AACHENER VERFAHRENSTECHNIK

RWTH AACHEN UNIVERSITY

DEXPI Data Exchange in Process Industry

P&ID Specification

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This specification is based on

Proteus P&ID Profile Schema 4.0.1

Manfred Theißen[1], **Michael Wiedau**[2]

[1] AixCAPE e.V.
Peterstraße 2-4
52062 Aachen

[2] RWTH Aachen University
Lehrstuhl für Systemverfahrenstechnik
Turmstr. 46
52064 Aachen

DECHEMA
Gesellschaft für Chemische Technik und Biotechnologie e.V.

AixCAPE

Contents

tl;dr

tl;dr = Too long; Didn't read

> **Wikipedia about *tl;dr*:**
> Traditionally, the phrase too long; didn't read (abbreviated tl;dr or simply tldr) has been used on the Internet as a reply to an excessively long statement. It indicates that the reader did not actually read the statement due to its undue length. This essay especially considers the term as used in Wikipedia discussions, and examines methods of fixing the problem when found in article content.

DEXPI main extensions to Proteus XML Schema

This page will help you to get a short overview of the main extensions and restrictions in comparison to the *Proteus XML Schema*. This does not prevent you from reading the rest of this beautiful specification.

- The functionality of the *ShapeCatalogue* MUST be used
- URIs should be used everywhere. Especially for:
  - PlantItems (e.g. equipment)
  - Attributes (generic attributes and native attributes)
  - Units (e.g. references to ISO-RDL units, find a list in this specification)
- The used attributes have to be defined in an XML-node called "dexpi_attributes" of type "generic_attributes"
- Pipings are splitted on T-Elements and Property Breaks

Part I.

Overview and Concepts

1. Introduction

1.1. About DEXPI

The DEXPI group (Data EXchange for the Process Industry) is a working party of the ProcessNet initiative under the lead of Dechema. ProcessNet describes itself as:

> "ProcessNet is the German platform for chemical engineering with more than 5,000 members. Experts from the sciences, industry and administration exchange ideas and experience, discuss current topics and identify new scientific trends. ProcessNet is a joint initiative of DECHEMA and VDI-GVC.
>
> ProcessNet organises numerous events targeting the interdisciplinary and cross-sectoral exchange of information. The most prominent conference is the ProcessNet Annual Meeting attracting more than 1,000 participants. The wide variety of thematically structured committees deal with scientific and technical problems and issues of paramount technological and societal relevance, they also trigger funding policy initiatives. ProcessNet is the national contact point for international co-operations. Participation in ProcessNet is open to all members of DECHEMA and/or VDI-GVC." (Source: www.processnet.org)

1.1.1. Motivation for DEXPI

Due to the lack of interoperability between CAE[1](and other) systems, companies today face high efforts in data exchange while working together to execute projects for planning, construction and operation of process plants. Parties typically exchanging data in such projects are e.g. EP/EPCs[2], owner-operators, and vendors, but also site services and authorities. One of the main reasons for this high effort is the lack of an agreed understanding across the different systems, e.g. by means of a commonly used standard for data exchange within the process industry. To become more efficient during planning, construction and operation of plants, a data exchange model based on the ISO 15926 standard shall be established.

1.1.2. Objectives

The objective is to develop and promote a general method for data exchange, data interoperability and data integration for the process industry covering all phases of the lifecycle of a (petro-)chemical plant, ranging from specification of functional requirements to assets in operation. This method shall cover formats and content to address various problems seen today:

- Avoid format conversions (and thereby data loss) when passing engineering data and documents across CAE system boundaries.
- Make handover of engineering data during and at the end of a project easy and cost-effective.
- Reduce data exchange barriers between different CAE systems or different customizations of the same CAE systems. Support long-term storage of plant data in a CAE system independent format. Today's commonly used standard formats like PDF don't support value added improvements or at best insufficiently.
- Simplify co-existence of different CAE systems within a company, e.g. due to mergers/acquisitions or different priorities in different business units.

[1] CAE=Computer Aided Engineering
[2] EPC=Engineering-Procurement-Construction

1.1.3. Expectations

EP/EPCs, suppliers and owner operators want to minimize the cost for handling engineering data during planning, construction and operation of process plants between different CAE systems and they want to create opportunities for new value-added functions base on the available engineering data. Therefore the CAE vendors will implement a valid global standard for data exchange into their CAE systems. In a first phase, data exchange will cover graphics, topology of the full P&ID[3] and attributes of the discrete P&ID components.

The involved owner/operator companies from the DEXPI working group will define a common data model which is based on the ISO 15926 standard. The resulting data model will be aligned with other projects in the global ISO 15926 community, e.g. within Fiatech. The CAE vendors will implement this common data model as the basis for data exchange and will deliver it as part of their default system configuration. In addition, it is expected that CAE vendors agree on a common exchange format for the graphical representation of a P&ID and implement the result in their systems as well. The involved companies expect a constructive team work of the CAE vendors during the definition of the common ISO 15926 conformant data model. Tasks

Objective of the first phase of the initiative is the transfer of a P&ID from one P&ID system to another P&ID system. The data transfer must include graphics, symbols, topology, all engineering attributes, enumerations, select lists etc. to enable seamless continuation of work on the P&ID in the destination system. Transfer of engineering data over the full life cycle of a plant between different CAE tools e.g. from simulation to basic/detail engineering up to operations and maintenance may be covered in subsequent phases.

1.1.4. Members of DEXPI

The DEXPI project is a joint initiative by

- BASF SE,
- Bayer Technology Services and
- Evonik Industries AG

The project is hosted by DECHEMA e.V. and SusChem Deutschland.

The initiative is supported by executing research of:

- AixCAPE e.V. and
- RWTH Aachen University (AVT.SVT).

Cooperating Software Partners are:

- AVEVA group plc
- Autodesk
- Bentley Systems
- Intergraph
- Siemens
- X-Visual and
- VTT.

[3] P&ID = piping and instrumentation diagram

2. Information Model

2.1. Overview

The DEXPI information model is a conceptual model that describes the objects that appear in a P&ID from an engineering point of view. It is not a model of a P&ID in the sense of a graph (i.e., a set of nodes representing things such as reactors and of arcs representing pipes). The DEXPI information model

- Goal and content of the information model

The information model is organized in a way similar to UML class diagrams. Figure 2.1 shows an excerpt of the information model.

- The core element of the models are *classes*. Classes are represented by rectangular boxes. The first text line in a box gives the name of the class. In Fig. 2.1, there are 6 classes, including for instance HeatExchanger and HeatExchangerShell.
- Classes can contain attribute declarations comprising an attribute name and an attribute type. Attribute declarations are given in the class boxes below the class name. For example, the HeatExchanger class has an attribute called DesignHeatFlowRate of type Power.
- A class can be a *specialization* (subclass) of another class.

2.2. Attributes

2.2.1. Attribute Types

2.2.1.1. String

The value of an attribute of type String is a sequence of characters. For example, the Equipment class in Fig. 2.1 has a String attribute called FunctionalObjectDescriptionAssignmentClass. This attribute can be used to give a textual description of the function of an instance of Equipment, e.g., "gas cooler".

2.2.1.2. Physical Quantity

A physical quantity is a quantification of a physical property of an object, e.g., its (current) temperature or its boiling temperature. Physical properties can be grouped according to their quantity type, e.g., both the current temperature and the boiling temperature have the quantity type *temperature*.

Physical quantities can be characterized by a scalar[1] and a unit of measurement. For example, the current temperature of an object can be 300 K, where 300 is the scalar and K the symbol for the unit of measurement *Kelvin*. The units of measurement that can be used for a physical quantity depend on the quantity type. For example, a physical quantity of type *temperature* can be given in *Kelvin* or *degree Celsius*, but it cannot be given in *kilometres*.[2]

Although the objects in a P&ID are abstract objects (they are specifications and/or representations of real objects), their attributes comprise physical quantities such as design values.[3] For example, the HeatExchangerShell class in Fig. 2.1 has an attribute LowerLimitDesignTemperature of type Temperature. Temperature is one of the DEXPI attribute types for physical quantities. For each of these attribute types, the information model contains several units of measurement. For consistency with ISO 15926 terminology, the units are

[1] We neglect properties of higher order such as vectors.

[2] This is why the distinction between physical quantity types and physical dimensions is important. For instance, the physical quantity types *work* and *torque* have the same dimension. However, the unit of measurement *Joule* can be used to give a *work*, but not a *torque*.

[3] Cf. the concept of *indirect properties* in ISO 15926.

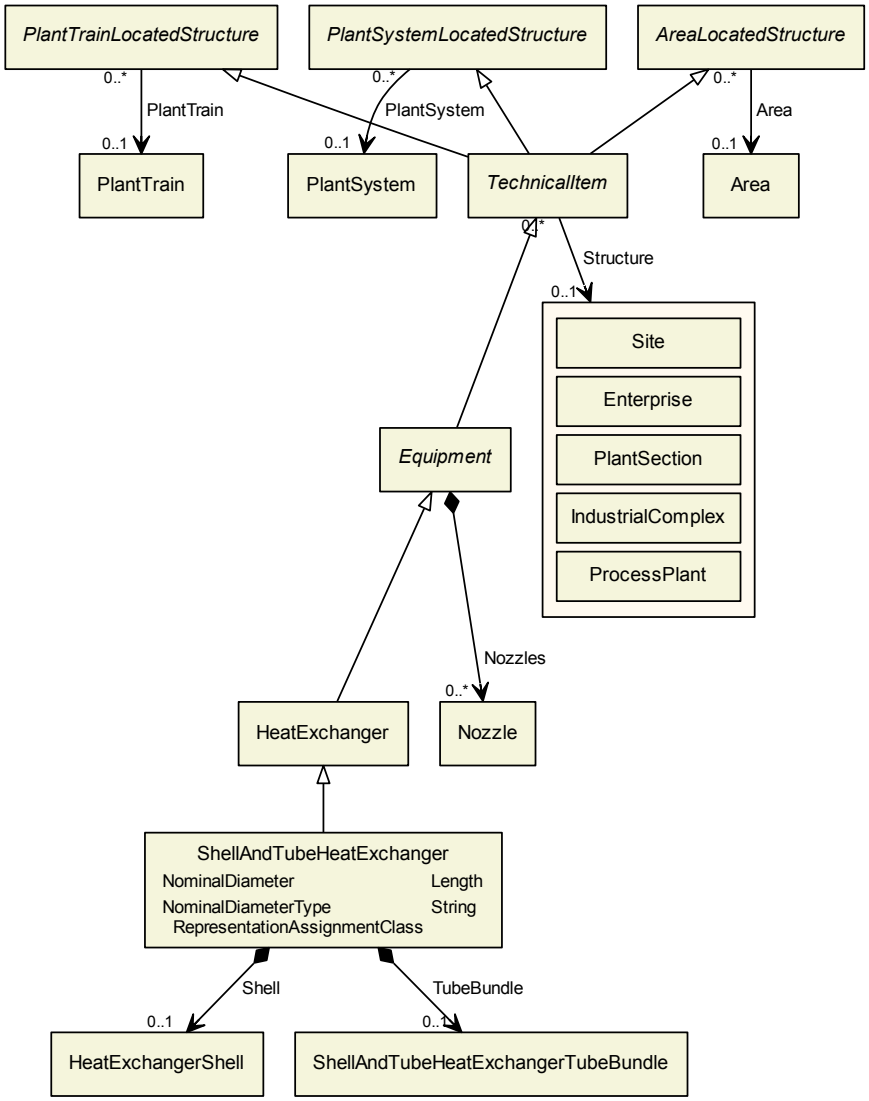

Figure 2.1.: Excerpt of the DEXPI information model: ShellAndTubeHeatExchanger and related classes.

called *scales*. Kelvin is one of the scales for Temperature. In consequence, the LowerLimitDesignTemperature of an instance of HeatExchangerShell can be given in Kelvin.

The complete list of attribute types for physical quantities is given in Sec. 11.1. For each type, the list contains:

- A reference to a SinglePropertyDimension (cf. data model of ISO 15926) in an RDL. In case of the DEXPI Temperature type, this is the TEMPERATURE in the JORD RDL (http://data.posccaesar.org/rdl/RDS355859).
- A list of scales that can be used for physical quantities of this type. A scale is characterized by a name (e.g., Kelvin), a reference to an ISO 15926 Scale (e.g., KELVIN at http://data.posccaesar.org/rdl/RDS1327904), and optionally a scale symbol (e.g., K).

2.2.1.3. Classifications

A classification gives additional information about the type or kind of an object. For instance, a PipingNetworkSegment can be classified as a SlopedPipingNetworkSegment or as an UnslopedPipingNetworkSegment (see attribute FlowClassification).

3. Implementation with Proteus Schema

The implementation of the DEXPI Information Model is based on Proteus Schema version 4.0.1[1].

3.1. Proteus Tags

3.1.1. GenericAttributes

The GenericAttributes element is a container for GenericAttribute elements:

```
<xsd:element name="GenericAttributes">
  <xsd:annotation>
    <xsd:documentation>Handles user defined Attributes of any name</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType mixed="true">
    <xsd:choice>
      <xsd:element maxOccurs="unbounded" ref="GenericAttribute"/>
    </xsd:choice>
    <xsd:attribute name="Number" type="xsd:nonNegativeInteger" use="required"/>
    <xsd:attribute name="Set" type="xsd:string" use="optional"/>
  </xsd:complexType>
</xsd:element>
```

According to the Proteus specification, the GenericAttributes element can be used as a sub-element of several other Proteus elements (e.g., of an Equipment). The Number attribute of a GenericAttributes element contains the number of GenericAttribute elements in the container. The optional Set attribute can be an arbitrary string.

In the DEXPI specification, GenericAttribute elements are used for several purposes. For a certain owner element, e.g., for a certain Equipment, these DEXPI GenericAttribute elements must be inside one single GenericAttributes element. This GenericAttributes element must not contain other content than the DEXPI content according to this specification. The Set attribute of the GenericAttributes must have the value "DexpiAttributes".

The DEXPI specification does not forbid *other* GenericAttributes containers.

Example:

```
<Equipment ...>
  ...
  <GenericAttributes Number="6" Set="DexpiAttributes">
    <!-- only content according to this specification -->
    <GenericAttribute ... />
    <GenericAttribute ... />
    ...
    <GenericAttribute ... />
  </GenericAttributes>
  <GenericAttributes Number="5" Set="SomeOtherContent">
    <!-- arbitrary content -->
    <GenericAttribute ... />
    <GenericAttribute ... />
    ...
    <GenericAttribute ... />
  </GenericAttributes>
```

[1] https://www.posccaesar.org/wiki/IdsAdiProject/IdsAdiProteusProject

```
</Equipment>
```

3.1.2. GenericAttribute

A GenericAttribute element allows to give values for arbitrary attributes. It can be used only within a GenericAttributes container. The DEXPI specification makes extensive use of GenericAttribute elements, in particular for the representation of engineering content.

In the Proteus Schema, GenericAttribute is defined as follows:

```
<xsd:element name="GenericAttribute">
  <xsd:annotation>
    <xsd:documentation>
      A GenericAttribute can be any Name but this should also match the RDL
    </xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:attribute name="Name" type="xsd:string" use="required"/>
    <xsd:attribute name="AttributeURI" type="xsd:anyURI" use="optional"/>
    <xsd:attribute name="Value" type="xsd:string" use="optional"/>
    <xsd:attribute name="DefaultValue" type="xsd:string" use="optional"/>
    <xsd:attribute ref="Units" use="optional"/>
    <xsd:attribute ref="Format" use="optional"/>
    <xsd:attribute name="ValueURI" type="xsd:anyURI" use="optional"/>
    <xsd:attribute name="UnitsURI" type="xsd:anyURI" use="optional"/>
  </xsd:complexType>
</xsd:element>
```

Attribute Name	Required	Description
Name	y	The name of the attribute.
AttributeURI	n	A URI to the RDL qualifying the attribute being represented.
Value	n	If Value is not present this is equivalent to null. This may not be equivalent to "" which denotes an empty string value for string formatted attributes.
ValueURI	n	If the value represents or is mapped to an RDL entry then the RDL URI should be provided in the ValueURI attribute.
Units	n	The units of measure for the field if relevant. *See* **??** *for the rules for default units if the unit is omitted.*
UnitsURI	n	The RDL reference for the Units of measure.
Format	n	The datatype of Value (as per 32 bit architecture).

Proteus Schema requires *CamelCase* spelling for attribute names, in contrast to the *CAPITAL LETTERS* spelling used, e.g., by the JORD RDL. For example, for http://data.posccaesar.org/rdl/RDS366794, the JORD RDL gives the designation NOMINAL DIAMETER, whereas the corresponding name in a GenericAttribute is NominalDiameter.

Except for Name, all XML attributes of a GenericAttribute are optional according to Proteus Schema. In addition, the DEXPI specification

- prescribes the use of the AttributeURI XML attribute;
- requires that the Name matches AttributeURI.

The usage of further XML attributes depends on the use case of the GenericAttribute. These use cases include

- the implementation of DEXPI attributes (cf. Sec. 3.2.1).

3.2. Attributes

This section describes the implementation of DEXPI attributes in Proteus Schema.

3.2.1. Attributes as GenericAttributes

In most cases, DEXPI attributes are represented in GenericAttribute elements. Name and AttributeURI are always required. The AttributeURI is the URI of the RDL object associated with the attribute in the information model. Name is the name of this RDL object in camel case. This name is always the same as the DEXPI attribute name.

In case an application does not know about the existence of an attribute in the DEXPI information model, the Proteus XML export of this application will obviously not contain the corresponding GenericAttribute. Also if an attribute is not in the scope of a certain application, the Proteus XML export should simply omit the corresponding GenericAttribute. Vice versa, importing applications must be able to handle the case of a missing GenericAttribute in an adequate way.

In case an application knows about the existence of an attribute in the DEXPI information model, but there is no value for this attribute (*null* value), the Proteus XML export should contain the corresponding GenericAttribute, but no Value and no ValueURI. Vice versa, importing applications must be able to handle the case of a missing Value or VaueURI in a GenericAttribute in an adequate way.

The concrete implementation of a DEXPI attribute in a Proteus GenericAttribute depends on the attribute type (cf. Sec. 2.2.1).

3.2.1.1. String

Attribute Name	Required	Description
Name	y	The name of the attribute.
AttributeURI	y	A URI to the RDL qualifying the attribute being represented.
Value	(y)	The string value. *Not used* if value is *null*.
ValueURI	n	*not used*
Units	n	*not used*
UnitsURI	n	*not used*
Format	y	"string"

Example

```
<GenericAttribute
  Name="FunctionalObjectDescriptionAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS2101566251"
  Value="gas cooler"
  Format="string" />
```

Example with Null Value

```
<GenericAttribute
  Name="FunctionalObjectDescriptionAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS2101566251"
  Format="string" />
```

3.2.1.2. Physical Quantity

Attribute Name	Required	Description
Name	y	The name of the attribute.

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Attribute Name	Required	Description
AttributeURI	y	The URI to the RDL qualifying the attribute being represented.
Value	(y)	The scalar value of the physical quantity. *Not used* if value is *null*.
ValueURI	n	*not used*
Units	(y)	The name of the scale of the physical quantity. *Optional* if value is *null*.
UnitsURI	(y)	The URI of the scale of the physical quantity. *Optional* if value is *null*.
Format	y	"double"

For some scales, Proteus schema allows alternative names in the Units attribute (see Sec. 11.1). For example, the scale Millimetre (http://data.posccaesar.org/rdl/RDS1357739) can also be written mm.

Example

```
<GenericAttribute
  Name="InsulationThickness"
  AttributeURI="http://data.posccaesar.org/rdl/RDS4238040"
  Value="80"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

Example with Alternative Scale Name

```
<GenericAttribute
  Name="InsulationThickness"
  AttributeURI="http://data.posccaesar.org/rdl/RDS4238040"
  Value="80"
  Format="double"
  Units="mm"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

Example with Null Value

Units and UnitsURI attributes are optional.

```
<GenericAttribute
  Name="InsulationThickness"
  AttributeURI="http://data.posccaesar.org/rdl/RDS4238040"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

3.2.1.3. Classification

Attribute Name	Required	Description
Name	y	The name of the attribute.
AttributeURI	y	A URI to the RDL qualifying the attribute being represented.
Value	y	The camel-case name of the classification RDL.
ValueURI	y	The URI of the classification RDL.

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Attribute Name	Required	Description
Units	n	*not used*
UnitsURI	n	*not used*
Format	y	"anyURI"

Example

```
<GenericAttribute
  Name="NominalDiameterStandardSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterStandardSpecialization"
  Value="Din2448ObjectDn25"
  ValueURI="http://sandbox.dexpi.org/rdl/Din2448ObjectDn25"
  Format="anyURI" />
```

Example with Null Value

```
<GenericAttribute
  Name="NominalDiameterStandardSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterStandardSpecialization"
  Format="anyURI" />
```

3.2.2. Attributes with Special Implementation

Some DEXPI attributes are not implemented as Proteus GenericAttributes, but have a special implementation. These special cases are described in the reference part of this document.

3.3. Symbol Registration Number

The registration number of a shape is given via the SymbolRegistrationNumberAssignmentClass.

3.3.1. Proteus Schema Implementation

The registration number is given as a generic attribute:

```
<GenericAttribute
  Name="SymbolRegistrationNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SymbolRegistrationNumberAssigmentClass"
  Value="ISO10628−2322A−A01"
  Format="string" />
```

.

3.4. Text in PID Graphics

Text elements in the PID graphics that visualize certain attributes of an engineering element (e.g., a tag name or a design temperature) should not hardcode these values as strings. Instead, the Proteus Text element should refer to the object that carries the actual data (cf. documentation of Text in the Proteus specification). To this end, the ItemID and DependantAttribute attributes of Text are used. DEXPI encourages to use the XML ID for the ItemID. However, the current version of Proteus Schema does not allow XML ID attributes for all objects (e.g., Node). In this case, the object should take a PersistentID with an arbitrary, but unambiguous Identifier. The Context should be in-file-identifier.

4. Verification

4.1. Overview

During the development of the described information model, the DEXPI group investigated that the outputs of the different CAE software systems differ in several ways. For this reason, the DEXPI group decided to develop some prototypical tools that are able to verify the output files of the software systems. This verification process is performed in two distinguishable ways:

Graphical Verification This method uses a given Proteus XML file to generate a graphical representation of the P&ID. The underlying DEXPI information model is not taken into account.

Information Model Verification All engineering information that is inside the P&ID will be checked according to its completeness and validity.

4.2. Graphical Verification

The graphical verification of a given Proteus XML file is done by an algorithm called "GraphicBuilder". This builder works on XML files which follow the *Proteus XML Schema 4.0.1*. To fulfill the requirement of a deterministic behavior and the importance of an output that looks the same, on every kind of computer, the GraphicBuilder produces a pixel-based image file, currently in the form of a PNG-file (Portable Network Graphics). Before reading this chapter, it is necessary to have knowledge about the Proteus XML Schema file format. A look into the Proteus XML file specification is useful.

4.2.1. General requirements

The most important dimensional requirement for a P&ID is the *Extent* of a *PlantModel*. In accordance with the ProteusXML Schema, a correct *Extent* element is necessary to specify the point zero and the size of the final image.

```
<PlantModel xmlns:xsi="http://www.w3.org/200
    <PlantInformation SchemaVersion="3.6.0"
        <UnitsOfMeasure Area="MetreSquared"
    </PlantInformation>
    <Extent>
        <Min X="0" Y="0" />
        <Max X="595" Y="421" />
    </Extent>
```

Further, a *Presentation* object is required within the *Drawing* to initialize the background color.

```
<Drawing Name="AVT-PT-REF 1.dwg" Title="AVT-PT-REF_1" Type="PID">
    <Presentation R="1" G="1" B="1" />
    <Extent>
        <Min X="0" Y="0" />
        <Max X="595" Y="421" />
    </Extent>
```

In addition to that, all geometric elements, like lines or circles, require the SubTags <Extent> and <Presentation> to be drawn correctly.

```
<Circle Radius="10.015841">
  <Presentation Layer="0" Color="0" LineType="Solid" Line
  <Extent>
      <Min X="-10.000000" Y="-10.000000" Z="0.000000" />
      <Max X="10.000000" Y="10.000000" Z="0.000000" />
  </Extent>
```

For other required or optional attributes and elements, please refer to the Proteus Xml Schema Specification 4.0.1.

4.2.2. ShapeCatalogue

All graphical data that is standardised by an ISO norm should be identical in all documents. The goal of the *ShapeCatalogue* is to outsource this graphical data to a common catalogue, to ensure unambigious use of symbols and to support the reusability.

4.2.2.1. References to the ShapeCatalogue

For a correct reference to a symbol in the *ShapeCatalogue*, both elements are required to have the same *ComponentName* and to be of the same type (e.g. Equipment, PipingComponent).

```
<Equipment ID="P_02" TagName="P4712" ComponentName="P_02" ComponentClass=
    <Presentation Layer="Equipment" Color="256" LineType="Solid" LineWeig
    <Extent>
        <Min X="72.2" Y="172.5" />
        <Max X="92.2" Y="192.5" />
    </Extent>
<ShapeCatalogue Name="Symbols">
    <Equipment ID="SC_P_02" ComponentName="P_02">
        <GenericAttributes Number="1" Set="DexpiAttributes">
```

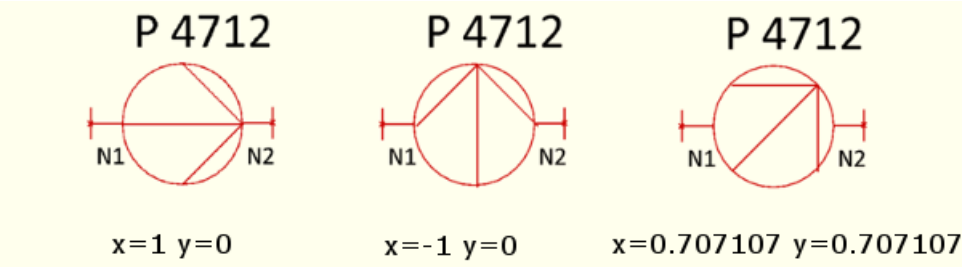
4.2.2.2. Relative coordinates

The graphic representations of symbols in the *ShapeCatalogue* are stored exclusively in relative coordinates, meaning that the symbol's coordinates relate to the position $(x = 0, y = 0, z = 0)$.
Further, negative values in the *Extent* usually implicate that the symbol's position is, especially in symmetric symbols, the point zero, and therefore its coordinates are to be interpreted as relative.

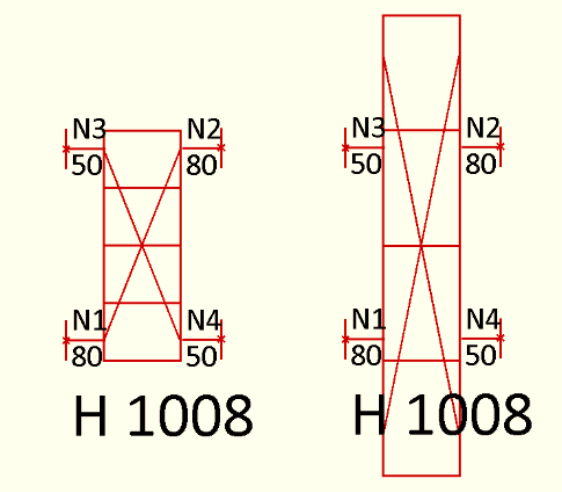
```
<Equipment ID="SC_P_02" ComponentName="P_02">
    <GenericAttributes Number="1" Set="DexpiAttributes">
    <Extent>
        <Min X="-10" Y="-10" Z="0" />
        <Max X="10" Y="10" Z="0" />
    </Extent>
    <Position>
        <Location X="0" Y="0" />
        <Axis X="0" Y="0" Z="1" />
        <Reference X="1" Y="0" Z="0" />
    </Position>
    <Circle Radius="10.015841">
    <PolyLine NumPoints="2">
    <PolyLine NumPoints="2">
    <PolyLine NumPoints="2">
</Equipment>
```

4.2.2.3. Rotation and Scale

A symbol from the *ShapeCatalogue*, can be rotated or scaled by using *Reference* and *Scale*.
The *Reference* is defined by the cosine and sine of the rotation angle. The x-value contains the cosine, the y-value the sine of the rotation angle, with the rotation being measured anti-clockwise. In consequence $x^2 + y^2 = 1$ must be fullfilled in order for the values to be correct.
The following image shows the rotation of a pump for certain *Reference* values.



As for scaling, x and y-value of the *Scale* determine the factor of enlargement in the corresponding axis. If both values are not equal, the symbol will be scaled with different factors for each direction, resulting in a disorted image.



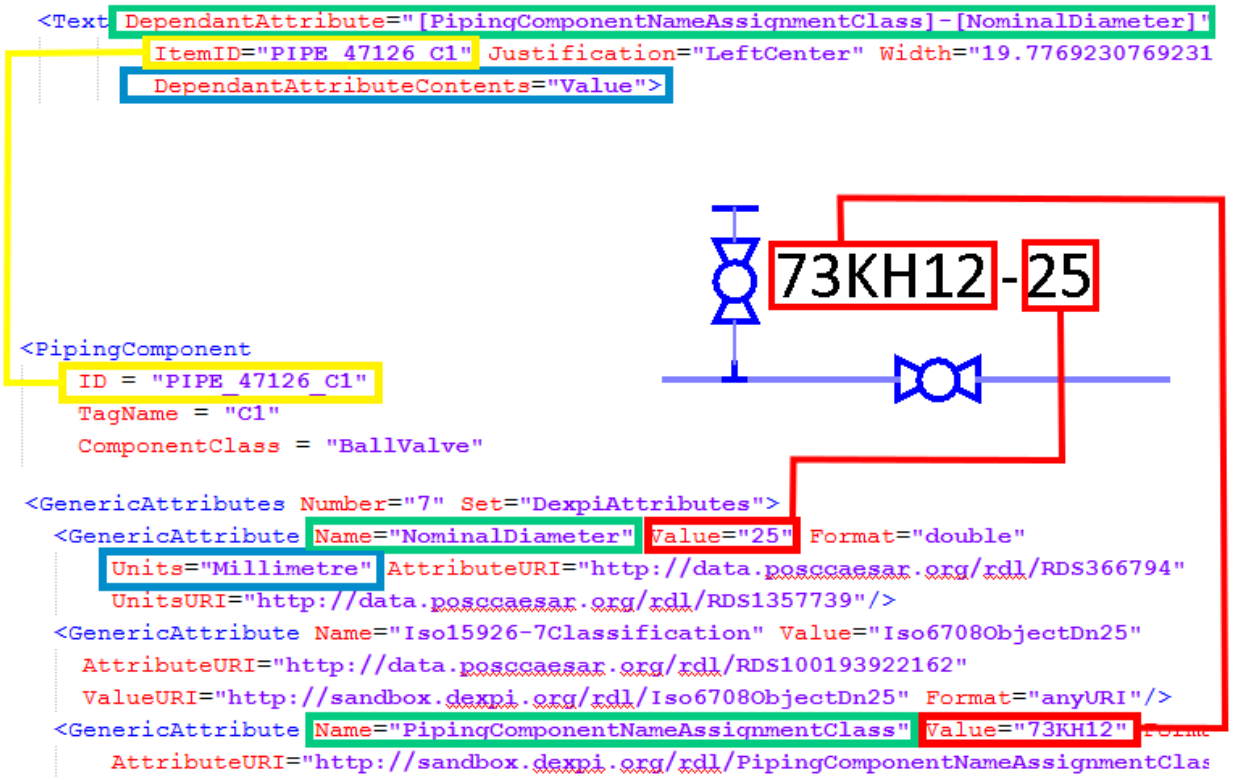
4.2.3. Text

Similar to the geometric elements, the SubTags <Extent> and <Presentation> are required for correct drawing. Further the text can be rotated via the *TextAngle* attribute. The rotation is measured counter-clockwise, with the lower left corner as rotation point.

4.2.3.1. DependantAttribute and ItemID

If a *Text* element is used to display values stored in a *GenericAttribute*, *ItemID* and *DependantAttribute* are required.
The *PlantItem* containing the desired value, is referenced by its *ID* in the *ItemID* attribute of the *Text*, while each *GenericAttribute* is specified in the *DependantAttribute* by noting its name in square brackets. All characters not enclosed by the brackets will remain in the final text.
Further, it is possible to specify whether the attribute's unit should be displayed, by setting *DependantAttributeContents* to either "Value" or "ValueAndUnits". The majority of unit names is automatically abbreviated to shorter standard unit symbols (e.g. millimetre to mm).

The following example will illustrate the basic principle. The *Text* element is shown on top, the referenced *PipingComponent* and its *GenericAttributes* on the bottom and the resulting text as it shows in the P&ID, on the upper right portion of the image:



4.2.4. Labels:

As for now, *Labels* are not allowed in the *ShapeCatalogue*, but in order to facilitate their use and reuse, relative coordinates can be deployed.
The subelements of a *Label*, having an *Extent* relating to the point (0,0), are interpreted as relative to the *Label's* position. Consequently the subelements' coordinates are required to be relative as well.
This allows repositioning without modifying the *Label's* subelements in any way. In combination with the use of *GenericAttribute* references, a *Label* can be reused for various equipments with hardly any need for changes.
In the following *Label* the values on the right side (red) are realized via *DependantAttributes*, while the left side (yellow) uses regular text elements.

Ident	P 4712	
Design Press. Casing, min.	-0.5 barg	
Design Press. Casing, max.	60 barg	
Design Temp. Casing, min.	-45 °C	
Design Temp. Casing, max.	80 °C	
Design Capacity / Design Press. Head	200 m³/h	10 m
Design Speed / Design Power max. Diam. Wheel	600 1/min	60 kW
Material Case Press. Side / Material Impeller	1.4306	1.4308

The equivalent xml code shows the *Extent* relating to the point (0,0), therefore indicating the use of relative coordinates. Further the use of regular text elements in conjunction with *DependantAttribute* based text element can be seen.

```
<Label ID="XMP 1" ComponentName="CentrifugalPumpInfo" ComponentClassURI="http://sandbox.dexpi.org
    <Extent>
        <Min X="-3" Y="0" />
        <Max X="0" Y="3" />
    </Extent>
    <Position>
    <Text Width="86" Height="3" String="Ident" Font="Calibri">
        <Presentation Layer="0" Color="0" LineType="Solid" LineWeight="0.25" R="0" G="0" B="0" />
        <Extent>
            <Min X="-3" Y="0" />
            <Max X="0" Y="3" />
        </Extent>
        <Position>
            <Location X="1.5" Y="36.75" />
            <Axis X="0" Y="0" Z="1" />
            <Reference X="1" Y="0" Z="0" />
        </Position>
    </Text>
    <Text DependantAttribute="[TagNamePrefixAssignmentClass][TagNameSequenceNumberAssignmentClass
        Width="86" Height="3.5" Font="Calibri" ItemID="P_02">
        <Presentation Layer="0" Color="0" LineType="Solid" LineWeight="0.25" R="0" G="0" B="0" />
        <Extent>
            <Min X="-3" Y="0" />
            <Max X="0" Y="3" />
        </Extent>
        <Position>
            <Location X="114.5" Y="36.75" />
            <Axis X="0" Y="0" Z="1" />
            <Reference X="1" Y="0" Z="0" />
        </Position>
    </Text>
```

4.2.5. Troubleshooting

- The drawing only shows a portion of the PID:
  The *Extent* of the *Plantmodel* is missing or incorrect.
- Background color is not as its supposed to be:
  The *Presentation* of the *Plantmodel* is missing or incorrect. The *Extent* of the *Plantmodel* is missing or incorrect.
- Colors are not as they are supposed to be:
  The color is not specified in the corresponding *Presentation*.
- A rotated symbol is not drawn:
  The *Reference* element might be incorrect. Check if $x^2 + y^2 = 1$ is fullfilled.

4.3. Information Model Verification

Due to the fact that P&IDs nowadays are the base for several other design steps for chemical plants, an enriched data transport layer is necessary.
- Converter form input file to IM style
- mapping rules from an unenriched file to an enriched file
- generation of error log

- generation of verificiation output

Part II.

Reference

5. Top-Level Classes

5.1. Overview

5.2. Plant

Description: The engineering content of a PlantModel.

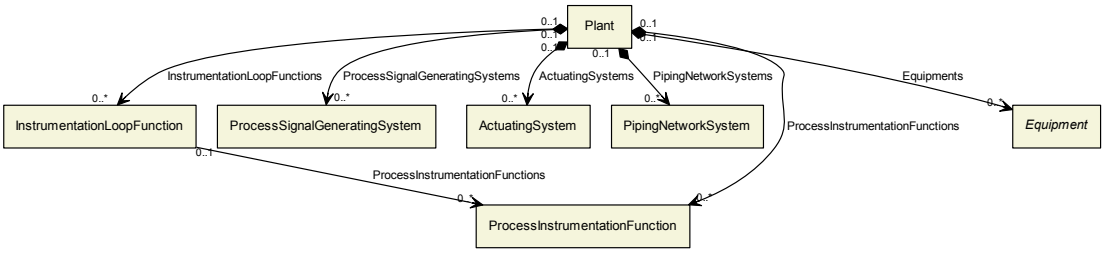
RDL: PLANT
http://data.posccaesar.org/rdl/RDS7151797

Proteus Schema Implementation: There is no direct implementation of a Plant in Proteus Schema. The Plant is rather a container for the actual engineering objects in a Proteus PlantModel element (ActuatingSystem, Equipment, etc., cf. the components of a Plant).

Example:

```
<PlantModel ...>
    <!-- A PlantModel implicitly contains a Plant. -->
    ...
    <PlantStructureItem ...>
        <!-- Not part of the implicit Plant. -->
    </PlantStructureItem>
    ...
    <Equipment ...>
        <!-- Part of the implicit Plant. -->
    </Equipment>
    ...
</PlantModel>
```

5.2.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

5.2.2. Components

5.2.2.1. ActuatingSystems

Description: The ActuatingSystems of the Plant.

Type: ActuatingSystem

Cardinality: 0..*

Proteus Schema Implementation: The ActuatingSystem elements are children of the PlantModel element that corresponds to the PlantModel containing the Plant. See also Proteus Schema Implementation of Plant.

Example:

```
<PlantModel ...>
    ...
    <ActuatingSystem ... >
        ...
    </ActuatingSystem>
    ...
</PlantModel>
```

5.2.2.2. Equipments

Description: The Equipment items of the Plant.

Type: Equipment

Cardinality: 0..*

Proteus Schema Implementation: The Equipment elements are children of the PlantModel element that corresponds to the PlantModel containing the Plant. See also Proteus Schema Implementation of Plant.

Example:

```
<PlantModel ...>
    ...
    <Equipment ... >
        ...
    </Equipment>
    ...
</PlantModel>
```

5.2.2.3. InstrumentationLoopFunctions

Description: The InstrumentationLoopFunctions of the Plant.

Type: InstrumentationLoopFunction

Cardinality: 0..*

Proteus Schema Implementation: The InstrumentationLoopFunctions elements are children of the PlantModel element that corresponds to the PlantModel containing the Plant. See also Proteus Schema Implementation of Plant.

Example:

```
<PlantModel ...>
    ...
    <InstrumentationLoopFunction ... >
        ...
    </InstrumentationLoopFunction>
    ...
</PlantModel>
```

5.2.2.4. PipingNetworkSystems

Description: The InstrumentationLoopFunctions of the Plant.

Type: PipingNetworkSystem

Cardinality: 0..*

Proteus Schema Implementation: The PipingNetworkSystem elements are children of the PlantModel element that corresponds to the PlantModel containing the Plant. See also Proteus Schema Implementation of Plant.

Example:

```
<PlantModel ...>
    ...
    <PipingNetworkSystem ... >
        ...
    </PipingNetworkSystem>
    <PipingNetworkSystem ... >
        ...
    </PipingNetworkSystem>
    ...
</PlantModel>
```

5.2.2.5. ProcessInstrumentationFunctions

Description: The ProcessInstrumentationFunctions of the Plant.

Type: ProcessInstrumentationFunction

Cardinality: 0..*

Proteus Schema Implementation: The ProcessInstrumentationFunction elements are children of the PlantModel element that corresponds to the PlantModel containing the Plant. See also Proteus Schema Implementation of Plant.

Example:

```
<PlantModel ...>
    ...
    <ProcessInstrumentationFunction ... >
        ...
    </ProcessInstrumentationFunction>
    ...
</PlantModel>
```

5.2.2.6. ProcessSignalGeneratingSystems

Description: The ProcessSignalGeneratingSystems of the Plant.

Type: ProcessSignalGeneratingSystem

Cardinality: 0..*

Proteus Schema Implementation: The ProcessSignalGeneratingSystem elements are children of the PlantModel element that corresponds to the PlantModel containing the Plant. See also Proteus Schema Implementation of Plant.

Example:

```
<PlantModel ...>
    ...
    <ProcessSignalGeneratingSystem ... >
        ...
    </ProcessSignalGeneratingSystem>
    ...
</PlantModel>
```

5.2.3. Model References

No model references.

5.2.4. Attributes

No attributes.

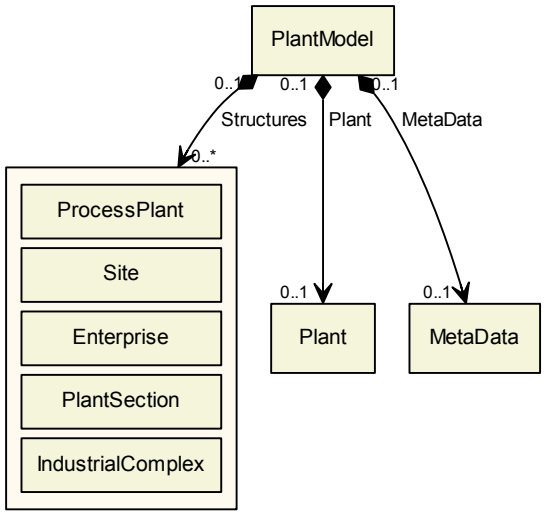
5.3. PlantModel

Description: A model of a chemical plant. It includes various aspects such as the engineering content, a diagram, and metadata.

RDL: -

Proteus Schema Implementation: Proteus Schema top-level element PlantModel.

5.3.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

5.3.2. Components

5.3.2.1. MetaData

Description: Meta data about the PlantModel.

Type: MetaData

Cardinality: 0..1

Proteus Schema Implementation: The XML element corresponding to the MetaData is a child of the XML element corresponding to the PlantModel.

Example:

```
<PlantModel ...>
    ...
    <MetaData ...>
        ...
    </MetaData>
    ...
</PlantModel>
```

5.3.2.2. Plant

Description: The engineering content of the PlantModel.

Type: Plant

Cardinality: 0..1

Proteus Schema Implementation: See Proteus Schema Implementation of the Plant class.

5.3.2.3. Structures

Description: The plant structures of the PlantModel

Type: One of:

- Enterprise
- IndustrialComplex
- PlantSection
- ProcessPlant
- Site

Cardinality: 0..*

Proteus Schema Implementation: The PlantStructureItem elements are children of the namePlantModel element.

Example:

```
<PlantModel ...>
    ...
    <PlantStructureItem ...>
        ...
    </PlantStructureItem>
    ...
</PlantModel>
```

5.3.3. Model References

No model references.

5.3.4. Attributes

No attributes.

6. Basic Concepts

6.1. Overview

This chapter contains basic objects of the DEXPI information model that are not specific for equipment (Chap. 8), piping (Chap. 9), and instrumentation (Chap. 10).

6.2. MetaData

RDL: META DATA
http://sandbox.dexpi.org/rdl/MetaData

6.2.1. Overview

MetaData	
ApprovalDateRepresentationAssignmentClass	String
ApprovalDescriptionAssignmentClass	String
ApproverNameAssignmentClass	String
ArchiveNumberAssignmentClass	String
Arealsa95NameAssignmentClass	String
BlockNameAssignmentClass	String
BlockNumberAssignmentClass	String
CheckerNameAssignmentClass	String
CompanyNameAssignmentClass	String
CompanyNumberAssignmentClass	String
ConfidentialitySpecialization	ConfidentialityClassification
CreationDateRepresentationAssignmentClass	String
CreatorNameAssignmentClass	String
DesignerNameAssignmentClass	String
DrafterNameAssignmentClass	String
DrawingNameAssignmentClass	String
DrawingNumberAssignmentClass	String
DrawingSubTitleAssignmentClass	String
FileNameAssignmentClass	String
LastModificationDateRepresentationAssignmentClass	String
LocationNameAssignmentClass	String
ProcessCellIsa95NameAssignmentClass	String
ProcessCellIsa95NumberAssignmentClass	String
ProjectNameAssignmentClass	String
ProjectNumberAssignmentClass	String
ProjectRangeNumberAssignmentClass	String
ReplacedDrawingAssignmentClass	String
ResponsibleDepartmentNameAssignmentClass	String
RevisionNumberAssignmentClass	String
SheetFormatAssignmentClass	String
SheetNumberAssignmentClass	String
SiteIsa95NameAssignmentClass	String
SubProjectNameAssignmentClass	String
SubProjectNumberAssignmentClass	String
TotalNumberOfSheetsAssignmentClass	String
UnitIsa95NameAssignmentClass	String
UnitIsa95NumberAssignmentClass	String

Superclasses: No superclasses.

Subclasses: No subclasses.

6.2.2. Components

No components.

6.2.3. Model References

No model references.

6.2.4. Attributes

6.2.4.1. ApprovalDateRepresentationAssignmentClass

Description: A representation of the approval date of the drawing.

RDL: APPROVAL DATE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ApprovalDateRepresentationAssignmentClass

Attribute Type: String

Example Value: "2016-04-01"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ApprovalDateRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ApprovalDateRepresentationAssignmentClass"
  Value="2016−04−01"
  Format="string" />
```

6.2.4.2. ApprovalDescriptionAssignmentClass

Description: A description of the approval of the drawing.

RDL: APPROVAL DESCRIPTION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ApprovalDescriptionAssignmentClass

Attribute Type: String

Example Value: "tested and proved"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ApprovalDescriptionAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ApprovalDescriptionAssignmentClass"
  Value="tested and proved"
  Format="string" />
```

6.2.4.3. ApproverNameAssignmentClass

Description: The name of the approver of the drawing.

RDL: APPROVER NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ApproverNameAssignmentClass

Attribute Type: String

Example Value: "A. P. Prover"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ApproverNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ApproverNameAssignmentClass"
  Value="A. P. Prover"
  Format="string" />
```

6.2.4.4. ArchiveNumberAssignmentClass

Description: The archive number of the drawing.

RDL: ARCHIVE NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ArchiveNumberAssignmentClass

Attribute Type: String

Example Value: "XY923-463"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ArchiveNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ArchiveNumberAssignmentClass"
  Value="XY923−463"
  Format="string" />
```

6.2.4.5. AreaIsa95NameAssignmentClass

Description: The name of the related area according to ISA-95.

RDL: AREA ISA95 NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/AreaIsa95NameAssignmentClass

Attribute Type: String

Example Value: "an area"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="AreaIsa95NameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/AreaIsa95NameAssignmentClass"
  Value="an area"
  Format="string" />
```

6.2.4.6. BlockNameAssignmentClass

Description: The name of the related block.

RDL: BLOCK NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/BlockNameAssignmentClass

Attribute Type: String

Example Value: "a block"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="BlockNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/BlockNameAssignmentClass"
  Value="a block"
  Format="string" />
```

6.2.4.7. BlockNumberAssignmentClass

Description: The number of the related block.

RDL: BLOCK NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/BlockNumberAssignmentClass

Attribute Type: String

Example Value: "B987-654"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="BlockNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/BlockNumberAssignmentClass"
  Value="B987−654"
  Format="string" />
```

6.2.4.8. CheckerNameAssignmentClass

Description: The name of the checker of the drawing.

RDL: CHECKER NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/CheckerNameAssignmentClass

Attribute Type: String

Example Value: "C. Hecker"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="CheckerNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/CheckerNameAssignmentClass"
  Value="C. Hecker"
  Format="string" />
```

6.2.4.9. CompanyNameAssignmentClass

Description: The name of the company.

RDL: COMPANY NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/CompanyNameAssignmentClass

Attribute Type: String

Example Value: "CompAny Ltd."

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="CompanyNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/CompanyNameAssignmentClass"
  Value="CompAny Ltd."
  Format="string" />
```

6.2.4.10. CompanyNumberAssignmentClass

Description: The number of the company.

RDL: COMPANY NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/CompanyNumberAssignmentClass

Attribute Type: String

Example Value: "C1248"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="CompanyNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/CompanyNumberAssignmentClass"
  Value="C1248"
  Format="string" />
```

6.2.4.11. ConfidentialitySpecialization

Description: The confidentiality of the drawing.

RDL: CONFIDENTIALITY SPECIALIZATION
http://sandbox.dexpi.org/rdl/ConfidentialitySpecialization

Attribute Type: ConfidentialityClassification

Example Value: confidential
(CONFIDENTIAL INFORMATION, http://data.posccaesar.org/rdl/RDS4316590816)

Proteus Schema Implementation: GenericAttribute of the MetaData (use case Classification).

Example:

```
<GenericAttribute
  Name="ConfidentialitySpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/ConfidentialitySpecialization"
  Value="ConfidentialInformation"
  ValueURI="http://data.posccaesar.org/rdl/RDS4316590816"
  Format="anyURI" />
```

6.2.4.12. CreationDateRepresentationAssignmentClass

Description: A representation of the creation date of the drawing.

RDL: CREATION DATE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/CreationDateRepresentationAssignmentClass

Attribute Type: String

Example Value: "2016-04-01"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="CreationDateRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/CreationDateRepresentationAssignmentClass"
  Value="2016−04−01"
  Format="string" />
```

6.2.4.13. CreatorNameAssignmentClass

Description: The name of the creator of the drawing.

RDL: CREATOR NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/CreatorNameAssignmentClass

Attribute Type: String

Example Value: "A. Creator"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="CreatorNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/CreatorNameAssignmentClass"
  Value="A. Creator"
  Format="string" />
```

6.2.4.14. DesignerNameAssignmentClass

Description: The name of the designer of the drawing.

RDL: DESIGNER NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/DesignerNameAssignmentClass

Attribute Type: String

Example Value: "D. E. Signer"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="DesignerNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignerNameAssignmentClass"
  Value="D. E. Signer"
  Format="string" />
```

6.2.4.15. DrafterNameAssignmentClass

Description: The name of the drafter of the drawing.

