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Irish Standard  
I.S. EN 62325-451-4:2017

# Framework for energy market communications - Part 451-4: Settlement and reconciliation business process, contextual and assembly models for European market

**I.S. EN 62325-451-4:2017**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN 62325-451-4:2017 is the adopted Irish version of the European Document EN 62325-451-4:2017, Framework for energy market communications - Part 451-4: Settlement and reconciliation business process, contextual and assembly models for European market

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NORME EUROPÉENNE  
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**EN 62325-451-4**

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Supersedes EN 62325-451-4:2015

English Version

**Framework for energy market communications -  
Part 451-4: Settlement and reconciliation business process,  
contextual and assembly models for European market  
(IEC 62325-451-4:2017)**

Cadre pour les communications pour le marché de l'énergie  
- Partie 451-4: Processus métier de règlement des écarts et  
de réconciliation, modèles contextuels et modèles  
d'assemblage pour le marché européen  
(IEC 62325-451-4:2017)

Kommunikation im Energiemarkt -  
Teil 451-4: Abwicklungs- und  
Abstimmungsgeschäftsprozesse, kontextbezogene Modelle  
und Einbindungsmodelle für den europäischen Markt  
(IEC 62325-451-4:2017)

This European Standard was approved by CENELEC on 2017-05-16. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## **EN 62325-451-4:2017**

### **European foreword**

The text of document 57/1737/CDV, future edition 2 of IEC 62325-451-4, prepared by IEC/TC 57 "Power systems management and associated information exchange" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62325-451-4:2017.

The following dates are fixed:

- latest date by which the document has to be (dop) 2018-02-16  
implemented at national level by  
publication of an identical national  
standard or by endorsement
- latest date by which the national (dow) 2020-05-16  
standards conflicting with the  
document have to be withdrawn

This document supersedes EN 62325-451-4:2015.

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### **Endorsement notice**

The text of the International Standard IEC 62325-451-4:2017 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61968-11	NOTE	Harmonized as EN 61968-11.
IEC 61970-301	NOTE	Harmonized as EN 61970-301.

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC/TS 61970-2	-	Energy management system application program interface (EMS-API) - Part 2: Glossary	CLC/TS 61970-2	-
IEC 62325-301	-	Framework for energy market communications - Part 301: Common information model (CIM) extensions for markets	EN 62325-301	-
IEC 62325-351	-	Framework for energy market communications - Part 351: CIM European market model exchange profile	EN 62325-351	-
IEC 62325-450	2013	Framework for energy market communications - Part 450: Profile and context modelling rules	EN 62325-450	2013
IEC 62325-451-1	-	Framework for energy market communications - Part 451-1: Acknowledgement business process and contextual model for CIM European market	EN 62325-451-1	-
IEC 62325-451-2	-	Framework for energy market communications - Part 451-2: Scheduling business process and contextual models for European market	EN 62325-451-2	-
IEC 62361-100	-	Power systems management and associated information exchange - Interoperability in the long term - Part 100: CIM profiles to XML schema mapping	EN 62361-100	-

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**IEC 62325-451-4**

Edition 2.0 2017-04

# **INTERNATIONAL STANDARD**



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**Framework for energy market communications –  
Part 451-4: Settlement and reconciliation business process, contextual and  
assembly models for European market**



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**IEC 62325-451-4**

Edition 2.0 2017-04

# INTERNATIONAL STANDARD



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**Framework for energy market communications –  
Part 451-4: Settlement and reconciliation business process, contextual and  
assembly models for European market**

