57/1450/CDV

COMMITTEE DRAFT FOR VOTE (CDV)
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Also of interest to the following committees Intéresse également les comités suivants		Supersedes document Remplace le document 57/1411/CD – 57/1448/CC

Proposed horizontal standard
Norme horizontale suggérée

☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the TC/SC secretary
Les autres CE/SC sont requis d'indiquer leur intérêt, si nécessaire, dans ce CDV à l'intention du secrétaire du CE/SC

Functions concerned
Fonctions concernées

☐ Safety / Sécurité ☐ EMC / CEM ☐ Environment / Environnement ☐ Quality assurance / Assurance qualité

Title : IEC 62325-451-5: Framework for energy market communications -

Part 451-5: Problem statement and status request business processes, contextual and assembly models for European market

Introductory note

ATTENTION
IEC – CENELEC
PARALLEL VOTING

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) for an International Standard is submitted for parallel voting.
The CENELEC members are invited to vote through the CENELEC online voting system.

ATTENTION
VOTE PARALLÈLE
CEI – CENELEC
L'attention des Comités nationaux de la CEI, membres du CENELEC, est attirée sur le fait que ce projet de comité pour vote (CDV) de Norme internationale est soumis au vote parallèle.
Les membres du CENELEC sont invités à voter via le système de vote en ligne du CENELEC.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FRAMEWORK FOR ENERGY MARKET COMMUNICATIONS –

Part 451-5: Problem statement and status request business processes, contextual and assembly models for European market

FOREWORD

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International Standard IEC 62325-451-5 has been prepared by subcommittee by IEC technical committee 57: Power systems management and associated information exchange.

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

FDIS	Report on voting
XX/XX/FDIS	XX/XX/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.

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

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site 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.

The National Committees are requested to note that for this publication the stability date is 2017.

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.

Document history

Any person intervening in the present document is invited to complete the table below before sending the document elsewhere. The purpose is to allow all actors to see all changes introduced and the intervening persons.

Any important message to IEC editors should also be included in the table below.

Name of intervening person	Document received		Brief description of the changes introduced	Document sent	
	From	Date		To	Date
Maurizio Monti	Project leader	2013-07-29	From the outlines submitted with the NP, draft the Committee Draft document and review made in the project group.	IEC Secretary	2013-08-29
Maurizio Monti	Project leader		No specific comment issued on the CD, cf. CC 57/1411/CD, the CDV is generated from the UML model	IEC Secretary	2014-02-17
Margareta Nöth	Maurizio Monti	2013-02-21	English CDV version sent to CO for generate the French version	CO	2014-02-21

This table will be removed by IEC editors before FDIS circulation (in case of IS) or before final publication (in case of TS or TR).

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 of standards 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 is based on different parts of the CIM IEC standard. The CIM is defined through a series of standard, i.e. IEC 62325-301, IEC 61970-301 and IEC 61968-11 standards.

This document provides for the European style market profile the problem statement and status request business processes 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.

FRAMEWORK FOR ENERGY MARKET COMMUNICATIONS –

Part 451-5: Problem statement and status request business processes, contextual and assembly models for European market

1 Scope

Based on the European style market profile (IEC 62325-351), this particular International Standard specifies a package for the problem statement and status request business processes and the associated document contextual models, assembly models 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.

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 62325-301*, Framework for energy market communications - Common information model (CIM) Extensions for markets*.

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

IEC 62325-450, *Profile and context modeling rules.*

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

IEC-62325-451-2, *Framework for energy market communications - Scheduling business process and contextual model for European market.*

IEC-62325-451-3, *Framework for energy market communications - Transmission capacity allocation business process (explicit or implicit auction) and contextual models for European market.*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions of IEC 61970-2 apply, as well as the following.

NOTE Refer to International Electrotechnical Vocabulary, IEC 60050, for general glossary definitions.

3.1
aggregate business information entity
ABIE
aggregate business information entity is a re-use of an aggregate core component (ACC) in a specified business

[SOURCE: ISO 15000-5]

3.2
aggregate core component
ACC
collection of related pieces of business information that together convey a distinct business meaning, independent of any specific business context.

Note 1 to entry: Expressed in modelling terms, this is the representation of an object class, independent of any specific business context.

[SOURCE: ISO 15000-5]

3.3
application program interface
API
set of public functions provided by an executable application component for use by other executable application components.

3.4
assembly model
assembly model is a model that prepares information in a business context for assembly into electronic documents for data interchange.

3.5
based on or IsBasedOn
use of an artefact that has been restricted according to the requirements of a specific business context.

[SOURCE: IEC 62325-450]

3.6
business context
formal description of a specific business circumstance as identified by the values of a set of context categories, allowing different business circumstances to be uniquely distinguished

[SOURCE: UN/Cefact]

3.7
European style market profile
ESMP
the European style market profile, the object of this International Standard.

3.8
information model
representation of concepts, relationships, constraints, rules, and operations to specify data semantics for a chosen domain of discourse.

Note 1 to entry: It can provide shareable, stable, and organized structure of information requirements for the domain context.

3.9
market management system
MMS
computer system comprised of a software platform providing basic support services and a set of applications providing the functionality needed for the effective management of the electricity market.

Note 1 to entry: These software systems in an electricity market may include support for capacity allocation, scheduling energy, ancillary or other services, real-time operations and settlements.

3.10
message business information entity
MBIE
aggregation of a set of ABIEs that respects a define set of assembly rules.

4 Document contextual model and message assembly model basic concepts

4.1 Overview

IEC 62325-450 defines a set of CIM profiles that follows a layered modelling framework as outlined in Figure 1 going from the common information model (CIM; IEC 61968-11, IEC 61970-301 and IEC 62325-301), to different regional contextual models and their subsequent contextualized documents for information exchange; the final step being the message specifications for information interchange.

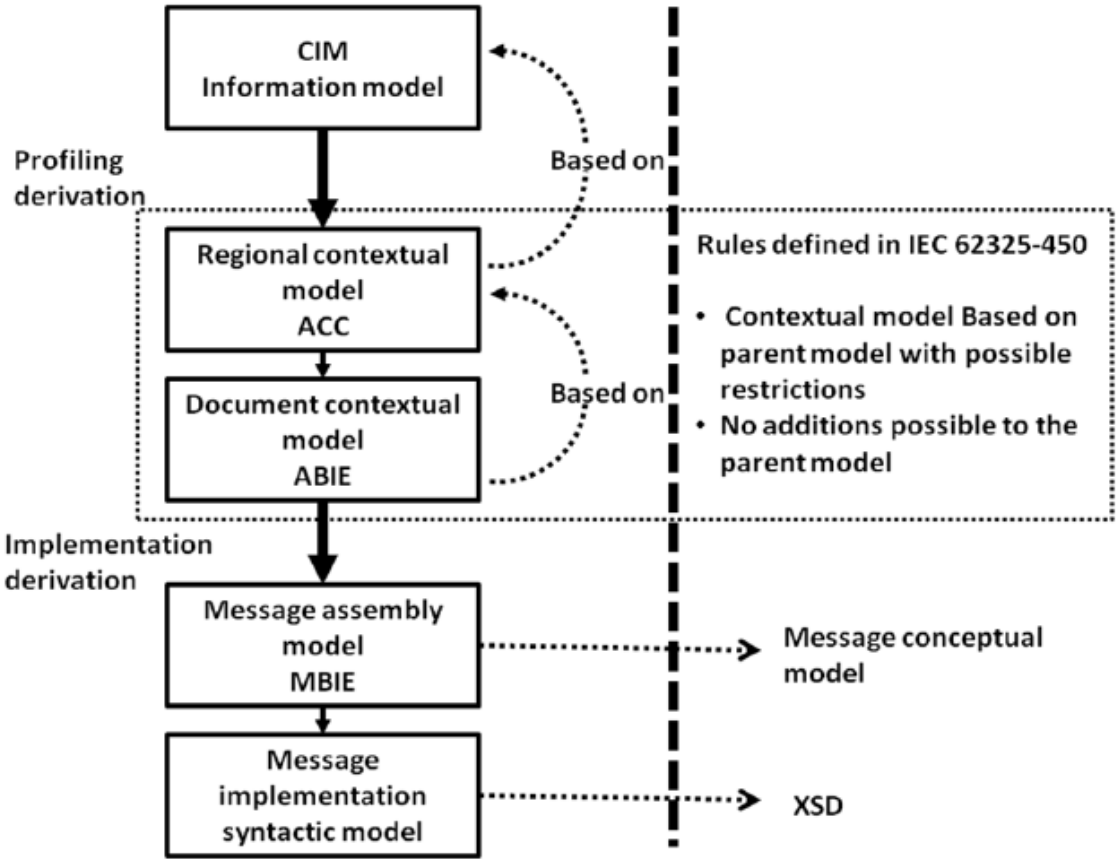

Figure 1 - IEC 623235-450 modelling framework

The regional contextual models are the basic core components that are necessary to build electronic documents for information interchange. This is defined in the European style market contextual model (IEC 62325-351). These core components are also termed aggregate core components (ACCs).

A document contextual model is based upon a specific business requirements specification and is constructed from the contextualisation of the ACCs that can be found in the European style market contextual model. The contextualised ACCs at this stage are terms aggregate business information entities (ABIEs) These ABIEs are the constructs that are assembled together into a specific electronic document to satisfy the information requirements outlined in the business requirements specification. The transformation from an ACC to an ABIE shall respect the rules defined in IEC 62325-450.

Once a document contextual model has been built that satisfactorily meets the business requirements, a message assembly model can be automatically generated from it.

XML schema then may be automatically generated from the message assembly model. If necessary specific mapping can take place at this stage to transform the CIM class and attribute names into more market legacy names.

4.2 European style market package structure

Figure 2 describes the main package structure of the European style market profile.

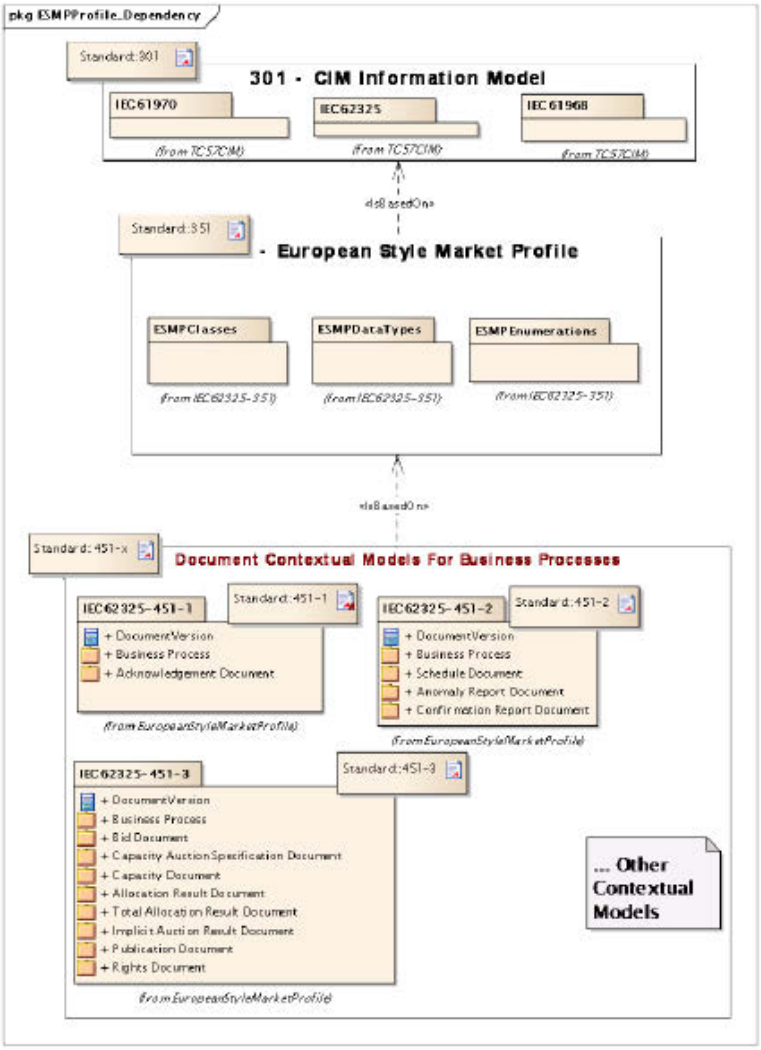

Figure 2 - Overview of European style market profile dependency

For each business process, a business process package is described in an IEC 62325-451-x (x from 1 to n) standard. A business process package contains:

- The document contextual model (ABIE) and the automatically generated message assembly model (MBIE) for each electronic document required to enable the completion of the business process. Each document is a sub contextual model derived by restriction from the European style market profile.
- The XML schema of the business document that is automatically generated from the message assembly model.