RDL: DRAFTER NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/DrafterNameAssignmentClass

Attribute Type: String

Example Value: "D. Rafter"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="DrafterNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/DrafterNameAssignmentClass"
  Value="D. Rafter"
  Format="string" />
```

6.2.4.16. DrawingNameAssignmentClass

Description: The drawing name.

RDL: DRAWING NAME ASSIGNMENT CLASS
http://data.posccaesar.org/rdl/RDS2102503531

Attribute Type: String

Example Value: "DEXPI example PID"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="DrawingNameAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS2102503531"
  Value="DEXPI example PID"
  Format="string" />
```

6.2.4.17. DrawingNumberAssignmentClass

Description: The drawing number.

RDL: DRAWING NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/DrawingNumberAssignmentClass

Attribute Type: String

Example Value: "123/A93"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="DrawingNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/DrawingNumberAssignmentClass"
  Value="123/A93"
  Format="string" />
```

6.2.4.18. DrawingSubTitleAssignmentClass

Description: The sub-title of the drawing.

RDL: DRAWING SUB TITLE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/DrawingSubTitleAssignmentClass

Attribute Type: String

Example Value: "Demonstration PID of the DEXPI group"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="DrawingSubTitleAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/DrawingSubTitleAssignmentClass"
  Value="Demonstration PID of the DEXPI group"
  Format="string" />
```

6.2.4.19. FileNameAssignmentClass

Description: The name of the drawing file.

RDL: FILE NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/FileNameAssignmentClass

Attribute Type: String

Example Value: "DEXPI_example_PID.xml."

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="FileNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/FileNameAssignmentClass"
  Value="DEXPI_example_PID.xml."
  Format="string" />
```

6.2.4.20. LastModificationDateRepresentationAssignmentClass

Description: A representation of the last modification date of the drawing.

RDL: LAST MODIFICATION DATE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/LastModificationDateRepresentationAssignmentClass

Attribute Type: String

Example Value: "2016-04-02"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="LastModificationDateRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/LastModificationDateRepresentationAssignmentClass"
  Value="2016−04−02"
  Format="string" />
```

6.2.4.21. LocationNameAssignmentClass

Description: The location name.

RDL: LOCATION NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/LocationNameAssignmentClass

Attribute Type: String

Example Value: "C1248."

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="LocationNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/LocationNameAssignmentClass"
  Value="C1248."
  Format="string" />
```

6.2.4.22. ProcessCellIsa95NameAssignmentClass

Description: The name of the related process cell according to ISA-95.

RDL: PROCESS CELL ISA95 NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProcessCellIsa95NameAssignmentClass

Attribute Type: String

Example Value: "a process cell"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ProcessCellIsa95NameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProcessCellIsa95NameAssignmentClass"
  Value="a process cell"
  Format="string" />
```

6.2.4.23. ProcessCellIsa95NumberAssignmentClass

Description: The number of the related process cell according to ISA-95.

RDL: PROCESS CELL ISA95 NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProcessCellIsa95NumberAssignmentClass

Attribute Type: String

Example Value: "PC123"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ProcessCellIsa95NumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProcessCellIsa95NumberAssignmentClass"
  Value="PC123"
  Format="string" />
```

6.2.4.24. ProjectNameAssignmentClass

Description: The name of the related project.

RDL: PROJECT NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProjectNameAssignmentClass

Attribute Type: String

Example Value: "a project"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ProjectNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProjectNameAssignmentClass"
  Value="a project"
  Format="string" />
```

6.2.4.25. ProjectNumberAssignmentClass

Description: The number of the related project.

RDL: PROJECT NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProjectNumberAssignmentClass

Attribute Type: String

Example Value: "P3.1415"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ProjectNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProjectNumberAssignmentClass"
  Value="P3.1415"
  Format="string" />
```

6.2.4.26. ProjectRangeNumberAssignmentClass

Description: The range number of he related project.

RDL: PROJECT RANGE NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProjectRangeNumberAssignmentClass

Attribute Type: String

Example Value: "PR321"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ProjectRangeNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProjectRangeNumberAssignmentClass"
  Value="PR321"
  Format="string" />
```

6.2.4.27. ReplacedDrawingAssignmentClass

Description: The drawing replaced by this drawing.

RDL: REPLACED DRAWING ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ReplacedDrawingAssignmentClass

Attribute Type: String

Example Value: "D321"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ReplacedDrawingAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ReplacedDrawingAssignmentClass"
  Value="D321"
  Format="string" />
```

6.2.4.28. ResponsibleDepartmentNameAssignmentClass

Description: The name of the department responsible for the drawing.

RDL: RESPONSIBLE DEPARTMENT NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ResponsibleDepartmentNameAssignmentClass

Attribute Type: String

Example Value: "R2-D2"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="ResponsibleDepartmentNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ResponsibleDepartmentNameAssignmentClass"
  Value="R2−D2"
  Format="string" />
```

6.2.4.29. RevisionNumberAssignmentClass

Description: The revision number of the drawing.

RDL: REVISION NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/RevisionNumberAssignmentClass

Attribute Type: String

Example Value: "R2.2"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="RevisionNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/RevisionNumberAssignmentClass"
  Value="R2.2"
  Format="string" />
```

6.2.4.30. SheetFormatAssignmentClass

Description: The sheet format.

RDL: SHEET FORMAT ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SheetFormatAssignmentClass

Attribute Type: String

Example Value: "DIN A3"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="SheetFormatAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SheetFormatAssignmentClass"
  Value="DIN A3"
  Format="string" />
```

6.2.4.31. SheetNumberAssignmentClass

Description: The sheet number of the drawing.

RDL: SHEET NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SheetNumberAssignmentClass

Attribute Type: String

Example Value: "2"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="SheetNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SheetNumberAssignmentClass"
  Value="2"
  Format="string" />
```

6.2.4.32. SiteIsa95NameAssignmentClass

Description: The name of the related site according to ISA-95.

RDL: SITE ISA95 NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SiteIsa95NameAssignmentClass

Attribute Type: String

Example Value: "a site"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="SiteIsa95NameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SiteIsa95NameAssignmentClass"
  Value="a site"
  Format="string" />
```

6.2.4.33. SubProjectNameAssignmentClass

Description: The name of the related sub-project.

RDL: SUB PROJECT NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SubProjectNameAssignmentClass

Attribute Type: String

Example Value: "a sub-project"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="SubProjectNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubProjectNameAssignmentClass"
  Value="a sub-project"
  Format="string" />
```

6.2.4.34. SubProjectNumberAssignmentClass

Description: The number of the related sub-project.

RDL: SUB PROJECT NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SubProjectNumberAssignmentClass

Attribute Type: String

Example Value: "P3.1415-SP2"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="SubProjectNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubProjectNumberAssignmentClass"
  Value="P3.1415-SP2"
  Format="string" />
```

6.2.4.35. TotalNumberOfSheetsAssignmentClass

Description: The total number of sheets.

RDL: TOTAL NUMBER OF SHEETS ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/TotalNumberOfSheetsAssignmentClass

Attribute Type: String

Example Value: "4"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="TotalNumberOfSheetsAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TotalNumberOfSheetsAssignmentClass"
  Value="4"
  Format="string" />
```

6.2.4.36. UnitIsa95NameAssignmentClass

Description: The name of the related unit according to ISA-95.

RDL: UNIT ISA95 NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/UnitIsa95NameAssignmentClass

Attribute Type: String

Example Value: "a unit"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="UnitIsa95NameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/UnitIsa95NameAssignmentClass"
  Value="a unit"
  Format="string" />
```

6.2.4.37. UnitIsa95NumberAssignmentClass

Description: The number of the related unit according to ISA-95.

RDL: UNIT ISA95 NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/UnitIsa95NumberAssignmentClass

Attribute Type: String

Example Value: "U-923-463"

Proteus Schema Implementation: GenericAttribute of the MetaData (use case String).

Example:

```
<GenericAttribute
  Name="UnitIsa95NumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/UnitIsa95NumberAssignmentClass"
  Value="U-923-463"
  Format="string" />
```

6.3. Node

RDL: -

6.3.1. Overview

Node	
NodeFlowSpecialization	NodeFlowClassification
NominalDiameterNumericalValue RepresentationAssignmentClass	String
NominalDiameterRepresentation AssignmentClass	String
NominalDiameterStandard Specialization	NominalDiameterStandard Classification
NominalDiameterType RepresentationAssignmentClass	String

Superclasses: No superclasses.

Subclasses: No subclasses.

6.3.2. Components

No components.

6.3.3. Model References

No model references.

6.3.4. Attributes

6.3.4.1. NodeFlowSpecialization

RDL: NODE FLOW SPECIALIZATION
http://sandbox.dexpi.org/rdl/NodeFlowSpecialization

Attribute Type: NodeFlowClassification

Example Value: main flow in
(FLOW IN NODE, http://sandbox.dexpi.org/rdl/FlowInNode)

Proteus Schema Implementation: XML attributes FlowIn and FlowOut of the surrounding ConnectionPoints. Note that the XML attributes default values of these XML attrutes (1 and 2, respectivel) have been removed in Proteus 4.0.1.

Example:

```
<ConnectionPoints ... FlowIn = "1" FlowOut = "3">

  <!-- node "0": ignored in information model -->
  <Node>...</Node>

  <!-- node "1": classified as main flow in -->
  <Node>...</Node>

  <!-- node "2": no classification -->
  <Node>...</Node>

  <!-- node "3": classified as main flow out -->
  <Node>...</Node>

</ConnectionPoints>
```

6.3.4.2. NominalDiameterNumericalValueRepresentationAssignmentClass

Description: A readable representation of the numerical value of the nominal diameter. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: NOMINAL DIAMETER NUMERICAL VALUE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterNumericalValueRepresentationAssignmentClass

Attribute Type: String

Example Value: "25"

Proteus Schema Implementation: GenericAttribute of the Node (use case String).

Example:

```
<GenericAttribute
  Name="NominalDiameterNumericalValueRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/
      NominalDiameterNumericalValueRepresentationAssignmentClass"
  Value="25"
  Format="string" />
```

6.3.4.3. NominalDiameterRepresentationAssignmentClass

Description: A readable representation of the nominal diameter. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: NOMINAL DIAMETER REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN 25"

Proteus Schema Implementation: GenericAttribute of the Node (use case String).

Example:

```
<GenericAttribute
  Name="NominalDiameterRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterRepresentationAssignmentClass"
  Value="DN 25"
  Format="string" />
```

6.3.4.4. NominalDiameterStandardSpecialization

Description: The nominal diameter of the Node, given as a reference to a nominal diameter standard and value.

RDL: NOMINAL DIAMETER STANDARD SPECIALIZATION
http://sandbox.dexpi.org/rdl/NominalDiameterStandardSpecialization

Attribute Type: NominalDiameterStandardClassification

Example Value: DN 25 (DIN 2448)
(DIN 2448 OBJECT DN 25, http://sandbox.dexpi.org/rdl/Din2448ObjectDn25)

Proteus Schema Implementation: GenericAttribute of the Node (use case Classification).

Example:

```
<GenericAttribute
  Name="NominalDiameterStandardSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterStandardSpecialization"
  Value="Din2448ObjectDn25"
  ValueURI="http://sandbox.dexpi.org/rdl/Din2448ObjectDn25"
  Format="anyURI" />
```

6.3.4.5. NominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: NOMINAL DIAMETER TYPE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN"

Proteus Schema Implementation: GenericAttribute of the Node (use case String).

Example:

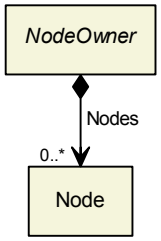
```
<GenericAttribute
  Name="NominalDiameterTypeRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass"
  Value="DN"
  Format="string" />
```

6.4. NodeOwner

This class is abstract.

RDL: -

6.4.1. Overview



Superclasses: No superclasses.

Subclasses:

- Nozzle
- PipingComponent
- PropertyBreak

6.4.2. Components

6.4.2.1. Nodes

Type: Node

Cardinality: 0..*

Proteus Schema Implementation: The Node elements are children of a ConnectionPoints element in the NodeOwner's element (e.g., in a PipingComponent element. For the information model, the *first* Node element is ignored as it represents the owner itself (cf. Proteus specification).

Example:

```
<PipingComponent ...>
    ...
    <ConnectionPoints ... >
        <!-- first Node ignored for information model -->
        <Node ...>
            ...
        </Node>
        <!-- Nodes for information model -->
        <Node ...>
            ...
        </Node>
        ...
    </ConnectionPoints>
    ...
</PipingComponent>
```

6.4.3. Model References

No model references.

6.4.4. Attributes

No attributes.

7. Plant Structure

7.1. Overview

7.2. Area

Description: An area as defined by ISA 95.

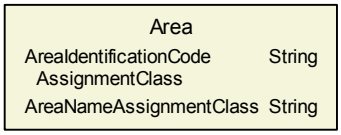
RDL: AREA ISA95
http://data.posccaesar.org/rdl/RDS10418236534

Proteus Schema Implementation: Proteus PlantStructureItem element:

- ComponentClass: AreaIsa95
- ComponentClassUri: http://data.posccaesar.org/rdl/RDS10418236534

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

7.2.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

7.2.2. Components

No components.

7.2.3. Model References

No model references.

7.2.4. Attributes

7.2.4.1. AreaIdentificationCodeAssignmentClass

Description: The identification code of the Area.

RDL: AREA IDENTIFICATION CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/AreaIdentificationCodeAssignmentClass

Attribute Type: String

Example Value: "F4"

Proteus Schema Implementation: GenericAttribute of the Area (use case String).

Example:

```
<GenericAttribute
  Name="AreaIdentificationCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/AreaIdentificationCodeAssignmentClass"
  Value="F4"
  Format="string" />
```

7.2.4.2. AreaNameAssignmentClass

Description: The name of the Area.

RDL: AREA NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/AreaNameAssignmentClass

Attribute Type: String

Example Value: "Area F4"

Proteus Schema Implementation: GenericAttribute of the Area (use case String).

Example:

```
<GenericAttribute
  Name="AreaNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/AreaNameAssignmentClass"
  Value="Area F4"
  Format="string" />
```

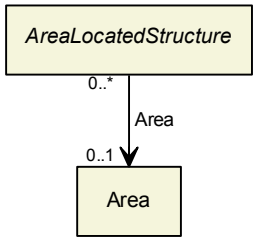
7.3. AreaLocatedStructure

This class is abstract.

Description: A structure that is located in an area.

RDL: -

7.3.1. Overview



Superclasses: No superclasses.

Subclasses:

- IndustrialComplex
- PlantSection
- ProcessPlant
- TechnicalItem

7.3.2. Components

No components.

7.3.3. Model References

7.3.3.1. Area

Description: The area in which the AreaLocatedStructure is located.

Type: Area

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the Equipment element representing the AreaLocatedStructure: is located in
- Association type for the association *target*, i.e., for the PlantStructureItem element representing the Area: is the location of

Both Associations must be used.

Example:

```
<Equipment ID="P4712" ...>
    ...
    <Association Type="is located in" ItemID="AREA_F4" />
    ...
</Equipment>
...
<PlantStructureItem ID="AREA_F4" ...>
    ...
    <Association Type="is the location of" ItemID="P4712" />
    ...
</PlantStructureItem>
```

7.3.4. Attributes

No attributes.

7.4. Enterprise

Description: An organization that is any undertaking, venture, initiative, or business organization with a defined mission (from http://data.posccaesar.org/rdl/RDS10418236543).

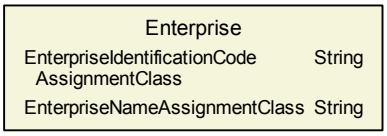
RDL: ISA95 ENTERPRISE
http://data.posccaesar.org/rdl/RDS10418236543

Proteus Schema Implementation: Proteus PlantStructureItem element:

- ComponentClass: Isa95Enterprise
- ComponentClassUri: http://data.posccaesar.org/rdl/RDS10418236543

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

7.4.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

7.4.2. Components

No components.

7.4.3. Model References

No model references.

7.4.4. Attributes

7.4.4.1. EnterpriseIdentificationCodeAssignmentClass

Description: The identification code of the Enterprise.

RDL: ENTERPRISE IDENTIFICATION CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/EnterpriseIdentificationCodeAssignmentClass

Attribute Type: String

Example Value: "DEXPI"

Proteus Schema Implementation: GenericAttribute of the Enterprise (use case String).

Example:

```
<GenericAttribute
  Name="EnterpriseIdentificationCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/EnterpriseIdentificationCodeAssignmentClass"
  Value="DEXPI"
  Format="string" />
```

7.4.4.2. EnterpriseNameAssignmentClass

Description: The name of the Enterprise.

RDL: ENTERPRISE NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/EnterpriseNameAssignmentClass

Attribute Type: String

Example Value: "The DEXPI Group"

Proteus Schema Implementation: GenericAttribute of the Enterprise (use case String).

Example:

```
<GenericAttribute
  Name="EnterpriseNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/EnterpriseNameAssignmentClass"
  Value="The DEXPI Group"
  Format="string" />
```

7.5. IndustrialComplex

Description: An industrial complex as defined by ISO 10209:2012.

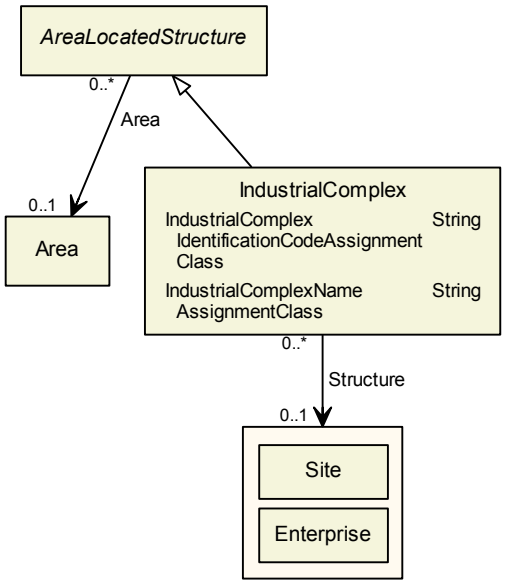
RDL: INDUSTRIAL COMPLEX ISO10209:2012
http://sandbox.dexpi.org/rdl/IndustrialComplexIso10209:2012

Proteus Schema Implementation: Proteus PlantStructureItem element:

- ComponentClass: IndustrialComplexIso10209:2012
- ComponentClassUri: http://sandbox.dexpi.org/rdl/IndustrialComplexIso10209:2012

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

7.5.1. Overview



Superclasses:

- AreaLocatedStructure

Subclasses: No subclasses.

7.5.2. Components

No components.

7.5.3. Model References

7.5.3.1. Structure

Description: A superordinate structure of which the IndustrialComplex is a part.

Type: One of:

- Enterprise
- Site

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the PlantStructureItem element representing the IndustrialComplex: is a part of
- Association type for the association *target*, i.e., for the PlantStructureItem element representing the RangeOfStructureOfIndustrialComplex: is a collection including

Both Associations must be used.

Example:

```
<PlantStructureItem ID="IC_ISOPHORENE_CHAIN" ...>
    ...
    <Association Type="is a part of" ItemID="SITE_AACHEN"/>
    ...
</PlantStructureItem>
...
<PlantStructureItem ID="SITE_AACHEN" ...>
    ...
    <Association Type="is a collection including" ItemID="IC_ISOPHORENE_CHAIN"/>
    ...
</PlantStructureItem>
```

7.5.4. Attributes

7.5.4.1. IndustrialComplexIdentificationCodeAssignmentClass

Description: The identification code of the IndustrialComplex.

RDL: INDUSTRIAL COMPLEX IDENTIFICATION CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/IndustrialComplexIdentificationCodeAssignmentClass

Attribute Type: String

Example Value: "I-Chain"

Proteus Schema Implementation: GenericAttribute of the IndustrialComplex (use case String).

Example:

```
<GenericAttribute
  Name="IndustrialComplexIdentificationCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/IndustrialComplexIdentificationCodeAssignmentClass"
  Value="I−Chain"
  Format="string" />
```

7.5.4.2. IndustrialComplexNameAssignmentClass

Description: The name of the IndustrialComplex.

RDL: INDUSTRIAL COMPLEX NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/IndustrialComplexNameAssignmentClass

Attribute Type: String

Example Value: "Isophorone Chain"

Proteus Schema Implementation: GenericAttribute of the IndustrialComplex (use case String).

Example:

```
<GenericAttribute
  Name="IndustrialComplexNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/IndustrialComplexNameAssignmentClass"
  Value="Isophorone Chain"
  Format="string" />
```

7.6. PlantSection

Description: An plant section as defined by ISO 10209:2012.

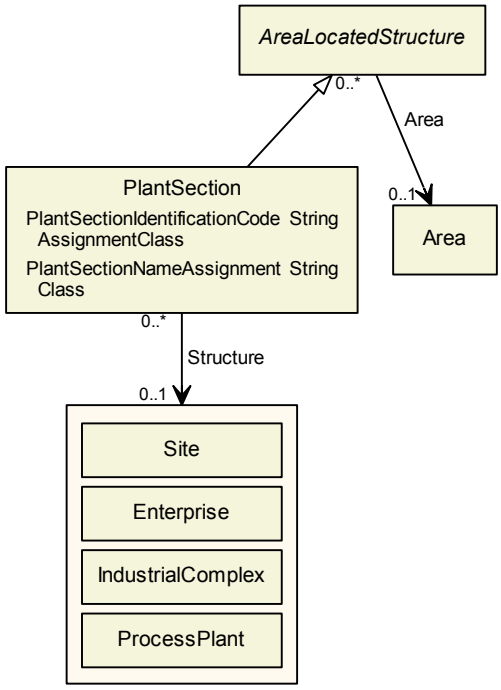
RDL: PLANT SECTION ISO10209:2012
http://sandbox.dexpi.org/rdl/PlantSectionIso10209:2012

Proteus Schema Implementation: Proteus PlantStructureItem element:

- ComponentClass: PlantSectionIso10209:2012
- ComponentClassUri: http://sandbox.dexpi.org/rdl/PlantSectionIso10209:2012

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

7.6.1. Overview



Superclasses:

- AreaLocatedStructure

Subclasses: No subclasses.

7.6.2. Components

No components.

7.6.3. Model References

7.6.3.1. Structure

Description: A superordinate structure of which the PlantSection is a part.

Type: One of:

- Enterprise
- IndustrialComplex
- ProcessPlant
- Site

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the PlantStructureItem element representing the PlantSection: is a part of
- Association type for the association *target*, i.e., for the PlantStructureItem element representing the RangeOfStructureOfPlantSection: is a collection including

Both Associations must be used.

Example:

```
<PlantStructureItem ID="PS_UTILITIES" ...>
    ...
    <Association Type="is a part of" ItemID="PP_ABC_PLANT"/>
    ...
</PlantStructureItem>
...
<PlantStructureItem ID="PP_ABC_PLANT" ...>
    ...
    <Association Type="is a collection including" ItemID="PS_UTILITIES"/>
    ...
</PlantStructureItem>
```

7.6.4. Attributes

7.6.4.1. PlantSectionIdentificationCodeAssignmentClass

Description: The identification code of the PlantSection.

RDL: PLANT SECTION IDENTIFICATION CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PlantSectionIdentificationCodeAssignmentClass

Attribute Type: String

Example Value: "10"

Proteus Schema Implementation: GenericAttribute of the PlantSection (use case String).

Example:

```
<GenericAttribute
  Name="PlantSectionIdentificationCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PlantSectionIdentificationCodeAssignmentClass"
  Value="10"
  Format="string"/>
```

7.6.4.2. PlantSectionNameAssignmentClass

Description: The name of the PlantSection.

RDL: PLANT SECTION NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PlantSectionNameAssignmentClass

Attribute Type: String

Example Value: "Utilities"

Proteus Schema Implementation: GenericAttribute of the PlantSection (use case String).

Example:

```
<GenericAttribute
  Name="PlantSectionNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PlantSectionNameAssignmentClass"
  Value="Utilities"
  Format="string" />
```

7.7. PlantSystem

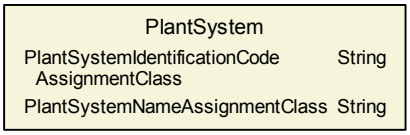
RDL: PLANT SYSTEM
http://sandbox.dexpi.org/rdl/PlantSystem

Proteus Schema Implementation: Proteus PlantStructureItem element:

- ComponentClass: PlantSystem
- ComponentClassUri: http://sandbox.dexpi.org/rdl/PlantSystem

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

7.7.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

7.7.2. Components

No components.

7.7.3. Model References

No model references.

7.7.4. Attributes

7.7.4.1. PlantSystemIdentificationCodeAssignmentClass

Description: The identification code of the PlantSystem.

RDL: PLANT SYSTEM IDENTIFICATION CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PlantSystemIdentificationCodeAssignmentClass

Attribute Type: String

Example Value: "X123"

Proteus Schema Implementation: GenericAttribute of the PlantSystem (use case String).

Example:

```
<GenericAttribute
  Name="PlantSystemIdentificationCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PlantSystemIdentificationCodeAssignmentClass"
  Value="X123"
  Format="string" />
```

7.7.4.2. PlantSystemNameAssignmentClass

Description: The name of the PlantSystem.

RDL: PLANT SYSTEM NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PlantSystemNameAssignmentClass

Attribute Type: String

Example Value: "System X123"

Proteus Schema Implementation: GenericAttribute of the PlantSystem (use case String).

Example:

```
<GenericAttribute
  Name="PlantSystemNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PlantSystemNameAssignmentClass"
  Value="System X123"
  Format="string" />
```

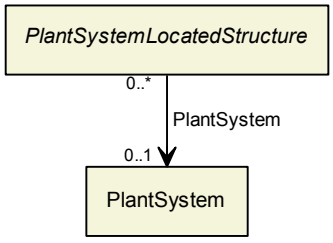
7.8. PlantSystemLocatedStructure

This class is abstract.

Description: A structure that is located in a plant system.

RDL: -

7.8.1. Overview



Superclasses: No superclasses.

Subclasses:

- TechnicalItem

7.8.2. Components

No components.

7.8.3. Model References

7.8.3.1. PlantSystem

Description: The plant system in which the PlantSystemLocatedStructure is located.

Type: PlantSystem

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the Equipment element representing the PlantSystemLocatedStructure: is located in
- Association type for the association *target*, i.e., for the PlantStructureItem element representing the PlantSystem: is the location of

Both Associations must be used.

Example:

```
<Equipment ID="P4712" ...>
    ...
    <Association Type="is located in" ItemID="PS123" />
    ...
</Equipment>
...
<PlantStructureItem ID="PS123" ...>
    ...
    <Association Type="is the location of" ItemID="P4712" />
    ...
</PlantStructureItem>
```

7.8.4. Attributes

No attributes.

7.9. PlantTrain

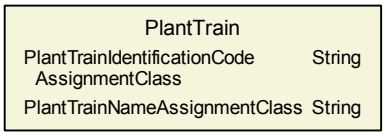
RDL: PLANT TRAIN
http://sandbox.dexpi.org/rdl/PlantTrain

Proteus Schema Implementation: Proteus PlantStructureItem element:

- ComponentClass: PlantTrain
- ComponentClassUri: http://sandbox.dexpi.org/rdl/PlantTrain

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

7.9.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

7.9.2. Components

No components.

7.9.3. Model References

No model references.

7.9.4. Attributes

7.9.4.1. PlantTrainIdentificationCodeAssignmentClass

Description: The identification code of the PlantTrain.

RDL: PLANT TRAIN IDENTIFICATION CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PlantTrainIdentificationCodeAssignmentClass

Attribute Type: String

Example Value: "T456"

Proteus Schema Implementation: GenericAttribute of the PlantTrain (use case String).

Example:

```
<GenericAttribute
  Name="PlantTrainIdentificationCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PlantTrainIdentificationCodeAssignmentClass"
  Value="T456"
  Format="string" />
```

7.9.4.2. PlantTrainNameAssignmentClass

Description: The name of the PlantTrain.

RDL: PLANT TRAIN NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PlantTrainNameAssignmentClass

Attribute Type: String

Example Value: "Train T456"

Proteus Schema Implementation: GenericAttribute of the PlantTrain (use case String).

Example:

```
<GenericAttribute
  Name="PlantTrainNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PlantTrainNameAssignmentClass"
  Value="Train T456"
  Format="string" />
```

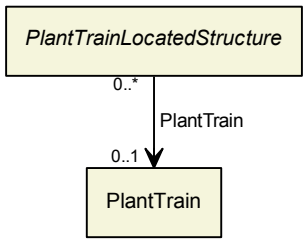
7.10. PlantTrainLocatedStructure

This class is abstract.

Description: A structure that is located in a plant train.

RDL: -

7.10.1. Overview



Superclasses: No superclasses.

Subclasses:

- TechnicalItem

7.10.2. Components

No components.

7.10.3. Model References

7.10.3.1. PlantTrain

Description: The plant train in which the PlantTrainLocatedStructure is located.

Type: PlantTrain

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the Equipment element representing the PlantTrain-LocatedStructure: is located in
- Association type for the association *target*, i.e., for the PlantStructureItem element representing the PlantTrain: is the location of

Both Associations must be used.

Example:

```
<Equipment ID="P4712" ...>
    ...
    <Association Type="is located in" ItemID="T456"/>
    ...
</Equipment>
...
<PlantStructureItem ID="T456" ...>
    ...
    <Association Type="is the location of" ItemID="P4712"/>
    ...
</PlantStructureItem>
```

7.10.4. Attributes

No attributes.

7.11. ProcessPlant

Description: A plant employed in carrying out chemical processes, including the required supporting processes (from http://data.posccaesar.org/rdl/RDS7151859).

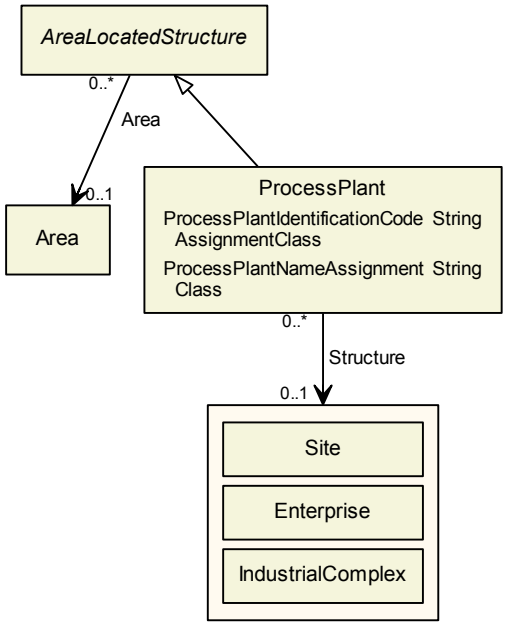
RDL: PROCESS PLANT
http://data.posccaesar.org/rdl/RDS7151859

Proteus Schema Implementation: Proteus PlantStructureItem element:

- ComponentClass: ProcessPlant
- ComponentClassUri: http://data.posccaesar.org/rdl/RDS7151859

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

7.11.1. Overview



Superclasses:

- AreaLocatedStructure

Subclasses: No subclasses.

7.11.2. Components

No components.

7.11.3. Model References

7.11.3.1. Structure

Description: A superordinate structure of which the ProcessPlant is a part.

Type: One of:

- Enterprise
- IndustrialComplex
- Site

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the PlantStructureItem element representing the ProcessPlant: is a part of
- Association type for the association *target*, i.e., for the PlantStructureItem element representing the RangeOfStructureOfProcessPlant: is a collection including

Both Associations must be used.

Example:

```
<PlantStructureItem ID="PP_ABC_PLANT" ...>
    ...
    <Association Type="is a part of" ItemID="IC_ISOPHORENE_CHAIN"/>
    ...
</PlantStructureItem>
...
<PlantStructureItem ID="IC_ISOPHORENE_CHAIN" ...>
    ...
    <Association Type="is a collection including" ItemID="PP_ABC_PLANT"/>
    ...
</PlantStructureItem>
```

7.11.4. Attributes

7.11.4.1. ProcessPlantIdentificationCodeAssignmentClass

Description: The identification code of the ProcessPlant.

RDL: PROCESS PLANT IDENTIFICATION CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProcessPlantIdentificationCodeAssignmentClass

Attribute Type: String

Example Value: "ABC"

Proteus Schema Implementation: GenericAttribute of the ProcessPlant (use case String).

Example:

```
<GenericAttribute
  Name="ProcessPlantIdentificationCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProcessPlantIdentificationCodeAssignmentClass"
  Value="ABC"
  Format="string"/>
```

7.11.4.2. ProcessPlantNameAssignmentClass

Description: The name of the ProcessPlant.

RDL: PROCESS PLANT NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProcessPlantNameAssignmentClass

Attribute Type: String

Example Value: "ABC Plant"

Proteus Schema Implementation: GenericAttribute of the ProcessPlant (use case String).

Example:

```
<GenericAttribute
  Name="ProcessPlantNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProcessPlantNameAssignmentClass"
  Value="ABC Plant"
  Format="string"/>
```

7.12. Site

Description: A site as defined by ISA 95.

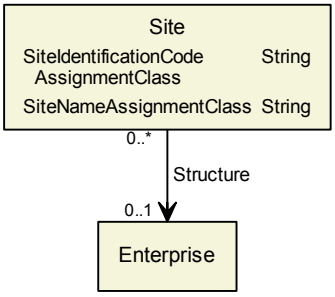
RDL: SITE ISA95
http://data.posccaesar.org/rdl/RDS10418236632

Proteus Schema Implementation: Proteus PlantStructureItem element:

- ComponentClass: SiteIsa95
- ComponentClassUri: http://data.posccaesar.org/rdl/RDS10418236632

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

7.12.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

7.12.2. Components

No components.

7.12.3. Model References

7.12.3.1. Structure

Description: A superordinate structure of which the Site is a part.

Type: Enterprise

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the PlantStructureItem element representing the Site: is a part of
- Association type for the association *target*, i.e., for the PlantStructureItem element representing the Enterprise: is a collection including

Both Associations must be used.

Example:

```
<PlantStructureItem ID="SITE_AACHEN" ...>
    ...
    <Association Type="is a part of" ItemID="ENTERPRISE_DEXPI_INDUSTRIES"/>
    ...
</PlantStructureItem>
...
<PlantStructureItem ID="ENTERPRISE_DEXPI_INDUSTRIES" ...>
    ...
    <Association Type="is a collection including" ItemID="SITE_AACHEN"/>
    ...
</PlantStructureItem>
```

7.12.4. Attributes

7.12.4.1. SiteIdentificationCodeAssignmentClass

Description: The identification code of the Site.

RDL: SITE IDENTIFICATION CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SiteIdentificationCodeAssignmentClass

Attribute Type: String

Example Value: "AC"

Proteus Schema Implementation: GenericAttribute of the Site (use case String).

Example:

```
<GenericAttribute
  Name="SiteIdentificationCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SiteIdentificationCodeAssignmentClass"
  Value="AC"
  Format="string"/>
```

7.12.4.2. SiteNameAssignmentClass

Description: The name of the Site.

RDL: SITE NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SiteNameAssignmentClass

Attribute Type: String

Example Value: "Aachen"

Proteus Schema Implementation: GenericAttribute of the Site (use case String).

Example:

```
<GenericAttribute
  Name="SiteNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SiteNameAssignmentClass"
  Value="Aachen"
  Format="string"/>
```

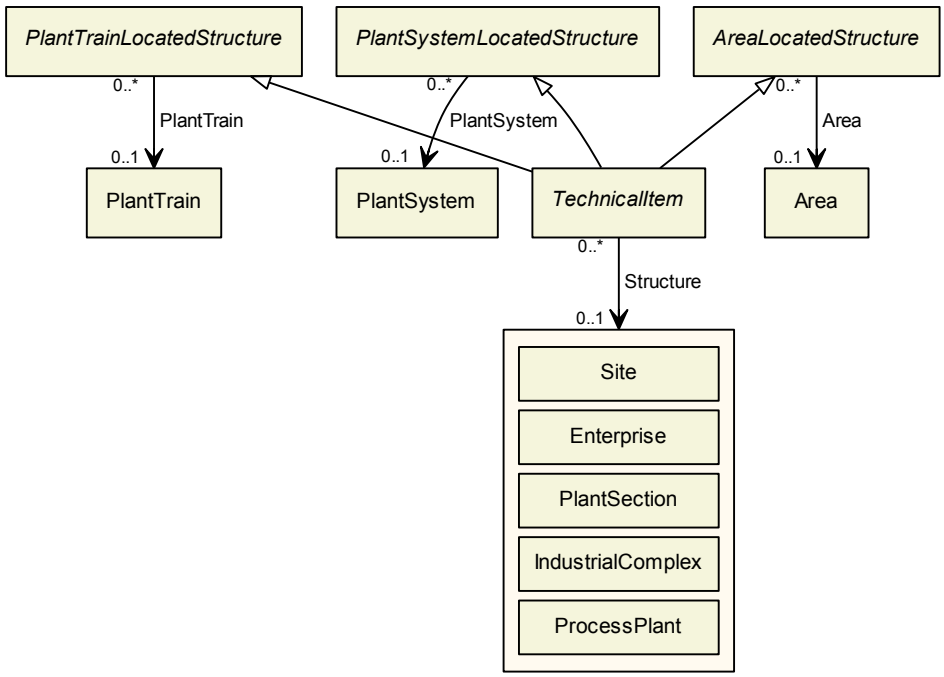
7.13. TechnicalItem

This class is abstract.

Description: An item at the lowest level of the plant structure.

RDL: -

7.13.1. Overview



Superclasses:

- AreaLocatedStructure
- PlantSystemLocatedStructure
- PlantTrainLocatedStructure

Subclasses:

- ActuatingFunction
- ActuatingSystem
- Equipment
- InstrumentationLoopFunction
- PipingNetworkSystem
- ProcessInstrumentationFunction
- ProcessSignalGeneratingFunction
- ProcessSignalGeneratingSystem

7.13.2. Components

No components.

7.13.3. Model References

7.13.3.1. Structure

Description: A superordinate structure of which the TechnicalItem is a part.

Type: One of:

- Enterprise
- IndustrialComplex
- PlantSection
- ProcessPlant
- Site

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the Equipment element representing the TechnicalItem: is a part of
- Association type for the association *target*, i.e., for the PlantStructureItem element representing the RangeOfStructureOfTechnicalItem: is a collection including

Both Associations must be used.

Example:

```
<Equipment ID="P4712" ...>
    ...
    <Association Type="is a part of" ItemID="PS_UTILITIES" />
    ...
</Equipment>
...
<PlantStructureItem ID="PS_UTILITIES" ...>
    ...
    <Association Type="is a collection including" ItemID="P4712" />
    ...
</PlantStructureItem>
```

7.13.4. Attributes

No attributes.

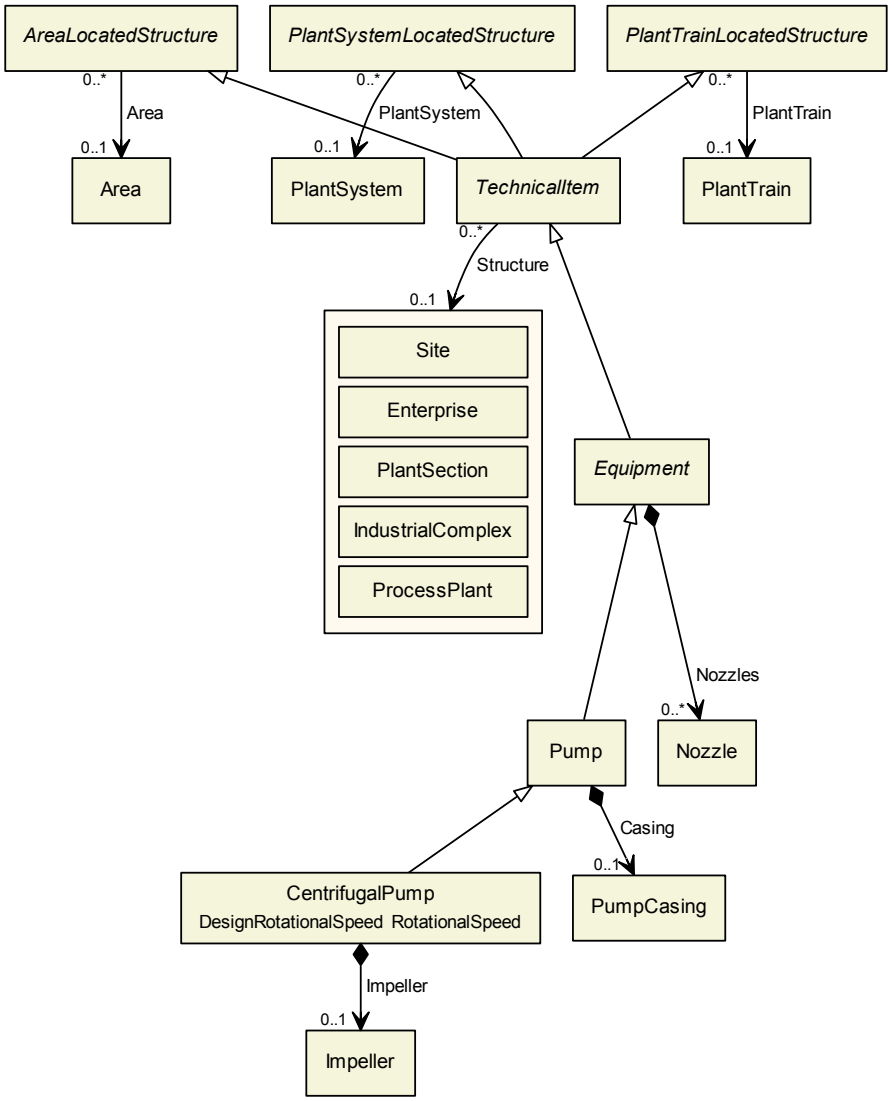
8. Equipment

8.1. Overview

8.2. CentrifugalPump

RDL: CENTRIFUGAL PUMP
http://data.posccaesar.org/rdl/RDS416834

8.2.1. Overview



Superclasses:

- Pump

Subclasses: No subclasses.

8.2.2. Components

8.2.2.1. Impeller

Type: Impeller

Cardinality: 0..1

Proteus Schema Implementation: The Equipment element for the Impeller is a sub-element of the Equipment element for the CentrifugalPump.

Example:

```
<Equipment
        ComponentClass="CentrifugalPump"
        ComponentClassURI="http://data.posccaesar.org/rdl/RDS416834"
        ...>
    ...
    <Equipment
            ComponentClass="Impeller"
            ComponentClassURI="http://data.posccaesar.org/rdl/RDS414539"
            ...>
        ...
    </Equipment
    ...
</Equipment
```

8.2.3. Model References

No model references.

8.2.4. Attributes

8.2.4.1. DesignRotationalSpeed

Description: The rotational speed of the CentrifugalPump by design.

RDL: DESIGN ROTATIONAL SPEED
http://sandbox.dexpi.org/rdl/DesignRotationalSpeed

Attribute Type: RotationalSpeed

Example Value: 1400 1/min

Proteus Schema Implementation: GenericAttribute of the CentrifugalPump (use case Physical Quantity).

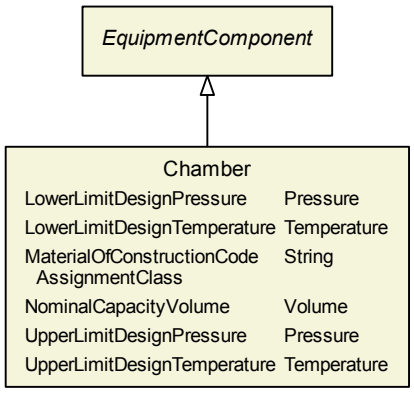
Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="1400"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

8.3. Chamber

RDL: CHAMBER
http://data.posccaesar.org/rdl/RDS903151421

8.3.1. Overview



Superclasses:

- EquipmentComponent

Subclasses: No subclasses.

8.3.2. Components

No components.

8.3.3. Model References

No model references.

8.3.4. Attributes

8.3.4.1. LowerLimitDesignPressure

Description: The lowest pressure for which the Chamber is designed.

RDL: LOWER LIMIT DESIGN PRESSURE
http://data.posccaesar.org/rdl/RDS360674

Attribute Type: Pressure

Example Value: -0.5 barg

Proteus Schema Implementation: GenericAttribute of the Chamber (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitDesignPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360674"
  Value="−0.5"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

8.3.4.2. LowerLimitDesignTemperature

Description: The lowest temperature for which the Chamber is designed.

RDL: LOWER LIMIT DESIGN TEMPERATURE
http://data.posccaesar.org/rdl/RDS360494

Attribute Type: Temperature

Example Value: -45 °C

Proteus Schema Implementation: GenericAttribute of the Chamber (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitDesignTemperature"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360494"
  Value="−45"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

8.3.4.3. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the Chamber.

RDL: MATERIAL OF CONSTRUCTION CODE ASSIGNMENT CLASS
http://data.posccaesar.org/rdl/RDS1460719741

Attribute Type: String

Example Value: "1.4306"

Proteus Schema Implementation: GenericAttribute of the Chamber (use case String).

Example:

```
<GenericAttribute
  Name="MaterialOfConstructionCodeAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1460719741"
  Value="1.4306"
  Format="string" />
```

8.3.4.4. NominalCapacityVolume

Description: The nominal volumetric capacity of the Chamber.

RDL: NOMINAL CAPACITY VOLUME
http://sandbox.dexpi.org/rdl/NominalCapacityVolume

Attribute Type: Volume

Example Value: 7.2 m^3

Proteus Schema Implementation: GenericAttribute of the Chamber (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="NominalCapacityVolume"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalCapacityVolume"
  Value="7.2"
  Format="double"
  Units="MetreCubed"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1349099" />
```

8.3.4.5. UpperLimitDesignPressure

Description: The highest pressure for which the Chamber is designed.

RDL: UPPER LIMIT DESIGN PRESSURE
http://data.posccaesar.org/rdl/RDS1470835011

Attribute Type: Pressure

Example Value: 60 barg

Proteus Schema Implementation: GenericAttribute of the Chamber (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="UpperLimitDesignPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1470835011"
  Value="60"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

8.3.4.6. UpperLimitDesignTemperature

Description: The highest temperature for which the Chamber is designed.

RDL: UPPER LIMIT DESIGN TEMPERATURE
http://data.posccaesar.org/rdl/RDS360449

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the Chamber (use case Physical Quantity).

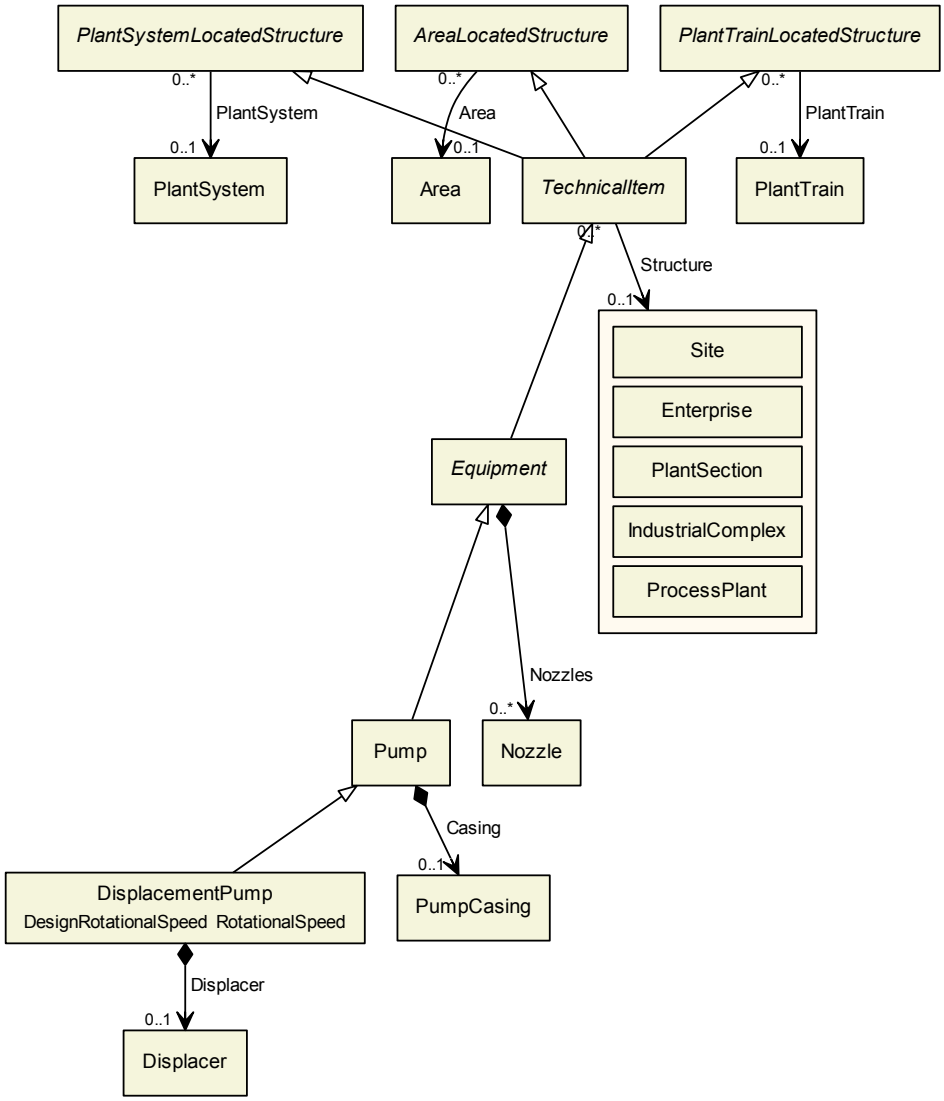
Example:

```
<GenericAttribute
  Name="UpperLimitDesignTemperature"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360449"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

8.4. DisplacementPump

RDL: DISPLACEMENT PUMP
http://sandbox.dexpi.org/rdl/DisplacementPump

8.4.1. Overview



Superclasses:

- Pump

Subclasses: No subclasses.

8.4.2. Components

8.4.2.1. Displacer

Type: Displacer

Cardinality: 0..1

Proteus Schema Implementation: The Equipment element for the Displacer is a sub-element of the Equipment element for the DisplacementPump.

