



SLOVENSKI STANDARD

SIST EN 60870-6-502:1997

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Telecontrol equipment and systems - Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations - Section 502: TASE.1 protocol definitions (IEC 870-6-502:1995)

Telecontrol equipment and systems -- Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations -- Section 502: TASE.1 Protocol definitions

Fernwirkeinrichtungen und -systeme -- Teil 6: Fernwirkprotokolle, die mit ISO-Normen und ITU-T-Empfehlungen kompatibel sind -- Hauptabschnitt 502: Beschreibung der TASE.1-Protokolle

Matériels et systèmes de téléconduite -- Partie 6: Protocoles de téléconduite compatibles avec les normes ISO et les recommandations de l'ITU-T -- Section 502: Définitions du protocole TASE.1

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Telecontrol equipment and systems
Part 6: Telecontrol protocols compatible with ISO standards
and ITU-T recommendations
Section 502: TASE.1 Protocol definitions
(IEC 870-6-502:1995)

Matériels et systèmes de téléconduite

Partie 6: Protocoles de téléconduite compatibles avec les normes ISO et les recommandations de l'UIT-T

Section 502: Définitions du protocole TASE.1

(CEI 870-6-502:1995)

Fernwirkeinrichtungen und -systeme

Teil 6: Fernwirkprotokolle, die mit ISO-Normen und ITU-T-Empfehlungen kompatibel sind

Hauptabschnitt 502: Beschreibung der TASE.1-Protokolle

(IEC 870-6-502:1995)

This European Standard was approved by CENELEC on 1996-03-05. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 57/223/FDIS, future edition 1 of IEC 870-6-502, prepared by IEC TC 57, Power system control and associated communications, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60870-6-502 on 1996-03-05.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1996-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-12-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A and ZA are normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 870-6-502:1995 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications
with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 870-6-501	1995	Telecontrol equipment and systems Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations Section 501: TASE.1 Service definitions	EN 60870-6-501	1996
ISO/IEC 8824	1990	Information technologie - Open Systems Interconnection - Specification of the Abstract Syntax Notation One (ASN.1)	-	-
ISO/IEC 8825	1990	Information technology - Open Systems Interconnection - Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1)	-	-
ISO/IEC 9072-1	1989	Information processing systems - Text communication - Remote Operations Part 1: Model notation and service definition	-	-
ISO/IEC 9072-2	1989	Part 2: Protocol specification	-	-
ISO/DIS 8825-2		Information technology - Open Systems Interconnection - Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1) Part 2: Packed encoding rules	-	-
ISO 7498	1984	Information processing systems - Open Systems Interconnection - Basic Reference Model	EN 27498	1989
ISO/TR 8509	1987	Information processing systems - Open Systems Interconnection - Service conventions	-	-
ISO 8649	1988	Information processing systems - Open Systems Interconnection - Service definition for the Association Control Service Element	-	-

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 8650	1988	Information processing systems - Open Systems Interconnection - Protocol specification for the Association Control Service Element	-	-
ISO 8822	1994	Information technology - Open Systems Interconnection - Presentation service definition	-	-
ISO 8859-1	1987	Information processing - 8-bit single-byte coded graphic character sets Part 1: Latin alphabet N° 1	-	-

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Matériels et systèmes de téléconduite –

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Protocoles de téléconduite compatibles avec
les normes ISO et les recommandations de l'UIT-T –
Section 502: Définitions du protocole TASE.1

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Telecontrol equipment and systems –

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Part 6:

Telecontrol protocols compatible with ISO standards
and ITU-T recommendations –
Section 502: TASE.1 Protocol definitions

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TELECONTROL EQUIPMENT AND SYSTEMS –

Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations –

Section 502: TASE.1 Protocol definitions

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, express as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 870-6-502 has been prepared by IEC technical committee 57: Power system control and associated communications.

The text of this standard is based on the following documents:

FDIS	Report on voting
57/223/FDIS	57/259/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Annex A forms an integral part of this standard.

TELECONTROL EQUIPMENT AND SYSTEMS –

Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations –

Section 502: TASE.1 Protocol definitions

1 Scope and object

This section of IEC 870-6 specifies the protocol for the services provided by an application-service-element – the Telecontrol Application Service Element no. 1 (TASE.1) – to support the exchange of process data between telecontrol systems.

The main goals for the design of these services are:

- simplicity;
- adaptability;
- independence of lower layer architecture;
- extensibility;
- efficiency;
- performance;
- maintainability.

