

DEXPI Data Exchange in
Process Industry

P&ID Specification

Version: 1.2

Date: 2017-05-20

This specification is based on
Proteus P&ID Profile Schema 4.0.1 RC 2

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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 CAE¹(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/EPCs², 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.

¹CAE=Computer Aided Engineering

²EPC=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&ID³ 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. DEXPI Members

Owner Operators (OO)

- BASF SE
- Bayer AG
- Evonik Technology & Infrastructure GmbH

Engineering, Procurement, and Construction (EPC)

- Air Liquide Global E&C Solutions Germany GmbH

Research

- AixCAPE e.V.
- RWTH Aachen University (AVT.SVT)
- VTT Technical Research Centre of Finland

Software and Systems Providers

- Autodesk, Inc.
- AVEVA group plc
- Bentley Systems, Inc.
- Intergraph Corporation
- Siemens AG
- X-Visual Technologies GmbH

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

³P&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 scalar¹ 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

¹We neglect properties of higher order such as vectors.

²This 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*.

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

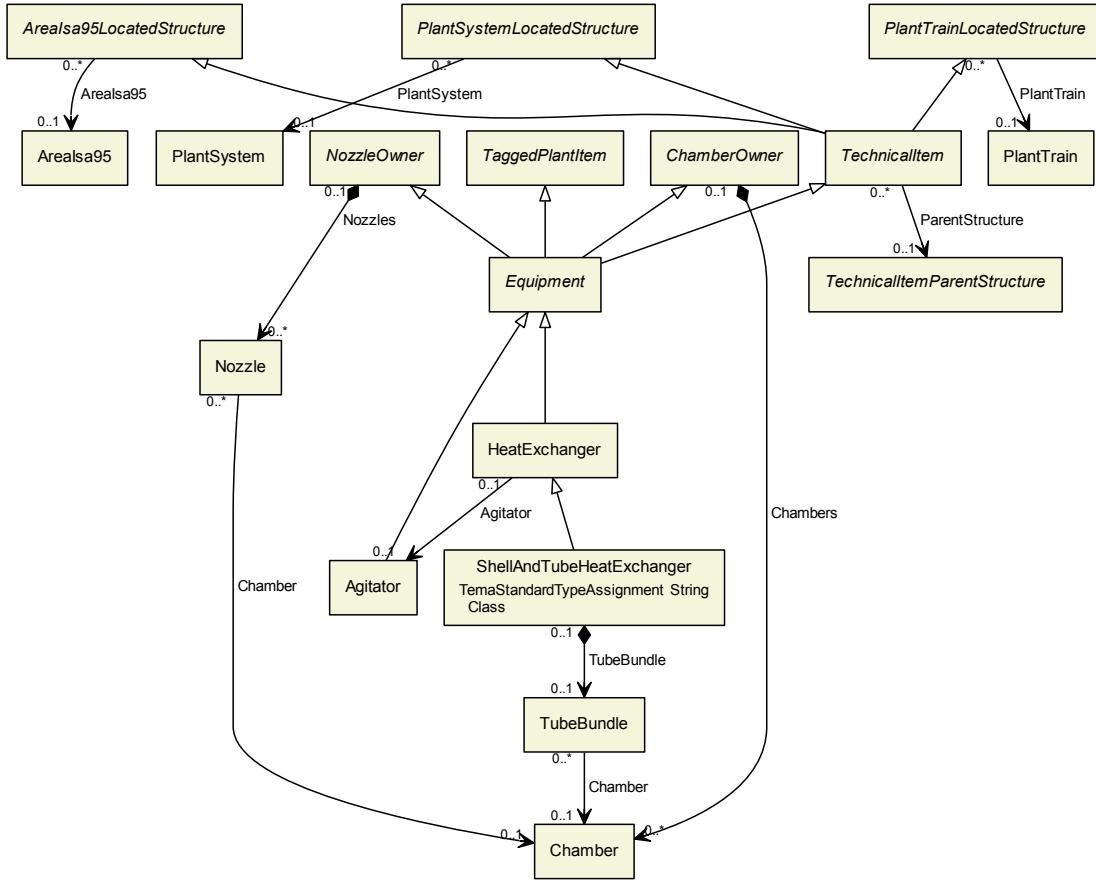


Figure 2.1.: Excerpt of the DEXPI information model: `ShellAndTubeHeatExchanger` and related classes.

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. 12.1. 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 RC 2¹.

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 ... />
```

¹No official release by IIMM. This release candidate is available on the DEXPI workspace. Contact DEXPI if you need access, see www.dexpi.org.

```
</GenericAttributes>
</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. <i>See ?? for the rules for default units if the unit is omitted.</i>
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 `ValueURI` 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. Integer

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

Example

```
<GenericAttribute
  Name="NumberOfTubes"
  AttributeURI="http://data.posccaesar.org/rdl/RDS363959"
  Value="36"
  Format="integer" />
```

Example with Null Value

```
<GenericAttribute
  Name="NumberOfTubes"
  AttributeURI="http://data.posccaesar.org/rdl/RDS363959"
  Format="integer" />
```

3.2.1.2. String

Attribute Name	Required	Description
<code>Name</code>	y	The name of the attribute.

continued on next page

3. Implementation with Proteus Schema

continued from previous page

Attribute Name	Required	Description
AttributeURI	y	A URI to the RDL qualifying the attribute being represented.
Value	(y)	The string value. <i>Not used</i> if value is <i>null</i> .
ValueURI	n	<i>not used</i>
Units	n	<i>not used</i>
UnitsURI	n	<i>not used</i>
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" />
```

3.2.1.3. Physical Quantity

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

For some scales, Proteus schema allows alternative names in the Units attribute (see Sec. 12.1). 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" />
```

3.2.1.4. 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.
Units	n	<i>not used</i>
UnitsURI	n	<i>not used</i>
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/SymbolRegistrationNumberAssignmentClass"
  Value="ISO10628-2322A-A01"
  Format="string"/>
```

3.4. Labels

Labels include simple text labels such as the tag name label of an equipment as well as more complex depictions such as an equipment bar label (cf. the various equipment bars for different equipments in the example flowsheet). In a Proteus file, labels are represented by means of `Label` elements. These elements must be children of the object to which the label refers. Where applicable, the type of the label must be given via `ComponentClass` and `ComponentClassURI`.

The following example shows an Equipment of type CentrifugalPump with two labels, i.e., a simple tag name (`EquipmentTagNameLabel`) and a more complex equipment bar (`EquipmentBarLabel`). In addition, the nozzle N1 of the pump has an additional label of type `NozzleStandardLabel`.

```
<Equipment
  ID = "P_02"
  TagName = "P4712"
  ComponentName = "CentrifugalPumpShape"
  ComponentClass = "CentrifugalPump"
  ComponentClassURI = "http://data.posccaesar.org/rdl/RDS416834" >
  <!-- details omitted -->
  <Label
    ID = "P_02_L1"
    ComponentClassURI = "http://sandbox.dexpi.org/rdl/EquipmentTagNameLabel"
    ComponentClass = "EquipmentTagNameLabel" >
    <!--details omitted -->
  </Label>
  <Label
    ID = "P_02_L2"
    ComponentClassURI = "http://sandbox.dexpi.org/rdl/EquipmentBarLabel"
    ComponentClass = "EquipmentBarLabel" >
    <!--details omitted -->
  </Label>
  <!--details omitted -->
  <Nozzle
    ID = "P_02_N1"
    TagName = "N1"
    ComponentName = "NozzleShape"
    ComponentClass = "Nozzle"
    ComponentClassURI = "http://data.posccaesar.org/rdl/RDS415214" >
    <!--details omitted -->
    <Label
      ID = "P_02_N1_L1"
      ComponentClassURI = "http://sandbox.dexpi.org/rdl/NozzleStandardLabel"
      ComponentClass = "NozzleStandardLabel" >
```

```
<!--details omitted -->
</Label>
</Nozzle>
<!--details omitted -->
</Equipment>
```

DEXPI has defined several label types for different kinds of objects (see below). Usage of labels is not prescribed by DEXPI, but if labels of a certain type are used, the label type must be given.

Text elements in labels that visualize certain attributes of an engineering element (e.g., a tag name or a design temperature) should hardcode these values as strings. In addition, 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 requires to use the XML ID for the ItemID².

3.4.1. EquipmentBarLabel

URI: <http://sandbox.dexpi.org/rdl/EquipmentBarLabel>

Defined for classes: [Equipment](#)

Example content: various attributes

Example: see equipment bars in DEXPI example flowsheet

3.4.2. EquipmentTagNameLabel

URI: <http://sandbox.dexpi.org/rdl/EquipmentTagNameLabel>

Defined for classes: [Equipment](#)

Example content: tag name

Example: P4712

3.4.3. NozzleStandardLabel

URI: <http://sandbox.dexpi.org/rdl/NozzleStandardLabel>

Defined for classes: [Nozzle](#)

Example content: tag name

Example: N1

3.4.4. ValveLabel

URI: <http://sandbox.dexpi.org/rdl/ValveLabel>

Defined for classes: [ShutOffValve](#), [CheckValve](#)

Example content: piping component name and nominal diameter

Example: 73KH12-50

3.4.5. FittingLabel

URI: <http://sandbox.dexpi.org/rdl/FittingLabel>

Defined for classes: [PipeFitting](#)

Example content: piping component name and nominal diameter

3.4.6. ReducerLabel

URI: <http://sandbox.dexpi.org/rdl/ReducerLabel>

Defined for classes: [PipeReducer](#)

Example content: both nominal diameters

Example: 80/50

²Proteus allows some alternatives, which, however, can easily lead to ambiguity.

3.4.7. InsulationLabel

URI: <http://sandbox.dexpi.org/rdl/InsulationLabel>

Defined for classes: [PipingNetworkSegment](#)

Example content: insulation type and thickness

Example: Q80

3.4.8. SafetyValveOrFittingLabel

URI: <http://sandbox.dexpi.org/rdl/SafetyValveOrFittingLabel>

Defined for classes: [SafetyValveOrFitting](#)

Example content: position number, set pressure and nominal diameter

Example: SV 104.1

P = 6 barg

DN = 25/50

3.4.9. PipingClassBreakLabel

URI: <http://sandbox.dexpi.org/rdl/PipingClassBreakLabel>

Defined for classes: [PropertyBreak](#)

Example content: piping classes before and after the break

3.4.10. InsulationBreakLabel

URI: <http://sandbox.dexpi.org/rdl/InsulationBreakLabel>

Defined for classes: [PropertyBreak](#)

Example content: insulation type and thickness before and after the break

3.4.11. ProcessInstrumentationFunctionLabel

URI: <http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunctionLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: category, process functions, and instrumentation loop function number

3.4.12. SignalHighLabel

URI: <http://sandbox.dexpi.org/rdl/SignalHighLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: signal functions, "H"

3.4.13. SignalHighHighLabel

URI: <http://sandbox.dexpi.org/rdl/SignalHighHighLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: signal functions, "HH"

3.4.14. SignalHighHighHighLabel

URI: <http://sandbox.dexpi.org/rdl/SignalHighHighHighLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: signal functions, "HHH"

3.4.15. SignalLowLabel

URI: <http://sandbox.dexpi.org/rdl/SignalLowLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: signal functions, "L"

3.4.16. SignalLowLabel

URI: <http://sandbox.dexpi.org/rdl/SignalLowLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: signal functions, "LL"

3.4.17. SignalLowLowLabel

URI: <http://sandbox.dexpi.org/rdl/SignalLowLowLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: signal functions, "LLL"

3.4.18. SafetyRelevanceLabel

URI: <http://sandbox.dexpi.org/rdl/SafetyRelevanceLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: safety relevance class

3.4.19. GMPRelevanceLabel

URI: <http://sandbox.dexpi.org/rdl/GMPRelevanceLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: GMP relevance

3.4.20. QualityRelevanceLabel

URI: <http://sandbox.dexpi.org/rdl/QualityRelevanceLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: quality relevance

3.4.21. VendorNameLabel

URI: <http://sandbox.dexpi.org/rdl/VendorNameLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: vendor name

3.4.22. TypicalInformationLabel

URI: <http://sandbox.dexpi.org/rdl/TypicalInformationLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: typical information

3.4.23. DeviceInformationLabel

URI: <http://sandbox.dexpi.org/rdl/DeviceInformationLabel>

Defined for classes: [ProcessInstrumentationFunction](#)

Example content: device information

3.4.24. ProcessSignalGeneratingSystemNumberLabel

URI: <http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingSystemNumberLabel>

Defined for classes: [ProcessSignalGeneratingSystem](#)

Example content: number of the process signal generating system

3.4.25. ActuatingSystemNumberLabel

URI: <http://sandbox.dexpi.org/rdl/ActuatingSystemNumberLabel>

Defined for classes: [ActuatingSystem](#)

Example content: number of the actuating system

3.4.26. FailActionLabel

URI: <http://sandbox.dexpi.org/rdl/FailActionLabel>

Defined for classes: [ControlledActuator](#)

Example content: fail action

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 RC 2*. 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/2001/XMLSchema-instance" SchemaVersion="3.6.0">
    <PlantInformation>
        <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.

4. Verification

```
<Circle Radius="10.015841">
    <Presentation Layer="0" Color="0" LineType="Solid" LineWidth="1" />
    <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 RC 2.

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 unambiguous 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="Symbol">
    <Presentation Layer="Equipment" Color="256" LineType="Solid" LineWidth="1" />
    <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">
            ...
        </GenericAttributes>
    </Equipment>
</ShapeCatalogue>
```

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.

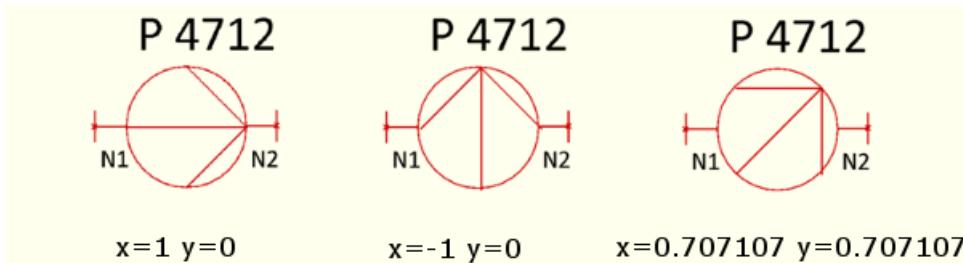
```
<Equipment ID="SC_P_02" ComponentName="P_02">
    <GenericAttributes Number="1" Set="DexpiAttributes">
        ...
    </GenericAttributes>
    <Extent>
        <Min X="-10" Y="-10" Z="0" />
        <Max X="10" Y="10" Z="0" />
    </Extent>
    <Position>
        <Location X="0" Y="0" Z="0" />
 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

4.2.2.3. Rotation and Scale

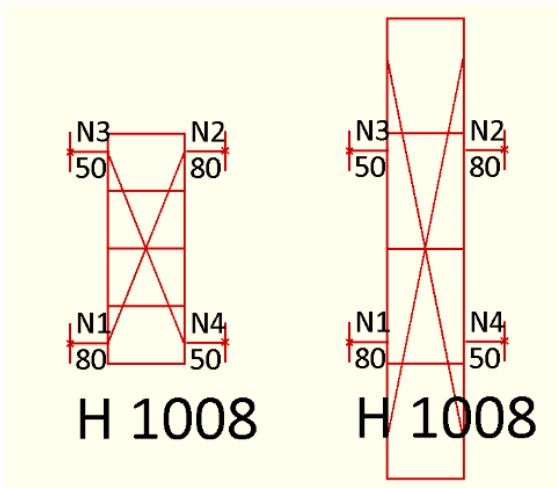
A symbol from the *ShapeCatalogue*, can be rotated or scaled by using *Reference* and *Scale*.

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 fulfilled 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 distorted 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

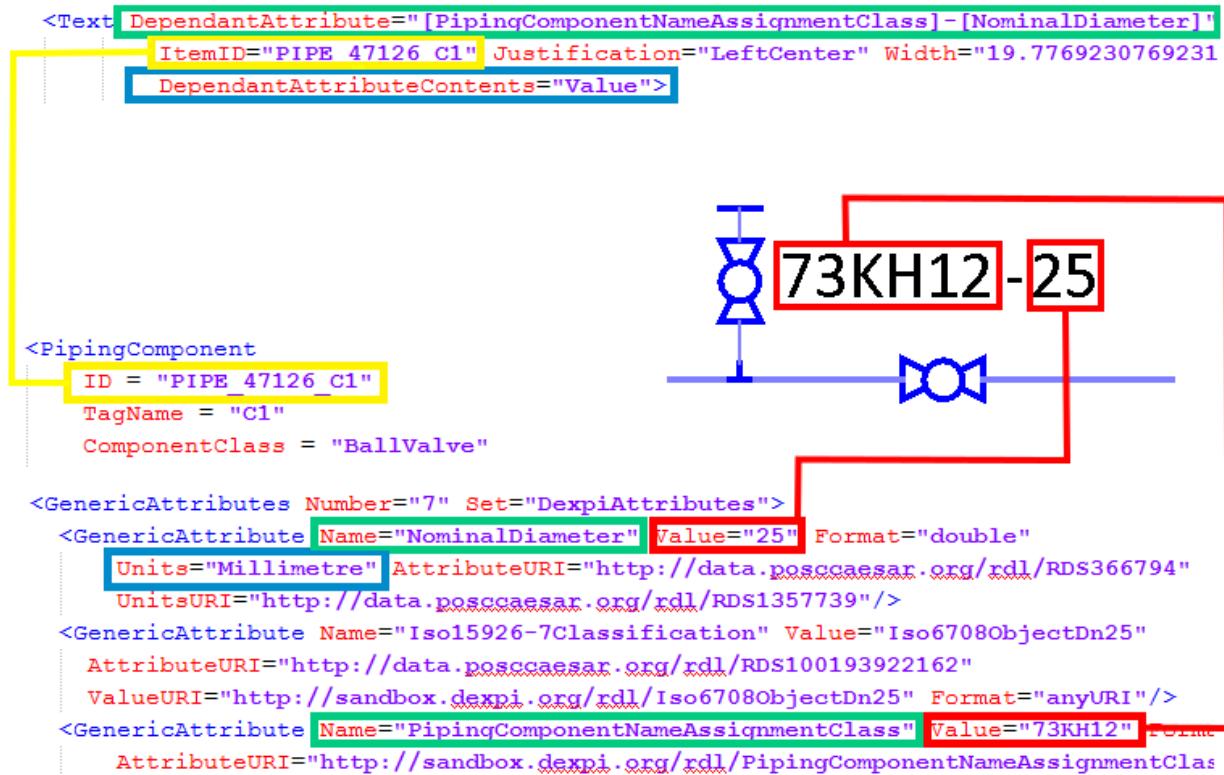
If a *Text* element is used to display values stored in a *GenericAttribute*, *ItemID* and *DependantAttribute* are required.

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).

4. Verification

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/Plantmodel/Labels">
    <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>
</Label>

```

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 fulfilled.

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

4. Verification

- generation of verification output

Part II.

Reference

5. Plant

5.1. Overview

5.2. Plant

Description: The engineering content of a [PlantModel](#).

RDL: PLANT

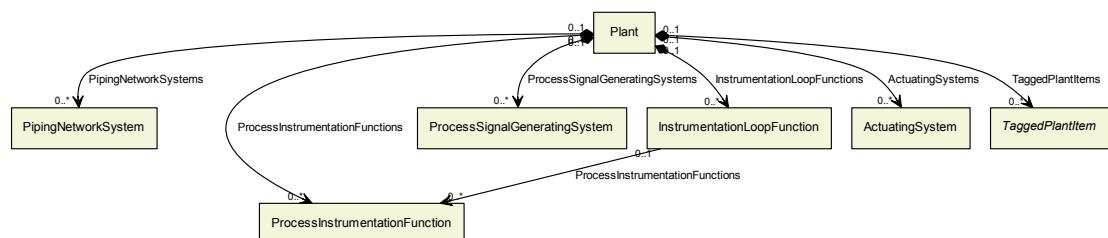
<http://data.posccaesar.org/rdl/RDS7151797>

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](#), [TaggedPlantItem](#), 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: For each [ActuatingSystem](#), the corresponding [ActuatingSystem](#) element is present in the [PlantModel](#).

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ment is a child 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. InstrumentationLoopFunctions

Description: The [InstrumentationLoopFunctions](#) of the [Plant](#).

Type: [InstrumentationLoopFunction](#)

Cardinality: 0..*

Proteus Schema Implementation: For each [InstrumentationLoopFunction](#), the corresponding <InstrumentationLoopFunction> element is a child of the <PlantModel> element that corresponds to the [PlantModel](#) containing the [Plant](#). See also Proteus Schema Implementation of [Plant](#).

Example:

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

5.2.2.3. PipingNetworkSystems

Description: The [PipingNetworkSystems](#) of the [Plant](#).

Type: [PipingNetworkSystem](#)

Cardinality: 0..*

Proteus Schema Implementation: For each [PipingNetworkSystem](#), the corresponding <PipingNetworkSystem> element is a child of the <PlantModel> element that corresponds to the [PlantModel](#) containing the [Plant](#). See also Proteus Schema Implementation of [Plant](#).

Example:

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

5.2.2.4. ProcessInstrumentationFunctions

Description: The [ProcessInstrumentationFunction](#)s of the [Plant](#).

Type: [ProcessInstrumentationFunction](#)

Cardinality: 0..*

Proteus Schema Implementation: For each [ProcessInstrumentationFunction](#), the corresponding `<ProcessInstrumentationFunction>` element is a child of the `<PlantModel>` element that corresponds to the [PlantModel](#) containing the [Plant](#). See also Proteus Schema Implementation of [Plant](#).

Example:

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

5.2.2.5. ProcessSignalGeneratingSystems

Description: The [ProcessSignalGeneratingSystem](#)s of the [Plant](#).

Type: [ProcessSignalGeneratingSystem](#)

Cardinality: 0..*

Proteus Schema Implementation: For each [ProcessSignalGeneratingSystem](#), the corresponding `<ProcessSignalGeneratingSystem>` element is a child of the `<PlantModel>` element that corresponds to the [PlantModel](#) containing the [Plant](#). See also Proteus Schema Implementation of [Plant](#).

Example:

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

5.2.2.6. TaggedPlantItems

Description: The [TaggedPlantItem](#)s of the [Plant](#).

Type: [TaggedPlantItem](#)

Cardinality: 0..*

Proteus Schema Implementation: For each [TaggedPlantItem](#), the corresponding `<Equipment>` element is a child of the `<PlantModel>` element that corresponds to the [PlantModel](#) containing the [Plant](#). See also Proteus Schema Implementation of [Plant](#).

Example:

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

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

5.2.3. Model References

No model references.

5.2.4. Attributes

No attributes.

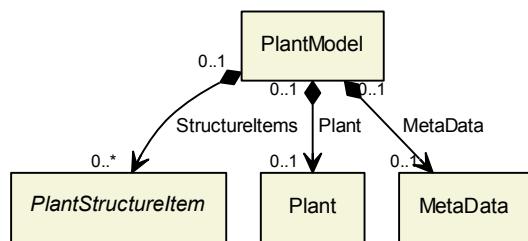
5.3. PlantModel

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. StructureItems

Description: The plant structures of the [PlantModel](#)

Type: [PlantStructureItem](#)

Cardinality: 0..*

Proteus Schema Implementation: The [PlantStructureItem](#) elements are children of the [PlantModel](#) element.

Example:

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

5.3.3. Model References

No model references.

5.3.4. Attributes

No attributes.

6. Common Concepts

6.1. Overview

This chapter contains basic objects of the DEXPI information model that are not specific for equipment (Chap. 9), piping (Chap. 10), and instrumentation (Chap. 11).

6.2. PipingNode

Description: A possible connection point for a [PipingConnection](#).

RDL: -

Proteus Schema Implementation: Proteus <Node> element with XML attribute Type="process". See also Proteus implementation of [Nodes](#) attribute of [PipingNodeOwner](#).

Example:

```
<Node Type="process"> ... </Node>
```

6.2.1. Overview

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

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. NodeFlowSpecialization

Description: A classification of the flow direction in the [PipingNode](#) with respect to its [PipingNodeOwner](#).

RDL: NODE FLOW SPECIALIZATION

<http://sandbox.dexpi.org/rdl/NodeFlowSpecialization>

Attribute Type: [NodeFlowClassification](#)

Example Value: main flow in

(MAIN FLOW IN NODE, <http://sandbox.dexpi.org/rdl/MainFlowInNode>)

Proteus Schema Implementation: XML attributes FlowIn and FlowOut of the surrounding <ConnectionPoints> element. Note that the default values of these XML attributes (1 and 2, respectively) have been removed in Proteus Schema 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 Type="process" ...> ... </Node>

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

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

</ConnectionPoints>
```

6.2.4.2. NominalDiameterNumericalValueRepresentationAssignmentClass

Description: A readable representation of the numerical value of the nominal diameter of the [PipingNode](#). 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 [PipingNode](#) (use case [String](#)).