Example:

```
<Equipment
        ComponentClass="DisplacementPump"
        ComponentClassURI="http://sandbox.dexpi.org/rdl/DisplacementPump"
        ...>
    ...
    <Equipment
            ComponentClass="Displacer"
            ComponentClassURI="http://sandbox.dexpi.org/rdl/Displacer"
            ...>
        ...
    </Equipment>
    ...
</Equipment>
```

8.4.3. Model References

No model references.

8.4.4. Attributes

8.4.4.1. DesignRotationalSpeed

Description: The rotational speed of the DisplacementPump by design.

RDL: DESIGN ROTATIONAL SPEED
http://sandbox.dexpi.org/rdl/DesignRotationalSpeed

Attribute Type: RotationalSpeed

Example Value: 1400 1/min

Proteus Schema Implementation: GenericAttribute of the DisplacementPump (use case Physical Quantity).

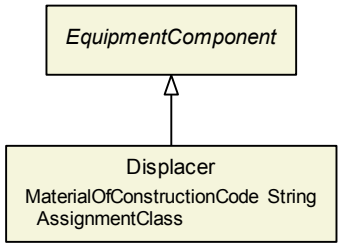
Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="1400"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

8.5. Displacer

RDL: DISPLACER
http://sandbox.dexpi.org/rdl/Displacer

8.5.1. Overview



Superclasses:

- EquipmentComponent

Subclasses: No subclasses.

8.5.2. Components

No components.

8.5.3. Model References

No model references.

8.5.4. Attributes

8.5.4.1. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the Displacer.

RDL: MATERIAL OF CONSTRUCTION CODE ASSIGNMENT CLASS
http://data.posccaesar.org/rdl/RDS1460719741

Attribute Type: String

Example Value: "1.4305"

Proteus Schema Implementation: GenericAttribute of the Displacer (use case String).

Example:

```
<GenericAttribute
  Name="MaterialOfConstructionCodeAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1460719741"
  Value="1.4305"
  Format="string" />
```

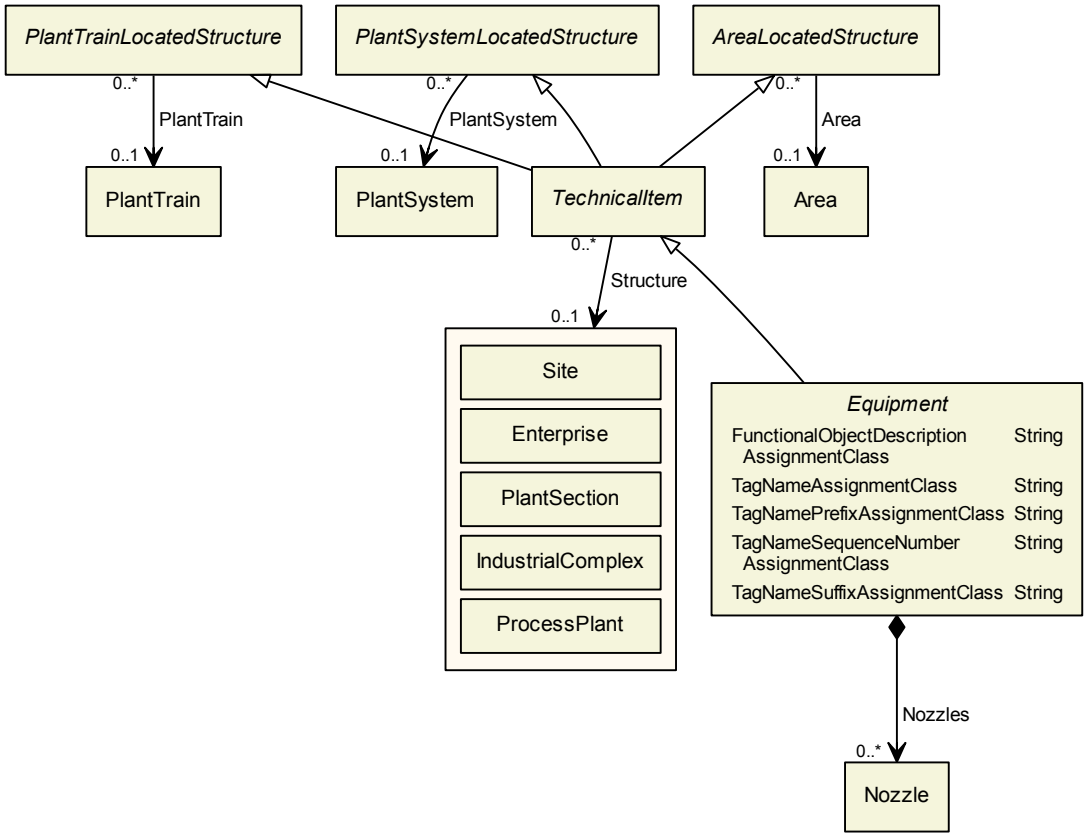
8.6. Equipment

This class is abstract.

Description: A piece of Equipment.

RDL: -

8.6.1. Overview



Superclasses:

- TechnicalItem

Subclasses:

- HeatExchanger
- Pump
- Tank
- Vessel

8.6.2. Components

8.6.2.1. Nozzles

Type: Nozzle

Cardinality: 0..*

Proteus Schema Implementation: The Nozzle elements are children of the Equipment element.

Example:

```
<Equipment ...>
    ...
    <!-- nozzles -->
    <Nozzle ... >
        ...
```

```
    </Nozzle>
    <Nozzle ... >
        ...
    </Nozzle>
    ...
</Equipment>
```

8.6.3. Model References

No model references.

8.6.4. Attributes

8.6.4.1. FunctionalObjectDescriptionAssignmentClass

Description: A short desciption of the function of the Equipment in natural language. So far, there is no support for descriptions in different languages.

RDL: FUNCTIONAL OBJECT DESCRIPTION ASSIGNMENT CLASS
http://data.posccaesar.org/rdl/RDS2101566251

Attribute Type: String

Example Value: "Prozessgaskühler"

Proteus Schema Implementation: GenericAttribute of the Equipment (use case String).

Example:

```
<GenericAttribute
  Name="FunctionalObjectDescriptionAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS2101566251"
  Value="Prozessgaskühler"
  Format="string"/>
```

8.6.4.2. TagNameAssignmentClass

Description: The tag number of the Equipment. See also TagNamePrefixAssignmentClass, TagNameSequenceNumberAssignmentClass, and TagNameSuffixAssignmentClass.

RDL: TAG NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/TagNameAssignmentClass

Attribute Type: String

Example Value: "P4714-A"

Proteus Schema Implementation: Attribute TagName of the Equipment element. Note that the Proteus implementation does not use the RDL object.

Example:

```
<Equipment TagName="P4714−A" ...>
```

8.6.4.3. TagNamePrefixAssignmentClass

Description: The prefix part of the tag number of the Equipment. For example, the prefix of the tag number "P4714-A" is "P". The prefix often indicates the type of the equipment item, e.g., "P" can indicate a pump. See also TagNameAssignmentClass.

RDL: TAG NAME PREFIX ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/TagNamePrefixAssignmentClass

Attribute Type: String

Example Value: "P"

Proteus Schema Implementation: GenericAttribute of the Equipment (use case String).

Example:

```
<GenericAttribute
  Name="TagNamePrefixAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TagNamePrefixAssignmentClass"
  Value="P"
  Format="string" />
```

8.6.4.4. TagNameSequenceNumberAssignmentClass

Description: The sequence number part of the tag number of the Equipment. For example, the sequence number of the tag number "P4714-A" is "4714".

RDL: TAG NAME SEQUENCE NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/TagNameSequenceNumberAssignmentClass

Attribute Type: String

Example Value: "4714"

Proteus Schema Implementation: GenericAttribute of the Equipment (use case String).

Example:

```
<GenericAttribute
  Name="TagNameSequenceNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TagNameSequenceNumberAssignmentClass"
  Value="4714"
  Format="string" />
```

8.6.4.5. TagNameSuffixAssignmentClass

Description: The suffix part of the tag number of an Equipment item. For example, the suffix of the tag number "P4714-A" is "A".

RDL: TAG NAME SUFFIX ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/TagNameSuffixAssignmentClass

Attribute Type: String

Example Value: "A"

Proteus Schema Implementation: GenericAttribute of the Equipment (use case String).

Example:

```
<GenericAttribute
  Name="TagNameSuffixAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TagNameSuffixAssignmentClass"
  Value="A"
  Format="string" />
```

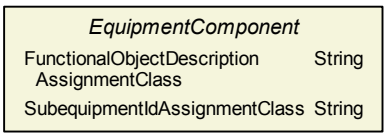
8.7. EquipmentComponent

This class is abstract.

Description: A component of a piece of Equipment.

RDL: -

8.7.1. Overview



Superclasses: No superclasses.

Subclasses:

- Chamber
- Displacer
- HeatExchangerShell
- Impeller
- PumpCasing
- ShellAndTubeHeatExchangerTubeBundle

8.7.2. Components

No components.

8.7.3. Model References

No model references.

8.7.4. Attributes

8.7.4.1. FunctionalObjectDescriptionAssignmentClass

Description: A short desciption of the function of the EquipmentComponent in natural language. So far, there is no support for descriptions in different languages.

RDL: FUNCTIONAL OBJECT DESCRIPTION ASSIGNMENT CLASS
http://data.posccaesar.org/rdl/RDS2101566251

Attribute Type: String

Example Value: "Cooling Chamber"

Proteus Schema Implementation: GenericAttribute of the EquipmentComponent (use case String).

Example:

```
<GenericAttribute
  Name="FunctionalObjectDescriptionAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS2101566251"
  Value="Cooling Chamber"
  Format="string" />
```

8.7.4.2. SubequipmentIdAssignmentClass

RDL: SUBEQUIPMENT ID ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SubequipmentIdAssignmentClass

Attribute Type: String

Example Value: "TubeBundle"

Proteus Schema Implementation: GenericAttribute of the EquipmentComponent (use case String).

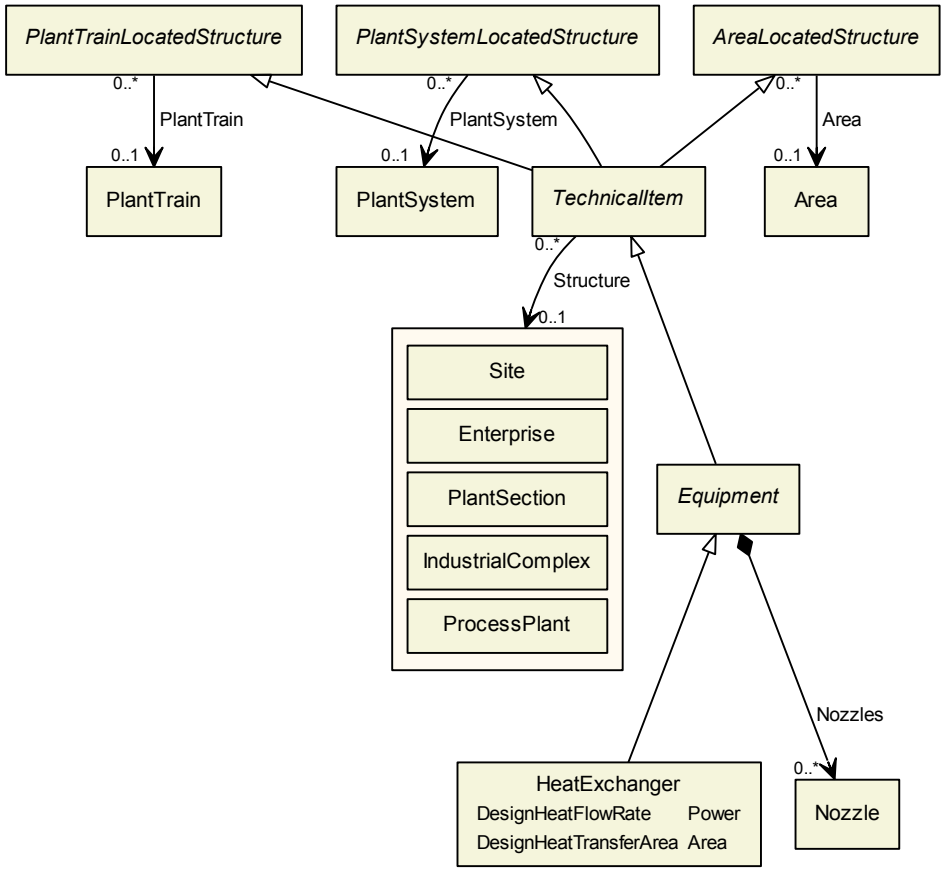
Example:

```
<GenericAttribute
  Name="SubequipmentIdAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubequipmentIdAssignmentClass"
  Value="TubeBundle"
  Format="string" />
```

8.8. HeatExchanger

RDL: HEAT EXCHANGER
http://data.posccaesar.org/rdl/RDS304199

8.8.1. Overview



Superclasses:

- Equipment

Subclasses:

- PlateAndShellHeatExchanger
- ShellAndTubeHeatExchanger

8.8.2. Components

No components.

8.8.3. Model References

No model references.

8.8.4. Attributes

8.8.4.1. DesignHeatFlowRate

Description: The heat flow rate for which the HeatExchanger is designed.

RDL: DESIGN HEAT FLOW RATE
http://sandbox.dexpi.org/rdl/DesignHeatFlowRate

Attribute Type: Power

Example Value: 313 kW

Proteus Schema Implementation: GenericAttribute of the HeatExchanger (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="DesignHeatFlowRate"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignHeatFlowRate"
  Value="313"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

8.8.4.2. DesignHeatTransferArea

Description: The design heat transfer area of the HeatExchanger.

RDL: DESIGN HEAT TRANSFER AREA
http://sandbox.dexpi.org/rdl/DesignHeatTransferArea

Attribute Type: Area

Example Value: 46.8 m^2

Proteus Schema Implementation: GenericAttribute of the HeatExchanger (use case Physical Quantity).

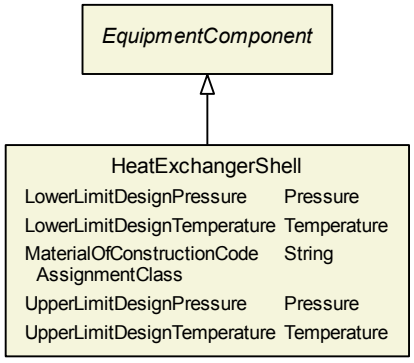
Example:

```
<GenericAttribute
  Name="DesignHeatTransferArea"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignHeatTransferArea"
  Value="46.8"
  Format="double"
  Units="MetreSquared"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1358009" />
```

8.9. HeatExchangerShell

RDL: HEAT EXCHANGER SHELL
http://data.posccaesar.org/rdl/RDS638864

8.9.1. Overview



Superclasses:

- EquipmentComponent

Subclasses: No subclasses.

8.9.2. Components

No components.

8.9.3. Model References

No model references.

8.9.4. Attributes

8.9.4.1. LowerLimitDesignPressure

Description: The lowest pressure for which the HeatExchangerShell is designed.

RDL: LOWER LIMIT DESIGN PRESSURE
http://data.posccaesar.org/rdl/RDS360674

Attribute Type: Pressure

Example Value: -0.5 barg

Proteus Schema Implementation: GenericAttribute of the HeatExchangerShell (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitDesignPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360674"
  Value="−0.5"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

8.9.4.2. LowerLimitDesignTemperature

Description: The lowest temperature for which the HeatExchangerShell is designed.

RDL: LOWER LIMIT DESIGN TEMPERATURE
http://data.posccaesar.org/rdl/RDS360494

Attribute Type: Temperature

Example Value: -45 °C

Proteus Schema Implementation: GenericAttribute of the HeatExchangerShell (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitDesignTemperature"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360494"
  Value="−45"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

8.9.4.3. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the HeatExchangerShell.

RDL: MATERIAL OF CONSTRUCTION CODE ASSIGNMENT CLASS
http://data.posccaesar.org/rdl/RDS1460719741

Attribute Type: String

Example Value: "1.4308"

Proteus Schema Implementation: GenericAttribute of the HeatExchangerShell (use case String).

Example:

```
<GenericAttribute
  Name="MaterialOfConstructionCodeAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1460719741"
  Value="1.4308"
  Format="string" />
```

8.9.4.4. UpperLimitDesignPressure

Description: The highest pressure for which the HeatExchangerShell is designed.

RDL: UPPER LIMIT DESIGN PRESSURE
http://data.posccaesar.org/rdl/RDS1470835011

Attribute Type: Pressure

Example Value: 60 barg

Proteus Schema Implementation: GenericAttribute of the HeatExchangerShell (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="UpperLimitDesignPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1470835011"
  Value="60"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

8.9.4.5. UpperLimitDesignTemperature

Description: The highest temperature for which the HeatExchangerShell is designed.

RDL: UPPER LIMIT DESIGN TEMPERATURE
http://data.posccaesar.org/rdl/RDS360449

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the HeatExchangerShell (use case Physical Quantity).

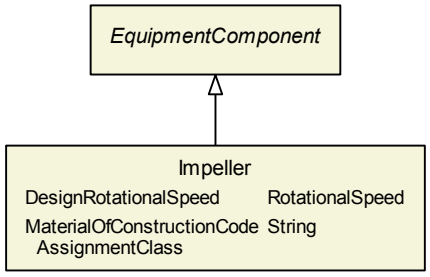
Example:

```
<GenericAttribute
  Name="UpperLimitDesignTemperature"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360449"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

8.10. Impeller

RDL: IMPELLER
http://data.posccaesar.org/rdl/RDS414539

8.10.1. Overview



Superclasses:

- EquipmentComponent

Subclasses: No subclasses.

8.10.2. Components

No components.

8.10.3. Model References

No model references.

8.10.4. Attributes

8.10.4.1. DesignRotationalSpeed

Description: The rotational speed of the Impeller by design.

RDL: DESIGN ROTATIONAL SPEED
http://sandbox.dexpi.org/rdl/DesignRotationalSpeed

Attribute Type: RotationalSpeed

Example Value: 200 1/min

Proteus Schema Implementation: GenericAttribute of the Impeller (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="200"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

8.10.4.2. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the Impeller.

RDL: MATERIAL OF CONSTRUCTION CODE ASSIGNMENT CLASS
http://data.posccaesar.org/rdl/RDS1460719741

Attribute Type: String

Example Value: "1.4308"

Proteus Schema Implementation: GenericAttribute of the Impeller (use case String).

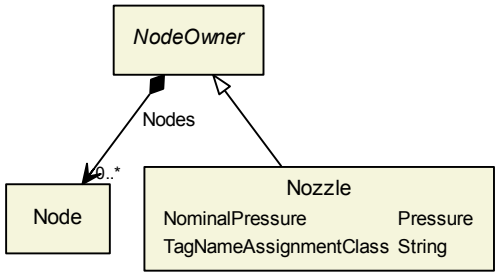
Example:

```
<GenericAttribute
  Name="MaterialOfConstructionCodeAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1460719741"
  Value="1.4308"
  Format="string" />
```

8.11. Nozzle

RDL: NOZZLE
http://data.posccaesar.org/rdl/RDS415214

8.11.1. Overview



Superclasses:

- NodeOwner

Subclasses: No subclasses.

8.11.2. Components

No components.

8.11.3. Model References

No model references.

8.11.4. Attributes

8.11.4.1. NominalPressure

Description: The nominal pressure of a Nozzle.

RDL: NOMINAL PRESSURE
http://data.posccaesar.org/rdl/RDS6949380

Attribute Type: Pressure

Example Value: 50 barg

Proteus Schema Implementation: GenericAttribute of the Nozzle (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="NominalPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS6949380"
  Value="50"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

8.11.4.2. TagNameAssignmentClass

Description: The tag number of the Nozzle.

RDL: TAG NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/TagNameAssignmentClass

Attribute Type: String

Example Value: "N2"

Proteus Schema Implementation: Attribute TagName of the Nozzle element. Note that the Proteus implementation does not use the RDL object.

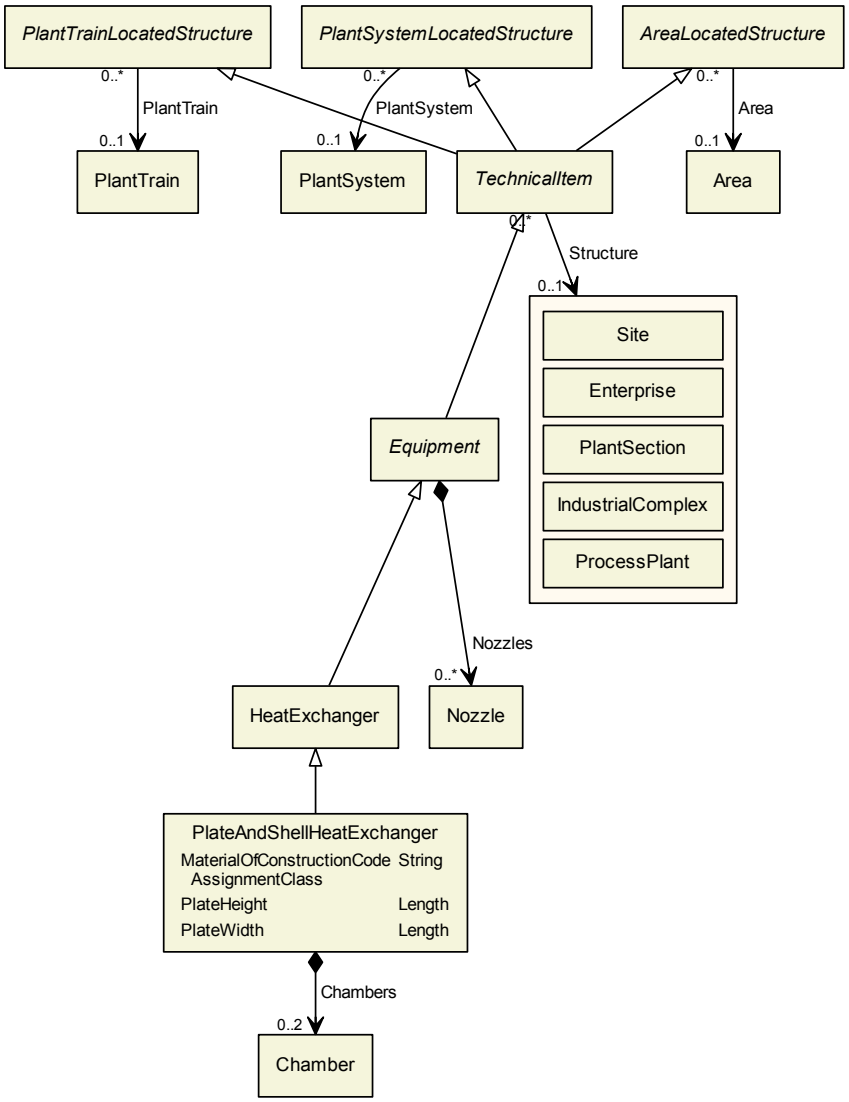
Example:

```
<Nozzle TagName="N2" ...>
```

8.12. PlateAndShellHeatExchanger

RDL: PLATE AND SHELL HEAT EXCHANGER
http://data.posccaesar.org/rdl/RDS441719

8.12.1. Overview



Superclasses:

- HeatExchanger

Subclasses: No subclasses.

8.12.2. Components

8.12.2.1. Chambers

Type: Chamber

Cardinality: 0..2

Proteus Schema Implementation: The Equipment element for the Chamber is a sub-element of the Equipment element for the PlateAndShellHeatExchanger.

Example:

```
<Equipment
        ComponentClass="PlateAndShellHeatExchanger"
        ComponentClassURI="http://data.posccaesar.org/rdl/RDS441719"
        ...>
    ...
    <Equipment
            ComponentClass="Chamber"
            ComponentClassURI="http://data.posccaesar.org/rdl/RDS903151421"
            ...>
        ...
    </Equipment
    ...
</Equipment
```

8.12.3. Model References

No model references.

8.12.4. Attributes

8.12.4.1. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the PlateAndShellHeatExchanger.

RDL: MATERIAL OF CONSTRUCTION CODE ASSIGNMENT CLASS
http://data.posccaesar.org/rdl/RDS1460719741

Attribute Type: String

Example Value: "1.4306"

Proteus Schema Implementation: GenericAttribute of the PlateAndShellHeatExchanger (use case String).

Example:

```
<GenericAttribute
  Name="MaterialOfConstructionCodeAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1460719741"
  Value="1.4306"
  Format="string" />
```

8.12.4.2. PlateHeight

Description: The height of the plates in the PlateAndShellHeatExchanger.

RDL: PLATE HEIGHT
http://sandbox.dexpi.org/rdl/PlateHeight

Attribute Type: Length

Example Value: 850 mm

Proteus Schema Implementation: GenericAttribute of the PlateAndShellHeatExchanger (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="PlateHeight"
  AttributeURI="http://sandbox.dexpi.org/rdl/PlateHeight"
  Value="850"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

8.12.4.3. PlateWidth

Description: The width of the plates in the PlateAndShellHeatExchanger.

RDL: PLATE WIDTH
http://sandbox.dexpi.org/rdl/PlateWidth

Attribute Type: Length

Example Value: 1100 mm

Proteus Schema Implementation: GenericAttribute of the PlateAndShellHeatExchanger (use case Physical Quantity).

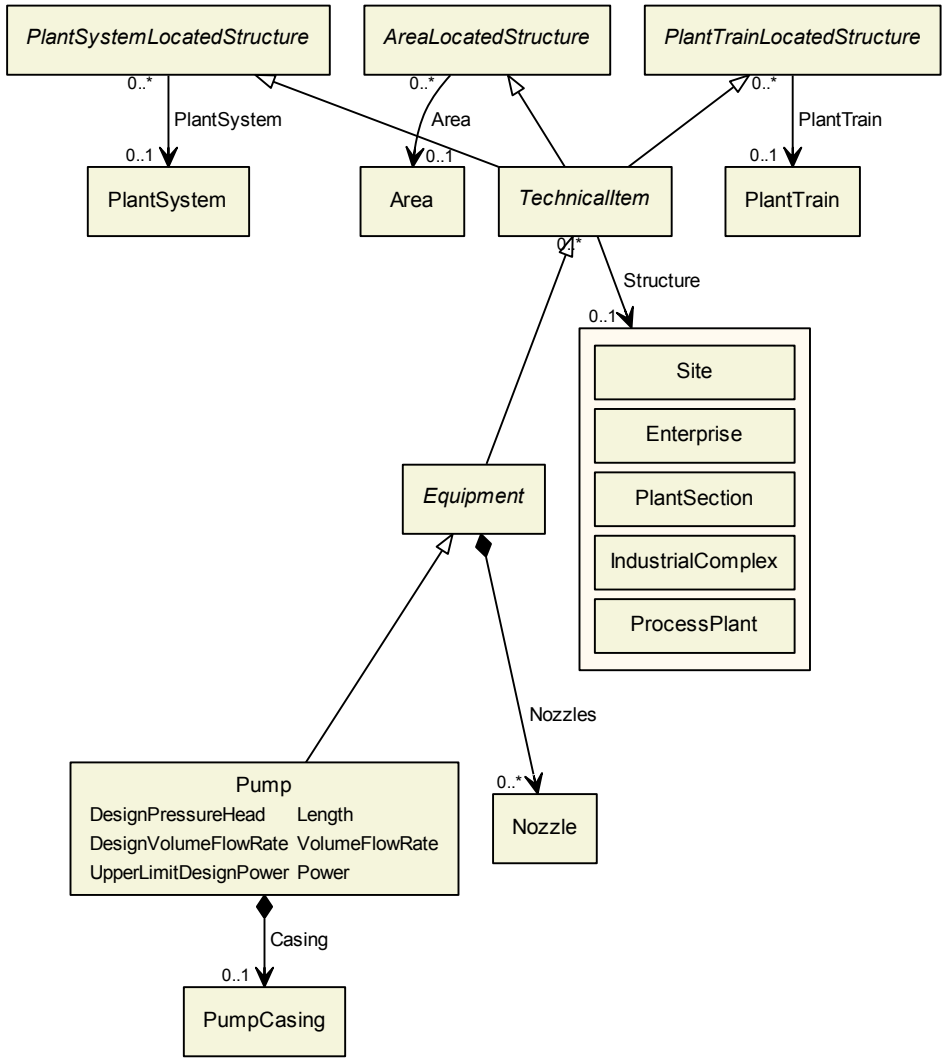
Example:

```
<GenericAttribute
  Name="PlateWidth"
  AttributeURI="http://sandbox.dexpi.org/rdl/PlateWidth"
  Value="1100"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

8.13. Pump

RDL: PUMP
http://data.posccaesar.org/rdl/RDS327239

8.13.1. Overview



Superclasses:

- Equipment

Subclasses:

- CentrifugalPump
- DisplacementPump

8.13.2. Components

8.13.2.1. Casing

Type: PumpCasing

Cardinality: 0..1

Proteus Schema Implementation: The Equipment element for the PumpCasing is a sub-element of the Equipment element for the Pump.

Example:

```
<Equipment
        ComponentClass="Pump"
        ComponentClassURI="http://data.posccaesar.org/rdl/RDS327239"
        ...>
    ...
    <Equipment
            ComponentClass="PumpCasing"
            ComponentClassURI="http://data.posccaesar.org/rdl/RDS461204"
            ...>
        ...
    </Equipment>
    ...
</Equipment>
```

8.13.3. Model References

No model references.

8.13.4. Attributes

8.13.4.1. DesignPressureHead

Description: The design pressure head of the Pump.

RDL: DESIGN PRESSURE HEAD
http://sandbox.dexpi.org/rdl/DesignPressureHead

Attribute Type: Length

Example Value: 40 m

Proteus Schema Implementation: GenericAttribute of the Pump (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="DesignPressureHead"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignPressureHead"
  Value="40"
  Format="double"
  Units="Metre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1332674" />
```

8.13.4.2. DesignVolumeFlowRate

Description: The volume flow rate for which the Pump is designed.

RDL: DESIGN VOLUME FLOW RATE
http://data.posccaesar.org/rdl/RDS14286227

Attribute Type: VolumeFlowRate

Example Value: 420 m^3/h

Proteus Schema Implementation: GenericAttribute of the Pump (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="DesignVolumeFlowRate"
  AttributeURI="http://data.posccaesar.org/rdl/RDS14286227"
  Value="420"
  Format="double"
  Units="MetreCubedPerHour"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1321064" />
```

8.13.4.3. UpperLimitDesignPower

Description: The maximum power the Pump is designed for.

RDL: UPPER LIMIT DESIGN POWER
http://sandbox.dexpi.org/rdl/UpperLimitDesignPower

Attribute Type: Power

Example Value: 60 kW

Proteus Schema Implementation: GenericAttribute of the Pump (use case Physical Quantity).

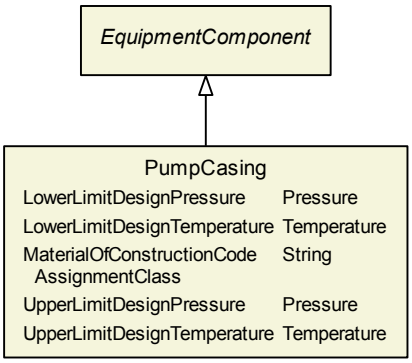
Example:

```
<GenericAttribute
  Name="UpperLimitDesignPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/UpperLimitDesignPower"
  Value="60"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

8.14. PumpCasing

RDL: PUMP CASING
http://data.posccaesar.org/rdl/RDS461204

8.14.1. Overview



Superclasses:

- EquipmentComponent

Subclasses: No subclasses.

8.14.2. Components

No components.

8.14.3. Model References

No model references.

8.14.4. Attributes

8.14.4.1. LowerLimitDesignPressure

Description: The lowest pressure for which the PumpCasing is designed.

RDL: LOWER LIMIT DESIGN PRESSURE
http://data.posccaesar.org/rdl/RDS360674

Attribute Type: Pressure

Example Value: -1 barg

Proteus Schema Implementation: GenericAttribute of the PumpCasing (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitDesignPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360674"
  Value="-1"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

8.14.4.2. LowerLimitDesignTemperature

Description: The lowest temperature for which the PumpCasing is designed.

RDL: LOWER LIMIT DESIGN TEMPERATURE
http://data.posccaesar.org/rdl/RDS360494

Attribute Type: Temperature

Example Value: -45 °C

Proteus Schema Implementation: GenericAttribute of the PumpCasing (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitDesignTemperature"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360494"
  Value="-45"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

8.14.4.3. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the PumpCasing.

RDL: MATERIAL OF CONSTRUCTION CODE ASSIGNMENT CLASS
http://data.posccaesar.org/rdl/RDS1460719741

Attribute Type: String

Example Value: "1.4306"

Proteus Schema Implementation: GenericAttribute of the PumpCasing (use case String).

Example:

```
<GenericAttribute
  Name="MaterialOfConstructionCodeAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1460719741"
  Value="1.4306"
  Format="string" />
```

8.14.4.4. UpperLimitDesignPressure

Description: The highest pressure for which the PumpCasing is designed.

RDL: UPPER LIMIT DESIGN PRESSURE
http://data.posccaesar.org/rdl/RDS1470835011

Attribute Type: Pressure

Example Value: 60 barg

Proteus Schema Implementation: GenericAttribute of the PumpCasing (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="UpperLimitDesignPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1470835011"
  Value="60"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

8.14.4.5. UpperLimitDesignTemperature

Description: The highest temperature for which the PumpCasing is designed.

RDL: UPPER LIMIT DESIGN TEMPERATURE
http://data.posccaesar.org/rdl/RDS360449

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the PumpCasing (use case Physical Quantity).

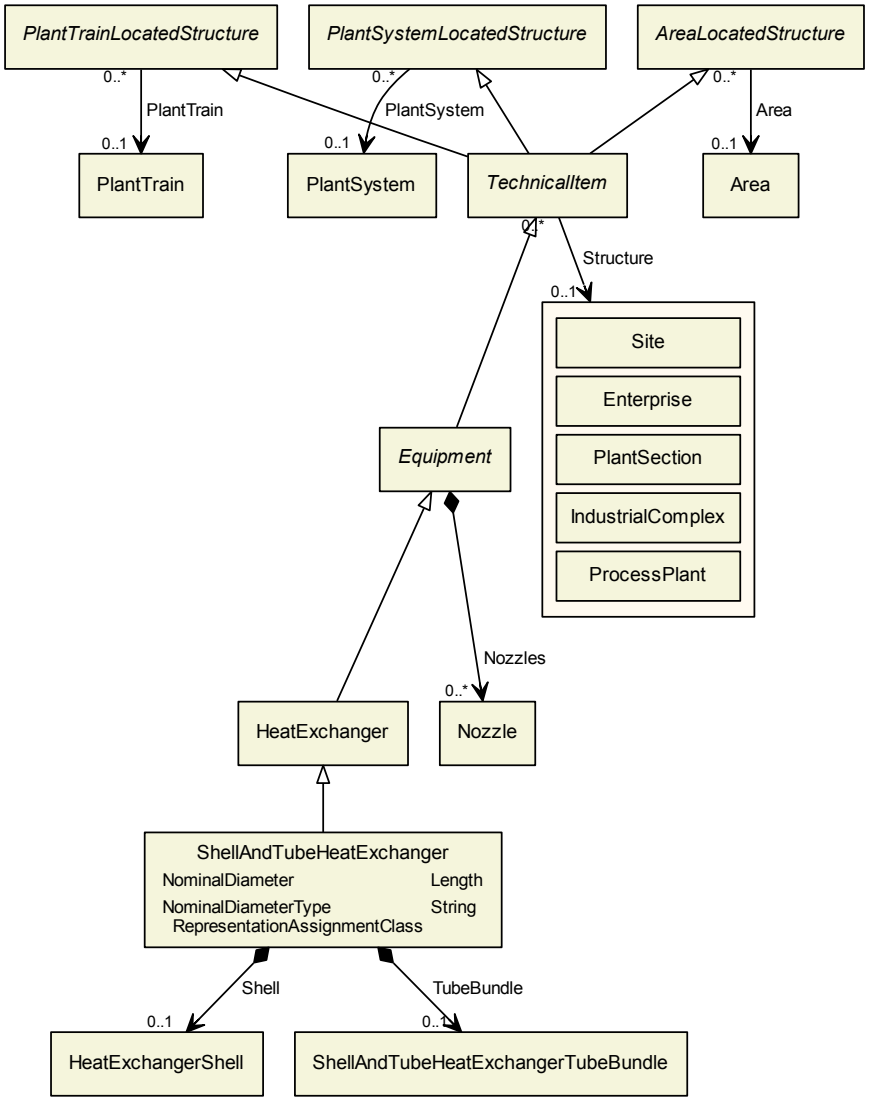
Example:

```
<GenericAttribute
  Name="UpperLimitDesignTemperature"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360449"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

8.15. ShellAndTubeHeatExchanger

RDL: SHELL AND TUBE HEAT EXCHANGER
http://data.posccaesar.org/rdl/RDS419084

8.15.1. Overview



Superclasses:

- HeatExchanger

Subclasses: No subclasses.

8.15.2. Components

8.15.2.1. Shell

Type: HeatExchangerShell

Cardinality: 0..1

Proteus Schema Implementation: The Equipment element for the HeatExchangerShell is a sub-element of the Equipment element for the ShellAndTubeHeatExchanger.

Example:

```
<Equipment
        ComponentClass="ShellAndTubeHeatExchanger"
        ComponentClassURI="http://data.posccaesar.org/rdl/RDS419084"
        ...>
    ...
    <Equipment
            ComponentClass="HeatExchangerShell"
            ComponentClassURI="http://data.posccaesar.org/rdl/RDS638864"
            ...>
        ...
    </Equipment>
    ...
</Equipment
```

8.15.2.2. TubeBundle

Type: ShellAndTubeHeatExchangerTubeBundle

Cardinality: 0..1

Proteus Schema Implementation: The Equipment element for the ShellAndTubeHeatExchangerTubeBundle is a sub-element of the Equipment element for the ShellAndTubeHeatExchanger.

Example:

```
<Equipment
        ComponentClass="ShellAndTubeHeatExchanger"
        ComponentClassURI="http://data.posccaesar.org/rdl/RDS419084"
        ...>
    ...
    <Equipment
            ComponentClass="ShellAndTubeHeatExchangerTubeBundle"
            ComponentClassURI="http://data.posccaesar.org/rdl/RDS17083476"
            ...>
        ...
    </Equipment>
    ...
</Equipment
```

8.15.3. Model References

No model references.

8.15.4. Attributes

8.15.4.1. NominalDiameter

Description: The nominal diameter of a ShellAndTubeHeatExchanger, given as a length. See also NominalDiameterStandardValue.

RDL: NOMINAL DIAMETER
http://data.posccaesar.org/rdl/RDS366794

Attribute Type: Length

Example Value: 800 mm

Proteus Schema Implementation: GenericAttribute of the ShellAndTubeHeatExchanger (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="NominalDiameter"
  AttributeURI="http://data.posccaesar.org/rdl/RDS366794"
  Value="800"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

8.15.4.2. NominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter of the ShellAndTubeHeatExchanger.

RDL: NOMINAL DIAMETER TYPE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN"

Proteus Schema Implementation: GenericAttribute of the ShellAndTubeHeatExchanger (use case String).

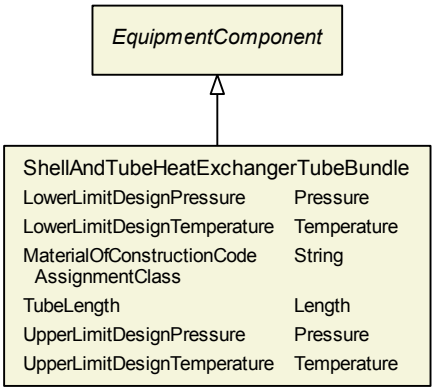
Example:

```
<GenericAttribute
  Name="NominalDiameterTypeRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass"
  Value="DN"
  Format="string" />
```

8.16. ShellAndTubeHeatExchangerTubeBundle

RDL: SHELL AND TUBE HEAT EXCHANGER TUBE BUNDLE
http://data.posccaesar.org/rdl/RDS17083476

8.16.1. Overview



Superclasses:

- EquipmentComponent

Subclasses: No subclasses.

8.16.2. Components

No components.

8.16.3. Model References

No model references.

8.16.4. Attributes

8.16.4.1. LowerLimitDesignPressure

Description: The lowest pressure for which the ShellAndTubeHeatExchangerTubeBundle is designed.

RDL: LOWER LIMIT DESIGN PRESSURE
http://data.posccaesar.org/rdl/RDS360674

Attribute Type: Pressure

Example Value: -0.5 barg

Proteus Schema Implementation: GenericAttribute of the ShellAndTubeHeatExchangerTubeBundle (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitDesignPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360674"
  Value="-0.5"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

8.16.4.2. LowerLimitDesignTemperature

Description: The lowest temperature for which the ShellAndTubeHeatExchangerTubeBundle is designed.

RDL: LOWER LIMIT DESIGN TEMPERATURE
http://data.posccaesar.org/rdl/RDS360494

Attribute Type: Temperature

Example Value: -45 °C

Proteus Schema Implementation: GenericAttribute of the ShellAndTubeHeatExchangerTubeBundle (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitDesignTemperature"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360494"
  Value="-45"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

8.16.4.3. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the ShellAndTubeHeatExchangerTubeBundle.

RDL: MATERIAL OF CONSTRUCTION CODE ASSIGNMENT CLASS
http://data.posccaesar.org/rdl/RDS1460719741

Attribute Type: String

Example Value: "1.4306"

Proteus Schema Implementation: GenericAttribute of the ShellAndTubeHeatExchangerTubeBundle (use case String).

Example:

```
<GenericAttribute
  Name="MaterialOfConstructionCodeAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1460719741"
  Value="1.4306"
  Format="string" />
```

8.16.4.4. TubeLength

Description: The length of the ShellAndTubeHeatExchangerTubeBundle.

RDL: TUBE LENGTH
http://data.posccaesar.org/rdl/RDS363869

Attribute Type: Length

Example Value: 2200 mm

Proteus Schema Implementation: GenericAttribute of the ShellAndTubeHeatExchangerTubeBundle (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="TubeLength"
  AttributeURI="http://data.posccaesar.org/rdl/RDS363869"
  Value="2200"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

8.16.4.5. UpperLimitDesignPressure

Description: The highest pressure for which the ShellAndTubeHeatExchangerTubeBundle is designed.

RDL: UPPER LIMIT DESIGN PRESSURE
http://data.posccaesar.org/rdl/RDS1470835011

Attribute Type: Pressure

Example Value: 60 barg

Proteus Schema Implementation: GenericAttribute of the ShellAndTubeHeatExchangerTubeBundle (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="UpperLimitDesignPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS1470835011"
  Value="60"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

8.16.4.6. UpperLimitDesignTemperature

Description: The highest temperature for which the ShellAndTubeHeatExchangerTubeBundle is designed.

RDL: UPPER LIMIT DESIGN TEMPERATURE
http://data.posccaesar.org/rdl/RDS360449

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the ShellAndTubeHeatExchangerTubeBundle (use case Physical Quantity).

Example:

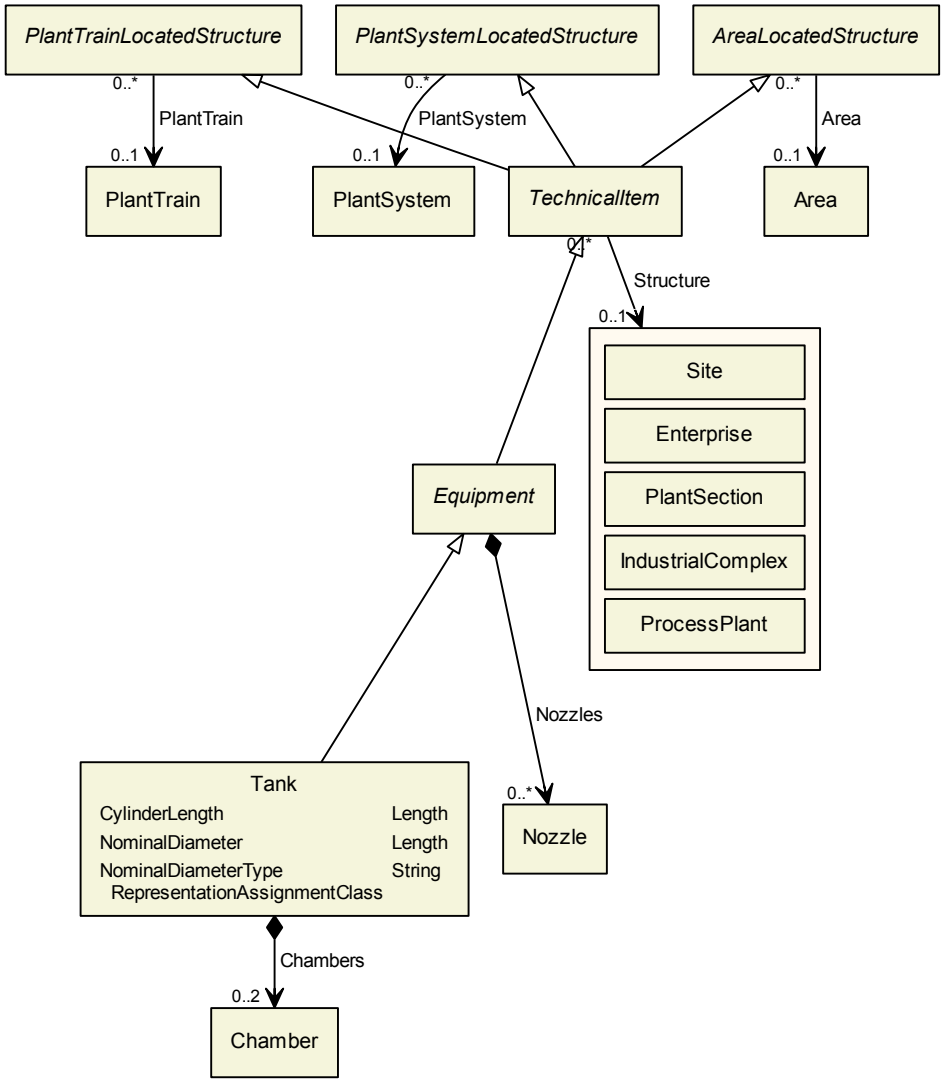
```
<GenericAttribute
  Name="UpperLimitDesignTemperature"
  AttributeURI="http://data.posccaesar.org/rdl/RDS360449"
  Value="100"
  Format="double"
```

```
Units="DegreeCelsius"
UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

8.17. Tank

RDL: TANK
http://data.posccaesar.org/rdl/RDS445139

8.17.1. Overview



Superclasses:

- Equipment

Subclasses: No subclasses.

8.17.2. Components

8.17.2.1. Chambers

Type: Chamber

Cardinality: 0..2

Proteus Schema Implementation: The Equipment element for the Chamber is a sub-element of the Equipment element for the Tank.

Example:

```
<Equipment
        ComponentClass="Tank"
        ComponentClassURI="http://data.posccaesar.org/rdl/RDS445139"
        ...>
    ...
    <Equipment
            ComponentClass="Chamber"
            ComponentClassURI="http://data.posccaesar.org/rdl/RDS903151421"
            ...>
        ...
    </Equipment
    ...
</Equipment
```

8.17.3. Model References

No model references.

8.17.4. Attributes

8.17.4.1. CylinderLength

RDL: CYLINDER LENGTH
http://sandbox.dexpi.org/rdl/CylinderLength

Attribute Type: Length

Example Value: 2 m

Proteus Schema Implementation: GenericAttribute of the Tank (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="CylinderLength"
  AttributeURI="http://sandbox.dexpi.org/rdl/CylinderLength"
  Value="2"
  Format="double"
  Units="Metre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1332674" />
```

8.17.4.2. NominalDiameter

Description: The nominal diameter of the Tank, given as a length. See also NominalDiameterStandardValue.

RDL: NOMINAL DIAMETER
http://data.posccaesar.org/rdl/RDS366794

Attribute Type: Length

Example Value: 4 m

Proteus Schema Implementation: GenericAttribute of the Tank (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="NominalDiameter"
  AttributeURI="http://data.posccaesar.org/rdl/RDS366794"
  Value="4"
  Format="double"
  Units="Metre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1332674" />
```

8.17.4.3. NominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter of the Tank.

RDL: NOMINAL DIAMETER TYPE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN"

Proteus Schema Implementation: GenericAttribute of the Tank (use case String).

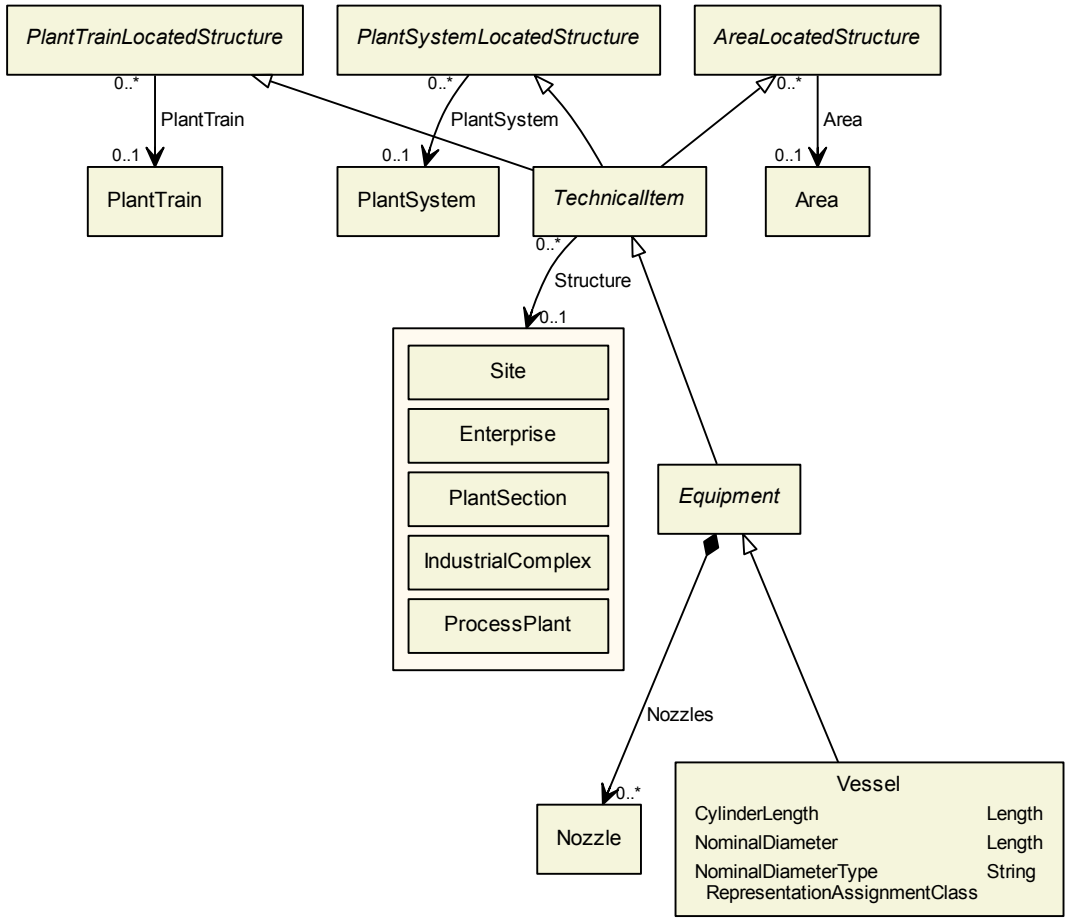
Example:

```
<GenericAttribute
  Name="NominalDiameterTypeRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass"
  Value="DN"
  Format="string" />
```

8.18. Vessel

RDL: VESSEL
http://data.posccaesar.org/rdl/RDS414674

8.18.1. Overview



Superclasses:

- Equipment

Subclasses: No subclasses.

8.18.2. Components

No components.

8.18.3. Model References

No model references.

8.18.4. Attributes

8.18.4.1. CylinderLength

RDL: CYLINDER LENGTH
http://sandbox.dexpi.org/rdl/CylinderLength

Attribute Type: Length

Example Value: 2 m

Proteus Schema Implementation: GenericAttribute of the Vessel (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="CylinderLength"
  AttributeURI="http://sandbox.dexpi.org/rdl/CylinderLength"
  Value="2"
  Format="double"
  Units="Metre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1332674" />
```

8.18.4.2. NominalDiameter

Description: The nominal diameter of the Vessel, given as a length. See also NominalDiameterStandardValue.

