

**Communication networks and systems  
in substations - Part 6: Configuration  
description language for  
communication in electrical substations  
related to IEDs**

Communication networks and systems in  
substations - Part 6: Configuration description  
language for communication in electrical substations  
related to IEDs

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 61850-6:2004 sisaldab Euroopa standardi EN 61850-6:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 22.07.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 61850-6:2004 consists of the English text of the European standard EN 61850-6:2004.</p> <p>This document is endorsed on 22.07.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p><b>Käsitlusala:</b> Specifies a file format for describing communication related IED (Intelligent Electronic Device) configurations and IED parameters, communication system configurations, switchyard (function) structures, and the relations between them. The purpose is to exchange IED capability descriptions, and SA system descriptions between IED engineering tools and the system engineering tool(s) of different manufacturers in a compatible way. Is to be used together with IEC 61850-5 and the IEC 61850-7 series.</p>	<p><b>Scope:</b> Specifies a file format for describing communication related IED (Intelligent Electronic Device) configurations and IED parameters, communication system configurations, switchyard (function) structures, and the relations between them. The purpose is to exchange IED capability descriptions, and SA system descriptions between IED engineering tools and the system engineering tool(s) of different manufacturers in a compatible way. Is to be used together with IEC 61850-5 and the IEC 61850-7 series.</p>
---	---

ICS 33.200

Võtmesõnad:

**Communication networks and systems in substations**  
**Part 6: Configuration description language for communication**  
**in electrical substations related to IEDs**  
(IEC 61850-6:2004)

Réseaux et systèmes de communication  
dans les postes  
Partie 6: Langage pour la description  
de configuration pour la communication  
dans les postes électriques,  
entre les dispositifs électroniques  
intelligents (IED)  
(CEI 61850-6:2004)

Kommunikationsnetze und -systeme  
in Stationen  
Teil 6: Sprache für die Beschreibung  
der Konfiguration für die Kommunikation  
in Stationen mit intelligenten  
elektronischen Geräten (IED)  
(IEC 61850-6:2004)

This European Standard was approved by CENELEC on 2004-05-01. 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 57/693/FDIS, future edition 1 of IEC 61850-6, prepared by IEC TC 57, Power systems management and associated information exchange, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61850-6 on 2004-05-01.

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) 2005-02-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2007-05-01

Annex ZA has been added by CENELEC.

---

## Endorsement notice

The text of the International Standard IEC 61850-6:2004 was approved by CENELEC as a European Standard without any modification.

---

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE Where 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 61346-1	1996	Industrial systems, installations and equipment and industrial products - Structuring principles and reference designations Part 1: Basic rules	EN 61346-1	1996
IEC 61346-2	2000	Part 2: Classification of objects and codes for classes	EN 61346-2	2000
IEC/TS 61850-2	- <sup>1)</sup>	Communication networks and systems in substations Part 2: Glossary	-	-
IEC 61850-5	- <sup>1)</sup>	Part 5: Communication requirements for functions and device models	EN 61850-5	2003 <sup>2)</sup>
IEC 61850-7-1	- <sup>1)</sup>	Part 7-1: Basic communication structure for substation and feeder equipment - Principles and models	EN 61850-7-1	2003 <sup>2)</sup>
IEC 61850-7-2	- <sup>1)</sup>	Part 7-2: Basic communication structure for substation and feeder equipment - Abstract communication service interface (ACSI)	EN 61850-7-2	2003 <sup>2)</sup>
IEC 61850-7-3	- <sup>1)</sup>	Part 7-3: Basic communication structure for substation and feeder equipment - Common data classes	EN 61850-7-3	2003 <sup>2)</sup>
IEC 61850-7-4	- <sup>1)</sup>	Part 7-4: Basic communication structure for substation and feeder equipment - Compatible logical node classes and data classes	EN 61850-7-4	2003 <sup>2)</sup>
IEC 61850-8-1	- <sup>1)</sup>	Part 8-1: Specific Communication Service Mapping (SCSM) - Mapping to MMS (ISO 9506-1 and ISO 9506-2) and to ISO/IEC 8802-3	EN 61850-8-1	2004 <sup>2)</sup>