The European style market profile (ESMP), as defined in the IEC 62325-351, provides the core components permitted for use in an IEC 62325-451-x standard as all ABIEs shall be "based on" the IEC 62325-351 core components:

- ESMPClasses: Defining all the semi-contextual classes of the European style market profile derived by restriction from the CIM model.
- ESMPDataTypes: Defining all the core datatypes used within the ESMP classes.

All the core components that are used in every electronic document structure have been harmonized and centralized in the European style market profile. These core components are consequently the basic building blocks from which all electronic document ABIEs are derived.

4.3 From the European style market profile to the document contextual model

The document contextual model for a given business process is constructed by an information analyst who identifies all the information requirements necessary to satisfy the business process.

Once the information requirements have been identified the information analyst identifies the related ACCs that are available in the European style market profile and contextualises them to meet the information requirements. This contextualisation step creates a set of aggregate business information entities (ABIEs).

In a final step the information analyst assembles together into a specific document contextual model package the ABIEs to form a document model satisfying the business requirements.

4.4 From the document contextual model to the message assembly model

Once the document contextual model has been finalised, the message assembly model may be automatically generated.

All document contextual models share the same core components and core datatypes. These are defined in the European style market profile (IEC 62325-351) and are contextualised and refined in all document contextual models (IEC 62325-451-x series) respecting the rules as described in IEC 62325-450.

4.5 From the assembly model to the XML schema

The final modelling step applies a standardized set of criteria in order to generate a uniform XML schema from the assembly model. This transformation process respects the rules defined in IEC 62361-100.

5 The problem statement and status request business process

5.1 Business context for the problem statement process

The objective of the problem statement process is to provide:

- a means of informing a party that a document could not be issued by the expected time and thus will be delayed (the approval of this delay depends upon the rules that have been established between the parties);

- an automated support in the case where an escalation procedure has to be put into place when an expected event does not occur or a critical situation has to be resolved.

Figure 3 displays the two parties involved in this kind of data exchanges:

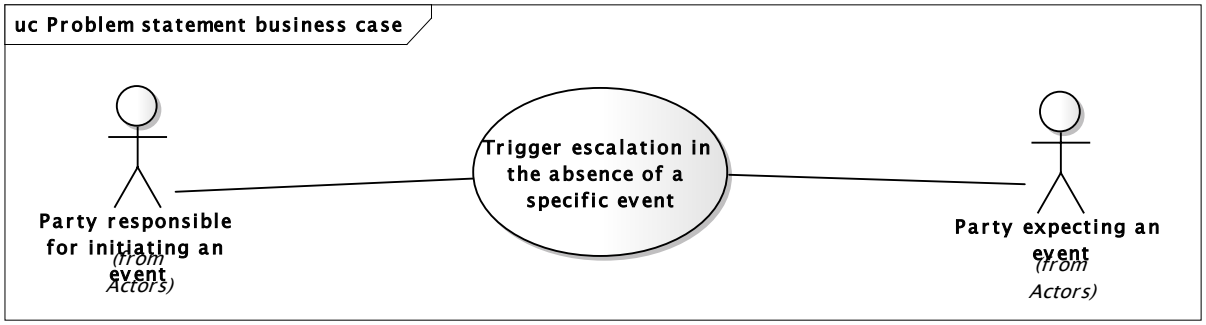

Figure 3 – Problem statement business case

In a normal document exchange the “party responsible for initiating an event” such as the transmission of a document transmits this within a specified time period. The “party expecting an event” is waiting for the reception of the document in question within the agreed timeframe.

The problem statement business process has a two-fold purpose hereafter described.

- The first is in case where the “party responsible for initiating an event” is not in a position (IT problems, etc.) to transmit an electronic document at the expected time. This party may issue to the other party a trouble shooting document stating when he will be in a position to send the expected document. In such a case, this specific exchange is for information and depending upon the rules agreed between the parties, other data exchanges may occur such as confirmation of the time delay, etc.
- The second is in the case where the expected document does not arrive by the time specified; the “party expecting an event” triggers the transmission of an escalation document to inform the “party responsible for initiating an event” to initiate an escalation procedure instead of sending the expected document.

5.2 Business context for the status request process

5.2.1 Overview of the status request process

Within the European style market, processes/markets are normally not instantaneous, thus there is a lapse of time between the initial transmission for a business process and its conclusion. During this time the initiator of the process is unaware of the status of his situation. For example in the case of the scheduling process matching information shall be received in order to conclude the transaction and a time limit is imposed on its successful conclusion. The initiator could be able to expedite the transmission of the matching information if he was aware that it had not yet been received.

In other cases it may be that a participating party would like to have a global overview of his situation at a given point in time.

To facilitate to the market participant the establishment of his overall position an harmonized requesting mechanism was developed enabling a market participant to make an electronic request for information to his counterparties. This requesting mechanism shall also be used as a web services interface.

The recipient may then acknowledge the request as per IEC 62325-451-1 and then transmit the requested information providing he has the capacity to do so.

The nature of the information that is sent in reply to a request is dependent on the context in which the request is made. It is through bilateral agreement that such a service is provided. The agreement will also define the structure of the answering information flow.

5.2.2 Use case for the status request process

In the general context the two principal actors participate in some mainline business process, e.g. the scheduling (IEC 62325-451-2) or the transmission capacity auctioning process (IEC 62325-451-3). The business process is composed of a number of transactions that are initialised, processed and concluded. In the context of the use case in Figure 4 it is assumed that the responsible operator (e.g. system operator, transmission capacity allocator, capacity coordinator, etc.) carries out the principal processing. However the roles may be inversed.

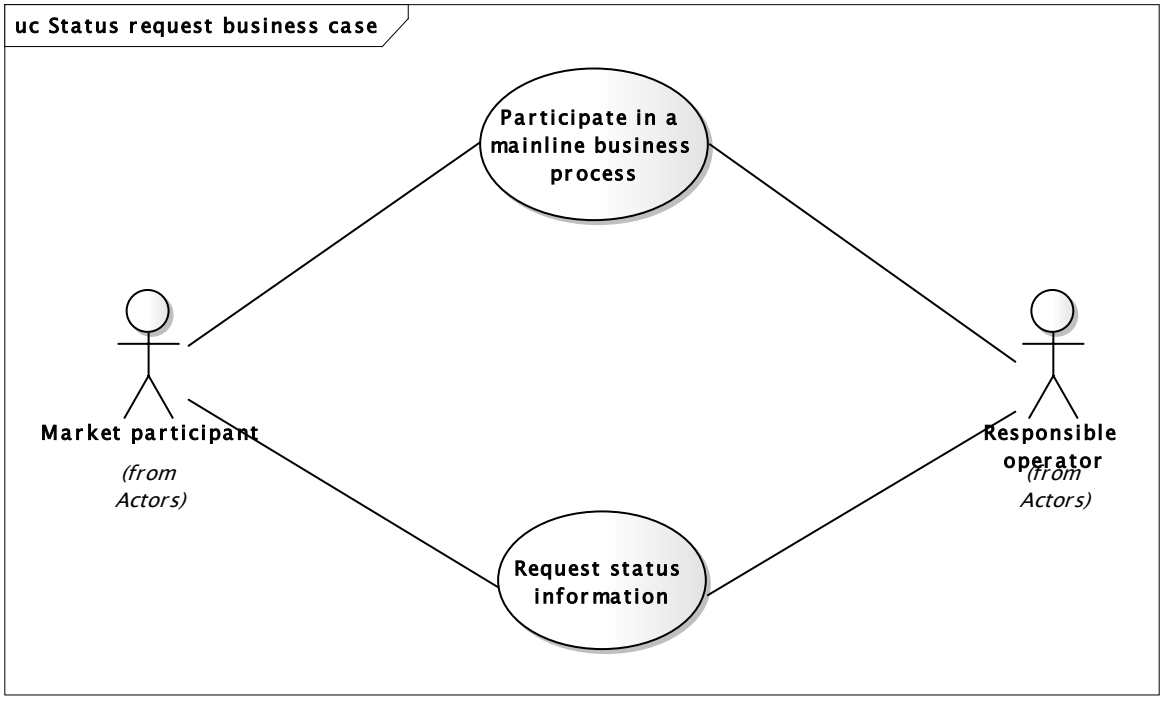

Figure 4 – Status request business case

Between the initialisation where the initial submission and acknowledgement is carried out and the conclusion where the business process is terminated, there is a processing activity. Generally it is during this period that the initiator has little or no insight into his position in respect to the ongoing transaction.

It is during this phase where a status request use case may be applied. This process will enable the initiator to receive the status of his transaction prior to its termination or the status of his overall situation. This will eventually enable him to react and expedite missing information prior to a transactions conclusion or carry out other actions to actualise his situation.

The status request process is of interest in a context where a mainline business process has not provided for status or position requests.

5.2.3 Sequence diagrams for the status request process

A status request document could be transmitted either during a given transaction or at any other time requesting status information related to the transmitter of the document.

The sequence diagrams in Figure 5 and Figure 6 outline the typical scenarios where status information can be requested during or just immediately prior to the processing of a transaction.

The first scenario in Figure 5, which may be considered the general case, displays the request about the status of a document (flow 1.0) that is being processed by a given party (flows 2.0 and 2.1). The flow 2.0 could be initiated before the flow 1.1 has been received, i.e. a status request could be issued even if an acknowledgement document has not been received.

