INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 11185-6

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Information technology — International Standardized Profiles FVT2nn — Virtual Terminal Basic Class — Register of control object type definitions —

Part 6:
FVT219 — Status Message Control Object

Technologies de l'information — Profils normalisés internationaux FVT2nn — Classe de base de terminal virtuel — Registre de définitions de type d'objet de commande —

Partie 6: FVT219 — Objet de commande de message d'état

Reference number
ISO/IEC ISP 11185-6:1994(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 JTC1. In addition to developing International Standards, ISO/IEC JTC1 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 11185-6 was prepared with the collaboration of

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

This International Standardized Profile ISO/IEC ISP 11185 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 JTC1, *Information technology*.

ISO/IEC ISP 11185 is issued under the general title *Information technology — International Standardized Profiles FVT2nn — Virtual Terminal Basic Class — Register of control object type definitions*. At present the following parts are published or are in the course of preparation:

- *Part 1: FVT211, FVT212 — Sequenced and Unsequenced Application Control Objects*
- *Part 2: FVT213, FVT214 — Sequenced and Unsequenced Terminal Control Objects*
- *Part 3: FVT215, FVT216 — Application RIO Record Loading Control Object, Terminal RIO Record Notification Control Object*
- *Part 4: FVT217 — Horizontal Tabulation Control Object*
- *Part 5: FVT218 — Logical Image Control Object*
- *Part 6: FVT219 — Status Message Control Object*
- *Part 7: FVT2110 — Entry-Control Control Object*
- *Part 8: FVT221 — Forms FEICO (Field Entry Instruction Control Object) No.1*
- *Part 9: FVT222 — Paged FEICO (Field Entry Instruction Control Object) No.1*
- *Part 10: FVT231 — Forms FEPCO (Field Entry Pilot Control Object) No.1*
- *Part 11: FVT232 — Paged FEPCO (Field Entry Pilot Control Object) No.1*
- *Part 12: FVT2116, FVT2117, FVT2118, FVT2119 — Generalized Telnet Synch, Signal, Negotiation and Subnegotiation Control Objects*
- *Part 13: FVT2111 — Waiting Time Control Object*
- *Part 14: FVT2112 — Printer Control Object*
- *Part 15: FVT2113 — Field Definition Management Control Object*
- *Part 16: FVT2114 — Terminal Signal Titles Control Object*
- *Part 17: FVT2115 — Help Text Control Object*

Annex A of this part of ISO/IEC ISP 11185 forms an integral part of this International Standardized Profile.

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Introduction

This International Standardized Profile ISO/IEC ISP 11185 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 VT Control Object type definitions. Procedures for the operation of this International Register are laid down in ISO/IEC 9834-5. 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.

This part of ISO/IEC ISP 11185 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 control object specification contained in the European S-mode Forms Functional Standard of ENV 41 208. 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 FVT2nn — Virtual Terminal Basic Class — Register of control object type definitions —

Part 6:
FVT219 — Status Message Control Object

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 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 Virtual Terminal Basic Class Service and Protocol may be used to realise a wide range of distinct functions. Particular functions may be realised through the selection of appropriate VT functional units, F-Profiles and other VTE-profile argument values. The specification of the selection 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 11185 contains the definition of a control object type that may be used to specify status messages for display in fixed positions within the image area of a real device, irrespective of the portion of the display object that is represented in the remainder of the image area. It is intended for use with a device that has a display screen capable of being scrolled by local means through a display object larger than the image area. It is not intended for use with a hard copy device such as a printer.

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:

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— *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.

This International Standardized Profile ISO/IEC ISP 11185 contains the specifications of the Profiles with identifiers of the form FVT2*bc*. For this form of identifier, the component *b* distinguishes between the five major classifications of Basic Class Control Objects as follows:

— *b* = 1 for Miscellaneous Control Objects;

— *b* = 2 for Field Entry Instruction Control Objects;

— *b* = 3 for Field Entry Pilot Control Objects;

— *b* = 4 for Reference Information Objects;

— *b* = 5 for Termination Conditions Control Objects.