Example:

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

6.2.4.3. NominalDiameterRepresentationAssignmentClass

Description: A readable representation of the nominal diameter of the [PipingNode](#). 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 [PipingNode](#) (use case [String](#)).

Example:

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

6.2.4.4. NominalDiameterStandardSpecialization

Description: The nominal diameter of the [PipingNode](#), 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 [PipingNode](#) (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" />
```

6.2.4.5. NominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter of the [PipingNode](#). 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 [PipingNode](#) (use case [String](#)).

Example:

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

6.3. PipingNodeOwner

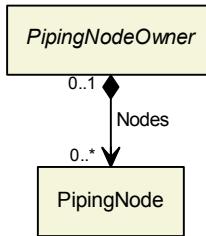
This class is abstract.

Description: An object that can have [PipingNodes](#).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

6.3.1. Overview



Superclasses: No superclasses.

Subclasses:

- [Nozzle](#)
- [PipeConnectorSymbol](#)
- [PipingComponent](#)
- [PropertyBreak](#)

6.3.2. Components

6.3.2.1. Nodes

Description: The [PipingNodes](#) of the [PipingNodeOwner](#).

Type: [PipingNode](#)

Cardinality: **0..***

Proteus Schema Implementation: The `<Node>` elements representing the [PipingNodes](#) are children of the `<ConnectionPoints>` element within the element corresponding to the [PipingNodeOwner](#) (e.g., a `<PipingComponent>`).

For the information model, the *first* `<Node>` element (index 0) is ignored as it represents the owner itself (cf. Proteus specification). This `<Node>` should not have a `Type` XML attribute.

The further `<Node>` elements are relevant for the information model only if they have a `Type="process"` XML attribute.

Example:

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

  <!-- ignored: no Type -->
  <Node ...> ... </Node>

  <!-- ignored: Type is not "process" -->
  <Node Type="signal" ...> ... </Node>

  <!-- relevant: Type is "process" -->
  <Node Type="process" ...> ... </Node>
</ConnectionPoints>
...
</PipingComponent>
```

6.3.3. Model References

No model references.

6.3.4. Attributes

No attributes.

7. Meta Data

7.1. MetaData

Description: A container for meta data about a [PlantModel](#).

RDL: META DATA

<http://sandbox.dexpi.org/rdl/MetaData>

Proteus Schema Implementation: Proteus <MetaData> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<MetaData  
    ComponentClass="MetaData"  
    ComponentClassURI="http://sandbox.dexpi.org/rdl/MetaData" ...>  
    ...  
</MetaData>
```

7.1.1. 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
ProcessCellsa95NameAssignmentClass	String
ProcessCellsa95NumberAssignmentClass	String
ProjectNameAssignmentClass	String
ProjectNumberAssignmentClass	String
ProjectRangeNumberAssignmentClass	String
ReplacedDrawingAssignmentClass	String
ResponsibleDepartmentNameAssignmentClass	String
RevisionNumberAssignmentClass	String
SheetFormatAssignmentClass	String
SheetNumberAssignmentClass	String
Sitelsa95NameAssignmentClass	String
SubProjectNameAssignmentClass	String
SubProjectNumberAssignmentClass	String
TotalNumberOfSheets	Integer
Unitlsa95NameAssignmentClass	String
Unitlsa95NumberAssignmentClass	String

Superclasses: No superclasses.

Subclasses: No subclasses.

7.1.2. Components

No components.

7.1.3. Model References

No model references.

7.1.4. Attributes

7.1.4.1. 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" />
```

7.1.4.2. 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" />
```

7.1.4.3. 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" />
```

7.1.4.4. ArchiveNumberAssignmentClass

Description: The archive number of the drawing.

RDL: ARCHIVE NUMBER ASSIGNMENT CLASS

7. Meta Data

<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"/>
```

7.1.4.5. Arealsa95NameAssignmentClass

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

RDL: AREA ISA95 NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/Arealsa95NameAssignmentClass>

Attribute Type: String

Example Value: "an area"

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

Example:

```
<GenericAttribute  
  Name="Arealsa95NameAssignmentClass"  
  AttributeURI="http://sandbox.dexpi.org/rdl/Arealsa95NameAssignmentClass"  
  Value="an area"  
  Format="string"/>
```

7.1.4.6. 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"/>
```

7.1.4.7. 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" />
```

7.1.4.8. 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" />
```

7.1.4.9. 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" />
```

7.1.4.10. CompanyNumberAssignmentClass

Description: The number of the company.

RDL: COMPANY NUMBER ASSIGNMENT CLASS

7. Meta Data

<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"/>
```

7.1.4.11. 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"/>
```

7.1.4.12. 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"/>
```

7.1.4.13. 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" />
```

7.1.4.14. 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" />
```

7.1.4.15. 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" />
```

7.1.4.16. 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" />
```

7.1.4.17. 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" />
```

7.1.4.18. 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" />
```

7.1.4.19. 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" />
```

7.1.4.20. 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" />
```

7.1.4.21. 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" />
```

7.1.4.22. 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" />
```

7.1.4.23. 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" />
```

7.1.4.24. 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" />
```

7.1.4.25. 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" />
```

7.1.4.26. ProjectRangeNumberAssignmentClass

Description: The range number of the 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" />
```

7.1.4.27. 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" />
```

7.1.4.28. 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" />
```

7.1.4.29. 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" />
```

7.1.4.30. 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" />
```

7.1.4.31. SheetNumberAssignmentClass

Description: The sheet number of the drawing.

RDL: SHEET NUMBER ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/SheetNumberAssignmentClass>

Attribute Type: String

Example Value: "2a"

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

Example:

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

7.1.4.32. Sitelsa95NameAssignmentClass

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

RDL: SITE ISA95 NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/Sitelsa95NameAssignmentClass>

Attribute Type: String

Example Value: "a site"

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

Example:

```
<GenericAttribute
  Name="Sitelsa95NameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/Sitelsa95NameAssignmentClass"
  Value="a site"
  Format="string" />
```

7.1.4.33. 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" />
```

7.1.4.34. 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" />
```

7.1.4.35. TotalNumberOfSheets

Description: The total number of sheets.

RDL: TOTAL NUMBER OF SHEETS

<http://sandbox.dexpi.org/rdl/TotalNumberOfSheets>

Attribute Type: Integer

Example Value: 4

Proteus Schema Implementation: GenericAttribute of the [MetaData](#) (use case [Integer](#)).

Example:

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

7.1.4.36. 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" />
```

7.1.4.37. 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"  
  AttributeURL="http://sandbox.dexpi.org/rdl/UnitIsa95NumberAssignmentClass"  
  Value="U-923-463"  
  Format="string"/>
```


8. Plant Structure

8.1. Overview

8.2. Arealsa95

Description: An area as defined by ISA 95.

RDL: AREA ISA95

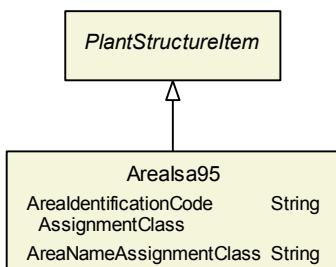
<http://data.posccaesar.org/rdl/RDS10418236534>

Proteus Schema Implementation: Proteus <PlantStructureItem> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PlantStructureItem  
    ComponentClass="Arealsa95"  
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS10418236534" ...>  
    ...  
</PlantStructureItem>
```

8.2.1. Overview



Superclasses:

- [PlantStructureItem](#)

Subclasses: No subclasses.

8.2.2. Components

No components.

8.2.3. Model References

No model references.

8.2.4. Attributes

8.2.4.1. ArealdentificationCodeAssignmentClass

Description: The identification code of the [Arealsa95](#).

RDL: AREA IDENTIFICATION CODE ASSIGNMENT CLASS

8. Plant Structure

<http://sandbox.dexpi.org/rdl/ArealdentificationCodeAssignmentClass>

Attribute Type: String

Example Value: "F4"

Proteus Schema Implementation: GenericAttribute of the [Arealsa95](#) (use case String).

Example:

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

8.2.4.2. AreaNameAssignmentClass

Description: The name of the [Arealsa95](#).

RDL: AREA NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/AreaNameAssignmentClass>

Attribute Type: String

Example Value: "Area F4"

Proteus Schema Implementation: GenericAttribute of the [Arealsa95](#) (use case String).

Example:

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

8.3. Arealsa95LocatedStructure

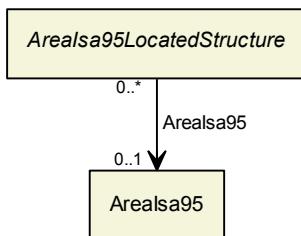
This class is abstract.

Description: A structure that can be located in an [Arealsa95](#).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

8.3.1. Overview



Superclasses: No superclasses.

Subclasses:

- [IndustrialComplexIso10209-2012](#)

- PlantSectionIso10209-2012
- ProcessPlant
- TechnicalItem

8.3.2. Components

No components.

8.3.3. Model References

8.3.3.1. Arealsa95

Description: The [Arealsa95](#) in which the [Arealsa95LocatedStructure](#) is located.

Type: [Arealsa95](#)

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 [Arealsa95LocatedStructure](#) is located in
- Association type for the association *target*, i.e., for the <PlantStructureItem> element representing the [Arealsa95](#): is the location of

Both <Association> elements must be used.

Example:

```
<Equipment ID="Tank1" ...>
  ...
  <Association Type="is located in" ItemID="Arealsa95-1" />
  ...
</Equipment>
...
<PlantStructureItem ID="Arealsa95-1" ...>
  ...
  <Association Type="is the location of" ItemID="Tank1" />
  ...
</PlantStructureItem>
```

8.3.4. Attributes

No attributes.

8.4. IndustrialComplexIso10209-2012

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

RDL: INDUSTRIAL COMPLEX ISO10209-2012

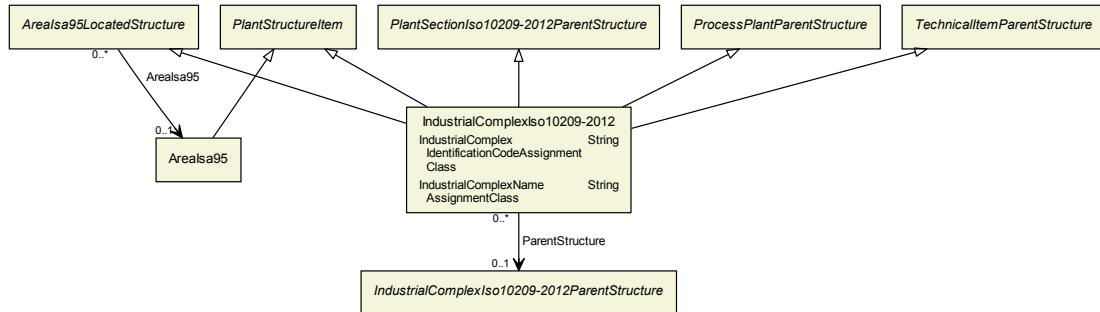
<http://sandbox.dexpi.org/rdl/IndustrialComplexIso10209-2012>

Proteus Schema Implementation: Proteus <PlantStructureItem> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PlantStructureItem
    ComponentClass="IndustrialComplexIso10209-2012"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/IndustrialComplexIso10209-2012" ...
...
</PlantStructureItem>
```

8.4.1. Overview



Superclasses:

- [Arealsa95LocatedStructure](#)
- [PlantSectionIso10209-2012ParentStructure](#)
- [PlantStructureItem](#)
- [ProcessPlantParentStructure](#)
- [TechnicalItemParentStructure](#)

Subclasses: No subclasses.

8.4.2. Components

No components.

8.4.3. Model References

8.4.3.1. ParentStructure

Description: A superordinate structure of which the [IndustrialComplexIso10209-2012](#) is a part.

Type: [IndustrialComplexIso10209-2012ParentStructure](#)

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 [IndustrialComplexIso10209-2012](#): is a part of
- Association type for the association *target*, i.e., for the <PlantStructureItem> element representing the [IndustrialComplexIso10209-2012ParentStructure](#): is a collection including

Both <Association> elements must be used.

Example:

```
<PlantStructureItem ID="IndustrialComplexIso10209-2012-1" ...>
...
<Association Type="is a part of" ItemID="Isa95Enterprise1" />
...
</PlantStructureItem>
...
<PlantStructureItem ID="Isa95Enterprise1" ...>
...
<Association Type="is a collection including" ItemID="IndustrialComplexIso10209-2012-1" />
...
</PlantStructureItem>
```

8.4.4. Attributes

8.4.4.1. IndustrialComplexIdentificationCodeAssignmentClass

Description: The identification code of the [IndustrialComplexIso10209-2012](#).

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 [IndustrialComplexIso10209-2012](#) (use case [String](#)).

Example:

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

8.4.4.2. IndustrialComplexNameAssignmentClass

Description: The name of the [IndustrialComplexIso10209-2012](#).

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 [IndustrialComplexIso10209-2012](#) (use case [String](#)).

Example:

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

8.5. IndustrialComplexIso10209-2012ParentStructure

This class is abstract.

Description: A PlantItemStructure that is a suitable ParentStructure of am [IndustrialComplexIso10209-2012](#).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

8.5.1. Overview

IndustrialComplexIso10209-2012ParentStructure

Superclasses: No superclasses.

Subclasses:

- [Isa95Enterprise](#)
- [Sitelsa95](#)

8.5.2. Components

No components.

8.5.3. Model References

No model references.

8.5.4. Attributes

No attributes.

8.6. Isa95Enterprise

Description: An enterprise as defined by ISA 95.

RDL: ISA95 ENTERPRISE

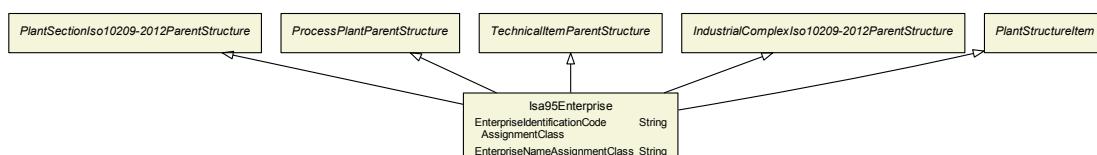
<http://data.posccaesar.org/rdl/RDS10418236543>

Proteus Schema Implementation: Proteus <PlantStructureItem> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PlantStructureItem
    ComponentClass="Isa95Enterprise"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS10418236543" ...>
...
</PlantStructureItem>
```

8.6.1. Overview



Superclasses:

- IndustrialComplexIso10209-2012ParentStructure
- PlantSectionIso10209-2012ParentStructure
- PlantStructureItem
- ProcessPlantParentStructure
- TechnicalItemParentStructure

Subclasses: No subclasses.

8.6.2. Components

No components.

8.6.3. Model References

No model references.

8.6.4. Attributes

8.6.4.1. EnterprisIdentificationCodeAssignmentClass

Description: The identification code of the Isa95Enterprise.

RDL: ENTERPRISE IDENTIFICATION CODE ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/EnterprisIdentificationCodeAssignmentClass>

Attribute Type: String

Example Value: "DEXPI"

Proteus Schema Implementation: GenericAttribute of the Isa95Enterprise (use case String).

Example:

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

8.6.4.2. EnterpriseNameAssignmentClass

Description: The name of the Isa95Enterprise.

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 Isa95Enterprise (use case String).

Example:

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

8.7. PlantSectionIso10209-2012

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

RDL: PLANT SECTION ISO10209-2012

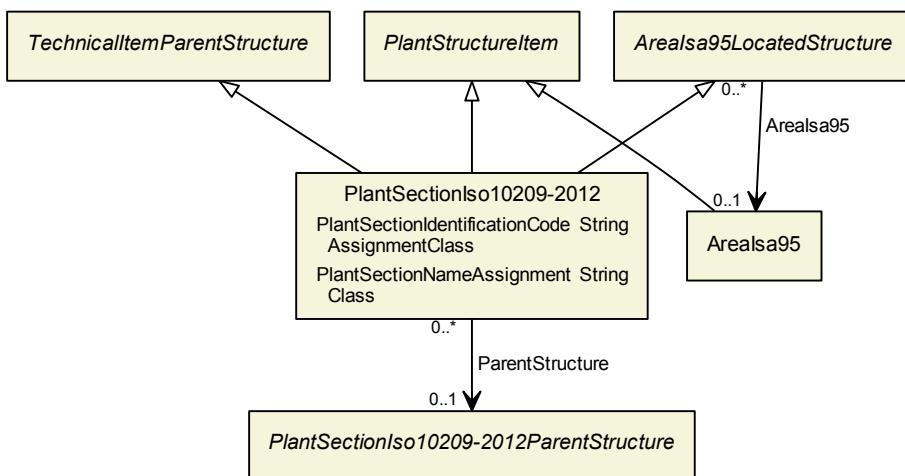
<http://sandbox.dexpi.org/rdl/PlantSectionIso10209-2012>

Proteus Schema Implementation: Proteus <PlantStructureItem> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PlantStructureItem
    ComponentClass="PlantSectionIso10209-2012"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/PlantSectionIso10209-2012" ...>
...
</PlantStructureItem>
```

8.7.1. Overview



Superclasses:

- Arealsa95LocatedStructure
- PlantStructureItem
- TechnicalItemParentStructure

Subclasses: No subclasses.

8.7.2. Components

No components.

8.7.3. Model References

8.7.3.1. ParentStructure

Description: A superordinate structure of which the [PlantSectionIso10209-2012](#) is a part.

Type: [PlantSectionIso10209-2012ParentStructure](#)

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 [PlantSectionIso10209-2012](#): is a part of
- Association type for the association *target*, i.e., for the <PlantStructureItem> element representing the [PlantSectionIso10209-2012ParentStructure](#): is a collection including

Both <Association> elements must be used.

Example:

```
<PlantStructureItem ID="PlantSectionIso10209-2012-1" ...>
  ...
    <Association Type="is a part of" ItemID="ProcessPlant1" />
  ...
</PlantStructureItem>
...
<PlantStructureItem ID="ProcessPlant1" ...>
  ...
    <Association Type="is a collection including" ItemID="PlantSectionIso10209-2012-1" />
  ...
</PlantStructureItem>
```

8.7.4. Attributes

8.7.4.1. PlantSectionIdentificationCodeAssignmentClass

Description: The identification code of the [PlantSectionIso10209-2012](#).

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 [PlantSectionIso10209-2012](#) (use case [String](#)).

Example:

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

8.7.4.2. PlantSectionNameAssignmentClass

Description: The name of the [PlantSectionIso10209-2012](#).

RDL: PLANT SECTION NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/PlantSectionNameAssignmentClass>

Attribute Type: [String](#)

Example Value: "Utilities"

Proteus Schema Implementation: [GenericAttribute](#) of the [PlantSectionIso10209-2012](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="PlantSectionNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/PlantSectionNameAssignmentClass"
```

```
Value=" Utilities"  
Format=" string" />
```

8.8. PlantSectionIso10209-2012ParentStructure

This class is abstract.

Description: A PlantItemStructure that is a suitable [ParentStructure](#) of a [PlantSectionIso10209-2012](#).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

8.8.1. Overview

```
PlantSectionIso10209-2012ParentStructure
```

Superclasses: No superclasses.

Subclasses:

- [IndustrialComplexIso10209-2012](#)
- [Isa95Enterprise](#)
- [ProcessPlant](#)
- [Sitelsa95](#)

8.8.2. Components

No components.

8.8.3. Model References

No model references.

8.8.4. Attributes

No attributes.

8.9. PlantStructureItem

This class is abstract.

RDL: -

Proteus Schema Implementation: Proteus <PlantStructureItem> element with mandatory ComponentClass and ComponentClassUri attributes.

8.9.1. Overview

```
PlantStructureItem
```

Superclasses: No superclasses.

Subclasses:

- [Arealsa95](#)

- IndustrialComplexIso10209-2012
- Isa95Enterprise
- PlantSectionIso10209-2012
- PlantSystem
- PlantTrain
- ProcessPlant
- Sitelsa95

8.9.2. Components

No components.

8.9.3. Model References

No model references.

8.9.4. Attributes

No attributes.

8.10. PlantSystem

Description: A plant system.

RDL: PLANT SYSTEM

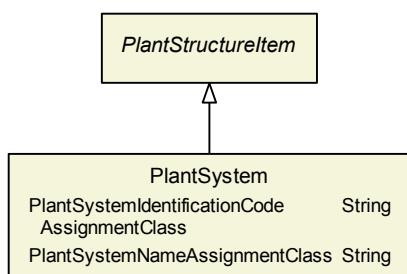
<http://sandbox.dexpi.org/rdl/PlantSystem>

Proteus Schema Implementation: Proteus <PlantStructureItem> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PlantStructureItem
    ComponentClass="PlantSystem"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/PlantSystem" ...>
...
</PlantStructureItem>
```

8.10.1. Overview



Superclasses:

- PlantStructureItem

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. 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" />
```

8.10.4.2. 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" />
```

8.11. PlantSystemLocatedStructure

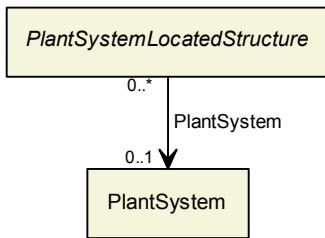
This class is abstract.

