

# TECHNICAL SPECIFICATION

# IEC TS 61968-2

First edition  
2003-11

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## Application integration at electric utilities – System interfaces for distribution management –

### Part 2: Glossary

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## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Terms and definitions.....	6
3 Glossary of abbreviations in the IEC 61968 series.....	20
Bibliography.....	23

Withdrawing

iTeh Standards  
(<https://standards.iteh.ai>)  
Document Preview

<https://standards.iteh.ai/catalog/standards/iec/ab2d6970-6713-4cf1-83ea-5b91e9967073/iec-ts-61968-2-2003>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**APPLICATION INTEGRATION AT ELECTRIC UTILITIES –  
SYSTEM INTERFACES FOR DISTRIBUTION MANAGEMENT –****Part 2: Glossary**

## FOREWORD

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- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 61968-2, which is a technical specification, has been prepared by IEC technical committee 57: Power system control and associated communications.

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

Enquiry draft	Report on voting
57/547/CDV	57/633/RVC

Full information on the voting for the approval of this technical specification 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 61968 consists of the following parts under the general title *Application integration at electric utilities – System interfaces for distribution management*:

Part 1: Interface architecture and general requirements

Part 2: Glossary

Part 3: Interface standard for network operations<sup>1</sup>

Part 4: Interface standard for records and asset management<sup>1</sup>

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

- transformed into an International standard;
- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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

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<sup>1</sup> Under consideration.

## INTRODUCTION

The IEC 61968 series is intended to facilitate inter-application integration, as opposed to intra-application integration, of the various distributed software application systems supporting the management of utility electrical distribution networks. Intra-application integration is aimed at programs in the same application system, usually communicating with each other using middleware that is embedded in their underlying runtime environment, and tends to be optimized for close, real-time, synchronous connections and interactive request/reply or conversation communication models. IEC 61968, by contrast, is intended to support the inter-application integration of a utility enterprise that needs to connect disparate applications that are already built or new (legacy or purchased applications), each supported by dissimilar runtime environments. Therefore, IEC 61968 is relevant to loosely coupled applications with more heterogeneity in languages, operating systems, protocols and management tools. IEC 61968 is intended to support applications that need to exchange data on an event driven basis. IEC 61968 is intended to be implemented with middleware services that broker messages among applications, and will complement, but not replace utility data warehouses, database gateways, and operational stores.

The series of standards will be using a lot of definitions, terms and abbreviations from the area of distribution management as well as from the area of Information and Communication Technology. This glossary part defines the terms and abbreviations as they are used in the context of this series of standards.

The contents of this part 2 contains the following clauses.

**Table 1 – Document overview for IEC 61968-2**

Clause	Title	Purpose
1	Scope	The scope, purpose, aim, and organization of IEC 61968 are described.
2	Terms and definitions	Definition of terms that are specific to this series of standards or may have different interpretations when not defined explicitly.
3	Glossary of abbreviations	Definitions of abbreviations that are specific to this series of standards.

# APPLICATION INTEGRATION AT ELECTRIC UTILITIES – SYSTEM INTERFACES FOR DISTRIBUTION MANAGEMENT –

## Part 2: Glossary

### 1 Scope

This glossary, accompanying the IEC 61968 series, is the second part in the series that, taken as a whole, define interfaces for the major elements of an interface architecture for Distribution Management Systems (DMS). This part of IEC 61968, referred to as Part 2, identifies and explains terms and abbreviations used in the remaining parts of IEC 61968.

As used in IEC 61968, a DMS consists of various distributed application components for the utility to manage electrical distribution networks. These capabilities include monitoring and control of equipment for power delivery, management processes to ensure system reliability, voltage management, demand-side management, outage management, work management, automated mapping and facilities management.

### 2 Terms and definitions

For the purposes of the IEC 61968 series, the following terms and definitions apply.