Each of these classifications corresponds to a sub-register under the procedures of ISO/IEC 9834-5. The identifier component *c* is the serial number of the control object type in the appropriate sub-register. Values of *b* greater than 5 are reserved for new classifications of Basic Class Control Objects that may be defined in future amendments to ISO 9040.

This part of ISO/IEC ISP 11185 contains the definition of the Miscellaneous Control Object type with the Profile identifier

FVT219 — Status Message Control Object.

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.

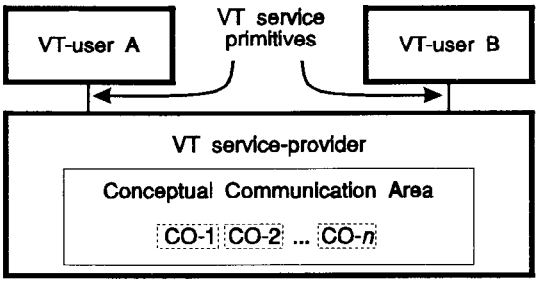


Figure 1 — Control objects in the VT Service model

Control objects (COs) form one of the types of information object that may be present in the CCA. This is illustrated in figure 1, in which CO-1, CO-2, ... CO-*n* represent a number of different control objects present in the CCA. The negotiation during establishment of a VT-association will determine whether or not these will include a control object of the type whose specification is given in this part of ISO/IEC ISP 11185.

The CCA is structured by the Virtual Terminal Service into a number of components. For a control object the Data Structure Definition (DSD) component of the CCA contains the syntax of its information content, including the range of possible values and the permitted update operations. The current value of its information content is contained in the Control, Signal and Status store (CSS) component. Updates to the current value take place through the issue of VT service primitives by one VT-user to the service-provider. Changes of state of the CCA are made accessible through the issue of VT service primitives by the service-provider to the peer VT-user.

By clause 14 of ISO 9040, COs enable VT-users to handle control information related to virtual terminal functions and to real devices. This control is exercised by the VT-users through semantics associated with the information content and with the update operations of the CO. Definition of the semantics, or specification of the source of the semantics if the semantic details are not fully prescribed, forms part of the registered definition of the CO. These semantics are not however of concern to the VT service-provider itself. The DSD will contain an ASN.1 object identifier that identifies the registered definition, but the VT service-provider merely acts as a repository of this value. It is only the VT-user that requires knowledge of the registered definition.

NOTE 1 — The VTE-parameter values that determine the syntax of the information content may not be negotiated explicitly during association establishment. Moreover, in the case of non-parametric COs these values do not determine the details of the syntax. Such values and details form part of the registered definition of the CO. Since the VT service-provider is not required to have knowledge of this registered definition, in principle the VT-users provide the VT service-provider with such information through local management procedures. Whether or not this is necessary in practice depends on the configuration of the implementations concerned.

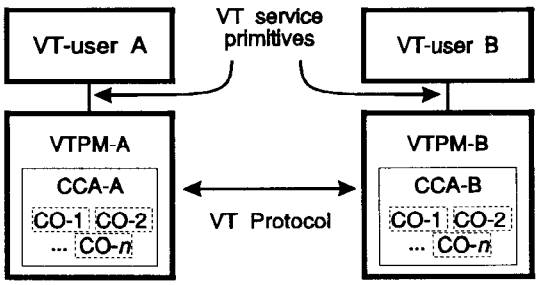


Figure 2 — Control objects in the VT Protocol model

The Virtual Terminal Protocol specification given in ISO 9041-1 models the VT service-provider in terms of protocol exchange between two Virtual Terminal Protocol Machines (VTPMs), each with its own CCA. The CCA of each VTPM is updated both by service primitives received from its own VT-user and by protocol elements received from the peer VTPM. Corresponding service primitives and protocol elements are issued by the VTPM to provide notification of changes to the content of its CCA. This is illustrated in figure 2. The control object type definition given in this part of ISO/IEC ISP 11185 is expressed in terms of this model.

