



BSI Standards Publication

Systems interface between customer energy management system and the power management system

Part 3: Architecture

National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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TECHNICAL SPECIFICATION



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Part 3: Architecture**

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CONTENTS

FOREWORD 4

INTRODUCTION 6

1 Scope 7

2 Normative references 7

3 Terms, definitions and abbreviations 7

 3.1 Terms and definitions 7

 3.2 Abbreviations 10

4 Architectural overview 10

 4.1 Application area 10

 4.2 Actors, roles and relationships 11

 4.3 Concepts 13

 4.4 Components/Entities 15

5 Message transport and services 20

 5.1 Transport requirements 20

 5.2 Supporting messaging standards 21

 5.3 Message payloads 21

 5.4 Message construction 22

 5.5 Messaging patterns 23

 5.5.1 General 23

 5.5.2 Transactional request/reply message patterns 23

 5.5.3 Query request/reply messages 24

 5.5.4 Event Messages 25

 5.5.5 Presence 27

 5.6 Publish/subscribe messaging 27

6 Security 28

7 Scalability and availability 29

Annex A (informative) Requirements 31

 A.1 General 31

 A.2 Principles 31

 A.3 Additional communication-specific functional requirements 31

 A.4 Non-functional requirements 32

Annex B (informative) Message payload profiles 34

Bibliography 35

Figure 1 – Relationship of IEC 62746 to other standards 6

Figure 2 – Resource-level view 11

Figure 3 – High-level example of actors, roles and relationships 12

Figure 4 – Example Communication Domain hierarchy 14

Figure 5 – Expanded communication domain example including operations 15

Figure 6 – Communication domain 16

Figure 7 – Example realization of VTNs and VENs in multiple communication domains 17

Figure 8 – Example for multiple communication domains 18

Figure 9 – Technical space of a single communication domain in IEC 62746 18

Figure 10 – Example application of IEC 62746 19

Figure 11 – CEM and resource relationships.....	20
Figure 12 – Example payload.....	22
Figure 13 – Transactional request/reply initiated by VTN	24
Figure 14 – Transaction request/reply initiated by VEN	24
Figure 15 – Query request initiated by VTN	25
Figure 16 – Query request initiated by VEN	25
Figure 17 – Example of VTN initiated events.....	26
Figure 18 – VEN initiated events.....	26
Figure 19 – Example of publish/subscribe nodes.....	27
Figure 20 – Security overview.....	29
Figure 21 – Configuration for scalability and availability.....	30
Figure B.1 – Profile structure	34

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SYSTEMS INTERFACE BETWEEN CUSTOMER ENERGY MANAGEMENT SYSTEM AND THE POWER MANAGEMENT SYSTEM –

Part 3: Architecture

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 TS 62746-3, which is a technical specification, has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

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

Enquiry draft	Report on voting
57/1527/DTS	57/1610/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.

A list of all parts in the IEC 62746 series, published under the general title *Systems interface between customer energy management system and the power management system*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The purpose of this part of IEC 62746 is to define an architecture for IEC 62746 series of standards that can be leveraged for the management of customer energy resources and DER. These resources may be a combination of load, generation and storage resources that can be managed to respond to signals provided by grid and/or market operators. These resources may be identified and managed as individual resources with specific capabilities, or as virtual resources with an aggregated set of capabilities.

The focus of this architecture is to leverage the Internet for communications between grid operators, market operators, distribution system operators, electricity suppliers, aggregators, service providers and energy resources.

This Technical Specification leverages existing IEC standards. The data model of IEC 62746 is based on the Common Information Model and IEC 61850. IEC 62746 is transport-independent.

Figure 1 shows the relationship of IEC 62746 to other IEC and ISO standards.

