requirements contained in the specifications of each of the information objects listed in table 2;

c. the static conformance requirements specified in the RL given in annex A.

Table 1 - Protocols required

Protocol name	Protocol specification	PICS proforma specification
VT	ISO 9041-1:1990	ISO/IEC 9041-2
ACSE	ISO 8650:1988	ISO/IEC 8650-2
Presentation	ISO 8823:1988	ISO/IEC 8823-2
Session	ISO 8327:1987 + AD2:1988	ISO/IEC 8327-2

Table 2 - Information Objects required

Taxonomy identifier	Object type	ISO/IEC ISP Reference
FVT114	VTE-profile	11184-6

A system claiming conformance to this Application Profile shall also exhibit external behavior consistent with having implemented :

d. the virtual terminal protocol machine so as to support the VTE-profile FVT114 as a current-VTE (see A.2.1 of ISO 9041-1);

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e. the additional information object requirements of clause 6 of this part of ISO/IEC ISP 11187;

f. the constraints specified in the Profile Specific ICS proforma given in annex B;

g. the dynamic conformance requirements specified in 7.1.

5.2 Profile ICS proforma

In compliance with 6.5.4 of ISO/IEC 9646-7, a Profile ICS proforma for this Application Profile shall consist of:

— the PICS proformas listed in table 1;

— the Profile RL specified in annex A of this part of ISO/IEC ISP 11187;

— the Profile Specific ICS proforma specified in annex B of this part of ISO/IEC ISP 11187.

A conforming Profile ICS proforma shall be technically equivalent to this specification and shall preserve the numbering and ordering of the items in each PICS proforma and the Profile Specific ICS proforma.

A Profile ICS which conforms to this specification shall:

a. describe an implementation which conforms to the Application Profile specification of ISO/IEC ISP 11187-6;

b. be a conforming ICS proforma, which has been completed in accordance with the instructions for completion given in the constituent questionnaires;

c. include the information necessary to uniquely identify both the supplier and the implementation.

6 Information object requirements

The definition of the VTE-profile FVT114 referenced in table 2 above is given in ISO/IEC ISP 11184-6. By 13.1 of that definition, if there is a mutual agreement between the two communicating VT-users to operate that VTE-profile in accordance with a specific VT Application Profile then a default value for a VTE-profile argument that is specified by the Application Profile takes precedence over the default value specified in the VTE-profile definition.

In accordance with clause 9 of ISO/IEC ISP 11184-3 and clause 6 of ISO/IEC ISP 11187-1, a mutual agreement to operate the VTE-profile FVT114 in accordance with the Application Profile AVT15 is created by the establishment of a full-VTE for which the VTE-profile name is the ASN.1 object identifier

{ iso standard 11187 1 profiles(1) 114 15 }.

This clause provides the specifications that apply when such a mutual agreement has been established.

7 Profile specific requirements

7.1 Negotiation of VTE-profile arguments

The requirements concerning the support of values for the 1 VTE-profile argument of FVT114 follow from the VTE-parameter requirements given in tables A.6 to A.9 of the RL in annex A. This Application Profile also specifies requirements concerning the usage of these VTE-profile arguments by the VT-ASSOCIATE and VT-SWITCH-PROFILE services defined in 28.1 and 30.1 of ISO 9040 respectively. These requirements differ between initiator and responder roles.

NOTE - The negotiation procedure ensures that a VT-association request between two conforming implementations will always be accepted, and that the value negotiated for the display object VTE-profile argument will always be the value desired by the responder VT-user if this is supported by the initiator VT-user.

7.1.1 The following VTE-profile argument

r1 repertoire-assignment

may contain a value. This parameter has a default value of the "Virtual Terminal Service Transparent Set" designated by the escape sequence "<ESC> 2/5 2/15 4/2".

The associated 'capability' VTE-parameter is set to 1.

The r1 argument in an Association Request is a sequence of offers for a single occurrence of this argument. An offer is a sequence of

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representations of coded character sets from which the responder can choose.

The rl argument in an Association Response is a value for the single occurrence of this argument. A value is the representation of a specific coded character set from the offers made for this element.

The value for the repertoire shall consist of the value contained in the rl argument of the response. In the case there is no value passed, it shall be the Virtual Terminal Service Transparent character set designated by the escape sequence "<ESC> 2/5 2/15 4/2".