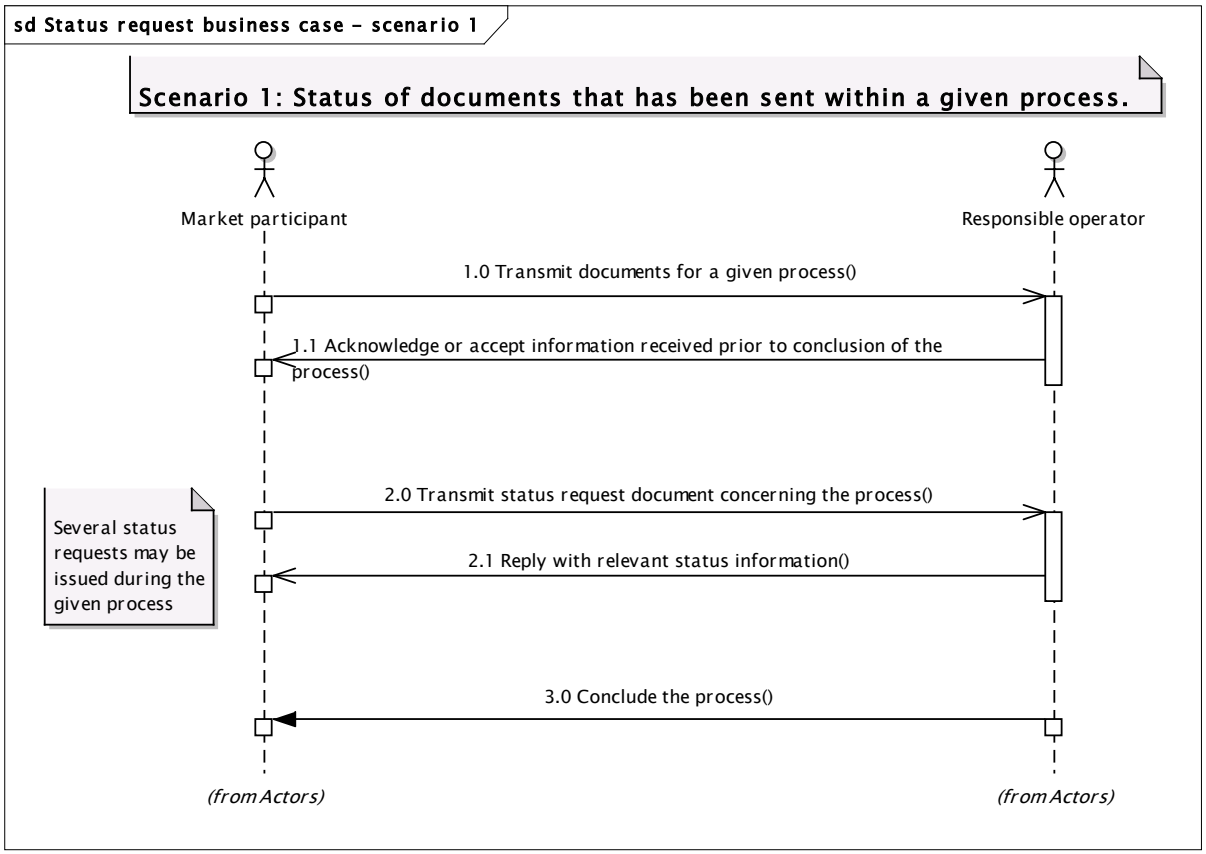

Figure 5 – Status request scenario 1

The second scenario, Figure 6, can occur outside any transaction processing where the situation of a party within a given context may be requested.

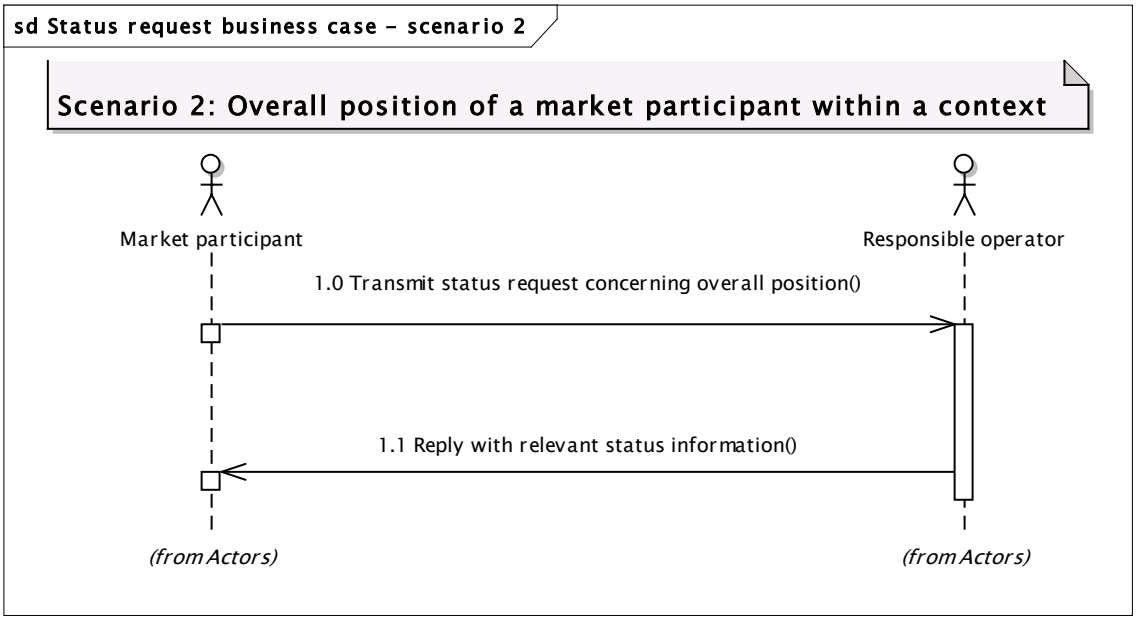

Figure 6 – Status request scenario 2

The status information that is returned is dependent on the nature of the business process.

After concluding the process it is still possible to send a status request (scenario 2) in order to determine the position of something (for example, the situation of a party on a given border). This status request could refer to the documents that have been exchanged during that process or it could also refer to a larger context of different processes for example the position of a balance responsible party taking into account both a day ahead scheduling process and an intraday scheduling process.

5.3 Business rules

5.3.1 General

All the business rules described in IEC 62325-351 are also valid for this standard. Additional rules are provided hereafter.

A new version (having a greater revisionNumber) of a received document with the same document identification and without error shall completely replace the previous versions.

5.3.2 Business rules for the problem statement process

The “expected_MarketDocument.createdDateTime” attribute is to be provided when:

- The “type” attribute has the value “A35 – Trouble shooting document”
- The “code” attribute has the value “A92 – Not possible to send document on time, but estimated delivery time is provided”.

5.3.3 Business rules for the status request process

The “type” attribute could have the following values:

- “A59 - status request for a status within a process”
- “A60 - status request for a position independently from a specific process”.

A status request document shall contain a set of “AttributeInstance_Component” that completely define the request being made.

509 It can cover either a request for the status of a given transaction or a position relative to a
510 given context. The exact signification of the request is determined with the “type” attribute in
511 the “StatusRequest_MarketDocument” class and the combination of the information provided
512 in the set of “AttributeInstance_Component” classes through the “attribute” that identifies what
513 the information in the “attributeValue” signifies.

514 Within a given “AttributeInstance_Component” class all the “attribute” values shall be unique
515 (i.e. no two “attribute” values could be the same).

516 The receiver will automatically reject the request if any information is found to be in error. The
517 receiver shall send an acknowledgement (IEC 62325-451-1) to indicate that he is unable to
518 respond to the request in the expected manner and to provide the reason why the requested
519 answer could not be provided.

520 If the sender does not get a reply within a specified time interval the request should be
521 resubmit after having closely examined it for eventual errors.

6 Contextual and assembly models

6.1 Problem statement contextual model

6.1.1 Overview of the model

Figure 7 shows the model.

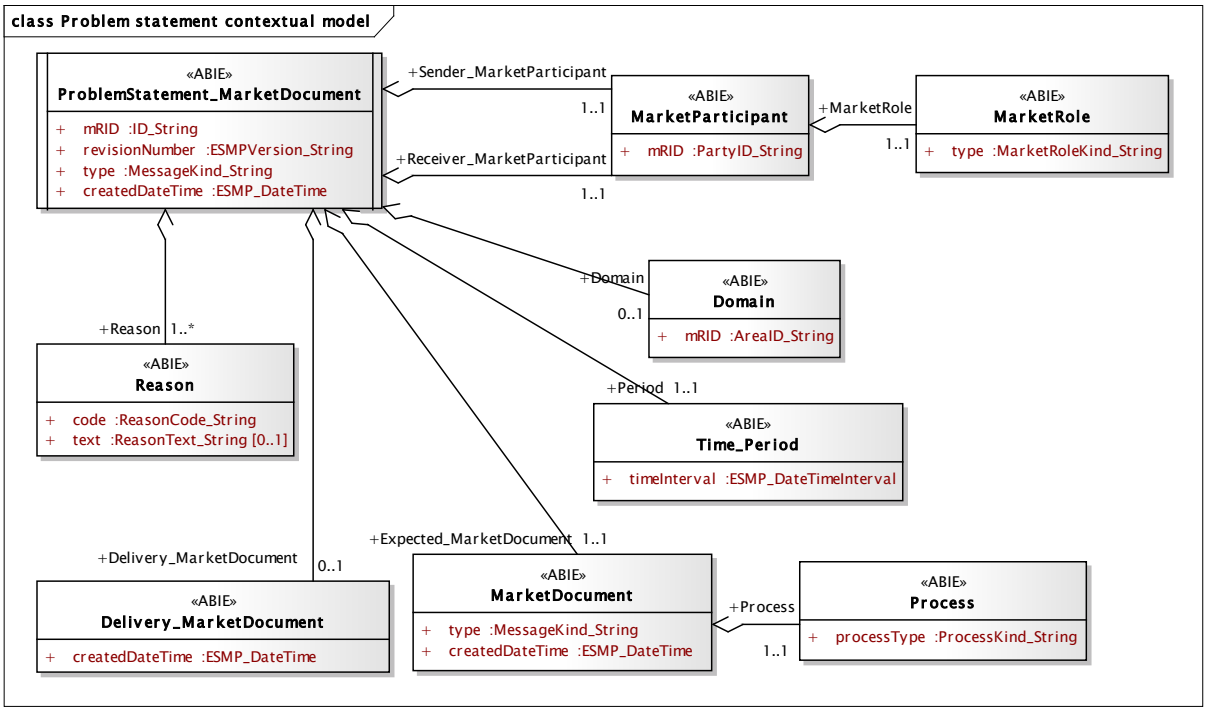

Figure 7 - Problem statement contextual model

6.1.2 IsBasedOn relationships from the European style market profile

Table 1 shows the traceability dependency of the classes used in this package towards the upper level.

Table 1 - IsBasedOn dependency

Name	Is BasedOn Class	Complete IsBasedOn Path
Delivery_MarketDocument	ESMPClasses::MarketDocument	62325\ESMPClasses
Domain	ESMPClasses::Domain	62325\ESMPClasses
MarketDocument	ESMPClasses::MarketDocument	62325\ESMPClasses
MarketParticipant	ESMPClasses::MarketParticipant	62325\ESMPClasses
MarketRole	ESMPClasses::MarketRole	62325\ESMPClasses
ProblemStatement_MarketDocument	ESMPClasses::MarketDocument	62325\ESMPClasses
Process	ESMPClasses::Process	62325\ESMPClasses
Reason	ESMPClasses::Reason	62325\ESMPClasses
Time_Period	ESMPClasses::Time_Period	62325\ESMPClasses

6.1.3 Detailed Problem statement contextual model

6.1.3.1 ProblemStatement_MarketDocument root class

The objective of this document is to provide either a means of informing a party that a document could not be issued by the expected time and thus will be delayed (the approval of this delay depends upon the rules that have been established between the parties) or an automated support in the case where an escalation procedure has to be put into place when an expected event does not occur or a critical situation has to be resolved.

An electronic document containing the information necessary to satisfy the requirements of a given business process.

IsBasedOn: ESMPClasses::MarketDocument

Table 2 shows all attributes of ProblemStatement_MarketDocument.

Table 2 - Attributes of Problem statement contextual model::ProblemStatement_MarketDocument.

mult.	Attribute name	Attribute type	Description
[1..1]	createdDateTime	ESMP_DateTime	The date and time of the creation of the document.
[1..1]	mRID	ID_String	The unique identification of the document being exchanged within a business process flow.
[1..1]	revisionNumber	ESMPVersion_String	The document version is used to identify a given version of a Problem Statement document and is used in the case of possible erroneous transmissions. The first version number for a given document identification shall normally be 1. The identification of the version that distinguishes one evolution of a document from another.
[1..1]	type	MessageKind_String	The following codes could be used - A34: Escalation document; - A35: Trouble shooting document. The coded type of a document. The document type describes the principal characteristic of the document.

