

Australian Standard™

**Communication networks and systems  
in substations  
Part 1: Introduction and overview**

**STANDARDS**  
Australia



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.  
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The following are represented on Committee EL-050:

Australian Electrical and Electronic Manufacturers Association  
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## 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 manufacturers and users of substation automation equipment and systems with an explanation of their structural elements, configurations and basic functions in order to provide an introduction to the more detailed standards of the series to be adopted in Australia.

This Standard is identical with, and has been reproduced from IEC/TR 61850-1, Ed.1 (2003), *Communication networks and systems in substations – Part 1: Introduction and overview*.

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

- Part 1: Introduction and overview (this Standard)
- 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/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 bidirectional multidrop point to point link
- Part 9.2: Specific communication service mapping (SCSM)—Sampled values over ISO/IEC 8802-3

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## STANDARDS AUSTRALIA

## Australian Standard

## Communication networks and systems in substations

## Part 1: Introduction and overview

**1 Scope**

This technical report is applicable to substation automation systems (SAS). It defines the communication between intelligent electronic devices (IEDs) in the substation and the related system requirements.

This part gives an introduction and overview of the IEC 61850 standard series. It refers to and includes text and Figures from other parts of the IEC 61850 standard series.

**2 Reference documents**

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.

IEC 60870-5-103:1997, *Telecontrol equipment and systems – Part 5-103: Transmission protocols – Companion standard for the informative interface of protection equipment*

~~IEC 61850-3: Communication networks and systems in substations – Part 3: General requirements~~

AS 61850.3, *Communication networks and systems in substations, Part 3: General requirements* (identical to IEC 61850-3)

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

AS 61850.5, *Communication networks and systems in substations, Part 5: Communication requirements for functions and device models* (identical to IEC 61850-5)

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

AS 61850.7.1, *Communication networks and systems in substations, Part 7.1: Basic communication structure for substation and feeder equipment—Principles and models* (identical to IEC 61850-7-1)

~~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)~~

AS 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)* (identical to IEC 61850-7-2)