

**57/547/CDV****COMMITTEE DRAFT FOR VOTE (CDV)
PROJET DE COMITÉ POUR VOTE (CDV)**

		Project number Numéro de projet		IEC 61968-2 TR Ed. 1.0	
IEC/TC or SC: TC 57 CEI/CE ou SC:		Date of circulation Date de diffusion 2001-08-24		Closing date for voting (Voting mandatory for P-members) Date de clôture du vote (Vote obligatoire pour les membres (P)) 2002-01-25	
Titre du CE/SC:			TC/SC Title: Power system control and associated communications		
Secretary: Dr. Andreas Huber, Germany Secrétaire:					
Also of interest to the following committees Intéresse également les comités suivants TC 1			Supersedes document Remplace le document 57/444/CD - 57/546/CC		
Horizontal functions concerned Fonctions horizontales concernées					
<input type="checkbox"/> Safety Sécurité		<input type="checkbox"/> EMC CEM		<input type="checkbox"/> Environment Environnement	
				<input type="checkbox"/> Quality assurance Assurance qualité	

CE DOCUMENT EST TOUJOURS A L'ETUDE ET SUSCEPTIBLE DE MODIFICATION.
IL NE PEUT SERVIR DE REFERENCE.

LES RECIPIENDAIRES DU PRESENT DOCUMENT SONT INVITES A PRESENTER,
AVEC LEURS OBSERVATIONS, LA NOTIFICATION DES DROITS DE PROPRIETE
DONT ILS AURAIENT EVENTUELLEMENT CONNAISSANCE ET A FOURNIR UNE
DOCUMENTATION EXPLICATIVE.

THIS DOCUMENT IS STILL UNDER STUDY AND SUBJECT TO CHANGE. IT
SHOULD NOT BE USED FOR REFERENCE PURPOSES.

RECIPIENTS OF THIS DOCUMENT ARE INVITED TO SUBMIT, WITH THEIR
COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH
THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

Titre :

Title :

Draft IEC 61968-2 Ed. 1.0
System interfaces for distribution management –
Part 2: Glossary

Note d'introduction

Introductory note

The French NC indicated that it would not provide a
French version of this project. The CDV is therefore
circulated in English only.

INTERNATIONAL ELECTROTECHNICAL COMMISSION

System Interfaces For Distribution Management –**Part 2: Glossary****FOREWORD**

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61968 has been prepared by Working Group 14, of IEC technical committee 57: Power System Control And Associated Communications.

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

FDIS	Report on voting
57/274/NP	57/294/RVN

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

CONTENTS

	Page
1 Scope	4
2 Normative references.....	5
3 Glossary of terms in IEC 61968	6
4 Glossary of abbreviations in IEC 61968	21

Tables

Table 1: Document Overview For IEC 61968 - Part 2	4
---	---

System Interfaces For Distribution Management – Part 2: Glossary

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 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, 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, 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:

Clause	Title	Purpose
1.	Scope	Standard IEC 61968's scope, purpose, aim, and organization are described.
2.	Normative References	Documents that contain provisions which, through reference in this text, constitute provisions of this International Standard.
3.	Glossary of terms	Definition of terms that are specific to this series of standards or may have different interpretations when not defined explicitly.
4.	Glossary of abbreviations	Definitions of abbreviations that are specific to this series of standards.

Table 1: Document Overview For IEC 61968 - Part 2

1 Scope

This glossary, accompanying the IEC 61968 standard 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 standard, referred to as Part 2, identifies and explains terms and abbreviations used in the remaining parts.

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 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050-601(1985-10) *International Electrotechnical Vocabulary. Chapter 601: Generation, transmission and distribution of electricity - General*

IEC 60050-603(1986-08), *International Electrotechnical Vocabulary. Chapter 603: Generation, transmission and distribution of electricity - Power systems planning and management*

IEC 60050-604(1987-03) *International Electrotechnical Vocabulary. Chapter 604: Generation, transmission and distribution of electricity - Operation*

IEC 60050-605(1983-01) *International Electrotechnical Vocabulary. Generation, transmission and distribution of electricity - Substations*

3 Glossary of terms in IEC 61968

3.1

abstract component

the smallest logical block of software considered in the IEC 61968 Interface Reference Model. Abstract components have interfaces defined in Parts 3 to 10. It is expected that different vendors will supply physical Application Components that support the interfaces for one or more abstract components.