RDL: NOMINAL DIAMETER
http://data.posccaesar.org/rdl/RDS366794

Attribute Type: Length

Example Value: 4 m

Proteus Schema Implementation: GenericAttribute of the Vessel (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="NominalDiameter"
  AttributeURI="http://data.posccaesar.org/rdl/RDS366794"
  Value="4"
  Format="double"
  Units="Metre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1332674" />
```

8.18.4.3. NominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter of the Vessel.

RDL: NOMINAL DIAMETER TYPE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN"

Proteus Schema Implementation: GenericAttribute of the Vessel (use case String).

Example:

```
<GenericAttribute
  Name="NominalDiameterTypeRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass"
  Value="DN"
  Format="string" />
```

9. Piping

9.1. Overview

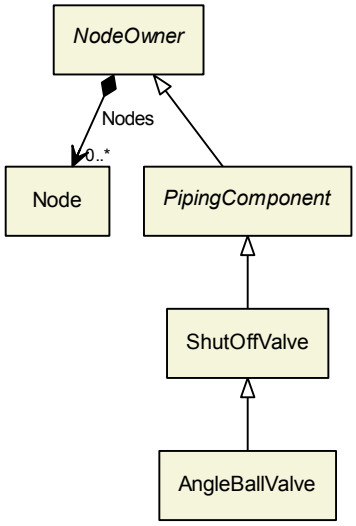
The DEXPI piping model is based on the piping model defined in Proteus Schema. The top-level element is a PipingNetworkSystem, which is composed of PipingNetworkSegments. The latter are *sequences* of pipes and certain other elements, in particular PipingComponents. The rules for the segments as specified by DEXPI are as follows:

1. Any change in a property ("property break"), in particular concerning graphical symbol, registration number, fluid, nominal diameter, insulation, slope, and flow direction, requires a new segment.
2. Inline components such as PipingComponents *without a property break* do no require a new segment. However, it is not forbidden to start a new segment.
3. No segment may cross a branching. For example, a PipeTee is always the start or end of all connected segments.

9.2. AngleBallValve

RDL: ANGLE BALL VALVE
http://sandbox.dexpi.org/rdl/AngleBallValve

9.2.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.2.2. Components

No components.

9.2.3. Model References

No model references.

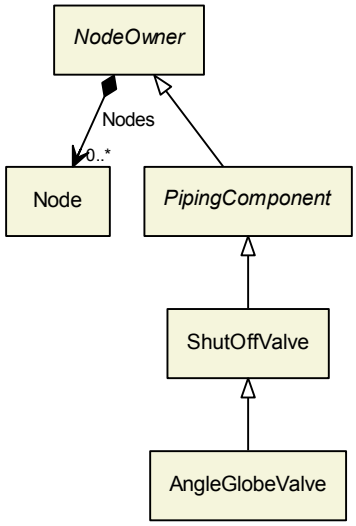
9.2.4. Attributes

No attributes.

9.3. AngleGlobeValve

RDL: ANGLE GLOBE VALVE
http://data.posccaesar.org/rdl/RDS882944

9.3.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.3.2. Components

No components.

9.3.3. Model References

No model references.

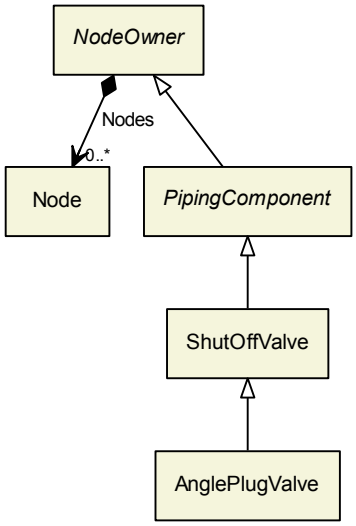
9.3.4. Attributes

No attributes.

9.4. AnglePlugValve

RDL: ANGLE PLUG VALVE
http://sandbox.dexpi.org/rdl/AnglePlugValve

9.4.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.4.2. Components

No components.

9.4.3. Model References

No model references.

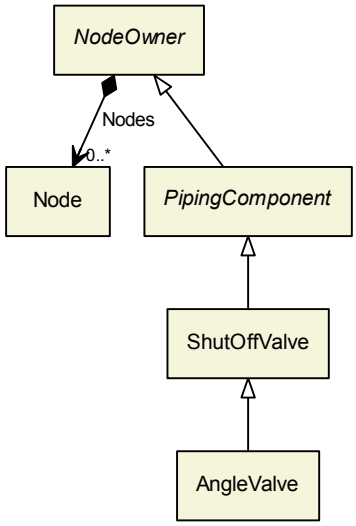
9.4.4. Attributes

No attributes.

9.5. AngleValve

RDL: ANGLE VALVE
http://data.posccaesar.org/rdl/RDS5789384

9.5.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.5.2. Components

No components.

9.5.3. Model References

No model references.

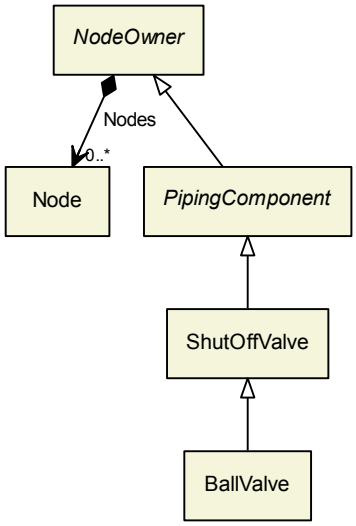
9.5.4. Attributes

No attributes.

9.6. BallValve

RDL: BALL VALVE
http://data.posccaesar.org/rdl/RDS416654

9.6.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.6.2. Components

No components.

9.6.3. Model References

No model references.

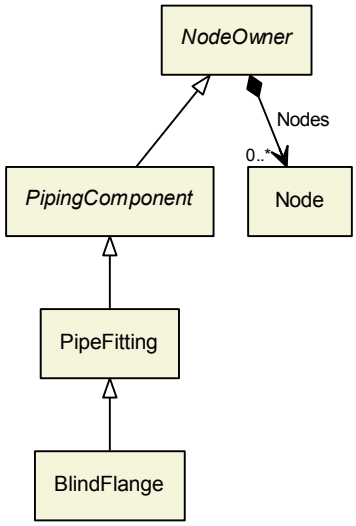
9.6.4. Attributes

No attributes.

9.7. BlindFlange

RDL: BLIND FLANGE
http://data.posccaesar.org/rdl/RDS414719

9.7.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.7.2. Components

No components.

9.7.3. Model References

No model references.

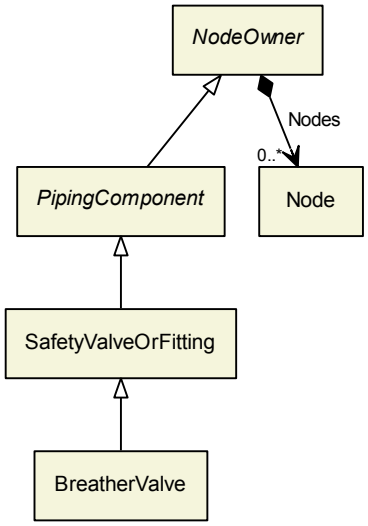
9.7.4. Attributes

No attributes.

9.8. BreatherValve

RDL: BREATHER VALVE
http://sandbox.dexpi.org/rdl/BreatherValve

9.8.1. Overview



Superclasses:

- SafetyValveOrFitting

Subclasses: No subclasses.

9.8.2. Components

No components.

9.8.3. Model References

No model references.

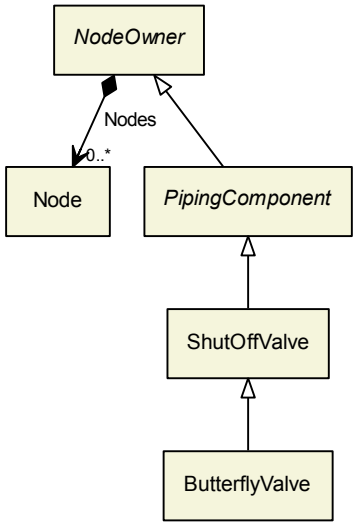
9.8.4. Attributes

No attributes.

9.9. ButterflyValve

RDL: BUTTERFLY VALVE
http://data.posccaesar.org/rdl/RDS416609

9.9.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.9.2. Components

No components.

9.9.3. Model References

No model references.

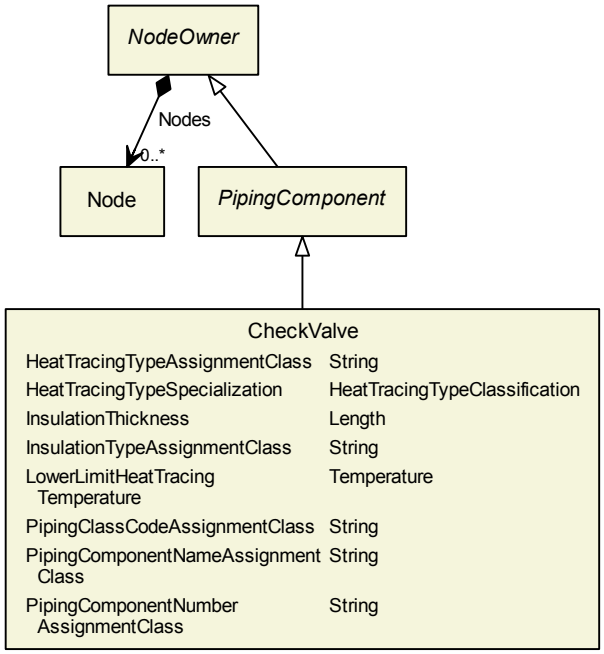
9.9.4. Attributes

No attributes.

9.10. CheckValve

RDL: CHECK VALVE
http://data.posccaesar.org/rdl/RDS292229

9.10.1. Overview



Superclasses:

- PipingComponent

Subclasses:

- GlobeCheckValve
- SwingCheckValve

9.10.2. Components

No components.

9.10.3. Model References

No model references.

9.10.4. Attributes

9.10.4.1. HeatTracingTypeAssignmentClass

Description: The heat tracing type of the CheckValve, represented as a string.

RDL: HEAT TRACING TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass

Attribute Type: String

Example Value: "E"

Proteus Schema Implementation: GenericAttribute of the CheckValve (use case String).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass"
  Value="E"
  Format="string" />
```

9.10.4.2. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type of the CheckValve.

RDL: HEAT TRACING TYPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization

Attribute Type: HeatTracingTypeClassification

Example Value: electrical heat tracing system
(ELECTRICAL HEAT TRACING SYSTEM, http://data.posccaesar.org/rdl/RDS11854600)

Proteus Schema Implementation: GenericAttribute of the CheckValve (use case Classification).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization"
  Value="ElectricalHeatTracingSystem"
  ValueURI="http://data.posccaesar.org/rdl/RDS11854600"
  Format="anyURI" />
```

9.10.4.3. InsulationThickness

Description: The insulation thickness of the CheckValve.

RDL: INSULATION THICKNESS
http://data.posccaesar.org/rdl/RDS4238040

Attribute Type: Length

Example Value: 8 mm

Proteus Schema Implementation: GenericAttribute of the CheckValve (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="InsulationThickness"
  AttributeURI="http://data.posccaesar.org/rdl/RDS4238040"
  Value="8"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

9.10.4.4. InsulationTypeAssignmentClass

Description: The identification code for the insulation type of the CheckValve. So far, DEXPI does not define restrictions for valid values.

RDL: INSULATION TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass

Attribute Type: String

Example Value: "Q"

Proteus Schema Implementation: GenericAttribute of the CheckValve (use case String).

Example:

```
<GenericAttribute
  Name="InsulationTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass"
  Value="Q"
  Format="string" />
```

9.10.4.5. LowerLimitHeatTracingTemperature

Description: The temperature that a heat tracing system must ensure for the CheckValve.

RDL: LOWER LIMIT HEAT TRACING TEMPERATURE
http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the CheckValve (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitHeatTracingTemperature"
  AttributeURI="http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

9.10.4.6. PipingClassCodeAssignmentClass

Description: The identification code of the piping class of the CheckValve. So far, DEXPI does not define restrictions for valid values.

RDL: PIPING CLASS CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingClassCodeAssignmentClass

Attribute Type: String

Example Value: "75HB13"

Proteus Schema Implementation: GenericAttribute of the CheckValve (use case String).

Example:

```
<GenericAttribute
  Name="PipingClassCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingClassCodeAssignmentClass"
  Value="75HB13"
  Format="string" />
```

9.10.4.7. PipingComponentNameAssignmentClass

Description: The piping component name of the CheckValve.

RDL: PIPING COMPONENT NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingComponentNameAssignmentClass

Attribute Type: String

Example Value: "73KH12"

Proteus Schema Implementation: GenericAttribute of the CheckValve (use case String).

Example:

```
<GenericAttribute
  Name="PipingComponentNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingComponentNameAssignmentClass"
  Value="73KH12"
  Format="string" />
```

9.10.4.8. PipingComponentNumberAssignmentClass

Description: The piping component number of the CheckValve.

RDL: PIPING COMPONENT NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingComponentNumberAssignmentClass

Attribute Type: String

Example Value: "C2"

Proteus Schema Implementation: GenericAttribute of the CheckValve (use case String).

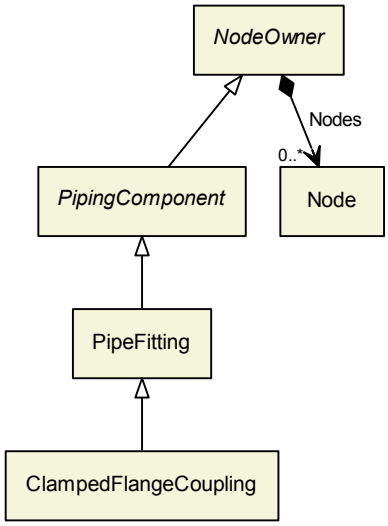
Example:

```
<GenericAttribute
  Name="PipingComponentNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingComponentNumberAssignmentClass"
  Value="C2"
  Format="string" />
```

9.11. ClampedFlangeCoupling

RDL: CLAMPED FLANGE COUPLING
http://sandbox.dexpi.org/rdl/ClampedFlangeCoupling

9.11.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.11.2. Components

No components.

9.11.3. Model References

No model references.

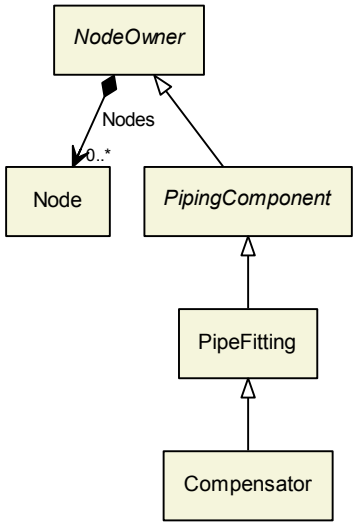
9.11.4. Attributes

No attributes.

9.12. Compensator

RDL: COMPENSATOR
http://data.posccaesar.org/rdl/RDS1280084541

9.12.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.12.2. Components

No components.

9.12.3. Model References

No model references.

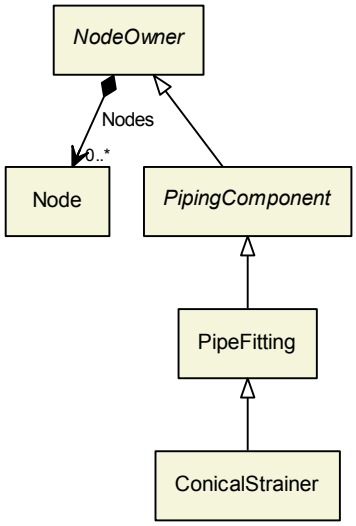
9.12.4. Attributes

No attributes.

9.13. ConicalStrainer

RDL: CONICAL STRAINER
http://data.posccaesar.org/rdl/RDS16044540

9.13.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.13.2. Components

No components.

9.13.3. Model References

No model references.

9.13.4. Attributes

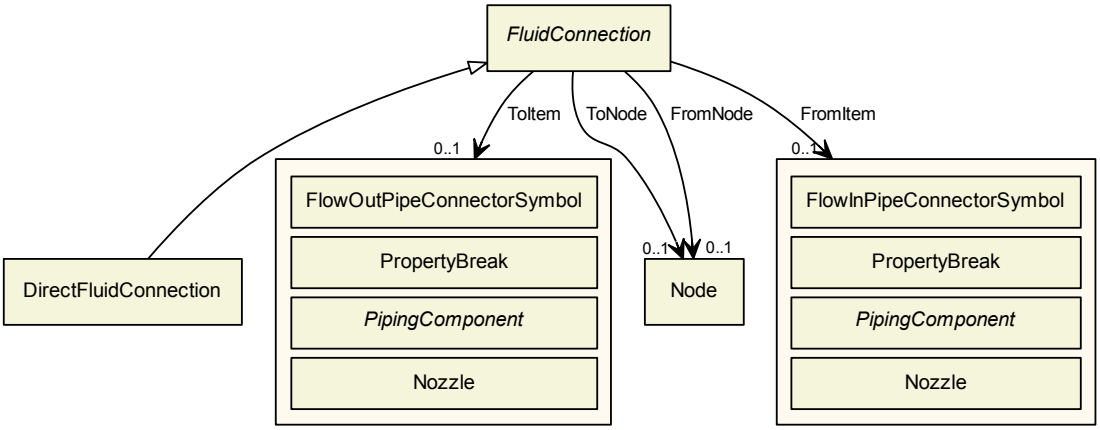
No attributes.

9.14. DirectFluidConnection

Description: Proteus Implementation: DirectFluidConnection is an auxiliary class of the information model to represent the connection between, e.g., a PipingComponent and a PropertyBreak. There is no direct implementation of a DirectFluidConnection in Proteus Schema. It is rather implemented indirectly, e.g., when the last item of a PipingNetworkSegment is a PipingComponent, and when this PipingNetworkSegment is connected to a PropertyBreak.

RDL: -

9.14.1. Overview



Superclasses:

- FluidConnection

Subclasses: No subclasses.

9.14.2. Components

No components.

9.14.3. Model References

No model references.

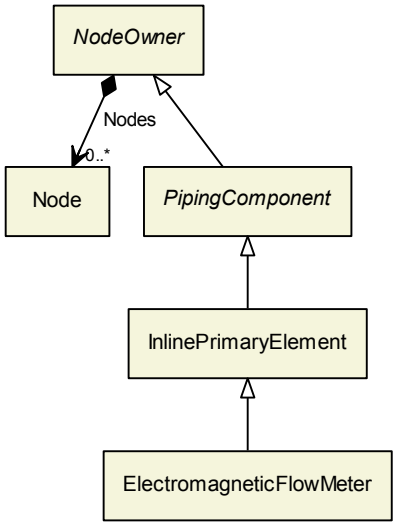
9.14.4. Attributes

No attributes.

9.15. ElectromagneticFlowMeter

RDL: ELECTROMAGNETIC FLOW METER
http://data.posccaesar.org/rdl/RDS1009664

9.15.1. Overview



Superclasses:

- InlinePrimaryElement

Subclasses: No subclasses.

9.15.2. Components

No components.

9.15.3. Model References

No model references.

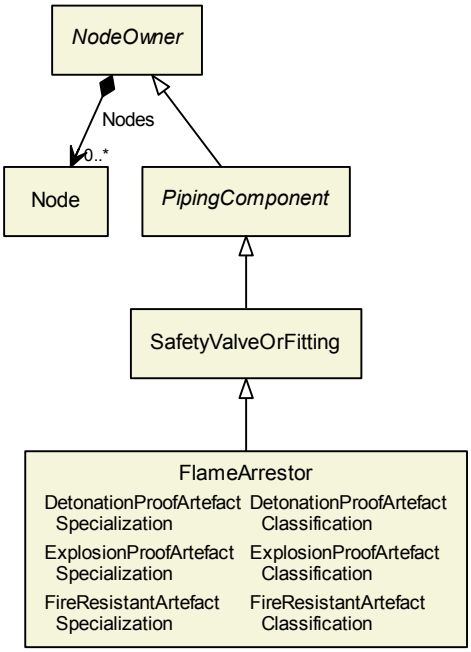
9.15.4. Attributes

No attributes.

9.16. FlameArrestor

RDL: FLAME ARRESTOR
http://data.posccaesar.org/rdl/RDS1325028651

9.16.1. Overview



Superclasses:

- SafetyValveOrFitting

Subclasses: No subclasses.

9.16.2. Components

No components.

9.16.3. Model References

No model references.

9.16.4. Attributes

9.16.4.1. DetonationProofArtefactSpecialization

Description: A specialization indicating if the FlameArrestor is detonation-proof.

RDL: DETONATION PROOF ARTEFACT SPECIALIZATION
http://sandbox.dexpi.org/rdl/DetonationProofArtefactSpecialization

Attribute Type: DetonationProofArtefactClassification

Example Value: non detonation-proof artefact
(NON DETONATION PROOF ARTEFACT, http://sandbox.dexpi.org/rdl/NonDetonationProofArtefact)

Proteus Schema Implementation: GenericAttribute of the FlameArrestor (use case Classification).
Example:

```
<GenericAttribute
  Name="DetonationProofArtefactSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/DetonationProofArtefactSpecialization"
  Value="NonDetonationProofArtefact"
  ValueURI="http://sandbox.dexpi.org/rdl/NonDetonationProofArtefact"
  Format="anyURI" />
```

9.16.4.2. ExplosionProofArtefactSpecialization

Description: A specialization indicating if the FlameArrestor is explosion-proof.

RDL: EXPLOSION PROOF ARTEFACT SPECIALIZATION
http://sandbox.dexpi.org/rdl/ExplosionProofArtefactSpecialization

Attribute Type: ExplosionProofArtefactClassification

Example Value: explosion-proof artefact
(EXPLOSION PROOF ARTEFACT, http://sandbox.dexpi.org/rdl/ExplosionProofArtefact)

Proteus Schema Implementation: GenericAttribute of the FlameArrestor (use case Classification).

Example:

```
<GenericAttribute
  Name="ExplosionProofArtefactSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/ExplosionProofArtefactSpecialization"
  Value="ExplosionProofArtefact"
  ValueURI="http://sandbox.dexpi.org/rdl/ExplosionProofArtefact"
  Format="anyURI" />
```

9.16.4.3. FireResistantArtefactSpecialization

Description: A specialization indicating if the FlameArrestor is fire-resistant.

RDL: FIRE RESISTANT ARTEFACT SPECIALIZATION
http://sandbox.dexpi.org/rdl/FireResistantArtefactSpecialization

Attribute Type: FireResistantArtefactClassification

Example Value: fire-resistant artefact
(FIRE RESISTANT ARTEFACT, http://data.posccaesar.org/rdl/RDS7907520)

Proteus Schema Implementation: GenericAttribute of the FlameArrestor (use case Classification).

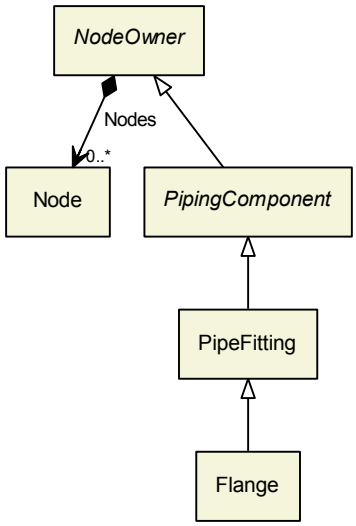
Example:

```
<GenericAttribute
  Name="FireResistantArtefactSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/FireResistantArtefactSpecialization"
  Value="FireResistantArtefact"
  ValueURI="http://data.posccaesar.org/rdl/RDS7907520"
  Format="anyURI" />
```

9.17. Flange

RDL: FLANGE
http://data.posccaesar.org/rdl/RDS13307654

9.17.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.17.2. Components

No components.

9.17.3. Model References

No model references.

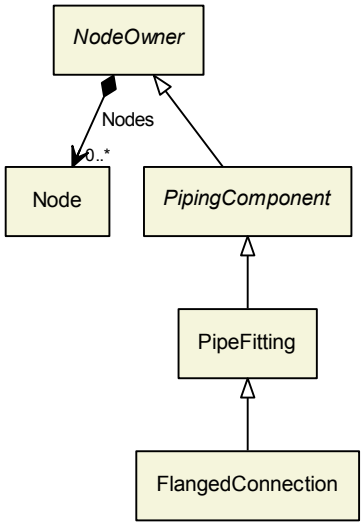
9.17.4. Attributes

No attributes.

9.18. FlangedConnection

RDL: FLANGED CONNECTION
http://sandbox.dexpi.org/rdl/FlangedConnection

9.18.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.18.2. Components

No components.

9.18.3. Model References

No model references.

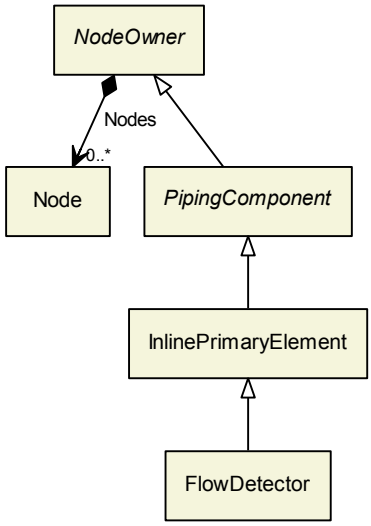
9.18.4. Attributes

No attributes.

9.19. FlowDetector

RDL: FLOW DETECTOR
http://data.posccaesar.org/rdl/RDS1008719

9.19.1. Overview



Superclasses:

- InlinePrimaryElement

Subclasses: No subclasses.

9.19.2. Components

No components.

9.19.3. Model References

No model references.

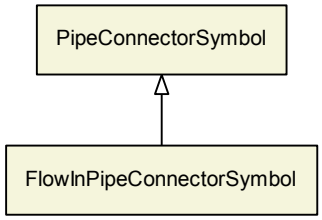
9.19.4. Attributes

No attributes.

9.20. FlowInPipeConnectorSymbol

RDL: FLOW IN PIPE CONNECTOR SYMBOL
http://sandbox.dexpi.org/rdl/FlowInPipeConnectorSymbol

9.20.1. Overview



Superclasses:

- PipeConnectorSymbol

Subclasses: No subclasses.

9.20.2. Components

No components.

9.20.3. Model References

No model references.

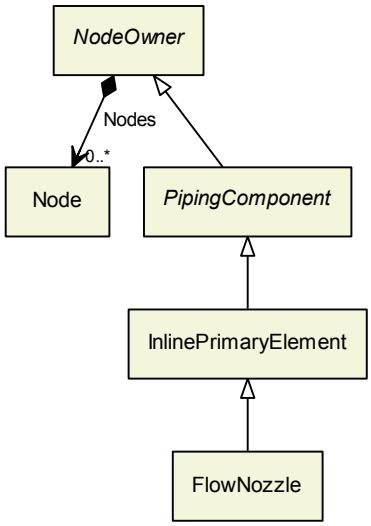
9.20.4. Attributes

No attributes.

9.21. FlowNozzle

RDL: FLOW NOZZLE
http://data.posccaesar.org/rdl/RDS821024

9.21.1. Overview



Superclasses:

- InlinePrimaryElement

Subclasses: No subclasses.

9.21.2. Components

No components.

9.21.3. Model References

No model references.

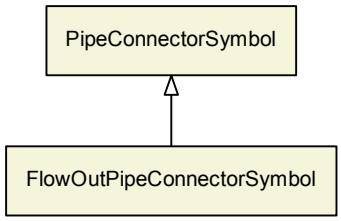
9.21.4. Attributes

No attributes.

9.22. FlowOutPipeConnectorSymbol

RDL: FLOW OUT PIPE CONNECTOR SYMBOL
http://sandbox.dexpi.org/rdl/FlowOutPipeConnectorSymbol

9.22.1. Overview



Superclasses:

- PipeConnectorSymbol

Subclasses: No subclasses.

9.22.2. Components

No components.

9.22.3. Model References

No model references.

9.22.4. Attributes

No attributes.

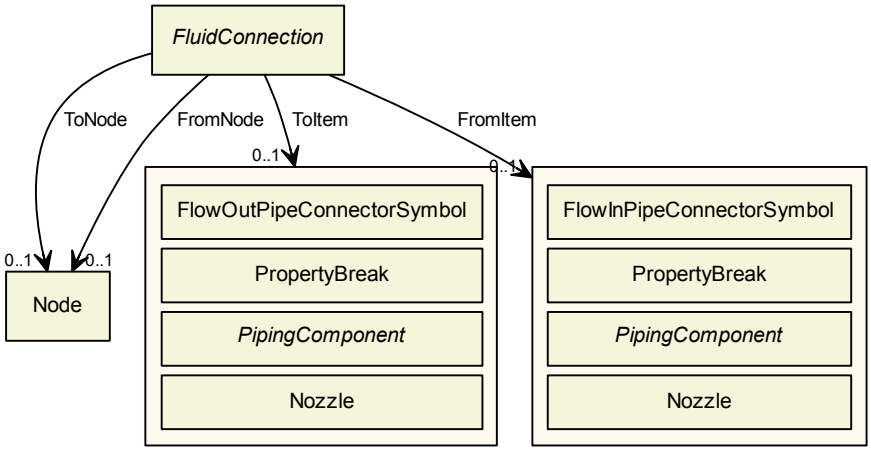
9.23. FluidConnection

This class is abstract.

Description: FluidConnection is an auxiliary class of the information model in order to keep the topology model simple. See subclasses for details.

RDL: -

9.23.1. Overview



Superclasses: No superclasses.

Subclasses:

- DirectFluidConnection
- Pipe

9.23.2. Components

No components.

9.23.3. Model References

9.23.3.1. FromItem

Type: One of:

- FlowInPipeConnectorSymbol
- Nozzle
- PipingComponent
- PropertyBreak

Target Multiplicity: 0..1

Proteus Schema Implementation: See subclasses.

Example:

```
<!-- subclass-dependent -->
```

9.23.3.2. FromNode

Type: Node

Target Multiplicity: 0..1

Proteus Schema Implementation: See subclasses.

Example:

```
<!-- subclass-dependent -->
```

9.23.3.3. ToItem

Type: One of:

- FlowOutPipeConnectorSymbol
- Nozzle
- PipingComponent
- PropertyBreak

Target Multiplicity: 0..1

Proteus Schema Implementation: See subclasses.

Example:

```
<!-- subclass-dependent -->
```

9.23.3.4. ToNode

Type: Node

Target Multiplicity: 0..1

Proteus Schema Implementation: See subclasses.

Example:

```
<!-- subclass-dependent -->
```

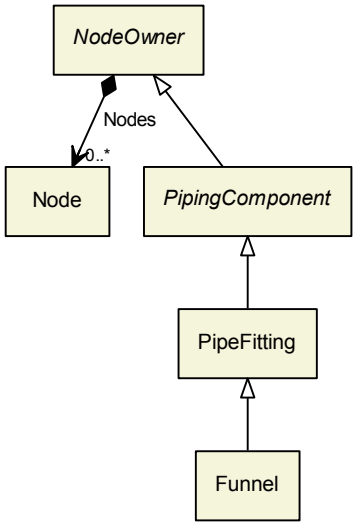
9.23.4. Attributes

No attributes.

9.24. Funnel

RDL: FUNNEL
http://data.posccaesar.org/rdl/RDS6689917

9.24.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.24.2. Components

No components.

9.24.3. Model References

No model references.

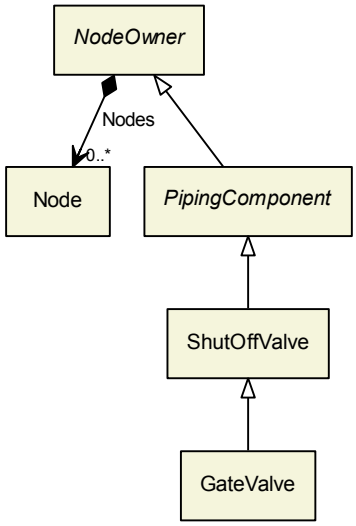
9.24.4. Attributes

No attributes.

9.25. GateValve

RDL: GATE VALVE
http://data.posccaesar.org/rdl/RDS416519

9.25.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.25.2. Components

No components.

9.25.3. Model References

No model references.

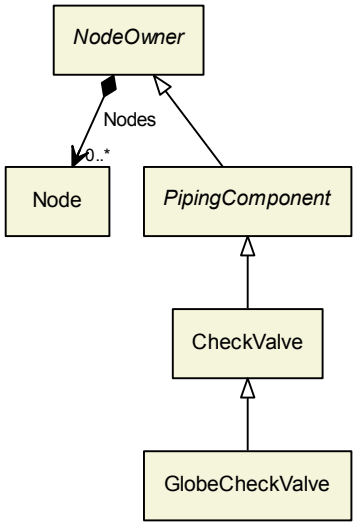
9.25.4. Attributes

No attributes.

9.26. GlobeCheckValve

RDL: GLOBE CHECK VALVE
http://sandbox.dexpi.org/rdl/GlobeCheckValve

9.26.1. Overview



Superclasses:

- CheckValve

Subclasses: No subclasses.

9.26.2. Components

No components.

9.26.3. Model References

No model references.

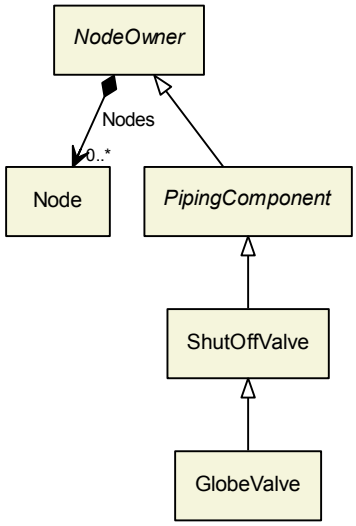
9.26.4. Attributes

No attributes.

9.27. GlobeValve

RDL: GLOBE VALVE
http://data.posccaesar.org/rdl/RDS416204

9.27.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.27.2. Components

No components.

9.27.3. Model References

No model references.

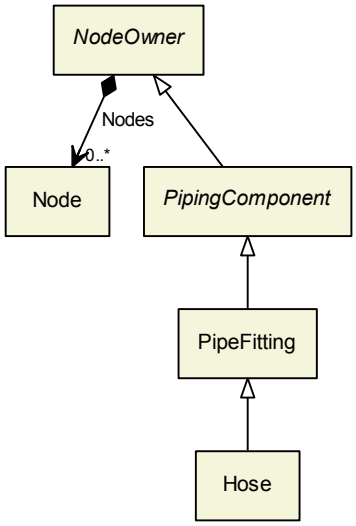
9.27.4. Attributes

No attributes.

9.28. Hose

RDL: HOSE
http://data.posccaesar.org/rdl/RDS302174

9.28.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.28.2. Components

No components.

9.28.3. Model References

No model references.

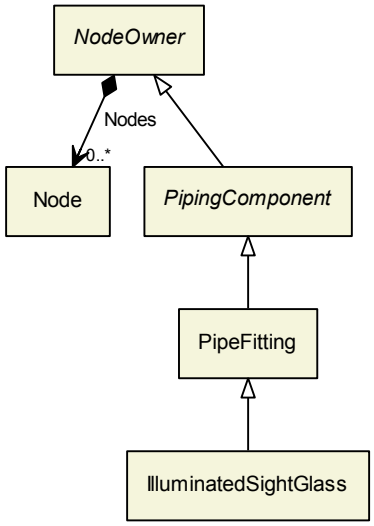
9.28.4. Attributes

No attributes.

9.29. IlluminatedSightGlass

RDL: ILLUMINATED SIGHT GLASS
http://sandbox.dexpi.org/rdl/IlluminatedSightGlass

9.29.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.29.2. Components

No components.

9.29.3. Model References

No model references.

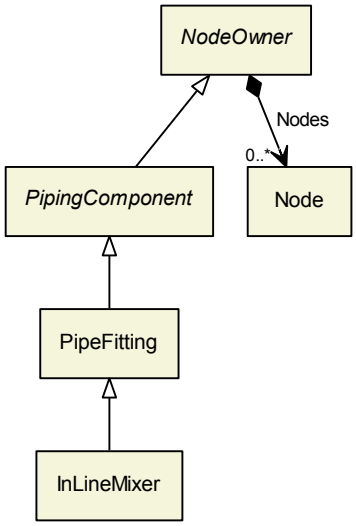
9.29.4. Attributes

No attributes.

9.30. InLineMixer

RDL: IN-LINE MIXER
http://data.posccaesar.org/rdl/RDS43167562195

9.30.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.30.2. Components

No components.

9.30.3. Model References

No model references.

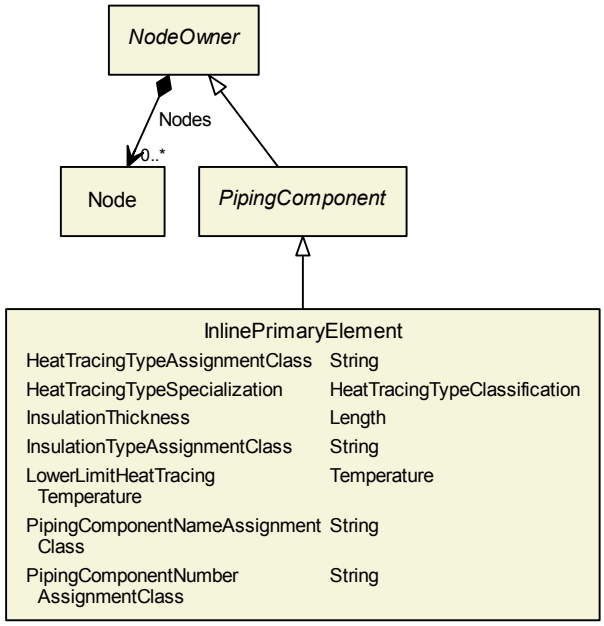
9.30.4. Attributes

No attributes.

9.31. InlinePrimaryElement

RDL: INLINE PRIMARY ELEMENT
http://sandbox.dexpi.org/rdl/InlinePrimaryElement

9.31.1. Overview



Superclasses:

- PipingComponent

Subclasses:

- ElectromagneticFlowMeter
- FlowDetector
- FlowNozzle
- PositiveDisplacementFlowMeter
- TurbineFlowMeter
- VariableAreaFlowMeter
- VenturiTube
- VolumetricFlowDetector

9.31.2. Components

No components.

9.31.3. Model References

No model references.

9.31.4. Attributes

9.31.4.1. HeatTracingTypeAssignmentClass

Description: The heat tracing type of the InlinePrimaryElement, represented as a string.

RDL: HEAT TRACING TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass

Attribute Type: String

Example Value: "E"

Proteus Schema Implementation: GenericAttribute of the InlinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass"
  Value="E"
  Format="string" />
```

9.31.4.2. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type of the InlinePrimaryElement.

RDL: HEAT TRACING TYPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization

Attribute Type: HeatTracingTypeClassification

Example Value: electrical heat tracing system
(ELECTRICAL HEAT TRACING SYSTEM, http://data.posccaesar.org/rdl/RDS11854600)

Proteus Schema Implementation: GenericAttribute of the InlinePrimaryElement (use case Classification).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization"
  Value="ElectricalHeatTracingSystem"
  ValueURI="http://data.posccaesar.org/rdl/RDS11854600"
  Format="anyURI" />
```

9.31.4.3. InsulationThickness

Description: The insulation thickness of the InlinePrimaryElement.

RDL: INSULATION THICKNESS
http://data.posccaesar.org/rdl/RDS4238040

Attribute Type: Length

Example Value: 8 mm

Proteus Schema Implementation: GenericAttribute of the InlinePrimaryElement (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="InsulationThickness"
  AttributeURI="http://data.posccaesar.org/rdl/RDS4238040"
  Value="8"
```

```
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

9.31.4.4. InsulationTypeAssignmentClass

Description: The identification code for the insulation type of the InlinePrimaryElement. So far, DEXPI does not define restrictions for valid values.

RDL: INSULATION TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass

Attribute Type: String

Example Value: "Q"

Proteus Schema Implementation: GenericAttribute of the InlinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="InsulationTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass"
  Value="Q"
  Format="string" />
```

9.31.4.5. LowerLimitHeatTracingTemperature

Description: The temperature that a heat tracing system must ensure for the InlinePrimaryElement.

RDL: LOWER LIMIT HEAT TRACING TEMPERATURE
http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the InlinePrimaryElement (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitHeatTracingTemperature"
  AttributeURI="http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

9.31.4.6. PipingComponentNameAssignmentClass

Description: The piping component name of the InlinePrimaryElement.

RDL: PIPING COMPONENT NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingComponentNameAssignmentClass

Attribute Type: String

Example Value: "73KH12"

Proteus Schema Implementation: GenericAttribute of the InlinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="PipingComponentNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingComponentNameAssignmentClass"
  Value="73KH12"
  Format="string" />
```

9.31.4.7. PipingComponentNumberAssignmentClass

Description: The piping component number of the InlinePrimaryElement.

RDL: PIPING COMPONENT NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingComponentNumberAssignmentClass

Attribute Type: String

Example Value: "FT2023"

Proteus Schema Implementation: GenericAttribute of the InlinePrimaryElement (use case String).

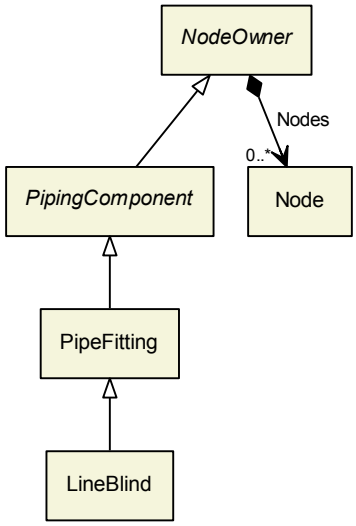
Example:

```
<GenericAttribute
  Name="PipingComponentNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingComponentNumberAssignmentClass"
  Value="FT2023"
  Format="string" />
```

9.32. LineBlind

RDL: LINE BLIND
http://data.posccaesar.org/rdl/RDS280034

9.32.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.32.2. Components

No components.

9.32.3. Model References

No model references.

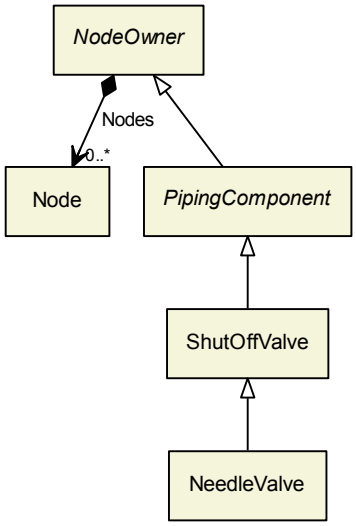
9.32.4. Attributes

No attributes.

9.33. NeedleValve

RDL: NEEDLE VALVE
http://data.posccaesar.org/rdl/RDS421064

9.33.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.33.2. Components

No components.

9.33.3. Model References

No model references.

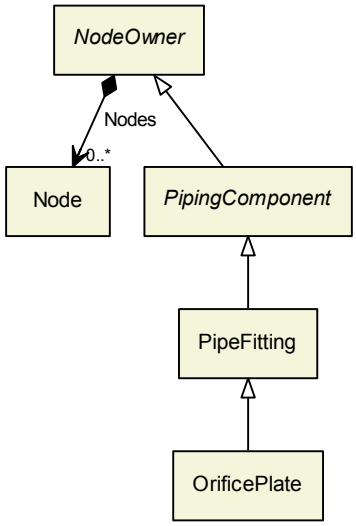
9.33.4. Attributes

No attributes.

9.34. OrificePlate

RDL: ORIFICE PLATE
http://data.posccaesar.org/rdl/RDS418364

9.34.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.34.2. Components

No components.

9.34.3. Model References

No model references.

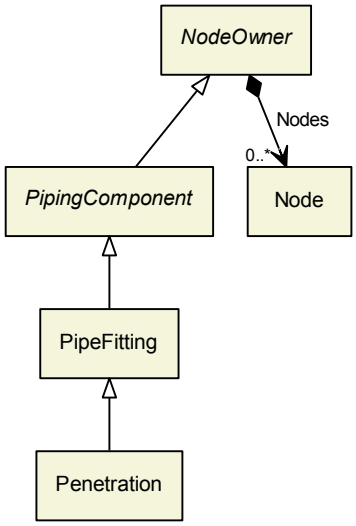
9.34.4. Attributes

No attributes.

9.35. Penetration

RDL: PENETRATION
http://data.posccaesar.org/rdl/RDS13068275

9.35.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.35.2. Components

No components.

9.35.3. Model References

No model references.

9.35.4. Attributes

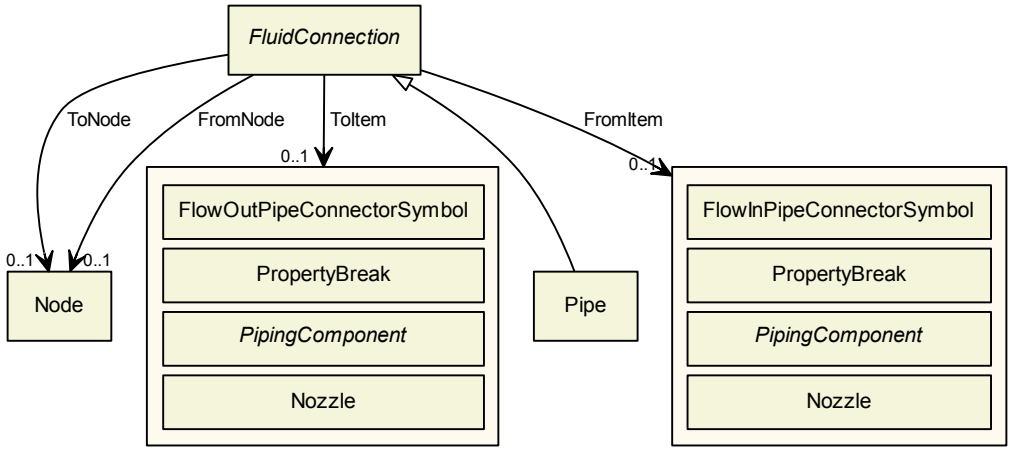
No attributes.

9.36. Pipe

Description: Proteus Implementation: A Pipe is implemented as a Centerline element, located in a PipingNetworkSegment element. The FromItem, FromNode, etc., references inherited from FluidConnection are not directly implemented in Proteus Schema. They are rather given implicitly by the order of Centerline and other elements in the PipingNetworkSegment.

RDL: PIPE
http://data.posccaesar.org/rdl/RDS421199

9.36.1. Overview



Superclasses:

- FluidConnection

Subclasses: No subclasses.

9.36.2. Components

No components.

9.36.3. Model References

No model references.

9.36.4. Attributes

No attributes.

9.37. PipeConnectorSymbol

RDL: PIPE CONNECTOR SYMBOL
http://sandbox.dexpi.org/rdl/PipeConnectorSymbol

9.37.1. Overview

Superclasses: No superclasses.

Subclasses:

- FlowInPipeConnectorSymbol
- FlowOutPipeConnectorSymbol

9.37.2. Components

No components.

9.37.3. Model References

No model references.

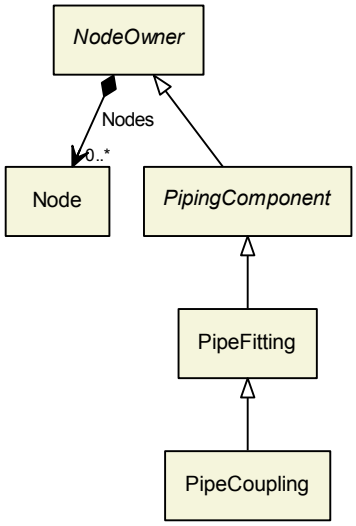
9.37.4. Attributes

No attributes.

9.38. PipeCoupling

RDL: PIPE COUPLING
http://data.posccaesar.org/rdl/RDS415664

9.38.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.38.2. Components

No components.

9.38.3. Model References

No model references.

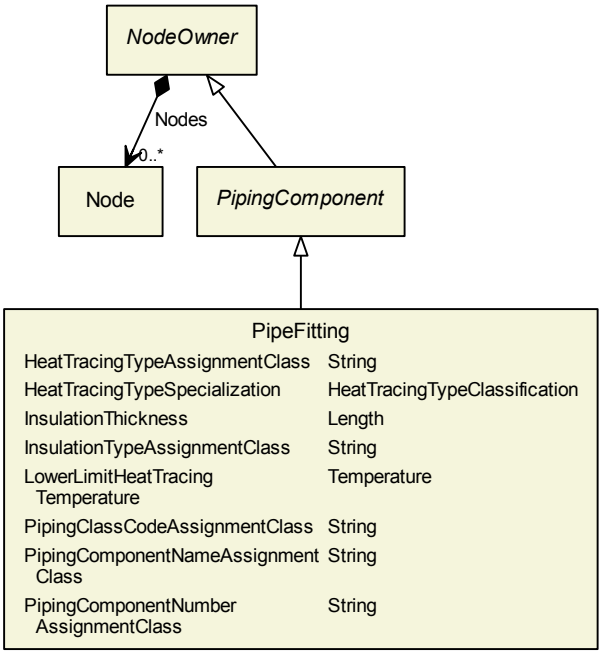
9.38.4. Attributes

No attributes.

9.39. PipeFitting

RDL: PIPE FITTING
http://sandbox.dexpi.org/rdl/PipeFitting

9.39.1. Overview



Superclasses:

- PipingComponent

Subclasses:

- BlindFlange
- ClampedFlangeCoupling
- Compensator
- ConicalStrainer
- Flange
- FlangedConnection
- Funnel
- Hose
- IlluminatedSightGlass
- InLineMixer
- LineBlind
- OrificePlate
- Penetration
- PipeCoupling
- PipeFlangeSpacer
- PipeFlangeSpade
- PipeReducer

- PipeTee
- SightGlass
- Silencer
- SteamTrap
- Strainer
- VentilationDevice

9.39.2. Components

No components.

9.39.3. Model References

No model references.

9.39.4. Attributes

9.39.4.1. HeatTracingTypeAssignmentClass

Description: The heat tracing type of the PipeFitting, represented as a string.

RDL: HEAT TRACING TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass

Attribute Type: String

Example Value: "E"

Proteus Schema Implementation: GenericAttribute of the PipeFitting (use case String).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass"
  Value="E"
  Format="string" />
```

9.39.4.2. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type of the PipeFitting.

