

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



## AMENDMENT 1 AMENDEMENT 1

**Framework for energy market communications –  
Part 451-3: Transmission capacity allocation business process (explicit or  
implicit auction) and contextual models for European market**

**Cadre pour les communications pour le marché de l'énergie –  
Partie 451-3: Processus métier d'attribution de la capacité de transport (vente  
aux enchères explicite ou implicite) et modèles contextuels pour le marché  
européen**





## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2017 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

#### IEC Catalogue - [webstore.iec.ch/catalogue](http://webstore.iec.ch/catalogue)

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

#### IEC publications search - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary of electronic and electrical terms, containing 20 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

#### IEC Glossary - [std.iec.ch/glossary](http://std.iec.ch/glossary)

65 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

#### IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [csc@iec.ch](mailto:csc@iec.ch).

### A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

### A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

#### Catalogue IEC - [webstore.iec.ch/catalogue](http://webstore.iec.ch/catalogue)

Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

#### Recherche de publications IEC - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient 20 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

#### Glossaire IEC - [std.iec.ch/glossary](http://std.iec.ch/glossary)

65 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

#### Service Clients - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: [csc@iec.ch](mailto:csc@iec.ch).

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



AMENDMENT 1  
AMENDEMENT 1

**Framework for energy market communications –  
Part 451-3: Transmission capacity allocation business process (explicit or  
implicit auction) and contextual models for European market**

**Cadre pour les communications pour le marché de l'énergie –  
Partie 451-3: Processus métier d'attribution de la capacité de transport (vente  
aux enchères explicite ou implicite) et modèles contextuels pour le marché  
européen**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 33.200

ISBN 978-2-8322-4209-4

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## FOREWORD

This amendment has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

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

CDV	Report on voting
57/1755/CDV	57/1825/RVC

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

The committee has decided that the contents of this amendment and the base 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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

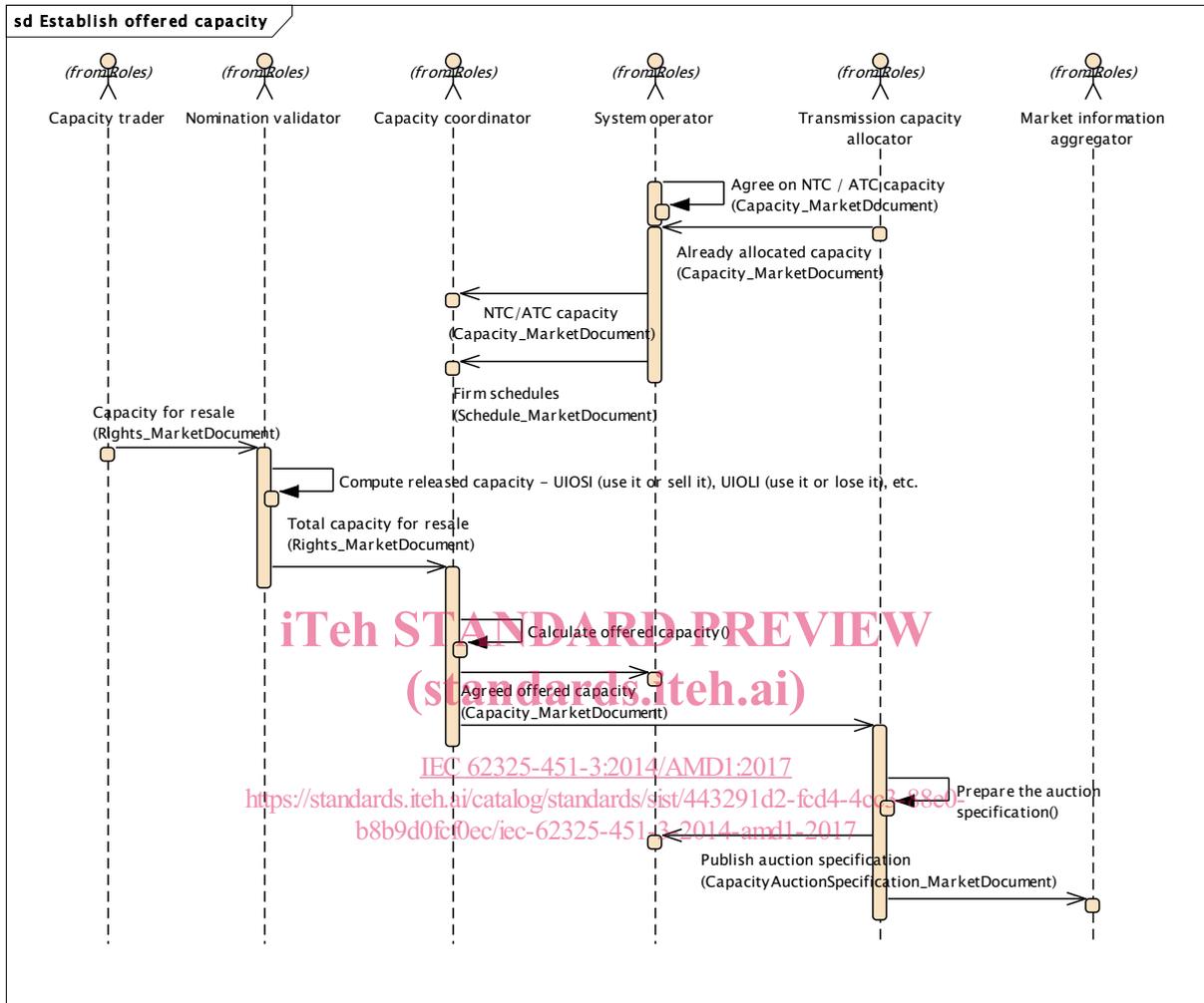
**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