3.2

adapter

A layer of software that connects one component, e.g. an application, to another component, e.g. an interface implementation or a middleware implementation. Same as object adapter.

3.3

address/network connection

linkage of customer to premise to electrical feeder

3.4

application component

a 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.

3.5

attribute

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

3.6

audit trail

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

3.7

automated mapping/geofacilities

a 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.

3.8

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.

3.9**billing system**

Electronic billing, customer account inquiries

3.10**breaker control**

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

3.11**broker**

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

3.12**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.

3.13**business functions**

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

3.14**cartographic map**

A 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

3.15**circuit**

The 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. Same as feeder.

3.16**class**

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

3.17**clearance (also known as safety permit)**

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

3.18**client**

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

3.19**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.

3.20**common facilities**

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

3.21**communication services**

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

3.22**component**

a 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.

3.23**component adapter**

a piece of software that has the role to make non compliant Components compliant with the IEC 61968. 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.

3.24**configuration data exchange**

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

3.25**connectivity model**

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

3.26**contingency analysis**

A study of the effect of unexpected failure or outage of a system component. In distribution systems it generally involves the study of how to restore power to customers when the normal supply path is unavailable.

Also an operating application which computes the potential effect of contingencies involving the loss of generation and transmission facilities. A specific set of predefined contingencies is analyzed on a cyclic basis. It simulates a contingency and calculates the changes in busbar voltages and power flows resulting from the contingency. The base conditions for this calculation are the Busbar voltages or power flows obtained from the load flow program

3.27**CORBA**

Common Object Request Broker Architecture

3.28**CORBA compliance**

The minimum required for a CORBA compliant system is adherence to the specifications in CORBA core and one mapping. Interoperability and inter-working are separate compliance points.

3.29**crew dispatch schedule**

The dynamically created schedule in which the work order for a specific crew is described. The schedule is based on the planned work or unplanned service interruptions in the infrastructure known at the moment the schedule was created.

3.30**crew management**

Tracking of crew details schedules, crewmembers and all general activities related to outage and general operational investigations.

3.31**crew scheduling**

The dispatch of service people for customer service calls and distribution construction, and the recording and monitoring of time spent on each call

3.32**crew tracking reports**

Dynamic information about the location, and progress of field crews in dealing with the work assigned to the current control

3.33**current control**

Manages circulating current in a parallel transformer configuration at the distribution substation. Reduces substation transformer load losses and minimizes transformer overloads by balancing loading between transformers in the same or adjacent distribution substations.

3.34**customer**

Resident who is supplied with power and is calling in because he/she has no power

3.35**customer outage analysis**

Up-to-date information on the number of customers affected by a specific network incident

3.36**data type**

A categorization of values operation arguments, typically covering both behavior and representation (i.e., the traditional non-OO programming language notion of type)

3.37**data model**

A data model is a collection of descriptions of data structures and their contained fields, together with the operations or functions that manipulate them

3.38**data warehouse**

A repository of Data

3.39**database management / security**

Provides the required maintenance of data elements and controls the data requirements of other subsystems. Security management encompasses access control authorization facilities and partitioning the network. Security management may also include support for encryption and maintenance of security logs.

3.40**deferred synchronous request**

a request where the client does not wait for completion of the request, but does intend to accept results later. Contrast with synchronous request and one-way request

3.41**demand-side management**

Functions that enable the utility to manage the demand curve in an emergency or planned mode and to determine the customer load curve. Demand-side management functions include load control and load survey.

3.42**department**

Business function, e.g. handling outages, repairs on meters and repairs on the distribution network, or customer care

3.43**device operation history**

Data concerning the operation of electrical devices, often used in condition-based maintenance schemes

3.44**dispatcher**

Person responsible for the controls at the master station.

3.45**distributed load control**

Distributed control is performed with both utility commands from a remote location like direct load control and a local controller that responds to local conditions. The utility has the ability to activate the control action, but the customer retains the option to override or modify the utility direct load control command.