Description: A structure can be located in a [PlantSystem](#).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

8.11.1. Overview



Superclasses: No superclasses.

Subclasses:

- TechnicalItem

8.11.2. Components

No components.

8.11.3. Model References

8.11.3.1. PlantSystem

Description: The [PlantSystem](#) 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 <Association> elements must be used.

Example:

```

<Equipment ID="Tank1" ...>
  ...
  <Association Type="is located in" ItemID="PlantSystem1"/>
  ...
</Equipment>
...
<PlantStructureItem ID="PlantSystem1" ...>
  ...
  <Association Type="is the location of" ItemID="Tank1"/>
  ...
</PlantStructureItem>
  
```

8.11.4. Attributes

No attributes.

8.12. PlantTrain

Description: A plant train.

RDL: PLANT TRAIN

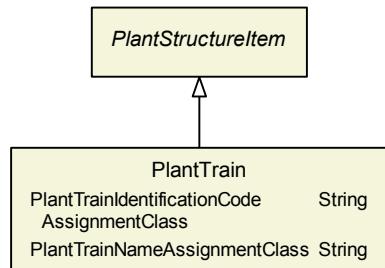
<http://sandbox.dexpi.org/rdl/PlantTrain>

Proteus Schema Implementation: Proteus <PlantStructureItem> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PlantStructureItem  
    ComponentClass="PlantTrain"  
    ComponentClassURI="http://sandbox.dexpi.org/rdl/PlantTrain" ...>  
    ...  
</PlantStructureItem>
```

8.12.1. Overview



Superclasses:

- [PlantStructureItem](#)

Subclasses: No subclasses.

8.12.2. Components

No components.

8.12.3. Model References

No model references.

8.12.4. Attributes

8.12.4.1. 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" />
```

8.12.4.2. 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" />
```

8.13. PlantTrainLocatedStructure

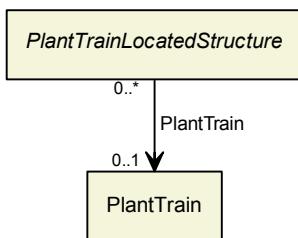
This class is abstract.

Description: A structure can be located in a [PlantTrain](#).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

8.13.1. Overview



Superclasses: No superclasses.

Subclasses:

- [TechnicalItem](#)

8.13.2. Components

No components.

8.13.3. Model References

8.13.3.1. PlantTrain

Description: The [PlantTrain](#) 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 [PlantTrainLocatedStructure](#): is located in
- Association type for the association *target*, i.e., for the <PlantStructureItem> element representing the [PlantTrain](#): is the location of

Both <Association> elements must be used.

Example:

```
<Equipment ID="Tank1" ...>
...
<Association Type="is located in" ItemID="PlantTrain1"/>
...
</Equipment>
...
<PlantStructureItem ID="PlantTrain1" ...>
...
<Association Type="is the location of" ItemID="Tank1"/>
...
</PlantStructureItem>
```

8.13.4. Attributes

No attributes.

8.14. 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

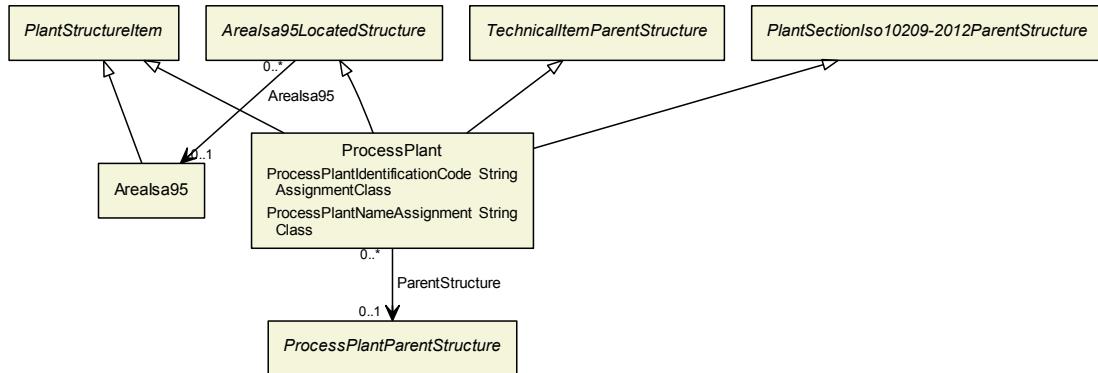
<http://data.posccaesar.org/rdl/RDS7151859>

Proteus Schema Implementation: Proteus <PlantStructureItem> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PlantStructureItem
    ComponentClass="ProcessPlant"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS7151859" ...>
...
</PlantStructureItem>
```

8.14.1. Overview



Superclasses:

- Arealsa95LocatedStructure
- PlantSectionIso10209-2012ParentStructure
- PlantStructureItem
- TechnicalItemParentStructure

Subclasses: No subclasses.

8.14.2. Components

No components.

8.14.3. Model References

8.14.3.1. ParentStructure

Description: A superordinate structure of which the [ProcessPlant](#) is a part.

Type: [ProcessPlantParentStructure](#)

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 [ProcessPlantParentStructure](#): is a collection including

Both <Association> elements must be used.

Example:

```

<PlantStructureItem ID="ProcessPlant1" ...>
...
<Association Type="is a part of" ItemID="Isa95Enterprise1" />
...
</PlantStructureItem>
...
<PlantStructureItem ID="Isa95Enterprise1" ...>
...
  
```

8. Plant Structure

```
<Association Type="is a collection including" ItemID="ProcessPlant1" />
...
</PlantStructureItem>
```

8.14.4. Attributes

8.14.4.1. 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" />
```

8.14.4.2. 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" />
```

8.15. ProcessPlantParentStructure

This class is abstract.

Description: A [PlantItemStructure](#) that is a suitable [ParentStructure](#) of a [ProcessPlant](#).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

8.15.1. Overview

`ProcessPlantParentStructure`

Superclasses: No superclasses.

Subclasses:

- [IndustrialComplexIso10209-2012](#)
- [Isa95Enterprise](#)
- [Sitelsa95](#)

8.15.2. Components

No components.

8.15.3. Model References

No model references.

8.15.4. Attributes

No attributes.

8.16. Sitelsa95

Description: A site as defined by ISA 95.

RDL: SITE ISA95

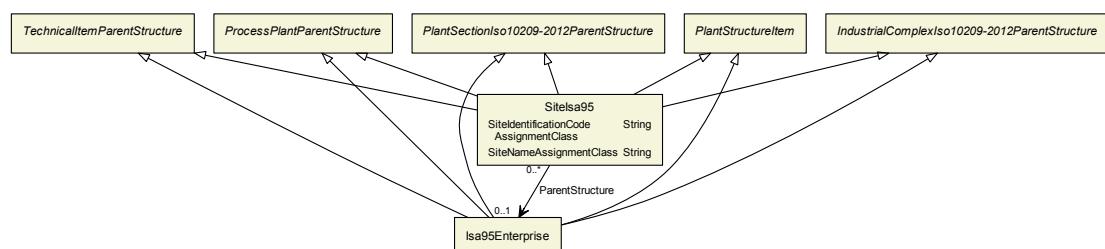
<http://data.posccaesar.org/rdl/RDS10418236632>

Proteus Schema Implementation: Proteus `<PlantStructureItem>` element with mandatory `ComponentClass` and `ComponentClassURI` attributes.

Example:

```
<PlantStructureItem
    ComponentClass="Sitelsa95"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS10418236632" ...>
...
</PlantStructureItem>
```

8.16.1. Overview



Superclasses:

- [IndustrialComplexIso10209-2012ParentStructure](#)
- [PlantSectionIso10209-2012ParentStructure](#)

- [PlantStructureItem](#)
- [ProcessPlantParentStructure](#)
- [TechnicalItemParentStructure](#)

Subclasses: No subclasses.

8.16.2. Components

No components.

8.16.3. Model References

8.16.3.1. ParentStructure

Description: A superordinate structure of which the [Sitelsa95](#) is a part.

Type: [Isa95Enterprise](#)

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 [Sitelsa95](#): is a part of
- Association type for the association *target*, i.e., for the <[PlantStructureItem](#)> element representing the [Isa95Enterprise](#): is a collection including

Both <Association> elements must be used.

Example:

```
<PlantStructureItem ID="Sitelsa95-1" ...>
...
<Association Type="is a part of" ItemID="Isa95Enterprise1" />
...
</PlantStructureItem>
...
<PlantStructureItem ID="Isa95Enterprise1" ...>
...
<Association Type="is a collection including" ItemID="Sitelsa95-1" />
...
</PlantStructureItem>
```

8.16.4. Attributes

8.16.4.1. SitelIdentificationCodeAssignmentClass

Description: The identification code of the [Sitelsa95](#).

RDL: SITE IDENTIFICATION CODE ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/SitelIdentificationCodeAssignmentClass>

Attribute Type: [String](#)

Example Value: "AC"

Proteus Schema Implementation: [GenericAttribute](#) of the [Sitelsa95](#) (use case [String](#)).

Example:

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

8.16.4.2. SiteNameAssignmentClass

Description: The name of the [Sitelsa95](#).

RDL: SITE NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/SiteNameAssignmentClass>

Attribute Type: String

Example Value: "Aachen"

Proteus Schema Implementation: GenericAttribute of the [Sitelsa95](#) (use case String).

Example:

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

8.17. TechnicalItem

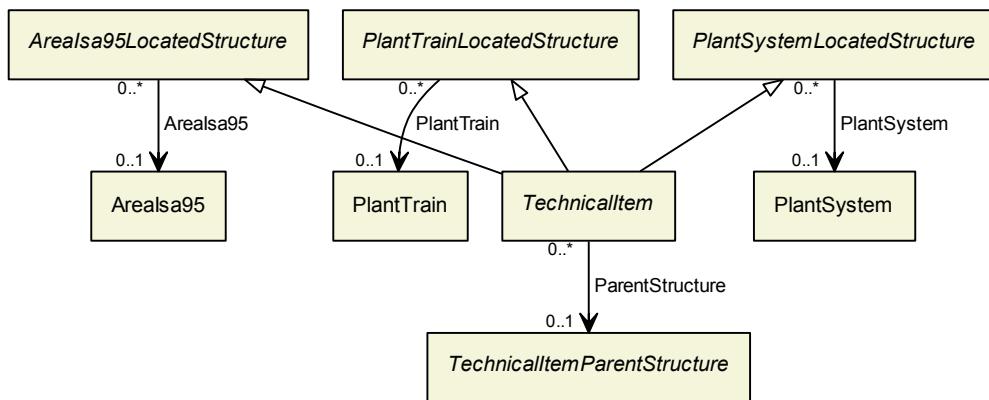
This class is abstract.

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

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

8.17.1. Overview



Superclasses:

- [Arealsa95LocatedStructure](#)
- [PlantSystemLocatedStructure](#)
- [PlantTrainLocatedStructure](#)

Subclasses:

- [ActuatingFunction](#)
- [ActuatingSystem](#)
- [Equipment](#)
- [InstrumentationLoopFunction](#)
- [PipingNetworkSystem](#)
- [ProcessInstrumentationFunction](#)
- [ProcessSignalGeneratingFunction](#)
- [ProcessSignalGeneratingSystem](#)

8.17.2. Components

No components.

8.17.3. Model References

8.17.3.1. ParentStructure

Description: A superordinate structure of which the [TechnicalItem](#) is a part.

Type: [TechnicalItemParentStructure](#)

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 [TechnicalItemParentStructure](#): is a collection including

Both <Association> elements must be used.

Example:

```
<Equipment ID="Tank1" ...>
  ...
  <Association Type="is a part of" ItemID="ProcessPlant1"/>
  ...
</Equipment>
...
<PlantStructureItem ID="ProcessPlant1" ...>
  ...
  <Association Type="is a collection including" ItemID="Tank1"/>
  ...
</PlantStructureItem>
```

8.17.4. Attributes

No attributes.

8.18. TechnicalItemParentStructure

This class is abstract.

Description: A PlantItemStructure that is a suitable [ParentStructure](#) of a [TechnicalItem](#).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

8.18.1. Overview

TechnicalItemParentStructure

Superclasses: No superclasses.

Subclasses:

- [IndustrialComplexIso10209-2012](#)
- [Isa95Enterprise](#)
- [PlantSectionIso10209-2012](#)
- [ProcessPlant](#)
- [Sitelsa95](#)

8.18.2. Components

No components.

8.18.3. Model References

No model references.

8.18.4. Attributes

No attributes.

9. Equipment

9.1. Overview

9.2. Agitator

Description: A dynamic mixer that stir or shake fluids by reaction force from moving vanes (from <http://data.posccaesar.org/rdl/RDS16045622>).

RDL: AGITATOR

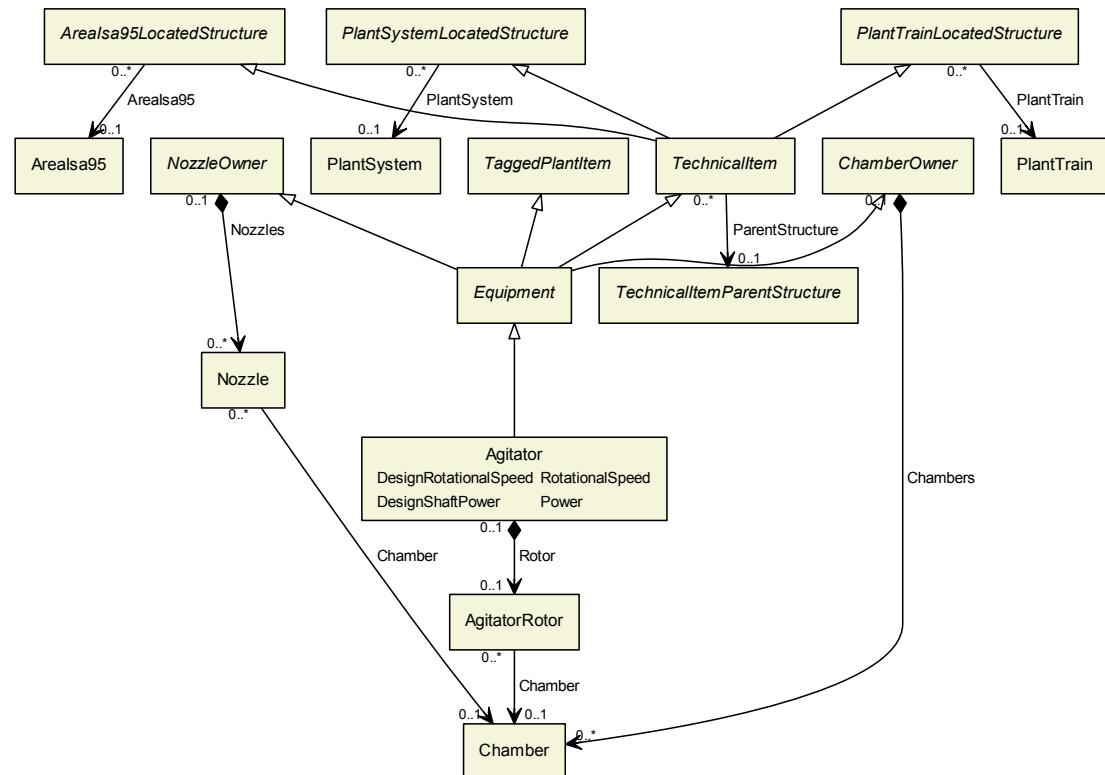
<http://data.posccaesar.org/rdl/RDS16045622>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment  
    ComponentClass="Agitator"  
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS16045622" ...>  
...  
</Equipment>
```

9.2.1. Overview



Superclasses:

- Equipment

Subclasses: No subclasses.

9.2.2. Components

9.2.2.1. Rotor

Description: The rotor of the [Agitator](#).

Type: [AgitatorRotor](#)

Cardinality: 0..1

Proteus Schema Implementation: The <Equipment> element for the [AgitatorRotor](#) is a child of the <Equipment> element for the [Agitator](#).

Example:

```
<Equipment
    ComponentClass="Agitator"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS16045622" ...>
...
<Equipment
    ComponentClass="AgitatorRotor"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/AgitatorRotor" ...>
...
</Equipment>
...
</Equipment>
```

9.2.3. Model References

No model references.

9.2.4. Attributes

9.2.4.1. DesignRotationalSpeed

Description: The design rotational speed of the [Agitator](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [Agitator](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
    Name="DesignRotationalSpeed"
    AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
    Value="180"
    Format="double"
    Units="RevolutionPerMinute"
    UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.2.4.2. DesignShaftPower

Description: The design shaft power of the [Agitator](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: Power

Example Value: 400 kW

Proteus Schema Implementation: GenericAttribute of the [Agitator](#) (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.3. AgitatorRotor

Description: An agitator rotor.

RDL: AGITATOR ROTOR

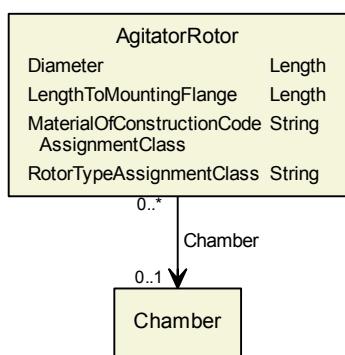
<http://sandbox.dexpi.org/rdl/AgitatorRotor>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.3.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

9.3.2. Components

No components.

9.3.3. Model References

9.3.3.1. Chamber

Description: The [Chamber](#) in which the [AgitatorRotor](#) is located, if applicable. The Chamber must be a component of the same object as the AgitatorRotor.

Type: [Chamber](#)

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 [AgitatorRotor](#): is located in
- Association type for the association *target*, i.e., for the <Equipment> element representing the [Chamber](#): is the location of

Both <Association> elements must be used.

Example:

```
<Equipment ID="AgitatorRotor1" ...>
  ...
  <Association Type="is located in" ItemID="Chamber1" />
  ...
</Equipment>
...
<Equipment ID="Chamber1" ...>
  ...
  <Association Type="is the location of" ItemID="AgitatorRotor1" />
  ...
</Equipment>
```

9.3.4. Attributes

9.3.4.1. Diameter

Description: The diameter of the [AgitatorRotor](#).

RDL: DIAMETER

<http://data.posccaesar.org/rdl/RDS350954>

Attribute Type: [Length](#)

Example Value: 20 cm

Proteus Schema Implementation: [GenericAttribute](#) of the [AgitatorRotor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="Diameter"
  AttributeURI="http://data.posccaesar.org/rdl/RDS350954"
  Value="20"
  Format="double"
  Units="Centimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />
```

9.3.4.2. LengthToMountingFlange

Description: The length to the mounting flange of the [AgitatorRotor](#).

RDL: LENGTH TO MOUNTING FLANGE

<http://sandbox.dexpi.org/rdl/LengthToMountingFlange>

Attribute Type: [Length](#)

Example Value: 80 cm

Proteus Schema Implementation: [GenericAttribute](#) of the [AgitatorRotor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="LengthToMountingFlange"
  AttributeURI="http://sandbox.dexpi.org/rdl/LengthToMountingFlange"
  Value="80"
  Format="double"
  Units="Centimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />
```

9.3.4.3. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the [AgitatorRotor](#).

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 [AgitatorRotor](#) (use case [String](#)).

Example:

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

9.3.4.4. RotorTypeAssignmentClass

Description: The rotor type of the [AgitatorRotor](#).

RDL: ROTOR TYPE ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/RotorTypeAssignmentClass>

Attribute Type: [String](#)

Example Value: "xy1"

Proteus Schema Implementation: [GenericAttribute](#) of the [AgitatorRotor](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="RotorTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/RotorTypeAssignmentClass"
  Value="xy1"
  Format="string" />
```

9.4. AirCoolingSystem

Description: A cooling system which uses air as the cooling medium (from <http://data.posccaesar.org/rdl/RDS277379>).