**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.**

---

Figure 4 – Establish offered capacity overview

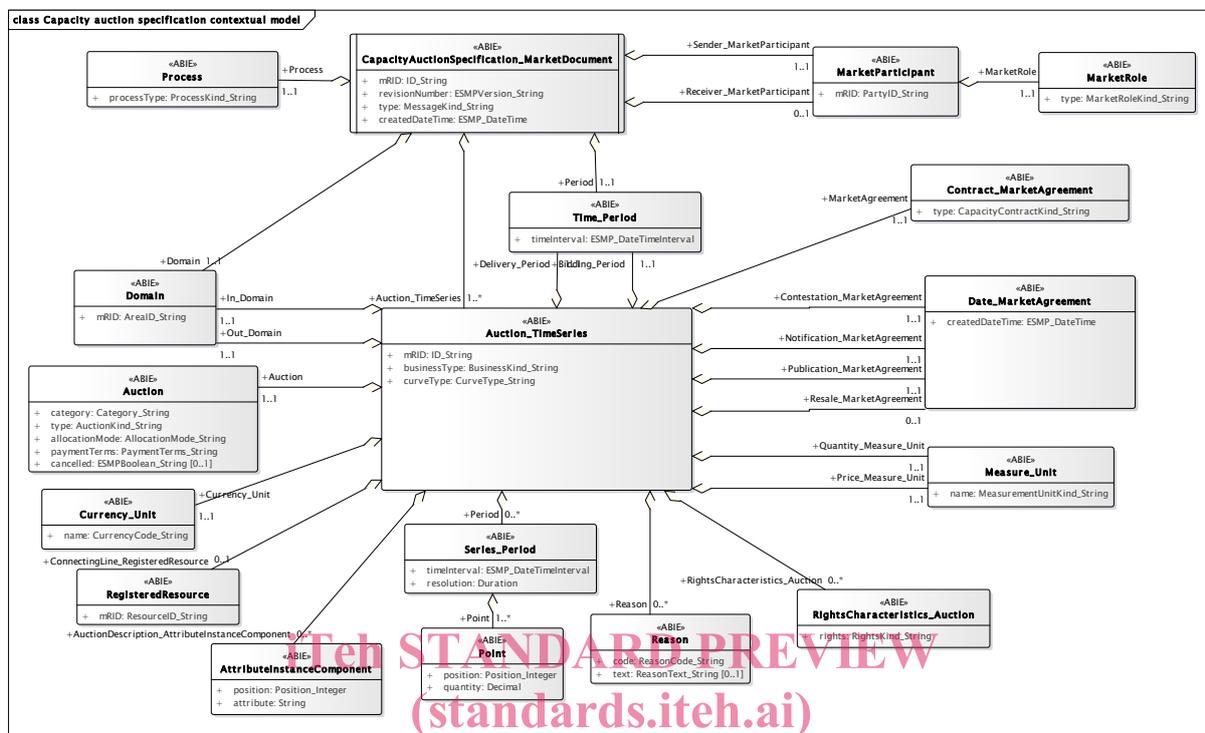
Replace existing Figure 4 by the following new figure:



iTeh STANDARD PREVIEW  
(standards.iteh.ai)  
IEC 62325-451-3:2014/AMD1:2017  
<https://standards.iteh.ai/catalog/standards/sist/443291d2-fcd4-4cd2-88ed-b8b9d0fc0ec/iec-62325-451-3-2014-amd1-2017>

Figure 11 – Capacity auction specification contextual model

Replace existing Figure 11 by the following new figure:



IEC

IEC 62325-451-3:2014/AMD1:2017

Table 29 – IsBasedOn dependency catalog/standards/sist/443291d2-fcd4-4cc3-88e0-b8b9d0fcf0ec/iec-62325-451-3-2014-amd1-2017

In Table 29 insert the following new row after the row "Reason":

Name	Is BasedOn Class	Complete IsBasedOn Path
RegisteredResource	MarketCommon::RegisteredResource	IEC62325/MarketCommon

Table 35 – Association ends of Capacity auction specification contextual model::Auction\_TimeTypeSeries with other classes

In Table 35 insert the following new row after the row "Bidding\_Period":

mult.	Role	Class type name	Description
[0..1]	ConnectingLine_Registered Resource	RegisteredResource	The identification of a resource associated with a TimeSeries. The identification of a set of lines that connect two areas; the transmission capacity rights are related to this set of lines. Association Based On: ESMPClasses::RegisteredResource.Registere dResource[0..*] ----- ESMPClasses::TimeSeries.[]

### 6.3.3 Detailed Capacity auction specification contextual model

Insert the following new Subclause 6.3.3.18 at end of Subclause 6.3.3:

**6.3.3.18 RegisteredResource**

A resource that is registered through the market participant registration system. Examples include generating unit, load, and non-physical generator or load.

IsBasedOn: ESMPClasses::RegisteredResource

Table 254 shows all attributes of RegisteredResource.

**Table 254 – Attributes of Capacity auction specification contextual model::RegisteredResource**

mult.	Attribute name	Attribute type	Description
[1..1]	mRID	ResourceID_String	The unique identification of a resource.