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Annex A
(normative)

Profile Requirements List

A.1 General

A Requirements List for a VT Application Profile specifies those static conformance requirements of the Application Profile that concern OSI protocols. In so doing, it provides the information required to determine whether or not a protocol exchange between two real open systems is consistent with the systems being conformant to those requirements.

This annex provides the Profile Requirements List (Profile RL) for the VT Application Profile AVT15 specified in this part of ISO/IEC ISP 11187, in compliance with ISO/IEC 9646-7.

This RL expresses restrictions upon answers allowed in the PICS proforma specified by:

— ISO/IEC 9041-2:1993;

which applies to the VT protocol specified by

— ISO 9041-1:1990;

— ISO 9041-1:1990/Cor.1:1992;

— ISO 9041-1:1990/Cor.2:1993.

This RL incorporates by reference, as nested RLs, that contained in the following ISP:

— ISO/IEC ISP 11187-1

and those contained in the specifications of each VT information object that is claimed, in the Profile Specific ICS for this Application Profile, to be supported by the implementation.

A.2 Notation

A.2.1 Item references

Each table entry in this RL corresponds to an item in the PICS proforma of ISO/IEC 9041-2 as referenced above. Individual items in the proforma are referenced by the means specified in 9.5 of ISO/IEC 9646-7. Such a reference has the form y/z where y is a reference within the ICS proforma to the smallest subclause that contains the item concerned and z is the reference number of the item within that subclause.

A.2.2 Item names

Each table entry in this RL includes the item name that is given in the PICS proforma of ISO/IEC 9041-2. For PDU parameters these item names correspond to ASN.1 types, or to the identifiers of named types, that are used in the specification of the structure of VT PDUs given in clause 12 of ISO 9041-1. Where the type concerned is a structured type and the following entries in the RL refer to its components, the item names for the components are indented to indicate this relationship.

A.2.3 Negotiation capabilities

Each table entry in this RL for a VTE-parameter specifies whether or not that VTE-parameter is negotiable. This is informative; the normative requirement is provided by the specifications of the VT information objects referenced by this profile, in accordance with 5.4.3 of ISO/IEC ISP 11187-1.

A.2.4 Normative references

Each table entry in this RL for a PDU parameter may optionally contain a reference to additional normative requirements that are given in the body of the specification to which this RL is annexed.

NOTE - The status values in an RL are themselves normative requirements of the profile that do not require reference to static conformance requirements given elsewhere in the profile specification; see A.5.3 of ISO/IEC TR 10000-1. This is in contrast to the situation for an ICS proforma as specified in 8.3 of ISO/IEC 9646-7, so that the reference columns serve different purposes in these two contexts.

A.2.5 Status columns

The status value assigned to a capability in the PICS proforma determines the support answers that are permitted for an implementation that is claimed to conform to the base standard. It also determines the implications of the answers for a test of conformance to the base standard.

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Status values specified in this RL may strengthen those specified in the PICS proforma for an implementation that is claimed to conform to the profile. This strengthening may refer to the permitted answers, or to the implications for conformance testing, or both.

NOTE - The incorporation of nested RLs occurs similarly. When two RLs both specify a status value for the same capability, the strongest one applies.

A.2.5.1 PICS support answers

The support columns in the PICS proforma are used to specify whether or not a particular capability is claimed to be supported. When the PICS proforma is being completed as part of an ICS for this Application Profile, the following notation should be used wherever possible, in accordance with ISO/IEC 9646-7:

'yes' or 'y' the capability is claimed to be supported;

'no' or 'n' the capability is claimed to be not supported;

'n/a' or '-' no answer is being given.

Depending on the context, no answer means either that an answer is logically meaningless or that no claim is being made as to the level of support.

The above notation differs from that specified in the PICS proforma itself. Where the answers 'y', '-' and 'Ig' would be given as defined in the PICS proforma, the corresponding appropriate answers as defined above are 'yes', 'no' and 'n/a' or equivalents; see A.2.5.5 in particular concerning support of syntax but not semantics. The notation of ISO/IEC 9646-7 used above postdates that of the PICS proforma, is more precisely defined and no answer, i.e.'n/a', is permitted in situations where none of the notations defined in the PICS proforma is appropriate.