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61850-9-1	- <sup>1)</sup>	Part 9-1: Specific Communication Service Mapping (SCSM) - Sampled values over serial unidirectional multidrop point to point link	EN 61850-9-1	2003 <sup>2)</sup>
IEC 61850-9-2	- <sup>1)</sup>	Part 9-2: Specific Communication Service Mapping (SCSM) - Sampled values over ISO/IEC 8802-3	EN 61850-9-2	2004 <sup>2)</sup>
ISO/IEC 8859-1	- <sup>1)</sup>	Information technology - 8-bit single-byte coded graphic character sets Part 1: Latin alphabet No.1	-	-
XML 1.0	- <sup>1)</sup>	Extensible Markup Language (XML) 1.0, W3C	-	-
XML W3C	- <sup>1)</sup>	Namespaces in XML, W3C	-	-
XML-0	- <sup>1)</sup>	XML Schema - Part 0: Primer, W3C	-	-
XML-1	- <sup>1)</sup>	Part 1: Structures, W3C	-	-
XML-2	- <sup>1)</sup>	Part 2: Datatypes, W3C	-	-
RFC 1952	- <sup>1)</sup>	GZIP file format specification version 4.3	-	-
RFC 2045	- <sup>1)</sup>	Multipurpose Internet Mail Extensions (MIME) - Part 1: Format of Internet Message Bodies	-	-

This document is a preview generated by EVS

# INTERNATIONAL STANDARD

**IEC**  
**61850-6**

First edition  
2004-03

---

---

**Communication networks and systems  
in substations –**

**Part 6:  
Configuration description language  
for communication in electrical  
substations related to IEDs**



Reference number  
IEC 61850-6:2004(E)

## Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

## Consolidated editions

The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

## Further information on IEC publications

The technical content of IEC publications is kept under constant review by the IEC, thus ensuring that the content reflects current technology. Information relating to this publication, including its validity, is available in the IEC Catalogue of publications (see below) in addition to new editions, amendments and corrigenda. Information on the subjects under consideration and work in progress undertaken by the technical committee which has prepared this publication, as well as the list of publications issued, is also available from the following:

- **IEC Web Site** ([www.iec.ch](http://www.iec.ch))
- **Catalogue of IEC publications**  
The on-line catalogue on the IEC web site ([http://www.iec.ch/searchpub/cur\\_fut.htm](http://www.iec.ch/searchpub/cur_fut.htm)) enables you to search by a variety of criteria including text searches, technical committees and date of publication. On-line information is also available on recently issued publications, withdrawn and replaced publications, as well as corrigenda.
- **IEC Just Published**  
This summary of recently issued publications ([http://www.iec.ch/online\\_news/justpub/jp\\_entry.htm](http://www.iec.ch/online_news/justpub/jp_entry.htm)) is also available by email. Please contact the Customer Service Centre (see below) for further information.
- **Customer Service Centre**  
If you have any questions regarding this publication or need further assistance, please contact the Customer Service Centre:

Email: [custserv@iec.ch](mailto:custserv@iec.ch)  
Tel: +41 22 919 02 11  
Fax: +41 22 919 03 00



# INTERNATIONAL STANDARD

**IEC**  
**61850-6**

First edition  
2004-03

---

---

## **Communication networks and systems in substations –**

### **Part 6: Configuration description language for communication in electrical substations related to IEDs**

© IEC 2004 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: [inmail@iec.ch](mailto:inmail@iec.ch) Web: [www.iec.ch](http://www.iec.ch)