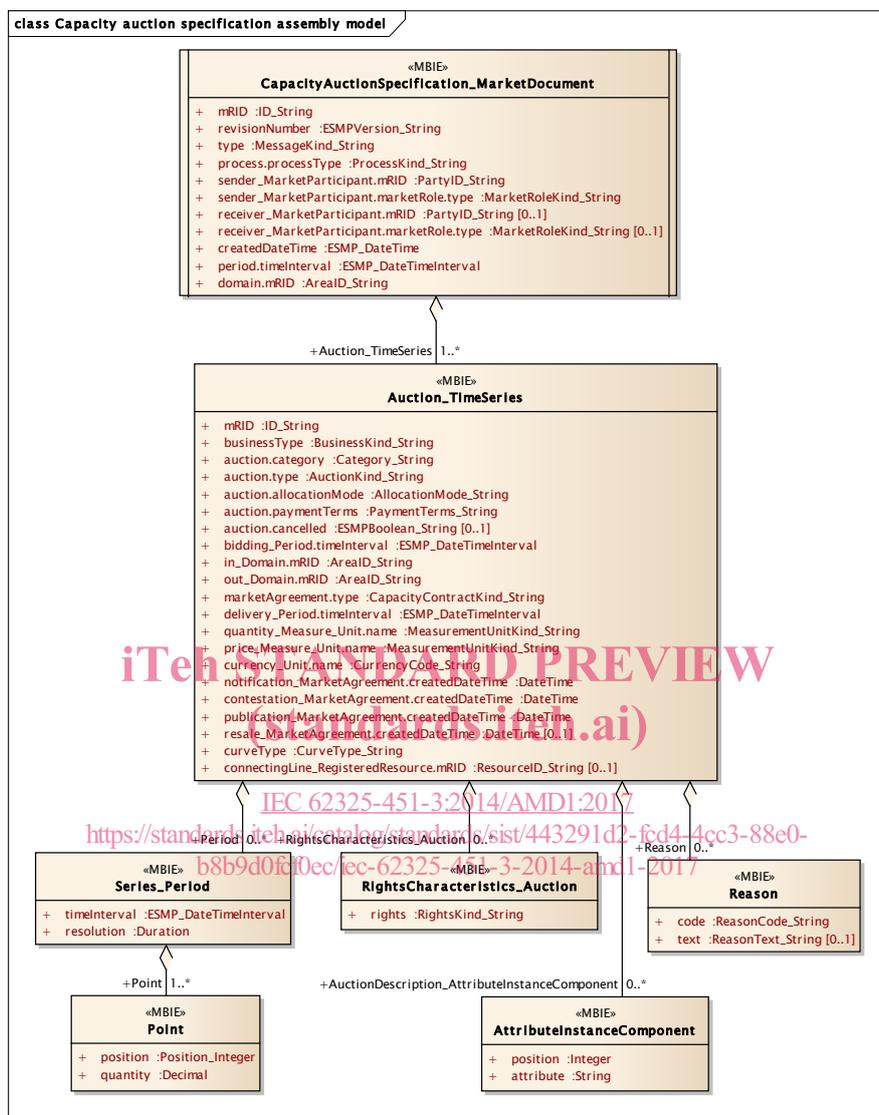
**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[IEC 62325-451-3:2014/AMD1:2017](https://standards.iteh.ai/catalog/standards/sist/443291d2-fcd4-4cc3-88e0-b8b9d0fcf0ec/iec-62325-451-3-2014-amd1-2017)

<https://standards.iteh.ai/catalog/standards/sist/443291d2-fcd4-4cc3-88e0-b8b9d0fcf0ec/iec-62325-451-3-2014-amd1-2017>

Figure 12 – Capacity auction specification assembly model

Replace existing Figure 12 by the following new figure:



IEC

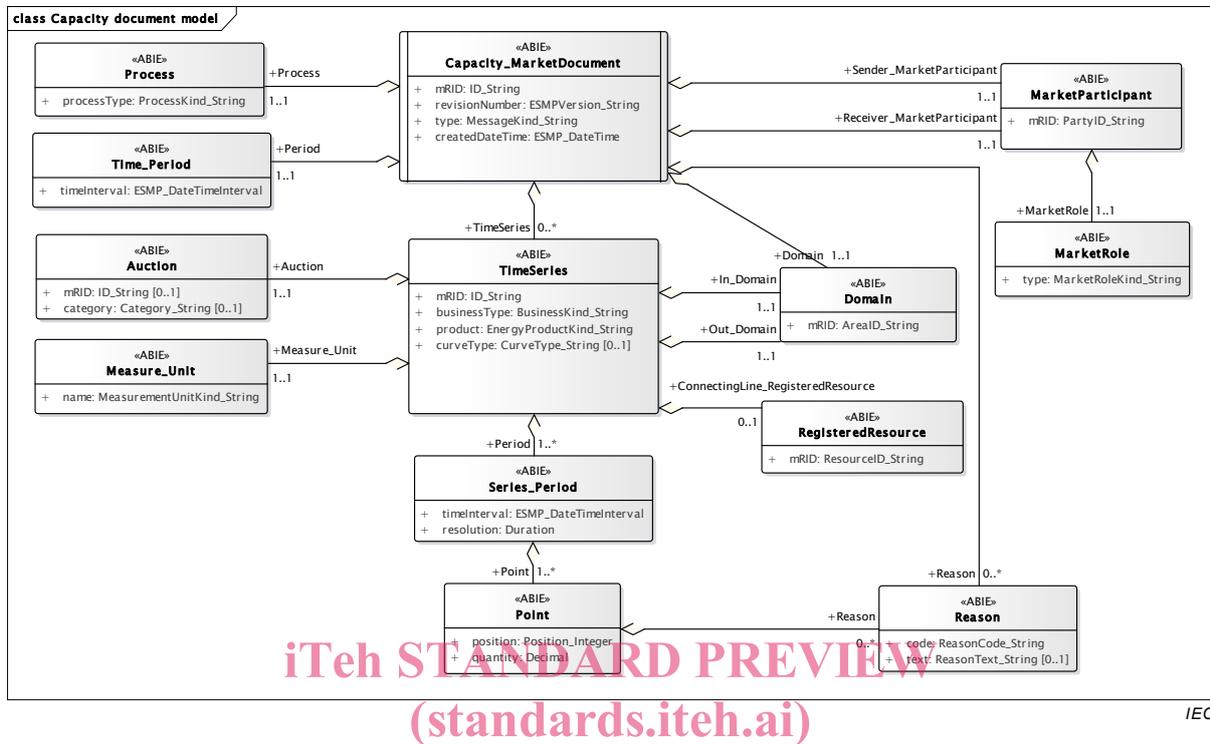
Table 55 – Attributes of Capacity auction specification assembly model::Auction\_TimeSeries

In Table 55 insert the following new row after the row “businessType”:

mult.	Attribute name	Attribute type	Description
[0..1]	connectingLine_RegisteredResource.mRID	ResourceID_String	The unique identification of a resource. --- The identification of a resource associated with a TimeSeries. The identification of a set of lines that connect two areas; the transmission capacity rights are related to this set of lines.

**Figure 13 – Capacity contextual model**

Replace existing Figure 13 by the following new figure:



**Table 62 – IsBasedOn dependency**

In Table 62 insert the following new row after the row "Reason":

Name	Is BasedOn Class	Complete IsBasedOn Path
RegisteredResource	MarketCommon::RegisteredResource	IEC62325/MarketCommon

**Table 79 – Association ends of Capacity contextual model::TimeSeries with other classes**

In Table 79 insert the following new row after the row "Auction":

mult	Role	Class type name	Description
[0..1]	ConnectingLine_RegisteredResource	RegisteredResource	The identification of a resource associated with a TimeSeries. The identification of a set of lines that connect two areas; the transmission capacity rights are related to this set of lines. Association Based On: ESMPClasses::RegisteredResource.RegisteredResource[0..*] ----- ESMPClasses::TimeSeries.[]

### 6.5.3 Detailed Capacity contextual model

Insert the following new Subclause 6.5.3.13 at end of Subclause 6.5.3:

### 6.5.3.13 RegisteredResource

A resource that is registered through the market participant registration system. Examples include generating unit, load, and non-physical generator or load.

