
**Information technology —
Telecommunications and information
exchange between systems — Protocol
for Computer Supported
Telecommunications Applications (CSTA)
Phase III**

iTeh STANDARD PREVIEW

*Technologies de l'information — Télécommunications et échange
d'information entre systèmes — Protocole pour applications en
télécommunications supportées par ordinateur (CSTA) en phase III*

[ISO/IEC 18052:2000](https://standards.iso.org/iso/iec/18052:2000)

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 18052 was prepared by ECMA (as ECMA-285) and was adopted, under a special "fast-track procedure", by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC. [ISO/IEC 18052:2000](https://standards.iteh.ai/catalog/standards/sist/f482d4c9-d86a-4691-a839-18052-2000)

Annex A forms a normative part of this International Standard. [18052-2000](https://standards.iteh.ai/catalog/standards/sist/f482d4c9-d86a-4691-a839-18052-2000)

Introduction

This International Standard defines Phase III of Protocol for Computer Supported Telecommunications Applications (CSTA) for OSI Layer 7 communication between a computing network and a telecommunications network. This International Standard is part of a Suite of Standards and Technical Reports for Phase III of CSTA. All of the Standards and Technical Reports in the Suite are based on practical experience of ECMA member companies and each one represents a pragmatic and widely-based consensus.

The evolution of this Suite began with CSTA Phase I, which included the CSTA Services and Protocol Standards (ECMA-179 and ECMA-180). In Phase II, Technical Report ECMA TR/68 was added illustrating how CSTA services and events may be used in typical call scenarios.

Phase III of CSTA extends the previous Phase II Standards (ECMA-217 and ECMA-218) in major theme directions as well as numerous details. This incorporates technology based upon the *versit* CTI Encyclopedia (Version 1.0), which was contributed to ECMA by *versit*. Major areas of advancement include:

- New categories of services and events such as capabilities exchange, charging, media attachment services, call data recording (CDR), etc.
- Additional services and events for call and device control.
- Enhancement to existing services and events.
- Organization of services and events to reflect a grouping based on function (call control, device control, etc.).

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Information technology - Telecommunications and information exchange between systems - Protocol for Computer Supported Telecommunications Applications (CSTA) Phase III

1 Scope

This International Standard specifies application protocol data units (APDUs) for the services described in ISO/IEC 18051, *Information technology - Telecommunications and information exchange between systems - Services for Computer Supported Telecommunications Applications (CSTA) Phase III*.

Clause 5 to clause 7 inclusive describes the concepts underlying the Remote Operations model, notation and service.

Clause 8 to clause 26 inclusive contains CSTA-specific protocol details and forms the main part of this International Standard.

The protocol in this International Standard operates in the context of an application association.

2 Normative References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

- ISO/IEC 8649:1996**, *Information technology - Open Systems Interconnection - Service definition for the Association Control Service Element* (this corresponds to ITU-T Rec. X.217 1995).
- ISO/IEC 8650-1:1996**, *Information technology - Open Systems Interconnection - Connection-oriented protocol for the Association Control Service Element: Protocol specification* (this corresponds to ITU-T Rec. X.227 4/95).
- ISO/IEC 9545:1994**, *Information technology - Open Systems Interconnection - Application Layer structure*.
- ISO/IEC 13712-1:1995**, *Information technology - Remote Operations: Concepts, model, and notation* (this corresponds to ITU-T Rec. X.880, 1994).
- ISO/IEC 13712-2:1994**, *Information technology - Remote Operations: OSI realisations - Remote Operations Service Element (ROSE) service definition* (this corresponds to ITU-T Rec. X.881, 1994).
- ISO/IEC 13712-3:1994**, *Information technology - Remote Operations: OSI realisations - Remote Operations Service Element (ROSE) protocol specification* (this corresponds to ITU-T Rec. X.882, 1994).
- ISO/IEC 18051:2000**, *Information technology - Telecommunications and information exchange between systems - Services for Computer Supported Telecommunications Applications (CSTA) Phase III*.
- ISO/IEC TR 18053:2000**, *Information technology - Telecommunications and information exchange between systems - Glossary of definitions and terminology for Computer Supported Telecommunications Applications (CSTA) Phase III*.

- ITU-T X.680, *Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation.*
- ITU-T X.690, *Information technology - ASN.1 encoding rules - Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER).*

3 Conformance

A manufacturer may select any part of the CSTA protocol, as specified in this International Standard, for implementation on a system as long as it satisfies the minimum conformance requirements as specified in clause 3 of ISO/IEC 18051.

A Protocol Implementation Conformance Statement (PICS) shall be used to specify the operations which are provided by a particular implementation. A PICS shall also specify the parameter options which are used.