3.46**distribution automation**

Distribution Automation defines those actions to carry out automation of the Distribution Networks to enable automatic or remote operation. It may include retrofitting switchgear with actuators/motors and the installation of RTU's. The action to restore supply post-fault may be initiated manually via a SCADA System, or automatically by IED's, RTU's, FPI's or EFI's.

3.47**Distribution Management System - DMS**

The integration of business processes, hardware, software, and telecommunications equipment that provide effective tools to manage the operational business processes related to network management, outage management, power quality and other supporting operational practices.

3.48**domain**

Another word for scope. The distribution management domain covers the business functions, software systems, physical equipment and staff concerned with the distribution of electrical power to consumers.

The term utility domain is used to describe the software systems, equipment, staff and consumers of a single utility organization, which could be a company or a department. It is expected that within each utility domain, the systems, equipment, staff and consumers can be uniquely identified. When information is exchange between two utility domains, then identifiers may need extending with the identity of the utility organization in order to guarantee global uniqueness

3.49**economic dispatch**

The economic dispatch function is closely coupled with the automatic generation control function. It allocates generation among committed units in the real-time mode to minimize total operating cost. In the study mode, economic dispatch works with unit commitment to allocate generation among unit schedules over a period of seven days.

3.50**electronic billing**

A process which uses computers and data communications, as opposed to regular mail service, to inform customers about their electric power consumption and to request payment

3.51**electronic billing**

The transmission of an electronic customer usage bill on a periodic basis (typically monthly) to customers

3.52**emergency response**

An off-site facility that has direct dial lines into regulatory agencies and the press for use in a nuclear emergency

3.53**energy accounting**

The accounting of energy sales and purchases to and from other utilities. The data collection function of energy accounting tracks the actual amount of power exchanged with other utilities. The account reconciliation function of energy accounting reports inadvertent data by comparing data from the interchange planning function (planned power exchange) with the data from the data collection function of energy accounting (actual power exchanged). The energy accounting function also includes billing cogenerators and other utilities for power sold.

3.54**Energy Management System (EMS)**

The distributed processing system that includes hardware and software for power utility management

3.55**equipment characteristics**

Data concerning the nature and operational parameters of physical devices designed to perform particular functions. A characteristics can be viewed as a relationship between two or more variable quantities which describes the performance of a device under given condition.

3.56**equipment operation statistics**

Data such as the duration of time, the number of times, or other parameters that indicate how a physical device has performed its function over a period of time.

3.57**fault**

An unplanned power interruption

3.58**fault analysis**

The review of fault records, sequence of events records, and other documentation produced upon a fault to determine the cause of the fault, its total impact, steps taken by the system to recover from the fault, and the possible avoidance of a future occurrence. This data includes pre-fault information as well as post fault information for a specified period.

3.59**fault isolation**

A process of isolating the segment of faulted transmission or distribution network.

3.60**fault locations estimates**

An estimate based on the obtained information about the fault, e.g. Ohms from a distance relay, which is used to calculate the estimated location of the fault.

3.61**fault restoration**

A process of restoring the faulted segment of transmission or distribution network.

3.62**feeder**

The 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. Same as circuit.

3.63**fuse**

A protective device designed to open when current thresholds (excessive amperes) are exceeded.

3.64 implementation

The portion of a code composition that is executed, ie a definition that provides the information needed to create an object and allow the object to participate in providing an appropriate set of services. An implementation typically includes a description of the data structure used to represent the core state associated with an object, as well as definitions of the methods that access that data structure. It will also typically include information about the intended interface of the object.

3.65 incident simulation

Recreating an incident on the network for analysis and also for training

3.66 instance

An object is an instance of an interface if it provides the operations, signatures and semantics specified by that interface. An object is an instance of an implementation if its behavior is provided by that implementation.

3.67 inter application

Between two or more applications

3.68 Interactive Voice Response - IVR

Interactive voice response systems permit customer telephone inquiries to be processed without the need for human intervention through the use of automated query/response scripts. Human intervention can often be requested if needed. These systems are often used for trouble reporting.