RDL: HEAT TRACING TYPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization

Attribute Type: HeatTracingTypeClassification

Example Value: electrical heat tracing system
(ELECTRICAL HEAT TRACING SYSTEM, http://data.posccaesar.org/rdl/RDS11854600)

Proteus Schema Implementation: GenericAttribute of the PipeFitting (use case Classification).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization"
  Value="ElectricalHeatTracingSystem"
  ValueURI="http://data.posccaesar.org/rdl/RDS11854600"
  Format="anyURI" />
```

9.39.4.3. InsulationThickness

Description: The insulation thickness of the PipeFitting.

RDL: INSULATION THICKNESS
http://data.posccaesar.org/rdl/RDS4238040

Attribute Type: Length

Example Value: 8 mm

Proteus Schema Implementation: GenericAttribute of the PipeFitting (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="InsulationThickness"
  AttributeURI="http://data.posccaesar.org/rdl/RDS4238040"
  Value="8"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

9.39.4.4. InsulationTypeAssignmentClass

Description: The identification code for the insulation type of the PipeFitting. So far, DEXPI does not define restrictions for valid values.

RDL: INSULATION TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass

Attribute Type: String

Example Value: "Q"

Proteus Schema Implementation: GenericAttribute of the PipeFitting (use case String).

Example:

```
<GenericAttribute
  Name="InsulationTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass"
  Value="Q"
  Format="string" />
```

9.39.4.5. LowerLimitHeatTracingTemperature

Description: The temperature that a heat tracing system must ensure for the PipeFitting.

RDL: LOWER LIMIT HEAT TRACING TEMPERATURE
http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the PipeFitting (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitHeatTracingTemperature"
  AttributeURI="http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

9.39.4.6. PipingClassCodeAssignmentClass

Description: The identification code of the piping class of the PipeFitting. So far, DEXPI does not define restrictions for valid values.

RDL: PIPING CLASS CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingClassCodeAssignmentClass

Attribute Type: String

Example Value: "75HB13"

Proteus Schema Implementation: GenericAttribute of the PipeFitting (use case String).

Example:

```
<GenericAttribute
  Name="PipingClassCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingClassCodeAssignmentClass"
  Value="75HB13"
  Format="string" />
```

9.39.4.7. PipingComponentNameAssignmentClass

Description: The piping component name of the PipeFitting.

RDL: PIPING COMPONENT NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingComponentNameAssignmentClass

Attribute Type: String

Example Value: "73KH12"

Proteus Schema Implementation: GenericAttribute of the PipeFitting (use case String).

Example:

```
<GenericAttribute
  Name="PipingComponentNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingComponentNameAssignmentClass"
  Value="73KH12"
  Format="string" />
```

9.39.4.8. PipingComponentNumberAssignmentClass

Description: The piping component number of the PipeFitting.

RDL: PIPING COMPONENT NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingComponentNumberAssignmentClass

Attribute Type: String

Example Value: "C2"

Proteus Schema Implementation: GenericAttribute of the PipeFitting (use case String).

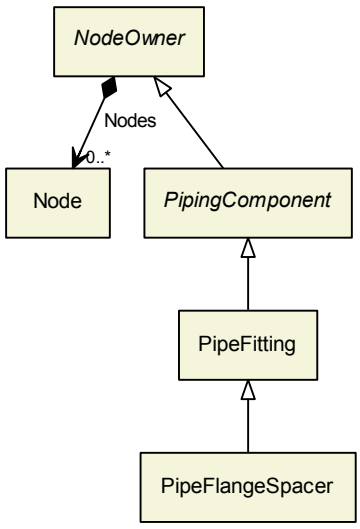
Example:

```
<GenericAttribute
  Name="PipingComponentNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingComponentNumberAssignmentClass"
  Value="C2"
  Format="string" />
```

9.40. PipeFlangeSpacer

RDL: PIPE FLANGE SPACER
http://data.posccaesar.org/rdl/RDS472724

9.40.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.40.2. Components

No components.

9.40.3. Model References

No model references.

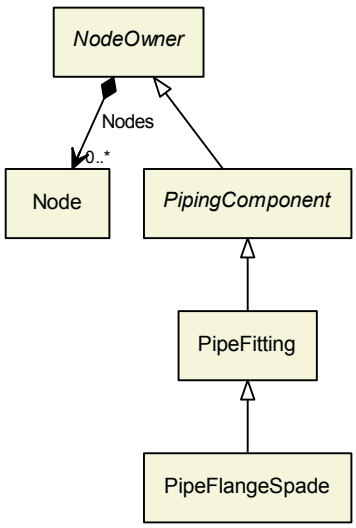
9.40.4. Attributes

No attributes.

9.41. PipeFlangeSpade

RDL: PIPE FLANGE SPADE
http://data.posccaesar.org/rdl/RDS472679

9.41.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.41.2. Components

No components.

9.41.3. Model References

No model references.

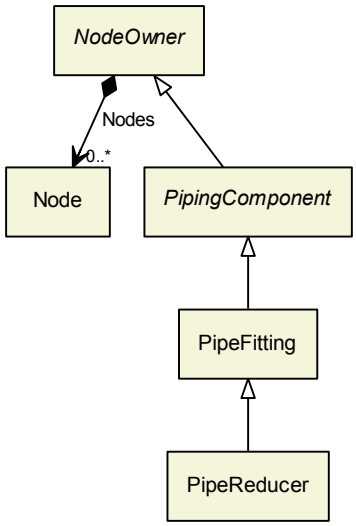
9.41.4. Attributes

No attributes.

9.42. PipeReducer

RDL: PIPE REDUCER
http://data.posccaesar.org/rdl/RDS416294

9.42.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.42.2. Components

No components.

9.42.3. Model References

No model references.

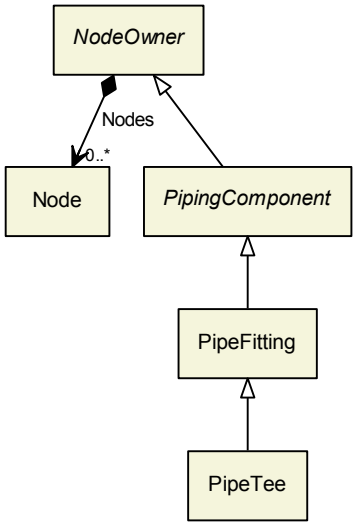
9.42.4. Attributes

No attributes.

9.43. PipeTee

RDL: PIPE TEE
http://data.posccaesar.org/rdl/RDS427724

9.43.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.43.2. Components

No components.

9.43.3. Model References

No model references.

9.43.4. Attributes

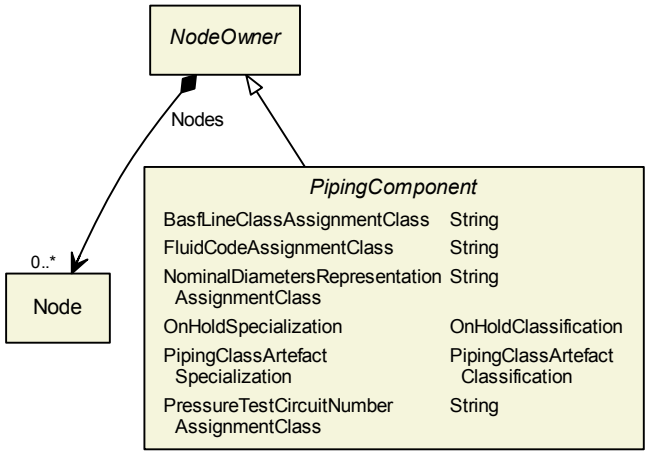
No attributes.

9.44. PipingComponent

This class is abstract.

RDL: -

9.44.1. Overview



Superclasses:

- NodeOwner

Subclasses:

- CheckValve
- InlinePrimaryElement
- PipeFitting
- SafetyValveOrFitting
- ShutOffValve

9.44.2. Components

No components.

9.44.3. Model References

No model references.

9.44.4. Attributes

9.44.4.1. BasfLineClassAssignmentClass

Description: The BASF line class of the PipingComponent, represented as a string. Note: This attribute has been included as an example for a company-specific attribute. It should actually be identified by a company-specific RDL reference. As there is currently no BASF RDL, the DEXPI RDL is used.

RDL: BASF LINE CLASS ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/BasfLineClassAssignmentClass

Attribute Type: String

Example Value: "801"

Proteus Schema Implementation: GenericAttribute of the PipingComponent (use case String).

Example:

```
<GenericAttribute
  Name="BasfLineClassAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/BasfLineClassAssignmentClass"
  Value="801"
  Format="string" />
```

9.44.4.2. FluidCodeAssignmentClass

Description: The identification code of the fluid in the PipingComponent. So far, DEXPI does not define restrictions for valid values.

RDL: FLUID CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/FluidCodeAssignmentClass

Attribute Type: String

Example Value: "MNc"

Proteus Schema Implementation: GenericAttribute of the PipingComponent (use case String).

Example:

```
<GenericAttribute
  Name="FluidCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/FluidCodeAssignmentClass"
  Value="MNc"
  Format="string" />
```

9.44.4.3. NominalDiametersRepresentationAssignmentClass

Description: A readable representation of the nominal diameters of the ports of the PipingComponent. The purpose of this value is to give a textual representation of the nominal diameters to be used in the graphics of a PID.

RDL: NOMINAL DIAMETERS REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiametersRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN = 25/50"

Proteus Schema Implementation: GenericAttribute of the PipingComponent (use case String).

Example:

```
<GenericAttribute
  Name="NominalDiametersRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiametersRepresentationAssignmentClass"
  Value="DN = 25/50"
  Format="string" />
```

9.44.4.4. OnHoldSpecialization

Description: A specialization indicating if the PipingComponent is on hold or not.

RDL: ON HOLD SPECIALIZATION
http://sandbox.dexpi.org/rdl/OnHoldSpecialization

Attribute Type: OnHoldClassification

Example Value: on hold
(ON HOLD, http://sandbox.dexpi.org/rdl/OnHold)

Proteus Schema Implementation: GenericAttribute of the PipingComponent (use case Classification).

Example:

```
<GenericAttribute
  Name="OnHoldSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/OnHoldSpecialization"
  Value="OnHold"
  ValueURI="http://sandbox.dexpi.org/rdl/OnHold"
  Format="anyURI" />
```

9.44.4.5. PipingClassArtefactSpecialization

Description: A specialization indicating if the PipingComponent is an artefact that is described by a piping class.

RDL: PIPING CLASS ARTEFACT SPECIALIZATION
http://sandbox.dexpi.org/rdl/PipingClassArtefactSpecialization

Attribute Type: PipingClassArtefactClassification

Example Value: piping class artefact
(PIPING CLASS ARTEFACT, http://sandbox.dexpi.org/rdl/PipingClassArtefact)

Proteus Schema Implementation: GenericAttribute of the PipingComponent (use case Classification).

Example:

```
<GenericAttribute
  Name="PipingClassArtefactSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingClassArtefactSpecialization"
  Value="PipingClassArtefact"
  ValueURI="http://sandbox.dexpi.org/rdl/PipingClassArtefact"
  Format="anyURI" />
```

9.44.4.6. PressureTestCircuitNumberAssignmentClass

Description: The number of the pressure test circuit of the PipingComponent.

RDL: PRESSURE TEST CIRCUIT NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PressureTestCircuitNumberAssignmentClass

Attribute Type: String

Example Value: "TC123"

Proteus Schema Implementation: GenericAttribute of the PipingComponent (use case String).

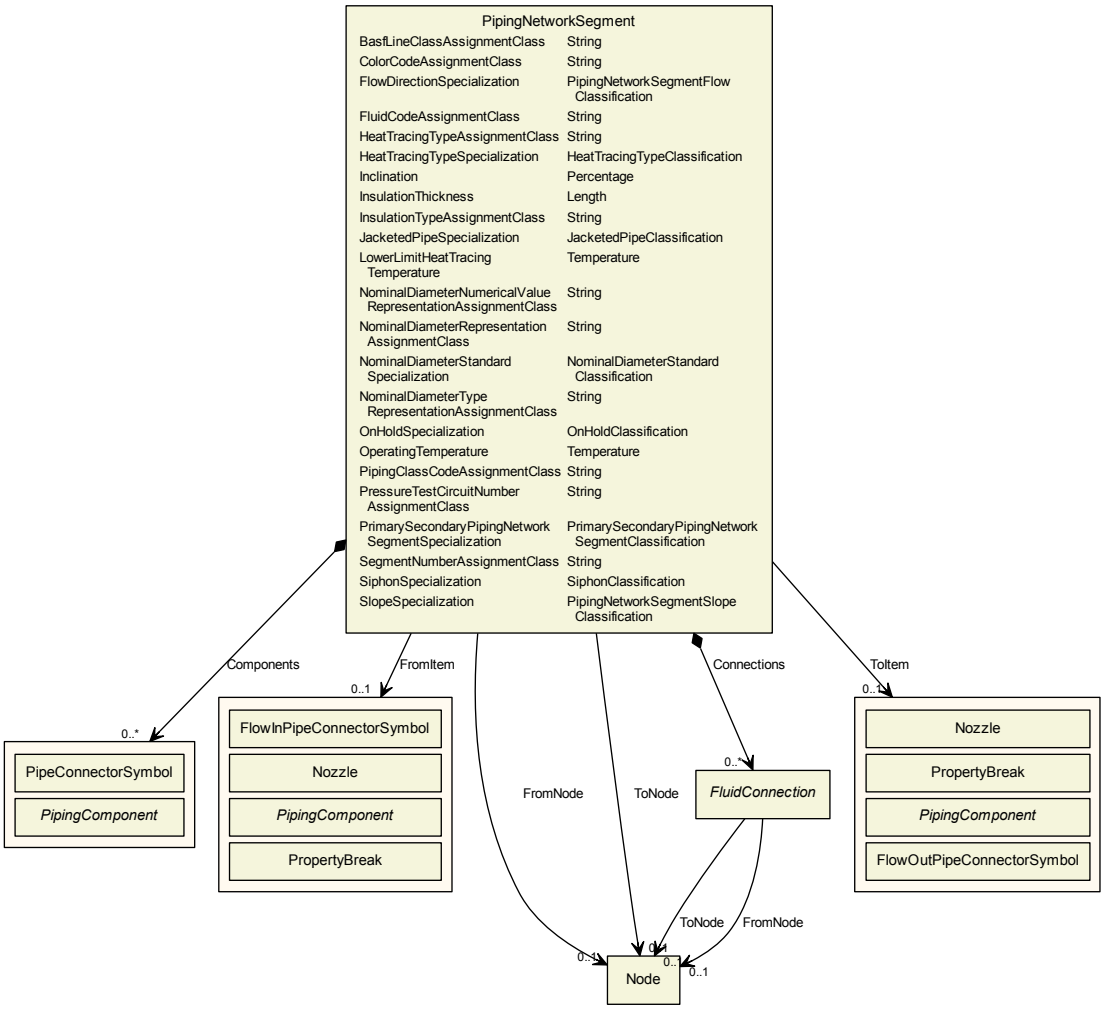
Example:

```
<GenericAttribute
  Name="PressureTestCircuitNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PressureTestCircuitNumberAssignmentClass"
  Value="TC123"
  Format="string" />
```

9.45. PipingNetworkSegment

RDL: PIPING NETWORK SEGMENT
http://data.posccaesar.org/rdl/RDS267704

9.45.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

9.45.2. Components

9.45.2.1. Components

Type: One of:

- PipeConnectorSymbol
- PipingComponent

Cardinality: 0..*

Proteus Schema Implementation: The elements representing components (e.g., PipingComponent elements) are children of the PipingNetworkSegment element. They are separated by CenterLine elements.

Example:

```
<PipingNetworkSegment ...>
    ...
    <PipingComponent ... >
        ...
    </PipingComponent>
    <CenterLine ... >
        ...
    </CenterLine>
    <PipingComponent ... >
        ...
    </PipingComponent>
    ...
</PipingNetworkSegment>
```

9.45.2.2. Connections

Type: FluidConnection

Cardinality: 0..*

Proteus Schema Implementation: The CenterLine elements representing pipes are children of the PipingNetworkSegment element. They are separated by other elements, e.g., PipingComponent elements.

Example:

```
<PipingNetworkSegment ...>
    ...
    <CenterLine ... >
        ...
    </CenterLine>
    <PipingComponent ... >
        ...
    </PipingComponent>
    <CenterLine ... >
        ...
    </CenterLine>
    ...
</PipingNetworkSegment>
```

9.45.3. Model References

9.45.3.1. FromItem

Description: The item at which the PipingNetworkSegment starts.

Type: One of:

- FlowInPipeConnectorSymbol
- Nozzle
- PipingComponent
- PropertyBreak

Target Multiplicity: 0..1

Proteus Schema Implementation: The FromItem reference is given by means of the FromID XML attribute of the Connection element in the PipingNetworkSegment element. The value of the FromID XML attribute is the XML ID of the actual item, e.g., a Nozzle or a PipingComponent.
For details, see **?**. Note that Proteus Schema allows other references than the XML ID. For DEXPI compliance, only the XML ID may be used. The example below demonstrates the case that FromID refers to the first component of the PipingNetworkSegment itself.

Example:

```
<PipingNetworkSegment ...>
    <PipingComponent ID = "PC123" ...>
        ...
    </PipingComponent>
    ...
    <Connection FromID = "PC123" ... />
    ...
</PipingNetworkSegment>
```

9.45.3.2. FromNode

Description: The Node at which the PipingNetworkSegment starts.

Type: Node

Target Multiplicity: 0..1

Proteus Schema Implementation: The FromNode reference is given by means of the FromNode XML attribute of the Connection element in the PipingNetworkSegment element. The value of the FromNode XML attribute is an integer. It refers to the index of the Node within the ConnectionPoints element associated with the owner of the Node. The owner itself is given by means of the FromID XML attribute (see Proteus Schema Implementation of FromItem).
For details, see **?**. Note that in certain cases, Proteus Schema allows to omit the FromID XML attribute when it is clear from the context.
The example below demonstrates the case that FromNode refers to a Node of the last component of another PipingNetworkSegment.

Example:

```
<PipingNetworkSegment ...>
    ...
    <PipingComponent ID = "PC14" ...>
        <ConnectionPoints NumPoints = "3">
```

```
            <Node> ... </Node>
            <Node> ... </Node>
            <!-- The node below has index 2. -->
            <Node> ... </Node>
        </ConnectionPoints>
    </PipingComponent>
</PipingNetworkSegment>
<PipingNetworkSegment ...>
    ...
    <PipingComponent ID = "PC23" ...>
    </PipingComponent>
    ...
    <Connection
        FromID = "PC14"
        FromNode = "2" .../>
    ...
</PipingNetworkSegment>
```

9.45.3.3. ToItem

Description: The item at which the PipingNetworkSegment ends.

Type: One of:

- FlowOutPipeConnectorSymbol
- Nozzle
- PipingComponent
- PropertyBreak

Target Multiplicity: 0..1

Proteus Schema Implementation: The ToItem reference is given by means of the ToID XML attribute of the Connection element in the PipingNetworkSegment element. The value of the ToID XML attribute is the XML ID of the actual item, e.g., a Nozzle or a PipingComponent.
For details, see **?**. Note that Proteus Schema allows other references than the XML ID. For DEXPI compliance, only the XML ID may be used. The example below demonstrates the case that ToID refers to the last component of the PipingNetworkSegment itself.

Example:

```
<PipingNetworkSegment ...>
    ...
    <PipingComponent ID = "PC123" ...>
        ...
    </PipingComponent>
    ...
    <Connection ToID = "PC123" ... />
    ...
</PipingNetworkSegment>
```

9.45.3.4. ToNode

Description: The Node at which the PipingNetworkSegment ends.

Type: Node

Target Multiplicity: 0..1

Proteus Schema Implementation: The ToNode reference is given by means of the ToNode XML attribute of the Connection element in the PipingNetworkSegment element. The value of the ToNode XML attribute is an integer. It refers to the index of the Node within the ConnectionPoints element associated with the owner of the Node. The owner itself is given by means of the ToID XML attribute (see Proteus Schema Implementation of ToItem).
For details, see **?**. Note that in certain cases, Proteus Schema allows to omit the ToID XML attribute when it is clear from the context.
The example below demonstrates the case that ToNode refers to a Node of the last component of the PipingNetworkSegment itself.

Example:

```
<PipingNetworkSegment ...>
    ...
    <PipingComponent ID = "PC123" ...>
        <ConnectionPoints NumPoints = "3">
            <Node> ... </Node>
            <Node> ... </Node>
            <!-- The node below has index 2. -->
            <Node> ... </Node>
        </ConnectionPoints>
    </PipingComponent>
    ...
    <Connection
        ToID = "PC123"
        ToNode = "2" .../>
    ...
</PipingNetworkSegment>
```

9.45.4. Attributes

9.45.4.1. BasfLineClassAssignmentClass

Description: The BASF line class of the PipingNetworkSegment, represented as a string. Note: This attribute has been included as an example for a company-specific attribute. It should actually be identified by a company-specific RDL reference. As there is currently no BASF RDL, the DEXPI RDL is used.

RDL: BASF LINE CLASS ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/BasfLineClassAssignmentClass

Attribute Type: String

Example Value: "801"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="BasfLineClassAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/BasfLineClassAssignmentClass"
  Value="801"
  Format="string" />
```

9.45.4.2. ColorCodeAssignmentClass

Description: The color code of the PipingNetworkSegment, represented as a string.

RDL: COLOR CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ColorCodeAssignmentClass

Attribute Type: String

Example Value: "C321"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="ColorCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ColorCodeAssignmentClass"
  Value="C321"
  Format="string" />
```

9.45.4.3. FlowDirectionSpecialization

Description: A specialization indicating if the PipingNetworkSegment enables dual flow or not.

RDL: FLOW DIRECTION SPECIALIZATION
http://sandbox.dexpi.org/rdl/FlowDirectionSpecialization

Attribute Type: PipingNetworkSegmentFlowClassification

Example Value: dual flow
(DUAL FLOW PIPING NETWORK SEGMENT, http://sandbox.dexpi.org/rdl/DualFlowPipingNetworkSegment)

Proteus Schema Implementation: XML attribute DualFlow of the PipingNetworkSegment element:

- DualFlow="false": Classify as single flow.
- DualFlow="true": Classify as dual flow.
- DualFlow *omitted*: No classification.

Example:

```
<PipingNetworkSegment DualFlow = "true" ...>
```

9.45.4.4. FluidCodeAssignmentClass

Description: The identification code of the fluid in the PipingNetworkSegment. So far, DEXPI does not define restrictions for valid values.

RDL: FLUID CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/FluidCodeAssignmentClass

Attribute Type: String

Example Value: "MNc"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="FluidCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/FluidCodeAssignmentClass"
  Value="MNc"
  Format="string" />
```

9.45.4.5. HeatTracingTypeAssignmentClass

Description: The heat tracing type of the PipingNetworkSegment, represented as a string.

RDL: HEAT TRACING TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass

Attribute Type: String

Example Value: "E"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass"
  Value="E"
  Format="string" />
```

9.45.4.6. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type of the PipingNetworkSegment.

RDL: HEAT TRACING TYPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization

Attribute Type: HeatTracingTypeClassification

Example Value: electrical heat tracing system
(ELECTRICAL HEAT TRACING SYSTEM, http://data.posccaesar.org/rdl/RDS11854600)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Classification).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization"
  Value="ElectricalHeatTracingSystem"
  ValueURI="http://data.posccaesar.org/rdl/RDS11854600"
  Format="anyURI" />
```

9.45.4.7. Inclination

Description: The inclination (slope) of the PipingNetworkSegment in percent.

RDL: INCLINATION
http://data.posccaesar.org/rdl/RDS17688057

Attribute Type: Percentage

Example Value: 10 %

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="Inclination"
  AttributeURI="http://data.posccaesar.org/rdl/RDS17688057"
  Value="10"
  Format="double"
  Units="Percent"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1317959" />
```

9.45.4.8. InsulationThickness

Description: The insulation thickness of the PipingNetworkSegment.

RDL: INSULATION THICKNESS
http://data.posccaesar.org/rdl/RDS4238040

Attribute Type: Length

Example Value: 8 mm

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="InsulationThickness"
  AttributeURI="http://data.posccaesar.org/rdl/RDS4238040"
  Value="8"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

9.45.4.9. InsulationTypeAssignmentClass

Description: The identification code for the insulation type of the PipingNetworkSegment. So far, DEXPI does not define restrictions for valid values.

RDL: INSULATION TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass

Attribute Type: String

Example Value: "Q"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="InsulationTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass"
  Value="Q"
  Format="string" />
```

9.45.4.10. JacketedPipeSpecialization

Description: A specialization indicating whether the PipingNetworkSegment is jacketed.

RDL: JACKETED PIPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/JacketedPipeSpecialization

Attribute Type: JacketedPipeClassification

Example Value: jacketed
(JACKETED PIPE, http://sandbox.dexpi.org/rdl/JacketedPipe)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Classification).

Example:

```
<GenericAttribute
  Name="JacketedPipeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/JacketedPipeSpecialization"
  Value="JacketedPipe"
  ValueURI="http://sandbox.dexpi.org/rdl/JacketedPipe"
  Format="anyURI" />
```

9.45.4.11. LowerLimitHeatTracingTemperature

Description: The temperature that a heat tracing system must ensure for the PipingNetworkSegment.

RDL: LOWER LIMIT HEAT TRACING TEMPERATURE
http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitHeatTracingTemperature"
  AttributeURI="http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

9.45.4.12. NominalDiameterNumericalValueRepresentationAssignmentClass

Description: A readable representation of the numerical value of the nominal diameter. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: NOMINAL DIAMETER NUMERICAL VALUE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterNumericalValueRepresentationAssignmentClass

Attribute Type: String

Example Value: "25"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="NominalDiameterNumericalValueRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/
      NominalDiameterNumericalValueRepresentationAssignmentClass"
  Value="25"
  Format="string" />
```

9.45.4.13. NominalDiameterRepresentationAssignmentClass

Description: A readable representation of the nominal diameter. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: NOMINAL DIAMETER REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN 25"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="NominalDiameterRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterRepresentationAssignmentClass"
  Value="DN 25"
  Format="string" />
```

9.45.4.14. NominalDiameterStandardSpecialization

Description: The nominal diameter of the PipingNetworkSegment, given as a reference to a nominal diameter standard and value.

RDL: NOMINAL DIAMETER STANDARD SPECIALIZATION
http://sandbox.dexpi.org/rdl/NominalDiameterStandardSpecialization

Attribute Type: NominalDiameterStandardClassification

Example Value: DN 25 (DIN 2448)
(DIN 2448 OBJECT DN 25, http://sandbox.dexpi.org/rdl/Din2448ObjectDn25)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Classification).

Example:

```
<GenericAttribute
  Name="NominalDiameterStandardSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterStandardSpecialization"
  Value="Din2448ObjectDn25"
  ValueURI="http://sandbox.dexpi.org/rdl/Din2448ObjectDn25"
  Format="anyURI" />
```

9.45.4.15. NominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: NOMINAL DIAMETER TYPE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="NominalDiameterTypeRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass"
  Value="DN"
  Format="string" />
```

9.45.4.16. OnHoldSpecialization

Description: A specialization indicating if the PipingNetworkSegment is on hold or not.

RDL: ON HOLD SPECIALIZATION
http://sandbox.dexpi.org/rdl/OnHoldSpecialization

Attribute Type: OnHoldClassification

Example Value: on hold
(ON HOLD, http://sandbox.dexpi.org/rdl/OnHold)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Classification).

Example:

```
<GenericAttribute
  Name="OnHoldSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/OnHoldSpecialization"
  Value="OnHold"
  ValueURI="http://sandbox.dexpi.org/rdl/OnHold"
  Format="anyURI" />
```

9.45.4.17. OperatingTemperature

Description: The operating temperature of the PipingNetworkSegment.

RDL: OPERATING TEMPERATURE
http://data.posccaesar.org/rdl/RDS357119

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="OperatingTemperature"
  AttributeURI="http://data.posccaesar.org/rdl/RDS357119"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

9.45.4.18. PipingClassCodeAssignmentClass

Description: The identification code of the piping class of the PipingNetworkSegment. So far, DEXPI does not define restrictions for valid values.

RDL: PIPING CLASS CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingClassCodeAssignmentClass

Attribute Type: String

Example Value: "75HB13"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="PipingClassCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingClassCodeAssignmentClass"
  Value="75HB13"
  Format="string" />
```

9.45.4.19. PressureTestCircuitNumberAssignmentClass

Description: The number of the pressure test circuit of the PipingNetworkSegment.

RDL: PRESSURE TEST CIRCUIT NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PressureTestCircuitNumberAssignmentClass

Attribute Type: String

Example Value: "TC123"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="PressureTestCircuitNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PressureTestCircuitNumberAssignmentClass"
  Value="TC123"
  Format="string" />
```

9.45.4.20. PrimarySecondaryPipingNetworkSegmentSpecialization

Description: A specialization indicating whether the PipingNetworkSegment is a primary or secondary PipingNetworkSegment.

RDL: PRIMARY SECONDARY PIPING NETWORK SEGMENT SPECIALIZATION
http://sandbox.dexpi.org/rdl/PrimarySecondaryPipingNetworkSegmentSpecialization

Attribute Type: PrimarySecondaryPipingNetworkSegmentClassification

Example Value: primary segment
(PRIMARY PIPING NETWORK SEGMENT, http://sandbox.dexpi.org/rdl/PrimaryPipingNetworkSegment)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Classification).

Example:

```
<GenericAttribute
  Name="PrimarySecondaryPipingNetworkSegmentSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/PrimarySecondaryPipingNetworkSegmentSpecialization"
  Value="PrimaryPipingNetworkSegment"
  ValueURI="http://sandbox.dexpi.org/rdl/PrimaryPipingNetworkSegment"
  Format="anyURI" />
```

9.45.4.21. SegmentNumberAssignmentClass

Description: The segment number of a PipingNetworkSegment. Values are typically (but not necessarily) string representations of numbers with a prefix.

RDL: SEGMENT NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SegmentNumberAssignmentClass

Attribute Type: String

Example Value: "S3"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case String).

Example:

```
<GenericAttribute
  Name="SegmentNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SegmentNumberAssignmentClass"
  Value="S3"
  Format="string" />
```

9.45.4.22. SiphonSpecialization

Description: A specialization indicating if the PipingNetworkSegment is a siphon or not.

RDL: SIPHON SPECIALIZATION
http://sandbox.dexpi.org/rdl/SiphonSpecialization

Attribute Type: SiphonClassification

Example Value: siphon
(SIPHON, http://data.posccaesar.org/rdl/RDS311084)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Classification).

Example:

```
<GenericAttribute
  Name="SiphonSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/SiphonSpecialization"
  Value="Siphon"
  ValueURI="http://data.posccaesar.org/rdl/RDS311084"
  Format="anyURI" />
```

9.45.4.23. SlopeSpecialization

Description: A specialization indicating if the PipingNetworkSegment is sloped or not.

RDL: SLOPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/SlopeSpecialization

Attribute Type: PipingNetworkSegmentSlopeClassification

Example Value: sloped
(SLOPED PIPING NETWORK SEGMENT, http://sandbox.dexpi.org/rdl/SlopedPipingNetworkSegment)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSegment (use case Classification).

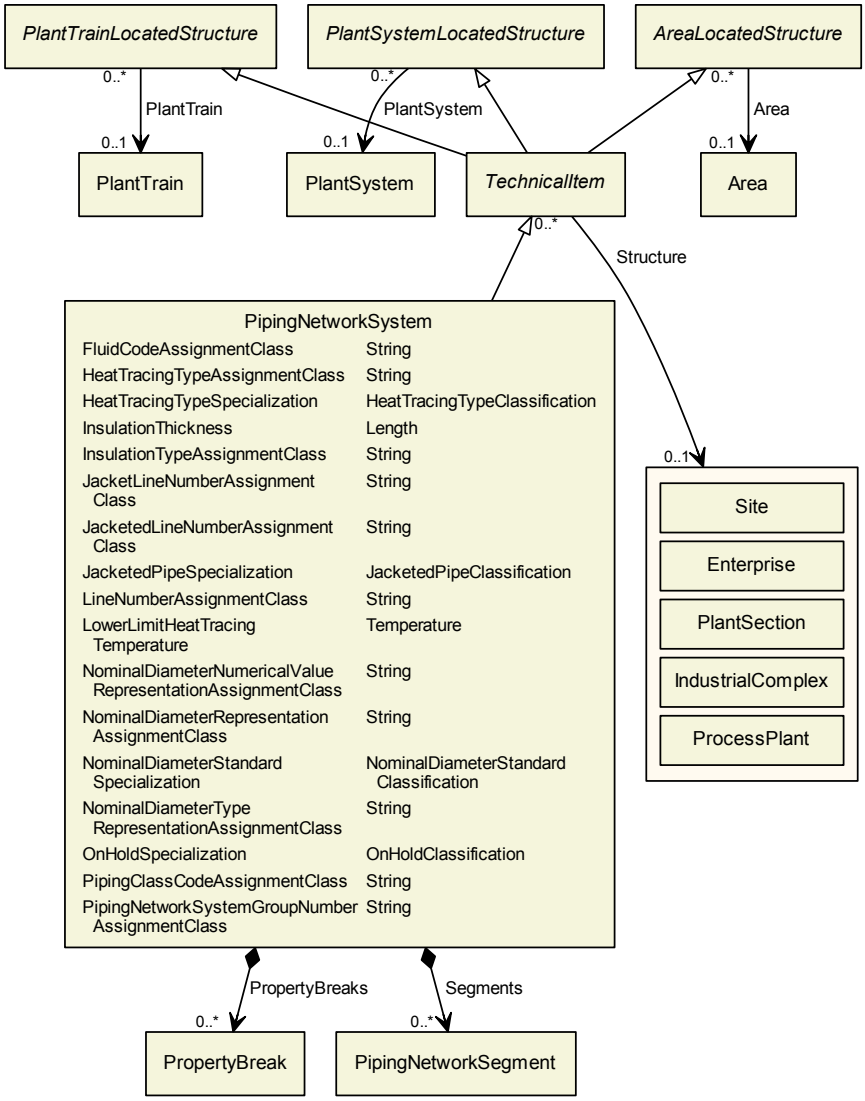
Example:

```
<GenericAttribute
  Name="SlopeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/SlopeSpecialization"
  Value="SlopedPipingNetworkSegment"
  ValueURI="http://sandbox.dexpi.org/rdl/SlopedPipingNetworkSegment"
  Format="anyURI" />
```

9.46. PipingNetworkSystem

RDL: PIPING NETWORK SYSTEM
http://data.posccaesar.org/rdl/RDS270359

9.46.1. Overview



Superclasses:

- TechnicalItem

Subclasses: No subclasses.

9.46.2. Components

9.46.2.1. PropertyBreaks

Type: PropertyBreak

Cardinality: 0..*

Proteus Schema Implementation: The PropertyBreak elements are children of the PipingNetworkSystem element.

Example:

```
<PipingNetworkSystem ...>
    ...
```

```
    <PropertyBreak ... >
        ...
    </PropertyBreak>
    <PropertyBreak ... >
        ...
    </PropertyBreak>
    ...
</PipingNetworkSystem>
```

9.46.2.2. Segments

Type: PipingNetworkSegment

Cardinality: 0..*

Proteus Schema Implementation: The PipingNetworkSegment elements are children of the PipingNetworkSystem element.

Example:

```
<PipingNetworkSystem ...>
    ...
    <PipingNetworkSegment ... >
        ...
    </PipingNetworkSegment>
    <PipingNetworkSegment ... >
        ...
    </PipingNetworkSegment>
    ...
</PipingNetworkSystem>
```

9.46.3. Model References

No model references.

9.46.4. Attributes

9.46.4.1. FluidCodeAssignmentClass

Description: The identification code of the fluid in the PipingNetworkSystem. So far, DEXPI does not define restrictions for valid values.

RDL: FLUID CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/FluidCodeAssignmentClass

Attribute Type: String

Example Value: "MNc"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

Example:

```
<GenericAttribute
  Name="FluidCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/FluidCodeAssignmentClass"
  Value="MNc"
  Format="string" />
```

9.46.4.2. HeatTracingTypeAssignmentClass

Description: The heat tracing type of the PipingNetworkSystem, represented as a string.

RDL: HEAT TRACING TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass

Attribute Type: String

Example Value: "E"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass"
  Value="E"
  Format="string" />
```

9.46.4.3. HeatTracingTypeSpecialization

Description: A classification indicating the heat tracing type of the PipingNetworkSystem.

RDL: HEAT TRACING TYPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization

Attribute Type: HeatTracingTypeClassification

Example Value: electrical heat tracing system
(ELECTRICAL HEAT TRACING SYSTEM, http://data.posccaesar.org/rdl/RDS11854600)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case Classification).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization"
  Value="ElectricalHeatTracingSystem"
  ValueURI="http://data.posccaesar.org/rdl/RDS11854600"
  Format="anyURI" />
```

9.46.4.4. InsulationThickness

Description: The insulation thickness of the PipingNetworkSystem.

RDL: INSULATION THICKNESS
http://data.posccaesar.org/rdl/RDS4238040

Attribute Type: Length

Example Value: 8 mm

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="InsulationThickness"
  AttributeURI="http://data.posccaesar.org/rdl/RDS4238040"
  Value="8"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

9.46.4.5. InsulationTypeAssignmentClass

Description: The identification code for the insulation type of the PipingNetworkSystem. So far, DEXPI does not define restrictions for valid values.

RDL: INSULATION TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass

Attribute Type: String

Example Value: "Q"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

Example:

```
<GenericAttribute
  Name="InsulationTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass"
  Value="Q"
  Format="string" />
```

9.46.4.6. JacketLineNumberAssignmentClass

Description: The line number of the PipingNetworkSystem that is the jacket of this PipingNetworkSystem.

RDL: JACKET LINE NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/JacketLineNumberAssignmentClass

Attribute Type: String

Example Value: "47126J"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

Example:

```
<GenericAttribute
  Name="JacketLineNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/JacketLineNumberAssignmentClass"
  Value="47126J"
  Format="string" />
```

9.46.4.7. JacketedLineNumberAssignmentClass

Description: The line number of the PipingNetworkSystem for which this PipingNetworkSystem is the jacket.

RDL: JACKETED LINE NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/JacketedLineNumberAssignmentClass

Attribute Type: String

Example Value: "47126"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

Example:

```
<GenericAttribute
  Name="JacketedLineNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/JacketedLineNumberAssignmentClass"
  Value="47126"
  Format="string" />
```

9.46.4.8. JacketedPipeSpecialization

Description: A specialization indicating whether the PipingNetworkSystem is jacketed.

RDL: JACKETED PIPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/JacketedPipeSpecialization

Attribute Type: JacketedPipeClassification

Example Value: jacketed
(JACKETED PIPE, http://sandbox.dexpi.org/rdl/JacketedPipe)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case Classification).

Example:

```
<GenericAttribute
  Name="JacketedPipeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/JacketedPipeSpecialization"
  Value="JacketedPipe"
  ValueURI="http://sandbox.dexpi.org/rdl/JacketedPipe"
  Format="anyURI" />
```

9.46.4.9. LineNumberAssignmentClass

Description: The line number of a PipingNetworkSystem. Values are typically (but not necessarily) string representations of numbers.

RDL: LINE NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/LineNumberAssignmentClass

Attribute Type: String

Example Value: "47126"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

Example:

```
<GenericAttribute
  Name="LineNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/LineNumberAssignmentClass"
  Value="47126"
  Format="string" />
```

9.46.4.10. LowerLimitHeatTracingTemperature

Description: The temperature that a heat tracing system must ensure for the PipingNetworkSystem.

RDL: LOWER LIMIT HEAT TRACING TEMPERATURE
http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitHeatTracingTemperature"
  AttributeURI="http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

9.46.4.11. NominalDiameterNumericalValueRepresentationAssignmentClass

Description: A readable representation of the numerical value of the nominal diameter. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: NOMINAL DIAMETER NUMERICAL VALUE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterNumericalValueRepresentationAssignmentClass

Attribute Type: String

Example Value: "25"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

Example:

```
<GenericAttribute
  Name="NominalDiameterNumericalValueRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/
      NominalDiameterNumericalValueRepresentationAssignmentClass"
  Value="25"
  Format="string" />
```

9.46.4.12. NominalDiameterRepresentationAssignmentClass

Description: A readable representation of the nominal diameter. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: NOMINAL DIAMETER REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN 25"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

Example:

```
<GenericAttribute
  Name="NominalDiameterRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterRepresentationAssignmentClass"
  Value="DN 25"
  Format="string" />
```

9.46.4.13. NominalDiameterStandardSpecialization

Description: The nominal diameter of the PipingNetworkSystem, given as a reference to a nominal diameter standard and value.

RDL: NOMINAL DIAMETER STANDARD SPECIALIZATION
http://sandbox.dexpi.org/rdl/NominalDiameterStandardSpecialization

Attribute Type: NominalDiameterStandardClassification

Example Value: DN 25 (DIN 2448)
(DIN 2448 OBJECT DN 25, http://sandbox.dexpi.org/rdl/Din2448ObjectDn25)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case Classification).

Example:

```
<GenericAttribute
  Name="NominalDiameterStandardSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterStandardSpecialization"
  Value="Din2448ObjectDn25"
  ValueURI="http://sandbox.dexpi.org/rdl/Din2448ObjectDn25"
  Format="anyURI" />
```

9.46.4.14. NominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: NOMINAL DIAMETER TYPE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

Example:

```
<GenericAttribute
  Name="NominalDiameterTypeRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterTypeRepresentationAssignmentClass"
  Value="DN"
  Format="string" />
```

9.46.4.15. OnHoldSpecialization

Description: A specialization indicating if the PipingNetworkSystem is on hold or not.

RDL: ON HOLD SPECIALIZATION
http://sandbox.dexpi.org/rdl/OnHoldSpecialization

Attribute Type: OnHoldClassification

Example Value: on hold
(ON HOLD, http://sandbox.dexpi.org/rdl/OnHold)

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case Classification).

Example:

```
<GenericAttribute
  Name="OnHoldSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/OnHoldSpecialization"
  Value="OnHold"
  ValueURI="http://sandbox.dexpi.org/rdl/OnHold"
  Format="anyURI" />
```

9.46.4.16. PipingClassCodeAssignmentClass

Description: The identification code of the piping class of the PipingNetworkSystem. So far, DEXPI does not define restrictions for valid values.

RDL: PIPING CLASS CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingClassCodeAssignmentClass

Attribute Type: String

Example Value: "75HB13"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

Example:

```
<GenericAttribute
  Name="PipingClassCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingClassCodeAssignmentClass"
  Value="75HB13"
  Format="string" />
```

9.46.4.17. PipingNetworkSystemGroupNumberAssignmentClass

Description: The number of the piping network system group of the PipingNetworkSystem, represented as a string.

RDL: PIPING NETWORK SYSTEM GROUP NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingNetworkSystemGroupNumberAssignmentClass

Attribute Type: String

Example Value: "G3"

Proteus Schema Implementation: GenericAttribute of the PipingNetworkSystem (use case String).

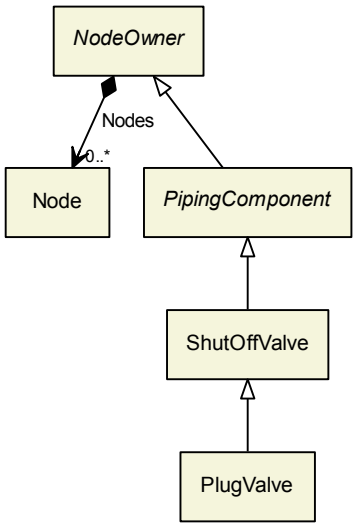
Example:

```
<GenericAttribute
  Name="PipingNetworkSystemGroupNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingNetworkSystemGroupNumberAssignmentClass"
  Value="G3"
  Format="string" />
```

9.47. PlugValve

RDL: PLUG VALVE
http://data.posccaesar.org/rdl/RDS421109

9.47.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.47.2. Components

No components.

9.47.3. Model References

No model references.

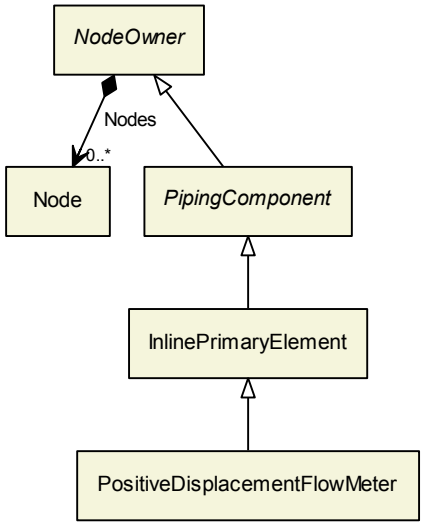
9.47.4. Attributes

No attributes.

9.48. PositiveDisplacementFlowMeter

RDL: POSITIVE DISPLACEMENT FLOW METER
http://data.posccaesar.org/rdl/RDS418094

9.48.1. Overview



Superclasses:

- InlinePrimaryElement

Subclasses: No subclasses.

9.48.2. Components

No components.

9.48.3. Model References

No model references.

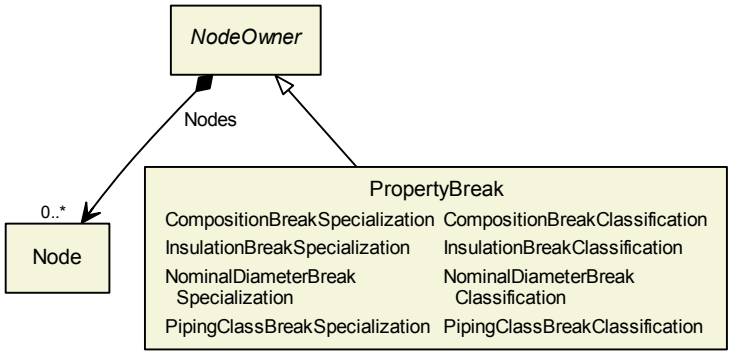
9.48.4. Attributes

No attributes.

9.49. PropertyBreak

RDL: PROPERTY BREAK
http://sandbox.dexpi.org/rdl/PropertyBreak

9.49.1. Overview



Superclasses:

- NodeOwner

Subclasses: No subclasses.

9.49.2. Components

No components.

9.49.3. Model References

No model references.

9.49.4. Attributes

9.49.4.1. CompositionBreakSpecialization

Description: A specialization indicating if the PropertyBreak is a composition break or not.

RDL: COMPOSITION BREAK SPECIALIZATION
http://sandbox.dexpi.org/rdl/CompositionBreakSpecialization

Attribute Type: CompositionBreakClassification

Example Value: no composition break
(NO COMPOSITION BREAK, http://sandbox.dexpi.org/rdl/NoCompositionBreak)

Proteus Schema Implementation: GenericAttribute of the PropertyBreak (use case Classification).

Example:

```
<GenericAttribute
  Name="CompositionBreakSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/CompositionBreakSpecialization"
  Value="NoCompositionBreak"
  ValueURI="http://sandbox.dexpi.org/rdl/NoCompositionBreak"
  Format="anyURI" />
```

9.49.4.2. InsulationBreakSpecialization

Description: A specialization indicating if the PropertyBreak is an insulation break or not.

RDL: INSULATION BREAK SPECIALIZATION
http://sandbox.dexpi.org/rdl/InsulationBreakSpecialization

Attribute Type: InsulationBreakClassification

Example Value: inulation break
(INSULATION BREAK, http://sandbox.dexpi.org/rdl/InsulationBreak)

Proteus Schema Implementation: GenericAttribute of the PropertyBreak (use case Classification).

Example:

```
<GenericAttribute
  Name="InsulationBreakSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/InsulationBreakSpecialization"
  Value="InsulationBreak"
  ValueURI="http://sandbox.dexpi.org/rdl/InsulationBreak"
  Format="anyURI" />
```

9.49.4.3. NominalDiameterBreakSpecialization

Description: A specialization indicating if the PropertyBreak is a nominal diameter break or not.

RDL: NOMINAL DIAMETER BREAK SPECIALIZATION
http://sandbox.dexpi.org/rdl/NominalDiameterBreakSpecialization

Attribute Type: NominalDiameterBreakClassification

Example Value: no nominal diameter break
(NO NOMINAL DIAMETER BREAK, http://sandbox.dexpi.org/rdl/NoNominalDiameterBreak)

Proteus Schema Implementation: GenericAttribute of the PropertyBreak (use case Classification).

Example:

```
<GenericAttribute
  Name="NominalDiameterBreakSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalDiameterBreakSpecialization"
  Value="NoNominalDiameterBreak"
  ValueURI="http://sandbox.dexpi.org/rdl/NoNominalDiameterBreak"
  Format="anyURI" />
```

9.49.4.4. PipingClassBreakSpecialization

Description: A specialization indicating if the PropertyBreak is a composition break or not.

RDL: PIPING CLASS BREAK SPECIALIZATION
http://sandbox.dexpi.org/rdl/PipingClassBreakSpecialization

Attribute Type: PipingClassBreakClassification

Example Value: piping class break
(PIPING CLASS BREAK, http://sandbox.dexpi.org/rdl/PipingClassBreak)

Proteus Schema Implementation: GenericAttribute of the PropertyBreak (use case Classification).

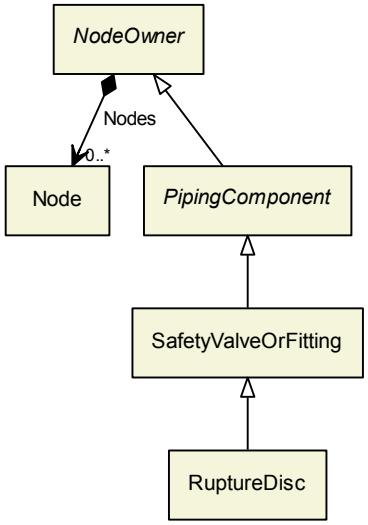
Example:

```
<GenericAttribute
  Name="PipingClassBreakSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingClassBreakSpecialization"
  Value="PipingClassBreak"
  ValueURI="http://sandbox.dexpi.org/rdl/PipingClassBreak"
  Format="anyURI" />
```

9.50. RuptureDisc

RDL: RUPTURE DISC
http://data.posccaesar.org/rdl/RDS8372601

9.50.1. Overview



Superclasses:

- SafetyValveOrFitting

Subclasses: No subclasses.

9.50.2. Components

No components.

9.50.3. Model References

No model references.

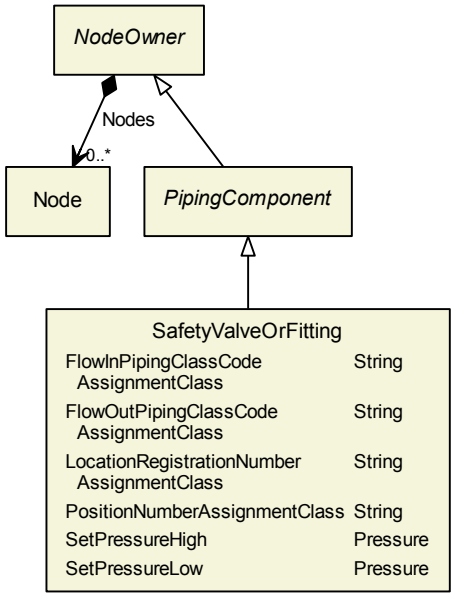
9.50.4. Attributes

No attributes.

9.51. SafetyValveOrFitting

RDL: SAFETY VALVE OR FITTING
http://sandbox.dexpi.org/rdl/SafetyValveOrFitting

9.51.1. Overview



Superclasses:

- PipingComponent

Subclasses:

- BreatherValve
- FlameArrestor
- RuptureDisc
- SpringLoadedAngleGlobeSafetyValve
- SpringLoadedGlobeSafetyValve

9.51.2. Components

No components.

9.51.3. Model References

No model references.

9.51.4. Attributes

9.51.4.1. FlowInPipingClassCodeAssignmentClass

Description: The code of the piping class at the flow in side of SafetyValveOrFitting.

RDL: FLOW IN PIPING CLASS CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/FlowInPipingClassCodeAssignmentClass

Attribute Type: String

Example Value: ”75HB13”

Proteus Schema Implementation: GenericAttribute of the SafetyValveOrFitting (use case String).

Example:

```
<GenericAttribute
  Name="FlowInPipingClassCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/FlowInPipingClassCodeAssignmentClass"
  Value="75HB13"
  Format="string" />
```

9.51.4.2. FlowOutPipingClassCodeAssignmentClass

Description: The code of the piping class at the flow out side of SafetyValveOrFitting.

RDL: FLOW OUT PIPING CLASS CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/FlowOutPipingClassCodeAssignmentClass

Attribute Type: String

Example Value: "75HB13"

Proteus Schema Implementation: GenericAttribute of the SafetyValveOrFitting (use case String).

Example:

```
<GenericAttribute
  Name="FlowOutPipingClassCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/FlowOutPipingClassCodeAssignmentClass"
  Value="75HB13"
  Format="string" />
```

9.51.4.3. LocationRegistrationNumberAssignmentClass

Description: The location registration number of the SafetyValveOrFitting.

RDL: LOCATION REGISTRATION NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/LocationRegistrationNumberAssignmentClass

Attribute Type: String

Example Value: "L-N123"

Proteus Schema Implementation: GenericAttribute of the SafetyValveOrFitting (use case String).

Example:

```
<GenericAttribute
  Name="LocationRegistrationNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/LocationRegistrationNumberAssignmentClass"
  Value="L−N123"
  Format="string" />
```

9.51.4.4. PositionNumberAssignmentClass

Description: The position number of the SafetyValveOrFitting.

RDL: POSITION NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PositionNumberAssignmentClass

Attribute Type: String

Example Value: "SV 104.01"

Proteus Schema Implementation: GenericAttribute of the SafetyValveOrFitting (use case String).

Example:

```
<GenericAttribute
  Name="PositionNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PositionNumberAssignmentClass"
  Value="SV 104.01"
  Format="string" />
```

9.51.4.5. SetPressureHigh

Description: The high pressure at which the SafetyValveOrFitting is activated.

RDL: SET PRESSURE HIGH
http://sandbox.dexpi.org/rdl/SetPressureHigh

Attribute Type: Pressure

Example Value: 30 barg

Proteus Schema Implementation: GenericAttribute of the SafetyValveOrFitting (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="SetPressureHigh"
  AttributeURI="http://sandbox.dexpi.org/rdl/SetPressureHigh"
  Value="30"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

9.51.4.6. SetPressureLow

Description: The low pressure at which the SafetyValveOrFitting is activated.

RDL: SET PRESSURE LOW
http://sandbox.dexpi.org/rdl/SetPressureLow

Attribute Type: Pressure

Example Value: 0 barg

Proteus Schema Implementation: GenericAttribute of the SafetyValveOrFitting (use case Physical Quantity).

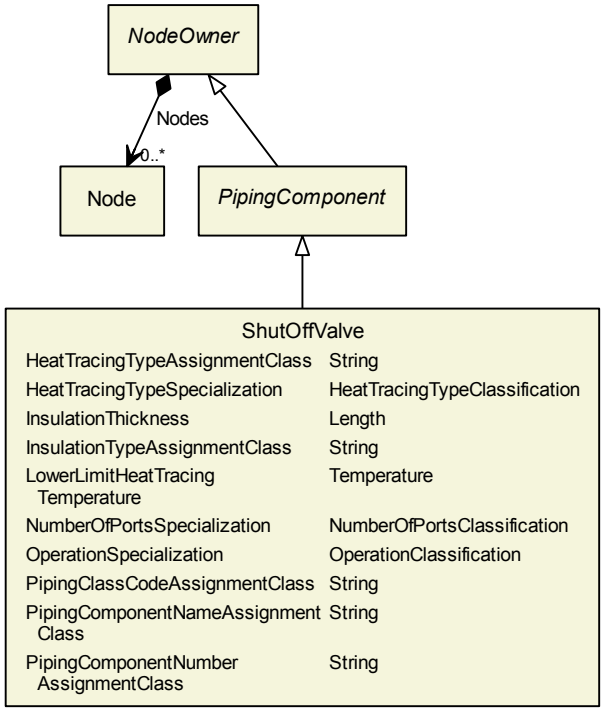
Example:

```
<GenericAttribute
  Name="SetPressureLow"
  AttributeURI="http://sandbox.dexpi.org/rdl/SetPressureLow"
  Value="0"
  Format="double"
  Units="BarGauge"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1348874" />
```

9.52. ShutOffValve

RDL: SHUT OFF VALVE
http://sandbox.dexpi.org/rdl/ShutOffValve

9.52.1. Overview



Superclasses:

- PipingComponent

Subclasses:

- AngleBallValve
- AngleGlobeValve
- AnglePlugValve
- AngleValve
- BallValve

- ButterflyValve
- GateValve
- GlobeValve
- NeedleValve
- PlugValve
- StraightwayValve

9.52.2. Components

No components.

9.52.3. Model References

No model references.

9.52.4. Attributes

9.52.4.1. HeatTracingTypeAssignmentClass

Description: The heat tracing type of the ShutOffValve, represented as a string.

RDL: HEAT TRACING TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass

Attribute Type: String

Example Value: "E"

Proteus Schema Implementation: GenericAttribute of the ShutOffValve (use case String).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass"
  Value="E"
  Format="string" />
```

9.52.4.2. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type of the ShutOffValve.

RDL: HEAT TRACING TYPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization

Attribute Type: HeatTracingTypeClassification

Example Value: electrical heat tracing system
(ELECTRICAL HEAT TRACING SYSTEM, http://data.posccaesar.org/rdl/RDS11854600)

Proteus Schema Implementation: GenericAttribute of the ShutOffValve (use case Classification).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization"
  Value="ElectricalHeatTracingSystem"
  ValueURI="http://data.posccaesar.org/rdl/RDS11854600"
  Format="anyURI" />
```

9.52.4.3. InsulationThickness

Description: The insulation thickness of the ShutOffValve.

RDL: INSULATION THICKNESS
http://data.posccaesar.org/rdl/RDS4238040

Attribute Type: Length

Example Value: 8 mm

Proteus Schema Implementation: GenericAttribute of the ShutOffValve (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="InsulationThickness"
  AttributeURI="http://data.posccaesar.org/rdl/RDS4238040"
  Value="8"
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

9.52.4.4. InsulationTypeAssignmentClass

Description: The identification code for the insulation type of the ShutOffValve. So far, DEXPI does not define restrictions for valid values.

RDL: INSULATION TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass

Attribute Type: String

Example Value: "Q"

Proteus Schema Implementation: GenericAttribute of the ShutOffValve (use case String).

Example:

```
<GenericAttribute
  Name="InsulationTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass"
  Value="Q"
  Format="string" />
```

9.52.4.5. LowerLimitHeatTracingTemperature

Description: The temperature that a heat tracing system must ensure for the ShutOffValve.

RDL: LOWER LIMIT HEAT TRACING TEMPERATURE
http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the ShutOffValve (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitHeatTracingTemperature"
  AttributeURI="http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

9.52.4.6. NumberOfPortsSpecialization

Description: A specialization indicating the number of ports of the ShutOffValve.

RDL: NUMBER OF PORTS SPECIALIZATION
http://sandbox.dexpi.org/rdl/NumberOfPortsSpecialization

Attribute Type: NumberOfPortsClassification

Example Value: 2 port valve
(TWO PORT VALVE, http://data.posccaesar.org/rdl/RDS11506315)

Proteus Schema Implementation: GenericAttribute of the ShutOffValve (use case Classification).

Example:

```
<GenericAttribute
  Name="NumberOfPortsSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/NumberOfPortsSpecialization"
  Value="TwoPortValve"
  ValueURI="http://data.posccaesar.org/rdl/RDS11506315"
  Format="anyURI" />
```

9.52.4.7. OperationSpecialization

Description: A specialization indicating the operation of the ShutOffValve.

RDL: OPERATION SPECIALIZATION
http://sandbox.dexpi.org/rdl/OperationSpecialization

Attribute Type: OperationClassification

Example Value: continuous operation
(CONTINUOUS OPERATION, http://data.posccaesar.org/rdl/RDS9710162)

Proteus Schema Implementation: GenericAttribute of the ShutOffValve (use case Classification).

Example:

```
<GenericAttribute
  Name="OperationSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/OperationSpecialization"
  Value="ContinuousOperation"
  ValueURI="http://data.posccaesar.org/rdl/RDS9710162"
  Format="anyURI" />
```

9.52.4.8. PipingClassCodeAssignmentClass

Description: The identification code of the piping class of the ShutOffValve. So far, DEXPI does not define restrictions for valid values.

RDL: PIPING CLASS CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingClassCodeAssignmentClass

Attribute Type: String

Example Value: "75HB13"

Proteus Schema Implementation: GenericAttribute of the ShutOffValve (use case String).

Example:

```
<GenericAttribute
  Name="PipingClassCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingClassCodeAssignmentClass"
  Value="75HB13"
  Format="string" />
```

9.52.4.9. PipingComponentNameAssignmentClass

Description: The piping component name of the ShutOffValve.

RDL: PIPING COMPONENT NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingComponentNameAssignmentClass

Attribute Type: String

Example Value: "73KH12"

Proteus Schema Implementation: GenericAttribute of the ShutOffValve (use case String).

Example:

```
<GenericAttribute
  Name="PipingComponentNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingComponentNameAssignmentClass"
  Value="73KH12"
  Format="string" />
```

9.52.4.10. PipingComponentNumberAssignmentClass

Description: The piping component number of the ShutOffValve.

RDL: PIPING COMPONENT NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PipingComponentNumberAssignmentClass

Attribute Type: String

Example Value: "C2"

Proteus Schema Implementation: GenericAttribute of the ShutOffValve (use case String).

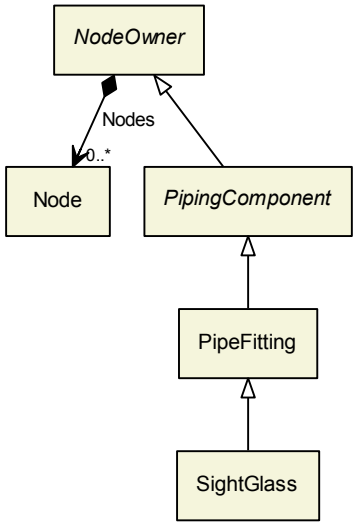
Example:

```
<GenericAttribute
  Name="PipingComponentNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PipingComponentNumberAssignmentClass"
  Value="C2"
  Format="string" />
```

9.53. SightGlass

RDL: SIGHT GLASS
http://data.posccaesar.org/rdl/RDS648674

9.53.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.53.2. Components

No components.

9.53.3. Model References

No model references.

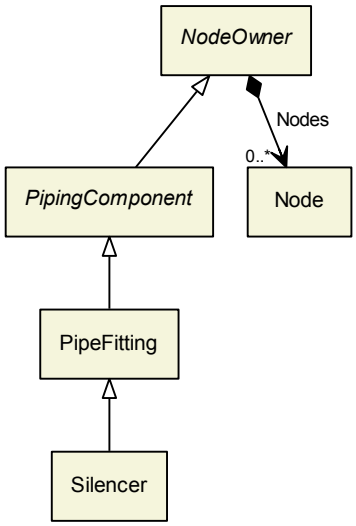
9.53.4. Attributes

No attributes.

9.54. Silencer

RDL: SILENCER
http://data.posccaesar.org/rdl/RDS1049368591

9.54.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.54.2. Components

No components.

9.54.3. Model References

No model references.

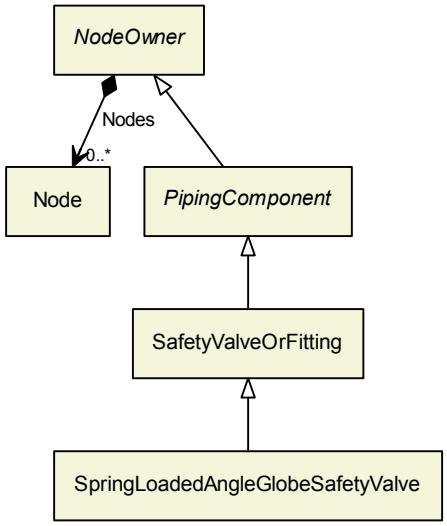
9.54.4. Attributes

No attributes.

9.55. SpringLoadedAngleGlobeSafetyValve

RDL: SPRING LOADED ANGLE GLOBE SAFETY VALVE
http://sandbox.dexpi.org/rdl/SpringLoadedAngleGlobeSafetyValve

9.55.1. Overview



Superclasses:

- SafetyValveOrFitting

Subclasses: No subclasses.

9.55.2. Components

No components.

9.55.3. Model References

No model references.

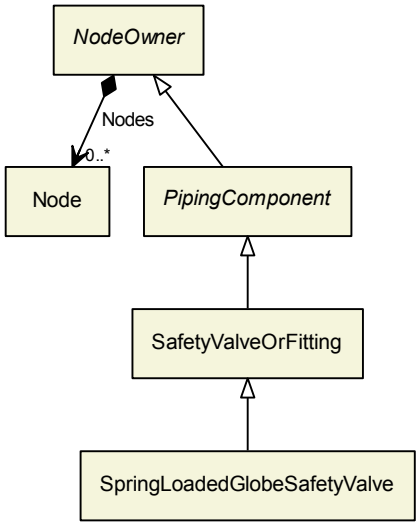
9.55.4. Attributes

No attributes.

9.56. SpringLoadedGlobeSafetyValve

RDL: SPRING LOADED GLOBE SAFETY VALVE
http://sandbox.dexpi.org/rdl/SpringLoadedGlobeSafetyValve

9.56.1. Overview



Superclasses:

- SafetyValveOrFitting

Subclasses: No subclasses.

9.56.2. Components

No components.

9.56.3. Model References

No model references.

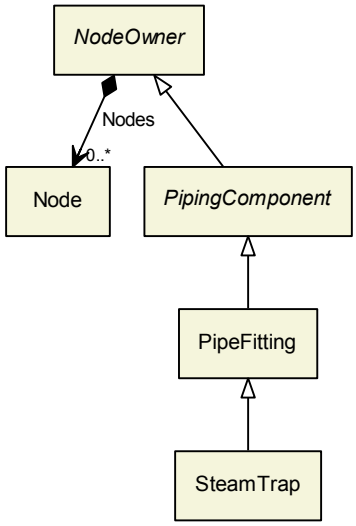
9.56.4. Attributes

No attributes.

9.57. SteamTrap

RDL: STEAM TRAP
http://data.posccaesar.org/rdl/RDS5782388

9.57.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.57.2. Components

No components.

9.57.3. Model References

No model references.

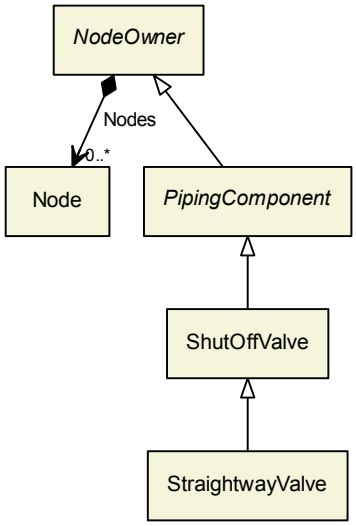
9.57.4. Attributes

No attributes.

9.58. StraightwayValve

RDL: STRAIGHTWAY VALVE
http://data.posccaesar.org/rdl/RDS9390905

9.58.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

9.58.2. Components

No components.

9.58.3. Model References

No model references.

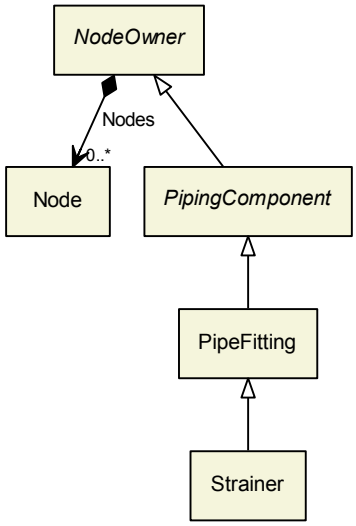
9.58.4. Attributes

No attributes.

9.59. Strainer

RDL: STRAINER
http://data.posccaesar.org/rdl/RDS422504

9.59.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.59.2. Components

No components.

9.59.3. Model References

No model references.

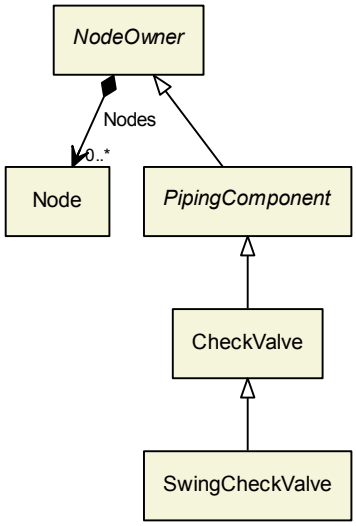
9.59.4. Attributes

No attributes.

9.60. SwingCheckValve

RDL: SWING CHECK VALVE
http://data.posccaesar.org/rdl/RDS610424

9.60.1. Overview



Superclasses:

- CheckValve

Subclasses: No subclasses.

9.60.2. Components

No components.

9.60.3. Model References

No model references.

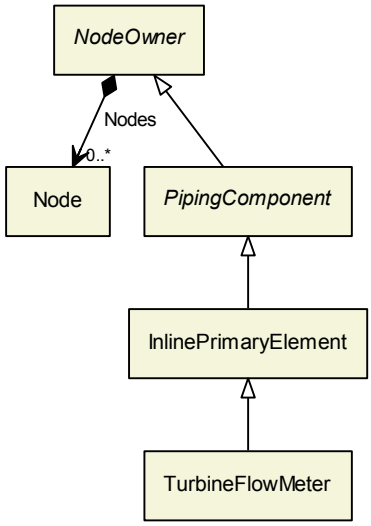
9.60.4. Attributes

No attributes.

9.61. TurbineFlowMeter

RDL: TURBINE FLOW METER
http://data.posccaesar.org/rdl/RDS417914

9.61.1. Overview



Superclasses:

- InlinePrimaryElement

Subclasses: No subclasses.

9.61.2. Components

No components.

9.61.3. Model References

No model references.

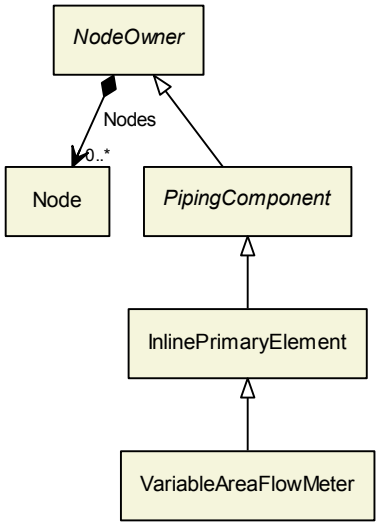
9.61.4. Attributes

No attributes.

9.62. VariableAreaFlowMeter

RDL: VARIABLE AREA FLOW METER
http://data.posccaesar.org/rdl/RDS418229

9.62.1. Overview



Superclasses:

- InlinePrimaryElement

Subclasses: No subclasses.

9.62.2. Components

No components.

9.62.3. Model References

No model references.

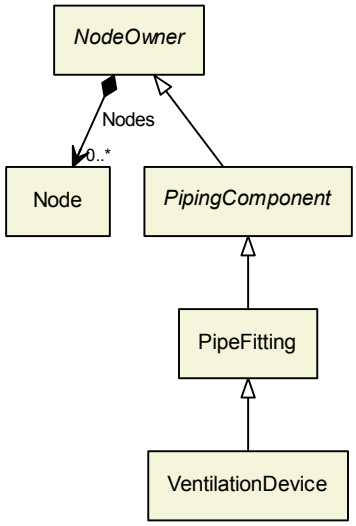
9.62.4. Attributes

No attributes.

9.63. VentilationDevice

RDL: VENTILATION DEVICE
http://data.posccaesar.org/rdl/RDS1049335351

9.63.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

9.63.2. Components

No components.

9.63.3. Model References

No model references.

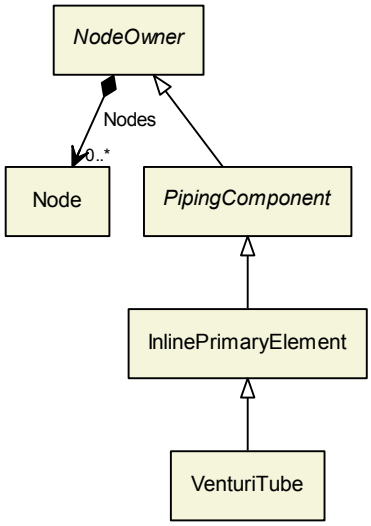
9.63.4. Attributes

No attributes.

9.64. VenturiTube

RDL: VENTURI TUBE
http://data.posccaesar.org/rdl/RDS648044

9.64.1. Overview



Superclasses:

- InlinePrimaryElement

Subclasses: No subclasses.

9.64.2. Components

No components.

9.64.3. Model References

No model references.

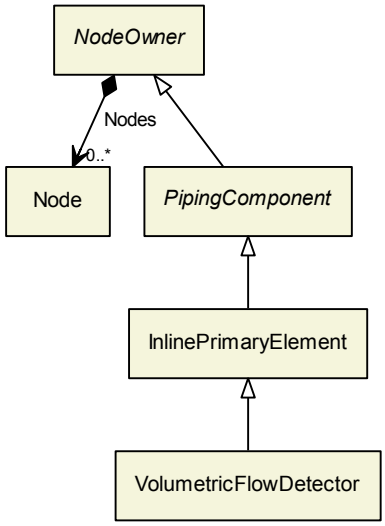
9.64.4. Attributes

No attributes.

9.65. VolumetricFlowDetector

RDL: VOLUMETRIC FLOW DETECTOR
http://sandbox.dexpi.org/rdl/VolumetricFlowDetector

9.65.1. Overview



Superclasses:

- InlinePrimaryElement

Subclasses: No subclasses.

9.65.2. Components

No components.

9.65.3. Model References

No model references.

9.65.4. Attributes

No attributes.

10. Instrumentation

10.1. Overview

The instrumentation model is still subject to discussions of the DEXPI group and other groups in the ISO 15926 community!

10.2. ActuatingFunction

Description: A function for acting control structures relating to the process.

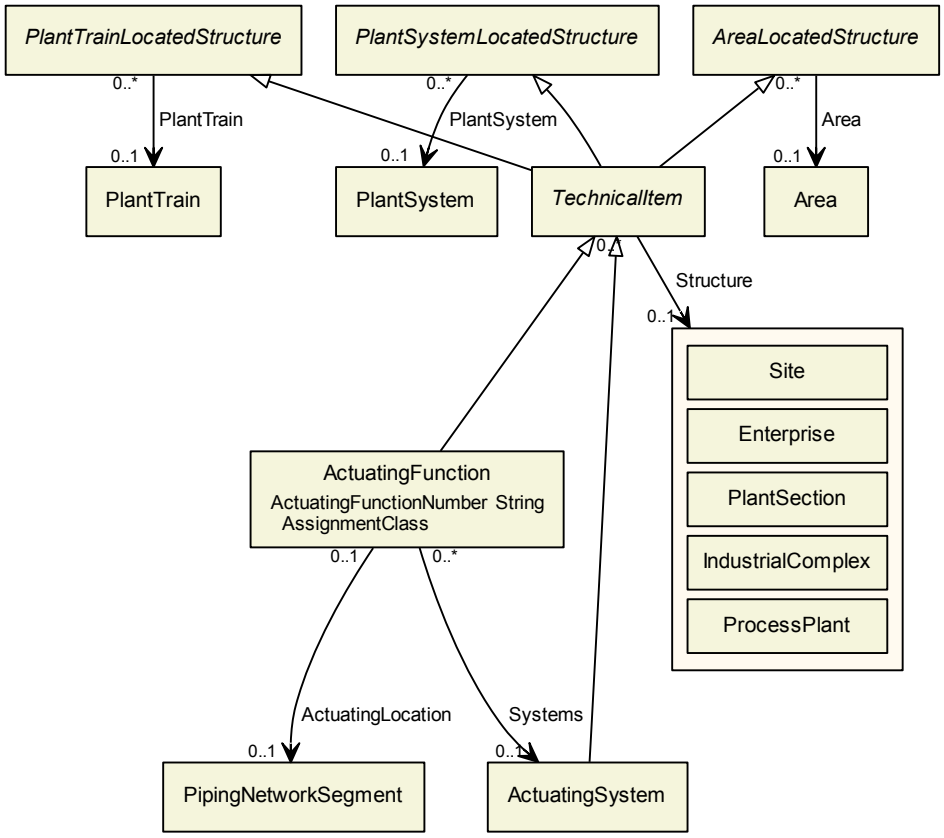
RDL: ACTUATING FUNCTION
http://sandbox.dexpi.org/rdl/ActuatingFunction

Proteus Schema Implementation: Proteus ActuatingFunction element:

- ComponentClass: ActuatingFunction
- ComponentClassUri: http://sandbox.dexpi.org/rdl/ActuatingFunction

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.2.1. Overview



Superclasses:

- TechnicalItem

Subclasses: No subclasses.

10.2.2. Components

No components.

10.2.3. Model References

10.2.3.1. ActuatingLocation

Description: The actuating location of the ActuatingFunction.

Type: PipingNetworkSegment

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the ActuatingFunction element representing the ActuatingFunction: is located in
- Association type for the association *target*, i.e., for the PipingNetworkSegment element representing the PipingNetworkSegment: is the location of

Both Associations must be used.

Example:

```
<ActuatingFunction ID="AF_1" ...>
    ...
    <Association Type="is located in" ItemID="PNS_1" />
    ...
</ActuatingFunction>
...
<PipingNetworkSegment ID="PNS_1" ...>
    ...
    <Association Type="is the location of" ItemID="AF_1" />
    ...
</PipingNetworkSegment>
```

10.2.3.2. Systems

Description: The ActuatingSystem that implements the ActuatingFunction.

Type: ActuatingSystem

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the ActuatingFunction element representing the ActuatingFunction: is fulfilled by
- Association type for the association *target*, i.e., for the ActuatingSystem element representing the ActuatingSystem: fulfills

Both Associations must be used.

Example:

```
<ActuatingFunction ID="AF_1" ...>
    ...
    <Association Type="is fulfilled by" ItemID="PS_1" />
    ...
</ActuatingFunction>
...
<ActuatingSystem ID="PS_1" ...>
    ...
    <Association Type="fulfills" ItemID="AF_1" />
    ...
</ActuatingSystem>
```

10.2.4. Attributes

10.2.4.1. ActuatingFunctionNumberAssignmentClass

Description: An identifier for the ActuatingFunction. It usually contains the identifier of the ProcessInstrumentationFunction that includes the ActuatingFunction (see ProcessInstrumentationFunctionNumberAssignmentClass).

RDL: ACTUATING FUNCTION NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ActuatingFunctionNumberAssignmentClass

Attribute Type: String

Example Value: "HV4750.01"

Proteus Schema Implementation: GenericAttribute of the ActuatingFunction (use case String).

Example:

```
<GenericAttribute
  Name="ActuatingFunctionNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ActuatingFunctionNumberAssignmentClass"
  Value="HV4750.01"
  Format="string" />
```

10.3. ActuatingSystem

Description: An assembly of artefacts that is designed to fulfill an ActuatingFunction.

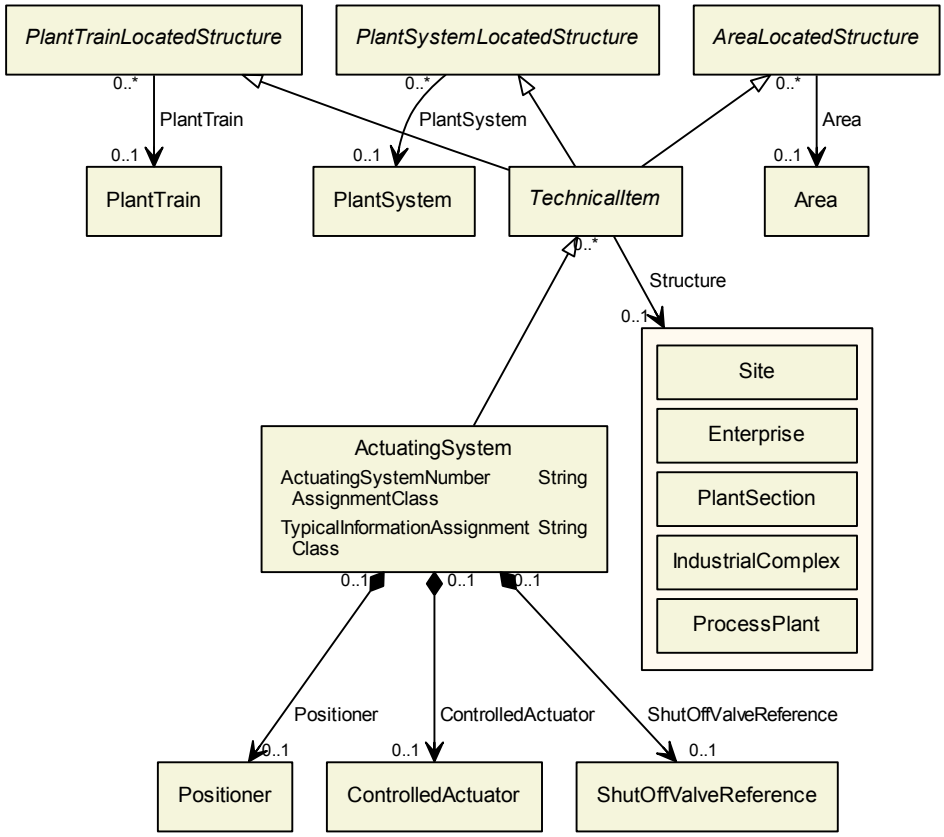
RDL: ACTUATING SYSTEM
http://sandbox.dexpi.org/rdl/ActuatingSystem

Proteus Schema Implementation: Proteus ActuatingSystem element:

- ComponentClass: ActuatingSystem
- ComponentClassUri: http://sandbox.dexpi.org/rdl/ActuatingSystem

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.3.1. Overview



Superclasses:

- TechnicalItem

Subclasses: No subclasses.

10.3.2. Components

10.3.2.1. ControlledActuator

Description: The controlled actuator of the ActuatingSystem.

Type: ControlledActuator

Cardinality: 0..1

Proteus Schema Implementation: The XML element corresponding to the ControlledActuator is a child of the XML element corresponding to the ActuatingSystem.

Example:

```
<ActuatingSystem ...>
    ...
    <ActuatingSystemComponent
        ComponentClass="ControlledActuator"
        ComponentClassURI="http://sandbox.dexpi.org/rdl/ControlledActuator" ...>
        ...
    </ActuatingSystemComponent>
    ...
</ActuatingSystem>
```

10.3.2.2. Positioner

Description: The positioner of the ActuatingSystem.

Type: Positioner

Cardinality: 0..1

Proteus Schema Implementation: TODO

10.3.2.3. ShutOffValveReference

Description: The reference to a shut off valve the ActuatingSystem.

Type: ShutOffValveReference

Cardinality: 0..1

Proteus Schema Implementation: TODO

10.3.3. Model References

No model references.

10.3.4. Attributes

10.3.4.1. ActuatingSystemNumberAssignmentClass

Description: The number of the ActuatingSystem

RDL: ACTUATING SYSTEM NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ActuatingSystemNumberAssignmentClass

Attribute Type: String

Example Value: "FT0001"

Proteus Schema Implementation: GenericAttribute of the ActuatingSystem (use case String).

Example:

```
<GenericAttribute
  Name="ActuatingSystemNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ActuatingSystemNumberAssignmentClass"
  Value="FT0001"
  Format="string" />
```

10.3.4.2. TypicalInformationAssignmentClass

Description: Typical information about the ActuatingSystem.

RDL: TYPICAL INFORMATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/TypicalInformationAssignmentClass

Attribute Type: String

Example Value: "V3"

Proteus Schema Implementation: GenericAttribute of the ActuatingSystem (use case String).

Example:

```
<GenericAttribute
  Name="TypicalInformationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TypicalInformationAssignmentClass"
  Value="V3"
  Format="string" />
```

10.4. ControlledActuator

Description: A transducer that is intended to convert energy (electric, mechanical, pneumatic or hydraulic) from an external source into kinetic energy (motion) in response to a signal or or power input.

RDL: CONTROLLED ACTUATOR
http://sandbox.dexpi.org/rdl/ControlledActuator

Proteus Schema Implementation: Proteus ActuatingSystemComponent element:

- ComponentClass: ControlledActuator
- ComponentClassUri: http://sandbox.dexpi.org/rdl/ControlledActuator

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.4.1. Overview

ControlledActuator	
DeviceTypeNameAssignmentClass	String
FailActionRepresentation AssignmentClass	String
FailActionSpecialization	FailActionClassification
SubTagNameAssignmentClass	String

Superclasses: No superclasses.

Subclasses: No subclasses.

10.4.2. Components

No components.

10.4.3. Model References

No model references.

10.4.4. Attributes

10.4.4.1. DeviceTypeNameAssignmentClass

Description: The device type of the ControlledActuator.

RDL: DEVICE TYPE NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/DeviceTypeNameAssignmentClass

Attribute Type: String

Example Value: "general actuator"

Proteus Schema Implementation: GenericAttribute of the ControlledActuator (use case String).

Example:

```
<GenericAttribute
  Name="DeviceTypeNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/DeviceTypeNameAssignmentClass"
  Value="general actuator"
  Format="string" />
```

10.4.4.2. FailActionRepresentationAssignmentClass

Description: A readable representation of the fail action of the ControlledActuator. This attribute should also be referenced in the graphics if applicable.

RDL: FAIL ACTION REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/FailActionRepresentationAssignmentClass

Attribute Type: String

Example Value: "F.O."

Proteus Schema Implementation: GenericAttribute of the ControlledActuator (use case String).

Example:

```
<GenericAttribute
  Name="FailActionRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/FailActionRepresentationAssignmentClass"
  Value="F.O."
  Format="string" />
```

10.4.4.3. FailActionSpecialization

Description: The fail action of the ControlledActuator.

RDL: FAIL ACTION SPECIALIZATION
http://sandbox.dexpi.org/rdl/FailActionSpecialization

Attribute Type: FailActionClassification

Example Value: fail open
(FAIL OPEN, http://data.posccaesar.org/rdl/RDS5921445)

Proteus Schema Implementation: GenericAttribute of the ControlledActuator (use case Classification).

Example:

```
<GenericAttribute
  Name="FailActionSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/FailActionSpecialization"
  Value="FailOpen"
  ValueURI="http://data.posccaesar.org/rdl/RDS5921445"
  Format="anyURI" />
```

10.4.4.4. SubTagNameAssignmentClass

Description: The sub tag name of the ControlledActuator.

RDL: SUB TAG NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass

Attribute Type: String

Example Value: "PY"

Proteus Schema Implementation: GenericAttribute of the ControlledActuator (use case String).

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="PY"
  Format="string" />
```

10.5. InlinePrimaryElementReference

Description: A reference to an inline primary element that is part of a pipe.

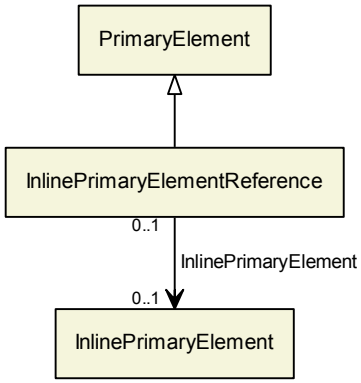
RDL: INLINE PRIMARY ELEMENT REFERENCE
http://sandbox.dexpi.org/rdl/InlinePrimaryElementReference

Proteus Schema Implementation: Proteus ProcessSignalGeneratingSystemComponent element:

- ComponentClass: InlinePrimaryElementReference
- ComponentClassUri: http://sandbox.dexpi.org/rdl/InlinePrimaryElementReference

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.5.1. Overview



Superclasses:

- PrimaryElement

Subclasses: No subclasses.

10.5.2. Components

No components.

10.5.3. Model References

10.5.3.1. InlinePrimaryElement

Description: The inline primary element referenced by the InlinePrimaryElementReference.

Type: InlinePrimaryElement

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the ActuatingSystemComponent element representing the InlinePrimaryElementReference: refers to
- Association type for the association *target*, i.e., for the PipingComponent element representing the InlinePrimaryElement: is referenced by

Both Associations must be used.

Example:

```
<ActuatingSystemComponent ID="ActSysComp1" ...>
    ...
    <Association Type="refers to" ItemID="InlinePrimaryElement1"/>
    ...
</ActuatingSystemComponent>
...
<PipingComponent ID="InlinePrimaryElement1" ...>
    ...
    <Association Type="is referenced by" ItemID="ActSysComp1"/>
    ...
</PipingComponent>
```

10.5.4. Attributes

No attributes.

10.6. InstrumentationLoopFunction

Description: An identified collection of related ProcessInstrumentationFunctions that interact for a known purpose.

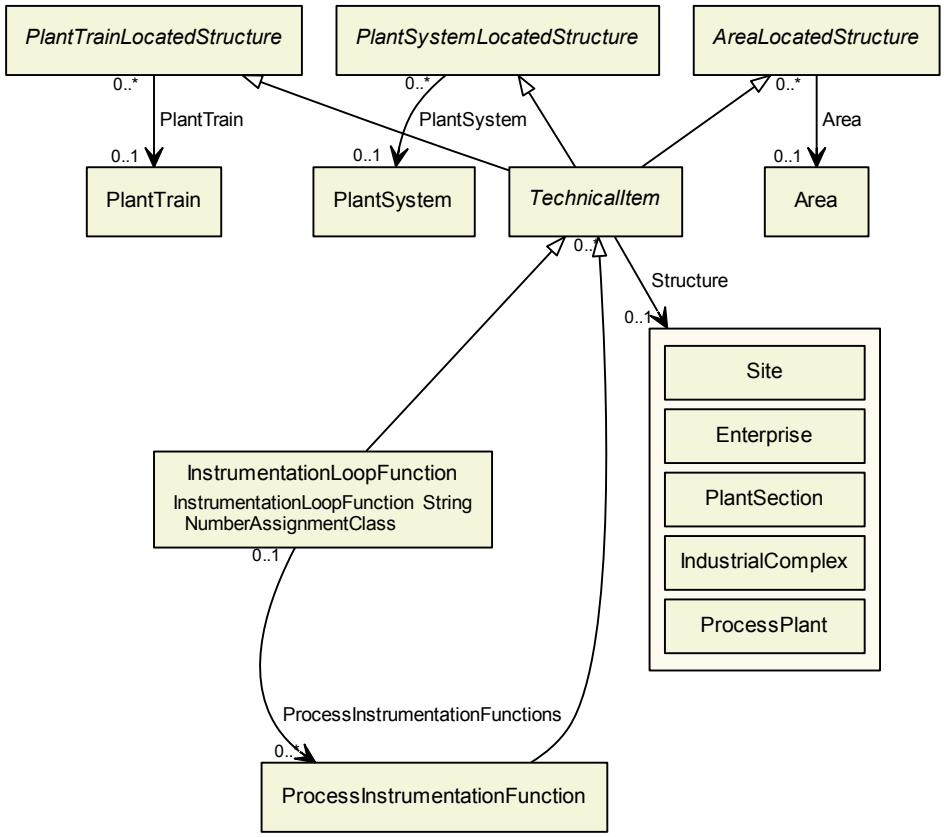
RDL: INSTRUMENTATION LOOP FUNCTION
http://sandbox.dexpi.org/rdl/InstrumentationLoopFunction

Proteus Schema Implementation: Proteus InstrumentationLoopFunction element:

- ComponentClass: InstrumentationLoopFunction
- ComponentClassUri: http://sandbox.dexpi.org/rdl/InstrumentationLoopFunction

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.6.1. Overview



Superclasses:

- TechnicalItem

Subclasses: No subclasses.

10.6.2. Components

No components.

10.6.3. Model References

10.6.3.1. ProcessInstrumentationFunctions

Description: The ProcessInstrumentationFunctions that constitute this InstrumentationLoopFunction.

Type: ProcessInstrumentationFunction

Source Multiplicity: 0..1

Target Multiplicity: 0..*

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the InstrumentationLoopFunction element representing the InstrumentationLoopFunction: is a collection including
- Association type for the association *target*, i.e., for the ProcessInstrumentationFunction element representing the ProcessInstrumentationFunction: is a part of

Both Associations must be used.

Example:

```
<InstrumentationLoopFunction ID="ILF_1" ...>
    ...
    <Association Type="is a collection including" ItemID="PIF_1" />
    ...
</InstrumentationLoopFunction>
...
<ProcessInstrumentationFunction ID="PIF_1" ...>
    ...
    <Association Type="is a part of" ItemID="ILF_1" />
    ...
</ProcessInstrumentationFunction>
```

10.6.4. Attributes

10.6.4.1. InstrumentationLoopFunctionNumberAssignmentClass

Description: The identification number of the InstrumentationLoopFunction.

RDL: INSTRUMENTATION LOOP FUNCTION NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/InstrumentationLoopFunctionNumberAssignmentClass

Attribute Type: String

Example Value: "4750.01"

Proteus Schema Implementation: GenericAttribute of the InstrumentationLoopFunction (use case String).

Example:

```
<GenericAttribute
  Name="InstrumentationLoopFunctionNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/InstrumentationLoopFunctionNumberAssignmentClass"
  Value="4750.01"
  Format="string" />
```

10.7. MeasuringLineFunction

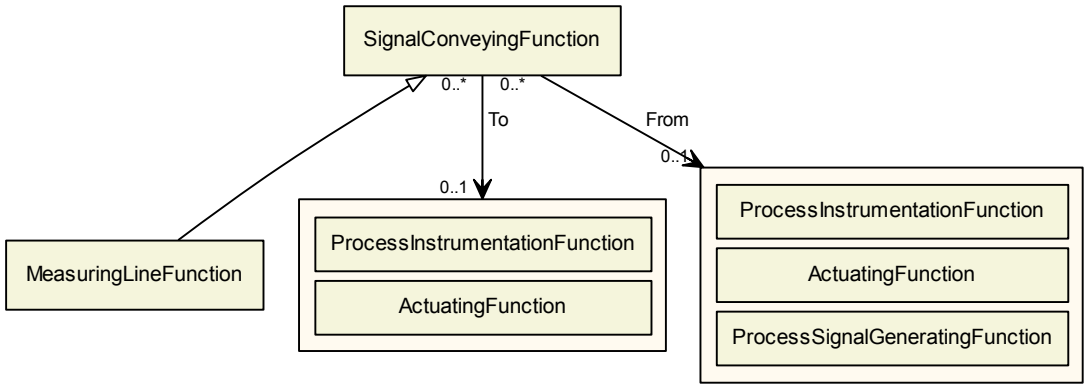
RDL: MEASURING LINE FUNCTION
http://sandbox.dexpi.org/rdl/MeasuringLineFunction

Proteus Schema Implementation: Proteus InformationFlow element:

- ComponentClass: MeasuringLineFunction
- ComponentClassUri: http://sandbox.dexpi.org/rdl/MeasuringLineFunction

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.7.1. Overview



Superclasses:

- SignalConveyingFunction

Subclasses: No subclasses.

10.7.2. Components

No components.

10.7.3. Model References

No model references.

10.7.4. Attributes

No attributes.

10.8. OfflinePrimaryElement

Description: A primary element that is not part of a pipe.

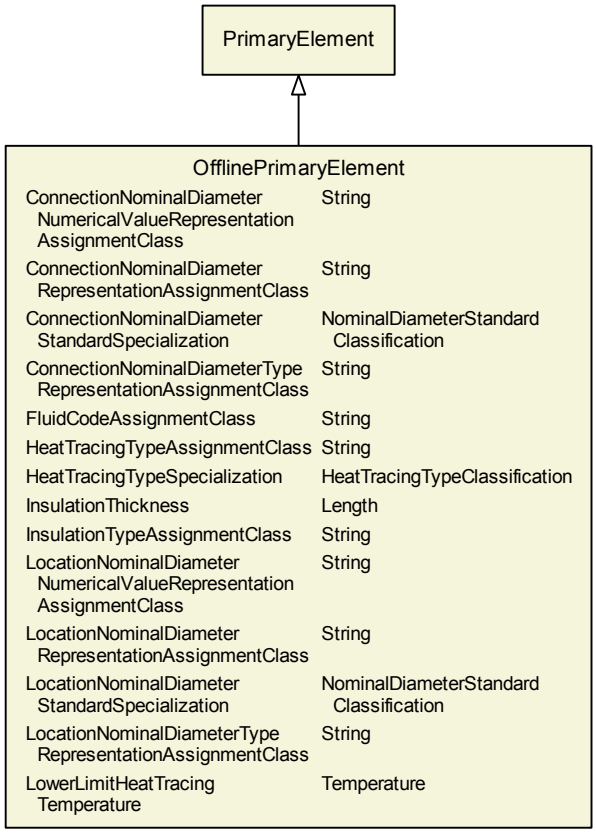
RDL: OFFLINE PRIMARY ELEMENT
http://sandbox.dexpi.org/rdl/OfflinePrimaryElement

Proteus Schema Implementation: Proteus ProcessSignalGeneratingSystemComponent element:

- ComponentClass: OfflinePrimaryElement
- ComponentClassUri: http://sandbox.dexpi.org/rdl/OfflinePrimaryElement

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.8.1. Overview



Superclasses:

- PrimaryElement

Subclasses: No subclasses.

10.8.2. Components

No components.

10.8.3. Model References

No model references.

10.8.4. Attributes

10.8.4.1. ConnectionNominalDiameterNumericalValueRepresentationAssignmentClass

Description: A readable representation of the numerical value of the nominal diameter at the device connection of the OfflinePrimaryElement. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: CONNECTION NOMINAL DIAMETER NUMERICAL VALUE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ConnectionNominalDiameterNumericalValueRepresentationAssignmentClass

Attribute Type: String

Example Value: "1/2"

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="ConnectionNominalDiameterNumericalValueRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/
      ConnectionNominalDiameterNumericalValueRepresentationAssignmentClass"
  Value="1/2"
  Format="string" />
```

10.8.4.2. ConnectionNominalDiameterRepresentationAssignmentClass

Description: A readable representation of the nominal diameter at the device connection of the OfflinePrimaryElement. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: CONNECTION NOMINAL DIAMETER REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ConnectionNominalDiameterRepresentationAssignmentClass

Attribute Type: String

Example Value: "NPS 1/2"

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="ConnectionNominalDiameterRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ConnectionNominalDiameterRepresentationAssignmentClass"
  Value="NPS 1/2"
  Format="string" />
```

10.8.4.3. ConnectionNominalDiameterStandardSpecialization

Description: The nominal diameter of the device connection of the OfflinePrimaryElement, given as a reference to a nominal diameter standard and value.