3.1 Static Requirements

To conform to this International Standard, a system shall support the transfer syntax (derived from the encoding rules specified in ITU-T X.690) named {joint-iso-ccitt asn1(1) basic-encoding(1)}; for the purpose of generating and interpreting CSTA protocol information as defined by the abstract syntax “CSTA-ASN.1-Object-Descriptor” for the operations supported.

3.2 Dynamic Requirements

To conform to this International Standard, a system shall:

- a. follow the procedures as specified in this International Standard, and ISO/IEC 18051, relevant to each CSTA operation that the system claims to implement; and
- b. satisfy the definitions, as specified in ISO/IEC 18051, relevant to each CSTA service that the system claims to implement.

3.3 PICS Requirement

To conform to this International Standard, the following shall be stated by the implementer when defining a PICS corresponding to an application or implementation:

- a. which CSTA operations, as defined in ISO/IEC 18051, are supported by the system for the particular implementation; and
- b. which optional parameters are supported by the PDUs belonging to the supported operations.

A PICS proforma is given in Annex A of this International Standard.

4 Definitions and Abbreviations

CSTA-specific terminology is defined in ISO/IEC TR 18053. For the purposes of this International Standard, the following additional definitions, defined in other standards, shall apply:

- Remote Operations (as per ISO/IEC 13712-1)
- Application Association (as per ISO/IEC 8649)
- Application Context (as per ISO/IEC 8649)

5 CSTA Service Definition Model

5.1 CSTA Application Layer Structure

The CSTA Application Layer structure conforms to the model described in ISO/IEC 9545.

5.2 Remote Operations

The services of CSTA are modeled as Remote Operations as described in ISO/IEC 13712-1. Typically, one entity requests that a particular operation be performed; the other entity attempts to perform the operation and responds to the requestor. Consequently the operation of the protocol is an elementary request/reply interaction, supported within the OSI Application Layer, and carried out within the context of an application association.

For some of the CSTA services, the entity to which the request is sent generates a reply which can indicate success or failure. For these services, CSTA shall adopt the operations Class 2, defined in ISO/IEC 13712-2 as:

- Asynchronous, reporting success or failure (result or error).

For some of the CSTA services, the entity to which the request is sent generates a reply which can only indicate failure. For these services, CSTA shall adopt the operations Class 3, defined in ISO/IEC 13712-2 as:

- Asynchronous, reporting failure (error) only, if any.

For some of the CSTA services, particularly the ongoing reporting of events, no reply is generated. For these services, CSTA shall adopt the operations Class 5, defined in ISO/IEC 13712-2 as:

- Asynchronous, outcome not reported.

The protocol description for the particular service defines the relevant class of the operation used for that service.

CSTA shall correlate the single response, denoting success or failure, with the originating request by using the mechanisms within the ROSE protocol.

5.3 The CSTA Service Response

CSTA employs a generic response mechanism which is, in principle, decoupled from the specifics of the switching activity. The following points describe the operation of the CSTA service response:

- Specific services may have an unconfirmed mode where responses to correct requests are not returned.
- The server shall check the correctness of the request (e.g. syntactical checks) before issuing the response. Incorrect requests shall result in an error response, even in the unconfirmed mode.

5.4 Cross Referencing of Event Reports

A computer application process may need to cross reference a CSTAEventReport to one of the following:

- a CSTA Object ID (Call ID or Device ID), <https://standards.iteh.ai/catalog/standards/sist/f482d4c9-d86a-4691-a839-445a4499ed62/iso-iec-18052-2000>
- an earlier Monitor request, or
- one of many Monitor requests (pertaining to the same CSTA Object).

For the above scenarios the necessary cross referencing function may be fulfilled by use of the parameter "MonitorCrossRefID". The content of MonitorCrossRefID depends upon the context and it may be one of the following: Call ID, Device ID or another independently switch managed static identifier. The independent identifier may have a unique correlation to either: one device, one call, or one monitor request.

The switching system limit on the number of monitor requests on one CSTA Object (Call or Device) is an implementation option. This International Standard does not stipulate how many monitor requests on one object are to be supported by the switch. If using Static Device or Call identifiers the limit can only be one.

5.5 Handling of Private Data

If an entity receives the parameter CSTAPrivateData, and it can not recognize the information contained, the parameter shall be discarded, and the rest of the message shall be processed.

6 Interconnection service boundary

The protocol in this International Standard is an OSI Application Layer protocol and uses the Remote Operations protocol defined in ISO/IEC 13712-3. The Remote Operations protocol assumes certain services are provided by the underlying layers, and these services are also assumed by the protocol for CSTA.

7 Security

This protocol also provides a mechanism for secure transmission of CSTA PDUs as defined in this International Standard.