A.2.5.2 Profile status notation

The columns headed 'Status' or 'Sts' in this RL specify Profile status values. The following notation is used in these status columns:

m mandatory - this capability shall be supported. The only support answer permitted is 'yes' (or equivalent).

o optional - this capability may, but need not, be supported. The support answers permitted are 'yes', 'no' and 'n/a' (or equivalents). For the purposes of conformance testing, an answer 'no' should be treated as if the answer were 'n/a'

i irrelevant, out-of-scope - this capability may, but need not, be supported. The support answers permitted are 'yes', 'no' and 'n/a' (or equivalents). For the purposes of conformance testing, answers 'yes' and 'no' should be treated as if the answer were 'n/a'.

x excluded - this capability shall not be supported. The only support answer permitted is 'no' (or equivalent).

- not applicable - the dynamic conformance requirements of the base standards are such that this capability is not available in the context concerned, so that the question of its support does not arise. The only support answer permitted is 'n/a' (or equivalent).

Where the status of a capability is dependent on whether or not some other capability is supported, the following additional conventions are used:

c<integer> conditional status;

o.<integer> restricted optional status.

A conditional status is a status that involves a prerequisite. Its scope is a single item and it evaluates to one of the above status values according to the value of a predicate. The conditional expression is given in a footnote to the table concerned.

A restricted optional status is a status that involves a co-requisite. Its scope is a group of items within a single table, each of which is individually optional but where there is a restriction on the set of permitted support

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answers. The integer identifies a unique group of options and the corresponding restriction is given in a footnote to the table concerned.

NOTE 1 - The period in the status notation o.<integer> signifies that the restriction applies jointly to all items with the same integer. In contrast, if a status c<integer> is assigned to more than one item in the same table then it applies individually to each item. This notation follows 9.2 of ISO/IEC 9646-7.

The status values of subparameters are indented to correspond to the pattern of the item names; see A.2.2. The status value given for a subparameter is conditional on the support of the parent parameter, i.e. the closest preceding parameter with one fewer level of indent, otherwise the subparameter is not applicable. This follows the conventions adopted in the PICS proforma.

Where the status values given in a table, or a section of a table, are conditional on the values taken by one or more parameters then the condition is specified by a predicate given at the head of the table or section concerned.

NOTE 2 - Such prerequisites arise when parameters play the part of identifier fields for classes of information object; see 3.6 of ISO/IEC 8824-2. At the time of preparation of ISO 9041-1 this extension of ASN.1 to permit formal definition of classes of information object was not available, so the nature of such parameters remains implicit in the VT protocol specification.

A.2.5.3 Interpretation of 'supported'

For a functional unit, support means that the functions of the unit are implemented and available for use in accordance with the protocol specification.

For a VTE-parameter, support means that the VT protocol machine supports the Existence status 'Defined' for that VTE-parameter; see A.2.1 of ISO 9041-1.

For a PDU, support means that the PDU is capable of being sent or received, according to the role concerned, in the context of supported functional units.

For a PDU parameter, support means that the implementation is capable of handling the parameter, i.e. sending or receiving it according to the role concerned, for the value range specified in the PICS as supported. The capability to send the parameter does not require the parameter to be present in every instance of the PDU concerned. The capability to receive the parameter includes taking such action as is required in accordance with the semantics of the received value.

NOTE - The action appropriate to the semantics of a received parameter value is often simply to pass the decoded value transparently to the service user.

A.2.5.4 Interpretation of 'not supported'

A support answer of 'no' is a specific statement that a capability is not supported.

If a VTE-parameter is not supported, the VT protocol machine supports only the value 'Undefined' for the Existence status of that VTE-parameter; see A.2.1 of ISO 9041-1.

If a functional unit is not supported, it means that the functions of the unit are not available for use, either through not being implemented or through being explicitly disabled.

The VT protocol has no PDUs for which a support answer of 'no' is valid.

If a PDU parameter is not supported in a sending role, it means that the parameter will not be present in any instance of the PDU concerned that is generated by the implementation.

If a PDU parameter is valid according to the protocol specification, a claim that it is not supported in a receiving role can occur within this profile only if the parameter is excluded from being sent by a conforming peer implementation; see clause A.3. If the parameter is received, the implementation may either reject the PDU or may accept it and respond correctly to it within the protocol specification; see 7.4.3.1 of ISO/IEC 9646-6. If it accepts the PDU then the implementation is operating outside of this profile; the peer implementation is necessarily not conformant to the profile. Such acceptance is not a case of non-conformance, nor shall it be considered to contradict the claim that the parameter is not supported when the implementation is configured to this profile.

