

INTERNATIONAL STANDARD

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

Part 9: Interfaces for meter reading and control

Intégration d'applications pour les services électriques – Interfaces système pour la gestion de distribution –

Partie 9: Interfaces pour le relevé et la commande des compteurs



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CONTENTS

FOREWORD.....	9
INTRODUCTION.....	12
1 Scope.....	14
2 Normative references	15
3 Terms, definitions and abbreviations	16
3.1 Terms and definitions.....	16
3.2 Abbreviations.....	17
4 Reference and information models	18
4.1 General approach to metering systems	18
4.2 Reference Model.....	19
4.2.1 General	19
4.2.2 Metering system (MS) – Data collection.....	22
4.2.3 Metering system (MS) – Control and reconfiguration.....	23
4.2.4 Load control	23
4.2.5 Load management system (LMS).....	23
4.2.6 Meter asset management (MAM) system	24
4.2.7 Meter data management (MDM) system.....	24
4.2.8 Customer information system (CIS)	24
4.2.9 Outage management system (OMS)	24
4.2.10 Network operations (NO)	25
4.2.11 Meter maintenance (MM)	25
4.2.12 Planning	25
4.2.13 Work management (WM)	25
4.2.14 Point of sale (POS).....	25
4.2.15 Meter.....	25
4.2.16 Load control devices.....	25
4.2.17 PAN devices.....	26
4.2.18 Demand response management system (DRMS)	26
4.3 Interface reference model	26
4.4 Meter reading and control functions and components.....	26
4.5 Static information model	27
4.5.1 General	27
4.5.2 Classes for meter reading and control	28
4.5.3 Classes related to meter reading and control.....	32
5 Meter reading and control message types.....	33
5.1 General.....	33
5.2 End device event messages.....	33
5.2.1 General	33
5.2.2 Applications	34
5.2.3 Message format.....	40
5.3 Meter reading messages	42
5.3.1 General	42
5.3.2 Applications.....	42
5.3.3 Message formats	47
5.4 End device control messages.....	58
5.4.1 General	58

5.4.2	Applications	58
5.4.3	Message format	65
5.5	Meter service requests	68
5.5.1	General	68
5.5.2	Applications	69
5.5.3	Message format	72
5.6	Metering system events	73
5.6.1	General	73
5.6.2	Applications – Firmware upgrade	74
5.6.3	Message formats	74
5.7	Customer switching	74
5.7.1	General	74
5.7.2	Message formats	75
5.8	Payment metering service messages	75
5.8.1	General	75
5.8.2	Auxiliary agreements	75
5.8.3	Applications	76
5.8.4	Message formats	77
5.9	Premise area networks	80
5.9.1	General	80
5.9.2	Applications	81
5.9.3	Message formats	83
5.10	Master data management messages	83
5.10.1	General	83
5.10.2	Applications	84
5.10.3	Message formats	91
6	Document conventions	104
6.1	UML diagrams	104
6.2	Message definitions	105
6.2.1	General	105
6.2.2	Mandatory vs. optional	105
6.2.3	Verb tense	105
6.3	Synchronous versus asynchronous messages	105
6.4	Depiction of simple acknowledgment messages	105
Annex A (normative)	Description of message type verbs	106
Annex B (informative)	Reply error codes	108
Annex C (normative)	Procedure for the generation of a ReadingType name	115
Annex D (normative)	Quality code enumerations	170
Annex E (normative)	EndDeviceEventType enumerations	183
Annex F (normative)	EndDeviceControlType enumerations	221
Annex G (normative)	Conventions for naming and identifying objects	224
Annex H (normative)	XML schemas for message payloads	227
Annex I (informative)	XML schemas for message payloads	314
Annex J (normative)	Request parameters	389
Annex K (normative)	Master data management transaction processing	395
Annex L (informative)	Master data management use cases and sample XML	402
Annex M (informative)	Notes on extended use of IEC 61968-100	438

Bibliography..... 440

Figure 1 – IEC 61968-9 scope 15

Figure 2 – Example of an end device with functions 20

Figure 3 – IEC 61968-9 reference model..... 21

Figure 4 – IEC 61968-9 Reference model with customer information and billing system..... 22