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

PRICE CODE

**XG**

*For price, see current catalogue*

## CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references.....	8
3 Terms and definitions .....	9
4 Abbreviations.....	9
5 Intended engineering process with SCL.....	10
6 The SCL object model .....	12
6.1 General .....	12
6.2 The substation model .....	15
6.3 The product (IED) model.....	16
6.4 The communication system model .....	17
6.5 Modelling redundancy.....	18
7 SCL description file types.....	18
8 The SCL language .....	19
8.1 Specification method .....	19
8.2 SCL language extensions .....	21
8.3 General structure.....	24
8.4 Object and signal designation .....	25
9 The SCL syntax elements .....	28
9.1 Header .....	28
9.2 Substation description .....	31
9.3 IED description .....	43
9.4 Communication system description .....	67
9.5 Data type templates.....	73
Annex A (normative) SCL syntax: XML schema definition .....	85
A.1 Base types.....	85
A.2 Substation syntax .....	96
A.3 Data type templates .....	101
A.4 IED capabilities and structure.....	104
A.5 Communication subnetworks .....	112
A.6 Main SCL.....	117
Annex B (normative) SCL enumerations according to IEC 61850-7-3 and IEC 61850-7-4 ....	118
Annex C (informative) Syntax extension examples.....	124
C.1 Extension syntax for drawing layout coordinates.....	124
C.2 Extension syntax for maintenance .....	126
Annex D (informative) Example .....	127
D.1 Example specification .....	127
D.2 Example SCL file contents .....	129
Annex E (informative) XML schema definition of SCL variants .....	138

Figure 1 – Reference model for information flow in the configuration process.....	11
Figure 2 – SCL object model .....	13
Figure 3 – Configuration example .....	15
Figure 4 – UML diagram overview of SCL schema .....	21
Figure 5 – Elements of the signal identification as defined in IEC 61850-7-2 .....	26
Figure 6 – Elements of the signal name using functional naming .....	27
Figure 7 – Elements of the signal name using product naming .....	27
Figure 8 – Names within different structures of the object model .....	28
Figure 9 – UML diagram of Header section .....	29
Figure 10 – UML diagram of Substation section .....	31
Figure 11 – UML diagram for equipment type inheritance and relations .....	36
Figure 12 – IED structure and access points .....	44
Figure 13 – UML description of IED related schema part – base .....	45
Figure 14 – UML description of IED related schema part for Control blocks .....	46
Figure 15 – UML description of IED related schema part – LN definition .....	47
Figure 16 – UML diagram overview of the Communication section .....	68
Figure 17 – UML overview of DataTypeTemplate section .....	74
Figure C.1 – Coordinate example .....	124
Figure D.1 – T1-1 Substation configuration .....	127
Figure D.2 – T1-1 Communication configuration .....	128
Figure D.3 – T1-1 Transformer bay .....	129
Table 1 – The files composing the XML schema definition for SCL .....	20
Table 2 – Attributes of the Private element .....	23
Table 3 – Attributes of the Header element .....	29
Table 4 – Attributes of the History item (Hitem) element .....	30
Table 5 – Primary apparatus device type codes .....	38
Table 6 – Attributes of the Terminal element .....	39
Table 7 – Attributes of the SubEquipment element .....	40
Table 8 – Attributes of the LNode element .....	40
Table 9 – Attributes of the IED element .....	48
Table 10 – List of service capabilities and setting elements and attributes .....	49
Table 11 – Attributes of the Access point element .....	51
Table 12 – Attributes of the IED server element .....	52
Table 13 – Attributes of the Authentication element .....	53
Table 14 – Attributes of the LDevice element .....	53
Table 15 – Attributes of the LN0 element .....	54
Table 16 – Attributes of the LN element .....	55
Table 17 – Attributes of the DOI element .....	56
Table 18 – Attributes of the DAI element .....	56
Table 19 – Attributes of the SDI element .....	57
Table 20 – Attributes of the DataSet element .....	57
Table 21 – Attributes of the FCDA element .....	58

