

# INTERNATIONAL STANDARD

**IEC**  
**61968-3**

First edition  
2004-03

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

### Part 3: Interface for network operations

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 3: Interface for network operations**

FOREWORD

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International Standard IEC 61968-3 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
57/694/FDIS	57/714/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 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 for network operations

Part 4: Interface for records and asset management<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- withdrawn;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 publication may be issued at a later date.

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<sup>1</sup> Under consideration.

## INTRODUCTION

The IEC 61968 series of standards is intended to facilitate *inter-application integration* as opposed to *intra-application integration*. 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 optimised for close, real-time, synchronous connections and interactive request/reply or conversation communication models. IEC 61968, in 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, these interface standards are relevant to loosely coupled applications with more heterogeneity in languages, operating systems, protocols and management tools. This series of standards is intended to support applications that need to exchange data every few seconds, minutes, or hours rather than waiting for a nightly batch run. This series of standards, which are intended to be implemented with middleware services that exchange messages among applications, will complement, but not replace utility data warehouses, database gateways, and operational stores.

As used in IEC 61968, a Distribution Management System (DMS) consists of various distributed application components for the utility to manage electrical distribution networks. These capabilities include monitoring and control of equipment, power delivery, management processes to ensure system reliability, voltage management, demand-side management, outage management, work management, automated mapping and facilities management. Standard interfaces are defined for each class of applications identified in the Interface Reference Model (IRM), which is described in IEC 61968-1.

This Part of IEC 61968 contains the Clauses shown in Table 1.

**Table 1 – Document overview for IEC 61968-3**

Clause	Title	Purpose
1	Scope	The scope and purpose of the document are described.
2	Normative references	Documents that contain provisions which, through reference in this text, constitute provisions of this International Standard.
3	Reference and information models	Description of the relevant parts of the interface reference model, static information model and message type naming convention.
4	Message types – general	Requirements common to all message types described in Clause 5.
5	Network operations message types	Message types related to the exchange of information for operational documents namely operation restrictions, outage, safety and switching schedule.
Annex A	Message type verbs	Description of the verbs that are used for the message types.

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

## Part 3: Interface for network operations

### 1 Scope

The IEC 61968 series, taken as a whole, defines interfaces for the major elements of an interface architecture for Distribution Management Systems (DMS). IEC 61968-1 identifies and establishes requirements for standard interfaces based on an Interface Reference Model (IRM). Parts 3 to 10 of the IEC 61968 series define interfaces relevant to each of the major business functions described by the Interface Reference Model.

As used in the IEC 61968 series, 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.

The IEC 61968 series is limited to the definition of interfaces and is implementation independent. It provides for interoperability among different computer systems, platforms, and languages. Methods and technologies used to implement a functionality conforming to these interfaces are considered outside of the scope of the IEC 61968 series; only the interface itself is specified in these standards.

This part specifies the information content of a set of message types that can be used to support many of the business functions related to network operations. Typical uses of the message types defined in this part include data acquisition by external systems, fault isolation, fault restoration, trouble management, maintenance of the plant, and the commissioning of the plant.

An additional part of IEC 61968 will document integration scenarios or use cases, which are informative examples showing typical ways of using the message types defined in this document as well as message types to be defined in other parts of the IEC 61968 series.

### 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 61850-7-4:2003, *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 61968-1, *System interfaces for distribution management – Part 1: Interface architecture and general requirements*