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The services of TASE.1 are:

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- services for defining, changing, deleting and inspecting groups of information;
- services for managing the transfer of information groups and blocks of information from different groups;
- services for supervisory control.

This section of IEC 870-6 specifies the protocol (abstract syntax) and the procedures for the Telecontrol Application Service Element (TASE). The TASE.1 services are provided in conjunction with the Remote Operations Service Element (ROSE) services (ISO/IEC 9072-1) and the ROSE protocol (ISO/IEC 9072-2), and the Association Control Element (ACSE) services (ISO 8649) and the ACSE protocol (ISO 8650).

The TASE.1 procedures are defined in terms of:

- a) the interactions between peer TASE.1 protocol machines through the use of ROSE services;
- b) the interactions between the TASE.1 protocol machine and its service-user.

The scope of the protocol is limited to the interconnection of systems. It does not specify or restrict the possible implementation of interfaces within a telecontrol system.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 870-6. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this section of IEC 870-6 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 870-6-501: 1995, *Telecontrol equipment and systems – Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations – Section 501: TASE.1 service definitions*

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

ISO/IEC 8825: 1990, *Information technology – Open Systems Interconnection – Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1)*

ISO/IEC 9072-1: 1989, *Information processing systems – Text communication – Remote Operations – Part 1: Model, notation and service definition*

ISO/IEC 9072-2: 1989, *Information processing systems – Text communication – Remote Operations – Part 2: Protocol specification*

ISO/DIS 8825-2*, *Information technology – Open Systems Interconnection – Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1) – Part 2: Packed encoding rules*

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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 8649: 1988, *Information processing systems – Open Systems Interconnection – Service definition for the Association Control Service Element*

ISO 8650: 1988, *Information processing systems – Open Systems Interconnection – Protocol specification for the Association Control Service Element*

ISO 8822: 1994, *Information technology – Open Systems Interconnection – Presentation service definition*

ISO 8859-1: 1987, *Information processing – 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No. 1*

* At present at the stage of Draft International Standard.

3 Definitions

For the purpose of this section of IEC 870-6, the following definitions apply.

3.1 Reference model definitions (defined in ISO 7498)

- a) Application layer
- b) Application-protocol-data-unit
- c) Application-protocol-control-information
- d) Application-entity
- e) Application-process
- f) Application-service-element
- g) Service-element
- h) User-element

3.2 Service conventions definitions (defined in ISO/TR 8509)

- a) Service-user
- b) Confirmed service
- c) Non-confirmed service
- d) Provider-initiated service
- e) Primitive
- f) Request
- g) Indication
- h) Response
- i) Confirm

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3.3 Presentation service definition (defined in ISO 8822)

- a) Abstract syntax
- b) Abstract syntax name
- c) Transfer syntax name

3.4 Association control definitions (defined in ISO 8649)

- a) Application-association; association
- b) Application-context
- c) Application Control Service Element

3.5 Remote operations definitions (defined in ISO 9072)

- a) ACSE-user
- b) ROSE-user
- c) BIND
- d) UNBIND
- e) Remote Operations
- f) RO-notation
- g) Remote Operation Service Element

3.6 TASE.1 service definitions (defined in IEC 870-6-501)

- a) Initiator
- b) Responder

3.7 TASE.1 protocol specification definitions

3.7.1 **idle state:** Connected entity waiting for an incoming event.

3.7.2 **initiating entity:** Application entity in idle state that receives a request event from the upper service-user.

3.7.3 **responding entity:** Application entity in idle state that receives an incoming event from its lower service-provider.

3.7.4 **DCUT1:** Timer used by the application-process for supervision of the application-service-user.

3.7.5 **DCLT1:** Timer used by the application-process for supervision of the remote peer entity.

3.7.6 **TASE-protocol-machine:** The protocol machine for the TASE.1 specified in this section of the TASE.1 standard.

4 Abbreviations

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ACSE Association Control Service Element

AE Application-entity [SIST EN 60870-6-502:1997](https://standards.iteh.ai/catalog/standards/sist/6abfb141-d203-4668-8d47-ed01c98ef7c/sist-en-60870-6-502-1997)

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APCI Application Protocol Control Information [SIST EN 60870-6-502:1997](https://standards.iteh.ai/catalog/standards/sist/6abfb141-d203-4668-8d47-ed01c98ef7c/sist-en-60870-6-502-1997)

APDU Application Protocol Data Unit

OSIE Open Systems Interconnection Environment

PDU Protocol Data Unit

ROSE Remote Operations Service Element

TASE Telecontrol Application Service Element

TPM Telecontrol Protocol Machine.