BSR/ASHRAE/NEMA Standard 201P

Second Public Review Draft

Facility Smart Grid Information Model

Second Public Review (January 2016)
(Review of Independent Substantive Changes)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

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FOREWORD

The second public review draft of proposed BSR/ASHRAE/NEMA Standard 201P contains a number of independent substantive changes to the first public review draft that constitute the scope of the review. The clauses containing these changes are enumerated below. Each change is described and then presented with some surrounding context to aid the reader in understanding where the change occurs. The specific changes are highlighted with strike through (deletions) or underline (additions). In the case of diagrams, the changed portion is highlighted with an oval.

[Change 5.2 Device]
Background: The association between the Device class and the ComponentElement class was changed to enable bi-directional navigation so that a component element can know what device it is part of. This is illustrated in Figure 5.2 (red circle), but the identical change occurs in Figure 5.3 and Figure 7.9 where both Device and ComponentElement appear in a different context. The change also effects the description of the connections in the ComponentElement class.

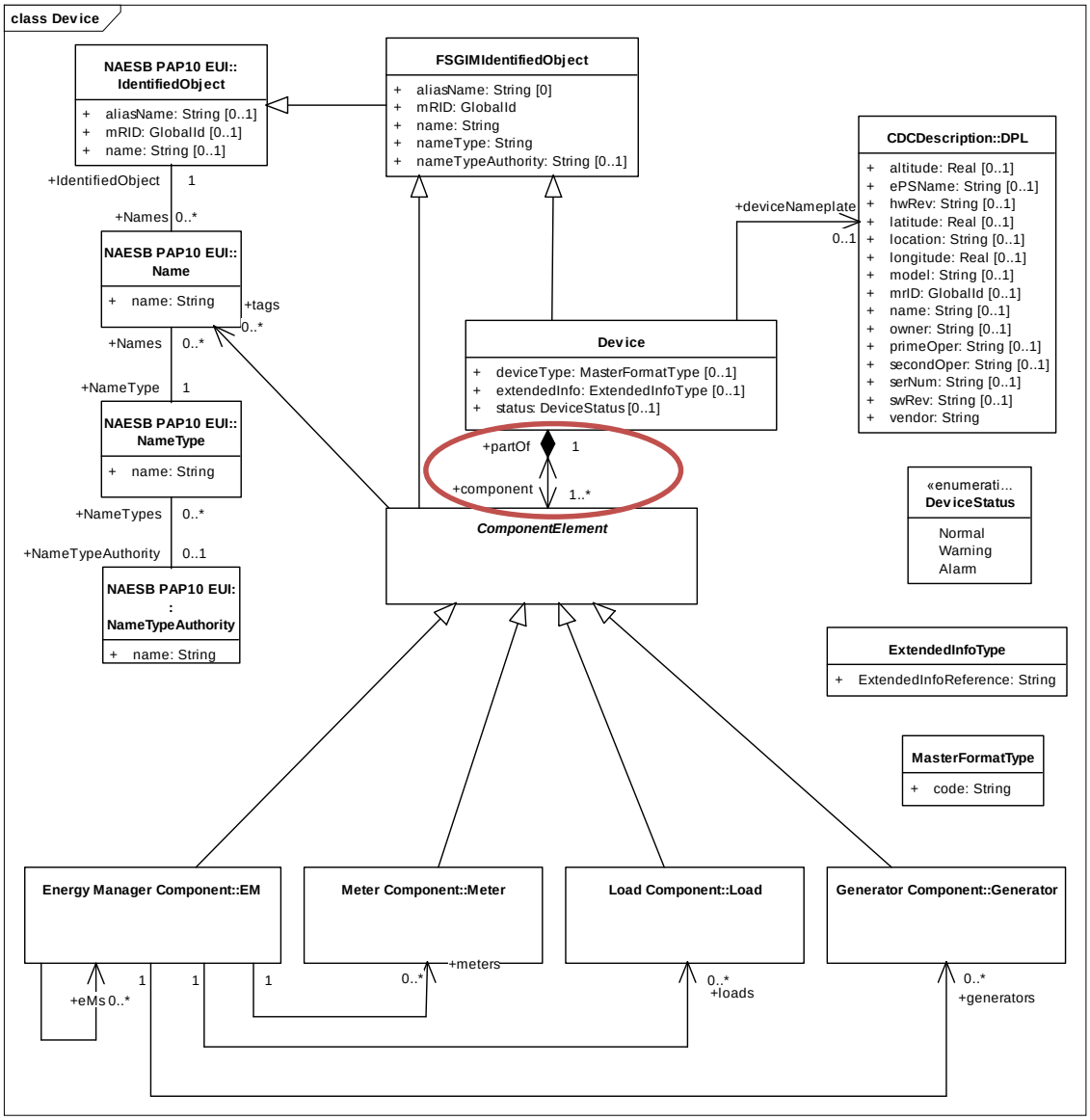

Figure 5.2 - Device

5.2.3.1 ComponentElement (Abstract Class)
This class is an abstract class representing the top level class of one of the four FSGIM model components or a Collection of these top level classes. Note that the parts of a Collection instance inherit the tag attribute values of its parent collection ComponentElement instance.

Parent Class: FSGIMIdentifiedObject (See Clause 5.2.3.4)

UML Element Location: *Model\Device and Model Components\Device\ComponentElement.*
This element has the following connections to other elements:

Table 5.1 - Class Connections

Connection Type	Role Name	Description	Role Type	Multiplicity
Composition (with bi-directional navigation)	partOf	The physical device that houses the functionality of the EM Class, Meter Class, Load Class, and/or Generator Class.	Device See Clause 5.2.3.2	[1]
Association	tags	This attribute may contain a set of strings to be used at the configuration phase of installation such as "hallway", "3rd Floor", "Critical", ... These strings may be optionally qualified with a NameType and NameTypeAuthority.	Name See Clause 5.7.5.2.1.14	[0..*]