RDL: CONNECTION NOMINAL DIAMETER STANDARD SPECIALIZATION
http://sandbox.dexpi.org/rdl/ConnectionNominalDiameterStandardSpecialization

Attribute Type: NominalDiameterStandardClassification

Example Value: NPS 1/2
(NPS 1/2 ARTEFACT, http://data.posccaesar.org/rdl/RDS20863408113)

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case Classification).

Example:

```
<GenericAttribute
  Name="ConnectionNominalDiameterStandardSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/ConnectionNominalDiameterStandardSpecialization"
  Value="Nps1/2Artefact"
```

```
  ValueURI="http://data.posccaesar.org/rdl/RDS20863408113"
  Format="anyURI" />
```

10.8.4.4. ConnectionNominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter at the device connection of the OfflinePrimaryElement. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: CONNECTION NOMINAL DIAMETER TYPE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ConnectionNominalDiameterTypeRepresentationAssignmentClass

Attribute Type: String

Example Value: "NPS"

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="ConnectionNominalDiameterTypeRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/
      ConnectionNominalDiameterTypeRepresentationAssignmentClass"
  Value="NPS"
  Format="string" />
```

10.8.4.5. FluidCodeAssignmentClass

Description: The identification code of the fluid related to the OfflinePrimaryElement. So far, DEXPI does not define restrictions for valid values.

RDL: FLUID CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/FluidCodeAssignmentClass

Attribute Type: String

Example Value: "MNb"

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="FluidCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/FluidCodeAssignmentClass"
  Value="MNb"
  Format="string" />
```

10.8.4.6. HeatTracingTypeAssignmentClass

Description: The heat tracing type related to the OfflinePrimaryElement, represented as a string.

RDL: HEAT TRACING TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass

Attribute Type: String

Example Value: "E"

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeAssignmentClass"
  Value="E"
  Format="string" />
```

10.8.4.7. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type related to the OfflinePrimaryElement.

RDL: HEAT TRACING TYPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization

Attribute Type: HeatTracingTypeClassification

Example Value: electrical heat tracing system
(ELECTRICAL HEAT TRACING SYSTEM, http://data.posccaesar.org/rdl/RDS11854600)

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case Classification).

Example:

```
<GenericAttribute
  Name="HeatTracingTypeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/HeatTracingTypeSpecialization"
  Value="ElectricalHeatTracingSystem"
  ValueURI="http://data.posccaesar.org/rdl/RDS11854600"
  Format="anyURI" />
```

10.8.4.8. InsulationThickness

Description: The insulation thickness of the OfflinePrimaryElement.

RDL: INSULATION THICKNESS
http://data.posccaesar.org/rdl/RDS4238040

Attribute Type: Length

Example Value: 40 mm

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="InsulationThickness"
  AttributeURI="http://data.posccaesar.org/rdl/RDS4238040"
  Value="40"
```

```
  Format="double"
  Units="Millimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357739" />
```

10.8.4.9. InsulationTypeAssignmentClass

Description: The identification code for the insulation type related to the OfflinePrimaryElement. So far, DEXPI does not define restrictions for valid values.

RDL: INSULATION TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass

Attribute Type: String

Example Value: "Q"

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="InsulationTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/InsulationTypeAssignmentClass"
  Value="Q"
  Format="string" />
```

10.8.4.10. LocationNominalDiameterNumericalValueRepresentationAssignmentClass

Description: A readable representation of the numerical value of the nominal diameter at the location of the OfflinePrimaryElement. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: LOCATION NOMINAL DIAMETER NUMERICAL VALUE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/LocationNominalDiameterNumericalValueRepresentationAssignmentClass

Attribute Type: String

Example Value: "25"

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="LocationNominalDiameterNumericalValueRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/
      LocationNominalDiameterNumericalValueRepresentationAssignmentClass"
  Value="25"
  Format="string" />
```

10.8.4.11. LocationNominalDiameterRepresentationAssignmentClass

Description: A readable representation of the nominal diameter at the location of the OfflinePrimaryElement. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: LOCATION NOMINAL DIAMETER REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/LocationNominalDiameterRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN 25"

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="LocationNominalDiameterRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/LocationNominalDiameterRepresentationAssignmentClass"
  Value="DN 25"
  Format="string" />
```

10.8.4.12. LocationNominalDiameterStandardSpecialization

Description: The nominal diameter of the location of the OfflinePrimaryElement, given as a reference to a nominal diameter standard and value.

RDL: LOCATION NOMINAL DIAMETER STANDARD SPECIALIZATION
http://sandbox.dexpi.org/rdl/LocationNominalDiameterStandardSpecialization

Attribute Type: NominalDiameterStandardClassification

Example Value: DN 25 (DIN 2448)
(DIN 2448 OBJECT DN 25, http://sandbox.dexpi.org/rdl/Din2448ObjectDn25)

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case Classification).

Example:

```
<GenericAttribute
  Name="LocationNominalDiameterStandardSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/LocationNominalDiameterStandardSpecialization"
  Value="Din2448ObjectDn25"
  ValueURI="http://sandbox.dexpi.org/rdl/Din2448ObjectDn25"
  Format="anyURI" />
```

10.8.4.13. LocationNominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter at the location of the OfflinePrimaryElement. The purpose of this value is to give a textual representation of the nominal diameter to be used in the graphics of a PID.

RDL: LOCATION NOMINAL DIAMETER TYPE REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/LocationNominalDiameterTypeRepresentationAssignmentClass

Attribute Type: String

Example Value: "DN"

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case String).

Example:

```
<GenericAttribute
  Name="LocationNominalDiameterTypeRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/LocationNominalDiameterTypeRepresentationAssignmentClass"
  Value="DN"
  Format="string" />
```

10.8.4.14. LowerLimitHeatTracingTemperature

Description: The temperature that a heat tracing system must ensure for the OfflinePrimaryElement.

RDL: LOWER LIMIT HEAT TRACING TEMPERATURE
http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature

Attribute Type: Temperature

Example Value: 100 °C

Proteus Schema Implementation: GenericAttribute of the OfflinePrimaryElement (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="LowerLimitHeatTracingTemperature"
  AttributeURI="http://sandbox.dexpi.org/rdl/LowerLimitHeatTracingTemperature"
  Value="100"
  Format="double"
  Units="DegreeCelsius"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1322684" />
```

10.9. Positioner

Description: A positioner.

RDL: POSITIONER
http://sandbox.dexpi.org/rdl/Positioner

Proteus Schema Implementation: Proteus ActuatingSystemComponent element:

- ComponentClass: Positioner
- ComponentClassUri: http://sandbox.dexpi.org/rdl/Positioner

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.9.1. Overview

Positioner	
DeviceTypeNameAssignmentClass	String
SubTagNameAssignmentClass	String

Superclasses: No superclasses.

Subclasses: No subclasses.

10.9.2. Components

No components.

10.9.3. Model References

No model references.

10.9.4. Attributes

10.9.4.1. DeviceTypeNameAssignmentClass

Description: The device type of the Positioner.

RDL: DEVICE TYPE NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/DeviceTypeNameAssignmentClass

Attribute Type: String

Example Value: "diaphragm actuator"

Proteus Schema Implementation: GenericAttribute of the Positioner (use case String).

Example:

```
<GenericAttribute
  Name="DeviceTypeNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/DeviceTypeNameAssignmentClass"
  Value="diaphragm actuator"
  Format="string" />
```

10.9.4.2. SubTagNameAssignmentClass

Description: The sub tag name of the Positioner.

RDL: SUB TAG NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass

Attribute Type: String

Example Value: "PP"

Proteus Schema Implementation: GenericAttribute of the Positioner (use case String).

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="PP"
  Format="string" />
```

10.10. PrimaryElement

Description: An artefact that converts the input variable into a signal suitable for measurement.

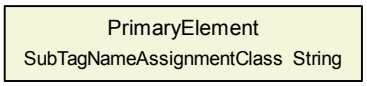
RDL: PRIMARY ELEMENT
http://sandbox.dexpi.org/rdl/PrimaryElement

Proteus Schema Implementation: Proteus ProcessSignalGeneratingSystemComponent element:

- ComponentClass: PrimaryElement
- ComponentClassUri: http://sandbox.dexpi.org/rdl/PrimaryElement

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.10.1. Overview



Superclasses: No superclasses.

Subclasses:

- InlinePrimaryElementReference
- OfflinePrimaryElement

10.10.2. Components

No components.

10.10.3. Model References

No model references.

10.10.4. Attributes

10.10.4.1. SubTagNameAssignmentClass

Description: The sub tag name of the PrimaryElement.

RDL: SUB TAG NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass

Attribute Type: String

Example Value: "PE"

Proteus Schema Implementation: GenericAttribute of the PrimaryElement (use case String).

Example:

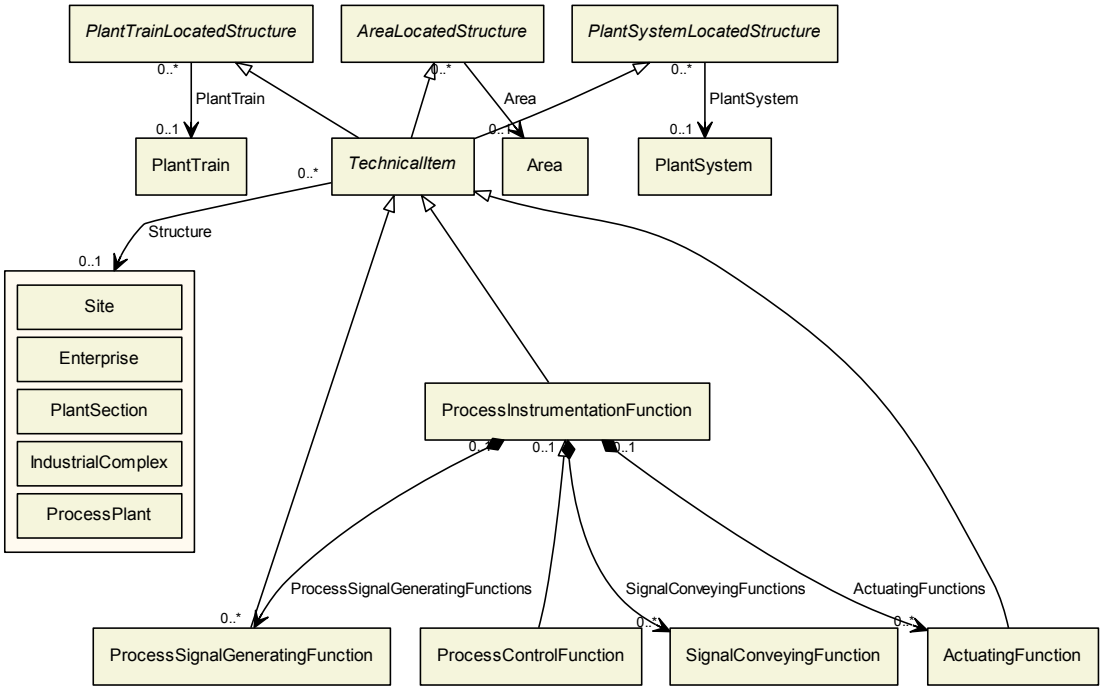
```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="PE"
  Format="string" />
```

10.11. ProcessControlFunction

Description: A requirement for control structures relating to Process Engineering.

RDL: PROCESS CONTROL FUNCTION
http://sandbox.dexpi.org/rdl/ProcessControlFunction

10.11.1. Overview



Superclasses:

- ProcessInstrumentationFunction

Subclasses: No subclasses.

10.11.2. Components

No components.

10.11.3. Model References

No model references.

10.11.4. Attributes

No attributes.

10.12. ProcessInstrumentationFunction

Description: A requirement for instrumentation and/or control structures relating to Process Engineering.

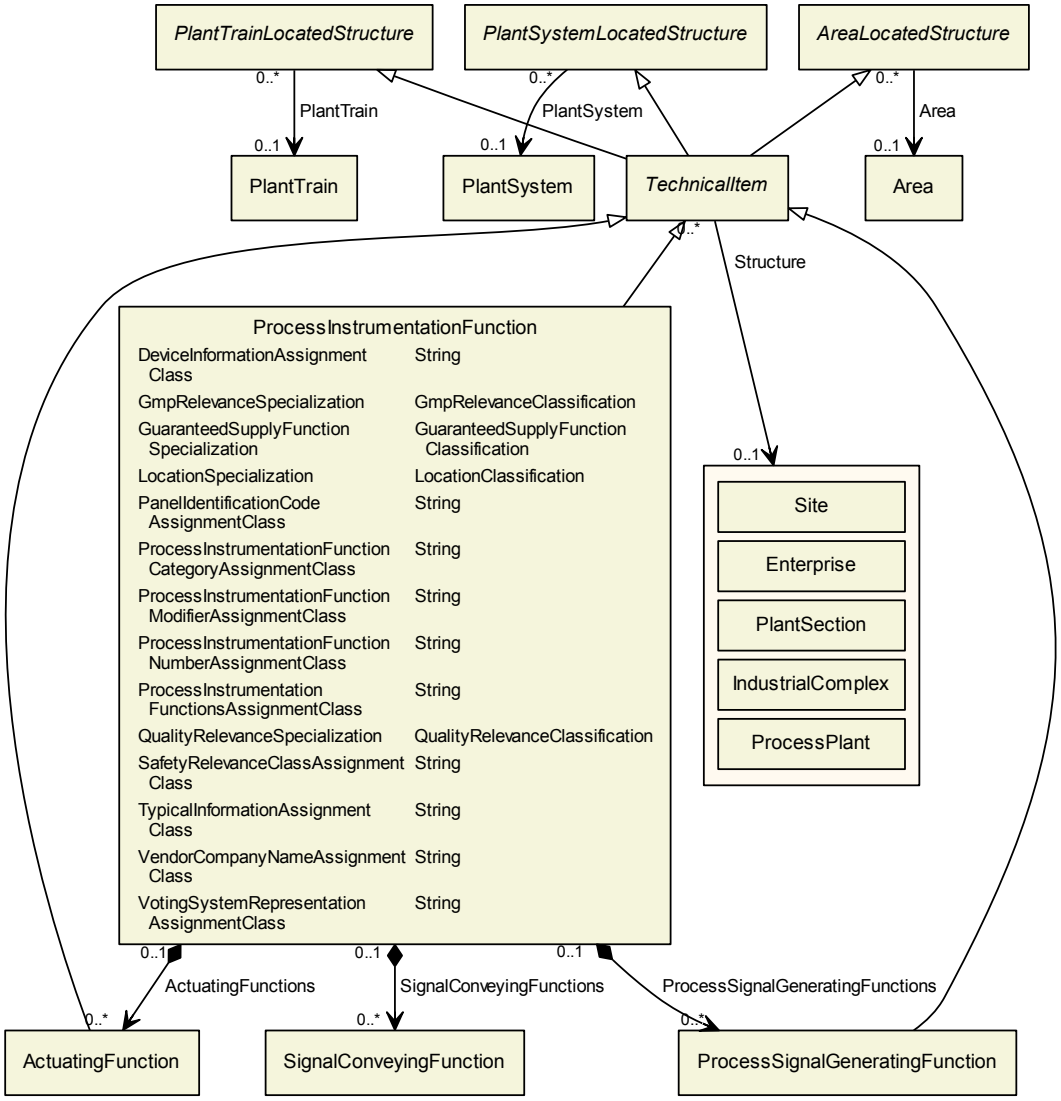
RDL: PROCESS INSTRUMENTATION FUNCTION
http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunction

Proteus Schema Implementation: Proteus ProcessInstrumentationFunction element:

- ComponentClass: ProcessInstrumentationFunction
- ComponentClassUri: http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunction

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.12.1. Overview



Superclasses:

- TechnicalItem

Subclasses:

- ProcessControlFunction

10.12.2. Components

10.12.2.1. ActuatingFunctions

Description: The ActuatingFunctions that are part of this ProcessInstrumentationFunction.

Type: ActuatingFunction

Cardinality: 0..*

Proteus Schema Implementation: The XML elements corresponding to the ActuatingFunctions are children of the XML element corresponding to the ProcessInstrumentationFunction.

Example:

```
<ProcessInstrumentationFunction ...>
    <!-- A ProcessInstrumentationFunction with two ActuatingFunctions. -->
    ...
    <ActuatingFunction ...> ... </ActuatingFunction>
    ...
    <ActuatingFunction ...> ... </ActuatingFunction>
    ...
</ProcessInstrumentationFunction>
```

10.12.2.2. ProcessSignalGeneratingFunctions

Description: The ProcessSignalGeneratingFunctions that are part of this ProcessInstrumentationFunction.

Type: ProcessSignalGeneratingFunction

Cardinality: 0..*

Proteus Schema Implementation: The XML elements corresponding to the ProcessSignalGeneratingFunction are children of the XML element corresponding to the ProcessInstrumentationFunction.

Example:

```
<ProcessInstrumentationFunction ...>
    <!-- A ProcessInstrumentationFunction with two ProcessSignalGeneratingFunction. -->
    ...
    <ProcessSignalGeneratingFunction ...> ... </ProcessSignalGeneratingFunction>
    ...
    <ProcessSignalGeneratingFunction ...> ... </ProcessSignalGeneratingFunction>
    ...
</ProcessInstrumentationFunction>
```

10.12.2.3. SignalConveyingFunctions

Description: The SignalConveyingFunctions that are part of this ProcessInstrumentationFunction.

Type: SignalConveyingFunction

Cardinality: 0..*

Proteus Schema Implementation: The XML elements corresponding to the SignalConveyingFunctions are children of the XML element corresponding to the ProcessInstrumentationFunction.

Example:

```
<ProcessInstrumentationFunction ...>
    <!-- A ProcessInstrumentationFunction with two SignalConveyingFunctions. -->
    ...
    <InformationFlow
        ComponentClass="SignalConveyingFunction"
```

```
        ComponentClassURI="http://sandbox.dexpi.org/rdl/SignalConveyingFunction" ...>
        ...
    </InformationFlow>
    ...
    <InformationFlow
        ComponentClass="SignalConveyingFunction"
        ComponentClassURI="http://sandbox.dexpi.org/rdl/SignalConveyingFunction" ...>
        ...
    </InformationFlow>
    ...
</ProcessInstrumentationFunction>
```

10.12.3. Model References

No model references.

10.12.4. Attributes

10.12.4.1. DeviceInformationAssignmentClass

Description: Device information the ProcessInstrumentationFunction, e.g., for a detector.

RDL: DEVICE INFORMATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/DeviceInformationAssignmentClass

Attribute Type: String

Example Value: "MDM"

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case String).

Example:

```
<GenericAttribute
  Name="DeviceInformationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/DeviceInformationAssignmentClass"
  Value="MDM"
  Format="string" />
```

10.12.4.2. GmpRelevanceSpecialization

Description: A classification indicating if the ProcessInstrumentationFunction is relevant for GMP (good manufacturing practise).

RDL: GMP RELEVANCE SPECIALIZATION
http://sandbox.dexpi.org/rdl/GmpRelevanceSpecialization

Attribute Type: GmpRelevanceClassification

Example Value: GMP relevant
(GMP RELEVANT FUNCTION, http://sandbox.dexpi.org/rdl/GmpRelevantFunction)

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case Classification).

Example:

```
<GenericAttribute
  Name="GmpRelevanceSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/GmpRelevanceSpecialization"
  Value="GmpRelevantFunction"
  ValueURI="http://sandbox.dexpi.org/rdl/GmpRelevantFunction"
  Format="anyURI" />
```

10.12.4.3. GuaranteedSupplyFunctionSpecialization

Description: A classification indicating if the ProcessInstrumentationFunction is a guaranteed supply function.

RDL: GUARANTEED SUPPLY FUNCTION SPECIALIZATION
http://sandbox.dexpi.org/rdl/GuaranteedSupplyFunctionSpecialization

Attribute Type: GuaranteedSupplyFunctionClassification

Example Value: guaranteed supply
(GUARANTEED SUPPLY FUNCTION, http://sandbox.dexpi.org/rdl/GuaranteedSupplyFunction)

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case Classification).

Example:

```
<GenericAttribute
  Name="GuaranteedSupplyFunctionSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/GuaranteedSupplyFunctionSpecialization"
  Value="GuaranteedSupplyFunction"
  ValueURI="http://sandbox.dexpi.org/rdl/GuaranteedSupplyFunction"
  Format="anyURI" />
```

10.12.4.4. LocationSpecialization

Description: A specialization indicating the location of the ProcessInstrumentationFunction.

RDL: LOCATION SPECIALIZATION
http://sandbox.dexpi.org/rdl/LocationSpecialization

Attribute Type: LocationClassification

Example Value: field
(FIELD, http://data.posccaesar.org/rdl/RDS409545541)

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case Classification).

Example:

```
<GenericAttribute
  Name="LocationSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/LocationSpecialization"
  Value="Field"
```

```
  ValueURI="http://data.posccaesar.org/rdl/RDS409545541"
  Format="anyURI" />
```

10.12.4.5. PanelIdentificationCodeAssignmentClass

Description: The panel identification code of the ProcessInstrumentationFunction.

RDL: PANEL IDENTIFICATION CODE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/PanelIdentificationCodeAssignmentClass

Attribute Type: String

Example Value: "P 3A"

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case String).

Example:

```
<GenericAttribute
  Name="PanelIdentificationCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PanelIdentificationCodeAssignmentClass"
  Value="P 3A"
  Format="string" />
```

10.12.4.6. ProcessInstrumentationFunctionCategoryAssignmentClass

Description: The function category of the ProcessInstrumentationFunction. The value is a string, typically one or two letters. Recent standards for PIDs normally enforce a single letter from a fixed list. However, there are no formal DEXPI restrictions for valid strings.

RDL: PROCESS INSTRUMENTATION FUNCTION CATEGORY ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunctionCategoryAssignmentClass

Attribute Type: String

Example Value: "H"

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case String).

Example:

```
<GenericAttribute
  Name="ProcessInstrumentationFunctionCategoryAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunctionCategoryAssignmentClass"
  Value="H"
  Format="string" />
```

10.12.4.7. ProcessInstrumentationFunctionModifierAssignmentClass

Description: The modifier of the ProcessInstrumentationFunction. The value is a string, typically a single letter, e.g., D for difference. So far, there are no formal DEXPI restrictions for valid strings.

RDL: PROCESS INSTRUMENTATION FUNCTION MODIFIER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunctionModifierAssignmentClass

Attribute Type: String

Example Value: "D"

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case String).

Example:

```
<GenericAttribute
  Name="ProcessInstrumentationFunctionModifierAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunctionModifierAssignmentClass"
  Value="D"
  Format="string" />
```

10.12.4.8. ProcessInstrumentationFunctionNumberAssignmentClass

Description: A unique identifier for the ProcessInstrumentationFunction. If the ProcessInstrumentationFunction is part of a InstrumentationLoopFunction, the identifier of the ProcessInstrumentationFunction usually contains the identifier of the InstrumentationLoopFunction (see InstrumentationLoopFunctionNumberAssignmentClass).

RDL: PROCESS INSTRUMENTATION FUNCTION NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunctionNumberAssignmentClass

Attribute Type: String

Example Value: "H4750.01"

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case String).

Example:

```
<GenericAttribute
  Name="ProcessInstrumentationFunctionNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunctionNumberAssignmentClass"
  Value="H4750.01"
  Format="string" />
```

10.12.4.9. ProcessInstrumentationFunctionsAssignmentClass

Description: Additional functions of the ProcessInstrumentationFunction (i.e., in addition to the function category, see ProcessInstrumentationFunctionCategoryAssignmentClass).

RDL: PROCESS INSTRUMENTATION FUNCTIONS ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunctionsAssignmentClass

Attribute Type: String

Example Value: "HS"

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case String).

Example:

```
<GenericAttribute
  Name="ProcessInstrumentationFunctionsAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunctionsAssignmentClass"
  Value="HS"
  Format="string" />
```

10.12.4.10. QualityRelevanceSpecialization

Description: A classification indicating if the ProcessInstrumentationFunction is quality relevant.

RDL: QUALITY RELEVANCE SPECIALIZATION
http://sandbox.dexpi.org/rdl/QualityRelevanceSpecialization

Attribute Type: QualityRelevanceClassification

Example Value: quality relevant
(QUALITY RELEVANT FUNCTION, http://sandbox.dexpi.org/rdl/QualityRelevantFunction)

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case Classification).

Example:

```
<GenericAttribute
  Name="QualityRelevanceSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/QualityRelevanceSpecialization"
  Value="QualityRelevantFunction"
  ValueURI="http://sandbox.dexpi.org/rdl/QualityRelevantFunction"
  Format="anyURI" />
```

10.12.4.11. SafetyRelevanceClassAssignmentClass

Description: The safety relevance class the ProcessInstrumentationFunction.

RDL: SAFETY RELEVANCE CLASS ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SafetyRelevanceClassAssignmentClass

Attribute Type: String

Example Value: "SIL3"

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case String).

Example:

```
<GenericAttribute
  Name="SafetyRelevanceClassAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SafetyRelevanceClassAssignmentClass"
  Value="SIL3"
  Format="string" />
```

10.12.4.12. TypicalInformationAssignmentClass

Description: Typical information about the ProcessInstrumentationFunction.

RDL: TYPICAL INFORMATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/TypicalInformationAssignmentClass

Attribute Type: String

Example Value: "T1"

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case String).

Example:

```
<GenericAttribute
  Name="TypicalInformationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TypicalInformationAssignmentClass"
  Value="T1"
  Format="string" />
```

10.12.4.13. VendorCompanyNameAssignmentClass

Description: The vendor company name the ProcessInstrumentationFunction.

RDL: VENDOR COMPANY NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/VendorCompanyNameAssignmentClass

Attribute Type: String

Example Value: "Emerson"

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case String).

Example:

```
<GenericAttribute
  Name="VendorCompanyNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/VendorCompanyNameAssignmentClass"
  Value="Emerson"
  Format="string" />
```

10.12.4.14. VotingSystemRepresentationAssignmentClass

Description: A representation of the voting system of the ProcessInstrumentationFunction.

RDL: VOTING SYSTEM REPRESENTATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/VotingSystemRepresentationAssignmentClass

Attribute Type: String

Example Value: "1o.o.2"

Proteus Schema Implementation: GenericAttribute of the ProcessInstrumentationFunction (use case String).

Example:

```
<GenericAttribute
  Name="VotingSystemRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/VotingSystemRepresentationAssignmentClass"
  Value="1o.o.2"
  Format="string" />
```

10.13. ProcessSignalGeneratingFunction

Description: A function for instrumentation and/or control structures relating to Process Engineering

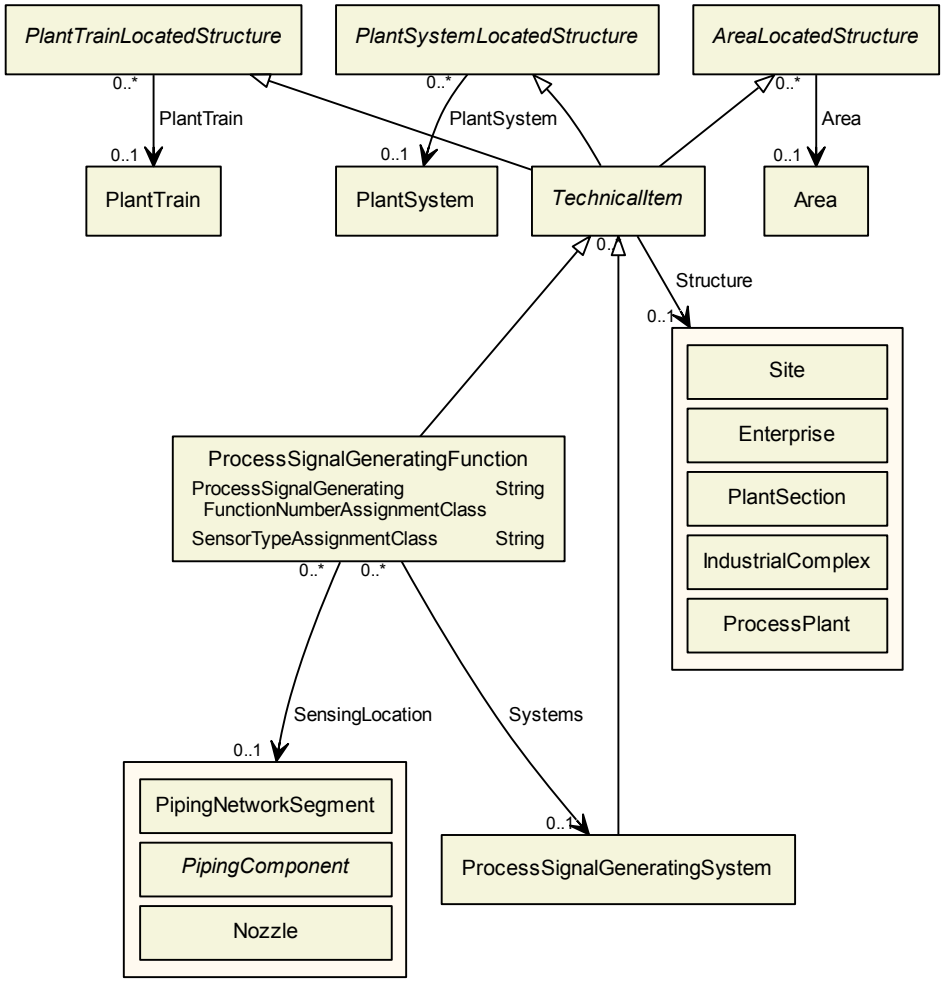
RDL: PROCESS SIGNAL GENERATING FUNCTION
http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingFunction

Proteus Schema Implementation: Proteus ProcessSignalGeneratingFunction element:

- ComponentClass: ProcessSignalGeneratingFunction
- ComponentClassUri: http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingFunction

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.13.1. Overview



Superclasses:

- TechnicalItem

Subclasses: No subclasses.

10.13.2. Components

No components.

10.13.3. Model References

10.13.3.1. SensingLocation

Description: The sensing location of the ProcessSignalGeneratingFunction.

Type: One of:

- Nozzle
- PipingComponent
- PipingNetworkSegment

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the ProcessSignalGeneratingFunction element representing the ProcessSignalGeneratingFunction: is located in
- Association type for the association *target*, i.e., for the PipingComponent element representing the RangeOfModelReferenceSensingLocationOfProcessSignalGeneratingFunction: is the location of

Both Associations must be used.

Example:

```
<ProcessSignalGeneratingFunction ID="PSGF_1" ...>
    ...
    <Association Type="is located in" ItemID="PC_1"/>
    ...
</ProcessSignalGeneratingFunction>
...
<PipingComponent ID="PC_1" ...>
    ...
    <Association Type="is the location of" ItemID="PSGF_1"/>
    ...
</PipingComponent>
```

10.13.3.2. Systems

Description: The ProcessSignalGeneratingSystem that implements the ProcessSignalGeneratingFunction.

Type: ProcessSignalGeneratingSystem

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the ProcessSignalGeneratingFunction element representing the ProcessSignalGeneratingFunction: is fulfilled by
- Association type for the association *target*, i.e., for the ProcessSignalGeneratingSystem element representing the ProcessSignalGeneratingSystem: fulfills

Both Associations must be used.

Example:

```
<ProcessSignalGeneratingFunction ID="PSGF_1" ...>
    ...
    <Association Type="is fulfilled by" ItemID="PSGS_1" />
    ...
</ProcessSignalGeneratingFunction>
...
<ProcessSignalGeneratingSystem ID="PSGS_1" ...>
    ...
    <Association Type="fulfills" ItemID="PSGF_1" />
    ...
</ProcessSignalGeneratingSystem>
```

10.13.4. Attributes

10.13.4.1. ProcessSignalGeneratingFunctionNumberAssignmentClass

Description: An identifier for the ProcessSignalGeneratingFunction. It usually contains the identifier of the ProcessInstrumentationFunction that includes the ProcessSignalGeneratingFunction (see ProcessInstrumentationFunctionNumberAssignmentClass).

RDL: PROCESS SIGNAL GENERATING FUNCTION NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingFunctionNumberAssignmentClass

Attribute Type: String

Example Value: "TT4750.03"

Proteus Schema Implementation: GenericAttribute of the ProcessSignalGeneratingFunction (use case String).

Example:

```
<GenericAttribute
  Name="ProcessSignalGeneratingFunctionNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingFunctionNumberAssignmentClass"
  Value="TT4750.03"
  Format="string" />
```

10.13.4.2. SensorTypeAssignmentClass

Description: The sensor type of the ProcessSignalGeneratingFunction.

RDL: SENSOR TYPE ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SensorTypeAssignmentClass

Attribute Type: String

Example Value: "MDM"

Proteus Schema Implementation: GenericAttribute of the ProcessSignalGeneratingFunction (use case String).

Example:

```
<GenericAttribute
  Name="SensorTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SensorTypeAssignmentClass"
  Value="MDM"
  Format="string" />
```

10.14. ProcessSignalGeneratingSystem

Description: An assembly of artefacts that is designed to fulfill a ProcessSignalGeneratingFunction.

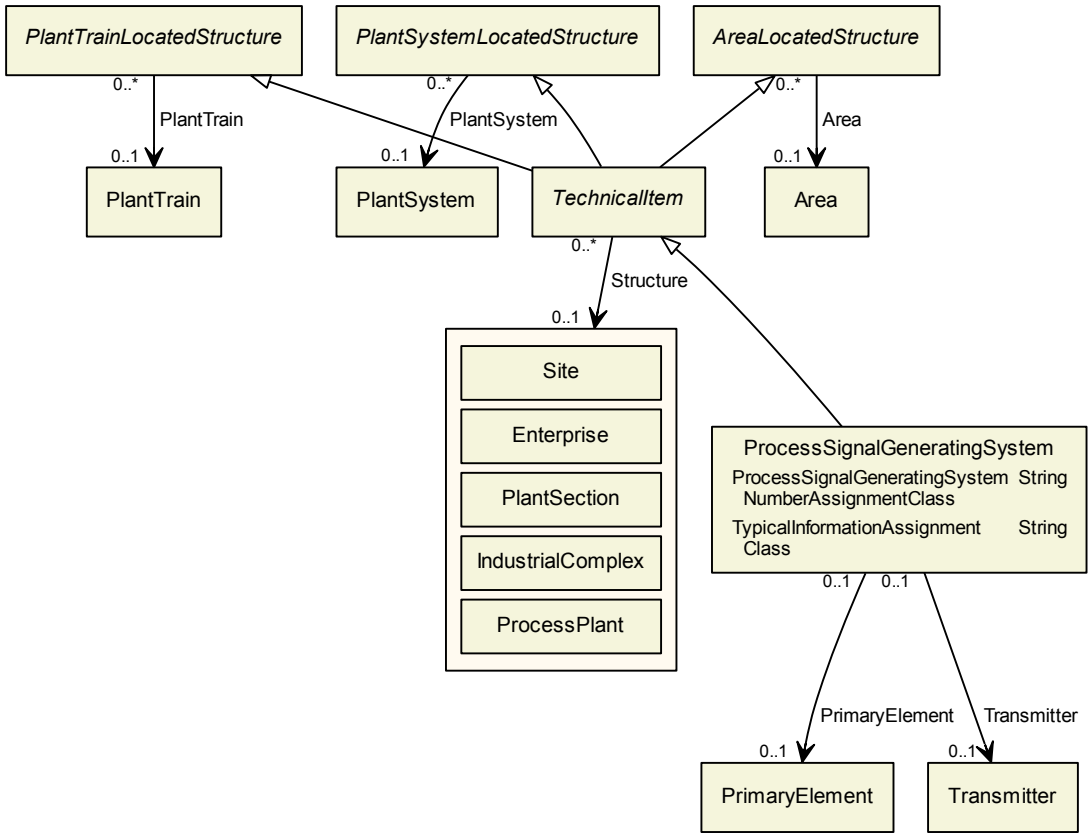
RDL: PROCESS SIGNAL GENERATING SYSTEM
http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingSystem

Proteus Schema Implementation: Proteus ProcessSignalGeneratingSystem element:

- ComponentClass: ProcessSignalGeneratingSystem
- ComponentClassUri: http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingSystem

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.14.1. Overview



Superclasses:

- TechnicalItem

Subclasses: No subclasses.

10.14.2. Components

No components.

10.14.3. Model References

10.14.3.1. PrimaryElement

Description: The primary element of the ProcessSignalGeneratingSystem.

Type: PrimaryElement

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: The XML element corresponding to the PrimaryElement is a child of the XML element corresponding to the ProcessSignalGeneratingSystem.

Example:

```
<ProcessSignalGeneratingSystem ...>
    ...
    <ProcessSignalGeneratingSystemComponent
        ComponentClass="PrimaryElement"
        ComponentClassURI="http://sandbox.dexpi.org/rdl/PrimaryElement" ...>
        ...
    </ProcessSignalGeneratingSystemComponent>
    ...
</ProcessSignalGeneratingSystem>
```

10.14.3.2. Transmitter

Description: The transmitter of the ProcessSignalGeneratingSystem.

Type: Transmitter

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: The XML element corresponding to the Transmitter is a child of the XML element corresponding to the ProcessSignalGeneratingSystem.

Example:

```
<ProcessSignalGeneratingSystem ...>
    ...
    <ProcessSignalGeneratingSystemComponent
        ComponentClass="Transmitter"
        ComponentClassURI="http://data.posccaesar.org/rdl/RDS267929" ...>
        ...
    </ProcessSignalGeneratingSystemComponent>
    ...
</ProcessSignalGeneratingSystem>
```

10.14.4. Attributes

10.14.4.1. ProcessSignalGeneratingSystemNumberAssignmentClass

Description: The number of the ProcessSignalGeneratingSystem

RDL: PROCESS SIGNAL GENERATING SYSTEM NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingSystemNumberAssignmentClass

Attribute Type: String

Example Value: "FE0001"

Proteus Schema Implementation: GenericAttribute of the ProcessSignalGeneratingSystem (use case String).

Example:

```
<GenericAttribute
  Name="ProcessSignalGeneratingSystemNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingSystemNumberAssignmentClass"
  Value="FE0001"
  Format="string" />
```

10.14.4.2. TypicalInformationAssignmentClass

Description: Typical information about the ProcessSignalGeneratingSystem.

RDL: TYPICAL INFORMATION ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/TypicalInformationAssignmentClass

Attribute Type: String

Example Value: "F4"

Proteus Schema Implementation: GenericAttribute of the ProcessSignalGeneratingSystem (use case String).

Example:

```
<GenericAttribute
  Name="TypicalInformationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TypicalInformationAssignmentClass"
  Value="F4"
  Format="string" />
```

10.15. ShutOffValveReference

Description: A reference to a shut off valve.

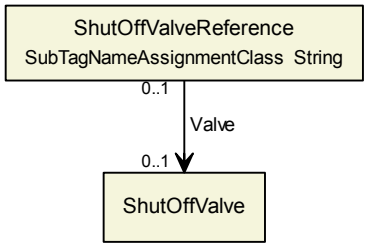
RDL: SHUT OFF VALVE REFERENCE
http://sandbox.dexpi.org/rdl/ShutOffValveReference

Proteus Schema Implementation: Proteus ActuatingSystemComponent element:

- ComponentClass: ShutOffValveReference
- ComponentClassUri: http://sandbox.dexpi.org/rdl/ShutOffValveReference

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.15.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

10.15.2. Components

No components.

10.15.3. Model References

10.15.3.1. Valve

Description: The actual valve referenced by the ShutOffValveReference.

Type: ShutOffValve

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the ActuatingSystemComponent element representing the ShutOffValveReference: refers to
- Association type for the association *target*, i.e., for the PipingComponent element representing the ShutOffValve: is referenced by

Both Associations must be used.

Example:

```
<ActuatingSystemComponent ID="CV_1" ...>
    ...
    <Association Type="refers to" ItemID="PC_1" />
    ...
</ActuatingSystemComponent>
...
<PipingComponent ID="PC_1" ...>
    ...
    <Association Type="is referenced by" ItemID="CV_1" />
    ...
</PipingComponent>
```

10.15.4. Attributes

10.15.4.1. SubTagNameAssignmentClass

Description: The sub tag name of the ShutOffValveReference.

RDL: SUB TAG NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass

Attribute Type: String

Example Value: "PV"

Proteus Schema Implementation: GenericAttribute of the ShutOffValveReference (use case String).

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="PV"
  Format="string" />
```

10.16. SignalConveyingFunction

Description: A function for conveying a signal.

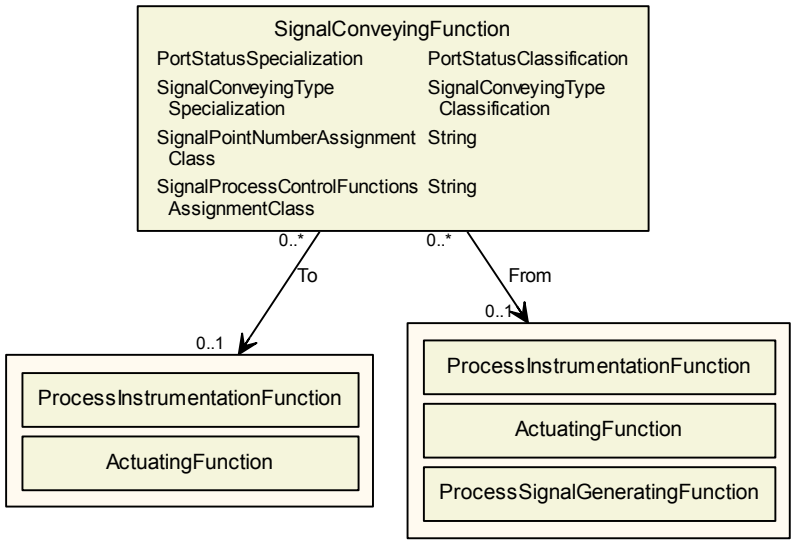
RDL: SIGNAL CONVEYING FUNCTION
http://sandbox.dexpi.org/rdl/SignalConveyingFunction

Proteus Schema Implementation: Proteus InformationFlow element:

- ComponentClass: SignalConveyingFunction
- ComponentClassUri: http://sandbox.dexpi.org/rdl/SignalConveyingFunction

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.16.1. Overview



Superclasses: No superclasses.

Subclasses:

- MeasuringLineFunction
- SignalLineFunction

10.16.2. Components

No components.

10.16.3. Model References

10.16.3.1. From

Description: The source of the signal conveyed by this SignalConveyingFunction.

Type: One of:

- ActuatingFunction
- ProcessInstrumentationFunction
- ProcessSignalGeneratingFunction

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the InformationFlow element representing the SignalConveyingFunction: has logical start
- Association type for the association *target*, i.e., for the ActuatingFunction element representing the RangeOfModelReferenceFromOfSignalConveyingFunction: is logical start of

Both Associations must be used.

Example:

```
<InformationFlow ID="SCF_1" ...>
    ...
    <Association Type="has logical start" ItemID="AF_1"/>
    ...
</InformationFlow>
...
<ActuatingFunction ID="AF_1" ...>
    ...
    <Association Type="is logical start of" ItemID="SCF_1"/>
    ...
</ActuatingFunction>
```

10.16.3.2. To

Description: The target of the signal conveyed by this SignalConveyingFunction.

Type: One of:

- ActuatingFunction
- ProcessInstrumentationFunction

Source Multiplicity: 0..*

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus Association elements:

- Association type for the association *source*, i.e., for the InformationFlow element representing the SignalConveyingFunction: has logical end
- Association type for the association *target*, i.e., for the ProcessInstrumentationFunction element representing the RangeOfModelReferenceToOfSignalConveyingFunction: is logical end of

Both Associations must be used.

Example:

```
<InformationFlow ID="SCF_1" ...>
    ...
    <Association Type="has logical end" ItemID="PIF_1" />
    ...
</InformationFlow>
...
<ProcessInstrumentationFunction ID="PIF_1" ...>
    ...
    <Association Type="is logical end of" ItemID="SCF_1" />
    ...
</ProcessInstrumentationFunction>
```

10.16.4. Attributes

10.16.4.1. PortStatusSpecialization

Description: A classification indicating the port status of the SignalConveyingFunction.

RDL: PORT STATUS SPECIALIZATION
http://sandbox.dexpi.org/rdl/PortStatusSpecialization

Attribute Type: PortStatusClassification

Example Value: GMP relevant
(GMP RELEVANT FUNCTION, http://sandbox.dexpi.org/rdl/GmpRelevantFunction)

Proteus Schema Implementation: GenericAttribute of the SignalConveyingFunction (use case Classification).

Example:

```
<GenericAttribute
  Name="PortStatusSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/PortStatusSpecialization"
  Value="GmpRelevantFunction"
  ValueURI="http://sandbox.dexpi.org/rdl/GmpRelevantFunction"
  Format="anyURI" />
```

10.16.4.2. SignalConveyingTypeSpecialization

Description: A classification indicating the signal conveying type of the SignalConveyingFunction.

RDL: SIGNAL CONVEYING TYPE SPECIALIZATION
http://sandbox.dexpi.org/rdl/SignalConveyingTypeSpecialization

Attribute Type: SignalConveyingTypeClassification

Example Value: electrical
(ELECTRICAL SIGNAL CONVEYING, http://sandbox.dexpi.org/rdl/ElectricalSignalConveying)

Proteus Schema Implementation: GenericAttribute of the SignalConveyingFunction (use case Classification).

Example:

```
<GenericAttribute
  Name="SignalConveyingTypeSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/SignalConveyingTypeSpecialization"
  Value="ElectricalSignalConveying"
  ValueURI="http://sandbox.dexpi.org/rdl/ElectricalSignalConveying"
  Format="anyURI" />
```

10.16.4.3. SignalPointNumberAssignmentClass

Description: The signal point number of the SignalConveyingFunction. Typical values are 1 to 6.

RDL: SIGNAL POINT NUMBER ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SignalPointNumberAssignmentClass

Attribute Type: String

Example Value: "2"

Proteus Schema Implementation: GenericAttribute of the SignalConveyingFunction (use case String).

Example:

```
<GenericAttribute
  Name="SignalPointNumberAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SignalPointNumberAssignmentClass"
  Value="2"
  Format="string" />
```

10.16.4.4. SignalProcessControlFunctionsAssignmentClass

Description: The process control functions of the SignalConveyingFunction. Values are combinations of characters.

RDL: SIGNAL PROCESS CONTROL FUNCTIONS ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SignalProcessControlFunctionsAssignmentClass

Attribute Type: String

Example Value: "SA"

Proteus Schema Implementation: GenericAttribute of the SignalConveyingFunction (use case String).

Example:

```
<GenericAttribute
  Name="SignalProcessControlFunctionsAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SignalProcessControlFunctionsAssignmentClass"
  Value="SA"
  Format="string" />
```

10.17. SignalLineFunction

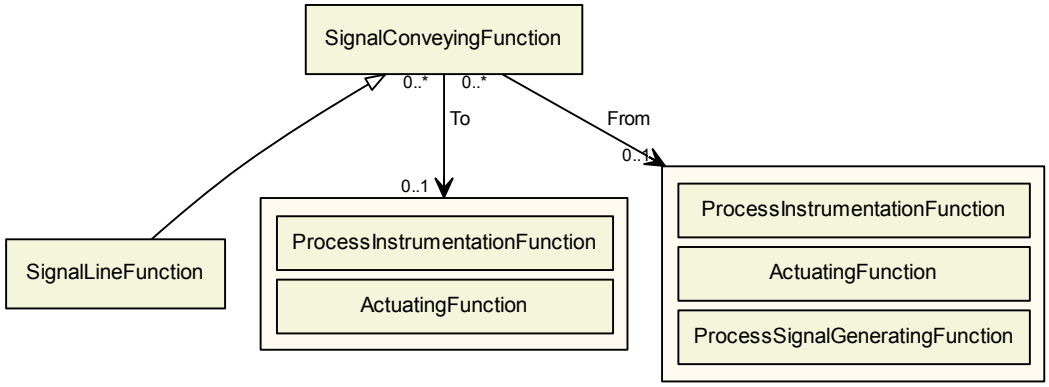
RDL: SIGNAL LINE FUNCTION
http://sandbox.dexpi.org/rdl/SignalLineFunction

Proteus Schema Implementation: Proteus InformationFlow element:

- ComponentClass: SignalLineFunction
- ComponentClassUri: http://sandbox.dexpi.org/rdl/SignalLineFunction

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.17.1. Overview



Superclasses:

- SignalConveyingFunction

Subclasses: No subclasses.

10.17.2. Components

No components.

10.17.3. Model References

No model references.

10.17.4. Attributes

No attributes.

10.18. Transmitter

Description: A 'detecting instrument' that generates a process variable signal and converts it into an output signal.

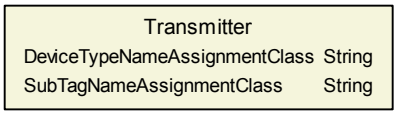
RDL: TRANSMITTER
http://data.posccaesar.org/rdl/RDS267929

Proteus Schema Implementation: Proteus ProcessSignalGeneratingSystemComponent element:

- ComponentClass: Transmitter
- ComponentClassUri: http://data.posccaesar.org/rdl/RDS267929

Both the ComponentClass and the ComponentClassUri are required for DEXPI compliance.

10.18.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

10.18.2. Components

No components.

10.18.3. Model References

No model references.

10.18.4. Attributes

10.18.4.1. DeviceTypeNameAssignmentClass

Description: The device type of the Transmitter.

RDL: DEVICE TYPE NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/DeviceTypeNameAssignmentClass

Attribute Type: String

Example Value: "pressure transmitter"

Proteus Schema Implementation: GenericAttribute of the Transmitter (use case String).

Example:

```
<GenericAttribute
  Name="DeviceTypeNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/DeviceTypeNameAssignmentClass"
  Value="pressure transmitter"
  Format="string"/>
```

10.18.4.2. SubTagNameAssignmentClass

Description: The sub tag name of the Transmitter.

RDL: SUB TAG NAME ASSIGNMENT CLASS
http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass

Attribute Type: String

Example Value: "PT"

Proteus Schema Implementation: GenericAttribute of the Transmitter (use case String).