Table 3 shows all association ends of ProblemStatement_MarketDocument with other classes.

Table 3 - Association ends of Problem statement contextual model::ProblemStatement_MarketDocument with other classes.

mult.	Role	Class type name	Description
[0..1]	Delivery_MarketDocument	Delivery_MarketDocument	The date and time when the document is expected to be prepared for transmission by the application of the sender. Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::MarketDocument.MarketDocument[0..*]
[0..1]	Domain	Domain	Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::Domain.Domain[0..1]
[1..1]	Expected_MarketDocument	MarketDocument	The information enabling to identify the expected (not received) or not received (escalation) document. Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::MarketDocument.MarketDocument[0..*]

mult.	Role	Class type name	Description
[1..1]	Period	Time_Period	Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::Time_Period.Period[0..*]
[1..*]	Reason	Reason	Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::Reason.Reason[0..*]
[1..1]	Receiver_MarketParticipant	MarketParticipant	Document recipient. Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::MarketParticipant.MarketParticipant[0..*]
[1..1]	Sender_MarketParticipant	MarketParticipant	Document owner. Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::MarketParticipant.MarketParticipant[0..*]

6.1.3.2 Delivery_MarketDocument

An electronic document containing the information necessary to satisfy the requirements of a given business process.

IsBasedOn: ESMPClasses::MarketDocument

Table 4 shows all attributes of Delivery_MarketDocument.

Table 4 - Attributes of Problem statement contextual model::Delivery_MarketDocument.

mult.	Attribute name	Attribute type	Description
[1..1]	createdDateTime	ESMP_DateTime	The date and time of the creation of the document.

6.1.3.3 Domain

A domain covering a number of related objects, such as market balance area, grid area, borders etc.

IsBasedOn: ESMPClasses::Domain

Table 5 shows all attributes of Domain.

Table 5 - Attributes of Problem statement contextual model::Domain.

mult.	Attribute name	Attribute type	Description
[1..1]	mRID	AreaID_String	The unique identification of the domain.

6.1.3.4 MarketDocument

An electronic document containing the information necessary to satisfy the requirements of a given business process.

IsBasedOn: ESMPClasses::MarketDocument

Table 6 shows all attributes of MarketDocument.

566 **Table 6 - Attributes of Problem statement contextual model::MarketDocument.**

mult.	Attribute name	Attribute type	Description
[1..1]	createdDateTime	ESMP_DateTime	The date and time that the document is expected by the receiver. The date and time of the creation of the document.
[1..1]	type	MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document.

567 Table 7 shows all association ends of MarketDocument with other classes.

568 **Table 7 - Association ends of Problem statement contextual model::MarketDocument**
569 **with other classes.**

mult.	Role	Class type name	Description
[1..1]	Process	Process	The process that the expected document is directed at. Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::Process.Process[0..*]

570 **6.1.3.5 MarketParticipant**

571 The identification of the party participating in energy market business processes.

572 IsBasedOn: ESMPClasses::MarketParticipant

573 Table 8 shows all attributes of MarketParticipant.

574 **Table 8 - Attributes of Problem statement contextual model::MarketParticipant.**

mult.	Attribute name	Attribute type	Description
[1..1]	mRID	PartyID_String	The identification of a party in the energy market.

575 Table 9 shows all association ends of MarketParticipant with other classes.

576 **Table 9 - Association ends of Problem statement contextual model::MarketParticipant**
577 **with other classes.**

mult.	Role	Class type name	Description
[1..1]	MarketRole	MarketRole	Association Based On : ESMPClasses::MarketParticipant.[] ----- ESMPClasses::MarketRole.MarketRole[0..1]

578 **6.1.3.6 MarketRole**

579 The identification of the intended behaviour of a market participant played within a given
580 business process.

581 IsBasedOn: ESMPClasses::MarketRole

582 Table 10 shows all attributes of MarketRole.

583 **Table 10 - Attributes of Problem statement contextual model::MarketRole.**

mult.	Attribute name	Attribute type	Description
[1..1]	type	MarketRoleKind_String	The identification of the role played by a market player.

584 **6.1.3.7 Process**

585 The formal identification of the business process in which a flow of information is exchanged.

586 IsBasedOn: ESMPClasses::Process

587 Table 11 shows all attributes of Process.

588 **Table 11 - Attributes of Problem statement contextual model::Process.**

mult.	Attribute name	Attribute type	Description
[1..1]	processType	ProcessKind_String	The identification of the nature of process that the document addresses.

589 **6.1.3.8 Reason**

590 The reason code is used to identify the reason for the transmission of the document. If
591 necessary additional information may be provided in the reason text.

592 The following codes have currently been identified: - A91: Expected document not received; -
593 A92: Not possible to send document on time, but estimated delivery time is provided; - A93:
594 Not possible to send document on time, and further more no expected time of return to normal
595 situation.

596 The motivation of an act.

597 IsBasedOn: ESMPClasses::Reason

598 Table 12 shows all attributes of Reason.

599 **Table 12 - Attributes of Problem statement contextual model::Reason.**

mult.	Attribute name	Attribute type	Description
[1..1]	code	ReasonCode_String	The motivation of an act in coded form.
[0..1]	text	ReasonText_String	The textual explanation corresponding to the reason code.

600 **6.1.3.9 Time_Period**

601 The identification of a time interval.

602 IsBasedOn: ESMPClasses::Time_Period

603 Table 13 shows all attributes of Time_Period.

604 **Table 13 - Attributes of Problem statement contextual model::Time_Period.**

mult.	Attribute name	Attribute type	Description
[1..1]	timeInterval	ESMP_DateTimeInterval	The start and end date and time for a given interval.

6.2 Problem statement assembly model

6.2.1 Overview of the model

Figure 8 shows the model.

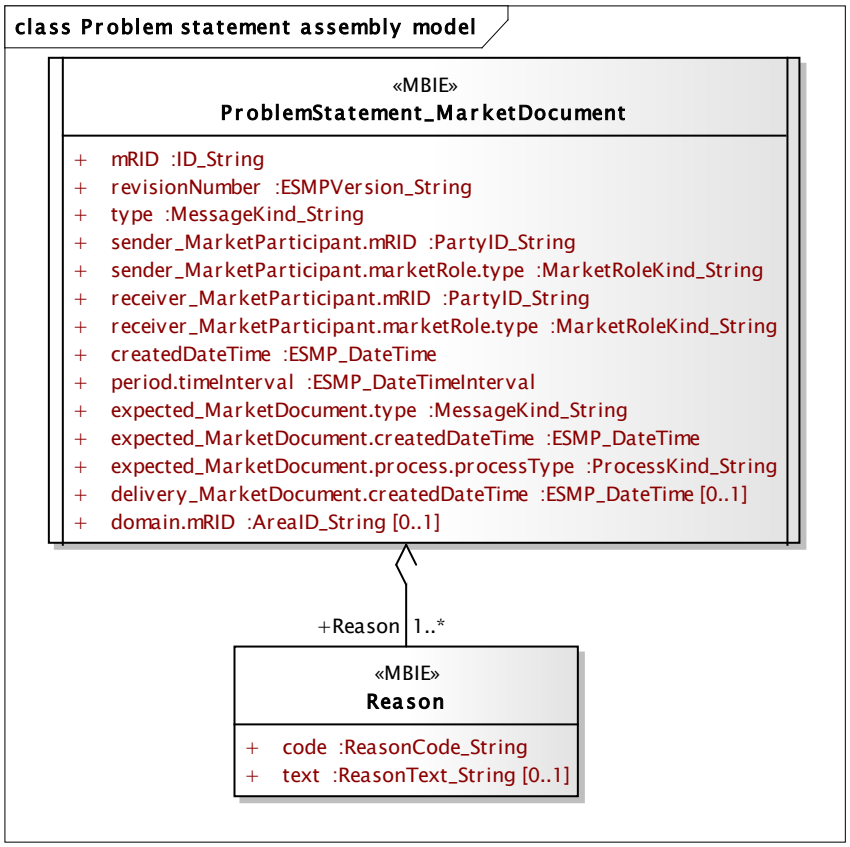

Figure 8 - Problem statement assembly model

6.2.2 IsBasedOn relationships from the European style market profile

Table 14 shows the traceability dependency of the classes used in this package towards the upper level.

Table 14 - IsBasedOn dependency

Name	Is BasedOn Class	Complete IsBasedOn Path
ProblemStatement_MarketDocument	Problem statement contextual model::ProblemStatement_MarketDocument	62325\Problem statement contextual model
Reason	Problem statement contextual model::Reason	62325\Problem statement contextual model

6.2.3 Detailed Problem statement assembly model

6.2.3.1 ProblemStatement_MarketDocument root class

The objective of this document is to provide either a means of informing a party that a document could not be issued by the expected time and thus will be delayed (the approval of this delay depends upon the rules that have been established between the parties) or an

619 automated support in the case where an escalation procedure has to be put into place when
620 an expected event does not occur or a critical situation has to be resolved.

621 An electronic document containing the information necessary to satisfy the requirements of a
622 given business process.

623 IsBasedOn: Problem statement contextual model::ProblemStatement_MarketDocument

624 Table 15 shows all attributes of ProblemStatement_MarketDocument.

625 **Table 15 - Attributes of Problem statement assembly**
626 **model::ProblemStatement_MarketDocument.**

mult.	Attribute name	Attribute type	Description
[1..1]	createdDateTime	ESMP_DateTime	The date and time of the creation of the document.
[0..1]	delivery_MarketDocument.createdDateTime	ESMP_DateTime	The date and time of the creation of the document. --- The date and time when the document is expected to be prepared for transmission by the application of the sender.
[0..1]	domain.mRID	AreaID_String	The unique identification of the domain.
[1..1]	expected_MarketDocument.createdDateTime	ESMP_DateTime	The date and time that the document is expected by the receiver. The date and time of the creation of the document. --- The information enabling to identify the expected (not received) or not received (escalation) document.
[1..1]	expected_MarketDocument.process.processType	ProcessKind_String	The identification of the nature of process that the document addresses. --- The information enabling to identify the expected (not received) or not received (escalation) document. --- The process that the expected document is directed at.
[1..1]	expected_MarketDocument.type	MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document. --- The information enabling to identify the expected (not received) or not received (escalation) document.
[1..1]	mRID	ID_String	The unique identification of the document being exchanged within a business process flow.
[1..1]	period.timeInterval	ESMP_DateTimeInterval	The start and end date and time for a given interval.
[1..1]	receiver_MarketParticipant.marketRole.type	MarketRoleKind_String	The identification of the role played by a market player. --- Document recipient.
[1..1]	receiver_MarketParticipant.mRID	PartyID_String	The identification of a party in the energy market. --- Document recipient.

mult.	Attribute name	Attribute type	Description
[1..1]	revisionNumber	ESMPVersion_String	The document version is used to identify a given version of a Problem Statement document and is used in the case of possible erroneous transmissions. The first version number for a given document identification shall normally be 1. The identification of the version that distinguishes one evolution of a document from another.
[1..1]	sender_MarketParticipant.marketRole.type	MarketRoleKind_String	The identification of the role played by a market player. --- Document owner.
[1..1]	sender_MarketParticipant.mRID	PartyID_String	The identification of a party in the energy market. --- Document owner.
[1..1]	type	MessageKind_String	The following codes could be used - A34: Escalation document; - A35: Trouble shooting document. The coded type of a document. The document type describes the principal characteristic of the document.

