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Part 1-3: General considerations - Glossary

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Telecontrol equipment and systems - Part 1-3: General considerations – Glossary

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This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC TR 60870-1-3 edition 2.1 contains the second edition (1997-04) [documents 57(Sec)171 and 57/297/RVC] and its amendment 1 (2026-10) [documents 57/2940/DTR and 57/2983/RVDTR].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

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- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

Technical reports of types 1 and 2 are subject to review within three years of publication to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

IEC 60870-1-3, which is a technical report of type 3, has been prepared by IEC technical committee 57: Power system control and associated communications.

This second edition cancels and replaces the first edition published in 1990 and constitutes a technical revision.

The text of this technical report is based on the following documents:

Committee draft	Report on voting
57(Sec)171	57/297/RVC

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

INTRODUCTION

Standards and reports on telecontrol equipment and systems produced during the last few years by IEC technical committee 57 in different documents of series IEC 60870-5 and IEC 60870-6 use a certain number of terms with specific meanings in telecontrol applications that are not yet defined in IEC 60050(371): *International Electrotechnical Vocabulary (IEV) – Chapter 371: Telecontrol* (1984). In most of the documents of the 60870 series, glossaries related to the particular document already exist. Nevertheless, the collection of relevant terms in this document is useful for the reader of the above-mentioned documents.

This section of IEC 60870-1 presents in alphabetic order these terms and their definitions. It also presents a comprehensive means of referring to terms with particular meaning in telecontrol systems and equipment that should also be used in future telecontrol documentation.

INTRODUCTION to Amendment 1

Amendment 1 to IEC TR 60870-1-3:1997 contains an update of the terminology used in the IEC 60870 series.

1 Scope and object

This technical report applies to telecontrol equipment and systems with coded bit serial data transmission for monitoring and control of geographically widespread processes.

This section of IEC 60870-1 covers those terms which are specifically relevant to telecontrol techniques as well as other terms which are necessary for the understanding of telecontrol standards.

This report also gives, where applicable, references to other dictionaries of electrical and electronic terms.

Terms which are considered to be well known by readers of telecontrol standards are not included in this report. This applies particularly in the field of communications where such terms as, for example, "information" and "bit" are commonplace and well understood.

2 Reference documents

The following standards contain provisions which, through reference in this text, constitute provisions of this section of the IEC 60870 series. At the time of publication, the editions of the reference documents indicated were valid. All standards are subject to revision, so readers are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(191): 1990, *International Electrotechnical Vocabulary (IEV) – Chapter 191: Dependability and quality of service*

IEC 60050(351): 1997, *International Electrotechnical Vocabulary (IEV) – Chapter 351: Automatic control*

IEC 60050(371): 1984, *International Electrotechnical Vocabulary (IEV) – Chapter 371: Telecontrol*

IEC 60050(721): 1992, *International Electrotechnical Vocabulary (IEV) – Chapter 721: Telegraphy, facsimile and data communication*

IEC 60870-1-4: 1994, *Telecontrol equipment and systems – Part 1: General considerations – Section 4: Basic aspects of telecontrol data transmission and organization of standards IEC 60870-5 and IEC 60870-6*

IEC 60870-2-1: 1995, *Telecontrol equipment and systems – Part 2: Operating conditions – Section 1: Power supply and electromagnetic compatibility*

IEC 60870-5-3: 1992, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 3: General structure of application data*

IEC 60870-5-4: 1993, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 4: Definition and coding of application information elements*

IEC 60870-5-5: 1995, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 5: Basic application functions*

IEC 60870-5-101: 1995, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 101: Companion standard for basic telecontrol tasks*

IEC 60870-6-501: 1995, *Telecontrol equipment and systems – Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations – Section 501: TASE.1 Service definitions*

IEC 60870-6-502: 1995, *Telecontrol equipment and systems – Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations – Section 502: TASE.1 Protocol definitions*

ISO/IEC 2382-9: 1995, *Information technology – Vocabulary – Part 9: Data communication*

ISO/IEC 3309: 1993, *Information technology – Telecommunications and information exchange between systems – High-level data link control (HDLC) procedures – Frame structure*

ISO/IEC 4335: 1993, *Information technology – Telecommunications and information exchange between systems – High-level data link control (HDLC) procedures – Elements of procedures*

ISO 7498-1: 1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model*

ISO 7498-2: 1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 2: Security Architecture*

ISO 8326: 1987, *Information processing systems – Open Systems Interconnection – Basic connection oriented session service definition*

ISO TR 8509: 1987*, Information processing systems – Open Systems Interconnection – Service conventions*

ISO 8648: 1988, *Information processing systems – Open Systems Interconnection – Internal organization of the Network Layer*

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

ISO/IEC 9545: 1994, *Information technology – Open Systems Interconnection – Application Layer structure*

ISO/IEC 9646-1: 1994, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts*

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

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

ITU-T X.15: 1984, *Definition of terms concerning public data networks*

3 Definitions

absolute chronology; time tagging: Method of transmission of changes-of-state so that transmitted information is accompanied by data giving the registered time at which the change occurred, within the time resolution. [IEV 371-05-02]

acknowledgement: See **positive acknowledgement; negative acknowledgement**

acquisition time: Minimum time for correct detection and processing of a change-of-state.

address: Part of a message identifying the source or its destination.

adjusting command: Command used to change the state of operational equipment having more than two states. [IEV 371-03-10]

alarm: Information for attracting attention to some abnormal state.

NOTE – A transition from a normal into an abnormal state causes a visual and/or audible warning which has to be acknowledged. A transition from an abnormal into a normal state usually causes a change of indication and, in some applications, also causes a visual and/or audible warning which has to be acknowledged.

analogue signal: Signal in the form of a continuously variable value.

application association: Co-operative relationship between two application-service-object-invocations which govern their bilateral use of the Presentation Service for communication of information and co-ordination of their joint operation. [ISO/IEC 9545]

application entity (AE): Aspects of an application-process pertinent to Open Systems Interconnection (OSI). [ISO 7498]

application functions: Functions covering the special needs of the process to which a telecontrol or SCADA system is applied.

The application functions are divided into basic functions and extended processing functions.

application functions (in the sense of the basic reference model): Part of application-processes which performs the remote communications procedures between application-processes. [ISO 7498]

application-process: Element within a real open system which performs the information processing for a particular application. [ISO 7498]

application profile: Profile defining the use of protocol standards from Open Systems Interconnection (OSI) layers 5 to 7, to provide for the structured transfer of information between systems.

application service element: That part of an application-entity which provides an Open Systems Interconnection (OSI) environment capability, using underlying services when appropriate. [ISO 7498]

association control service element: Application service element that provides the exclusive means for establishing and terminating all application-associations. [ISO/IEC 9545]

asynchronous telecontrol transmission: See **start-stop telecontrol transmission.**