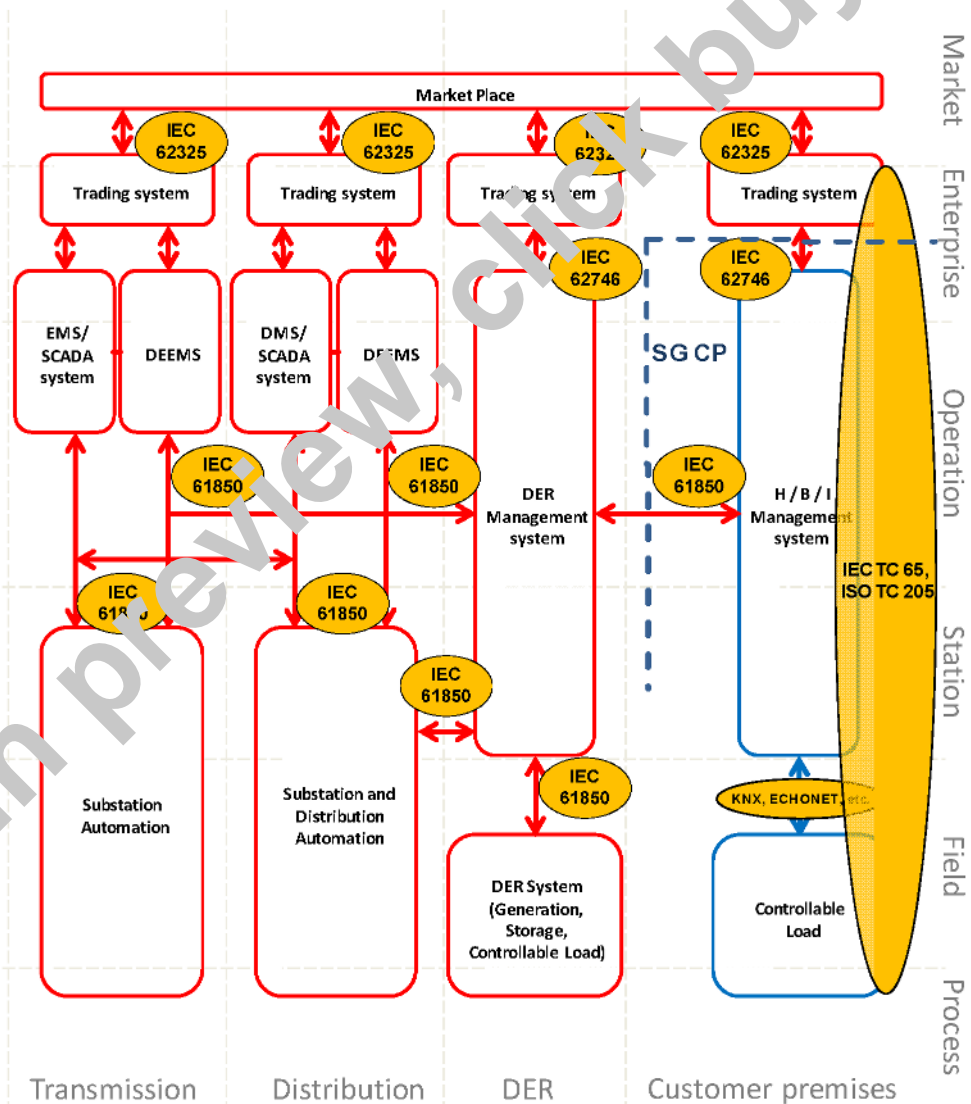


Figure 1 – Relationship of IEC 62746 to other standards

SYSTEMS INTERFACE BETWEEN CUSTOMER ENERGY MANAGEMENT SYSTEM AND THE POWER MANAGEMENT SYSTEM –

Part 3: Architecture

1 Scope

This part of IEC 62746, which is a Technical Specification, establishes an architecture that is supportive of interfaces between the Customer Energy Management System and the Power Management System.

A DER Management System can also be a Customer Energy Management System.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61968-9:2013, *Application integration at electric utilities – System interfaces for distribution management – Part 9: Interfaces for meter reading and control*

IEC 61968-100, *Application integration at electric utilities – System interfaces for distribution management – Part 100: Implementation profiles*

IEC 62351 (all parts), *Power systems management and associated information exchange – Data and communications security*

IEC TR 62746-2:2015, *Systems interface between customer energy management system and the power management system – Part 2: Use cases and requirements*

IEC 62443 (all parts), *Industrial communication networks – Network and system security*

3 Terms, definitions and abbreviations

For the purposes of this document, the following terms, definitions and abbreviations apply.

3.1 Terms and definitions

3.1.1 aggregation

Collection of the capabilities of multiple resources into a single virtual resource

Note 1 to entry: A common use of aggregation is to collect many small resources and offer their capabilities in the form of a single larger resource to a market.

3.1.2 cascading

event which occurs when a message published in one communication domain causes another message to be published in one or more other communication domains at a different level of a hierarchy