[Change 5.6.7.4 EMIntervalData (Class)]
Background: The description of "resources" was changed to make it clear that it means only the set of loads, generators, meters and EMs that are directly connected to an EM. This change was made to be consistent with the standard aggregation rules. This change also effects the description of the derived attribute presentResources in the EMPresentData class found in Table 5.36.

5.6.7.4 EMIntervalData (Class)
This class represents data in the domain of concern of an Energy Manager over some complete interval of time. This time interval may be in the past or future.

Parent Class: AttachType (See Clause 5.7.3.2.4)

UML Element Location: *Model\Device and Model Components\Energy Manager Component\EMIntervalData.*

Table 5.32 - Class Attributes

Attribute Name	Description	Attribute Type	Multiplicity
…	…	...	…
resources	The set of all of the loads, generators, meters and EMs that are directly ~~or indirectly~~ managed by the energy manager during the interval referenced by the IntervalDataContainer through the attach relation.	AllResourcesIn EMDomain See Clause 5.6.7.11.2.	[0..1]

Table 5.36 - Class Attributes

Attribute Name	Description	Attribute Type	Multiplicity
…	…	…	…
presentResources (Derived	The set of all of the loads, generators, meters and EMs that are directly ~~or indirectly~~ managed by the energy manager at	AllResourcesInEMDomain See Clause 5.6.7.11.2	[1]

Attribute Name	Description	Attribute Type	Multiplicity
attribute)	this instant in time.		

[Change 5.7.5.2.1.26 UsagePoint (Class)]
Background: A new attribute, isVirtual, was added to the UsagePoint class. This attribute appeared in a revision of IEC 61968-9 and serves as a flag to indicate a virtual measurement. This same flag was added to Green Button and will be added to the next release of "NAESB Business Practices and Information Models to Support Priority Action Plan 10 - Standardized Energy Usage Information standards. Revision 1.1 2012.

Because EMUsagePoint is derived from UsagePoint, the change affects Clause 6.4.2 Measurement Sets (Figure 6.4) and the EMUsagePoint Conformance Block (Figure 7.24).

5.7.5.2.1.26 UsagePoint (Class)
Logical point on a network at which consumption or production is either physically measured (e.g. metered) or estimated (e.g. unmetered street lights).