3.69 interface

The complete protocol used by a class for all of its messaging, i.e. a listing of the operations and attributes that an object provides. This includes the signatures of the operations, and the types of the attributes. An interface definition ideally includes the semantics as well. An object satisfies an interface if it can be specified as the target object in each potential request described by the interface.

3.70 interface adapters

A standards software interface that facilitates a software module to communicate and share of information with other software modules.

3.71 interface profile

The description of the set of interfaces for an abstract component using a specified type of middleware

3.72 Interface Reference Model - IRM

The architecture model of business functions, abstract components and middleware.

**3.73
interoperability**

The ability for two or more ORBs to cooperate to deliver requests to the proper object. Inter-operating ORBs appear to a client to be a single ORB. interruptible customer list
A list of identified customers who have a supply contract that permits their electricity supplier to (temporarily) interrupt its service to that customer if a need arises

**3.74
intra application**
Within the same application**3.75
inventory**
A list of articles, typically giving the code number, quantity, and value of each.**3.76
issue**
Item Issue refers to the physical movement of an item from a stocking location. An issue can result from the fulfillment of a sales order, or from a manufacturing production order, or from a work order. [definition provided by the Open Applications Group]**3.77
load control**
Explicit action taken to reduce the load at a given point in time. The action may involve: voltage reduction, switching off selected customer devices or totally interrupting supply to some customers, encouraging customers to modify their normal consumption pattern, etc**3.78
load forecast**
A forecast of the expected load at a specific time and day-of-week for each feeder in the network**3.79
load forecasting**
The load forecasting function predicts the hourly system load. The load forecasting function maintains a real-time forecast and a study forecast. The real-time forecast is based on actual historical load and weather data and generates a load forecast for the current hour. The study forecast uses a completely independent set of historical and predicted data that the operator may use to set up and evaluate hypothetical situations up to seven days in the future**3.80
load shedding**
Emergency disconnection of customer loads to preserve the power network operation. This removes overloads and arrests consequent frequency decline without disrupting the utility transmission grid.**3.81
maintenance**
Work involving inspection, cleaning, adjustment, or other service of equipment to enable it to perform better or to extend its service life. Generally, although not always, equipment must be taken out of service while it is undergoing maintenance.

3.82**maintenance scheduling**

Planning the specific times when a set of maintenance activities should be performed taking into account a variety of constraining factors such as the impact of removing the equipment from service, availability and work load of maintenance crews, etc.

3.83**message**

A specification of the conveyance of information from one instance to another, with the expectation that activity will ensue. A message may specify the raising of a signal or the call of an operation.

3.84**message brokers**

Message broker enables objects to transparently make and receive requests and responses in a distributed environment.

3.85**metadata**

Data that describes data. Data dictionaries and repositories are examples of metadata. The term may also refer to any file or database that holds information about another database's structure, attributes, processing or changes.

3.86**meter records**

History of the meter usage readings on a periodic basis. Meter records will also include customers who used the power at the meter location

3.87**metering and load management**

Remote meter-reading, time-of-use management, service connect/disconnect

3.88**method**

A single request or message made available by a server, ie an implementation of an operation. Code that may be executed to perform a requested service. Methods associated with an object may be structured into one or more programs.

3.89**middleware**

Middleware is a term used to describe the software needed to support interactions between clients and servers. Middleware aims to make a heterogeneous, distributed environment appear as a single "virtual machine" that provides access to all resources and business components on the network, hiding the complexity of the necessary communication protocols and services. Examples of middleware categories include: message brokers, message oriented middleware, transactional middleware, database middleware, and many others.

3.90**middleware adapter**

Middleware Adapter is a piece of software that has the role to make non-IEC compliant Middleware Services compliant with the IEC 61968 interface specifications.

3.91**middleware services**

The Middleware Services are required to provide a set of APIs so that the previous layers in the IEC 61968 Service Profile among others can locate transparently across the network, can interact with other applications or services, are independent from Communication Profile Services, are reliable and available, etc.