RDL: AIR COOLING SYSTEM

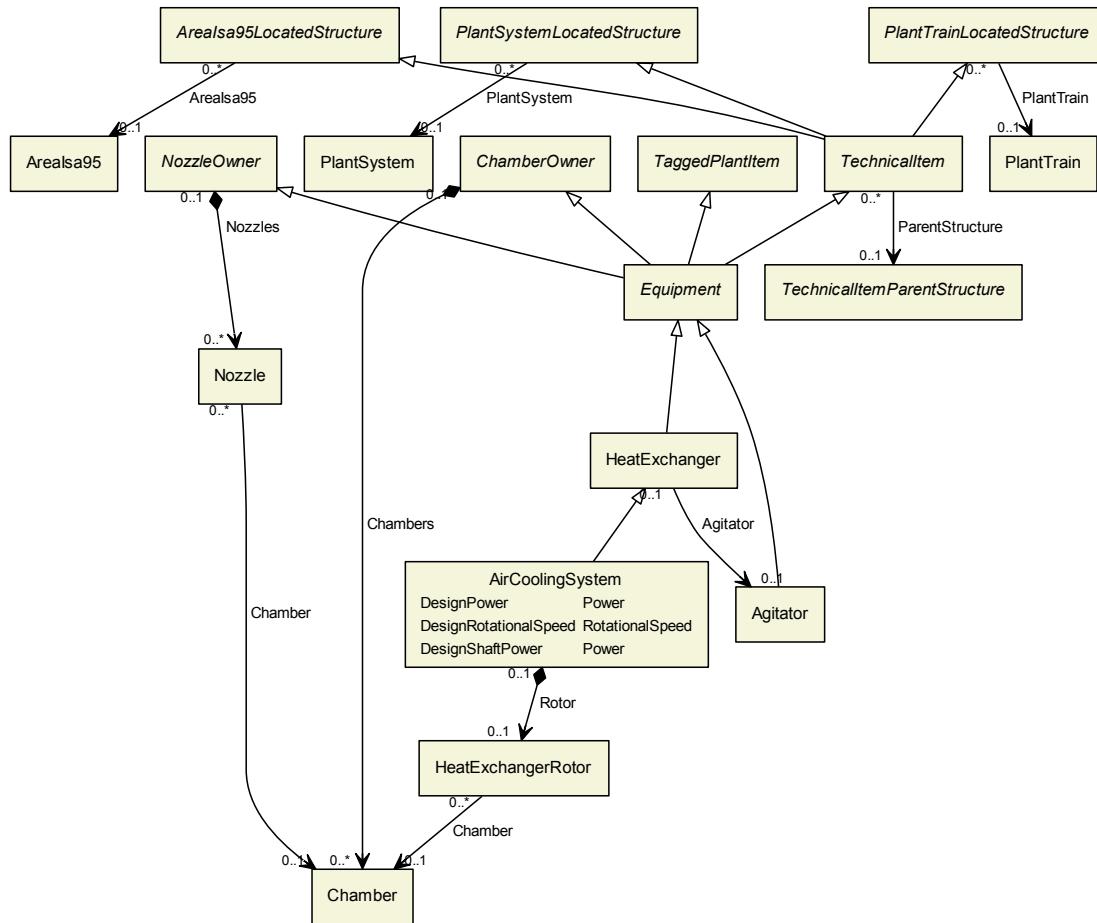
<http://data.posccaesar.org/rdl/RDS277379>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
    ComponentClass="AirCoolingSystem"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS277379" ...>
...
</Equipment>
```

9.4.1. Overview



Superclasses:

- [HeatExchanger](#)

Subclasses: No subclasses.

9.4.2. Components

9.4.2.1. Rotor

Description: The rotor of the [AirCoolingSystem](#).

Type: [HeatExchangerRotor](#)

Cardinality: 0..1

Proteus Schema Implementation: The <Equipment> element for the [HeatExchangerRotor](#) is a child of the <Equipment> element for the [AirCoolingSystem](#).

Example:

```
<Equipment
    ComponentClass="AirCoolingSystem"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS277379" ...>
...
<Equipment
    ComponentClass="HeatExchangerRotor"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/HeatExchangerRotor" ...>
...
</Equipment>
...
</Equipment>
```

9.4.3. Model References

No model references.

9.4.4. Attributes

9.4.4.1. DesignPower

Description: The design power of the [AirCoolingSystem](#).

RDL: DESIGN POWER

<http://sandbox.dexpi.org/rdl/DesignPower>

Attribute Type: [Power](#)

Example Value: 500 kW

Proteus Schema Implementation: [GenericAttribute](#) of the [AirCoolingSystem](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
    Name="DesignPower"
    AttributeURI="http://sandbox.dexpi.org/rdl/DesignPower"
    Value="500"
    Format="double"
    Units="Kilowatt"
    UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.4.4.2. DesignRotationalSpeed

Description: The design rotational speed of the [AirCoolingSystem](#).

RDL: DESIGN ROTATIONAL SPEED

9. Equipment

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: RotationalSpeed

Example Value: 180 1/min

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

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="180"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.4.4.3. DesignShaftPower

Description: The design shaft power of the AirCoolingSystem.

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: Power

Example Value: 400 kW

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

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.5. AirEjector

Description: An ejector intended to create vacuum using compressed air (from <http://data.posccaesar.org/rdl/RDS5770157>).

RDL: AIR EJECTOR

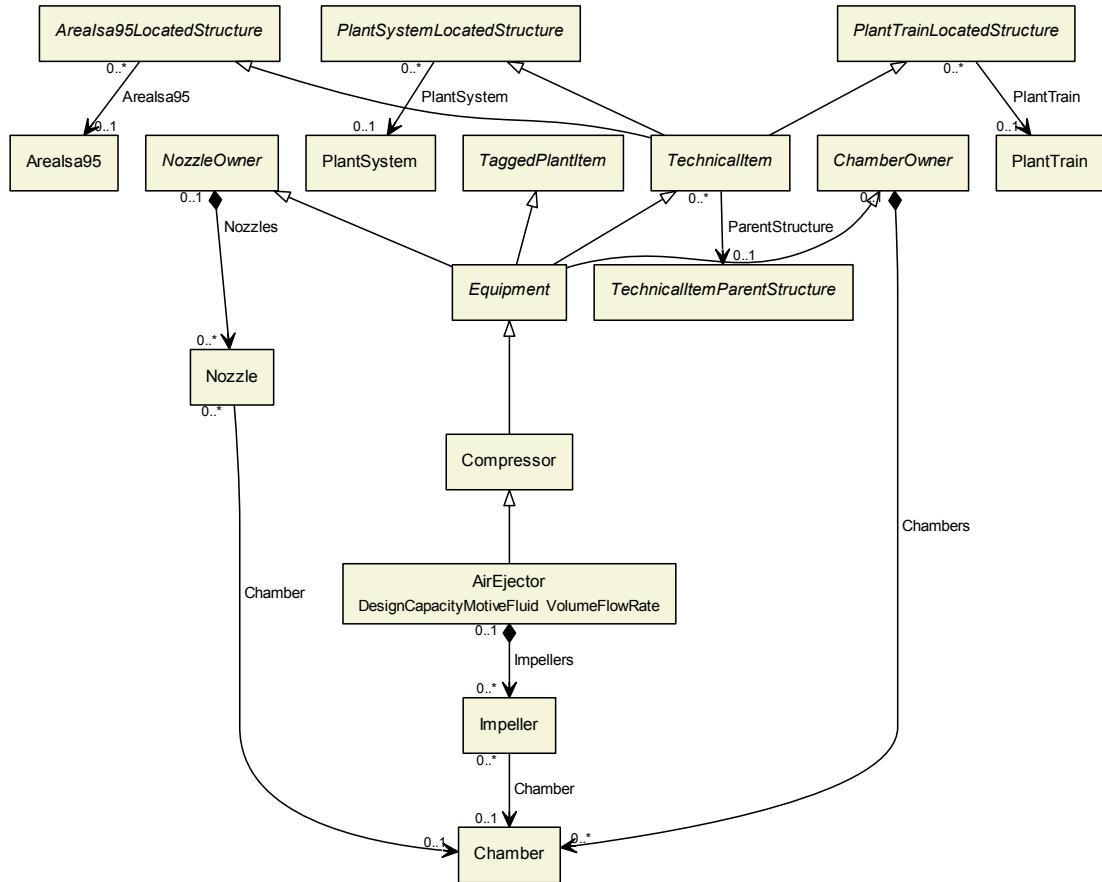
<http://data.posccaesar.org/rdl/RDS5770157>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
  ComponentClass="AirEjector"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS5770157" ...>
...
</Equipment>
```

9.5.1. Overview



Superclasses:

- Compressor

Subclasses: No subclasses.

9.5.2. Components

9.5.2.1. Impellers

Description: The impellers of the [AirEjector](#).

Type: [Impeller](#)

Cardinality: 0..*

Proteus Schema Implementation: The <Equipment> element for the [Impeller](#) is a child of the <Equipment> element for the [AirEjector](#).

Example:

```

<Equipment
    ComponentClass="AirEjector"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS5770157" ...>
...
<Equipment
    ComponentClass="Impeller"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS414539" ...>
...
</Equipment>
    
```

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

9.5.3. Model References

No model references.

9.5.4. Attributes

9.5.4.1. DesignCapacityMotiveFluid

Description: The design capacity for the motive fluid of the [AirEjector](#).

RDL: DESIGN CAPACITY MOTIVE FLUID

<http://sandbox.dexpi.org/rdl/DesignCapacityMotiveFluid>

Attribute Type: [VolumeFlowRate](#)

Example Value: 40 m³/h

Proteus Schema Implementation: [GenericAttribute](#) of the [AirEjector](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute  
  Name="DesignCapacityMotiveFluid"  
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignCapacityMotiveFluid"  
  Value="40"  
  Format="double"  
  Units="MetreCubedPerHour"  
  UnitsURI="http://data.posccaesar.org/rdl/RDS1321064" />
```

9.6. AxialCompressor

Description: A dynamic compressor in which the gas is accelerated by the action of a bladed rotor and where the main flow is along the rotation axis of the rotor (from <http://data.posccaesar.org/rdl/RDS417239>).

RDL: AXIAL COMPRESSOR

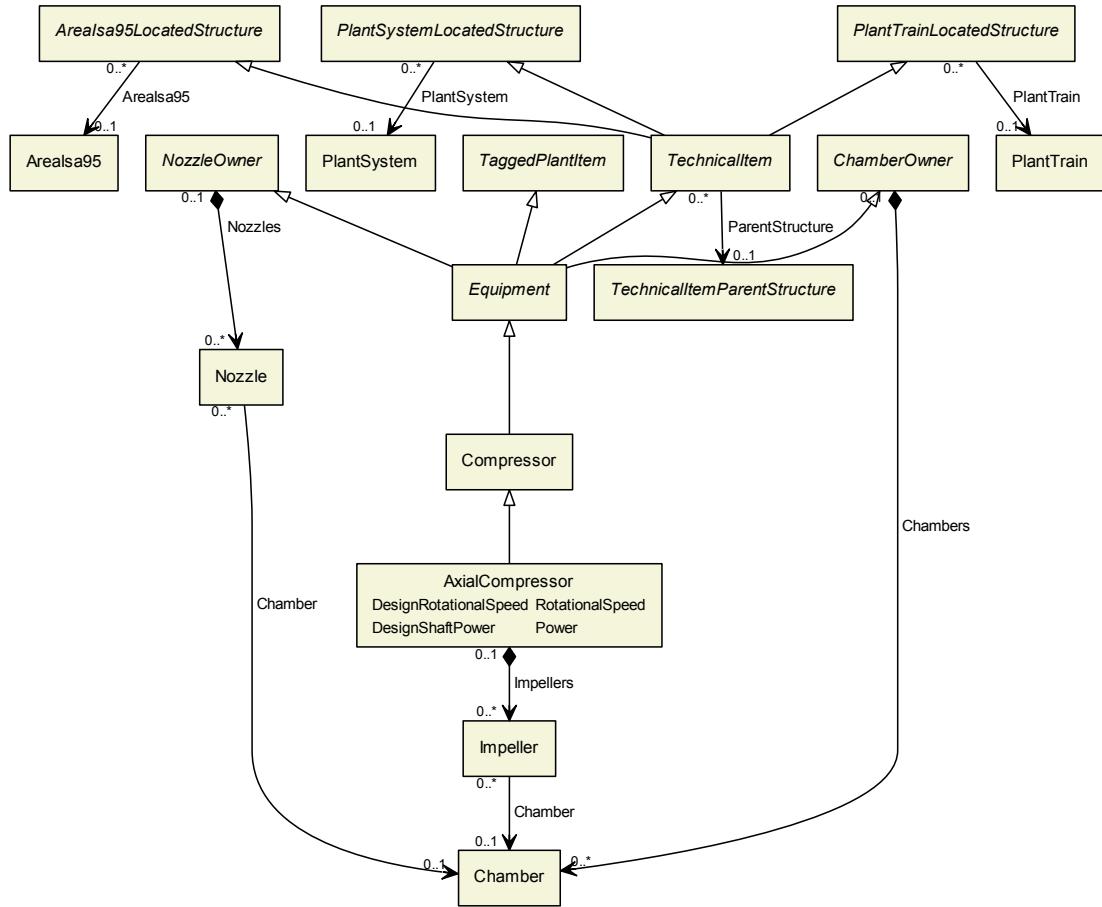
<http://data.posccaesar.org/rdl/RDS417239>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment  
  ComponentClass="AxialCompressor"  
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS417239" ...>  
  ...  
</Equipment>
```

9.6.1. Overview



Superclasses:

- Compressor

Subclasses: No subclasses.

9.6.2. Components

9.6.2.1. Impellers

Description: The impellers of the [AxialCompressor](#).

Type: [Impeller](#)

Cardinality: 0..*

Proteus Schema Implementation: The <Equipment> element for the [Impeller](#) is a child of the <Equipment> element for the [AxialCompressor](#).

Example:

```

<Equipment
  ComponentClass="AxialCompressor"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS417239" ...>
...
<Equipment
  ComponentClass="Impeller"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS414539" ...>
...
  
```

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

9.6.3. Model References

No model references.

9.6.4. Attributes

9.6.4.1. DesignRotationalSpeed

Description: The design rotational speed of the [AxialCompressor](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [AxialCompressor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="180"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.6.4.2. DesignShaftPower

Description: The design shaft power of the [AxialCompressor](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: [Power](#)

Example Value: 400 kW

Proteus Schema Implementation: [GenericAttribute](#) of the [AxialCompressor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.7. CentrifugalCompressor

Description: A dynamic compressor in which one or more impellers accelerate the gas and where the main flow through the impeller is radial (from <http://data.posccaesar.org/rdl/RDS417194>).

RDL: CENTRIFUGAL COMPRESSOR

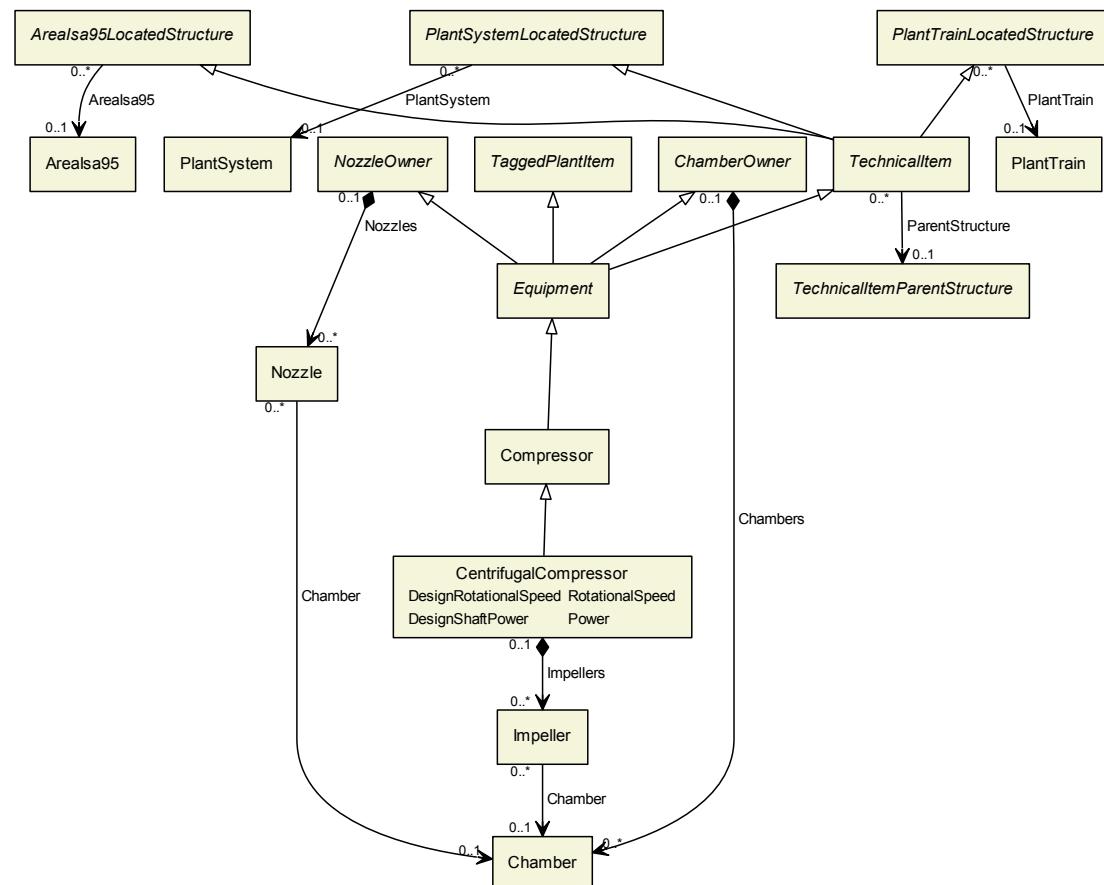
<http://data.posccaesar.org/rdl/RDS417194>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
    ComponentClass="CentrifugalCompressor"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS417194" ...>
</Equipment>
```

9.7.1. Overview



Superclasses:

- Compressor

Subclasses: No subclasses.

9.7.2. Components

9.7.2.1. Impellers

Description: The impellers of the [CentrifugalCompressor](#).

Type: [Impeller](#)

Cardinality: 0..*

Proteus Schema Implementation: The <Equipment> element for the [Impeller](#) is a child of the <Equipment> element for the [CentrifugalCompressor](#).

Example:

```
<Equipment
    ComponentClass="CentrifugalCompressor"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS417194" ...>
    ...
    <Equipment
        ComponentClass="Impeller"
        ComponentClassURI="http://data.posccaesar.org/rdl/RDS414539" ...>
        ...
    </Equipment>
    ...
</Equipment>
```

9.7.3. Model References

No model references.

9.7.4. Attributes

9.7.4.1. DesignRotationalSpeed

Description: The design rotational speed of the [CentrifugalCompressor](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [CentrifugalCompressor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
    Name="DesignRotationalSpeed"
    AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
    Value="180"
    Format="double"
    Units="RevolutionPerMinute"
    UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.7.4.2. DesignShaftPower

Description: The design shaft power of the [CentrifugalCompressor](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: Power

Example Value: 400 kW

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

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.8. CentrifugalPump

Description: A dynamic pump utilizing impellers provided with vanes generating centrifugal force to achieve the required pressure head (from <http://data.posccaesar.org/rdl/RDS416834>).

RDL: CENTRIFUGAL PUMP

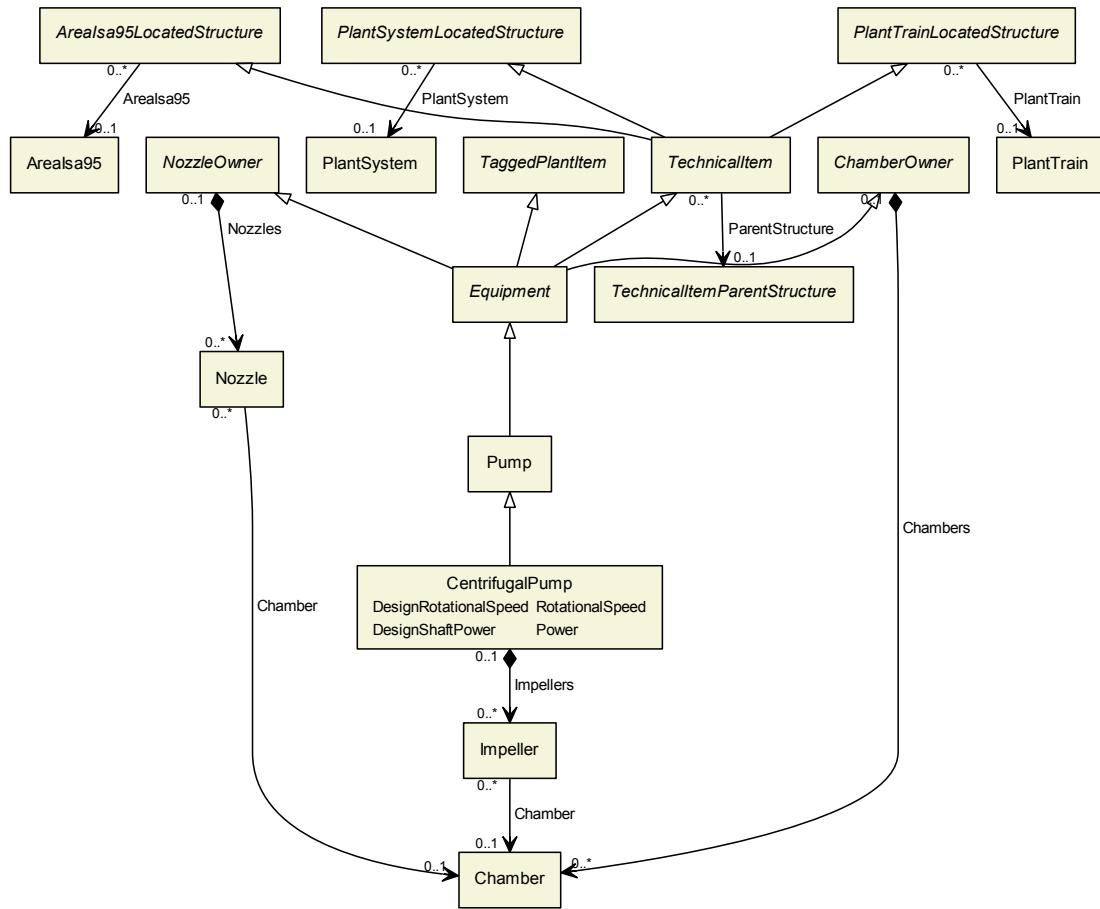
<http://data.posccaesar.org/rdl/RDS416834>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.8.1. Overview



Superclasses:

- [Pump](#)

Subclasses: No subclasses.

9.8.2. Components

9.8.2.1. Impellers

Description: The impellers of the [CentrifugalPump](#).

Type: [Impeller](#)

Cardinality: 0..*

Proteus Schema Implementation: The <Equipment> element for the [Impeller](#) is a child 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>
```

9.8.3. Model References

No model references.

9.8.4. Attributes

9.8.4.1. DesignRotationalSpeed

Description: The design rotational speed of the [CentrifugalPump](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 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="180"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.8.4.2. DesignShaftPower

Description: The design shaft power of the [CentrifugalPump](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: [Power](#)

Example Value: 400 kW

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

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.9. Chamber

Description: A physical object that is an enclosed space (from <http://data.posccaesar.org/rdl/RDS903151421>).

RDL: CHAMBER

<http://data.posccaesar.org/rdl/RDS903151421>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.9.1. Overview

Chamber	
ChamberDescriptionAssignment Class	String
ChamberFunctionAssignmentClass	String
ChamberFunctionSpecialization	ChamberFunctionClassification
Height	Length
InsideDiameter	Length
Length	Length
LowerLimitDesignPressure	Pressure
LowerLimitDesignTemperature	Temperature
MaterialOfConstructionCode AssignmentClass	String
NominalDiameter	Length
NominalDiameterType RepresentationAssignmentClass	String
SubTagNameAssignmentClass	String
UpperLimitDesignPressure	Pressure
UpperLimitDesignTemperature	Temperature
Width	Length

Superclasses: No superclasses.

Subclasses: No subclasses.

9.9.2. Components

No components.

9.9.3. Model References

No model references.

9.9.4. Attributes

9.9.4.1. ChamberDescriptionAssignmentClass

Description: The description of the [Chamber](#).

RDL: CHAMBER DESCRIPTION ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/ChamberDescriptionAssignmentClass>

Attribute Type: String

Example Value: "jacket chamber"

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

Example:

```
<GenericAttribute
  Name="ChamberDescriptionAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/ChamberDescriptionAssignmentClass"
  Value="jacket chamber"
  Format="string" />
```

9.9.4.2. ChamberFunctionAssignmentClass

Description: The function of the Chamber.

RDL: CHAMBER FUNCTION ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/ChamberFunctionAssignmentClass>

Attribute Type: String

Example Value: "cooling"

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

Example:

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

9.9.4.3. ChamberFunctionSpecialization

Description: A specialization indicating the function of the Chamber.

RDL: CHAMBER FUNCTION SPECIALIZATION

<http://sandbox.dexpi.org/rdl/ChamberFunctionSpecialization>

Attribute Type: ChamberFunctionClassification

Example Value: heating

(HEATING, <http://data.posccaesar.org/rdl/RDS9666872>)

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

Example:

```
<GenericAttribute
  Name="ChamberFunctionSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/ChamberFunctionSpecialization"
  Value="Heating"
  ValueURI="http://data.posccaesar.org/rdl/RDS9666872"
  Format="anyURI" />
```

9.9.4.4. Height

Description: The height of the [Chamber](#).