Parent Class: IdentifiedObject (See Clause 5.7.5.2.1.8)

UML Element Location: *Model\Model Elements from External Sources\iec_cim_naesb_eui_model_20101111Update_20120802\NAESB PAP10 EUI\UsagePoint.*

Table 5.307 - Class Attributes

Attribute Name	Description	Attribute Type	Multiplicity
description	A human readable description of the object.	String See Clause 6.6.3.7.	[0..1]
isVirtual	Is used to indicate that the UsagePoint is virtual (that is, not a real physical measurement). This may be the result of a computation or estimation.	Boolean See Clause 6.6.3.3.	[1]
name	The name is any free human readable and possibly non unique text naming the object.	String See Clause 6.6.3.7.	[0..1]
role Flags	The set of roles pertinent to this UsagePoint	RoleFlags See Clause 5.7.5.2.1.28	[1]
status	Status of this UsagePoint: 0 - Off 1 - On	Integer See Clause 6.6.3.5	[1]

6.4.2 Measurement Sets Diagram

Some concepts in the Facility Smart Grid Information Model, such as aggregation, apply equally to PowerMeasurementSets, EnergyMeasurementSets, and EmissionsMeasurementSets. In these cases, the PowerMeasurementSet, EnergyMeasurementSet, and EmissionsMeasurementSet can be abstracted and referred to as a Measurement Set.

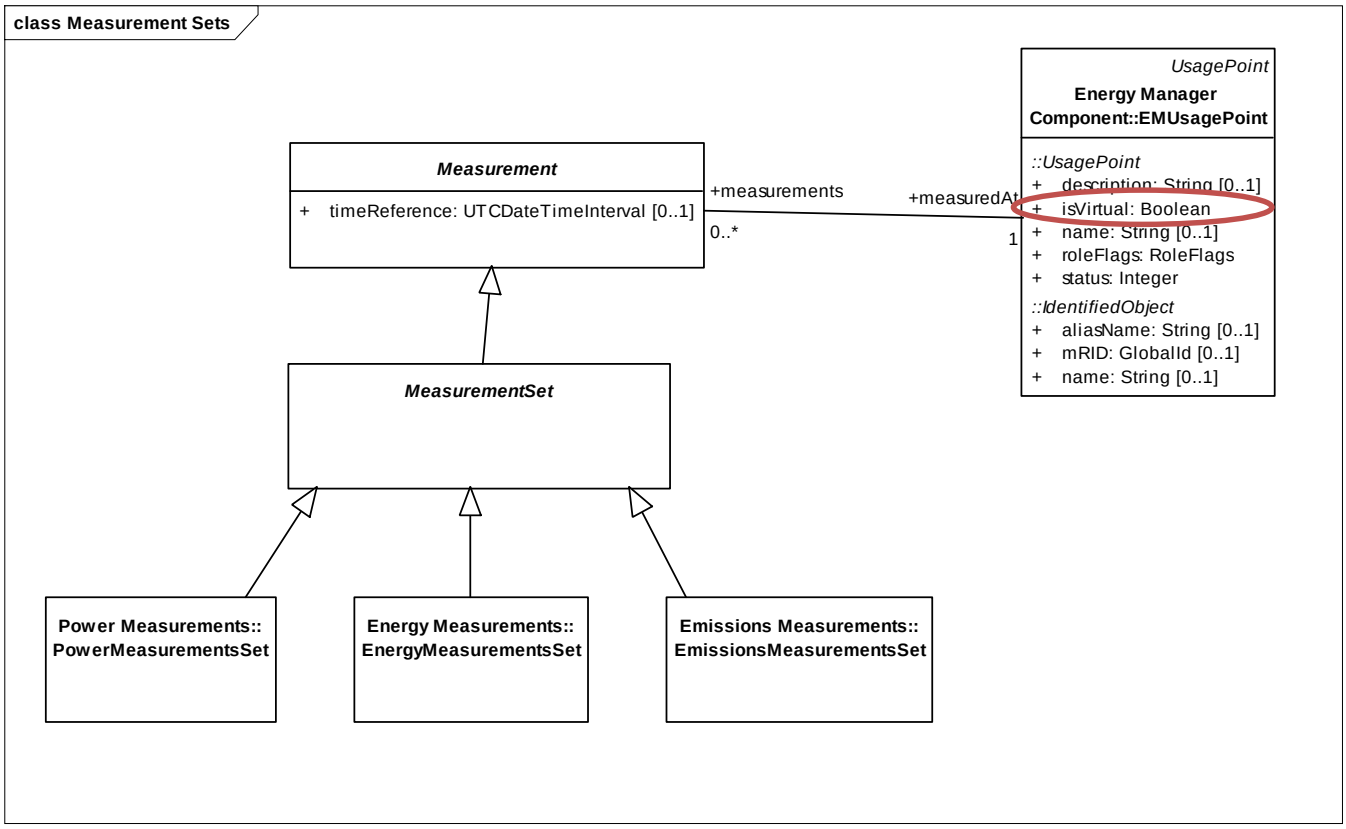

Figure 6.4 - Measurement Sets

7.3.3.2.15 EMUsagePoint Conformance Block Diagram

This diagram depicts the classes and attributes used to define the grid view of the logical point on a network where consumption or generation is either measured or estimated.

