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First edition
2002-02

**Electricity metering –
Data exchange for meter reading,
tariff and load control –**

**Part 61:
Object identification system (OBIS)**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICITY METERING – DATA EXCHANGE
FOR METER READING, TARIFF AND LOAD CONTROL –**

Part 61: Object identification system (OBIS)

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.
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The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this International Standard may involve the use of a maintenance service concerning the stack of protocols on which the present standard IEC 62056-61 is based.

The provider of the maintenance service has assured the IEC that he is willing to provide services under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the provider of the maintenance service is registered with the IEC. Information (see also chapter 5.1) may be obtained from:

DLMS¹ User Association
Geneva / Switzerland
www.dlms.ch

The IEC takes no position concerning the evidence, validity and scope of this maintenance service.

International Standard IEC 62056-61 has been prepared by IEC technical committee 13: Equipment for electrical energy measurement and load control.

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

FDIS	Report on voting
13/1269/FDIS	13/1275/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.

¹ Device Language Message Specification.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annex A forms an integral part of this standard.

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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INTRODUCTION

The competitive electricity market requires an ever-increasing amount of timely information concerning the usage of electrical energy. Recent technology developments enable to build intelligent static metering equipment, which are capable of capturing, processing and communicating this information to all parties involved.

For further analysis of this information, for the purposes of billing, load-, customer- and contract management, it is necessary to uniquely identify all data in a manufacturer independent way collected manually or automatically, via local or remote data exchange.

The definition of identification codes is based on DIN 43863-3:1997, *Electricity meters – Part 3: Tariff metering device as additional equipment for electricity meters – EDIS – Energy Data Identification System*

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ELECTRICITY METERING – DATA EXCHANGE FOR METER READING, TARIFF AND LOAD CONTROL –

Part 61: Object identification system (OBIS)

1 Scope

The Object Identification System (OBIS) defines the identification codes (ID-codes) for commonly used data items in electricity metering equipment. This part of IEC 62056 specifies the overall structure of the identification system and the mapping of all data items to their identification codes.

OBIS provides a unique identifier for all data within the metering equipment, including not only measurement values, but also abstract values used for configuration or obtaining information about the behaviour of the metering equipment. The ID codes defined in this standard are used for the identification of

- logical names of the various instances of the interface classes, or objects, as defined in IEC 62056-62;
- data transmitted through communication lines (see clause A.1);
- data displayed on the metering equipment (see clause A.2).

This standard applies to all types of electricity metering equipment, such as fully integrated meters, modular meters, tariff attachments, data concentrators etc.

To cover metering equipment measuring energy types other than electricity, combined metering equipment measuring more than one type of energy or metering equipment with several physical measurement channels, the concept of channels and medium are introduced. This allows meter data originating from different sources to be identified. While this standard fully defines the structure of the identification system for other media, the mapping of non-electrical energy related data items to ID codes needs to be completed separately.

NOTE CEN TC 294, "Communication systems for meters and remote reading meters" have implemented some non-electrical energy related codes in draft prEn 13757.

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 60050-300:2001, *International Electrotechnical Vocabulary – Electrical and electronic measurements and measuring instruments – Part 311: General terms relating to measurements – Part 312: General terms relating to electrical measurements – Part 313: Types of electrical measuring instrument – Part 314: Specific terms according to the type of instrument*

IEC 61268:1995, *Alternating current static var-hour meters for reactive energy (classes 2 and 3)*

IEC 62051:1999, *Electricity metering – Glossary of terms*

IEC 62056-21, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 21: Direct local data exchange*¹

IEC 62056-62, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 62: Interface classes*¹

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purpose of this part of IEC 62056 the terms and definitions given in IEC 60050-300 and IEC 62051, as well as the following apply:

3.2 Abbreviations

COSEM COmpanion Specification for Energy Metering

IC Interface Class

OBIS OBject Identification System

4 OBIS structure

OBIS codes are a combination of six value groups, which describe – in a hierarchical way – the exact meaning of each data item (see figure 1).



IEC 302/02

Figure 1 – OBIS code structure

4.1 Value group A

The value group A defines the characteristic of the data item to be identified (abstract data, electricity-, gas-, heat-, water-related data).

4.2 Value group B

The value group B defines the channel number, i.e. the number of the input of a metering equipment having several inputs for the measurement of energy of the same or different types (e.g. in data concentrators, registration units). Data from different sources can thus be identified. The definitions for this value group are independent from the value group A.

4.3 Value group C

The value group C defines the abstract or physical data items related to the information source concerned, e.g. current, voltage, power, volume, temperature. The definitions depend on the value of the value group A. Measurement, tariff processing and data storage methods of these quantities are defined by value groups D, E and F.

For abstract data, the hierarchical structure of the 6 code fields is not applicable.

¹ To be published

4.4 Value group D

The value group D defines types, or the result of the processing of physical quantities identified with the value groups A and C, according to various specific algorithms. The algorithms can deliver energy and demand quantities as well as other physical quantities.

4.5 Value group E

The value group E defines the further processing of measurement results identified with value groups A to D to tariff registers, according to the tariff(s) in use. For abstract data or for measurement results for which tariffs are not relevant, this value group can be used for further classification.

4.6 Value group F

The value group F defines the storage of data, identified by value groups A to E, according to different billing periods. Where this is not relevant, this value group can be used for further classification.

4.7 Manufacturer specific codes

If any value group C to F contains a value between 128 and 254, the whole code is considered as manufacturer specific.

5 Value group definitions

5.1 Value group A

The range for value group A is 0 to 15 (see table 1).

Table 1 – Value group A codes

Value group A	
0	Abstract objects
1	Electricity related objects
2	
3	
4	Heat cost allocator related objects
5	Cooling related objects
6	Heat related objects
7	Gas related objects
8	Cold water related objects
9	Hot water related objects
All other possible values are reserved ¹ .	

¹ Administered by the DLMS User Association (see Foreword).