INTERNATIONAL  
ELECTROTECHNICAL  
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## CONTENTS

FOREWORD.....	6
INTRODUCTION.....	8
1 Scope.....	9
2 Normative references .....	9
3 Terms and definitions .....	10
4 Document contextual model and message assembly model basic concepts .....	11
4.1 Overview.....	11
4.2 European style market package structure .....	12
4.3 From the European style market profile to the document contextual model .....	14
4.4 From the document contextual model to the message assembly model .....	14
4.5 From the assembly model to the XML schema .....	14
5 The settlement and reconciliation business process .....	14
5.1 Balance responsible party and settlement .....	14
5.2 Overall business context.....	16
5.3 Use cases .....	16
5.4 Process flow .....	18
5.5 Business rules for the settlement and reconciliation process.....	20
5.5.1 General .....	20
5.5.2 Attributes area_Domain.mRID and domain.mRID and quantity.....	21
5.5.3 Dependency matrix for type, processType and businessType .....	21
5.5.4 Dependency of attributes of the TimeSeries.....	22
5.5.5 Rules governing the Point class.....	23
5.5.6 Attribute price.amount .....	23
6 Contextual and assembly models.....	24
6.1 Energy account contextual model.....	24
6.1.1 Overview of the model .....	24
6.1.2 IsBasedOn relationships from the European style market profile.....	24
6.1.3 Detailed Energy account contextual model .....	25
6.2 Energy account assembly model.....	33
6.2.1 Overview of the model .....	33
6.2.2 IsBasedOn relationships from the European style market profile.....	35
6.2.3 Detailed Energy account assembly model.....	35
6.2.4 Primitives .....	39
6.2.5 Datatypes .....	39
6.2.6 Enumerations .....	48
7 XML schema.....	48
7.1 XML schema URN namespace rules .....	48
7.2 Code list URN namespace rules.....	49
7.3 URI rules for model documentation .....	49
7.3.1 Datatype.....	49
7.3.2 Class .....	49
7.3.3 Attribute.....	50
7.3.4 Association end role name.....	50
7.4 EnergyAccount_MarketDocument schema .....	50
7.4.1 Schema Structure .....	50
7.4.2 Schema description .....	53

Bibliography.....	59
Figure 1 – IEC 62325-450 modelling framework.....	12
Figure 2 – Overview of European style market profile dependency.....	13
Figure 3 – Balance responsible party relations.....	15
Figure 4 – Settlement/reconciliation use case .....	18
Figure 5 – Sequence diagram of the information flow.....	19
Figure 6 – Energy account contextual model.....	24
Figure 7 – Energy account assembly model .....	34
Figure 8 – EnergyAccount_MarketDocument XML Schema Structure 1/2 .....	51
Figure 9 – EnergyAccount_MarketDocument XML Schema Structure 2/2 .....	52
Table 1 – Dependency table for type, processType and businessType.....	22
Table 2 – Dependency table for TimeSeries attributes .....	23
Table 3 – Dependency table for price.amount attribute .....	23
Table 4 – IsBasedOn dependency.....	24
Table 5 – Attributes of Energy account contextual model::EnergyAccount_MarketDocument .....	25
Table 6 – Association ends of Energy account contextual model::EnergyAccount_MarketDocument with other classes .....	26
Table 7 – Attributes of Energy account contextual model::Currency_Unit.....	26
Table 8 – Attributes of Energy account contextual model::Domain .....	27
Table 9 – Attributes of Energy account contextual model::MarketAgreement.....	27
Table 10 – Attributes of Energy account contextual model::MarketEvaluationPoint .....	27
Table 11 – Attributes of Energy account contextual model::MarketParticipant .....	27
Table 12 – Association ends of Energy account contextual model::MarketParticipant with other classes .....	28
Table 13 – Attributes of Energy account contextual model::MarketRole.....	28
Table 14 – Attributes of Energy account contextual model::Measure_Unit.....	28
Table 15 – Attributes of Energy account contextual model:: Party_MarketParticipant .....	28
Table 16 – Attributes of Energy account contextual model::Point .....	29
Table 17 – Association ends of Energy account contextual model ::Point with other classes .....	29
Table 18 – Attributes of Energy account contextual model::Price .....	30
Table 19 – Attributes of Energy account contextual model::Process.....	30
Table 20 – Attributes of Energy account contextual model::Quantity .....	30
Table 21 – Attributes of Energy account contextual model::Reason .....	31
Table 22 – Attributes of Energy account contextual model::Series_Period .....	31
Table 23 – Association ends of Energy account contextual model::Series_Period with other classes .....	31
Table 24 – Attributes of Energy account contextual model::Time_Period.....	31
Table 25 – Attributes of Energy account contextual model::TimeSeries.....	32
Table 26 – Association ends of Energy account contextual model::TimeSeries with other classes .....	32
Table 27 – IsBasedOn dependency.....	35