NOTE - Some VT PDUs have parameters whose use is conditionally invalid according to the protocol

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specification, such as those for the negotiation of VTE-parameter values that are not permitted arguments of the VTE-profile concerned. It is a protocol error if an implementation receives a VT PDU that includes such an invalid parameter.

A.2.5.5 Interpretation of 'no answer'

If the status of a capability permits an answer 'n/a' then an implementation may provide partial support for the capability, for which neither 'yes' nor 'no' would be a correct description. Any behavior that is permitted by the protocol specification is also permitted by the profile; in particular the capability may be fully supported.

For a capability that has separate sending and receiving roles, this support answer can occur in a receiving role within this profile only if the parameter is excluded from being sent by a conforming peer implementation; see clause A.3. In this context it should be used if the syntax, but not the semantics, is supported for receiving, a situation for which the notation 'Ig' is specifically defined in the support notation of the PICS proforma.

A.2.6 Value columns

In principle there is no distinction between a PDU parameter and a parameter value, since for a parameter whose value is a value of a structured ASN.1 type, each component type appears in the PICS proforma as a subparameter with its own status value. However, a PICS specifies the status values and support answers for parameter values in a different manner than that for other capabilities.

A.2.6.1 PICS proforma allowed values

The PICS proforma includes 'allowed values' and 'supported values' columns for VTE-parameters and, separately in both sending and receiving roles, for PDU parameters. The 'allowed values' columns specify the values that are permitted to be included in the 'supported values' columns of the completed PICS.

The entries in the 'allowed values' columns of a PICS proforma shall be interpreted as assigning a status value 'optional' to each allowed value. All other values of the ASN.1 type concerned are prohibited according to the protocol specification. Where the PICS proforma does not contain an entry in the 'allowed values' column, all values of the ASN.1 type concerned shall be considered as allowed.

NOTE - The PICS proforma does not contain entries in the 'allowed values' columns for structured types, such as sequence-of and set-of types, if the protocol places restrictions only on the component types that have separate entries in the PICS proforma. Nevertheless this RL may place constraints on the permitted size of such sequences and sets, so the concept of allowed values is still required.

A.2.6.2 Profile values

A.2.6.2.1 Status notation for values

This RL may modify the status of an allowed value, as it may do for any other capability. Since a profile status may be assigned independently to each allowed value, an abbreviated notation is used in this RL as follows.

A status symbol is prefixed to a set of values. If it is one of the basic status values 'm', 'o', 'x' or 'n/a' then it applies individually to each member of the set; there is no implication for values not in the set. If it is a reference to a conditional expression of the form c<integer> then it applies individually to each member of the set but the referenced expression may also assign a status value to all allowed values not in the set. If it is a reference of the form o.<integer> to an expression of restricted optional status then its scope is the specified set of values but again the referenced expression may also assign a status value to all allowed values not in the set.

NOTE 1 - A restricted option may, for example, be used to specify that at least one value in the set shall be supported and that all values not in the set are excluded.

It is sometimes convenient to specify the scope of a restricted option by exclusion, so that the restriction applies to the allowed values that are not in the specified set. In this case a modified notation is used in this RL, of the form <status>.<integer>, where <status> is the basic status value that applies to the remaining values, i.e. those that are in the specified set.

NOTE 2 - A restricted option of the form m.<integer> may, for example, be used to specify that support for all values in a specific range of consecutive integer values is mandatory and that all other values are

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optional but with the requirement that the supported values, including the mandatory ones, shall all be consecutive.

This notation is also used in the case in which the restriction on the optional values is the extreme one of them all being excluded.

A.2.6.2.2 Specification of value sets

The status notation described in A.2.6.2.1 requires a notation for the specification of subsets from the set of allowed values. In this RL, different notations are used in the case of VTE-parameter values and PDU parameter values.

Values for VTE-parameters are given in the notation defined in A.2 of ISO 9040 for the definition of VTE-profiles. Subsets of values are defined by giving an explicit list separated by commas.