Table 16 shows all association ends of ProblemStatement_MarketDocument with other classes.

Table 16 - Association ends of Problem statement assembly model::ProblemStatement_MarketDocument with other classes.

mult.	Role	Class type name	Description
[1..*]	Reason	Reason	Association Based On : Problem statement contextual model::Reason.Reason[1..*] ----- Problem statement contextual model::ProblemStatement_MarketDocument.[]

6.2.3.2 Reason

The reason code is used to identify the reason for the transmission of the document. If necessary additional information may be provided in the reason text.

The following codes have currently been identified: - A91: Expected document not received; - A92: Not possible to send document on time, but estimated delivery time is provided; - A93: Not possible to send document on time, and further more no expected time of return to normal situation.

The motivation of an act.

IsBasedOn: Problem statement contextual model::Reason

Table 17 shows all attributes of Reason.

Table 17 - Attributes of Problem statement assembly model::Reason.

mult.	Attribute name	Attribute type	Description
[1..1]	code	ReasonCode_String	The motivation of an act in coded form.

mult.	Attribute name	Attribute type	Description
[0..1]	text	ReasonText_String	The textual explanation corresponding to the reason code.

642 **6.2.4 Datatypes**

643 **6.2.4.1 ESMP_DateTimeInterval compound**

644 This datatype enables to express the start date and time, and the end date and time of a time
645 interval with a specific pattern. This pattern is the YYYY-MM-DDThh:mmZ.

646 Table 18 shows all attributes of ESMP_DateTimeInterval.

647 **Table 18 - Attributes of ESMPDataTypes::ESMP_DateTimeInterval.**

mult.	Attribute name	Attribute type	Description
[1..1]	start	YMDHM_DateTime	The start date and time of the interval with a minute resolution.
[1..1]	end	YMDHM_DateTime	The end date and time of the interval with a minute resolution.

648 **6.2.4.2 AreaID_String datatype**

649 The coded identification of a domain, i.e. balance area, grid area, etc.

650 In the ESMP context, it is an authorized issuing office that provides an agreed identification
651 coding scheme for domain identification.

652 Table 19 shows all attributes of AreaID_String.

653 **Table 19 - Attributes of ESMPDataTypes::AreaID_String.**

mult.	Attribute name	Attribute type	Description
[1..1]	codingScheme	CodingSchemeTypeList	DomainQualification.
[1..1]	value	String	Main Core value Space.

654 Table 20 shows all restrictions applied to the attributes of AreaID_String.

655 **Table 20 - Restrictions of attributes for ESMPDataTypes::AreaID_String.**

Name	Constraint	Type	Expression of constraint
value	maxLength	OCL	inv: self->MaxLength(18)

656 **6.2.4.3 ESMP_DateTime datatype**

657 In ESMP, the dateTime shall be expressed in UTC as YYYY-MM-DDThh:mm:ssZ.

658 Table 21 shows all attributes of ESMP_DateTime.

659 **Table 21 - Attributes of ESMPDataTypes::ESMP_DateTime.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	DateTime	Main Core value Space.

660 Table 22 shows all restrictions applied to the attributes of ESMP_DateTime.

661 **Table 22 - Restrictions of attributes for ESMPDataTypes::ESMP_DateTime.**

Name	Constraint	Type	Expression of constraint
value	pattern	OCL	inv: self->Pattern(((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-9]|[12][0-9]|3[01])|([0-9]{4})[\-](0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][048]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][01345789][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[02468][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z))

662 **6.2.4.4 ESMPVersion_String datatype**

663 In ESMP, the coded value is restricted to digits.

664 A code that distinguishes one evolution of an identified object from another. Information about
665 a specific object may be sent several times, each transmission being identified by a different
666 version number.

667 Table 23 shows all attributes of ESMPVersion_String.

668 **Table 23 - Attributes of ESMPDataTypes::ESMPVersion_String.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	String	Main Core value Space.

669 Table 24 shows all restrictions applied to the attributes of ESMPVersion_String.

670 **Table 24 - Restrictions of attributes for ESMPDataTypes::ESMPVersion_String.**

Name	Constraint	Type	Expression of constraint
value	pattern	OCL	inv: self->Pattern([1-9]([0-9]){0,2})

671 **6.2.4.5 ID_String datatype**

672 A code to uniquely distinguish one occurrence of an entity from another.

673 In the ESMP context, the code is defined either by:

674 - an authorized issuing office that provides an agreed identification coding scheme for market
675 participant, domain, measurement point, resources (generator, lines, substations, etc.)
676 identification

677 - an emitting company that provides an agreed identification unique within a business context
678 such as capacity auction identification, market agreement identification, etc.

679 - a party (originator of the exchange) that provides a unique identification in the framework of
680 a business exchange such as document identification, time series identification, bid
681 identification, ...

682 Table 25 shows all attributes of ID_String.

683 **Table 25 - Attributes of ESMPDataTypes::ID_String.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	String	Main Core value Space.

Table 26 shows all restrictions applied to the attributes of ID_String.

Table 26 - Restrictions of attributes for ESMPDataTypes::ID_String.

Name	Constraint	Type	Expression of constraint
value	maxLength	OCL	inv: self->MaxLength(35)

6.2.4.6 MarketRoleKind_String datatype

The identification of the role played by a party.

Table 27 shows all attributes of MarketRoleKind_String.

Table 27 - Attributes of ESMPDataTypes::MarketRoleKind_String.

mult.	Attribute name	Attribute type	Description
[1..1]	value	RoleTypeList	Main Core value Space.

6.2.4.7 MessageKind_String datatype

The coded type of a document.

Table 28 shows all attributes of MessageKind_String.

Table 28 - Attributes of ESMPDataTypes::MessageKind_String.

mult.	Attribute name	Attribute type	Description
[1..1]	value	MessageTypeList	Main Core value Space.

6.2.4.8 PartyID_String datatype

The identification of an actor in the energy market.

In the ESMP context, it is an authorized issuing office that provides an agreed identification coding scheme for market participant identification.

Table 29 shows all attributes of PartyID_String.

Table 29 - Attributes of ESMPDataTypes::PartyID_String.

mult.	Attribute name	Attribute type	Description
[1..1]	codingScheme	CodingSchemeTypeList	DomainQualification.
[1..1]	value	String	Main Core value Space.

Table 30 shows all restrictions applied to the attributes of PartyID_String.

Table 30 - Restrictions of attributes for ESMPDataTypes::PartyID_String.

Name	Constraint	Type	Expression of constraint
value	maxLength	OCL	inv: self->MaxLength(16)

6.2.4.9 ProcessKind_String datatype

The coded identification of the nature of process.

Table 31 shows all attributes of ProcessKind_String.

705 **Table 31 - Attributes of ESMPDataTypes::ProcessKind_String.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	ProcessTypeList	Main Core value Space.

706 **6.2.4.10 ReasonCode_String datatype**

707 The coded motivation of an act.

708 Table 32 shows all attributes of ReasonCode_String.

709 **Table 32 - Attributes of ESMPDataTypes::ReasonCode_String.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	ReasonCodeTypeList	Main Core value Space.

710 **6.2.4.11 ReasonText_String datatype**

711 The textual explanation of an act as a string of characters.

712 Table 33 shows all attributes of ReasonText_String.

713 **Table 33 - Attributes of ESMPDataTypes::ReasonText_String.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	String	Main Core value Space.

714 Table 34 shows all restrictions applied to the attributes of ReasonText_String.

715 **Table 34 - Restrictions of attributes for ESMPDataTypes::ReasonText_String.**

Name	Constraint	Type	Expression of constraint
value	maxLength	OCL	inv: self->MaxLength(512)

716 **6.2.4.12 YMDHM_DateTime datatype**

717 In ESMP, the date and time as "YYYY-MM-DDThh:mmZ", which conforms with the ISO 8601
718 UTC time zone. This date and time is without the seconds.

719 Table 35 shows all attributes of YMDHM_DateTime.

720 **Table 35 - Attributes of ESMPDataTypes::YMDHM_DateTime.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	DateTime	The date and time as "YYYY-MM-DDThh:mmZ", which conforms with the ISO 8601 UTC time zone.

721 Table 36 shows all restrictions applied to the attributes of YMDHM_DateTime.

722 **Table 36 - Restrictions of attributes for ESMPDataTypes::YMDHM_DateTime.**

Name	Constraint	Type	Expression of constraint
value	TruncationOrReduced	INV	choice=gYearMonthDayHourMinute

Name	Constraint	Type	Expression of constraint
value	pattern	OCL	inv: self->Pattern(((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-9]|[12][0-9]|3[01])|([0-9]{4})[\-](0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T(([01][0-9]|2[0-3]):[0-5][0-9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][048]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-5][0-9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][01345789][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[02468][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9])Z))

6.2.5 Enumerations

The list of enumerations used for the Problem statement assembly model is as follows:

- CodingSchemeTypeList
- MessageTypeList
- ProcessTypeList
- ReasonCodeTypeList
- RoleTypeList

6.3 Status request contextual model

6.3.1 Overview of the model

Figure 9 shows the model.

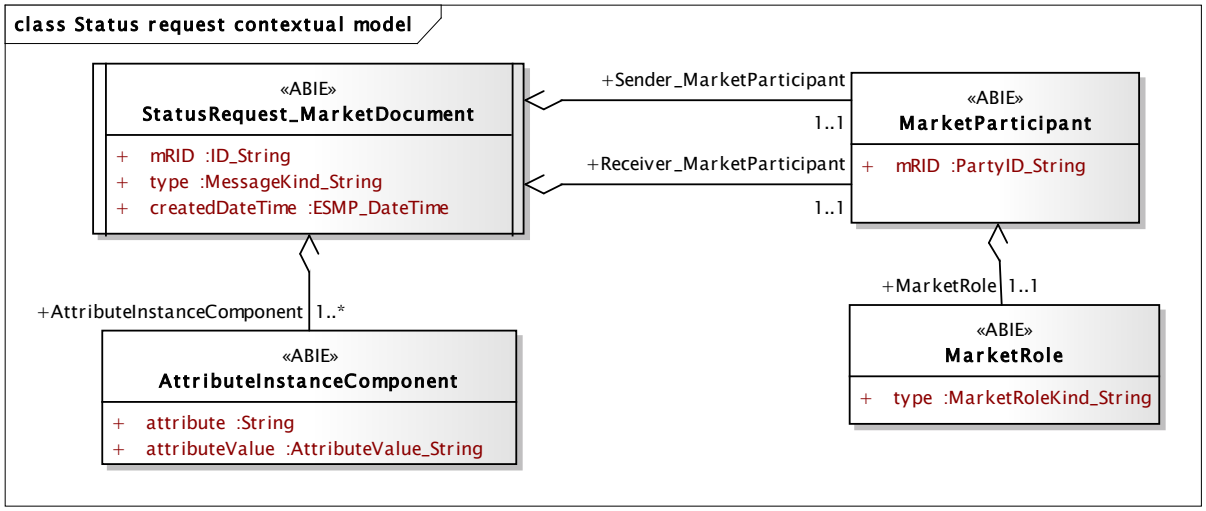

Figure 9 - Status request contextual model

6.3.2 IsBasedOn relationships from the European style market profile

Table 37 shows the traceability dependency of the classes used in this package towards the upper level.

Table 37 - IsBasedOn dependency

Name	Is BasedOn Class	Complete IsBasedOn Path
AttributeInstanceComponent	ESMPClasses::AttributeInstanceComponent	62325\ESMPClasses
MarketParticipant	ESMPClasses::MarketParticipant	62325\ESMPClasses
MarketRole	ESMPClasses::MarketRole	62325\ESMPClasses
StatusRequest_MarketDocument	ESMPClasses::MarketDocument	62325\ESMPClasses

6.3.3 Detailed Status request contextual model

6.3.3.1 StatusRequest_MarketDocument root class

An electronic document containing the information necessary to satisfy the requirements of a given business process.