Table 28 – Attributes of Energy account assembly model::EnergyAccount_MarketDocument .....	35
Table 29 – Association ends of Energy account assembly model::EnergyAccount_MarketDocument with other classes .....	36
Table 30 – Attributes of Energy account assembly model::Point.....	36
Table 31 – Association ends of Energy account assembly model:: Point with other classes .....	37
Table 32 – Attributes of Energy account assembly model::Reason .....	37
Table 33 – Attributes of Energy account assembly model::Series_Period .....	38
Table 34 – Association ends of Energy account assembly model:: Series_Period with other classes .....	38
Table 35 – Attributes of Energy account assembly model::TimeSeries .....	38
Table 36 – Association ends of Energy account assembly model:: TimeSeries with other classes .....	39
Table 37 – Attributes of ESMPDataTypes::Action_Status .....	40
Table 38 – Attributes of ESMPDataTypes::ESMP_DateTimeInterval .....	40
Table 39 – Attributes of ESMPDataTypes::Amount_Decimal .....	40
Table 40 – Restrictions of attributes for ESMPDataTypes::Amount_Decimal .....	40
Table 41 – Attributes of ESMPDataTypes::AreaID_String.....	41
Table 42 – Restrictions of attributes for ESMPDataTypes::AreaID_String .....	41
Table 43 – Attributes of ESMPDataTypes::BusinessKind_String .....	41
Table 44 – Attributes of ESMPDataTypes::ClassificationKind_String.....	41
Table 45 – Attributes of ESMPDataTypes::CurrencyCode_String .....	42
Table 46 – Attributes of ESMPDataTypes::EnergyProductKind_String .....	42
Table 47 – Attributes of ESMPDataTypes::ESMP_DateTime .....	42
Table 48 – Restrictions of attributes for ESMPDataTypes::ESMP_DateTime .....	42
Table 49 – Attributes of ESMPDataTypes::ESMPVersion_String .....	43
Table 50 – Restrictions of attributes for ESMPDataTypes::ESMPVersion_String .....	43
Table 51 – Attributes of ESMPDataTypes::ID_String .....	43
Table 52 – Restrictions of attributes for ESMPDataTypes::ID_String.....	43
Table 53 – Attributes of ESMPDataTypes::MarketRoleKind_String.....	44
Table 54 – Attributes of ESMPDataTypes::MeasurementPointID_String.....	44
Table 55 – Restrictions of attributes for ESMPDataTypes:: MeasurementPointID_String .....	44
Table 56 – Attributes of ESMPDataTypes::MeasurementUnitKind_String .....	44
Table 57 – Attributes of ESMPDataTypes::MessageKind_String .....	45
Table 58 – Attributes of ESMPDataTypes::ObjectAggregationKind_String.....	45
Table 59 – Attributes of ESMPDataTypes::PartyID_String.....	45
Table 60 – Restrictions of attributes for ESMPDataTypes::PartyID_String.....	45
Table 61 – Attributes of ESMPDataTypes::Position_Integer .....	46
Table 62 – Restrictions of attributes for ESMPDataTypes::Position_Integer .....	46
Table 63 – Attributes of ESMPDataTypes::ProcessKind_String .....	46
Table 64 – Attributes of ESMPDataTypes::Quality_String .....	46
Table 65 – Attributes of ESMPDataTypes::ReasonCode_String .....	47
Table 66 – Attributes of ESMPDataTypes::ReasonText_String.....	47
Table 67 – Restrictions of attributes for ESMPDataTypes::ReasonText_String.....	47

Table 68 – Attributes of ESMPDataTypes::Status_String .....	47
Table 69 – Attributes of ESMPDataTypes::YMDHM_DateTime .....	48
Table 70 – Restrictions of attributes for ESMPDataTypes::YMDHM_DateTime .....	48