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For certain types of control object the abstract syntax of ISO 9041-1 does not provide a complete specification for the representation of CO update operations. This arises where the abstract syntax of ISO 9041-1 makes use of an ASN.1 any type, or where symbolic values have to be encoded in terms of an ASN.1 integer type. Control object type definitions are required by ISO/IEC 9834-5 to provide the necessary refinement of the abstract syntax.

NOTE 2 — Since an abstract syntax is made available for use through its inclusion in a presentation context, and since the Presentation service-provider has no knowledge of control object type definitions, in principle the VT-users provide the Presentation service-provider with these refinements to the abstract syntax through local management procedures. Whether or not this is necessary in practice depends on the configuration of the implementations concerned.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 11185. 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 CCITT maintains published editions of its current Recommendations.

ISO 7498:1984, *Information processing systems — Open Systems Interconnection — Basic Reference Model.*

ISO/TR 8509:1987, *Information processing systems — Open Systems Interconnection — Service conventions.*

ISO 8822:1988, *Information processing systems — Open Systems Interconnection — Connection oriented presentation service definition.*

ISO/IEC 8824:1990, *Information technology — Open Systems Interconnection — Specification of Abstract Syntax Notation One (ASN.1).*

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 9834-1:1993, *Information technology — Open Systems Interconnection — Procedures for the Operation of OSI Registration Authorities — Part 1: General Procedures.*

ISO/IEC 9834-5:1991, *Information technology — Open Systems Interconnection — Procedures for the Operation of OSI Registration Authorities — Part 5: Register of VT Control Object Definitions.*

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

ISO/IEC TR 10000-2:1992, *Information technology — Framework and taxonomy of International Standardized Profiles — Part 2: Taxonomy of Profiles* (second edition).

3 Definitions

For the purposes of this part of ISO/IEC ISP 11185 the following definitions apply.

3.1 General OSI terminology

3.1.1 This part of ISO/IEC ISP 11185 makes use of the following terms defined in ISO/TR 8509:

a) service primitive;

b) service-provider.

3.1.2 This part of ISO/IEC ISP 11185 makes use of the following terms defined in ISO 8822:

a) abstract syntax;

b) presentation context.

3.1.3 This part of ISO/IEC ISP 11185 makes use of the following terms defined in ISO/IEC 8824:

a) any type;

b) object descriptor type;

c) object identifier.

3.1.4 This part of ISO/IEC ISP 11185 makes use of the following terms defined in ISO/IEC 9834-1:

a) registration;

b) registration-hierarchical-name.

3.2 Terminology of VT base standards

3.2.1 This part of ISO/IEC ISP 11185 makes use of the following terms defined in ISO 9040:

a) control object;

b) device object;

c) display object;

d) object updating device;

e) VT-user;

f) VTE-parameter;

g) VTE-profile.

3.2.2 This part of ISO/IEC ISP 11185 makes use of the following term defined in ISO 9041-1:

a) protocol element.

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4 Abbreviations

For the purposes of this part of ISO/IEC ISP 11185 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 TR 10000-1 or ISO 9040.

5 Principles of conformance to VT Profiles

An implementation of the Virtual Terminal Protocol conforms to an FVT2*nn* Profile that defines a control object type if the protocol implementation is capable of sending and receiving PDUs corresponding to all update operations permitted for that CO type.

Conformance of a protocol implementation to an FVT2*nn* Profile does not place requirements on the ability of the implementation to negotiate the presence in the CCA of an instance of this CO type. Such requirements fall within the scope of conformance to an FVT1*nn* Profile that specifies a VTE-profile.

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 require that CO update operations received by the VT-user component of the system are interpreted in accordance with the semantics defined within the appropriate CO type definition. Conformance to 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 PICS proforma provided in ISO/IEC 9041-2. Annex A of this part of ISO/IEC ISP 11185 provides an ISPICS Requirements List (IPRL) for the Profile FVT219 specified herein. This IPRL specifies constraints on the answers that may be given in the completed PICS for a protocol implementation that claims conformance to this Profile.

6 Entry number

The remaining clauses of this part of ISO/IEC ISP 11185 provide the entry for a Status Message Control Object in the International Register of VT Control Object Type Definitions. The entry is structured in accordance with the requirements of ISO/IEC 9834-5. These requirements specify that this International Register shall consist of a number of sub-registers, each corresponding to a major classification of VT Control Object.