Figure 5 – Outage Detection, request/reply message exchange, example 1 35

Figure 6 – Outage Detection, request / reply message exchange, Example 2..... 36

Figure 7 – Outage Detection, publish/subscribe exchange, Example 1..... 37

Figure 8 – Outage Detection, publish/subscribe exchange, Example 2..... 37

Figure 9 – Meter Health Event exchange, Example 1 38

Figure 10 – Meter Health Event exchange, Example 2 39

Figure 11 – Power quality event exchange, Example 1 39

Figure 12 – Power quality event exchange, Example 2 40

Figure 13 – End device event message format..... 41

Figure 14 – Example use of meter read schedule to create subscription 43

Figure 15 – Example manual meter reading exchange 44

Figure 16 – Example On-Request meter read 45

Figure 17 – Historical MeterData exchange..... 46

Figure 18 – Example billing inquiry message exchange 46

Figure 19 – Meter readings message format 47

Figure 20 – Reading structure..... 48

Figure 21 – Timestamps assigned between systems..... 49

Figure 22 – Conventions for timeStamp and timePeriod 49

Figure 23 – IntervalBlock structure 50

Figure 24 – Interval data timestamp generation 51

Figure 25 – Time interval conventions..... 51

Figure 26 – ReadingType structure 52

Figure 27 – Meter read schedule message format..... 57

Figure 28 – Example load control message exchange..... 59

Figure 29 – Example message exchange for LC unit installation 60

Figure 30 – Example message exchange for change of customer program 61

Figure 31 – Example message exchange for change of customer program w/o MDM 61

Figure 32 – Example for change of customer program with meter change out 62

Figure 33 – Example message exchange for meter connect/disconnect 63

Figure 34 – Example of remote connect/disconnect directly between CIS and MS 64

Figure 35 – Example message exchange for real-time price signal 65

Figure 36 – End device controls message format..... 66

Figure 37 – Example meter installation and removal message exchange 69

Figure 38 – Example end device event message exchange due to meter changeout..... 70

Figure 39 – Example message exchange due to CIS alarms 71

Figure 40 – Example message exchange when meter is changed out for recalibration 72

Figure 41 – Meter service requests message format 73

Figure 42 – Example firmware upgrade message exchange	74
Figure 43 – Example customer switching message exchange	75
Figure 44 – Message exchange for transferring auxiliary agreement information	76
Figure 45 – Message exchange for transferring receipt information	77
Figure 46 – Message exchange for transferring transaction information	77
Figure 47 – Auxiliary agreement configuration message format	78
Figure 48 – ReceiptRecord message format	79
Figure 49 – TransactionRecord message format	80
Figure 50 – Pairing of a PAN device	81
Figure 51 – PAN device events	82
Figure 52 – PAN device controls	83
Figure 53 – Master data linkages	85
Figure 54 – Message exchange for transferring supplier information	86
Figure 55 – Message exchange for transferring customer information	87
Figure 56 – Message exchange for transferring customer agreement information	87
Figure 57 – Message exchange for transferring customer account information	88
Figure 58 – Message exchange for transferring service category information	88
Figure 59 – Message exchange for transferring usage point information	89
Figure 60 – Message exchange for transferring meter information	89
Figure 61 – Message exchange for transferring end device information	90
Figure 62 – Message exchange for transferring service location information	91
Figure 63 – Message exchange for transferring pricing structures	91
Figure 64 – MasterDataLinkageConfig message format	92
Figure 65 – Service supplier configuration message format	93
Figure 66 – Customer configuration message	94
Figure 67 – Customer agreement configuration message	95
Figure 68 – Customer account configuration message	96
Figure 69 – ServiceCategoryConfig message format	96
Figure 70 – UsagePointConfig message format	97
Figure 71 – UsagePointLocationConfig message format	99
Figure 72 – End device config message format	100
Figure 73 – Meter configuration message	101
Figure 74 – ComModuleConfig message format	102
Figure 75 – ServiceLocationConfig message format	103
Figure 76 – PricingStructureConfig message format	104
Figure B.1 – Reply Message States	114
Figure C.1 – Typical enumerations for accumulation behaviour	123
Figure C.2 – Typical enumerations for direction of flow	130
Figure C.3 – Voltage measurements	137
Figure E.1 – Event data	184
Figure G.1 – CIM naming	224
Figure G.2 – Example XML structure for names	225
Figure G.3 – Use of names for references	226