RDL: HEIGHT

<http://data.posccaesar.org/rdl/RDS357704>

Attribute Type: [Length](#)

Example Value: 220 cm

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

Example:

```
<GenericAttribute
  Name="Height"
  AttributeURI="http://data.posccaesar.org/rdl/RDS357704"
  Value="220"
  Format="double"
  Units="Centimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />
```

9.9.4.5. InsideDiameter

Description: The inside diameter of the [Chamber](#).

RDL: INSIDE DIAMETER

<http://data.posccaesar.org/rdl/RDS357209>

Attribute Type: [Length](#)

Example Value: 60 cm

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

Example:

```
<GenericAttribute
  Name="InsideDiameter"
  AttributeURI="http://data.posccaesar.org/rdl/RDS357209"
  Value="60"
  Format="double"
  Units="Centimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />
```

9.9.4.6. Length

Description: The length of the [Chamber](#).

RDL: LENGTH

<http://data.posccaesar.org/rdl/RDS373094>

Attribute Type: [Length](#)

Example Value: 160 cm

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

Example:

```
<GenericAttribute
  Name="Length"
  AttributeURI="http://data.posccaesar.org/rdl/RDS373094"
```

```

Value="160"
Format="double"
Units="Centimetre"
UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />

```

9.9.4.7. 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" />

```

9.9.4.8. 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" />

```

9.9.4.9. 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](#)).

9. Equipment

Example:

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

9.9.4.10. NominalDiameter

Description: The nominal diameter of the [Chamber](#), given as a length. See also [NominalDiameterTypeRepresentationClass](#).

RDL: NOMINAL DIAMETER

<http://data.posccaesar.org/rdl/RDS366794>

Attribute Type: [Length](#)

Example Value: 80 cm

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

Example:

```
<GenericAttribute
  Name="NominalDiameter"
  AttributeURI="http://data.posccaesar.org/rdl/RDS366794"
  Value="80"
  Format="double"
  Units="Centimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />
```

9.9.4.11. NominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter of the [Chamber](#). 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 [Chamber](#) (use case [String](#)).

Example:

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

9.9.4.12. SubTagNameAssignmentClass

Description: The sub tag name of the [Chamber](#).

RDL: SUB TAG NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass>

Attribute Type: String

Example Value: "Chamber1"

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

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="Chamber1"
  Format="string" />
```

9.9.4.13. 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" />
```

9.9.4.14. 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" />
```

9.9.4.15. Width

Description: The width of the [Chamber](#).

RDL: WIDTH

<http://data.posccaesar.org/rdl/RDS361709>

Attribute Type: [Length](#)

Example Value: 180 cm

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

Example:

```
<GenericAttribute
  Name="Width"
  AttributeURI="http://data.posccaesar.org/rdl/RDS361709"
  Value="180"
  Format="double"
  Units="Centimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />
```

9.10. ChamberOwner

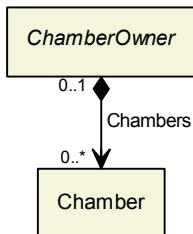
This class is abstract.

Description: An object that can have chambers.

RDL: -

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

9.10.1. Overview



Superclasses: No superclasses.

Subclasses:

- [Equipment](#)

9.10.2. Components

9.10.2.1. Chambers

Description: The Chambers of the [ChamberOwner](#).

Type: [Chamber](#)

Cardinality: 0..*

Proteus Schema Implementation: The <Equipment> element for the [Chamber](#) is a child of the <Equipment> element for the [ChamberOwner](#) (e.g., a [Tank](#)).

Example:

```

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

```

9.10.3. Model References

No model references.

9.10.4. Attributes

No attributes.

9.11. ColumnInternalsArrangement

This class is abstract.

Description: The internals of a column.

RDL: -

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

9.11.1. Overview

ColumnInternalsArrangement

Superclasses: No superclasses.

Subclasses:

- [ColumnPackingsArrangement](#)
- [ColumnTraysArrangement](#)

9.11.2. Components

No components.

9.11.3. Model References

No model references.

9.11.4. Attributes

No attributes.

9.12. ColumnPackingsArrangement

Description: The packings of a column.

RDL: COLUMN PACKINGS ARRANGEMENT

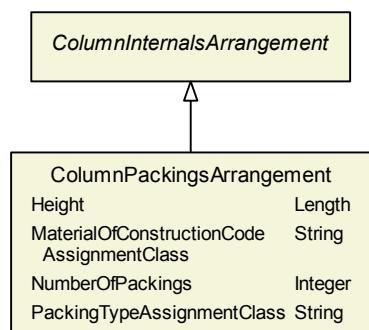
<http://sandbox.dexpi.org/rdl/ColumnPackingsArrangement>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.12.1. Overview



Superclasses:

- [ColumnInternalsArrangement](#)

Subclasses: No subclasses.

9.12.2. Components

No components.

9.12.3. Model References

No model references.

9.12.4. Attributes

9.12.4.1. Height

Description: The height of the [ColumnPackingsArrangement](#).

RDL: HEIGHT

<http://data.posccaesar.org/rdl/RDS357704>

Attribute Type: [Length](#)

Example Value: 220 cm

Proteus Schema Implementation: GenericAttribute of the [ColumnPackingsArrangement](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="Height"
  AttributeURI="http://data.posccaesar.org/rdl/RDS357704"
  Value="220"
  Format="double"
  Units="Centimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />
```

9.12.4.2. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the [ColumnPackingsArrangement](#).

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 [ColumnPackingsArrangement](#) (use case [String](#)).

Example:

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

9.12.4.3. NumberOfPackings

Description: The number of packings in the [ColumnPackingsArrangement](#).

RDL: NUMBER OF PACKINGS

<http://sandbox.dexpi.org/rdl/NumberOfPackings>

Attribute Type: [Integer](#)

Example Value: 300

Proteus Schema Implementation: [GenericAttribute](#) of the [ColumnPackingsArrangement](#) (use case [Integer](#)).

Example:

```
<GenericAttribute
  Name="NumberOfPackings"
  AttributeURI="http://sandbox.dexpi.org/rdl/NumberOfPackings"
  Value="300"
  Format="integer" />
```

9.12.4.4. PackingTypeAssignmentClass

Description: The type of the packings in the [ColumnPackingsArrangement](#).

RDL: PACKING TYPE ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/PackingTypeAssignmentClass>

Attribute Type: [String](#)

Example Value: "rings"

Proteus Schema Implementation: [GenericAttribute](#) of the [ColumnPackingsArrangement](#) (use case [String](#)).

Example:

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

9.13. ColumnSection

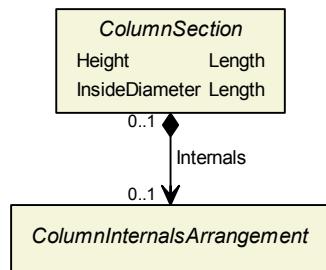
This class is abstract.

Description: A column section.

RDL: -

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

9.13.1. Overview



Superclasses: No superclasses.

Subclasses:

- SubTaggedColumnSection
- TaggedColumnSection

9.13.2. Components

9.13.2.1. Internals

Description: The [ColumnInternalsArrangement](#) of the [ColumnSection](#).

Type: [ColumnInternalsArrangement](#)

Cardinality: 0..1

Proteus Schema Implementation: The <Equipment> element for the [ColumnInternalsArrangement](#) (e.g., a [ColumnPackingsArrangement](#)) is a child of the <Equipment> element for the [ColumnSection](#) (e.g., a [TaggedColumnSection](#)).

Example:

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

```

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

9.13.3. Model References

No model references.

9.13.4. Attributes

9.13.4.1. Height

Description: The height of the [ColumnSection](#).

RDL: HEIGHT

<http://data.posccaesar.org/rdl/RDS357704>

Attribute Type: [Length](#)

Example Value: 220 cm

Proteus Schema Implementation: GenericAttribute of the [ColumnSection](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="Height"
  AttributeURI="http://data.posccaesar.org/rdl/RDS357704"
  Value="220"
  Format="double"
  Units="Centimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />
```

9.13.4.2. InsideDiameter

Description: The inside diameter of the [ColumnSection](#).

RDL: INSIDE DIAMETER

<http://data.posccaesar.org/rdl/RDS357209>

Attribute Type: [Length](#)

Example Value: 60 cm

Proteus Schema Implementation: GenericAttribute of the [ColumnSection](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="InsideDiameter"
  AttributeURI="http://data.posccaesar.org/rdl/RDS357209"
  Value="60"
  Format="double"
  Units="Centimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />
```

9.14. ColumnTraysArrangement

Description: The trays of a column.

RDL: COLUMN TRAYS ARRANGEMENT

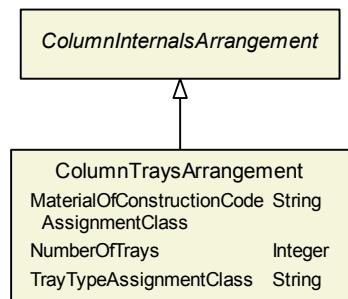
<http://sandbox.dexpi.org/rdl/ColumnTraysArrangement>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.14.1. Overview



Superclasses:

- [ColumnInternalsArrangement](#)

Subclasses: No subclasses.

9.14.2. Components

No components.

9.14.3. Model References

No model references.

9.14.4. Attributes

9.14.4.1. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the [ColumnTraysArrangement](#).

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 [ColumnTraysArrangement](#) (use case [String](#)).

Example:

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

9.14.4.2. NumberOfTrays

Description: The number of trays in the [ColumnTraysArrangement](#).

RDL: NUMBER OF TRAYS

<http://sandbox.dexpi.org/rdl/NumberOfTrays>

Attribute Type: Integer

Example Value: 16

Proteus Schema Implementation: GenericAttribute of the [ColumnTraysArrangement](#) (use case [Integer](#)).

Example:

```
<GenericAttribute
  Name="NumberOfTrays"
  AttributeURI="http://sandbox.dexpi.org/rdl/NumberOfTrays"
  Value="16"
  Format="integer" />
```

9.14.4.3. TrayTypeAssignmentClass

Description: The type of the trays in the [ColumnTraysArrangement](#).

RDL: TRAY TYPE ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/TrayTypeAssignmentClass>

Attribute Type: String

Example Value: "sieve trays"

Proteus Schema Implementation: GenericAttribute of the [ColumnTraysArrangement](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="TrayTypeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TrayTypeAssignmentClass"
  Value="sieve trays"
  Format="string" />
```

9.15. Compressor

Description: A 'gas pressure increase device' and an 'artefact' that is driven by a prime mover by which energy is either constantly or periodically added to an amount of gas in order to increase its pressure (from <http://data.posccaezar.org/rdl/RDS14286497>).

RDL: COMPRESSOR

<http://data.posccaezar.org/rdl/RDS14286497>

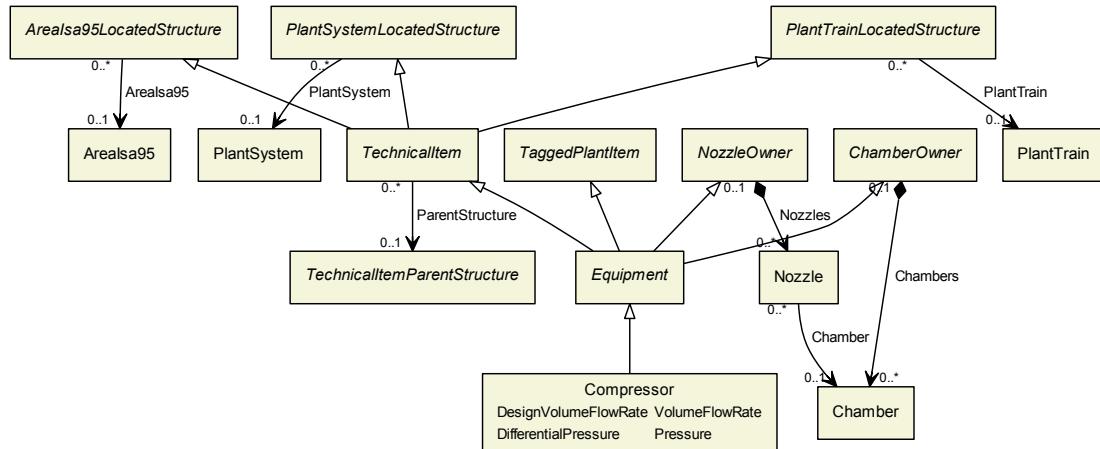
Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

9. Equipment

```
<Equipment
    ComponentClass="Compressor"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS14286497" ...>
...
</Equipment>
```

9.15.1. Overview



Superclasses:

- Equipment

Subclasses:

- AirEjector
- AxialCompressor
- CentrifugalCompressor
- ReciprocatingCompressor
- RotaryCompressor
- SpecialCompressor

9.15.2. Components

No components.

9.15.3. Model References

No model references.

9.15.4. Attributes

9.15.4.1. DesignVolumeFlowRate

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

RDL: DESIGN VOLUME FLOW RATE

<http://data.posccaesar.org/rdl/RDS14286227>

Attribute Type: VolumeFlowRate

Example Value: 420 m³/h

Proteus Schema Implementation: GenericAttribute of the Compressor (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" />
```

9.15.4.2. DifferentialPressure

Description: The differential pressure of the Compressor.

RDL: DIFFERENTIAL PRESSURE

<http://data.posccaesar.org/rdl/RDS361574>

Attribute Type: Pressure

Example Value: 4.8 bar

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

Example:

```
<GenericAttribute
  Name="DifferentialPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS361574"
  Value="4.8"
  Format="double"
  Units="Bar"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1314539" />
```

9.16. CompressorEquipment

This class is abstract.

Description: Equipment of a Compressor.

RDL: -

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

9.16.1. Overview

CompressorEquipment

Superclasses: No superclasses.

Subclasses:

- Displacer
- Impeller

9.16.2. Components

No components.

9.16.3. Model References

No model references.

9.16.4. Attributes

No attributes.

9.17. Displacer

Description: A displacer.

RDL: DISPLACER

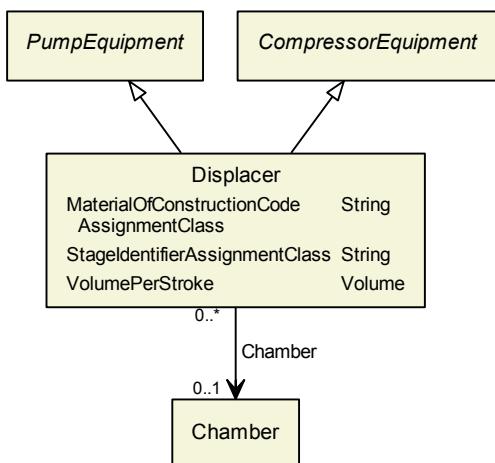
<http://sandbox.dexpi.org/rdl/Displacer>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.17.1. Overview



Superclasses:

- [CompressorEquipment](#)
- [PumpEquipment](#)

Subclasses: No subclasses.

9.17.2. Components

No components.

9.17.3. Model References

9.17.3.1. Chamber

Description: The [Chamber](#) in which the [Displacer](#) is located, if applicable. The Chamber must be a component of the same object as the Displacer.

Type: [Chamber](#)

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 [Displacer](#): is located in
- Association type for the association *target*, i.e., for the <Equipment> element representing the [Chamber](#): is the location of

Both <Association> elements must be used.

Example:

```
<Equipment ID="Displacer1" ...>
...
<Association Type="is located in" ItemID="Chamber1" />
...
</Equipment>
...
<Equipment ID="Chamber1" ...>
...
<Association Type="is the location of" ItemID="Displacer1" />
...
</Equipment>
```

9.17.4. Attributes

9.17.4.1. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the [Displacer](#).

RDL: MATERIAL OF CONSTRUCTION CODE ASSIGNMENT CLASS

<http://data.posccaezar.org/rdl/RDS1460719741>

Attribute Type: [String](#)

Example Value: "1.4306"

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

Example:

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

9.17.4.2. StageIdentifierAssignmentClass

Description: The stage identifier of the [Displacer](#).

RDL: STAGE IDENTIFIER ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/StagelIdentifierAssignmentClass>

Attribute Type: [String](#)

Example Value: "s1"

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

Example:

```
<GenericAttribute
  Name="StageIdentifierAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/StagelIdentifierAssignmentClass"
  Value="s1"
  Format="string" />
```

9.17.4.3. VolumePerStroke

Description: The volume per stroke of the [Displacer](#).

RDL: VOLUME PER STROKE

<http://data.posccaesar.org/rdl/RDS7503244>

Attribute Type: [Volume](#)

Example Value: 80 cm²

Proteus Schema Implementation: [GenericAttribute](#) of the [Displacer](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="VolumePerStroke"
  AttributeURI="http://data.posccaesar.org/rdl/RDS7503244"
  Value="80"
  Format="double"
  Units="CentimetreSquared"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1357829" />
```

9.18. EjectorPump

Description: A pump which uses pressurized gas or liquid passing through an ejector to transport liquid (from <http://data.posccaesar.org/rdl/RDS860624>).

RDL: EJECTOR PUMP

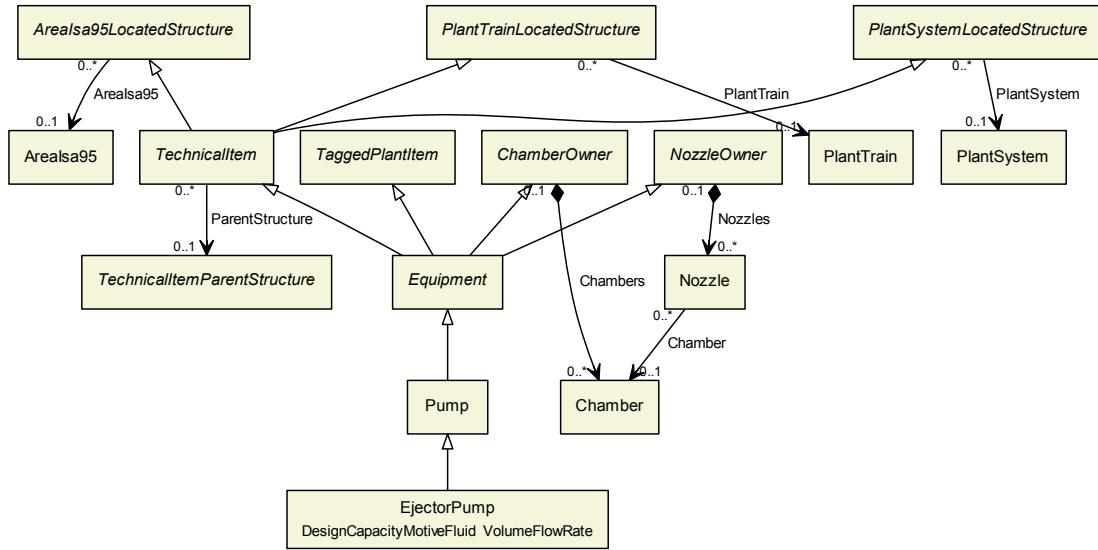
<http://data.posccaesar.org/rdl/RDS860624>

Proteus Schema Implementation: Proteus [`<Equipment>`](#) element with mandatory [ComponentClass](#) and [ComponentClassUri](#) attributes.

Example:

```
<Equipment
  ComponentClass="EjectorPump"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS860624" ...>
...
</Equipment>
```

9.18.1. Overview



Superclasses:

- Pump

Subclasses: No subclasses.

9.18.2. Components

No components.

9.18.3. Model References

No model references.

9.18.4. Attributes

9.18.4.1. DesignCapacityMotiveFluid

Description: The design capacity for the motive fluid of the EjectorPump.

RDL: DESIGN CAPACITY MOTIVE FLUID

<http://sandbox.dexpi.org/rdl/DesignCapacityMotiveFluid>

Attribute Type: VolumeFlowRate

Example Value: 40 m³/h

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

Example:

```

<GenericAttribute
  Name="DesignCapacityMotiveFluid"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignCapacityMotiveFluid"
  Value="40"
  Format="double"
  Units="MetreCubedPerHour"
  UnitsURI="http://data.posccaezar.org/rdl/RDS1321064" />
  
```

9.19. ElectricHeater

Description: A heater in which electric energy is converted into heat for useful purposes (from <http://data.posccaesar.org/rdl/RDS14070475>).