This entry is the ninth in the sub-register for Miscellaneous Control Objects. This register assigns it the entry number:

MISCO-9.

7 Name of sponsoring authority

This entry is sponsored by the European Workshop for Open Systems (EWOS).

8 Date

The date of submission of this proposal was 1992-09-02.

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 relative distinguished name as defined in ISO/IEC 9594-2.

In accordance with A.4 of ISO/IEC 9834-5, this register assigns the following object identifier form for the name of this register entry:

{ iso(1) identified-organization(3) ewos(16) eg(2) vt(7) controlObject(0) cotypemisc(0) sm(2) }.

In accordance with 20.1.1 of ISO 9040, this object identifier shall be used as the value of the CO-type-identifier VTE-parameter for a control object in order to identify this register entry as the source of the information structure and semantic content of the control object.

This register does not assign any other form to the name of this entry.

NOTE — By ISO/IEC 9834-1 a relative 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 this register entry is:

"EWOS VT CO for Status Messages".

11 CO parameters

This register entry specifies the following values for VTE-parameters of this control object type:

CO-access: any valid value
CO-priority: "normal"
CO-trigger: "not selected"
CO-structure: (CO-size for data element 1) +
(CO-size for data element 2) + 2

(a) top status size data element (*ts*)

CO-element-id: 1
CO-category: "integer"
CO-size: any valid value

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(b) bottom status size data element (*bs*)

CO-element-id: 2
CO-category: "integer"
CO-size: any valid value

(c) status message data elements

FOR *n* = 3 TO (value of CO-structure) DO
{ CO-element-id: *n*
CO-category: "character"
CO-repertoire-assignment: any valid value that does not depend on *n*
CO-size: equal to the value of the device-minimum-x-array-length VTE-parameter for the device to which this CO is linked }.

A CO of this type should be specified as a value for the device-control-object VTE-parameter of exactly one device object. This determines the value of CO-size for the status message data elements. The status messages specified by these data elements are displayed only on the real device that is associated with this device object.

12 CO values, syntax and semantics

The data elements of a CO of this type contain character strings for display within the image area of a real device. The device-object VTE-parameters are used to specify the particular real device concerned, as described in clause 11. Such a CO is intended for use with a display screen rather than a hard copy device such as a printer.

The status messages are displayed on a variable number of rows at the top and bottom of the screen area. The screen area occupied by these messages shall be excluded from the image area of the device as described by the device minimum length VTE-parameters. The maximum number of rows at the top and bottom of the screen that can be reserved for status messages, and the character repertoire for these messages, are determined by VTE-parameters for the CO whose values are not specified by this CO type definition. These values shall be specified by any VTE-profile that references a CO of this type. The VTE-profile may assign fixed values to these VTE-parameters or may specify them as VTE-profile arguments.

The actual number of rows reserved at any one time is dynamically determined by the value of two data elements of the CO. The maximum length for each status message is the value of the device-minimum-x-array-length VTE-parameter for the device concerned, to ensure that an entire message can be displayed on a single row. The rendition used for the display of status messages is device-dependent, as is the means, if any, used to separate the status messages visibly from the image area used for representation of the display object.

Each status message shall be displayed on a separate line. The top *ts* lines and the bottom *bs* lines of the real display shall be reserved for this purpose, these values being given by the first two data elements of the CO. The first *ts* status messages, as given by the remaining data elements, shall be displayed in order on the top *ts* reserved lines. The last *bs* status messages shall be displayed in order on the bottom *bs* reserved lines. If there are more than *ts*+*bs* messages, the remaining messages will not be displayed.

Since *ts* and *bs* are data element values, they may be changed during the currency of a VT-association. However, the maximum number of messages is controlled by the CO-size parameters for *ts* and *bs*, which cannot be changed in this way.

The update syntax used by the VT Protocol for updates to this CO type is fully defined in ISO 9041-1.

13 Additional information

A CO of this type requires the use of the Structured Control Objects VT functional unit.