#### 2.1

##### **abstract component**

smallest logical block of software considered in the IEC 61968 interface reference model. Abstract components have interfaces that will be defined in future parts 3 to 10 of the IEC 61968 series. It is expected that different vendors will supply physical Application Components that support the interfaces for one or more abstract components

#### 2.2

##### **adapter**

layer of software that connects one component, for example an application, to another component, for example an interface implementation or a middleware implementation

NOTE Same as object adapter.

#### 2.3

##### **address/network connection**

linkage of customer to premise to electrical feeder

#### 2.4

##### **application component**

block of software with specific functions and interfaces. A distribution management system is considered to be a set of one or more applications. Each application consists of one or more application components

#### 2.5

##### **attribute**

identifiable association between an object and a value. An attribute is a property of an object

#### 2.6

##### **audit trail**

information saved in a sequential form so that an event can be traced back to its origin



**2.7****automated mapping/geofacilities**

geospatial management system utilizing computer graphics technology to enter, store, and update graphic and non-graphic information. Automated mapping reduces the cost and effort in map creation and maintenance and facility record keeping. An automated mapping/geospatial system processes geographic depictions and related non-graphic data elements for each entity stored in a digital database. The graphic representations are referenced using a coordinate system that relates to locations on the surface of the earth. Information in the database can be queried and displayed based upon either the graphic or non-graphic attributes of the entities. The system provides the utility a single, continuous electronic map of the service territory

**2.8****automatic generation control**

controls generation such that average hourly generation control follows predispach schedule. Generation levels may be changed based on improving economic operation, emergency conditions, or other improved conditions

**2.9****billing system**

electronic billing, customer account inquiries

**2.10****breaker control**

operator or manual opening or closing of a circuit breaker to isolate a fault or change the network configuration

**2.11****broker**

middleware component that provides a means for communication between distributed application components

**2.12****busbar voltage control**

regulates the voltage on the distribution substation busbar by controlling transformer load tap changing. Includes control of either single or paralleled substation transformers

**2.13****business functions**

functions that form part of a business process. The functions may be performed manually and/or by one or more software applications

**2.14****cartographic map**

map, which displays planimetric and/or topographic information and which, may be used as a base for a thematic layer. Features, which may be included on a base map, are roads, rivers, major structures (buildings), contours, etc. Feature presentation will, however, be map scale dependent. A cartographic feature is a term applied to the natural or cultural objects shown on a map or chart

**2.15****circuit**

normal or actual configuration of a specific distribution circuit originating at a substation and extending to either normally open switches of other distribution circuits or simply terminating at different end points

NOTE Same as feeder.

**2.16****class**

definition of the attribute and methods for a type of object (see object)

**2.17****clearance**

special authority given a person or persons working on de-energized cables, wires or equipment

NOTE Also known as safety permit.

**2.18****client**

requester of either or both services or resources, i.e. the code or process that invokes an operation on an object

**2.19****cold load pickup**

restores service to a distribution feeder or feeders after a prolonged outage (minutes or more) without causing feeder and substation protective relays to operate due to high inrush currents.

**2.20****common facilities**

sets of programs and documents used by applications through a common interface

**2.21****communication services**

to connect multiple components, an integration system must reconcile network and protocol differences transparently to the components. The IEC specifies therefore a basic set of appropriate communication services

**2.22****component**

set of services with a well-defined interface. A component can be as large as a complete (legacy) application, which implements multiple services or as small as a tiny widget which implements only one service. Components are independent software entities, which encapsulate (private) data the component needs to know to perform its business function. For example, it can perform any function that is required for distribution management. Typical categories of functions are showed in the interface reference model

**2.23****component adapter**

piece of software that has the role of making non compliant components compliant with the IEC 61968 series. As such, the component adapter only goes as far as necessary to make the component conformant to one or more specific IEC interface specifications. A component adapter is a type of wrapper

**2.24****configuration data exchange**

inter-substation computer communications to transfer control/monitoring (SCADA) of devices to an adjacent substation due to reconfiguration or outage

**2.25****connectivity model**

complete description of the electrical connections between lines, cables, switches, isolators and other network components