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### **FRAMEWORK FOR ENERGY MARKET COMMUNICATIONS –**

#### **Part 451-4: Settlement and reconciliation business process, contextual and assembly models for European market**

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International Standard IEC 62325-451-4 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 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Removal of the attributes "quantity" and "secondary quantity" of the class "Point";
- b) Introduction of the class "Quantity" from IEC 62351-351 UML package, with the following attributes "quantity" as mandatory and "quality" as optional, and create two association 1..1 between the class "Quantity" and the class "Point" with the role "In\_Quantity" and "Out\_Quantity".



- c) Introduction of the class “Reason” from IEC 62351-351 UML package, with the following attributes “code” as mandatory and “text” as optional, and create an association 0..\* from the class “Reason” to the class “Point” with the role “Reason”.

The text of this International Standard is based on the following documents:

CDV	Report on voting
57/1737/CDV	57/1804/RVC

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62325 series, published under the general title *Framework for energy market communications*, can be found on the IEC website.

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

This standard is one of the IEC 62325 series which define protocols for deregulated energy market communications.

The principal objective of the IEC 62325 series is to produce standards which facilitate the integration of market application software developed independently by different vendors into a market management system, between market management systems and market participant systems. This is accomplished by defining message exchanges to enable these applications or systems access to public data and exchange information independent of how such information is represented internally.

The common information model (CIM) specifies the basis for the semantics for this message exchange.

The European style market profile (ESMP) is based on different parts of the CIM IEC standard. The CIM is defined through a series of standards, i.e. IEC 62325-301, IEC 61970-301 and IEC 61968-11.

This document provides the settlement and reconciliation business process that can be used throughout a European style market. This standard was originally based upon the work of the European Transmission System Operators (ETSO) Task Force EDI (Electronic Data Interchange) and then on the work of the European Network of Transmission System Operators (ENTSO-E) Working Group EDI.

This document describes the settlement and reconciliation process for wholesale markets; it is brought to the attention of the reader that it is envisaged to initiate work on a combined reconciliation process for retail and wholesale markets.

## FRAMEWORK FOR ENERGY MARKET COMMUNICATIONS –

### Part 451-4: Settlement and reconciliation business process, contextual and assembly models for European market

#### 1 Scope

Based on the European style market profile (ESMP) (IEC 62325-351), this part of IEC 62325-451 specifies a package for the settlement and reconciliation business process and the associated document contextual model, assembly model and XML schema for use within European style markets.

The relevant aggregate core components (ACCs) defined in IEC 62325-351 have been contextualised into aggregated business information entities (ABIEs) to satisfy the requirements of this business process. The contextualised ABIEs have been assembled into the relevant document contextual models. Related assembly models and XML schema for the exchange of information between market participants are automatically generated from the assembled document contextual models.

This part of IEC 62325 provides a uniform layout for the transmission of aggregated data in order to settle the electricity market. It is however not the purpose of this document to define the formula to be taken into account to settle or reconcile a market. The purpose of this document is only to enable the information exchange necessary to carry out the computation of settlement and reconciliation.

The settlement process or reconciliation process is the way to compute the final position of each market participant as well as its imbalance amounts.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 TS 61970-2, *Energy management system application program interface (EMS-API) – Part 2: Glossary*

IEC 62325-301, *Framework for energy market communications – Part 301: Common information model (CIM) extensions for markets*

IEC 62325-351, *Framework for energy market communications – Part 351: CIM European market model exchange profile*

IEC 62325-450:2013, *Framework for energy market communications – Part 450: Profile and context modelling rules*

IEC 62325-451-1, *Framework for energy market communications – Part 451-1: Acknowledgement business process and contextual model for CIM European market*

IEC 62325-451-2, *Framework for energy market communications – Part 451-2: Scheduling business process and contextual model for CIM European market*

IEC 62361-100, *Power systems management and associated information exchange – Interoperability in the long term – Part 100: CIM profiles to XML schema mapping*

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