

**SLOVENSKI
STANDARD**

**SIST EN 60870-5-
101:1997/A1:2002**

prva izdaja
april 2002

**Companion standard for basic telecontrol tasks Amendment A1 (IEC
60870-5-101:1995/A1:2000)**

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[SIST EN 60870-5-101:1997/A1:2002](https://standards.iteh.ai/catalog/standards/sist/4eca2782-a1ab-4770-87de-5234bd6864b1/sist-en-60870-5-101-1997-a1-2002)
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ICS 33.200

Referenčna številka
SIST EN 60870-5-
101:1997/A1:2002(en)

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EUROPEAN STANDARD

EN 60870-5-101/A1

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2000

ICS 33.200

English version

Telecontrol equipment and systems
Part 5-101: Transmission protocols - Companion standard
for basic telecontrol tasks
(IEC 60870-5-101:1995/A1:2000)

Matériels et systèmes de téléconduite
Partie 5-101: Protocoles de transmission -
Norme d'accompagnement pour les
tâches élémentaires de téléconduite
(CEI 60870-5-101:1995/A1:2000)

Fernwirkeinrichtungen und -systeme
Teil 5-101: Übertragungsprotokolle -
Anwendungsbezogene Norm für
grundsätzliche Fernwirkaufgaben
(IEC 60870-5-101:1995/A1:2000)

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This amendment A1 modifies the European Standard EN 60870-5-101:1996; it was approved by CENELEC on 2000-08-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Czech Republic, 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 57/435/FDIS, future amendment 1 to IEC 60870-5-101:1995, 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 amendment A1 to EN 60870-5-101:1996 on 2000-08-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2001-05-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2003-08-01

Endorsement notice

The text of amendment A1:2000 to the International Standard IEC 600870-5-101:1995 was approved by CENELEC as an amendment to the European Standard without any modification.

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NORME
INTERNATIONALE

CEI
IEC

INTERNATIONAL
STANDARD

60870-5-101

1995

AMENDEMENT 1
AMENDMENT 1
2000-04

Amendement 1

Matériels et systèmes de téléconduite –

Partie 5-101:

**Protocoles de transmission –
Norme d'accompagnement pour les tâches
élémentaires de téléconduite**

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Amendment 1

Telecontrol equipment and systems –

Part 5-101:

**Transmission protocols –
Companion standard for basic telecontrol tasks**

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Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

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*Pour prix, voir catalogue en vigueur
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FOREWORD

This amendment has been prepared by IEC technical committee 57: Power system control and associated communications.

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

FDIS	Report on voting
57/435/FDIS	57/452/RVD

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

The committee has decided that the contents of the base publication and its amendment will remain unchanged until 2003. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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1 Scope and object [5234bd6864b1/sist-en-60870-5-101-1997-a1-2002](https://standards.iteh.ai/catalog/standards/sist/4eca2782-a1ab-4770-87de-5234bd6864b1/sist-en-60870-5-101-1997-a1-2002)

Add, after the first paragraph, the following text:

This standard defines ASDUs with time tags CP24Time2a which includes three octets binary time from milliseconds to minutes. In addition to these specifications, ASDUs with time tags CP56Time2a, which includes seven octets binary time from milliseconds to years, are defined in this standard (see 6.8 of IEC 60870-5-4 and 7.2.6.18 of this standard).

ASDUs with time tags CP56Time2a are used when the controlling station is not able to add the time from hours to years unambiguously to the received ASDUs which are tagged from milliseconds to minutes. This may happen when using networks with uncertain transmission delays or if temporary failure of a network occurs.

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7.3 Definition and presentation of the specific ASDUs

Add after the first paragraph, the following new paragraph:

A specific application may select either a set of ASDUs with the time tag CP24Time2a, or a set of ASDUs with the time tag CP56Time2a. A mixture of ASDUs from both ASDUs with time tag CP24Time2a and CP56Time2a is not defined, with the exception of using ASDUs which are already defined with time tag CP56Time2a in this standard.

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7.3.1 ASDUs for process information in monitor direction*Add, on page 119, the following new subclauses:***7.3.1.22 TYPE IDENT 30: M_SP_TB_1
Single-point information with time tag CP56Time2a****Sequence of information objects (SQ = 0)**

0 0 0 1 1 1 1 0	TYPE IDENTIFICATION	
0	Number i of objects	VARIABLE STRUCTURE QUALIFIER
Defined in 7.2.3	CAUSE OF TRANSMISSION	DATA UNIT IDENTIFIER Defined in 7.1
Defined in 7.2.4	COMMON ADDRESS OF ASDU	
Defined in 7.2.5	INFORMATION OBJECT ADDRESS	
IV NT SB BL 0 0 0 SPI	SIQ = Single-point information with quality descriptor, defined in 7.2.6.1	
CP56Time2a Defined in 7.2.6.18	Seven octet binary time	INFORMATION OBJECT 1
Defined in 7.2.5	INFORMATION OBJECT ADDRESS	
IV NT SB BL 0 0 0 SPI	SIQ = Single-point information with quality descriptor, defined in 7.2.6.1	
CP56Time2a Defined in 7.2.6.18	Seven octet binary time	INFORMATION OBJECT i

IEC 519/2000

Figure 64 – ASDU: M_SP_TB_1 Single-point information with time tag CP56Time2a

M_SP_TB_1 := CP{Data unit identifier,i{(Information object address,SIQ,CP56Time2a)}}
 i := number of objects defined in the variable structure qualifier

Since each single-point information has its individual time tag, this type of ASDU does not exist as a sequence of information elements (SQ = 1).