A PDU parameter takes values of a specific ASN.1 type. A subset of the allowed values is specified by an ASN.1 element set specification in the notation of clause 39 of ISO/IEC 8824-1, the parent type being the type defined in the protocol specification for the parameter concerned.

NOTE - The RL may use an element set specification to specify size constraints on ASN.1 sequence-of and set-of types even though the PICS proforma does not contain a corresponding entry in the allowed values column.

A.2.6.3 PICS supported values

The entries in the 'supported values' columns of a PICS shall be interpreted as assigning a support answer 'yes' to each listed value. The support answer implied for an allowed value that is not in the list of supported values depends as follows on the status assigned to the value concerned:

— a support answer 'no' is assigned to each value for which the status is 'excluded';

— a support answer 'n/a', i.e. no answer, is assigned to each value for which the status is 'optional' or 'out-of-scope'.

A.2.6.4 Interpretation

The interpretation of the support answers for PDU parameter values is as specified in A.2.5.3 to A.2.5.5 for PDU parameters, for reasons given above.

A support answer 'yes' for a negotiable VTE-parameter value means that the implementation always offers this value, either explicitly or by default, in negotiation for this VTE-parameter and that it always accepts this value when offered. For a non-negotiable VTE-parameter it implies that the implementation supports this value if it is assigned to that VTE-parameter in accordance with the VTE-profile specification.

NOTE - This profile specifies that omission of an offer for a particular VTE-profile argument is to be interpreted as a default offer of all the values that have mandatory support, within the profile, for the initiator or responder role as appropriate.

A support answer 'no' for a negotiable VTE-parameter value means that the implementation does not offer this value in a negotiation of VTE-parameter values; if it accepts this value when offered by a non-conforming peer implementation then it is operating outside of the profile. For a non-negotiable VTE-parameter it implies that the implementation does not support this value if it is assigned to that VTE-parameter in accordance with the VTE-profile specification.

A support answer 'n/a' for a VTE-parameter value places no constraint on the ability of the implementation to offer, responder support this value, whether the value is determined by negotiation or otherwise.

A.3 Asymmetric requirements

The static conformance requirements of a profile may be different with respect to different roles, such as sending/receiving or initiating/responding. For example, a profile may require an implementation to be able to receive, and to respond correctly, to a wider range of values for a PDU parameter than may be sent to it by a conforming peer implementation. By 7.4.3 of ISO/IEC 9646-6 and 6.6.3 of ISO/IEC TR 10000-1, a profile shall clearly identify, for each conformance requirement, whether there is, or is not, an asymmetry. If there is asymmetry, the profile shall identify the asymmetric requirements.

This RL specifies no requirements that are asymmetric between initiator and responder roles, other than those already contained in the base

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standards.

This RL identifies an asymmetry between the protocol requirements of systems operating in initiator and responder roles. The requirements in each role are specified separately in the tables of the RL.

This RL identifies an asymmetry between sending and receiving. Its requirements in a sending role are specified explicitly in the tables of the RL. It places no explicit requirements on a protocol implementation in a receiving role beyond those contained in the base standards. According to A.3.2.1 of ISO/IEC 9646-7, support of a PDU parameter is defined as being able to handle, in send and receive mode, the syntax of the parameter, its definition, its value range and other characteristics, and to use the parameter contents or its semantics to take an action. An initiator or responder implementation shall be considered to satisfy these requirements if it can handle in this manner the entire range of values that may be sent to it by a conforming responder or initiator implementation respectively, namely all values that are not explicitly excluded for sending.

NOTES

1 A protocol base standard may specify requirements concerning behavior on reception of a parameter value that is outside the range permitted by the base standard. These requirements still apply for conformance to any profile that includes the protocol concerned.

2 The behavior of an implementation is undefined if it receives a parameter value that is prohibited by a profile but permitted by the base standard; see A.2.5.4. By 7.4.3.1 of ISO/IEC 9646-6, in a test of conformance the means of testing shall only exhibit in profile behavior and shall not attempt to coerce the receiving system under test to operate outside of the profile. This implies for this Application Profile that the means of testing shall not send parameter values to an implementation under test that are excluded from being sent by a conforming peer implementation.

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A.4 VT environment parameters

Tables A.1 to A.4 below specify static conformance requirements concerning the VT environment parameters that are listed in A.3 of the PICS.