RDL: ELECTRIC HEATER

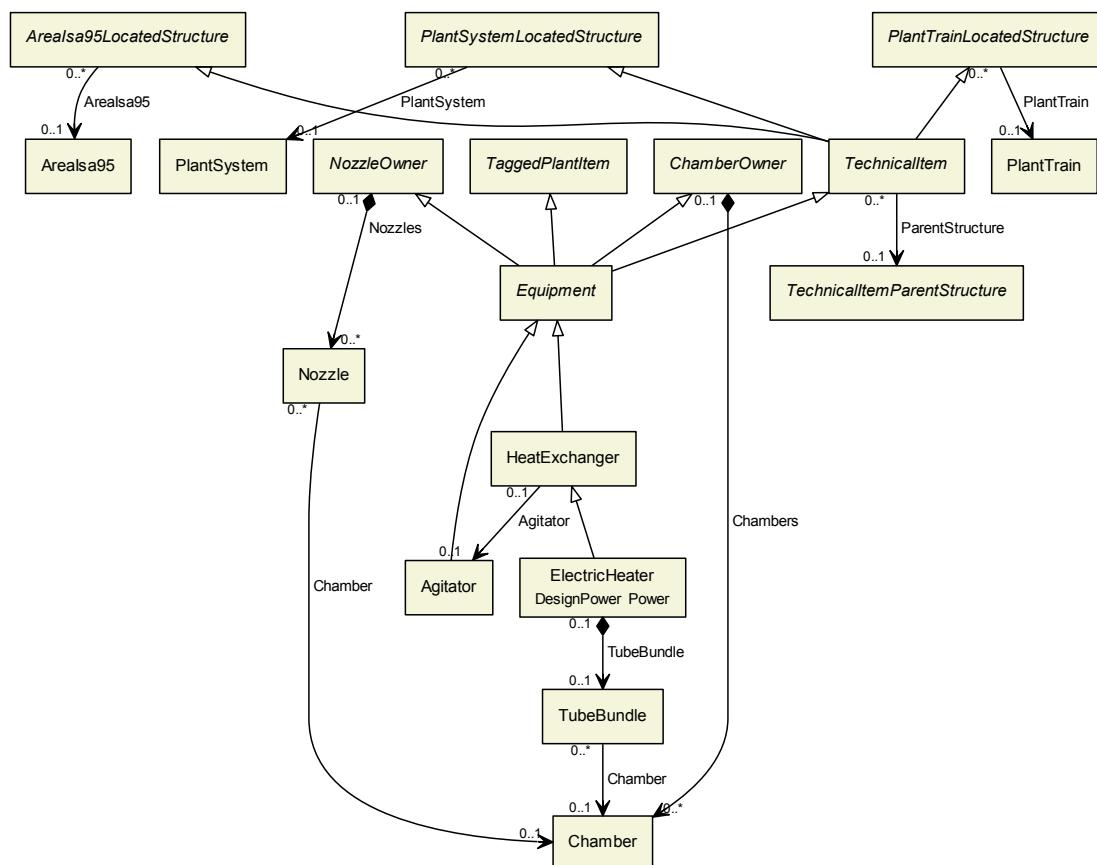
<http://data.posccaesar.org/rdl/RDS14070475>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment  
    ComponentClass="ElectricHeater"  
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS14070475" ...>  
    ...  
</Equipment>
```

9.19.1. Overview



Superclasses:

- HeatExchanger

Subclasses: No subclasses.

9.19.2. Components

9.19.2.1. TubeBundle

Description: The tube bundle of the [ElectricHeater](#).

Type: [TubeBundle](#)

Cardinality: 0..1

Proteus Schema Implementation: The `<Equipment>` element for the [TubeBundle](#) is a child of the `<Equipment>` element for the [ElectricHeater](#).

Example:

```
<Equipment
    ComponentClass="ElectricHeater"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS14070475" ...>
...
<Equipment
    ComponentClass="TubeBundle"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS415259" ...>
...
</Equipment>
...
</Equipment>
```

9.19.3. Model References

No model references.

9.19.4. Attributes

9.19.4.1. DesignPower

Description: The design power of the [ElectricHeater](#).

RDL: DESIGN POWER

<http://sandbox.dexpi.org/rdl/DesignPower>

Attribute Type: [Power](#)

Example Value: 500 kW

Proteus Schema Implementation: [GenericAttribute](#) of the [ElectricHeater](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
    Name="DesignPower"
    AttributeURI="http://sandbox.dexpi.org/rdl/DesignPower"
    Value="500"
    Format="double"
    Units="Kilowatt"
    UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.20. Equipment

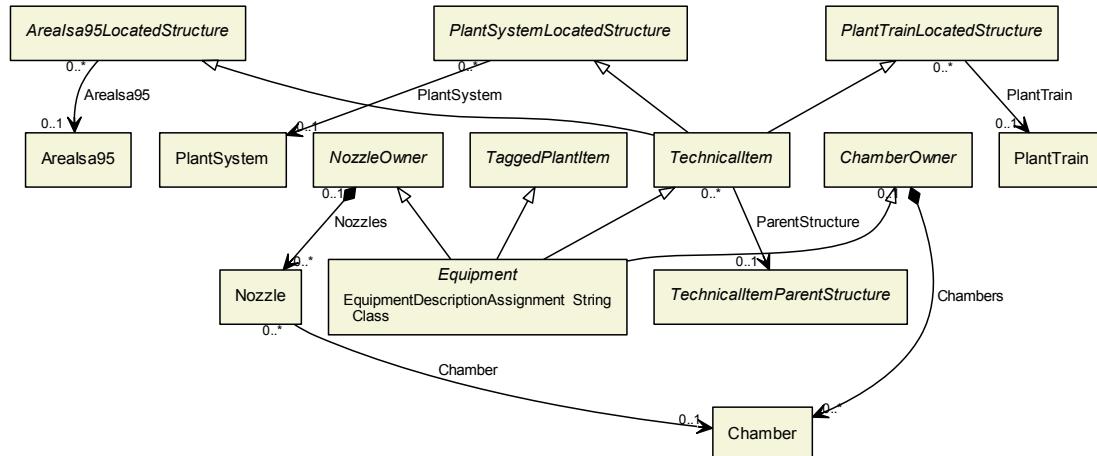
This class is abstract.

Description: A piece of equipment.

RDL: -

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

9.20.1. Overview



Superclasses:

- ChamberOwner
- NozzleOwner
- TaggedPlantItem
- TechnicalItem

Subclasses:

- Agitator
- Compressor
- Filter
- HeatExchanger
- Mixer
- ProcessColumn
- Pump
- Vessel

9.20.2. Components

No components.

9.20.3. Model References

No model references.

9.20.4. Attributes

9.20.4.1. EquipmentDescriptionAssignmentClass

Description: A short description of the [Equipment](#) in natural language. So far, there is no support for descriptions in different languages.

RDL: EQUIPMENT DESCRIPTION ASSIGNMENT CLASS

<http://data.posccaesar.org/rdl/RDS2181987301>

Attribute Type: [String](#)

Example Value: "Prozessgaskühler"

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

Example:

```
<GenericAttribute
  Name="EquipmentDescriptionAssignmentClass"
  AttributeURI="http://data.posccaesar.org/rdl/RDS2181987301"
  Value="Prozessgaskühler"
  Format="string" />
```

9.21. Filter

Description: A separator intended to remove solids from vapour or liquid (from <http://data.posccaesar.org/rdl/RDS300689>).

RDL: FILTER

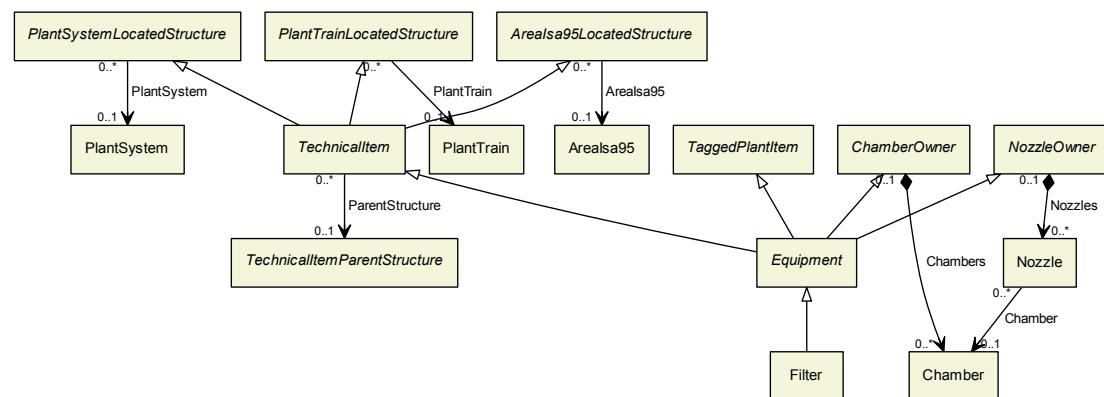
<http://data.posccaesar.org/rdl/RDS300689>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
  ComponentClass="Filter"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS300689" ...>
  ...
</Equipment>
```

9.21.1. Overview



Superclasses:

- [Equipment](#)

Subclasses:

- [GasFilter](#)
- [LiquidFilter](#)

9.21.2. Components

No components.

9.21.3. Model References

No model references.

9.21.4. Attributes

No attributes.

9.22. FilterUnit

RDL: FILTER UNIT

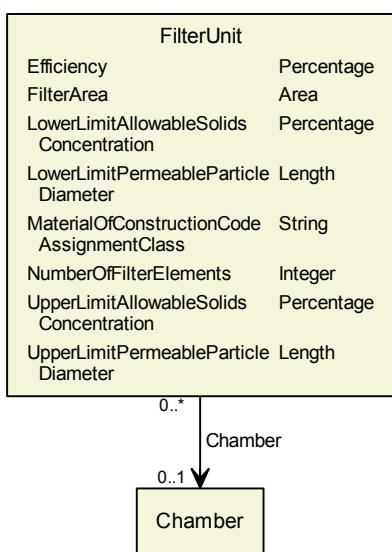
<http://sandbox.dexpi.org/rdl/FilterUnit>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.22.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

9.22.2. Components

No components.

9.22.3. Model References

9.22.3.1. Chamber

Description: The [Chamber](#) in which the [FilterUnit](#) is located, if applicable. The Chamber must be a component of the same object as the FilterUnit.

Type: [Chamber](#)

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 [FilterUnit](#): is located in
- Association type for the association *target*, i.e., for the <Equipment> element representing the [Chamber](#): is the location of

Both <Association> elements must be used.

Example:

```
<Equipment ID="FilterUnit1" ...>
...
<Association Type="is located in" ItemID="Chamber1"/>
...
</Equipment>
...
<Equipment ID="Chamber1" ...>
...
<Association Type="is the location of" ItemID="FilterUnit1"/>
...
</Equipment>
```

9.22.4. Attributes

9.22.4.1. Efficiency

RDL: EFFICIENCY

<http://data.posccaesar.org/rdl/RDS362654>

Attribute Type: Percentage

Example Value: 90 %

Proteus Schema Implementation: GenericAttribute of the [FilterUnit](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="Efficiency"
  AttributeURI="http://data.posccaesar.org/rdl/RDS362654"
  Value="90"
  Format="double"
  Units="Percent"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1317959"/>
```

9.22.4.2. FilterArea

RDL: FILTER AREA

<http://sandbox.dexpi.org/rdl/FilterArea>

Attribute Type: Area

Example Value: 6 m²

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

Example:

```
<GenericAttribute
  Name="FilterArea"
  AttributeURI="http://sandbox.dexpi.org/rdl/FilterArea"
  Value="6"
  Format="double"
  Units="MetreSquared"
  UnitsURI="http://data.posccaezar.org/rdl/RDS1358009" />
```

9.22.4.3. LowerLimitAllowableSolidsConcentration

RDL: LOWER LIMIT ALLOWABLE SOLIDS CONCENTRATION

<http://sandbox.dexpi.org/rdl/LowerLimitAllowableSolidsConcentration>

Attribute Type: Percentage

Example Value: 10 %

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

Example:

```
<GenericAttribute
  Name="LowerLimitAllowableSolidsConcentration"
  AttributeURI="http://sandbox.dexpi.org/rdl/LowerLimitAllowableSolidsConcentration"
  Value="10"
  Format="double"
  Units="Percent"
  UnitsURI="http://data.posccaezar.org/rdl/RDS1317959" />
```

9.22.4.4. LowerLimitPermeableParticleDiameter

RDL: LOWER LIMIT PERMEABLE PARTICLE DIAMETER

<http://sandbox.dexpi.org/rdl/LowerLimitPermeableParticleDiameter>

Attribute Type: Length

Example Value: 50 µm

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

Example:

```
<GenericAttribute
  Name="LowerLimitPermeableParticleDiameter"
  AttributeURI="http://sandbox.dexpi.org/rdl/LowerLimitPermeableParticleDiameter"
  Value="50"
  Format="double"
  Units="Micrometre"
  UnitsURI="http://data.posccaezar.org/rdl/RDS1351529" />
```

9.22.4.5. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the [FilterUnit](#).

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 [FilterUnit](#) (use case [String](#)).

Example:

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

9.22.4.6. NumberOfFilterElements

RDL: NUMBER OF FILTER ELEMENTS

<http://sandbox.dexpi.org/rdl/NumberOfFilterElements>

Attribute Type: Integer

Example Value: 36

Proteus Schema Implementation: GenericAttribute of the [FilterUnit](#) (use case [Integer](#)).

Example:

```
<GenericAttribute
  Name="NumberOfFilterElements"
  AttributeURI="http://sandbox.dexpi.org/rdl/NumberOfFilterElements"
  Value="36"
  Format="integer" />
```

9.22.4.7. UpperLimitAllowableSolidsConcentration

RDL: UPPER LIMIT ALLOWABLE SOLIDS CONCENTRATION

<http://sandbox.dexpi.org/rdl/UpperLimitAllowableSolidsConcentration>

Attribute Type: Percentage

Example Value: 30 %

Proteus Schema Implementation: GenericAttribute of the [FilterUnit](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="UpperLimitAllowableSolidsConcentration"
  AttributeURI="http://sandbox.dexpi.org/rdl/UpperLimitAllowableSolidsConcentration"
  Value="30"
  Format="double"
  Units="Percent"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1317959" />
```

9.22.4.8. UpperLimitPermeableParticleDiameter

RDL: UPPER LIMIT PERMEABLE PARTICLE DIAMETER

<http://sandbox.dexpi.org/rdl/UpperLimitPermeableParticleDiameter>

Attribute Type: Length

Example Value: 400 µm

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

Example:

```
<GenericAttribute
  Name="UpperLimitPermeableParticleDiameter"
  AttributeURI="http://sandbox.dexpi.org/rdl/UpperLimitPermeableParticleDiameter"
  Value="400"
  Format="double"
  Units="Micrometre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1351529" />
```

9.23. GasFilter

RDL: GAS FILTER

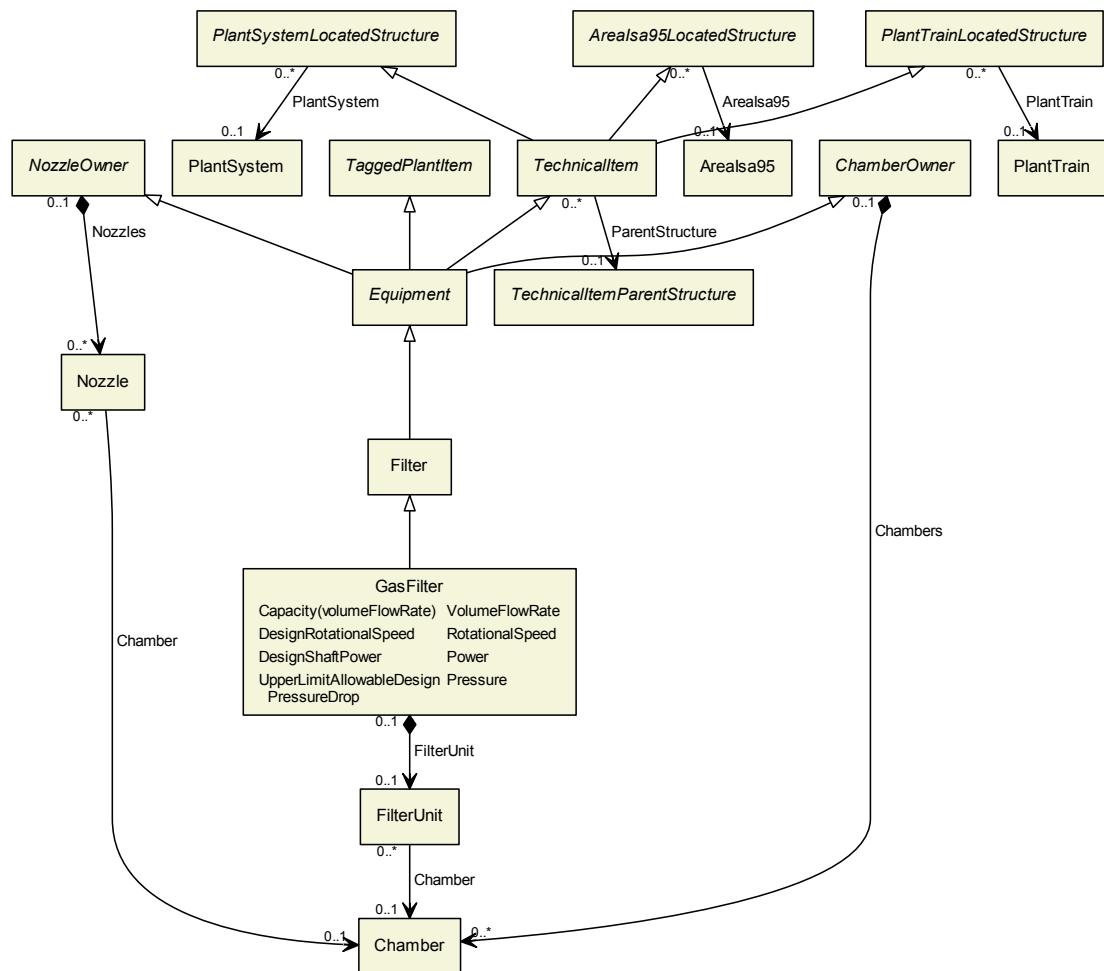
<http://data.posccaesar.org/rdl/RDS4316755843>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
  ComponentClass="GasFilter"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS4316755843" ...>
  ...
</Equipment>
```

9.23.1. Overview



Superclasses:

- Filter

Subclasses: No subclasses.

9.23.2. Components

9.23.2.1. FilterUnit

Description: The filter unit of the [GasFilter](#).

Type: [FilterUnit](#)

Cardinality: 0..1

Proteus Schema Implementation: The <Equipment> element for the [FilterUnit](#) is a child of the <Equipment> element for the [GasFilter](#).

Example:

```

<Equipment
  ComponentClass="GasFilter"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS4316755843" ...>
...
<Equipment
  ComponentClass="FilterUnit">
```

9. Equipment

```
ComponentClassURI="http://sandbox.dexpi.org/rdl/FilterUnit" ...>
...
</Equipment>
...
</Equipment>
```

9.23.3. Model References

No model references.

9.23.4. Attributes

9.23.4.1. Capacity(volumeFlowRate)

Description: The handling flow rate for which the [GasFilter](#) is designed.

RDL: CAPACITY (VOLUME FLOW RATE)

<http://data.posccaesar.org/rdl/RDS7354248>

Attribute Type: [VolumeFlowRate](#)

Example Value: 420 m³/h

Proteus Schema Implementation: [GenericAttribute](#) of the [GasFilter](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="Capacity(volumeFlowRate)"
  AttributeURI="http://data.posccaesar.org/rdl/RDS7354248"
  Value="420"
  Format="double"
  Units="MetreCubedPerHour"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1321064" />
```

9.23.4.2. DesignRotationalSpeed

Description: The design rotational speed of the [GasFilter](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [GasFilter](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="180"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.23.4.3. DesignShaftPower

Description: The design shaft power of the [GasFilter](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: Power

Example Value: 400 kW

Proteus Schema Implementation: GenericAttribute of the [GasFilter](#) (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.23.4.4. UpperLimitAllowableDesignPressureDrop

Description: The maximum allowable design pressure drop of the [GasFilter](#).

RDL: UPPER LIMIT ALLOWABLE DESIGN PRESSURE DROP

<http://sandbox.dexpi.org/rdl/UpperLimitAllowableDesignPressureDrop>

Attribute Type: Pressure

Example Value: 2 bar

Proteus Schema Implementation: GenericAttribute of the [GasFilter](#) (use case Physical Quantity).

Example:

```
<GenericAttribute
  Name="UpperLimitAllowableDesignPressureDrop"
  AttributeURI="http://sandbox.dexpi.org/rdl/UpperLimitAllowableDesignPressureDrop"
  Value="2"
  Format="double"
  Units="Bar"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1314539" />
```

9.24. HeatExchanger

Description: An artefact that is intended to transfer heat from one object to another (from <http://data.posccaesar.org/rdl/RDS304199>).

RDL: HEAT EXCHANGER

<http://data.posccaesar.org/rdl/RDS304199>

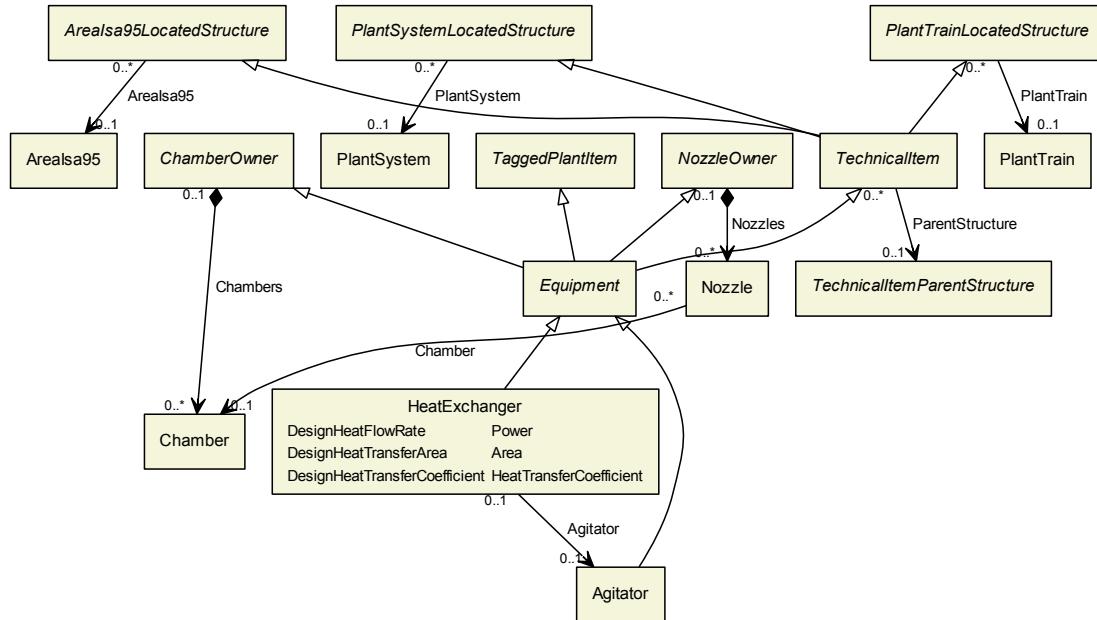
Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
  ComponentClass="HeatExchanger"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS304199" ...>
```

...
</Equipment>

9.24.1. Overview



Superclasses:

- [Equipment](#)

Subclasses:

- [AirCoolingSystem](#)
- [ElectricHeater](#)
- [PlateAndShellHeatExchanger](#)
- [ShellAndTubeHeatExchanger](#)
- [SpiralHeatExchanger](#)
- [ThinFilmEvaporator](#)

9.24.2. Components

No components.

9.24.3. Model References

9.24.3.1. Agitator

Description: The [Agitator](#) of the [HeatExchanger](#), if applicable.

Type: [Agitator](#)

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus <Association> elements:

- Association type for the association *source*, i.e., for the <Equipment> element representing the [HeatExchanger](#): is the location of
- Association type for the association *target*, i.e., for the <Equipment> element representing the [Agitator](#): is located in

Both <Association> elements must be used.

Example:

```
<Equipment ID="HeatExchanger1" ...>
...
<Association Type="is the location of" ItemID="Agitator1" />
...
</Equipment>
...
<Equipment ID="Agitator1" ...>
...
<Association Type="is located in" ItemID="HeatExchanger1" />
...
</Equipment>
```

9.24.4. Attributes

9.24.4.1. 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" />
```

9.24.4.2. 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 m²

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.posccaezar.org/rdl/RDS1358009" />
```

9.24.4.3. DesignHeatTransferCoefficient

Description: The design heat transfer coefficient of the [HeatExchanger](#).

RDL: DESIGN HEAT TRANSFER COEFFICIENT

<http://sandbox.dexpi.org/rdl/DesignHeatTransferCoefficient>

Attribute Type: [HeatTransferCoefficient](#)

Example Value: 1.2 kW/(m² K)

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

Example:

```
<GenericAttribute  
  Name="DesignHeatTransferCoefficient"  
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignHeatTransferCoefficient"  
  Value="1.2"  
  Format="double"  
  Units="KilowattPerMetreSquaredKelvin"  
  UnitsURI="http://data.posccaezar.org/rdl/RDS43167567170" />
```

9.25. HeatExchangerRotor

Description: A heat exchanger rotor.

RDL: HEAT EXCHANGER ROTOR

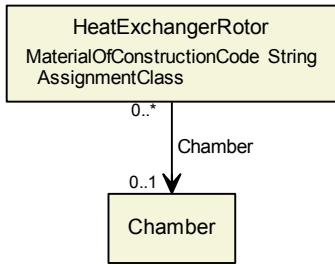
<http://sandbox.dexpi.org/rdl/HeatExchangerRotor>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.25.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

9.25.2. Components

No components.

9.25.3. Model References

9.25.3.1. Chamber

Description: The `Chamber` in which the `HeatExchangerRotor` is located, if applicable. The `Chamber` must be a component of the same object as the `HeatExchangerRotor`.

Type: `Chamber`

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 `HeatExchangerRotor`: is located in
- Association type for the association *target*, i.e., for the <Equipment> element representing the `Chamber`: is the location of

Both <Association> elements must be used.

Example:

```

<Equipment ID="HeatExchangerRotor1" ...>
  ...
  <Association Type="is located in" ItemID="Chamber1" />
  ...
</Equipment>
...
<Equipment ID="Chamber1" ...>
  ...
  <Association Type="is the location of" ItemID="HeatExchangerRotor1" />
  ...
</Equipment>
  
```

9.25.4. Attributes

9.25.4.1. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the `HeatExchangerRotor`.

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 HeatExchangerRotor (use case String).

Example:

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

9.26. Impeller

Description: A physical object that is an assembly of rotating vanes within an enclosure which is used to impart energy to or derive energy from a fluid through dynamic force (from <http://data.posccaesar.org/rdl/RDS414539>).

RDL: IMPELLER

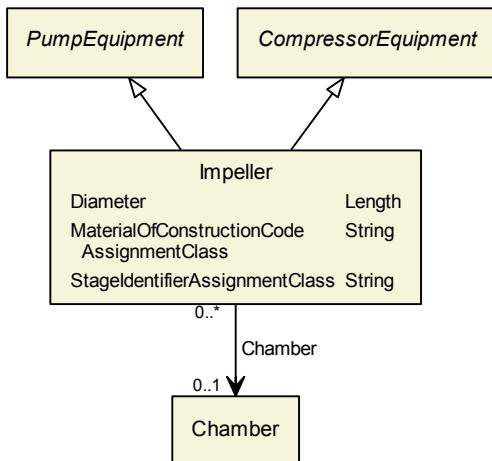
<http://data.posccaesar.org/rdl/RDS414539>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.26.1. Overview



Superclasses:

- CompressorEquipment
- PumpEquipment

Subclasses: No subclasses.

9.26.2. Components

No components.

9.26.3. Model References

9.26.3.1. Chamber

Description: The [Chamber](#) in which the [Impeller](#) is located, if applicable. The [Chamber](#) must be a component of the same object as the [Impeller](#).

Type: [Chamber](#)

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 [Impeller](#): is located in
- Association type for the association *target*, i.e., for the <Equipment> element representing the [Chamber](#): is the location of

Both <Association> elements must be used.

Example:

```
<Equipment ID="Impeller1" ...>
...
<Association Type="is located in" ItemID="Chamber1" />
...
</Equipment>
...
<Equipment ID="Chamber1" ...>
...
<Association Type="is the location of" ItemID="Impeller1" />
...
</Equipment>
```

9.26.4. Attributes

9.26.4.1. Diameter

Description: The diameter of the [Impeller](#).

RDL: DIAMETER

<http://data.posccaesar.org/rdl/RDS350954>

Attribute Type: [Length](#)

Example Value: 20 cm

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

Example:

```
<GenericAttribute
  Name="Diameter"
  AttributeURI="http://data.posccaesar.org/rdl/RDS350954"
  Value="20"
  Format="double"
  Units="Centimetre"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1318004" />
```

9.26.4.2. 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: "1.4306"

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

Example:

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

9.26.4.3. StageIdentifierAssignmentClass

Description: The stage identifier of of the [Impeller](#).

RDL: STAGE IDENTIFIER ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/StagelIdentifierAssignmentClass>

Attribute Type: [String](#)

Example Value: "s1"

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

Example:

```
<GenericAttribute
  Name="StageIdentifierAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/StagelIdentifierAssignmentClass"
  Value="s1"
  Format="string" />
```

9.27. Kneader

RDL: KNEADER

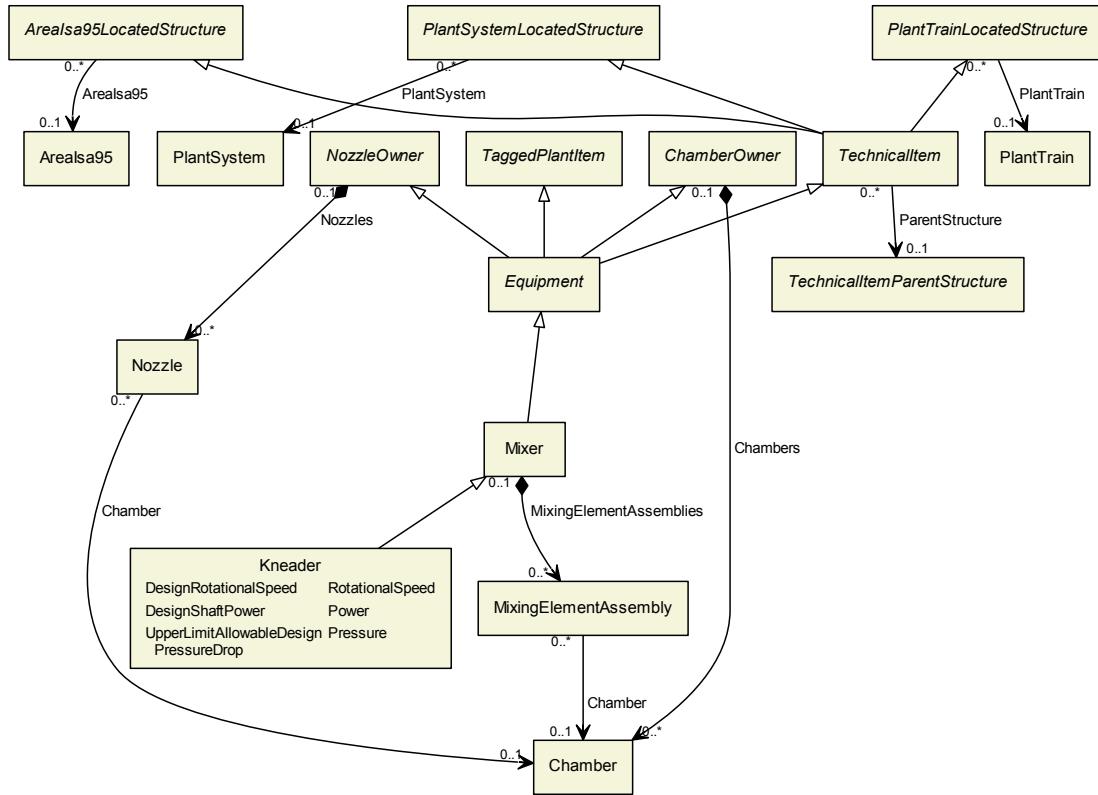
<http://sandbox.dexpi.org/rdl/Kneader>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.27.1. Overview



Superclasses:

- Mixer

Subclasses: No subclasses.

9.27.2. Components

No components.

9.27.3. Model References

No model references.

9.27.4. Attributes

9.27.4.1. DesignRotationalSpeed

Description: The design rotational speed of the [Kneader](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: GenericAttribute of the [Kneader](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
```

9. Equipment

```
AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
Value="180"
Format="double"
Units="RevolutionPerMinute"
UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.27.4.2. DesignShaftPower

Description: The design shaft power of the [Kneader](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: Power

Example Value: 400 kW

Proteus Schema Implementation: [GenericAttribute](#) of the [Kneader](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.27.4.3. UpperLimitAllowableDesignPressureDrop

Description: The maximum allowable design pressure drop of the [Kneader](#).

RDL: UPPER LIMIT ALLOWABLE DESIGN PRESSURE DROP

<http://sandbox.dexpi.org/rdl/UpperLimitAllowableDesignPressureDrop>

Attribute Type: Pressure

Example Value: 2 bar

Proteus Schema Implementation: [GenericAttribute](#) of the [Kneader](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="UpperLimitAllowableDesignPressureDrop"
  AttributeURI="http://sandbox.dexpi.org/rdl/UpperLimitAllowableDesignPressureDrop"
  Value="2"
  Format="double"
  Units="Bar"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1314539" />
```

9.28. LiquidFilter

RDL: LIQUID FILTER

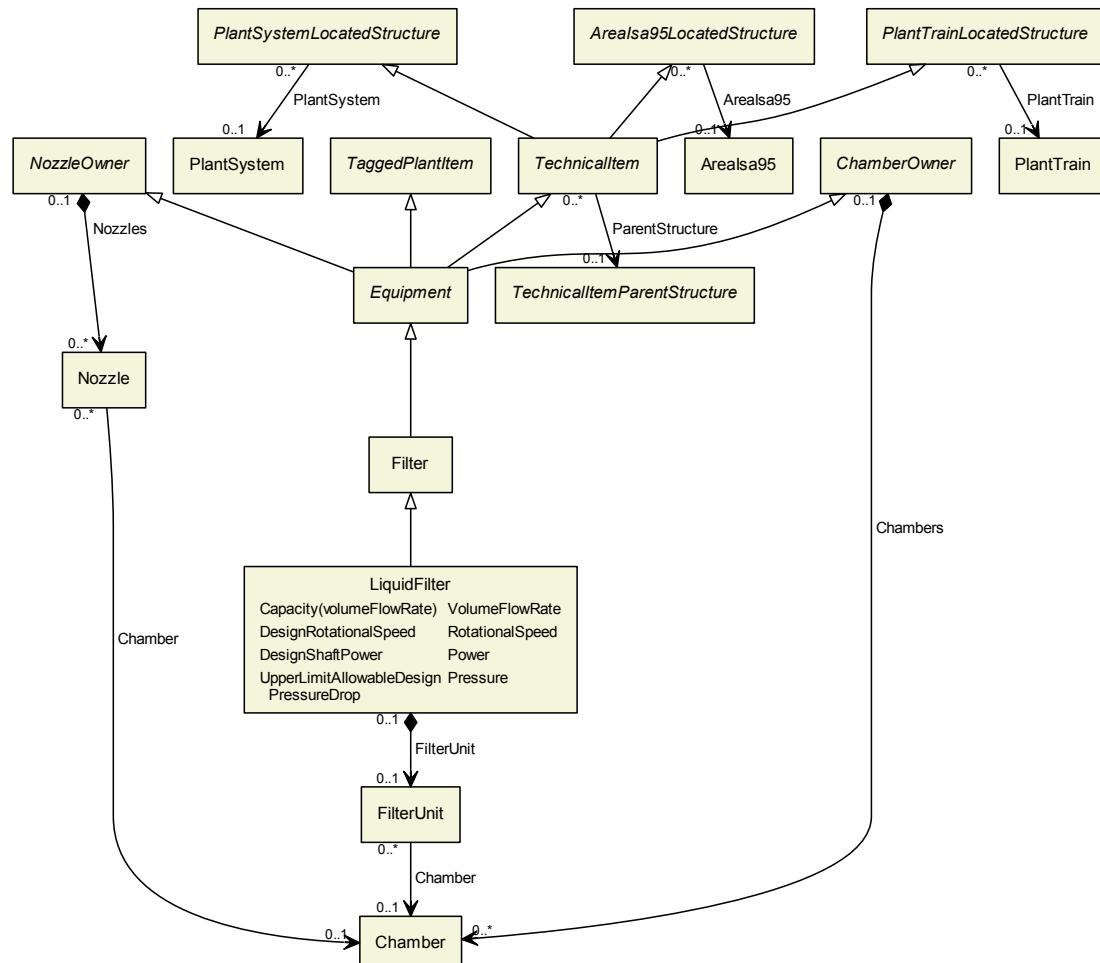
<http://sandbox.dexpi.org/rdl/LiquidFilter>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.28.1. Overview



Superclasses:

- ## Filter

Subclasses: No subclasses

9.28.2. Components

9.28.2.1 FilterInit

Description: The filter unit of the [LiquidFilter](#).

Type: FilterUnit

Cardinality: 0..1

Proteus Schema Implementation: The `<Equipment>` element for the `FilterUnit` is a child of the `<Equipment>` element for the `LiquidFilter`.

9. Equipment

Example:

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

9.28.3. Model References

No model references.

9.28.4. Attributes

9.28.4.1. Capacity(volumeFlowRate)

Description: The handling flow rate for which the [LiquidFilter](#) is designed.

RDL: CAPACITY (VOLUME FLOW RATE)

<http://data.posccaesar.org/rdl/RDS7354248>

Attribute Type: [VolumeFlowRate](#)

Example Value: 420 m³/h

Proteus Schema Implementation: [GenericAttribute](#) of the [LiquidFilter](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
    Name="Capacity(volumeFlowRate)"
    AttributeURI="http://data.posccaesar.org/rdl/RDS7354248"
    Value="420"
    Format="double"
    Units="MetreCubedPerHour"
    UnitsURI="http://data.posccaesar.org/rdl/RDS1321064" />
```

9.28.4.2. DesignRotationalSpeed

Description: The design rotational speed of the [LiquidFilter](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [LiquidFilter](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
    Name="DesignRotationalSpeed"
    AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
    Value="180"
```

```

Format="double"
Units="RevolutionPerMinute"
UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />

```

9.28.4.3. DesignShaftPower

Description: The design shaft power of the [LiquidFilter](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: Power

Example Value: 400 kW

Proteus Schema Implementation: GenericAttribute of the [LiquidFilter](#) (use case [Physical Quantity](#)).

Example:

```

<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />

```

9.28.4.4. UpperLimitAllowableDesignPressureDrop

Description: The maximum allowable design pressure drop of the [LiquidFilter](#).

RDL: UPPER LIMIT ALLOWABLE DESIGN PRESSURE DROP

<http://sandbox.dexpi.org/rdl/UpperLimitAllowableDesignPressureDrop>

Attribute Type: Pressure

Example Value: 2 bar

Proteus Schema Implementation: GenericAttribute of the [LiquidFilter](#) (use case [Physical Quantity](#)).

Example:

```

<GenericAttribute
  Name="UpperLimitAllowableDesignPressureDrop"
  AttributeURI="http://sandbox.dexpi.org/rdl/UpperLimitAllowableDesignPressureDrop"
  Value="2"
  Format="double"
  Units="Bar"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1314539" />

```

9.29. Mixer

RDL: MIXER

<http://sandbox.dexpi.org/rdl/Mixer>

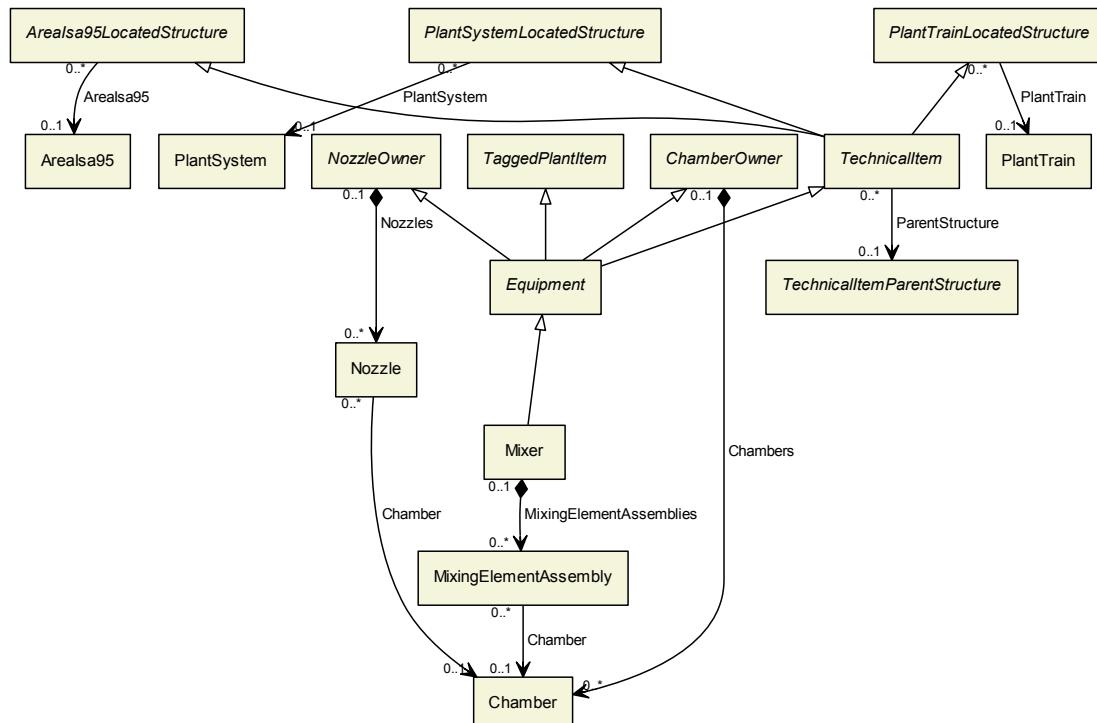
Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

9. Equipment

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

9.29.1. Overview



Superclasses:

- Equipment

Subclasses:

- Kneader
 - RotaryMixer
 - StaticMixer

9.29.2. Components

9.29.2.1. Mixing Element Assemblies

Description: The mixing element assemblies of the [Mixer](#), if applicable.

Type: MixingElementAssembly

Cardinality: 0..*

Proteus Schema Implementation: The `<Equipment>` element for the `MixingElementAssembly` is a child of the `<Equipment>` element for the `Mixer`.

Example:

```

<Equipment
    ComponentClass="Mixer"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/Mixer" ...>
...
<Equipment
    ComponentClass="MixingElementAssembly"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/MixingElementAssembly" ...>
...
</Equipment>
...
</Equipment>

```

9.29.3. Model References

No model references.

9.29.4. Attributes

No attributes.

9.30. MixingElementAssembly

RDL: MIXING ELEMENT ASSEMBLY

<http://sandbox.dexpi.org/rdl/MixingElementAssembly>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

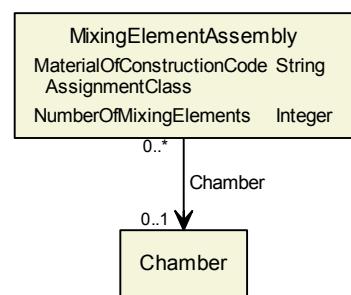
Example:

```

<Equipment
    ComponentClass="MixingElementAssembly"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/MixingElementAssembly" ...>
...
</Equipment>

```

9.30.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

9.30.2. Components

No components.

9.30.3. Model References

9.30.3.1. Chamber

Description: The [Chamber](#) in which the [MixingElementAssembly](#) is located, if applicable. The Chamber must be a component of the same object as the MixingElementAssembly.

Type: [Chamber](#)

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 [MixingElementAssembly](#): is located in
- Association type for the association *target*, i.e., for the <Equipment> element representing the [Chamber](#): is the location of

Both <Association> elements must be used.

Example:

```
<Equipment ID="MixingElementAssembly1" ...>
...
<Association Type="is located in" ItemID="Chamber1" />
...
</Equipment>
...
<Equipment ID="Chamber1" ...>
...
<Association Type="is the location of" ItemID="MixingElementAssembly1" />
...
</Equipment>
```

9.30.4. Attributes

9.30.4.1. MaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the [MixingElementAssembly](#).

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 [MixingElementAssembly](#) (use case [String](#)).

Example:

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

9.30.4.2. NumberOfMixingElements

Description: The number of mixing elements in the [MixingElementAssembly](#).

RDL: NUMBER OF MIXING ELEMENTS

<http://sandbox.dexpi.org/rdl/NumberOfMixingElements>

Attribute Type: Integer

Example Value: 5

Proteus Schema Implementation: GenericAttribute of the [MixingElementAssembly](#) (use case [Integer](#)).

Example:

```
<GenericAttribute
  Name="NumberOfMixingElements"
  AttributeURL="http://sandbox.dexpi.org/rdl/NumberOfMixingElements"
  Value="5"
  Format="integer"/>
```

9.31. Nozzle

Description: A physical object that has a protruding part through which a stream of fluid is directed (from <http://data.posccaesar.org/rdl/RDS415214>).