IsBasedOn: ESMPClasses::MarketDocument

Table 38 shows all attributes of StatusRequest_MarketDocument.

Table 38 - Attributes of Status request contextual model::StatusRequest_MarketDocument.

mult.	Attribute name	Attribute type	Description
[1..1]	createdDateTime	ESMP_DateTime	The date and time of the creation of the document.

mult.	Attribute name	Attribute type	Description
[1..1]	mRID	ID_String	The unique identification of the document being exchanged within a business process flow.
[1..1]	type	MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document.

747 Table 39 shows all association ends of StatusRequest_MarketDocument with other classes.

748 **Table 39 - Association ends of Status request contextual**
749 **model::StatusRequest_MarketDocument with other classes.**

mult.	Role	Class type name	Description
[1..*]	AttributeInstanceComponent	AttributeInstanceComponent	Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::AttributeInstanceComponent.AttributeInstanceComponent[0..*]
[1..1]	Receiver_MarketParticipant	MarketParticipant	Document recipient. Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::MarketParticipant.MarketParticipant[0..*]
[1..1]	Sender_MarketParticipant	MarketParticipant	Document owner. Association Based On : ESMPClasses::MarketDocument.[] ----- ESMPClasses::MarketParticipant.MarketParticipant[0..*]

750 **6.3.3.2 AttributeInstanceComponent**

751 A class used to provide information about an attribute.

752 IsBasedOn: ESMPClasses::AttributeInstanceComponent

753 Table 40 shows all attributes of AttributeInstanceComponent.

754 **Table 40 - Attributes of Status request contextual model::AttributeInstanceComponent.**

mult.	Attribute name	Attribute type	Description
[1..1]	attribute	String	The requested attribute identifies the significance of the content of the requested attribute value. It is a string value that represents a copy of the elementTag of the electronic document for which the status is being requested. In addition the following reserved names may be used. RequestedReturnDocumentType; Identification of a particular document that is expected as a reply, for example the merit order list document. DateAndOrTime; The requests can be made for a specific date, and or Date Time, for example, it can be used for the outage document. The identification of an attribute for a given request component.
[1..1]	attributeValue	AttributeValue_String	Each requested attribute component has associated with it a value that is identified in the requested attribute value attribute. The value of a given component.

6.3.3.3 MarketParticipant

The identification of the party participating in energy market business processes.

IsBasedOn: ESMPClasses::MarketParticipant

Table 41 shows all attributes of MarketParticipant.

Table 41 - Attributes of Status request contextual model::MarketParticipant.

mult.	Attribute name	Attribute type	Description
[1..1]	mRID	PartyID_String	The identification of a party in the energy market.

Table 42 shows all association ends of MarketParticipant with other classes.

Table 42 - Association ends of Status request contextual model::MarketParticipant with other classes.

mult.	Role	Class type name	Description
[1..1]	MarketRole	MarketRole	The role associated with a MarketParticipant. Association Based On : ESMPClasses::MarketParticipant.[] ----- ESMPClasses::MarketRole.MarketRole[0..1]

6.3.3.4 MarketRole

The identification of the intended behaviour of a market participant played within a given business process.

IsBasedOn: ESMPClasses::MarketRole

Table 43 shows all attributes of MarketRole.

Table 43 - Attributes of Status request contextual model::MarketRole.

mult.	Attribute name	Attribute type	Description
[1..1]	type	MarketRoleKind_String	The identification of the role played by a market player.

6.4 Status request assembly model

6.4.1 Overview of the model

Figure 10 shows the model.

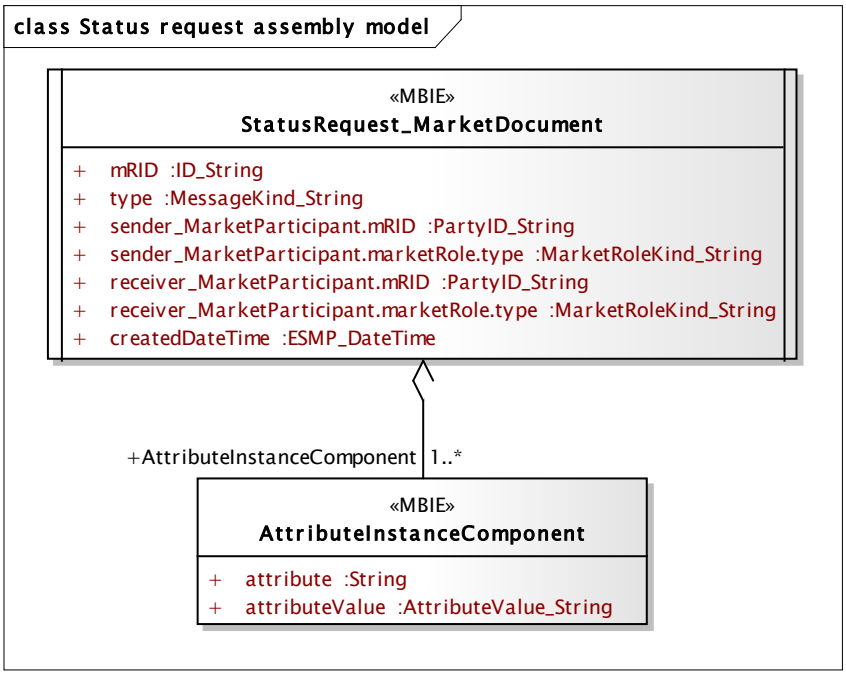

Figure 10 - Status request assembly model

6.4.2 IsBasedOn relationships from the European style market profile

Table 44 shows the traceability dependency of the classes used in this package towards the upper level.

Table 44 - IsBasedOn dependency

Name	Is BasedOn Class	Complete IsBasedOn Path
AttributeInstanceComponent	Status request contextual model::AttributeInstanceComponent	62325\Status request contextual model
StatusRequest_MarketDocument	Status request contextual model::StatusRequest_MarketDocument	62325\Status request contextual model

6.4.3 Detailed Status request assembly model

6.4.3.1 StatusRequest_MarketDocument root class

An electronic document containing the information necessary to satisfy the requirements of a given business process.

IsBasedOn: Status request contextual model::StatusRequest_MarketDocument

Table 45 shows all attributes of StatusRequest_MarketDocument.

784 **Table 45 - Attributes of Status request assembly**
785 **model::StatusRequest_MarketDocument.**

mult.	Attribute name	Attribute type	Description
[1..1]	createdDateTime	ESMP_DateTime	The date and time of the creation of the document.
[1..1]	mRID	ID_String	The unique identification of the document being exchanged within a business process flow.
[1..1]	receiver_MarketParticipant.marketRole.type	MarketRoleKind_String	The identification of the role played by a market player. --- Document recipient. --- The role associated with a MarketParticipant.
[1..1]	receiver_MarketParticipant.mRID	PartyID_String	The identification of a party in the energy market. --- Document recipient.
[1..1]	sender_MarketParticipant.marketRole.type	MarketRoleKind_String	The identification of the role played by a market player. --- Document owner. --- The role associated with a MarketParticipant.
[1..1]	sender_MarketParticipant.mRID	PartyID_String	The identification of a party in the energy market. --- Document owner.
[1..1]	type	MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document.

786 Table 46 shows all association ends of StatusRequest_MarketDocument with other classes.

787 **Table 46 - Association ends of Status request assembly**
788 **model::StatusRequest_MarketDocument with other classes.**

mult.	Role	Class type name	Description
[1..*]	AttributeInstanceComponent	AttributeInstanceComponent	Association Based On : Status request contextual model::AttributeInstanceComponent.AttributeInstanceComponent[1..*] ----- Status request contextual model::StatusRequest_MarketDocument.[]

789 **6.4.3.2 AttributeInstanceComponent**

790 A class used to provide information about an attribute.

791 IsBasedOn: Status request contextual model::AttributeInstanceComponent

792 Table 47 shows all attributes of AttributeInstanceComponent.

793 **Table 47 - Attributes of Status request assembly model::AttributeInstanceComponent.**

mult.	Attribute name	Attribute type	Description
[1..1]	attribute	String	The requested attribute identifies the significance of the content of the requested attribute value. It is a string value that represents a copy of the elementTag of the electronic document for which the status is being requested. In addition the following reserved names may be used. RequestedReturnDocumentType; Identification of a particular document that is expected as a reply, for example the merit order list document. DateAndOrTime; The requests can be made for a specific date, and or Date Time, for example, it can be used for the outage document. The identification of an attribute for a given request component.
[1..1]	attributeValue	AttributeValue_String	Each requested attribute component has associated with it a value that is identified in the requested attribute value attribute. The value of a given component.

794 **6.4.4 Datatypes**

795 **6.4.4.1 AttributeValue_String datatype**

796 The coded identification of a given component.

797 Table 48 shows all attributes of AttributeValue_String.

798 **Table 48 - Attributes of ESMPDataTypes::AttributeValue_String.**

mult.	Attribute name	Attribute type	Description
[0..1]	codingScheme	CodingSchemeTypeList	DomainQualification.
[1..1]	value	String	Main Core value Space.

799 Table 49 shows all restrictions applied to the attributes of AttributeValue_String.

800 **Table 49 - Restrictions of attributes for ESMPDataTypes::AttributeValue_String.**

Name	Constraint	Type	Expression of constraint
value	maxLength	OCL	inv: self->MaxLength(150)

801 **6.4.4.2 ESMP_DateTime datatype**

802 In ESMP, the dateTime shall be expressed in UTC as YYYY-MM-DDThh:mm:ssZ.

803 Table 50 shows all attributes of ESMP_DateTime.

804 **Table 50 - Attributes of ESMPDataTypes::ESMP_DateTime.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	DateTime	Main Core value Space.

805 Table 51 shows all restrictions applied to the attributes of ESMP_DateTime.

806 **Table 51 - Restrictions of attributes for ESMPDataTypes::ESMP_DateTime.**

Name	Constraint	Type	Expression of constraint
value	pattern	OCL	inv: self->Pattern(((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-9]|[12][0-9]|3[01])|([0-9]{4})[\-](0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][048]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][01345789][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[02468][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z))

807 **6.4.4.3 ID_String datatype**

808 A code to uniquely distinguish one occurrence of an entity from another.

809 In the ESMP context, the code is defined either by:

810 - an authorized issuing office that provides an agreed identification coding scheme for market
811 participant, domain, measurement point, resources (generator, lines, substations, etc.)
812 identification

813 - an emitting company that provides an agreed identification unique within a business context
814 such as capacity auction identification, market agreement identification, etc.

815 - a party (originator of the exchange) that provides a unique identification in the framework of
816 a business exchange such as document identification, time series identification, bid
817 identification, ...

818 Table 52 shows all attributes of ID_String.

819 **Table 52 - Attributes of ESMPDataTypes::ID_String.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	String	Main Core value Space.

820 Table 53 shows all restrictions applied to the attributes of ID_String.

821 **Table 53 - Restrictions of attributes for ESMPDataTypes::ID_String.**

Name	Constraint	Type	Expression of constraint
value	maxLength	OCL	inv: self->MaxLength(35)

822 **6.4.4.4 MarketRoleKind_String datatype**

823 The identification of the role played by a party.

824 Table 54 shows all attributes of MarketRoleKind_String.

825 **Table 54 - Attributes of ESMPDataTypes::MarketRoleKind_String.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	RoleTypeList	Main Core value Space.