3.92**network**

The distribution network (not the transport or transmission network)

3.93**network calculation**

A suite of applications software used to analyze the capacity, efficiency and reliability of the power network

3.94**network state supervision**

The monitoring and supervision of feeder networks

3.95**object**

An instance of a class, supporting encapsulation, inheritance and polymorphism, i.e. a combination of state and a set of methods that explicitly embodies an abstraction characterized by the behavior of relevant requests. An object is an instance of an implementation and an interface. An object models a real-world entity, and it is implemented as a computational entity that encapsulates state and operations (internally implemented as data and methods) and responds to request or services.

3.96**object adapter**

The ORB component, which provides object reference, activation, and state related services to an object implementation. There may be different adapters provided for different kinds of implementations.

3.97**object creation**

An event that causes the existence of an object that is distinct from any other object.

3.98**operation**

Alternative term for method (computing)

Or - non-permanent changes made to distribution network equipment e.g. opening or closing a switch, applying a portable earth. Operations do not normally include equipment installation or removal (electrical).

3.99**Optimal Power Flow - OPF**

Optimal solution of power flow calculations in a transmission or a distribution network

3.100**ORB core**

The ORB component which moves a request from a client to the appropriate adapter for the target object

**3.101
outage**

Description of a no power situation. This may include the fault of the outage situation if it is known

**3.102
outage analysis**

Uses information from distribution automation, the energy management system, and the customer information system regarding trouble calls, blackouts, and circuit outages to analyze service outages and assist in the power restoration process.

**3.103
Outage Management System - OMS**

All related business processes and supporting technologies related to interruption of electric power supply to customers. These generally include trouble call handling, customer notification, probable device prediction, dispatching workflows for outages and general electric service problems, network management, crew management and reliability reporting.

**3.104
outage report**

Progress report on restoration of supplies following a fault. Outage reports indicate whether each outage is a chargeable outage to the utility and must be reported in reliability statistics.

**3.105
outage schedules**

Data, which defines the time, duration and extent of, planned outages

**3.106
outage report**

Report with outage data

**3.107
peer**

Used in the context of inter-process communication to describe another process with similar capabilities of making and servicing requests

**3.108
performance monitoring**

Implements data acquisition processes to obtain performance data by using specialized performance testing equipment. Documents performance-monitoring results.

**3.109
planning**

Determines the regulating and support conditions of voltage control devices and the necessary magnitude, sign, and location of reactive power injection into an electric network to maintain desired system voltage profile; minimize system loss; maintain system stability while maximizing power transfer; reduce generation production costs; and unload transmission system equipment through reduction of reactive flows

3.110
power flow

The power flow function allows dispatchers to study control actions upon the power system. The power flow function operates in two modes. Dispatcher power flow allows the operator to determine the effects of control actions (breaker switching, tap changing, and interchange adjustments) on the system. In optimal power flow, the control actions are automatically predetermined within the limitations of the power system.

3.111
process

A program is an inanimate entity; only when a processor "breathes life" into it does it become the "active" entity we call process. This Process is an individually controllable computation entity, which may go through a series of discrete Process states e.g. ready state, running state, blocked state, etc.

3.112
purchase order

Purchase Order is a document authorizing the purchase of goods or services from a specific vendor. The purchase order includes the terms of the purchase, delivery requirements, identification of goods or services ordered, as well as their quantities and prices. [definition provided by the Open Applications Group]

3.113
quality index analysis

A report on the overall performance of the utility in the supply of power to its customers

3.114
receivable

Receivable is a transaction representing an invoice, credit memo or debit memo to a customer. A receivable is an open (unpaid) item in the Accounts Receivable ledger. [definition provided by the Open Applications Group]

3.115
release / clearance remote switch command scheduling

The preparation and execution of switching plans for remote switch operations and management of necessary safety documentation

3.116
request

A client issues a request to cause a service to be performed. A request consists of an operation (i.e. the name of a method) and zero or more parameters.

3.117
results

The information returned to the client, which may include values as well as status information indicating that exceptional conditions were raised in attempting to perform the requested service.

3.118
security

Physical security systems that restrict access to specific areas of a facility via card readers or video cameras

3.119
server

An entity providing a service or resources, i.e. a process implementing one or more operations on one or more objects.

