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

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*Technologies de l'information — Téléinformatique — Protocole XML  
pour applications en télécommunications supportées par ordinateur  
(CSTA) en phase III*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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 document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 18051 was prepared by Ecma International (as ECMA-269, fifth edition) 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 the national bodies of ISO and IEC

This fourth edition cancels and replaces the third edition (ISO/IEC 18056:2007), which has been technically revised.

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## Introduction

This International Standard defines an XML protocol for ISO/IEC 18051 [Phase III of Services for Computer Supported Telecommunications Applications (CSTA)]. It 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.

Phase III of CSTA extends the previous Phase I and Phase II Standards 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*.

XML specified in this Standard has been checked using the XML SPY tool.

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# Information technology — Telecommunications and information exchange between systems — XML protocol for Computer Supported Telecommunications Applications (CSTA) Phase III

## 1 Scope

This International Standard specifies an XML protocol for the services defined in ISO/IEC 18051. It provides an alternative protocol to the ASN.1-based protocol specified in ISO/IEC 18052.

In addition to the CSTA-specific protocol details, this International Standard describes the concepts underlying the request/response model, application association, notation and service, and describes the template used in this International Standard.

It also specifies the PICS for this International Standard and provides examples of CSTA XML encodings.

## 2 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 2 of ISO/IEC 18051:2010.

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.

### 2.1 Static Requirements

To conform to this International Standard, a system shall support the syntax as defined by the XML 1.0 specification and the structures and data types as defined in the XML Schema Structure and XML Schema Data Types specifications for the purpose of generating and interpreting CSTA protocol information for the operations supported.

### 2.2 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.

### 2.3 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 each supported operations.

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

### 2.4 XML Tag Options

To conform to this International Standard, a system shall support at least one of the XML tag options listed below.

## ISO/IEC 18056:2010 (E)

### 2.4.1 ISO/IEC 18056 (ECMA-323) Specified Tags

Instance documents shall include the following URI for the namespace and conform to the schemas as specified in Clauses 9 through 27 of this International Standard without transformations.

<http://www.ecma-international.org/standards/ecma-323/csta/ed5>

### 2.4.2 ISO/IEC 18056 (ECMA-323) Specified Short Tags

Instance documents shall include the following URI for the namespace and conform to the schemas as specified in Clauses 9 through 27 of this International Standard with transformations as specified in Annex D.

[urn:www.ecma-international.org/standards/ecma-323/csta/ed5/short\\_tags](urn:www.ecma-international.org/standards/ecma-323/csta/ed5/short_tags)

### 2.4.3 Dynamic Transformations

Implementation claiming conformance to this option shall support XML schema transformations e.g. using `<?xml-stylesheet>` for the schemas specified in Clauses 9 through 27.

## 2.5 CSTA Over SIP (uaCSTA) Transport Mechanism Option

An implementation that conforms to this International Standard can also claim conformance to the “CSTA Over SIP (uaCSTA Transport Mechanism Option” by implementing the SIP and CSTA procedures specified in Annex C.

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## 3 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

### 3.1 ISO Standards and Technical Reports

- |                              |  |
|------------------------------|--|
| <b>ISO/IEC 18051:2010</b>    | Information technology - Telecommunications and information exchange between systems - Services for Computer Supported Telecommunications Applications (CSTA) Phase III                                |
| <b>ISO/IEC 18052:2000</b>    | Information technology - Telecommunications and information exchange between systems - Protocol for Computer Supported Telecommunications Applications (CSTA) Phase III                                |
| <b>ISO/IEC TR 18053:2000</b> | Information technology - Telecommunications and information exchange between systems - Glossary of definitions and terminology for Computer Supported Telecommunications Applications (CSTA) Phase III |

### 3.2 World Wide Web Consortium Specifications

- |                          |   |
|--------------------------|---|
| <b>XML 1.0</b>           | XML 1.0. W3C Recommendation February 1998 (revised October 2000)      |
| <b>XML Schema Part 1</b> | XML Schema Language Part 1: Structures. W3C Recommendation 2 May 2001 |
| <b>XML Schema Part 2</b> | XML Schema Language Part 2: Datatypes. W3C Recommendation 2 May 2001  |
|                          | Simple Object Access Protocol (SOAP) 1.1, W3C Note 08 May 2000        |

## 4 Terms, definitions and abbreviations

For the purposes of this document, the terms, definitions and abbreviations given in ISO/IEC TR 18053 apply.

## 5 CSTA Service Definition Model

CSTA services specified in ISO/IEC 18051 are modeled as a request/response interaction.

Typically, one entity requests that a particular operation be performed; the other entity attempts to perform the operation and responds to the requestor.

### 5.1 Request/Response Interactions

CSTA services consist of the following types of request/response interactions:

- Services which specify a response in case of success or failure. The protocol description for these services includes a response element that represents the success (i.e. positive acknowledgement). In case of service failure, a fault element is used to provide the failure information (i.e. negative acknowledgement).
- Services which only specify a response in case of failure. The protocol description for these services do not include a response element. A fault element is used to provide the failure information (i.e. negative acknowledgement).

For CSTA event reports, no response is generated.

### 5.2 Request/Response Protocol Requirements

This International Standard specifies CSTA-specific XML-encoded content for messages that are sent across a CSTA Service boundary. Typically this CSTA-specific XML is enveloped by a request/response protocol that provides a mechanism for correlating a CSTA request with a CSTA response, manages faults, defines header information, etc.

This International Standard does not mandate that a specific request/response protocol be used. However, this International Standard provides examples of how the CSTA-specific XML can be used with several industry request/response protocols and transports such as SOAP (Simple Object Access Protocol), HTTP, and TCP. These examples are provided beginning in Annex H.

### 5.3 Cross Referencing of Event Reports

The Monitor Cross Reference Identifier in CSTA event reports is used to correlate events to an earlier Monitor Start service request (see 6.7.2.1 of ISO/IEC 18051:2010).

### 5.4 Handling of Private Data

If an entity receives CSTA Private Data in a CSTA message, and it can not recognize the information contained, the CSTA Private Data 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 that assumes certain services are provided by the underlying layers, and these services are also assumed by the protocol for CSTA.

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