826 **6.4.4.5 MessageKind_String datatype**

827 The coded type of a document.

828 Table 55 shows all attributes of MessageKind_String.

829 **Table 55 - Attributes of ESMPDataTypes::MessageKind_String.**

mult.	Attribute name	Attribute type	Description
[1..1]	value	MessageTypeList	Main Core value Space.

830 **6.4.4.6 PartyID_String datatype**

831 The identification of an actor in the energy market.

832 In the ESMP context, it is an authorized issuing office that provides an agreed identification
833 coding scheme for market participant identification.

834 Table 56 shows all attributes of PartyID_String.

835 **Table 56 - Attributes of ESMPDataTypes::PartyID_String.**

mult.	Attribute name	Attribute type	Description
[1..1]	codingScheme	CodingSchemeTypeList	DomainQualification.
[1..1]	value	String	Main Core value Space.

836 Table 57 shows all restrictions applied to the attributes of PartyID_String.

837 **Table 57 - Restrictions of attributes for ESMPDataTypes::PartyID_String.**

Name	Constraint	Type	Expression of constraint
value	maxLength	OCL	inv: self->MaxLength(16)

838 **6.4.5 Enumerations**

839 The list of enumerations used for the Status request assembly model is as follows:

840 • CodingSchemeTypeList
841 • MessageTypeList
842 • RoleTypeList

7 XML schema

7.1 XML schema URN namespace rules

In order to provide a generic and stable means of declaring a URN for the European style market profile XML schemas, the namespace will be composed in the following manner:

urn:iec62325.351:tc57wg16:<process>**:<**document>**:**<version>**:**<release>

where:

- iec62325.351 shall be the stem of all European style market profile XML schema namespaces.
- tc57wg16 identifies the organisation or group of organisations within IEC that owns the object being referenced. In the case of TC57 this shall be the WG16.
- <process> identifies the specific process where the object is situated, e.g. the part of the IEC 62325 standards in which the XML schema is defined, e.g. 451-1, 451-2, 451-3, etc.
- <document> identifies the electronic document schema.
- <version> identifies the version of the document schema.
- <release> identifies the release of the document schema.

Every XML schema representing an electronic document shall have a default namespace corresponding to the namespace that identifies the document and respects the above URI namespace construction.

Every XML schema representing an electronic document shall have a targetNamespace corresponding to the default namespace.

Every XML schema shall have an elementFormDefault as “qualified”.

Every XML schema shall have an attributeFormDefault as “unqualified”.

7.2 Code list URN namespace rules

In the case of the codelist library that shall be used for the European style market profile the URN shall be as follows **urn:entsoe.eu:wgedi:codelists**.

7.3 URI rules for model documentation

7.3.1 Datatype

All the datatypes are documented in IEC 62325-351.

In the case of the base datatype library that shall be used for the European style market profile, the URI shall use the sawsdl:modelReference as follows:

http://iec.ch/TC57/<CIM-version-year>/CIM-schema-<cimxx>#[datatype-name]

where:

- <CIM-version-year> is the year of the released CIM version used for generating market profile.
- <cimxx> is the CIM version name.
- [datatype-name] is the name of the CIM datatype or primitive.

879 Examples:

880 http://iec.ch/TC57/2012/CIM-schema-cim16#String

881 http://iec.ch/TC57/2012/CIM-schema-cim16#Money

882 ### 7.3.2 Class

883 In the case of the base class library that shall be used for the European style market profile,
884 the URI shall use the sawsdl:modelReference as follows:

885 **http://iec.ch/TC57/<CIM-version-year>/CIM-schema-<cimxx>#[class-name]**

886 where:

887 • <CIM-version-year> is the year of the released CIM version used for generating market
888 profile

889 • <cimxx> is the CIM version name

890 • [class-name] is the name of the CIM class

891 Example: http://iec.ch/TC57/2012/CIM-schema-cim16#TimeSeries

892 ### 7.3.3 Attribute

893 In the case of the base attribute library that shall be used for the European style market
894 profile, the URI shall use the sawsdl:modelReference as follows:

895 **http://iec.ch/TC57/<CIM-version-year>/CIM-schema-<cimxx>#[class-name].[attribute-**
896 **name]**

897 where:

898 • <CIM-version-year> is the year of the released CIM version used for generating market
899 profile

900 • <cimxx> is the CIM version name

901 • [class-name] is the name of the CIM class

902 • [attribute-name] is the name of a class attribute

903 Example: http://iec.ch/TC57/2012/CIM-schema-cim16#TimeSeries.product

904 ### 7.3.4 Association end role name

905 In the case of the base association library that shall be used for the European style market
906 profile, the URI shall use the sawsdl:modelReference as follows:

907 **http://iec.ch/TC57/<CIM-version-year>/CIM-schema-<cimxx>#[class-name].[association-**
908 **end-role-name]**

909 where:

910 • <CIM-version-year> is the year of the released CIM version used for generating market
911 profile

912 • <cimxx> is the CIM version name

913 • [class-name] is the name of the CIM class

914 • [association-end-role-name]

915 Example: http://iec.ch/TC57/2012/CIM-schema-cim16#MarketDocument.TimeSeries

7.4 ProblemStatement_MarketDocument schema

7.4.1 Schema Structure

Figure 11 provides the structure of the schema.

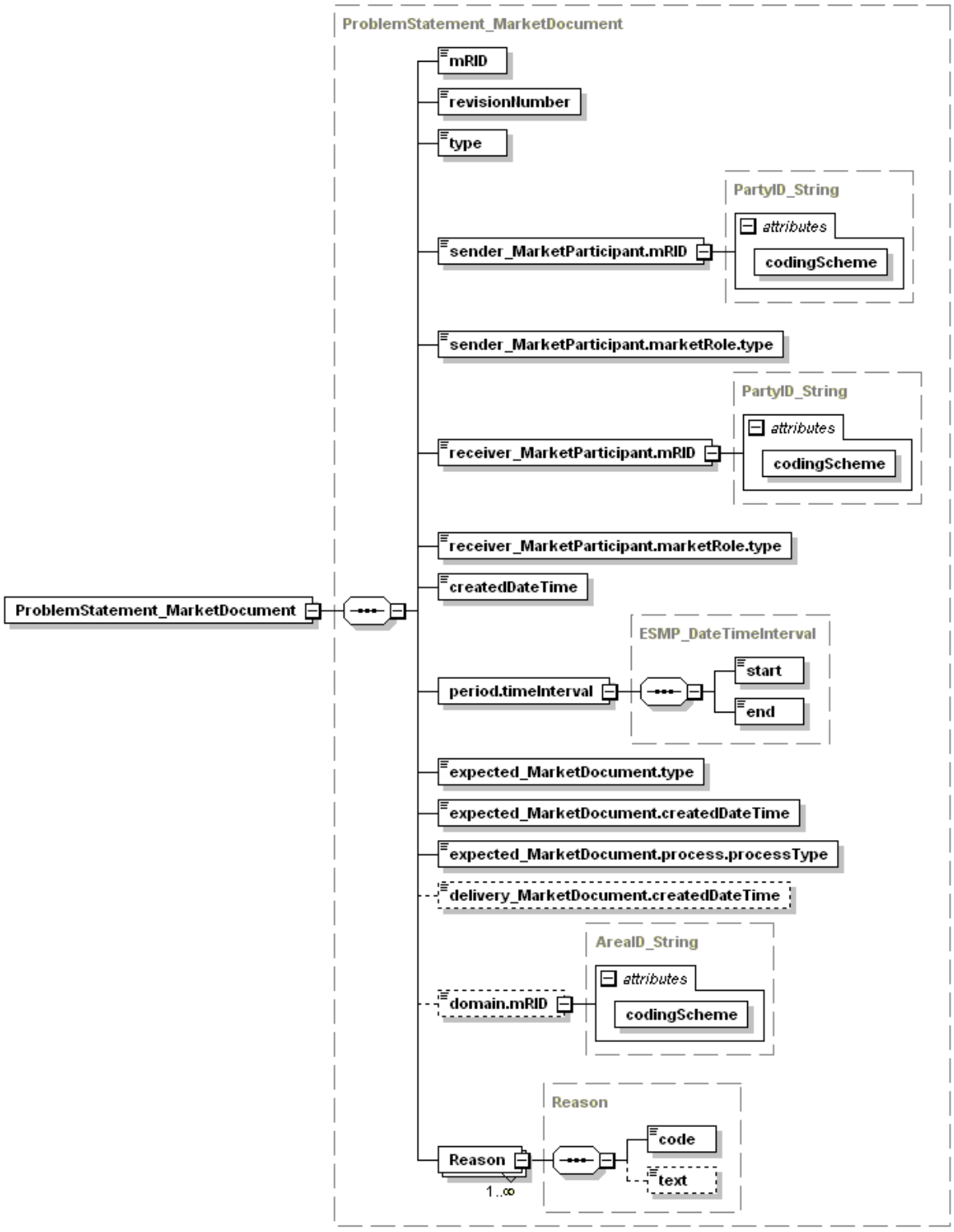

Figure 11 – ProblemStatement_MarketDocument XML schema structure

7.4.2 Schema description

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:cl="urn:entsoe.eu:wgedi:codelists"
xmlns:sawsdl="http://www.w3.org/ns/sawsdl" xmlns="urn:iec62325.351:tc57wg16:451-
5:problemdocument:3:0" xmlns:cimp="http://www.iec.ch/cimprofile"
attributeFormDefault="unqualified" elementFormDefault="qualified"
targetNamespace="urn:iec62325.351:tc57wg16:451-5:problemdocument:3:0"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:import schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"
namespace="urn:entsoe.eu:wgedi:codelists" />
  <xs:element name="ProblemStatement_MarketDocument"
type="ProblemStatement_MarketDocument" />
  <xs:simpleType name="ID_String" sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="35" />
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="ESMPVersion_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="xs:string">
      <xs:pattern value="[1-9]([0-9]){0,2}" />
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="MessageKind_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="cl:MessageTypeList" />
  </xs:simpleType>
  <xs:simpleType name="PartyID_String-base"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="16" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="PartyID_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:simpleContent>
      <xs:extension base="PartyID_String-base">
        <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
use="required" />
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
  <xs:simpleType name="MarketRoleKind_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="cl:RoleTypeList" />
  </xs:simpleType>
  <xs:simpleType name="ESMP_DateTime"
sawsdl:modelReference="http://iec.ch/tc57#DateTime">
    <xs:restriction base="xs:dateTime">
      <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-9]|[12][0-
9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T(([01][0-9]|2[0-
3]):[0-5][0-9]:[0-5][0-
9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][048]
|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[0-
9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-5][0-
9]:[0-5][0-
9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][01345789][
2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[02468][123
5679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-
8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)" />
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="ProcessKind_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="cl:ProcessTypeList" />
  </xs:simpleType>
  <xs:simpleType name="AreaID_String-base"
sawsdl:modelReference="http://iec.ch/tc57#String">
```