When a CO of this type is in use, the device-minimum-y-array-length VTE-parameter specifies a minimum for the number of screen rows that are guaranteed to be available for representation of the display object. Since this number is affected by the value of the CO-size VTE-parameters of the first two data elements of the CO, there is a difficulty of interpretation when the values of all three VTE-parameters are determined by VTE-profile arguments.

When the VT-user that contains the real device initiates a VT-ASSOCIATE or a VT-SWITCH-PROFILE request, it may offer a set of values for each of these three VTE-profile arguments. It is unnecessarily restrictive to require that all combinations of offered values are consistent with the actual screen size. Instead, the responding VT-user shall select from the offers a set of values chosen such that

(CO-size for data element 1) +
(CO-size for data element 2) +
(device-minimum-y-array-length)

does not exceed an upper bound *s* given by

(minimum offer for CO-size for data element 1) +
(minimum offer for CO-size for data element 2) +
(maximum offer for device-minimum-y-array-length).

The offered values shall be chosen so that *s* does not exceed the number of rows in the device image. If the initiating VT-user wishes to ensure that all combinations of values offered for the two CO-size VTE-parameters can be accepted, its offered values should be such that

(maximum offer for CO-size for data element 1) +
(maximum offer for CO-size for data element 2) +
(minimum offer for device-minimum-y-array-length)

also does not exceed *s*.

There is no corresponding problem when it is the responding VT-user that contains the real device concerned. In this case it can always make a selection from the offered values that is compatible with the screen size of the device.

14 Usage

When the image area of a real device is not sufficient to enable the whole display object to be represented simultaneously, the VT-user normally provides a means for the image to be scrolled through the display object. An application may wish to have certain information permanently visible to the human user of the device. When image scrolling is used, this cannot be achieved by writing the

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information to the display object. A control object of this type provides a means for excluding part of the image area of the device from such scrolling and instead using it to display messages that will remain fixed in position during the scrolling of the remainder of the image area. This CO type may be used whenever such a facility is required.

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Annex A
(normative)

ISPICS Requirements List

A.1 Protocol requirements

This annex provides an ISPICS Requirements List (IPRL) for the Profile FVT219 specified in this part of ISO/IEC ISP 11185. The PICS proforma for the VT protocol is given in ISO/IEC 9041-2. This IPRL specifies constraints on the answers that may be given in the completed PICS for an implementation that claims conformance to this Profile.

These constraints are given in tables A.1 and A.2. The notation used in the tables is as follows. Individual items in a PICS proforma are referenced by the means specified in A.9.1 of ISO 9646-2. 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 IPRL 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 IPRL 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.

Where an IPRL table has a "Profile values" column, the status value applies separately to each listed Profile value.

For any column in an IPRL 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 IPRL places no constraint on the answer;
n/a	The column is not relevant to this item.

A.2 Profile-specific requirements

An IPRL may also specify constraints on the answers to additional questions that concern Profile-specific conformance requirements which are outside the scope of any referenced base standard. These questions will be given in the IPRL itself.

This IPRL does not specify any Profile-specific constraints.

Table A.1 — VTE requirements for FVT219 (Status Message CO)

Item reference no. 9041-	Name of item	Status	Numbers supported	Negotiable
A2.1/7	Structured Control Objects	m	n/a	n/a
A.3.8/11	Parametric COs	m	≥1	Any

Table A.2 — PDU requirements for FVT219 (Status Message CO)

Item reference no. 9041-	Name of item	Profile values	SENDING Status	RECEIVING Status
A.5.15.4/3.1	characterUpdate	See note 1	m	m
A.5.15.4/3.2	"	See note 2	o	m
A.5.15.4/8.1	integerUpdate	See note 3	m	m
A.5.15.4/8.2	"	See note 4	o	m

NOTES

1 This references all ASN.1 OCTET STRING values whose length does not exceed the number of columns of the device concerned.

2 This references all ASN.1 OCTET STRING values whose length exceeds the number of columns of the device concerned.

3 This references all non-negative integer values that do not exceed the number of rows of the device concerned.

4 This references all non-negative integer values that exceed the number of rows of the device concerned.

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