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="PT"
  Format="string" />
```

11. Attribute Types

11.1. Attribute Types for Physical Quantities

This section contains the attribute types for physical quantities (see Sec. 2.2.1.2).

11.1.1. Angle

RDL: ANGLE
http://data.posccaesar.org/rdl/RDS358019

Scales: The following table lists the admissible scales for values of the attribute type Angle. Scales for which Proteus Schema allows alternative designations are marked*.

Scale	Symbol	RDL
CentesimalMinute		http://data.posccaesar.org/rdl/RDS17254212
CentesimalSecond		http://data.posccaesar.org/rdl/RDS17254167
Cycle		http://data.posccaesar.org/rdl/RDS1321964
DecimalDegree		http://data.posccaesar.org/rdl/RDS1325519
Degree-angle*		http://data.posccaesar.org/rdl/RDS43166353217
Gigaradian		http://data.posccaesar.org/rdl/RDS17254257
Iso2041Cycle		http://data.posccaesar.org/rdl/RDS54808341168
Kiloradian		http://data.posccaesar.org/rdl/RDS17254302
Megaradian		http://data.posccaesar.org/rdl/RDS17253042
Microradian		http://data.posccaesar.org/rdl/RDS17253132
Mil_6400Radian		http://data.posccaesar.org/rdl/RDS17253492
Milliradian		http://data.posccaesar.org/rdl/RDS17253537
Minute-angle		http://data.posccaesar.org/rdl/RDS1351934
Radian*		http://data.posccaesar.org/rdl/RDS1342214
Second-angle		http://data.posccaesar.org/rdl/RDS1355444

Proteus Schema Implementation: The following table contains scales for which Proteus Schema allows alternative designations (see Sec. 3.2.1.2). The quotation marks have been added because some designations contain spaces.

Scale	Designations
Degree-angle	"deg"
Radian	"rad"

11.1.2. Area

RDL: AREA
http://data.posccaesar.org/rdl/RDS349874

Scales: The following table lists the admissible scales for values of the attribute type Area. Scales for which Proteus Schema allows alternative designations are marked*.

Scale	Symbol	RDL
Acre		http://data.posccaesar.org/rdl/RDS11614590
Are		http://data.posccaesar.org/rdl/RDS43164553202
Barn		http://data.posccaesar.org/rdl/RDS1314584
CentimetreSquared*	cm^2	http://data.posccaesar.org/rdl/RDS1357829
DecimetreSquared*		http://data.posccaesar.org/rdl/RDS43168636175

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Scale	Symbol	RDL
FootSquared*		http://data.posccaesar.org/rdl/RDS1342934
Hectare		http://data.posccaesar.org/rdl/RDS1326329
HundredFootSquared		http://data.posccaesar.org/rdl/RDS43167561292
InchSquared*		http://data.posccaesar.org/rdl/RDS1342979
KilometreSquared*	km^2	http://data.posccaesar.org/rdl/RDS1343159
MetreSquared*	m^2	http://data.posccaesar.org/rdl/RDS1358009
MicrometreSquared		http://data.posccaesar.org/rdl/RDS4316863838
MileSquared		http://data.posccaesar.org/rdl/RDS1343609
MillimetreSquared*	mm^2	http://data.posccaesar.org/rdl/RDS1358189
UsSurveyMileSquared		http://data.posccaesar.org/rdl/RDS1344914
YardSquared*		http://data.posccaesar.org/rdl/RDS1343744

Proteus Schema Implementation: The following table contains scales for which Proteus Schema allows alternative designations (see Sec. 3.2.1.2). The quotation marks have been added because some designations contain spaces.

Scale	Designations
CentimetreSquared	"sq cm"
DecimetreSquared	"sq dm"
FootSquared	"sq ft"
InchSquared	"sq in"
KilometreSquared	"sq km"
MetreSquared	"sq m"
MillimetreSquared	"sq mm"
YardSquared	"sq yd"

11.1.3. Length

RDL: LENGTH
http://data.posccaesar.org/rdl/RDS373094

Scales: The following table lists the admissible scales for values of the attribute type Length. Scales for which Proteus Schema allows alternative designations are marked*.

Scale	Symbol	RDL
16thOfAnInch		http://data.posccaesar.org/rdl/RDS17255877
32ndOfAnInch		http://data.posccaesar.org/rdl/RDS17255922
64thOfAnInch		http://data.posccaesar.org/rdl/RDS17255967
Angstrom		http://data.posccaesar.org/rdl/RDS1314224
Centimetre*	cm	http://data.posccaesar.org/rdl/RDS1318004
ClarkeChain		http://data.posccaesar.org/rdl/RDS17255292
ClarkeLink		http://data.posccaesar.org/rdl/RDS1318724
ClarkeYard		http://data.posccaesar.org/rdl/RDS17254617
Decimetre*	dm	http://data.posccaesar.org/rdl/RDS1322504
Fathom		http://data.posccaesar.org/rdl/RDS1349369
Femtometre		http://data.posccaesar.org/rdl/RDS17272735
Foot*	ft	http://data.posccaesar.org/rdl/RDS1324664
GermanLegalMetre		http://data.posccaesar.org/rdl/RDS17254437
GoldCoastFoot		http://data.posccaesar.org/rdl/RDS17255517
ImperialFoot		http://data.posccaesar.org/rdl/RDS1326869
ImperialYard		http://data.posccaesar.org/rdl/RDS1326914
Inch*	in	http://data.posccaesar.org/rdl/RDS1326959
IndianGeodeticFoot		http://data.posccaesar.org/rdl/RDS17255562
IndianYard		http://data.posccaesar.org/rdl/RDS1327454
Kilometre*	km	http://data.posccaesar.org/rdl/RDS1330199
Megametre		http://data.posccaesar.org/rdl/RDS17254482
Metre*	m	http://data.posccaesar.org/rdl/RDS1332674

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Scale	Symbol	RDL
Micrometre		http://data.posccaesar.org/rdl/RDS1351529
Mil		http://data.posccaesar.org/rdl/RDS1334114
Mile	mi	http://data.posccaesar.org/rdl/RDS1334159
Millimetre*	mm	http://data.posccaesar.org/rdl/RDS1357739
ModifiedAmericanFoot		http://data.posccaesar.org/rdl/RDS1336859
Nanometre		http://data.posccaesar.org/rdl/RDS1337669
NauticalMile		http://data.posccaesar.org/rdl/RDS1337894
Parsec		http://data.posccaesar.org/rdl/RDS43168246189
Picometre		http://data.posccaesar.org/rdl/RDS11616390
SearsChain		http://data.posccaesar.org/rdl/RDS1318454
SearsFoot		http://data.posccaesar.org/rdl/RDS17255787
SearsLink		http://data.posccaesar.org/rdl/RDS1342439
SearsYard		http://data.posccaesar.org/rdl/RDS1342484
TenthOfAnInch		http://data.posccaesar.org/rdl/RDS17255832
UsSurveyChain		http://data.posccaesar.org/rdl/RDS17255337
UsSurveyFoot		http://data.posccaesar.org/rdl/RDS1347254
UsSurveyInch		http://data.posccaesar.org/rdl/RDS17256012
UsSurveyLink		http://data.posccaesar.org/rdl/RDS17254392
UsSurveyMile		http://data.posccaesar.org/rdl/RDS1344869
Yard*		http://data.posccaesar.org/rdl/RDS1348784

Proteus Schema Implementation: The following table contains scales for which Proteus Schema allows alternative designations (see Sec. 3.2.1.2). The quotation marks have been added because some designations contain spaces.

Scale	Designations
Centimetre	"cm"
Decimetre	"dm"
Foot	"ft"
Inch	"in"
Kilometre	"km"
Metre	"m"
Millimetre	"mm"
Yard	"yd"

11.1.4. Mass

RDL: MASS
http://data.posccaesar.org/rdl/RDS353339

Scales: The following table lists the admissible scales for values of the attribute type Mass. Scales for which Proteus Schema allows alternative designations are marked*.

Scale	Symbol	RDL
94PoundSack		http://data.posccaesar.org/rdl/RDS17253807
Attogram		http://data.posccaesar.org/rdl/RDS17253672
AvoirdupoisOunce*		http://data.posccaesar.org/rdl/RDS43164554125
Carat		http://data.posccaesar.org/rdl/RDS17253717
Grain		http://data.posccaesar.org/rdl/RDS1325609
Gram*	g	http://data.posccaesar.org/rdl/RDS1325789
Kilogram*	kg	http://data.posccaesar.org/rdl/RDS1328669
KilopoundMass		http://data.posccaesar.org/rdl/RDS17253762
Megagram*		http://data.posccaesar.org/rdl/RDS1331909
Microgram		http://data.posccaesar.org/rdl/RDS1333619
Milligram*	mg	http://data.posccaesar.org/rdl/RDS1334924
MillionPoundMass		http://data.posccaesar.org/rdl/RDS43168070243
OunceMass		http://data.posccaesar.org/rdl/RDS11616165

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Scale	Symbol	RDL
OunceMassAv		http://data.posccaesar.org/rdl/RDS1352024
OunceTroy		http://data.posccaesar.org/rdl/RDS11614635
PoundMass*		http://data.posccaesar.org/rdl/RDS11617515
Tonne	t	http://data.posccaesar.org/rdl/RDS1344689
UkHundredweight		http://data.posccaesar.org/rdl/RDS11614770
UkTon		http://data.posccaesar.org/rdl/RDS1345904
UnifiedAtomicMassUnit		http://data.posccaesar.org/rdl/RDS1356614
UsHundredweight		http://data.posccaesar.org/rdl/RDS11614905
UsTon		http://data.posccaesar.org/rdl/RDS4316887489

Proteus Schema Implementation: The following table contains scales for which Proteus Schema allows alternative designations (see Sec. 3.2.1.2). The quotation marks have been added because some designations contain spaces.

Scale	Designations
AvoirdupoisOunce	"oz"
Gram	"g"
Kilogram	"kg"
Megagram	"Mg"
Milligram	"mg"
PoundMass	"lb"

11.1.5. Percentage

RDL: PERCENTAGE
http://data.posccaesar.org/rdl/RDS13657820

Scales: The following table lists the admissible scales for values of the attribute type Percentage.

Scale	Symbol	RDL
Percent	%	http://data.posccaesar.org/rdl/RDS1317959

11.1.6. Power

RDL: POWER
http://data.posccaesar.org/rdl/RDS354104

Scales: The following table lists the admissible scales for values of the attribute type Power.

Scale	Symbol	RDL
CaloriePerHour	cal/h	http://data.posccaesar.org/rdl/RDS4316590555
Gigawatt	GW	http://data.posccaesar.org/rdl/RDS1325384
KilocaloriePerHour	kcal/hr	http://data.posccaesar.org/rdl/RDS1328309
KilojoulePerHour	kJ/h	http://data.posccaesar.org/rdl/RDS4316756697
Kilowatt	kW	http://data.posccaesar.org/rdl/RDS1330919
Megawatt	MW	http://data.posccaesar.org/rdl/RDS1332584
Microwatt	µW	http://data.posccaesar.org/rdl/RDS1360349
Milliwatt	mW	http://data.posccaesar.org/rdl/RDS1336634
Nanowatt	nW	http://data.posccaesar.org/rdl/RDS1337849
Picowatt	pW	http://data.posccaesar.org/rdl/RDS43168247221
Terawatt	TW	http://data.posccaesar.org/rdl/RDS1348154
Watt	W	http://data.posccaesar.org/rdl/RDS1348154

11.1.7. Pressure

RDL: PRESSURE
http://data.posccaesar.org/rdl/RDS354194

Scales: The following table lists the admissible scales for values of the attribute type Pressure. Scales for which Proteus Schema allows alternative designations are marked*.

Scale	Symbol	RDL
Bar*	bar	http://data.posccaesar.org/rdl/RDS1314539
BarAbsolute*		http://data.posccaesar.org/rdl/RDS1348919
BarGauge*	barg	http://data.posccaesar.org/rdl/RDS1348874
Gigapascal		http://data.posccaesar.org/rdl/RDS1325339
Hectobar		http://data.posccaesar.org/rdl/RDS17272601
Hectopascal		http://data.posccaesar.org/rdl/RDS1058913381
Kilobar		http://data.posccaesar.org/rdl/RDS1059971921
KilogramForcePerCentimetreSquared		http://data.posccaesar.org/rdl/RDS1058889741
KilogramForcePerMetreSquared		http://data.posccaesar.org/rdl/RDS1058901891
KilogramForcePerMillimetreSquared		http://data.posccaesar.org/rdl/RDS1328894
KilonewtonPerMetreSquared		http://data.posccaesar.org/rdl/RDS17253402
Kilopascal*	kPa	http://data.posccaesar.org/rdl/RDS1330559
KilopoundPerInchSquared		http://data.posccaesar.org/rdl/RDS17253447
Megapascal*		http://data.posccaesar.org/rdl/RDS1332404
MegapascalGauge		http://data.posccaesar.org/rdl/RDS1059963660
MegapoundPerInchSquared		http://data.posccaesar.org/rdl/RDS1331774
MetreLiquidColumn		http://data.posccaesar.org/rdl/RDS1358729
Microbar		http://data.posccaesar.org/rdl/RDS1333349
Micropascal		http://data.posccaesar.org/rdl/RDS1333844
MicropoundPerSquareInch		http://data.posccaesar.org/rdl/RDS17252412
Millibar		http://data.posccaesar.org/rdl/RDS11617875
MillibarGauge		http://data.posccaesar.org/rdl/RDS1061680551
Millipascal*	mPa	http://data.posccaesar.org/rdl/RDS11617110
NewtonPerMetreSquared		http://data.posccaesar.org/rdl/RDS1338344
NewtonPerMillimetreSquared		http://data.posccaesar.org/rdl/RDS1338389
Pascal*	Pa	http://data.posccaesar.org/rdl/RDS1338749
PascalGauge		http://data.posccaesar.org/rdl/RDS1338794
PhysicalAtmosphere*		http://data.posccaesar.org/rdl/RDS17253312
Picopascal		http://data.posccaesar.org/rdl/RDS1339919
PoundForcePerFootSquared		http://data.posccaesar.org/rdl/RDS17253582
PoundForcePerInchSquared*		http://data.posccaesar.org/rdl/RDS1341809
PoundForcePerInchSquaredAbsolute		http://data.posccaesar.org/rdl/RDS1341854
PoundForcePerInchSquaredGauge		http://data.posccaesar.org/rdl/RDS1341899
PoundalPerFootSquared		http://data.posccaesar.org/rdl/RDS1061438491
PoundalPerInchSquared		http://data.posccaesar.org/rdl/RDS1061419191
StandardAtmosphere		http://data.posccaesar.org/rdl/RDS979626281
TechnicalAtmosphere*		http://data.posccaesar.org/rdl/RDS17253267
Torr		http://data.posccaesar.org/rdl/RDS17252772
UsTonForcePerFootSquared		http://data.posccaesar.org/rdl/RDS1347659
UsTonForcePerInchSquared		http://data.posccaesar.org/rdl/RDS1347704

Proteus Schema Implementation: The following table contains scales for which Proteus Schema allows alternative designations (see Sec. 3.2.1.2). The quotation marks have been added because some designations contain spaces.

Scale	Designations
Bar	"bar"
BarAbsolute	"bara"
BarGauge	"barg"
Kilopascal	"kPa"
Megapascal	"MPa"

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Scale	Designations
Millipascal	"mPa"
Pascal	"Pa"
PhysicalAtmosphere	"atm"
PoundForcePerInchSquared	"psi"
TechnicalAtmosphere	"at"

11.1.8. RotationalSpeed

RDL: ROTATIONAL SPEED
http://data.posccaesar.org/rdl/RDS361034

Scales: The following table lists the admissible scales for values of the attribute type RotationalSpeed.

Scale	Symbol	RDL
RevolutionPerMinute	1/min	http://data.posccaesar.org/rdl/RDS1342304
RevolutionPerSecond	1/s	http://data.posccaesar.org/rdl/RDS1053858351

11.1.9. Temperature

RDL: TEMPERATURE
http://data.posccaesar.org/rdl/RDS355859

Scales: The following table lists the admissible scales for values of the attribute type Temperature. Scales for which Proteus Schema allows alternative designations are marked*.

Scale	Symbol	RDL
DegreeCelsius*	°C	http://data.posccaesar.org/rdl/RDS1322684
DegreeFahrenheit*	°F	http://data.posccaesar.org/rdl/RDS1322549
DegreeRankine		http://data.posccaesar.org/rdl/RDS43166353206
Kelvin*	K	http://data.posccaesar.org/rdl/RDS1327904
Millikelvin		http://data.posccaesar.org/rdl/RDS4316807033

Proteus Schema Implementation: The following table contains scales for which Proteus Schema allows alternative designations (see Sec. 3.2.1.2). The quotation marks have been added because some designations contain spaces.

Scale	Designations
DegreeCelsius	"degC"
DegreeFahrenheit	"degF"
Kelvin	"K", "degK"

11.1.10. Volume

RDL: VOLUME
http://data.posccaesar.org/rdl/RDS356444

Scales: The following table lists the admissible scales for values of the attribute type Volume. Scales for which Proteus Schema allows alternative designations are marked*.

Scale	Symbol	RDL
AcreFoot		http://data.posccaesar.org/rdl/RDS1313909
Barrel		http://data.posccaesar.org/rdl/RDS4316489099
BillionFootCubed		http://data.posccaesar.org/rdl/RDS1315799
Centilitre		http://data.posccaesar.org/rdl/RDS43165906116
CentimetreCubed*	cm^3	http://data.posccaesar.org/rdl/RDS1357874

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Scale	Symbol	RDL
Cubem		http://data.posccaesar.org/rdl/RDS43165909158
Decilitre		http://data.posccaesar.org/rdl/RDS43166353126
DecimetreCubed		http://data.posccaesar.org/rdl/RDS1319174
FootCubed		http://data.posccaesar.org/rdl/RDS1319669
HectareMetre		http://data.posccaesar.org/rdl/RDS1326374
Hectolitre		http://data.posccaesar.org/rdl/RDS11618325
HundredFootCubed		http://data.posccaesar.org/rdl/RDS43167561248
InchCubed		http://data.posccaesar.org/rdl/RDS1320524
KilometreCubed	km^3	http://data.posccaesar.org/rdl/RDS1320569
Litre		http://data.posccaesar.org/rdl/RDS1331144
MetreCubed	m^3	http://data.posccaesar.org/rdl/RDS1349099
MicrometreSquaredMetre		http://data.posccaesar.org/rdl/RDS1343519
MileCubed		http://data.posccaesar.org/rdl/RDS17251197
Millilitre		http://data.posccaesar.org/rdl/RDS1335329
MillimetreCubed		http://data.posccaesar.org/rdl/RDS1349144
MillionBarrel		http://data.posccaesar.org/rdl/RDS43168070197
MillionFootCubed		http://data.posccaesar.org/rdl/RDS43168070230
MillionMetreCubed		http://data.posccaesar.org/rdl/RDS17251242
StandardFootCubed		http://data.posccaesar.org/rdl/RDS1061642391
StandardMetreCubed		http://data.posccaesar.org/rdl/RDS16227942
ThousandBarrel		http://data.posccaesar.org/rdl/RDS4316887066
ThousandFootCubed		http://data.posccaesar.org/rdl/RDS17252322
ThousandUkGallon		http://data.posccaesar.org/rdl/RDS4316887077
ThousandUsGallon		http://data.posccaesar.org/rdl/RDS4316887088
UkBushel		http://data.posccaesar.org/rdl/RDS43168871203
UkFluidOunce		http://data.posccaesar.org/rdl/RDS11619270
UkGallon		http://data.posccaesar.org/rdl/RDS11615355
UkPint		http://data.posccaesar.org/rdl/RDS11615040
UkQuart		http://data.posccaesar.org/rdl/RDS11614815
UsBarrel		http://data.posccaesar.org/rdl/RDS1349414
UsBushel		http://data.posccaesar.org/rdl/RDS43168873151
UsDryBarrel		http://data.posccaesar.org/rdl/RDS43168873165
UsDryPint		http://data.posccaesar.org/rdl/RDS43168873179
UsFluidOunce		http://data.posccaesar.org/rdl/RDS11619315
UsGallon		http://data.posccaesar.org/rdl/RDS11615400
UsLiquidPint		http://data.posccaesar.org/rdl/RDS4316887475
UsPint		http://data.posccaesar.org/rdl/RDS11614950
UsQuart		http://data.posccaesar.org/rdl/RDS11614500
YardCubed		http://data.posccaesar.org/rdl/RDS1321784

Proteus Schema Implementation: The following table contains scales for which Proteus Schema allows alternative designations (see Sec. 3.2.1.2). The quotation marks have been added because some designations contain spaces.

Scale	Designations
CentimetreCubed	"cc"

11.1.11. VolumeFlowRate

RDL: VOLUME FLOW RATE
http://data.posccaesar.org/rdl/RDS380834

Scales: The following table lists the admissible scales for values of the attribute type VolumeFlowRate.

Scale	Symbol	RDL
LitrePerSecond	l/s	http://data.posccaesar.org/rdl/RDS1331369
MetreCubedPerDay	m^3/d	http://data.posccaesar.org/rdl/RDS1320839

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Scale	Symbol	RDL
MetreCubedPerHour	m^3/h	http://data.posccaesar.org/rdl/RDS1321064
MetreCubedPerMinute	m^3/min	http://data.posccaesar.org/rdl/RDS1349909
MetreCubedPerSecond	m^3/s	http://data.posccaesar.org/rdl/RDS1321379

11.2. Attribute Types for Classifications

This section contains the attribute types for classifications (see Sec. 2.2.1.3).

11.2.1. CompositionBreakClassification

Classifications: The following table lists the admissible classifications for values of the attribute type CompositionBreakClassification.

Classification	Symbol	RDL
CompositionBreak	composition break	http://sandbox.dexpi.org/rdl/CompositionBreak
NoCompositionBreak	no composition break	http://sandbox.dexpi.org/rdl/NoCompositionBreak

11.2.2. ConfidentialityClassification

Classifications: The following table lists the admissible classifications for values of the attribute type ConfidentialityClassification.

Classification	Symbol	RDL
ConfidentialInformation	confidential	http://data.posccaesar.org/rdl/RDS4316590816
NonConfidentialInformation	non-nonfidential	http://sandbox.dexpi.org/rdl/NonConfidentialInformation

11.2.3. DetonationProofArtefactClassification

Classifications: The following table lists the admissible classifications for values of the attribute type DetonationProofArtefactClassification.

Classification	Symbol	RDL
DetonationProofArtefact	detonation-proof artefact	http://sandbox.dexpi.org/rdl/DetonationProofArtefact
NonDetonationProofArtefact	non detonation-proof artefact	http://sandbox.dexpi.org/rdl/NonDetonationProofArtefact

11.2.4. ExplosionProofArtefactClassification

Classifications: The following table lists the admissible classifications for values of the attribute type ExplosionProofArtefactClassification.

Classification	Symbol	RDL
ExplosionProofArtefact	explosion-proof artefact	http://sandbox.dexpi.org/rdl/ExplosionProofArtefact
NonExplosionProofArtefact	non explosion-proof artefact	http://sandbox.dexpi.org/rdl/NonExplosionProofArtefact

11.2.5. FailActionClassification

Classifications: The following table lists the admissible classifications for values of the attribute type FailActionClassification.

Classification	Symbol	RDL
FailClose	fail close	http://data.posccaesar.org/rdl/RDS5921400
FailOpen	fail open	http://data.posccaesar.org/rdl/RDS5921445
FailRetainPosition	fail retain position	http://sandbox.dexpi.org/rdl/FailRetainPosition

11.2.6. FireResistantArtefactClassification

Classifications: The following table lists the admissible classifications for values of the attribute type FireResistantArtefactClassification.

Classification	Symbol	RDL
FireResistantArtefact	fire-resistant artefact	http://data.posccaesar.org/rdl/RDS7907520
NonFireResistantArtefact	non fire-resistant artefact	http://sandbox.dexpi.org/rdl/NonFireResistantArtefact

11.2.7. GmpRelevanceClassification

Classifications: The following table lists the admissible classifications for values of the attribute type GmpRelevanceClassification.

Classification	Symbol	RDL
GmpRelevantFunction	GMP relevant	http://sandbox.dexpi.org/rdl/GmpRelevantFunction
NonGmpRelevantFunction	not GMP relevant	http://sandbox.dexpi.org/rdl/NonGmpRelevantFunction

11.2.8. GuaranteedSupplyFunctionClassification

Classifications: The following table lists the admissible classifications for values of the attribute type GuaranteedSupplyFunctionClassification.

Classification	Symbol	RDL
GuaranteedSupplyFunction	guaranteed supply	http://sandbox.dexpi.org/rdl/GuaranteedSupplyFunction
NonGuaranteedSupplyFunction	no guaranteed supply	http://sandbox.dexpi.org/rdl/NonGuaranteedSupplyFunction

11.2.9. HeatTracingTypeClassification

Classifications: The following table lists the admissible classifications for values of the attribute type HeatTracingTypeClassification.

Classification	Symbol	RDL
ElectricalHeatTracingSystem	electrical heat tracing system	http://data.posccaesar.org/rdl/RDS11854600
HeatTracingSystem	heat tracing system	http://data.posccaesar.org/rdl/RDS267434
NoHeatTracingSystem	no heat tracing system	http://sandbox.dexpi.org/rdl/NoHeatTracingSystem
SteamHeatTracingSystem	steam heat tracing system	http://data.posccaesar.org/rdl/RDS11854690
TubularHeatTracingSystem	tubular heat tracing system	http://data.posccaesar.org/rdl/RDS11854645

11.2.10. InsulationBreakClassification

Classifications: The following table lists the admissible classifications for values of the attribute type InsulationBreakClassification.

Classification	Symbol	RDL
InsulationBreak	inulation break	http://sandbox.dexpi.org/rdl/InsulationBreak
NoInsulationBreak	no insulation break	http://sandbox.dexpi.org/rdl/NoInsulationBreak

11.2.11. JacketedPipeClassification

Classifications: The following table lists the admissible classifications for values of the attribute type JacketedPipeClassification.

Classification	Symbol	RDL
JacketedPipe	jacketed	http://sandbox.dexpi.org/rdl/JacketedPipe
UnjacketedPipe	not jacketed	http://sandbox.dexpi.org/rdl/UnjacketedPipe

11.2.12. LocationClassification

Classifications: The following table lists the admissible classifications for values of the attribute type LocationClassification.

Classification	Symbol	RDL
CentralLocation	central	http://sandbox.dexpi.org/rdl/CentralLocation
ControlPanel	panel	http://data.posccaesar.org/rdl/RDS874124
Field	field	http://data.posccaesar.org/rdl/RDS409545541

11.2.13. NodeFlowClassification

Classifications: The following table lists the admissible classifications for values of the attribute type NodeFlowClassification.

Classification	Symbol	RDL
MainFlowInNode	main flow in	http://sandbox.dexpi.org/rdl/FlowInNode
MainFlowOutNode	main flow out	http://sandbox.dexpi.org/rdl/FlowOutNode

11.2.14. NominalDiameterBreakClassification

Classifications: The following table lists the admissible classifications for values of the attribute type NominalDiameterBreakClassification.

Classification	Symbol	RDL
NoNominalDiameterBreak	no nominal diameter break	http://sandbox.dexpi.org/rdl/NoNominalDiameterBreak
NominalDiameterBreak	nominal diameter break	http://sandbox.dexpi.org/rdl/NominalDiameterBreak

11.2.15. NominalDiameterStandardClassification

Classifications: The following table lists the admissible classifications for values of the attribute type NominalDiameterStandardClassification.

Classification	Symbol	RDL
Din2448ObjectDn15	DN 15 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn15
Din2448ObjectDn20	DN 20 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn20
Din2448ObjectDn25	DN 25 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn25
Din2448ObjectDn32	DN 32 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn32
Din2448ObjectDn40	DN 40 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn40
Din2448ObjectDn50	DN 50 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn50
Din2448ObjectDn65	DN 65 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn65
Din2448ObjectDn80	DN 80 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn80
Din2448ObjectDn100	DN 100 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn100
Din2448ObjectDn125	DN 125 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn125
Din2448ObjectDn150	DN 150 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn150
Din2448ObjectDn200	DN 200 (DIN 2448)	http://sandbox.dexpi.org/rdl/Din2448ObjectDn200
Iso6708ObjectDn15	DN 15 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn15
Iso6708ObjectDn20	DN 20 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn20
Iso6708ObjectDn25	DN 25 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn25
Iso6708ObjectDn32	DN 32 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn32
Iso6708ObjectDn40	DN 40 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn40
Iso6708ObjectDn50	DN 50 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn50
Iso6708ObjectDn65	DN 65 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn65
Iso6708ObjectDn80	DN 80 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn80
Iso6708ObjectDn100	DN 100 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn100
Iso6708ObjectDn125	DN 125 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn125
Iso6708ObjectDn150	DN 150 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn150
Iso6708ObjectDn200	DN 200 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn200
Iso6708ObjectDn250	DN 250 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn250
Iso6708ObjectDn300	DN 300 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn300

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Scale	Symbol	RDL
Iso6708ObjectDn350	DN 350 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn350
Iso6708ObjectDn400	DN 400 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn400
Iso6708ObjectDn450	DN 450 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn450
Iso6708ObjectDn500	DN 500 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn500
Iso6708ObjectDn600	DN 600 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn600
Iso6708ObjectDn700	DN 700 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn700
Iso6708ObjectDn800	DN 800 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn800
Iso6708ObjectDn900	DN 900 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn900
Iso6708ObjectDn1000	DN 1000 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn1000
Iso6708ObjectDn1200	DN 1200 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn1200
Iso6708ObjectDn1400	DN 1400 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn1400
Iso6708ObjectDn1600	DN 1600 (ISO 6708)	http://sandbox.dexpi.org/rdl/Iso6708ObjectDn1600
Nps1_1/2Artefact	NPS 1 1/2	http://data.posccaesar.org/rdl/RDS2086340822
Nps1_1/4Artefact	NPS 1 1/4	http://data.posccaesar.org/rdl/RDS20863408321
Nps1Artefact	NPS 1	http://data.posccaesar.org/rdl/RDS20863408137
Nps1/2Artefact	NPS 1/2	http://data.posccaesar.org/rdl/RDS20863408113
Nps1/4Artefact	NPS 1/4	http://data.posccaesar.org/rdl/RDS2086340839
Nps10Artefact	NPS 10	http://data.posccaesar.org/rdl/RDS20863408298
Nps12Artefact	NPS 12	http://data.posccaesar.org/rdl/RDS208634082110
Nps14Artefact	NPS 14	http://data.posccaesar.org/rdl/RDS208634082122
Nps16Artefact	NPS 16	http://data.posccaesar.org/rdl/RDS208634082134
Nps18Artefact	NPS 18	http://data.posccaesar.org/rdl/RDS208634082146
Nps2_1/2Artefact	NPS 2 1/2	http://data.posccaesar.org/rdl/RDS20863408226
Nps2Artefact	NPS 2	http://data.posccaesar.org/rdl/RDS20863408214
Nps20Artefact	NPS 20	http://data.posccaesar.org/rdl/RDS208634082158
Nps24Artefact	NPS 24	http://data.posccaesar.org/rdl/RDS208634082170
Nps3_1/2Artefact	NPS 3 1/2	http://data.posccaesar.org/rdl/RDS20863408333
Nps3Artefact	NPS 3	http://data.posccaesar.org/rdl/RDS20863408238
Nps3/4Artefact	NPS 3/4	http://data.posccaesar.org/rdl/RDS20863408125
Nps30Artefact	NPS 30	http://data.posccaesar.org/rdl/RDS208634082182
Nps36Artefact	NPS 36	http://data.posccaesar.org/rdl/RDS208634082194
Nps4Artefact	NPS 4	http://data.posccaesar.org/rdl/RDS20863408250
Nps42Artefact	NPS 42	http://data.posccaesar.org/rdl/RDS208634082206
Nps48Artefact	NPS 48	http://data.posccaesar.org/rdl/RDS208634082218
Nps5Artefact	NPS 5	http://data.posccaesar.org/rdl/RDS20863408262
Nps54Artefact	NPS 54	http://data.posccaesar.org/rdl/RDS208634082230
Nps6Artefact	NPS 6	http://data.posccaesar.org/rdl/RDS20863408274
Nps60Artefact	NPS 60	http://data.posccaesar.org/rdl/RDS208634082242
Nps8Artefact	NPS 8	http://data.posccaesar.org/rdl/RDS20863408286

11.2.16. NumberOfPortsClassification

Classifications: The following table lists the admissible classifications for values of the attribute type NumberOfPortsClassification.

Classification	Symbol	RDL
FourPortValve	4 port valve	http://data.posccaesar.org/rdl/RDS6330166
ThreePortValve	3 port valve	http://data.posccaesar.org/rdl/RDS6331437
TwoPortValve	2 port valve	http://data.posccaesar.org/rdl/RDS11506315

11.2.17. OnHoldClassification

Classifications: The following table lists the admissible classifications for values of the attribute type OnHoldClassification.

Classification	Symbol	RDL
NotOnHold	not on hold	http://sandbox.dexpi.org/rdl/NotOnHold
OnHold	on hold	http://sandbox.dexpi.org/rdl/OnHold

11.2.18. OperationClassification

Classifications: The following table lists the admissible classifications for values of the attribute type OperationClassification.

Classification	Symbol	RDL
ContinuousOperation	continuous operation	http://data.posccaesar.org/rdl/RDS9710162
IntermittentOperation	intermittent operation	http://data.posccaesar.org/rdl/RDS9705752

11.2.19. PipingClassArtefactClassification

Classifications: The following table lists the admissible classifications for values of the attribute type PipingClassArtefactClassification.

Classification	Symbol	RDL
NonPipingClassArtefact	non-piping-class artefact	http://sandbox.dexpi.org/rdl/NonPipingClassArtefact
PipingClassArtefact	piping class artefact	http://sandbox.dexpi.org/rdl/PipingClassArtefact

11.2.20. PipingClassBreakClassification

Classifications: The following table lists the admissible classifications for values of the attribute type PipingClassBreakClassification.

Classification	Symbol	RDL
NoPipingClassBreak	no piping class break	http://sandbox.dexpi.org/rdl/NoPipingClassBreak
PipingClassBreak	piping class break	http://sandbox.dexpi.org/rdl/PipingClassBreak

11.2.21. PipingNetworkSegmentFlowClassification

Classifications: The following table lists the admissible classifications for values of the attribute type PipingNetworkSegmentFlowClassification.

Classification	Symbol	RDL
DualFlowPipingNetworkSegment	dual flow	http://sandbox.dexpi.org/rdl/DualFlowPipingNetworkSegment
SingleFlowPipingNetworkSegment	single flow	http://sandbox.dexpi.org/rdl/SingleFlowPipingNetworkSegment

11.2.22. PipingNetworkSegmentSlopeClassification

Classifications: The following table lists the admissible classifications for values of the attribute type PipingNetworkSegmentSlopeClassification.

Classification	Symbol	RDL
SlopedPipingNetworkSegment	sloped	http://sandbox.dexpi.org/rdl/SlopedPipingNetworkSegment
UnslopedPipingNetworkSegment	not sloped	http://sandbox.dexpi.org/rdl/UnslopedPipingNetworkSegment

11.2.23. PortStatusClassification

Classifications: The following table lists the admissible classifications for values of the attribute type PortStatusClassification.

Classification	Symbol	RDL
HighHighHighPort	HHH	http://sandbox.dexpi.org/rdl/StatusHighHighHighPort
HighHighPort	HH	http://data.posccaesar.org/rdl/RDS323099
HighPort	H	http://data.posccaesar.org/rdl/RDS323144
LowLowLowPort	LLL	http://sandbox.dexpi.org/rdl/StatusLowLowLowPort
LowLowPort	LL	http://data.posccaesar.org/rdl/RDS323189
LowPort	L	http://data.posccaesar.org/rdl/RDS323234

11.2.24. PrimarySecondaryPipingNetworkSegmentClassification

Classifications: The following table lists the admissible classifications for values of the attribute type PrimarySecondaryPipingNetworkSegmentClassification.

Classification	Symbol	RDL
PrimaryPipingNetworkSegment	primary segment	http://sandbox.dexpi.org/rdl/PrimaryPipingNetworkSegment
SecondaryPipingNetworkSegment	secondary segment	http://sandbox.dexpi.org/rdl/SecondaryPipingNetworkSegment

11.2.25. QualityRelevanceClassification

Classifications: The following table lists the admissible classifications for values of the attribute type QualityRelevanceClassification.

Classification	Symbol	RDL
NonQualityRelevantFunction	not quality relevant	http://sandbox.dexpi.org/rdl/NonQualityRelevantFunction
QualityRelevantFunction	quality relevant	http://sandbox.dexpi.org/rdl/QualityRelevantFunction

11.2.26. SignalConveyingTypeClassification

Classifications: The following table lists the admissible classifications for values of the attribute type SignalConveyingTypeClassification.

Classification	Symbol	RDL
CapillarySignalConveying	capillary	http://sandbox.dexpi.org/rdl/CapillarySignalConveying
ConductedRadiationSignalConveying	conducted radiation	http://sandbox.dexpi.org/rdl/ConductedRadiationSignalConveying
ElectricalSignalConveying	electrical	http://sandbox.dexpi.org/rdl/ElectricalSignalConveying
HydraulicSignalConveying	hydraulic	http://sandbox.dexpi.org/rdl/HydraulicSignalConveying
PneumaticSignalConveying	pneumatic	http://sandbox.dexpi.org/rdl/PneumaticSignalConveying

11.2.27. SiphonClassification

Classifications: The following table lists the admissible classifications for values of the attribute type SiphonClassification.

Classification	Symbol	RDL
NoSiphon	no siphon	http://sandbox.dexpi.org/rdl/NoSiphon
Siphon	siphon	http://data.posccaesar.org/rdl/RDS311084

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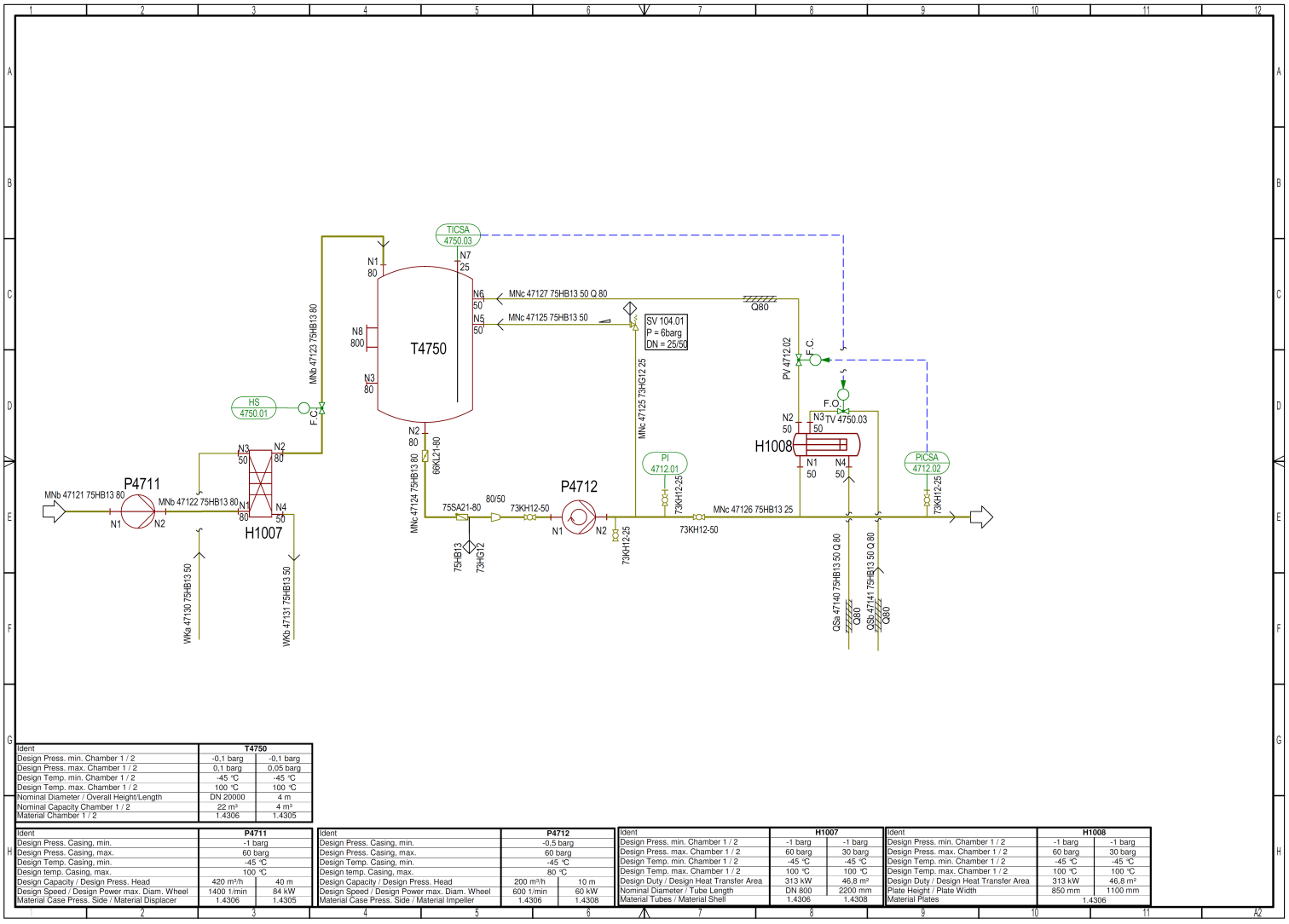
B. Example P&ID

The example P&ID created by the DEXPI group (see Fig. B.1) has been implemented in an XMpLant file[1]. Figure B.2 shows the graphical content of this XMpLant file; the figure has been generated with the DEXPI graphics validator.

[1] The document is attached as a separate file.



Ident	T4750	
Design Press. min. Chamber 1 / 2	-0,1 barg	-0,1 barg
Design Press. max. Chamber 1 / 2	0,1 barg	0,05 barg
Design Temp. min. Chamber 1 / 2	-45 °C	-45 °C
Design Temp. max. Chamber 1 / 2	100 °C	100 °C
Nominal Diameter / Overall Height/Length	DN 20000	4 m
Nominal Capacity Chamber 1 / 2	22 m³	4 m³
Material Chamber 1 / 2	1.4306	1.4305

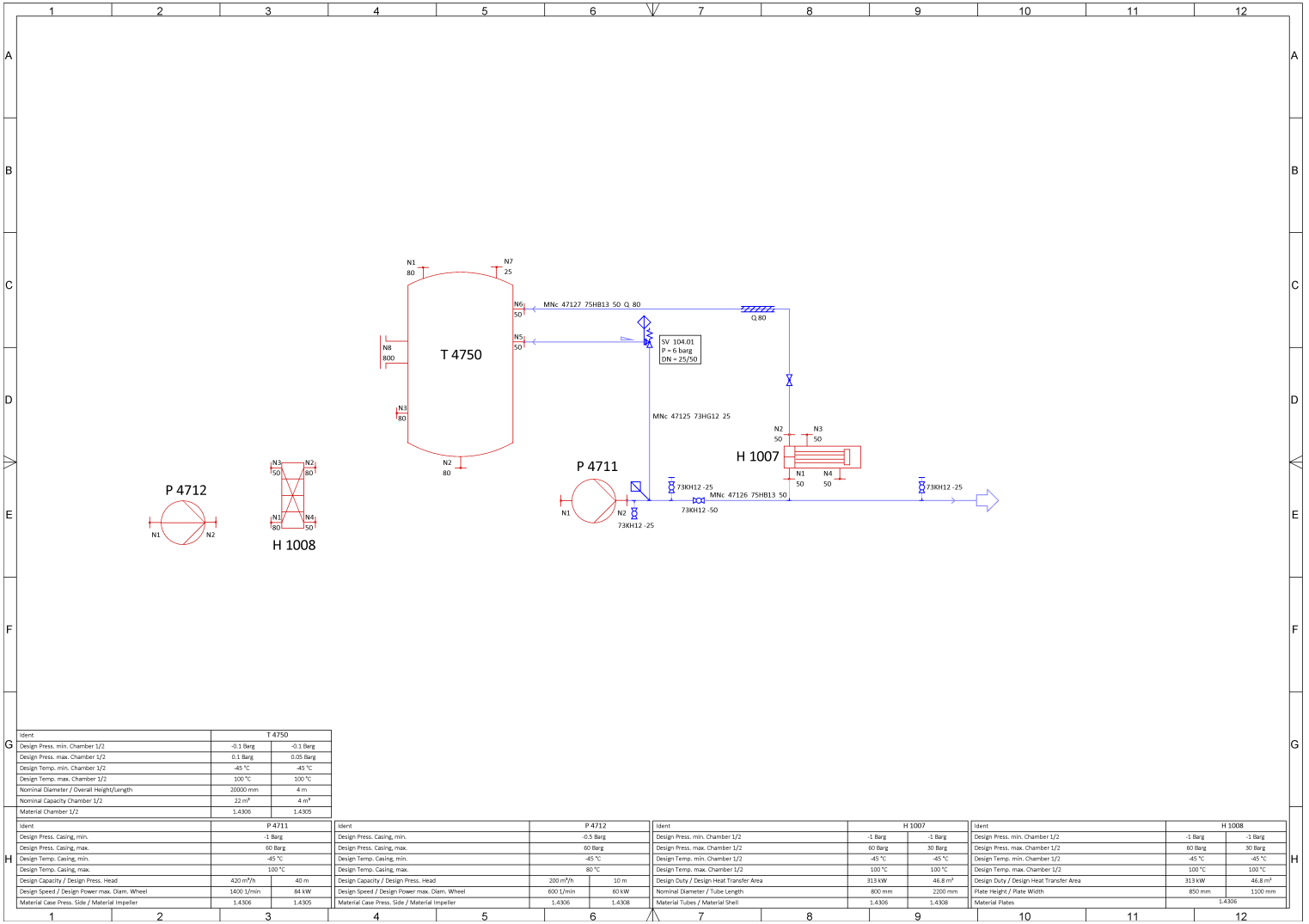
Ident	P4711	
Design Press. Casing, min.	-1 barg	
Design Press. Casing, max.	60 barg	
Design Temp. Casing, min.	-45 °C	
Design temp. Casing, max.	100 °C	
Design Capacity / Design Press. Head	420 m³/h	40 m
Design Speed / Design Power max. Diam. Wheel	1400 1/min	84 kW
Material Case Press. Side / Material Displacer	1.4306	1.4305

Ident	P4712	
Design Press. Casing, min.	-0,5 barg	
Design Press. Casing, max.	60 barg	
Design Temp. Casing, min.	-45 °C	
Design temp. Casing, max.	80 °C	
Design Capacity / Design Press. Head	200 m³/h	10 m
Design Speed / Design Power max. Diam. Wheel	600 1/min	60 kW
Material Case Press. Side / Material Impeller	1.4306	1.4308

Ident	H1007	
Design Press. min. Chamber 1 / 2	-1 barg	-1 barg
Design Press. max. Chamber 1 / 2	60 barg	30 barg
Design Temp. min. Chamber 1 / 2	-45 °C	-45 °C
Design Temp. max. Chamber 1 / 2	100 °C	100 °C
Design Duty / Design Heat Transfer Area	313 kW	46,8 m²
Nominal Diameter / Tube Length	DN 800	2200 mm
Material Tubes / Material Shell	1.4306	1.4308

Ident	H1008	
Design Press. min. Chamber 1 / 2	-1 barg	-1 barg
Design Press. max. Chamber 1 / 2	60 barg	30 barg
Design Temp. min. Chamber 1 / 2	-45 °C	-45 °C
Design Temp. max. Chamber 1 / 2	100 °C	100 °C
Design Duty / Design Heat Transfer Area	313 kW	46,8 m²
Plate Height / Plate Width	850 mm	1100 mm
Material Plates	1.4306	

Figure B.1.: Original DEXPI example flowsheet.



Ident	T 4750	
Design Press. min. Chamber 1/2	-0.1 Barg	-0.1 Barg
Design Press. max. Chamber 1/2	0.1 Barg	0.05 Barg
Design Temp. min. Chamber 1/2	-45 °C	-45 °C
Design Temp. max. Chamber 1/2	100 °C	100 °C
Nominal Diameter / Overall Height/Length	20000 mm	4 m
Nominal Capacity Chamber 1/2	22 m³	4 m³
Material Chamber 1/2	1.4306	1.4305

Ident	P 4711	
Design Press. Casing, min.	-1 Barg	
Design Press. Casing, max.	60 Barg	
Design Temp. Casing, min.	-45 °C	
Design Temp. Casing, max.	100 °C	
Design Capacity / Design Press. Head	420 m³/h	40 m
Design Speed / Design Power max. Diam. Wheel	1400 1/min	84 kW
Material Case Press. Side / Material Impeller	1.4306	1.4305

Ident	P 4712	
Design Press. Casing, min.	-0.5 Barg	
Design Press. Casing, max.	60 Barg	
Design Temp. Casing, min.	-45 °C	
Design Temp. Casing, max.	80 °C	
Design Capacity / Design Press. Head	200 m³/h	10 m
Design Speed / Design Power max. Diam. Wheel	600 1/min	60 kW
Material Case Press. Side / Material Impeller	1.4306	1.4308

Ident	H 1007	
Design Press. min. Chamber 1/2	-1 Barg	-1 Barg
Design Press. max. Chamber 1/2	60 Barg	30 Barg
Design Temp. min. Chamber 1/2	-45 °C	-45 °C
Design Temp. max. Chamber 1/2	100 °C	100 °C
Design Duty / Design Heat Transfer Area	313 kW	46.8 m²
Nominal Diameter / Tube Length	800 mm	2200 mm
Material Tubes / Material Shell	1.4306	1.4308

Ident	H 1008	
Design Press. min. Chamber 1/2	-1 Barg	-1 Barg
Design Press. max. Chamber 1/2	60 Barg	30 Barg
Design Temp. min. Chamber 1/2	-45 °C	-45 °C
Design Temp. max. Chamber 1/2	100 °C	100 °C
Design Duty / Design Heat Transfer Area	313 kW	46.8 m²
Plate Height / Plate Width	850 mm	1100 mm
Material Plates	1.4306	

Figure B.2.: DEXPI example flowsheet, generated from the XMpLant implementation.