```
989       <xs:restriction base="xs:string">
990         <xs:maxLength value="18" />
991       </xs:restriction>
992     </xs:simpleType>
993     <xs:complexType name="AreaID_String"
994   sawsdl:modelReference="http://iec.ch/tc57#String">
995       <xs:simpleContent>
996         <xs:extension base="AreaID_String-base">
997           <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
998   use="required" />
999         </xs:extension>
1000      </xs:simpleContent>
1001    </xs:complexType>
1002    <xs:simpleType name="YMDHM_DateTime"
1003  sawsdl:modelReference="http://iec.ch/tc57#DateTime">
1004      <xs:restriction base="xs:string">
1005        <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-9]|[12][0-
1006  9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T(([01][0-9]|2[0-
1007  3]):[0-5][0-
1008  9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][048]
1009  |[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[0-
1010  9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-5][0-
1011  9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][01345789][
1012  2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[02468][123
1013  5679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-
1014  8])T(([01][0-9]|2[0-3]):[0-5][0-9])Z)" />
1015      </xs:restriction>
1016    </xs:simpleType>
1017    <xs:complexType name="ESMP_DateTimeInterval"
1018  sawsdl:modelReference="http://iec.ch/tc57#DateTimeInterval">
1019      <xs:sequence>
1020        <xs:element minOccurs="1" maxOccurs="1" name="start" type="YMDHM_DateTime"
1021  sawsdl:modelReference="http://iec.ch/tc57#ESMP_DateTimeInterval.start">
1022        </xs:element>
1023        <xs:element minOccurs="1" maxOccurs="1" name="end" type="YMDHM_DateTime"
1024  sawsdl:modelReference="http://iec.ch/tc57#ESMP_DateTimeInterval.end">
1025        </xs:element>
1026      </xs:sequence>
1027    </xs:complexType>
1028    <xs:complexType name="ProblemStatement_MarketDocument"
1029  sawsdl:modelReference="http://iec.ch/tc57#MarketDocument">
1030      <xs:sequence>
1031        <xs:element minOccurs="1" maxOccurs="1" name="mRID" type="ID_String"
1032  sawsdl:modelReference="http://iec.ch/tc57#IdentifiedObject.mRID">
1033        </xs:element>
1034        <xs:element minOccurs="1" maxOccurs="1" name="revisionNumber"
1035  type="ESMPVersion_String"
1036  sawsdl:modelReference="http://iec.ch/tc57#Document.revisionNumber">
1037        </xs:element>
1038        <xs:element minOccurs="1" maxOccurs="1" name="type" type="MessageKind_String"
1039  sawsdl:modelReference="http://iec.ch/tc57#Document.type">
1040        </xs:element>
1041        <xs:element minOccurs="1" maxOccurs="1" name="sender_MarketParticipant.mRID"
1042  type="PartyID_String"
1043  sawsdl:modelReference="http://iec.ch/tc57#IdentifiedObject.mRID">
1044        </xs:element>
1045        <xs:element minOccurs="1" maxOccurs="1"
1046  name="sender_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
1047  sawsdl:modelReference="http://iec.ch/tc57#MarketRole.type">
1048        </xs:element>
1049        <xs:element minOccurs="1" maxOccurs="1" name="receiver_MarketParticipant.mRID"
1050  type="PartyID_String"
1051  sawsdl:modelReference="http://iec.ch/tc57#IdentifiedObject.mRID">
1052        </xs:element>
1053        <xs:element minOccurs="1" maxOccurs="1"
1054  name="receiver_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
1055  sawsdl:modelReference="http://iec.ch/tc57#MarketRole.type">
1056        </xs:element>
```

```
      <xs:element minOccurs="1" maxOccurs="1" name="createdDateTime"
type="ESMP_DateTime"
sawsdl:modelReference="http://iec.ch/tc57#Document.createdDateTime">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="period.timeInterval"
type="ESMP_DateTimeInterval"
sawsdl:modelReference="http://iec.ch/tc57#Period.timeInterval">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="expected_MarketDocument.type"
type="MessageKind_String" sawsdl:modelReference="http://iec.ch/tc57#Document.type">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1"
name="expected_MarketDocument.createdDateTime" type="ESMP_DateTime"
sawsdl:modelReference="http://iec.ch/tc57#Document.createdDateTime">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1"
name="expected_MarketDocument.process.processType" type="ProcessKind_String"
sawsdl:modelReference="http://iec.ch/tc57#Process.processType">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1"
name="delivery_MarketDocument.createdDateTime" type="ESMP_DateTime"
sawsdl:modelReference="http://iec.ch/tc57#Document.createdDateTime">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1" name="domain.mRID" type="AreaID_String"
sawsdl:modelReference="http://iec.ch/tc57#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="unbounded" name="Reason" type="Reason"
sawsdl:modelReference="http://iec.ch/tc57#MarketDocument.Reason">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
  <xs:simpleType name="ReasonCode_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="cl:ReasonCodeTypeList" />
  </xs:simpleType>
  <xs:simpleType name="ReasonText_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="512" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="Reason" sawsdl:modelReference="http://iec.ch/tc57#Reason">
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="code" type="ReasonCode_String"
sawsdl:modelReference="http://iec.ch/tc57#Reason.code">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1" name="text" type="ReasonText_String"
sawsdl:modelReference="http://iec.ch/tc57#Reason.text">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:schema>
```

7.5 StatusRequest_MarketDocument schema

7.5.1 Schema Structure

Figure 12 provides the structure of the schema.

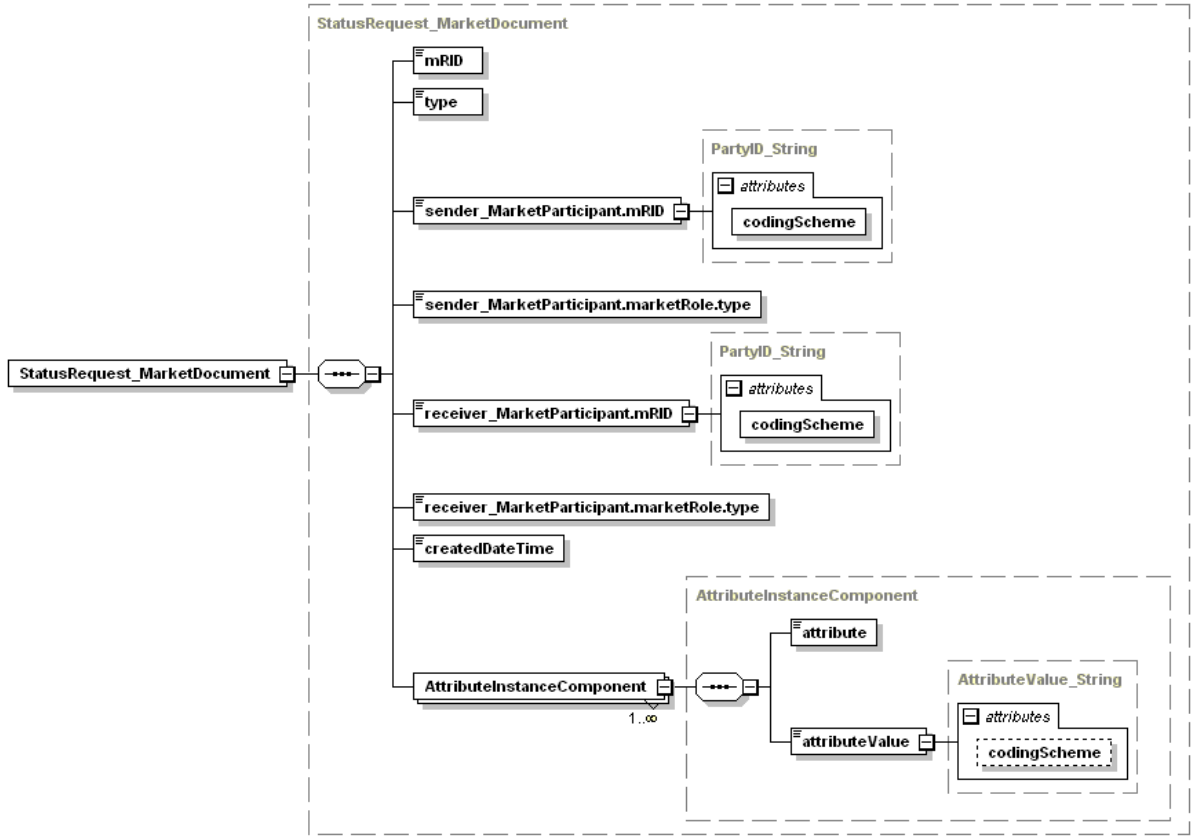

Figure 12 – StatusRequest_MarketDocument XML schema structure

7.5.2 Schema description

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:cl="urn:entsoe.eu:wgedi:codelists"
xmlns:sawsdl="http://www.w3.org/ns/sawsdl" xmlns="urn:iec62325.351:tc57wg16:451-
5:statusrequestdocument:4:0" xmlns:cimp="http://www.iec.ch/cimprofile"
attributeFormDefault="unqualified" elementFormDefault="qualified"
targetNamespace="urn:iec62325.351:tc57wg16:451-5:statusrequestdocument:4:0"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:import schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"
namespace="urn:entsoe.eu:wgedi:codelists" />
  <xs:element name="StatusRequest_MarketDocument" type="StatusRequest_MarketDocument"
/>
  <xs:simpleType name="AttributeValue_String-base"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="150" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="AttributeValue_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:simpleContent>
      <xs:extension base="AttributeValue_String-base">
        <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList" />
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
  <xs:complexType name="AttributeInstanceComponent"
sawsdl:modelReference="http://iec.ch/tc57#AttributeInstanceComponent">
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="attribute" type="xs:string"
sawsdl:modelReference="http://iec.ch/tc57#AttributeInstanceComponent.attribute">
      </xs:element>
```

```
      <xs:element minOccurs="1" maxOccurs="1" name="attributeValue"
type="AttributeValue_String"
sawsdl:modelReference="http://iec.ch/tc57#AttributeInstanceComponent.attributeValue">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
  <xs:simpleType name="ID_String" sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="35" />
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="MessageKind_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="cl:MessageTypeList" />
  </xs:simpleType>
  <xs:simpleType name="PartyID_String-base"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="16" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="PartyID_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:simpleContent>
      <xs:extension base="PartyID_String-base">
        <xs:attribute name="codingScheme" type="cl:CodingSchemeTypeList"
use="required" />
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
  <xs:simpleType name="MarketRoleKind_String"
sawsdl:modelReference="http://iec.ch/tc57#String">
    <xs:restriction base="cl:RoleTypeList" />
  </xs:simpleType>
  <xs:simpleType name="ESMP_DateTime"
sawsdl:modelReference="http://iec.ch/tc57#DateTime">
    <xs:restriction base="xs:dateTime">
      <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-9]|[12][0-
9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T(([01][0-9]|2[0-
3]):[0-5][0-9]:[0-5][0-
9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][048]
|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[0-
9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-5][0-
9]:[0-5][0-
9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][01345789][
2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[02468][123
5679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-9]|2[0-
8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="StatusRequest_MarketDocument"
sawsdl:modelReference="http://iec.ch/tc57#MarketDocument">
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="mRID" type="ID_String"
sawsdl:modelReference="http://iec.ch/tc57#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="type" type="MessageKind_String"
sawsdl:modelReference="http://iec.ch/tc57#Document.type">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="sender_MarketParticipant.mRID"
type="PartyID_String"
sawsdl:modelReference="http://iec.ch/tc57#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1"
name="sender_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
sawsdl:modelReference="http://iec.ch/tc57#MarketRole.type">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="receiver_MarketParticipant.mRID"
type="PartyID_String"
sawsdl:modelReference="http://iec.ch/tc57#IdentifiedObject.mRID">
```

```
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1"
name="receiver_MarketParticipant.marketRole.type" type="MarketRoleKind_String"
sawsdl:modelReference="http://iec.ch/tc57#MarketRole.type">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="1" name="createdDateTime"
type="ESMP_DateTime"
sawsdl:modelReference="http://iec.ch/tc57#Document.createdDateTime">
      </xs:element>
      <xs:element minOccurs="1" maxOccurs="unbounded"
name="AttributeInstanceComponent" type="AttributeInstanceComponent"
sawsdl:modelReference="http://iec.ch/tc57#MarketDocument.AttributeInstanceComponent">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:schema>
```