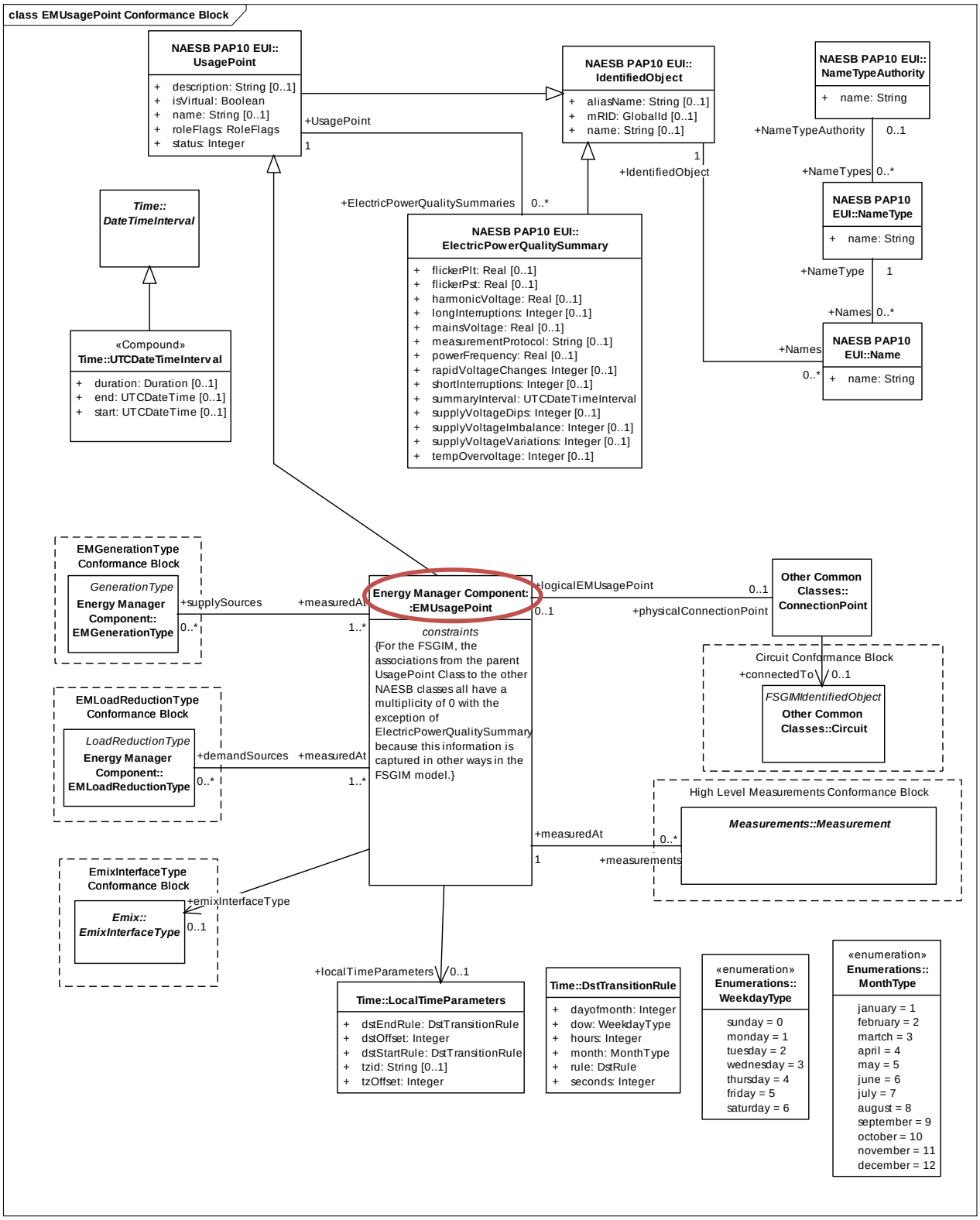

Figure 7.24 - EMUsagePoint Conformance Block