Table A.1 - Support requirements for VTE display, control and device objects

Item Ref. (9041-2)	Name of Item	Value	Terminal Status	Application Status
A.3.2/1	display-object-name	D2	m	m
A.3.3/1	display-object-name	D1	m	m

Table A.2 - VTE requirements for terminal display object

Item ref. (9041-2)	Name of item	Negot-iable	Profile values	Terminal Status	Application Status
A.3.7.2/1.1	repertoire-capability	No	1	m	m
A.3.7.2/2.1	repertoire-assignment	Yes	m.1	m	m
m.1	It is mandatory to support the Virtual Terminal Service Transparent Set (See Table A4); all others are optional.				

Table A.3 - VTE requirements for application display object

Item ref. (9041-2)	Name of item	Negot-iable	Profile values	Terminal Status	Application Status
A.3.7.3/1.1	repertoire-capability	No	1	m	m
A.3.7.3/2.1	repertoire-assignment	Yes	m.1	m	m
m.1	It is mandatory to support the Virtual Terminal Service Transparent Set (See Table A4); all others are optional.				

Table A.4 - Information referenced by VTE requirements for DOs

Table ref. (9041-2)	Item	Value
A.3.7.5 and A.3.7.6 Repertoire and font support	Repertoire name	Virtual Terminal Service Transparent Set
	Standard name	ISO 9040 default scheme based on ISO 2022
	Register reference Escape sequences	ISO 2375 Registration No. 125 ESC 2/5 2/15 4/2

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A.5 Initiator/Responder Capabilities

Table A.5 identifies whether the configuration shall be an initiator or a responder.

Table A.5 - Initiator/Responder Capabilities

Item ref. (9041-2)	Name of Item	Normative Reference	Status
A.4.3/1	Initiator	5.1	c1
A.4.3/2	Responder	5.1	c2
c1	If terminal then m else x.		
c2	If application then m else x.		

A.6 VT PDUs and PDU parameters

The profile requirements concerning the VT PDUs and PDU parameters listed in A.4 and A.5 of the PICS are specified in the Common Requirements List of ISO/IEC ISP 11187-1.

A.7 Lower level negotiation elements

Tables A.6 to A.9 below specify static conformance requirements concerning the lower level negotiation elements that are listed in A.6 of the PICS.

Table A.6 - Profile Argument Offer List requirements

Item ref. (9041-2)	Name of item	Norm-ative ref.	TERMINAL SENDING	
			Status	Values
Prerequisite (VTE-profile-name for AVT15): A.5.2/8 or A.5.24/1 = {iso standard 11187 profiles(1) 114 15}				
A.6.1/7	vteParams		o	
A.6.1/8	displayObjects		m	
A.6.4/2	name		m	m.1:"D1"
A.6.4/3	ParameterOffers		m	See table A.8
m.1:	This value is mandatory; all others are excluded.			

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Table A.7 - Profile Argument Value List requirements

Item ref. (9041-2)	Name of item	Norm-ative ref.	APPLICATION SENDING	
			Status	Values
Prerequisite (Use of AVT15): Vena=TRUE, current-VTE={iso standard 11187 profiles(1) 114 15}				
A.6.2/7	vteParams		o	
A.6.2/8	displayObjects		m	
A.6.5/2	name		m	m.1:"D1"
A.6.5/3	ParameterValues		m	See table A.9
m.1	This value is value is mandatory; all others are excluded.			

Table A.8 - CDS Offer requirements

Item ref. (9041-2)	Name of item	Norm-ative ref.	TERMINAL SENDING	
			Status	Values
Prerequisite: A.6.4/2 = "D1"				
A.6.4/9	repertoireOfferList	8.1.2	o	
A.6.4.1/6	SEQ OF RepertoireFontOffer		m	
A.6.4.1/8	SEQ OF SEQ		m	
A.6.4.1/9	repertoire		m	
A.6.4.1/11	iso2022		m	m.1:'252F42'H
m.1:	This value is mandatory; all others are optional.			