Figure J.1 – Message request structure	389
Figure J.2 – GetMeterReadings	390
Figure J.3 – GetEndDeviceConfig	391
Figure J.4 – GetCustomerMeterDataSet.....	392
Figure J.5 – GetMeterServiceRequests	393
Figure K.1 – Message Envelope Extension	396
Figure K.2 – OperationSet	397
Figure K.3 – Pattern 1: Request/response (non-OperationSet).....	398
Figure K.4 – Pattern 2: published event (non-OperationSet)	399
Figure K.5 – Pattern 3: Request/response (OperationSet).....	400
Figure K.6 – Pattern 4: published event (OperationSet)	401
Figure M.1 – Get/cancel pattern which is not recommended.....	438
Figure M.2 – Get/cancel pattern which is recommended	439
Table 1 – Document overview for IEC 61968-9	13
Table 2 – Business functions and abstract components	27
Table 3 – Classes for meter reading and control	28
Table 4 – Classes related to meter reading and control.....	32
Table 5 – IEC 61968-9 configuration profiles	84
Table A.1 – Commonly used verbs.....	106
Table B.1 – ReplyCode Categories	108
Table B.2 – Error-free Enumerations.....	109
Table B.3 – Missing-element Enumerations	109
Table B.4 – Bad-value Enumerations	109
Table B.5 – Too-many-values enumerations	110
Table B.6 – Request-timed-out enumerations	110
Table B.7 – Application-error enumerations	111
Table B.8 – Business-rule-violation enumerations.....	111
Table B.9 – Security issue enumerations	111
Table B.10 – Common enumerations	112
Table C.1 – Time-period of interest enumerations.....	116
Table C.2 – Data qualifier enumerations	116
Table C.3 – measuringPeriod enumerations.....	117
Table C.4 – Demand normalization scalars	119
Table C.5 – Accumulation behaviour enumerations.....	121
Table C.6 – Customary accumulation behaviour enumerations	123
Table C.7 – Direction of flow enumeration.....	124
Table C.8 – DirectionOfFlow enumeration equivalencies.....	130
Table C.9 – Commodity	131
Table C.10 – measurementKind Index	132
Table C.11 – Harmonic and Interharmonic enumerations	138
Table C.12 – Argument enumerations	138
Table C.13 – Time Of Use Enumerations	139

Table C.14 – Critical Peak Period Enumerations	140
Table C.15 – Consumption Tier Enumerations	141
Table C.16 – Example Combinations of TOU and Consumption Tier Enumerations	141
Table C.17 – Phase enumerations	142
Table C.18 – Power of ten enumerations	146
Table C.19 – Historical concentration multiplier enumerations	147
Table C.20 – Base SI units of measure	149
Table C.21 – Derived SI units of measure with special names	149
Table C.22 – Derived SI Units of Measure without Special Names	151
Table C.23 – Non-SI Units of Measure accepted for use with the International System of Units	154
Table C.24 – Dimensionless and Concentration Units of Measure	155
Table C.25 – Non-SI units whose values in SI units shall be obtained experimentally	157
Table C.26 – Other Non-SI Units of Measure	158
Table C.27 – Non-SI Units Associated with the CGS and the CGS-Gaussian System of Units	162
Table C.28 – Currency units of measure (from ISO 4217)	163
Table C.29 – ReadingType Examples	165
Table D.1 – System identifier	171
Table D.2 – Example quality code categories	171
Table D.3 – Validity related codes	172
Table D.4 – Diagnostics related codes	173
Table D.5 – Power quality related codes	173
Table D.6 – Tamper / revenue protection related codes	174
Table D.7 – Data collection related codes	174
Table D.8 – Failed reasonability testing related codes	176
Table D.9 – Failed validation testing related codes	176
Table D.10 – Edit related codes	177
Table D.11 – Estimation related codes	178
Table D.12 – Questionable related codes	179
Table D.13 – Derived related codes	180
Table D.14 – Projected related codes	181
Table D.15 – Example Quality Codes	182
Table E.1 – EndDeviceType codes	185
Table E.2 – EndDeviceDomain Codes	187
Table E.3 – EndDeviceSubdomain codes	188
Table E.4 – EndDeviceEventOrAction codes	193
Table E.5 – Battery events	200
Table E.6 – Billing events	200
Table E.7 – Cartridge events	201
Table E.8 – Clock events	201
Table E.9 – Communication events	202
Table E.10 – Configuration events	203
Table E.11 – Demand events	204