3.120
server object

An object providing response to a request for a service. A given object may be a client for some requests and a server for other requests

3.121
short circuit analysis

An application program used for analysis of transmission or distribution network.

3.122
state

The time-varying properties of an object that affect that object's behavior

3.123
substation state supervision

The monitoring and control of primary substations, including the status of circuit-breakers and isolators

3.124
supply restoration assessment

Analysis of switching options after a network fault to re-connect supply to as many customers as possible

3.125
switching simulation

Simulating the switching operations to isolate a network section and subsequently reconnect it

3.126
thermal ratings

Temperature operating limits of a device.

3.127
type

An abstraction used for composition that describes the underlying properties of an entity, and as a protection mechanism used to verify the expected consistency of such entities at compile time. See data type and interface.

3.128
use case [class]

The specification of a sequence of actions, including variants, that a system (or other entity) can perform, interacting with actors of the system. See: *use case instances*.

3.129
user access control

The regulation authorization and empowerment of utility staff to perform operations on the power network

**3.130
value**

Any entity that may be a possible actual parameter in a request. Values that serve to identify objects are called object references.

**3.131
work management**

Work order scheduling and tracking, manpower assignment, preparation of Bills of material, cost estimating and monitoring

**3.132
XML**

eXtensible Markup language. A language for writing schemas.

4**Glossary of abbreviations in IEC 61968****4.1****AGC**

Automatic Generation Control

4.2**API**

Application Programming Interface

4.3**CAD**

Computer Aided Design

4.4**CIM**

Common Information Model

4.5**CIS**

Customer Information System

4.6**CORBA**

Common Object Request Broker Architecture

4.7**CSP**

Communication Service Provider

4.8**DAS**

Distribution Automation System

4.9**DCOM**

Distributed COM, An object protocol that enables ActiveX components to communicate directly with each other across a network including Internet and Intranet. DCOM is language neutral, so any language that produces ActiveX components can also produce DCOM applications.

DCOM is based on the most widely-used component technology today. DCOM is simply "COM with a longer wire" a low level extension of the Component Object Model, the core object technology within Microsoft.

4.10**4.11****DMS**

Distribution Management System

4.12**EMS**

Energy Management System

4.13**EPRI**

Electric Power Research Institute

4.14**GIS**

Geographical Information System

4.15**HTTP**

Hypertext Transfer Protocol

4.16**ICT**

Integration Communication Technology

4.17**ID**

Identifier

4.18**IDL (CORBA)**

Interface Definition Language

4.19**IEC**

International Electrotechnical Commission

4.20**IED**

Intelligent Electronic Device

4.21**IEM**

Information Exchange Model

4.22**IIOP (CORBA)**

Internet Inter- ORB Protocol

4.23**IRM**

Interface Reference Model

4.24**ISO**

International Standardizations Organization

4.25**LAN**

Local Area Network

4.26**LV**

Low voltage, a portion of the electrical distribution network which is below a specified voltage.

4.27**MOM**

Message Oriented Middleware

4.28**MQM**

Message Queue Middleware, Provides reliable, asynchronous and loosely coupled communication services. MQM represents the realization by major software vendors of the need for ubiquitous message queue-based communication services.

4.29**NMS**

Network Management System

4.30**ODL (DCOM)**

Object Definition Language

4.31**ORB**

Object Request Broker. Provides the means by which clients make and receive requests and responses, e.g. a CORBA implementation like Orbix or Visibroker or DCOM implemented in Windows NT.

4.32**RMR**

Remote Meter Reading

4.33**RTU**

Remote Terminal Unit

4.34**SCADA**

Supervisory Control And Data Acquisition

4.35**SIM**

Substation Integration Module

4.36**Switchgear**

A general term covering switching devices and their combination with associated control measuring, protective and regulating equipment, also assemblies, devices and equipment intended in principle for use in connection with generation, transmission, distribution and conversion of energy.

4.37**Telecontrol**

A telecontrol system in which the monitored information is obtained upon request from the master station to outstations.

4.38**UC**

Unit Commitment

4.39**UCA**

Utility Communications Architecture

4.40**UML**

Unified Modeling Language

4.41**WAN**

Wide Area Network