Table A.9 - CDS Value requirements

Item ref. (9041-2)	Name of item	Norm-ative ref.	APPLICATION SENDING	
			Status	Values
Prerequisite: A.6.5/2 = "D1"				
A.6.5/9	repertoire	8.1.2	o	
A.6.5.1/6	SEQ OF RepertoireFontValue		m	
A.6.5.1/8	SEQUENCE		m	
A.6.5.1/9	repertoireAssingt		m	
A.6.5.1/11	iso2022		m	m.1:'252F42'H
m.1:	This value is mandatory; all others are optional.			

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Annex B
(normative)

Profile Specific ICS Proforma

B.1 Identification of ICS proforma corrigenda

If corrigenda to this proforma are published, suppliers of the proforma should modify the proforma or attach additional pages, as appropriate, and shall then record the application of the corrigenda by completing table B.1.

Table B.1 - Identification of ICS proforma corrigenda

Identification of corrigenda applied to this ICS proforma	ISO/IEC ISP 11187-6 Corr: Corr: Corr:

B.2 Instructions

This ICS proforma provides a means for the supplier of an implementation or client of a test laboratory to specify the level of support provided for the semantics of those VT information objects that are referenced by the A-mode Transparent Application Profile AVT15.

This information is provided by completing the questionnaire given in clause B.6. The questionnaire is in tabular form. Each tabular item describes a capability of an information object. Support for that capability implies that the semantic behavior of the capability has been implemented in the context of this Application Profile, in accordance with the specification of the information object concerned.

Each item provides a reference to the semantic specification of the capability, a status value describing the support requirements of the Application Profile and space for a support answer to be given. The references are prefixed by an identifier for the ISP concerned, as follows:

AP ISO/IEC ISP 11187-6:- (Application Profile);
VT ISO/IEC ISP 11184-3:- (VTE-profile);

The following notation is used in the status columns:

- m mandatory, the capability is required to be implemented in conformance with the relevant specification;
- o optional, the capability may be implemented, and if it is implemented it is required to conform to the relevant specification;
- c conditional, the requirement depends on the support answer for some other item.

Each conditional status is numbered and references a footnote in the table concerned that gives the corresponding conditional expression. Support answers to other items are referenced in conditional expressions in the form y/z where y is the number of the smallest subclause that contains the item concerned and z is the reference number of the item within that subclause. An optional status may also have a corresponding footnote, for example to specify that two or more options are mutually exclusive.

Support answers shall be given using the following notation:

- 'yes' or 'y' supported;
- 'no' or 'n' not supported.

The following abbreviations are used in the column headings:

- Sts status;
- Spt support.

This notation is in accordance with ISO/IEC 9646-7, to which reference should be made for further information.

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B.3 Identification of the implementation

A supplier or a client of a test laboratory that completes a copy of this ICS proforma shall attach to that copy an identification of the implementation to which it applies, identifying:

a. the implementation and the system in which it resides;

b. the supplier of the system and/or the client of the test laboratory;

c. the person to contact if there are any queries concerning the content of the ICS.

B.4 Identification of the profile

This ICS proforma applies to the A-mode Forms Application Profile for VT whose specification is given in:

ISO/IEC ISP 11187-6: Information technology -International Standardized Profiles AVT1n, AVT2n - Virtual Terminal Basic Class - Application Profiles - Part 6: AVT15 - A-mode Transparent Application Profile.

B.5 Identification of corrigenda to referenced specifications

If corrigenda are published to the specification of the Application Profile, or to the specifications of any of the VT information objects referenced by the Application Profile, table B.2 shall be completed to list the corrigenda that have been implemented. Specifications are listed by their taxonomy identifier in accordance with ISO/IEC TR 10000-2 and corrigenda by the Technical Corrigenda or equivalent that are issued for the ISP containing the specification.

Table B.2 - Identification of corrigenda implemented for AVT15

Identification of corrigenda implemented for AVT15	ISO/IEC ISP 11187-6:- Corr: Corr:
Identification of corrigenda implemented for FVT114	ISO/IEC ISP 11184-3:- Corr: Corr:

B.6 ICS proforma tables

Table B.3 shall be completed to indicate whether or not the implementation is claimed to conform to this Application Profile.

Table B.3 - Global statement of conformance

No.	Question	Reply
1	Are all the mandatory capabilities of ISO/IEC ISP 11187-6 implemented?	
NOTE - Answering 'No' to this question indicates non-conformance to the OSI specification. Non-supported mandatory capabilities are to be identified in the ICS, with an explanation of why the implementation is non-conforming.		

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