Table E.12 – Firmware events	204
Table E.13 – GasSupply events	206
Table E.14 – Installation events	206
Table E.15 – LoadControl events	207
Table E.16 – LoadProfile events	207
Table E.17 – Logs events	208
Table E.18 – Memory events	208
Table E.19 – Metrology events.....	209
Table E.20 – MobileSecurity events	210
Table E.21 – Modem events.....	211
Table E.22 – ModuleFirmware events	211
Table E.23 – Network events	211
Table E.24 – PAN / HAN events.....	212
Table E.25 – Power events	213
Table E.26 – Pressure events	216
Table E.27 – RCDSwitch events	217
Table E.28 – Security events	217
Table E.29 – Temperature events	219
Table E.30 – VideoDisplay events.....	219
Table E.31 – WaterSupply events	220
Table F.1 – Demand Controls	221
Table F.2 – LoadControl Controls	222
Table F.3 – PAN / HAN Controls	222
Table F.4 – RCDSwitch Controls.....	222
Table L.1 – Exemplary master data management / data synchronization use cases	403

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**APPLICATION INTEGRATION AT ELECTRIC UTILITIES –
SYSTEM INTERFACES FOR DISTRIBUTION MANAGEMENT –****Part 9: Interfaces for meter reading and control**

FOREWORD

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International Standard IEC 61968-9 has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

This second edition cancels and replaces the first edition published in 2009. This edition constitutes a technical revision and includes the following significant technical changes with respect to the previous edition:

- a) changes to and addition of new profiles to support PAN and UsagePoints;
- b) extensions to support PAN devices generically as EndDevices;
- c) extensions to the MeterReading model and profiles to support richer descriptions of metered quantities and to accommodate coincident readings;
- d) addition of CIM Name class and corresponding revisions to profiles to allow reference by name instead of by mRID. Where the document may identify the use of mRID values as references, Name.name values may be alternatively used. This is described in more detail in Annex G;

- e) reference of ReadingTypes, EndDeviceEventTypes and EndDeviceControlTypes using name references;
- f) definition of normative enumerations for ReadingTypes, EndDeviceEventTypes and EndDeviceControlTypes in annexes;
- g) various corrections to example sequence diagrams;
- h) Removal of MeterAssetReading profile, where functionality is supported using the MeterReading profile;
- i) MeterAsset class is now named Meter;
- j) MeterAssetConfig profile now named MeterConfig;
- k) EndDeviceAssets profile now named EndDeviceConfig;
- l) removal of EndDeviceFirmware profile, where functionality is supported using the EndDeviceConfig profile;
- m) use of new namespaces to reflect the new edition, where the namespaces is reflective of the year in which a profile is defined;
- n) adoption of UsagePoint as a replacement for and a generalization of ServiceDeliveryPoint;
- o) SDPLocationConfig has been deprecated in favor of UsagePointLocationConfig;
- p) some profiles previously defined have been moved into the new subclause 5.10 which is focused on data linkages;
- q) elimination of the MeterSystemEvents profile, as it provided no functionality that could not be achieved with the EndDeviceEvents profile;
- r) there were several profiles originally defined in support of prepayment use cases that were identified to be more general in nature, and were consequentially moved to 5.10. Subclause 5.8 now consists of only those profiles that are specific to prepayment. In all cases there has been some refactoring of these profiles to reflect other necessary changes that have been described;
- s) supplierConfig has been renamed ServiceSupplierConfig;
- t) messages using the SUBSCRIBE verb have been removed as these are related to the underlying communication transport and do not reflect actual IEC 61968 messages.

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

FDIS	Report on voting
57/1377/FDIS	57/1394/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.

A list of all parts in the IEC 61968 series, published under the general title *Application integration at electric utilities – System interfaces for distribution management*, can be found on the IEC website.

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INTRODUCTION

The purpose of this document is to define a standard for the integration of Metering Systems (MS), which would include traditional (one or two-way) Automated Meter Reading (AMR) Systems, with other systems and business functions within the scope of IEC 61968. The scope of this standard is the exchange of meter reading, transactions, event and control information between systems within the utility enterprise and between enterprises. The specific details of communication protocols those systems employ are outside the scope of this standard. Instead, this standard will recognize and model the general capabilities that can be potentially provided by advanced and/or legacy meter infrastructures, including two-way communication capabilities such as load control, dynamic pricing, outage detection, distributed energy resource (DER) control signals and on-request read. In this way, this standard will not be impacted by the specification, development and/or deployment of next generation meter infrastructures, either through the use of standards or proprietary means.

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, 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.

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 for 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, *Interface architecture and general requirements*.