CAUSES OF TRANSMISSION used with

TYPE IDENT 30 := M_SP_TB_1

CAUSE OF TRANSMISSION

<2>	:=	background scan
<3>	:=	spontaneous
<5>	:=	requested
<11>	:=	return information caused by a remote command
<12>	:=	return information caused by a local command
<20>	:=	interrogated by general interrogation
<21>	:=	interrogated by group 1 interrogation
<22>	:=	interrogated by group 2 interrogation
	up to	
<36>	:=	interrogated by group 16 interrogation

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7.3.1.23 TYPE IDENT 31: M_DP_TB_1
Double-point information with time tag CP56Time2a

Sequence of information objects (SQ = 0)

0 0 0 1 1 1 1 1	TYPE IDENTIFICATION	
0	Number i of objects	VARIABLE STRUCTURE QUALIFIER
Defined in 7.2.3	CAUSE OF TRANSMISSION	DATA UNIT IDENTIFIER Defined in 7.1
Defined in 7.2.4	COMMON ADDRESS OF ASDU	
Defined in 7.2.5	INFORMATION OBJECT ADDRESS	
IV NT SB BL 0 0 DPI	DIQ = Double-point information with quality descriptor, defined in 7.2.6.2	
CP56Time2a Defined in 7.2.6.18	Seven octet binary time	INFORMATION OBJECT 1
Defined in 7.2.5	INFORMATION OBJECT ADDRESS	
IV NT SB BL 0 0 DPI	DIQ = Double-point information with quality descriptor, defined in 7.2.6.2	
CP56Time2a Defined in 7.2.6.18	Seven octet binary time	INFORMATION OBJECT i

IEC 520/2000

Figure 65 – ASDU: M_DP_TB_1 Double-point information with time tag CP56Time2a

M_DP_TB_1 := CP{Data unit identifier, i(Information object address, DIQ, CP56Time2a)}
 i := number of objects defined in the variable structure qualifier

CAUSES OF TRANSMISSION used with
TYPE IDENT 31 := M_DP_TB_1

CAUSE OF TRANSMISSION

<2>	:=	background scan
<3>	:=	spontaneous
<5>	:=	requested
<11>	:=	return information caused by a remote command
<12>	:=	return information caused by a local command
<20>	:=	interrogated by general interrogation
<21>	:=	interrogated by group 1 interrogation
<22>	:=	interrogated by group 2 interrogation
		up to
<36>	:=	interrogated by group 16 interrogation

Since each double-point information has its individual time tag, this type of ASDU does not exist as a sequence of information elements (SQ = 1).

7.3.1.24 TYPE IDENT 32: M_ST_TB_1 Step position information with time tag CP56Time2a

Single information object (SQ = 0)

0 0 1 0 0 0 0 0	TYPE IDENTIFICATION	
0 0 0 0 0 0 0 1	VARIABLE STRUCTURE QUALIFIER	
Defined in 7.2.3	CAUSE OF TRANSMISSION	DATA UNIT IDENTIFIER Defined in 7.1
Defined in 7.2.4	COMMON ADDRESS OF ASDU https://standards.iteh.ai/catalog/standards/sist/4eca2782-a1ab-4770-87de-5234bd6864b1/sist-en-60870-5-101-1997-a1-2002	
Defined in 7.2.5	INFORMATION OBJECT ADDRESS	
T Value	VTI = Value with transient state indication, defined in 7.2.6.5	
IV NT SB BL 0 0 0 OV	QDS = Quality descriptor, defined in 7.2.6.3	
CP56Time2a Defined in 7.2.6.18	Seven octet binary time	INFORMATION OBJECT

IEC 521/2000

Figure 66 – ASDU: M_ST_TB_1 Step position information with time tag CP56Time2a

M_ST_TB_1 := CP{Data unit identifier, Information object address, VTI, QDS, CP56Time2a}

CAUSES OF TRANSMISSION used with

TYPE IDENT 32 := M_ST_TB_1

CAUSE OF TRANSMISSION

<2>	:=	background scan
<3>	:=	spontaneous
<5>	:=	requested
<11>	:=	return information caused by a remote command
<12>	:=	return information caused by a local command
<20>	:=	interrogated by general interrogation
<21>	:=	interrogated by group 1 interrogation
<22>	:=	interrogated by group 2 interrogation
		up to
<36>	:=	interrogated by group 16 interrogation

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