Table 22 – Attributes of the report control block element.....	59
Table 23 – Attributes of the RptEnabled element .....	60
Table 24 – Attributes of the ClientLN element.....	61
Table 25 – Attributes of the log control block element.....	62
Table 26 – Attributes of the GSE control block element.....	63
Table 27 – Attributes of the sampled value control block element.....	64
Table 28 – Attributes of the Smv Options element .....	64
Table 29 – Attributes of the setting control block element .....	65
Table 30 – Attributes of the Input/ExtRef element .....	66
Table 31 – Attributes of the Association element .....	67
Table 32 – Attributes of the Subnetwork element .....	69
Table 33 – Attributes of the ConnectedAP element .....	70
Table 34 – Attributes of the GSE element.....	71
Table 35 – Attributes of the SMV element.....	72
Table 36 – PhysConn P-Type definitions .....	72
Table 37 – Template definition elements .....	76
Table 38 – Attributes of the LNodeType element.....	76
Table 39 – Attributes of the DO element.....	77
Table 40 – Attributes of the DOType element.....	77
Table 41 – Attributes of the SDO element.....	77
Table 42 – Data type mapping.....	78
Table 43 – Attribute value kind (Valkind) meaning .....	79
Table 44 – Attributes of the DA element .....	80
Table 45 – Attributes of the BDA element .....	82
Table 46 – Attributes of the EnumType element.....	83

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**COMMUNICATION NETWORKS AND SYSTEMS IN SUBSTATIONS –****Part 6: Configuration description language for communication  
in electrical substations related to IEDs**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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 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 IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61850-6 has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

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

FDIS	Report on voting
57/693/FDIS	57/713/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IEC 61850 consists of the following parts, under the general title *Communication networks and systems in substations*:

- Part 1: Introduction and overview
- Part 2: Glossary
- Part 3: General requirements
- Part 4: System and project management
- Part 5: Communication requirements for functions and device models
- Part 6: Configuration description language for communication in electrical substations related to IEDs
- Part 7-1: Basic communication structure for substation and feeder equipment – Principles and models
- Part 7-2: Basic communication structure for substation and feeder equipment – Abstract communication service interface (ACSI)
- Part 7-3: Basic communication structure for substation and feeder equipment – Common data classes
- Part 7-4: Basic communication structure for substation and feeder equipment – Compatible logical node classes and data classes
- Part 8-1: Specific Communication Service Mapping (SCSM) – Mappings to MMS (ISO 9506-1 and ISO 9506-2) and to ISO/IEC 8802-3
- Part 9-1: Specific Communication Service Mapping (SCSM) – Sampled values over serial unidirectional multidrop point to point link
- Part 9-2: Specific Communication Service Mapping (SCSM) – Sampled values over ISO/IEC 8802-3
- Part 10: Conformance testing<sup>1</sup>

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

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

A bilingual version of this standard may be issued at a later date.

---

<sup>1</sup> Under consideration.

## INTRODUCTION

This part of IEC 61850 specifies a description language for the configuration of electrical substation IEDs. This language is called Substation Configuration description Language (SCL). It is used to describe IED configurations and communication systems according to IEC 61850-5 and IEC 61850-7-x. It allows the formal description of the relations between the substation automation system and the substation (switchyard). At the application level, the switchyard topology itself and the relation of the switchyard structure to the SAS functions (logical nodes) configured on the IEDs can be described.

SCL allows the description of an IED configuration to be passed to a communication and application system engineering tool, and to pass back the whole system configuration description to the IED configuration tool in a compatible way. Its main purpose is to allow the interoperable exchange of communication system configuration data between an IED configuration tool and a system configuration tool from different manufacturers.

IEC 61850-8-x and IEC 61850-9-x, which concern the mapping of IEC 61850-7-x to specific communication stacks, may extend these definitions according to their need with additional parts, or just by restrictions on the way the values of objects have to be used.

## COMMUNICATION NETWORKS AND SYSTEMS IN SUBSTATIONS –

### Part 6: Configuration description language for communication in electrical substations related to IEDs

#### 1 Scope

This part of the IEC 61850 series specifies a file format for describing communication related IED (Intelligent Electronic Device) configurations and IED parameters, communication system configurations, switchyard (function) structures, and the relations between them. The main purpose of this format is to exchange IED capability descriptions, and SA system descriptions between IED engineering tools and the system engineering tool(s) of different manufacturers in a compatible way.

The defined language is called Substation Configuration description Language (SCL). The IED and communication system model in SCL is according to IEC 61850-5 and IEC 61850-7-x. SCSM specific extensions or usage rules may be required in the appropriate parts.

The configuration language is based on the Extensible Markup Language (XML) version 1.0.

This standard does not specify individual implementations or products using the language, nor does it constrain the implementation of entities and interfaces within a computer system. This part of the standard does not specify the download format of configuration data to an IED, although it could be used for part of the configuration data.

#### 2 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.

IEC 61346-1:1996, *Industrial systems, installations and equipment and industrial products – Structuring principles and reference designations – Part 1: Basic rules*

IEC 61346-2:2000, *Industrial systems, installations and equipment and industrial products – Structuring principles and reference designations – Part 2: Classification of objects and codes for classes*

IEC 61850-2, *Communication networks and systems in substations – Part 2: Glossary*

IEC 61850-5, *Communication networks and systems in substations – Part 5: Communication requirements for functions and device models*

IEC 61850-7-1, *Communication networks and systems in substations – Part 7-1: Basic communication structure for substation and feeder equipment – Principles and models*

IEC 61850-7-2, *Communication networks and systems in substations – Part 7-2: Basic communication structure for substation and feeder equipment – Abstract communication service interface (ACSI)*

IEC 61850-7-3, *Communication networks and systems in substations – Part 7-3: Basic communication structure for substation and feeder equipment – Common data classes*



IEC 61850-7-4, *Communication networks and systems in substations – Part 7-4: Basic communication structure for substation and feeder equipment – Compatible logical node classes and data classes*

IEC 61850-8-1, *Communication networks and systems in substations – Part 8-1: Specific Communication Service Mapping (SCSM) – Mappings to MMS (ISO 9506-1 and ISO 9506-2) and to ISO/IEC 8802-3*

IEC 61850-9-1, *Communication networks and systems in substations – Part 9-1: Specific Communication Service Mapping (SCSM) – Sampled values over serial unidirectional multidrop point to point link*

IEC 61850-9-2, *Communication networks and systems in substations – Part 9-2: Specific Communication Service Mapping (SCSM) – Sampled values over ISO/IEC 8802-3*

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

*Extensible Markup Language (XML) 1.0*, W3C, available at <http://www.w3.org/TR/2000/REC-xml-20001006>

*Namespaces in XML*, W3C, available at <http://www.w3.org/TR/1999/REC-xml-names-19990114>

*XML Schema Part 0: Primer*, W3C, available at <http://www.w3.org/TR/2001/REC-xmlschema-0-20010502>

*XML Schema Part 1: Structures*, W3C, available at <http://www.w3.org/TR/2001/REC-xmlschema-1-20010502>

*XML Schema Part 2: Datatypes*, W3C, available at <http://www.w3.org/TR/2001/REC-xmlschema-2-20010502>

RFC 1952, *GZIP file format specification version 4.3*, RFC, available at <http://www.ietf.org/rfc/rfc1952.txt>

RFC 2045, *Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies*, RFC, available at <http://www.ietf.org/rfc/rfc2045.txt>

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61850-2 apply.

### 4 Abbreviations

In general, the glossary and abbreviations defined in IEC 61850-2 apply. The following abbreviations are either special for this part of the standard, or particularly useful for understanding this part and are repeated here for convenience.

BDA	Basic Data Attribute, that is not structured
CIM	Common Information Model for energy management applications
DAI	Instantiated Data Attribute
DO	DATA in IEC 61850-7-2, data object type or instance, depending on the context
DOI	Instantiated Data Object (DATA)
DTD	Document Type Definition for an XML document
ID	Identifier
IED	Intelligent Electronic Device
LDInst	Instantiated Logical Device