IsBasedOn: ESMPClasses::RegisteredResource

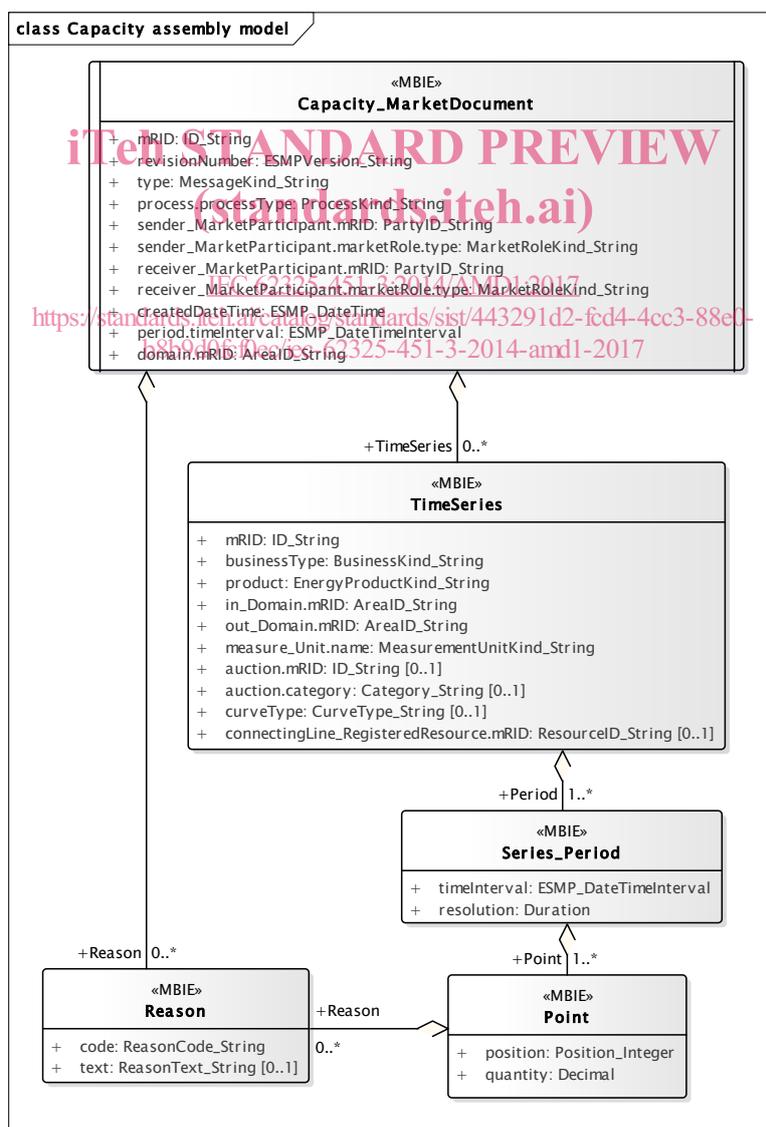
Table 255 shows all attributes of RegisteredResource.

**Table 255 – Attributes of Capacity contextual model::RegisteredResource**

mult.	Attribute name	Attribute type	Description
[1..1]	mRID	ResourceID_String	The unique identification of a resource.

**Figure 14 – Capacity assembly model**

Replace existing Figure 14 by the following new figure:



**Table 88 – Attributes of Capacity assembly model::TimeSeries**

*In Table 88 insert the following new row after the row “businessType”:*

mult.	Attribute name	Attribute type	Description
[0..1]	connectingLine_RegisteredResource.mRID	ResourceID_String	The unique identification of a resource. --- The identification of a resource associated with a TimeSeries. The identification of a set of lines that connect two areas; the transmission capacity rights are related to this set of lines.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[IEC 62325-451-3:2014/AMD1:2017](https://standards.iteh.ai/catalog/standards/sist/443291d2-fcd4-4cc3-88e0-b8b9d0fcf0ec/iec-62325-451-3-2014-amd1-2017)

<https://standards.iteh.ai/catalog/standards/sist/443291d2-fcd4-4cc3-88e0-b8b9d0fcf0ec/iec-62325-451-3-2014-amd1-2017>

Figure 28 – CapacityAuctionSpecification\_MarketDocument XML schema structure – 2/2

Replace existing Figure 28 by the following new figure:

