AS 61850.7.3—2005
IEC 61850-7-3, Ed.1.0 (2003)

AS 61850.7.3—2005

Australian Standard™

Communication networks and systems in substations
Part 7.3: Basic communication structure for substation and feeder equipment—Common data classes

This Australian Standard was prepared by Committee EL-050, Power System Control and Communication. It was approved on behalf of the Council of Standards Australia on 15 August 2005.
This Standard was published on 20 September 2005.

The following are represented on Committee EL-050:

Australian Electrical and Electronic Manufacturers Association
Commerce Queensland
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This Standard was issued in draft form for comment as DR 05209.

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First published as AS 61850.7.3—2005.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 6854 7

PREFACE

This Standard was prepared by the Standards Australia Committee EL-050, Power System Control and Communication.

The objective of this Standard is to provide users and manufacturers of substation automation equipment with specification of common attribute types and common data classes related in substation applications.

This Standard is identical with, and has been reproduced from IEC 61850-7-3, Ed.1.0 (2003), *Communication networks and systems in substations – Part 7.3: Basic communication structure for substation and feeder equipment – Common data classes*.

This Standard is Part of *Communication networks and systems in substations*. The series consists of the following:

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 (this Standard)

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/IEC 9506-1 and ISO/IEC 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

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The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

CONTENTS

INTRODUCTION

This document is part of a set of specifications, which details layered substation communication architecture. This architecture has been chosen to provide abstract definitions of classes and services such that the specifications are independent of specific protocol stacks and objects. The mapping of these abstract classes and services to communication stacks is outside the scope of IEC 61850-7-x and may be found in IEC 61850-8-x (station bus) and IEC 61850-9-x (process bus).

IEC 61850-7-1 gives an overview of this communication architecture. This part of IEC 61850 defines common attribute types and common data classes related to substation applications. These common data classes are used in IEC 61850-7-4. To define compatible data classes, the attributes of the instances of data shall be accessed using services defined in IEC 61850-7-2.

This part is used to specify the **abstract common data class** definitions. These abstract definitions shall be mapped into concrete object definitions that are to be used for a particular protocol (for example MMS, ISO 9506).

STANDARDS AUSTRALIA

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Communication networks and systems in substations Part 7.3: Basic communication structure for substation and feeder equipment—Common data classes

1 Scope

This part of IEC 61850 specifies common attribute types and common data classes related to substation applications. In particular it specifies:

- common data classes for **status information**,
- common data classes for **measured information**,
- common data classes for **controllable status information**,
- common data classes for **controllable analogue set point information**,
- common data classes for **status settings**,
- common data classes for **analogue settings** and
- **attribute types** used in these common data classes

This international standard is applicable to the description of device models and functions of substations and feeder equipment.

This international standard may also be applied, for example, to describe device models and functions for:

- substation to substation information exchange,
- substation to control centre information exchange,
- power plant to control centre information exchange,
- information exchange for distributed generation, or
- information exchange for metering.

2 Normative references

References to international standards that are struck through in this clause are replaced by references to Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is identified as such.

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

AS 61850.2, *Communication networks and systems in substations, Part 2: Glossary* (Identical to IEC 61580-2)

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