RDL: NOZZLE

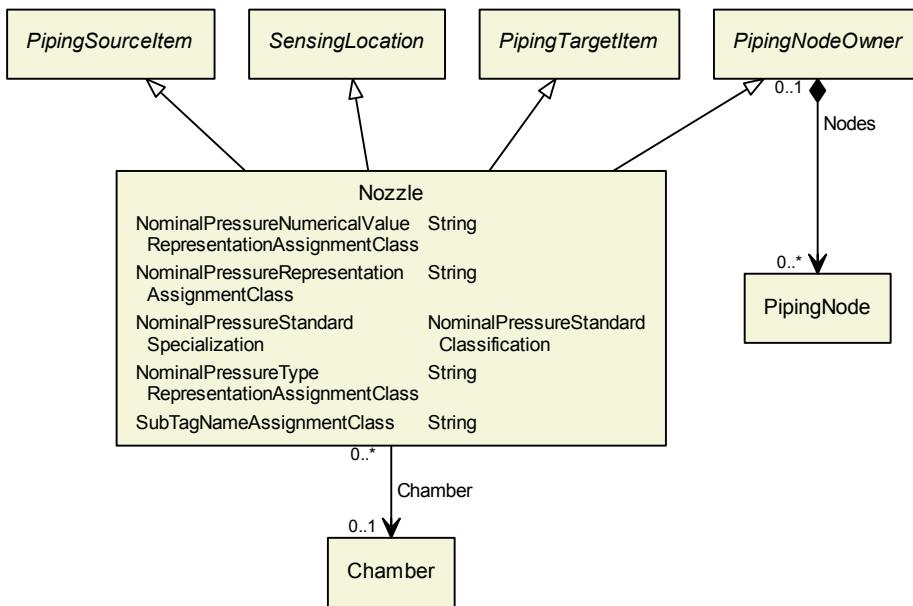
<http://data.posccaesar.org/rdl/RDS415214>

Proteus Schema Implementation: Proteus <Nozzle> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Nozzle
  ComponentClass="Nozzle"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS415214" ...>
...
</Nozzle>
```

9.31.1. Overview



Superclasses:

- [PipingNodeOwner](#)
- [PipingSourceItem](#)
- [PipingTargetItem](#)
- [SensingLocation](#)

Subclasses: No subclasses.

9.31.2. Components

No components.

9.31.3. Model References

9.31.3.1. Chamber

Description: The [Chamber](#) at which the [Nozzle](#) is located, if applicable. The [Chamber](#) must be a component of the same object as the [Nozzle](#).

Type: [Chamber](#)

Source Multiplicity: **0..***

Target Multiplicity: **0..1**

Proteus Schema Implementation: Proteus <Association> elements:

- Association type for the association *source*, i.e., for the <Nozzle> element representing the [Nozzle](#): is located in
- Association type for the association *target*, i.e., for the <Equipment> element representing the [Chamber](#): is the location of

Both <Association> elements must be used.

Example:

```
<Nozzle ID="Nozzle1" ...>
...
<Association Type="is located in" ItemID="Chamber1" />
...
</Nozzle>
...
<Equipment ID="Chamber1" ...>
...
<Association Type="is the location of" ItemID="Nozzle1" />
...
</Equipment>
```

9.31.4. Attributes

9.31.4.1. NominalPressureNumericalValueRepresentationAssignmentClass

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

RDL: NOMINAL PRESSURE NUMERICAL VALUE REPRESENTATION ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/NominalPressureNumericalValueRepresentationAssignmentClass>

Attribute Type: String

Example Value: "40"

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

Example:

```
<GenericAttribute
  Name="NominalPressureNumericalValueRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalPressureNumericalValueRepresentationAssignmentClass"
  "
  Value="40"
  Format="string" />
```

9.31.4.2. NominalPressureRepresentationAssignmentClass

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

RDL: NOMINAL PRESSURE REPRESENTATION ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/NominalPressureRepresentationAssignmentClass>

Attribute Type: String

Example Value: "PN 40"

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

Example:

```
<GenericAttribute
  Name="NominalPressureRepresentationAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalPressureRepresentationAssignmentClass"
  "
  Value="PN 40"
  Format="string" />
```

9.31.4.3. NominalPressureStandardSpecialization

Description: The nominal pressure of the [Nozzle](#), given as a reference to a nominal pressure standard and value.

RDL: NOMINAL PRESSURE STANDARD SPECIALIZATION

<http://sandbox.dexpi.org/rdl/NominalPressureStandardSpecialization>

Attribute Type: [NominalPressureStandardClassification](#)

Example Value: PN 40 (EN 1333)

(EN 1333 PN 40 ARTEFACT, <http://sandbox.dexpi.org/rdl/En1333Pn40Artefact>)

Proteus Schema Implementation: [GenericAttribute](#) of the [Nozzle](#) (use case [Classification](#)).

Example:

```
<GenericAttribute
  Name="NominalPressureStandardSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/NominalPressureStandardSpecialization"
  Value="En1333Pn40Artefact"
  ValueURI="http://sandbox.dexpi.org/rdl/En1333Pn40Artefact"
  Format="anyURI"/>
```

9.31.4.4. NominalPressureTypeRepresentationAssignmentClass

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

RDL: NOMINAL PRESSURE TYPE REPRESENTATION ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/NominalPressureTypeRepresentationAssignmentClass>

Attribute Type: [String](#)

Example Value: "PN"

Proteus Schema Implementation: [GenericAttribute](#) of the [Nozzle](#) (use case [String](#)).

Example:

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

9.31.4.5. SubTagNameAssignmentClass

Description: The sub tag name of the [Nozzle](#).

RDL: SUB TAG NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass>

Attribute Type: [String](#)

Example Value: "N2"

Proteus Schema Implementation: [GenericAttribute](#) of the [Nozzle](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
```

```
Value="N2"
Format="string" />
```

9.32. NozzleOwner

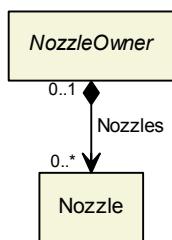
This class is abstract.

Description: An object that can have nozzles.

RDL: -

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

9.32.1. Overview



Superclasses: No superclasses.

Subclasses:

- Equipment

9.32.2. Components

9.32.2.1. Nozzles

Description: The nozzles of the [NozzleOwner](#).

Type: [Nozzle](#)

Cardinality: 0..*

Proteus Schema Implementation: The <Nozzle> element for the [Nozzle](#) is a child of the <Equipment> element for the [NozzleOwner](#) (e.g., a [Tank](#)).

Example:

```
<Equipment
  ComponentClass="Tank"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS445139" ...>
...
<Nozzle
  ComponentClass="Nozzle"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS415214" ...>
...
</Nozzle>
...
</Equipment>
```

9.32.3. Model References

No model references.

9.32.4. Attributes

No attributes.

9.33. PlateAndShellHeatExchanger

Description: A corrugated plate heat exchanger that has a corrugated plate pack inside a shell (from <http://data.posccaesar.org/rdl/RDS441719>).

RDL: PLATE AND SHELL HEAT EXCHANGER

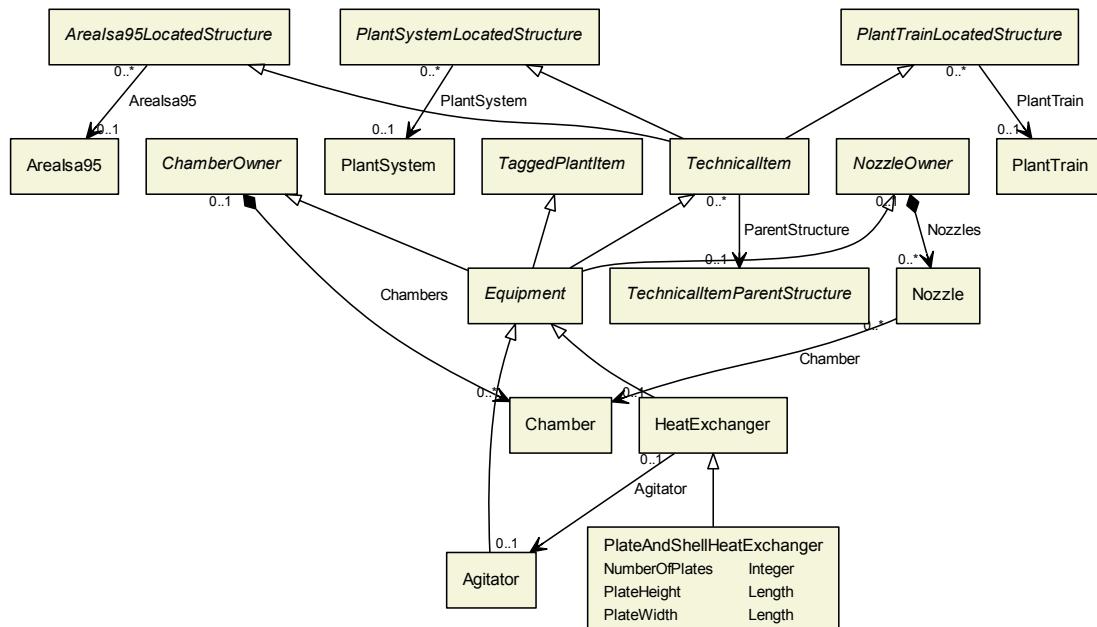
<http://data.posccaesar.org/rdl/RDS441719>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.33.1. Overview



Superclasses:

- [HeatExchanger](#)

Subclasses: No subclasses.

9.33.2. Components

No components.

9.33.3. Model References

No model references.

9.33.4. Attributes

9.33.4.1. NumberOfPlates

Description: The number of plates in the [PlateAndShellHeatExchanger](#).

RDL: NUMBER OF PLATES

<http://data.posccaesar.org/rdl/RDS364229>

Attribute Type: Integer

Example Value: 20

Proteus Schema Implementation: GenericAttribute of the [PlateAndShellHeatExchanger](#) (use case [Integer](#)).

Example:

```
<GenericAttribute
  Name="NumberOfPlates"
  AttributeURI="http://data.posccaesar.org/rdl/RDS364229"
  Value="20"
  Format="integer" />
```

9.33.4.2. 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" />
```

9.33.4.3. 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"
```

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

9.34. PressureVessel

Description: A vessel intended to withstand external and/or internal pressure (from <http://data.posccaesar.org/rdl/RDS427229>).

RDL: PRESSURE VESSEL

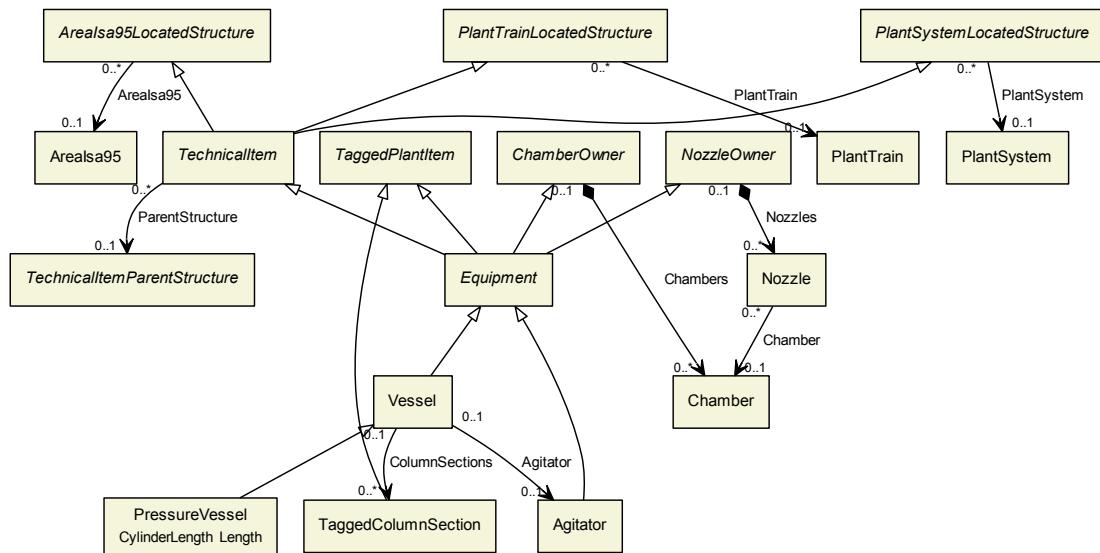
<http://data.posccaesar.org/rdl/RDS427229>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
    ComponentClass="PressureVessel"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS427229" ...>
...
</Equipment>
```

9.34.1. Overview



Superclasses:

- [Vessel](#)

Subclasses: No subclasses.

9.34.2. Components

No components.

9.34.3. Model References

No model references.

9.34.4. Attributes

9.34.4.1. CylinderLength

Description: The cylinder length of the PressureVessel.

RDL: CYLINDER LENGTH

<http://sandbox.dexpi.org/rdl/CylinderLength>

Attribute Type: Length

Example Value: 2 m

Proteus Schema Implementation: GenericAttribute of the PressureVessel (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" />
```

9.35. ProcessColumn

Description: A vertical vessel intended to enable chemical reactions or physical processes utilising differences in density of fluids and/or forced flow of fluid (from <http://data.posccaesar.org/rdl/RDS4316825224>).

RDL: PROCESS COLUMN

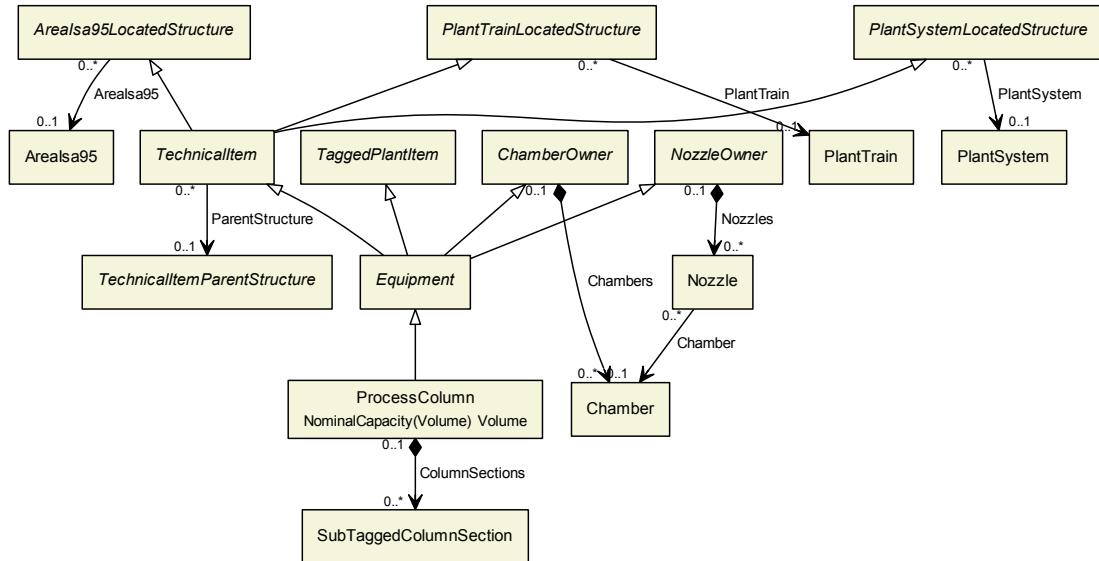
<http://data.posccaesar.org/rdl/RDS4316825224>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
  ComponentClass="ProcessColumn"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS4316825224" ...>
...
</Equipment>
```

9.35.1. Overview



Superclasses:

- [Equipment](#)

Subclasses: No subclasses.

9.35.2. Components

9.35.2.1. ColumnSections

Description: The column sections of the [ProcessColumn](#).

Type: [SubTaggedColumnSection](#)

Cardinality: $0..*$

Proteus Schema Implementation: The `<Equipment>` element for the [SubTaggedColumnSection](#) is a child of the `<Equipment>` element for the [ProcessColumn](#).

Example:

```

<Equipment
    ComponentClass="ProcessColumn"
    ComponentClassURI="http://data.posccaezar.org/rdl/RDS4316825224" ...>
...
<Equipment
    ComponentClass="ColumnSection"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ColumnSection" ...>
...
</Equipment>
...
</Equipment>
  
```

9.35.3. Model References

No model references.

9.35.4. Attributes

9.35.4.1. NominalCapacity(Volume)

Description: The nominal volumetric capacity of the [ProcessColumn](#).

RDL: NOMINAL CAPACITY (VOLUME)

[http://sandbox.dexpi.org/rdl/NominalCapacity\(Volume\)](http://sandbox.dexpi.org/rdl/NominalCapacity(Volume))

Attribute Type: [Volume](#)

Example Value: 7.2 m³

Proteus Schema Implementation: [GenericAttribute](#) of the [ProcessColumn](#) (use case [Physical Quantity](#)).

Example:

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

9.36. Pump

Description: A physical object that is a driven piece of equipment in which energy is either constantly or periodically added to an amount of pumped liquid in order to increase the pressure required for the process in which the pump is in operation (from <http://data.posccaesar.org/rdl/RDS327239>).

RDL: PUMP

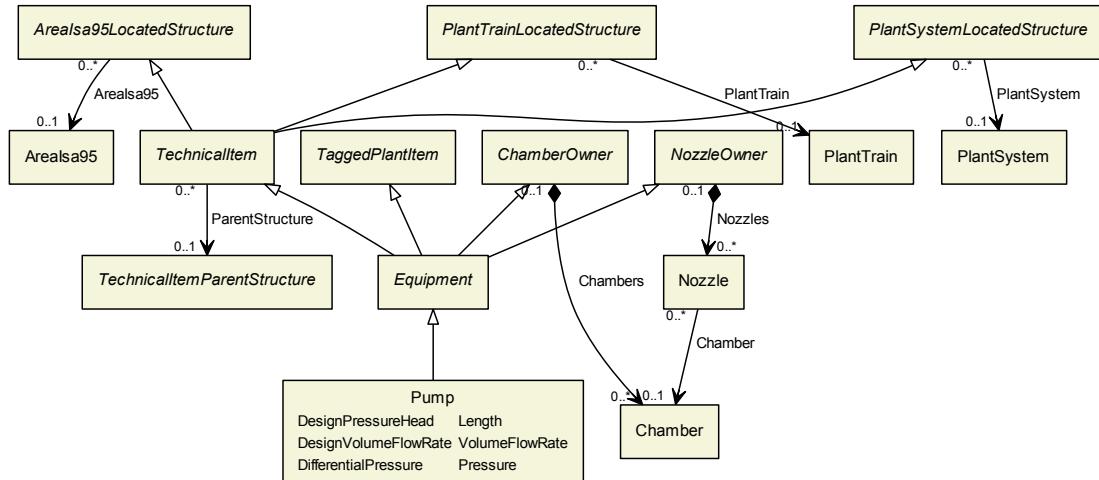
<http://data.posccaesar.org/rdl/RDS327239>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.36.1. Overview



Superclasses:

- `Equipment`

Subclasses:

- `CentrifugalPump`
- `EjectorPump`
- `ReciprocatingPump`
- `RotaryPump`
- `SpecialPump`

9.36.2. Components

No components.

9.36.3. Model References

No model references.

9.36.4. Attributes

9.36.4.1. 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" />

```

9.36.4.2. 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 m³/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" />

```

9.36.4.3. DifferentialPressure

Description: The differential pressure of the [Pump](#).

RDL: DIFFERENTIAL PRESSURE

<http://data.posccaesar.org/rdl/RDS361574>

Attribute Type: [Pressure](#)

Example Value: 4.8 bar

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

Example:

```

<GenericAttribute
  Name="DifferentialPressure"
  AttributeURI="http://data.posccaesar.org/rdl/RDS361574"
  Value="4.8"
  Format="double"
  Units="Bar"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1314539" />

```

9.37. PumpEquipment

This class is abstract.

Description: Equipment of a [Pump](#).

RDL: -

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

9.37.1. Overview

PumpEquipment

Superclasses: No superclasses.

Subclasses:

- [Displacer](#)
- [Impeller](#)

9.37.2. Components

No components.

9.37.3. Model References

No model references.

9.37.4. Attributes

No attributes.

9.38. ReciprocatingCompressor

Description: A positive displacement compressor in which forced reduction of gas volume takes place by the movement of a displacing element in a cylinder or enclosure (from <http://data.posccaesar.org/rdl/RDS417284>).

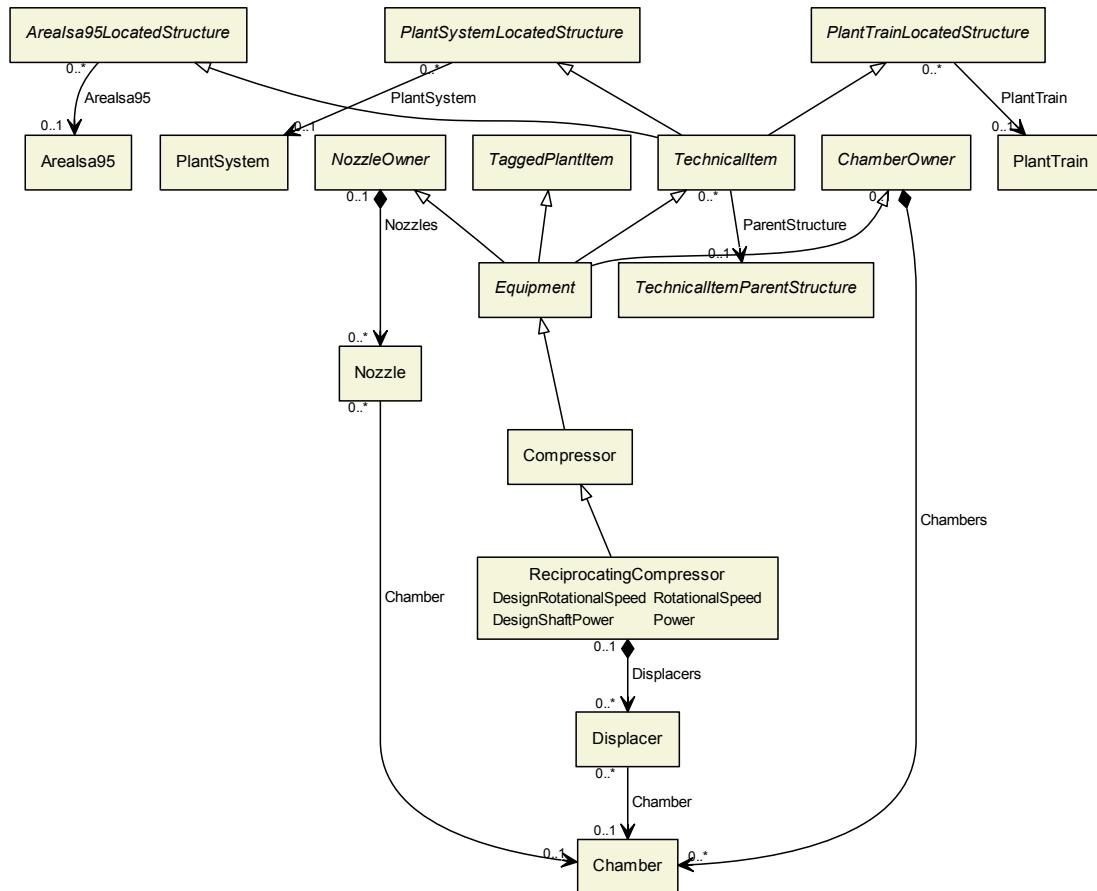
RDL: RECIPROCATING COMPRESSOR
<http://data.posccaesar.org/rdl/RDS417284>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
    ComponentClass="ReciprocatingCompressor"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS417284" ...>
    ...
</Equipment>
```

9.38.1. Overview



Superclasses:

- `Compressor`

Subclasses: No subclasses.

9.38.2. Components

9.38.2.1. Displacers

Description: The displacers of the `ReciprocatingCompressor`.

Type: `Displacer`

Cardinality: 0..*

Proteus Schema Implementation: The `<Equipment>` element for the `Displacer` is a child of the `<Equipment>` element for the `ReciprocatingCompressor`.

Example:

```

<Equipment
    ComponentClass="ReciprocatingCompressor"
    ComponentClassURI="http://data.posccaesar.org/rdf/RDS417284" ...>
...
<Equipment
    ComponentClass="Displacer"
    ComponentClassURI="http://sandbox.dexpi.org/rdf/Displacer" ...>
...
</Equipment>
  
```

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

9.38.3. Model References

No model references.

9.38.4. Attributes

9.38.4.1. DesignRotationalSpeed

Description: The design rotational speed of the [ReciprocatingCompressor](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [ReciprocatingCompressor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute  
  Name="DesignRotationalSpeed"  
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"  
  Value="180"  
  Format="double"  
  Units="RevolutionPerMinute"  
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.38.4.2. DesignShaftPower

Description: The design shaft power of the [ReciprocatingCompressor](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: [Power](#)

Example Value: 400 kW

Proteus Schema Implementation: [GenericAttribute](#) of the [ReciprocatingCompressor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute  
  Name="DesignShaftPower"  
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"  
  Value="400"  
  Format="double"  
  Units="Kilowatt"  
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.39. ReciprocatingPump

Description: a positive displacement pump which contains a displacing element intended to be moved in a reciprocating movement to exert pressure on a fluid, typically moving within a cylindrical space (from <http://data.posccaesar.org/rdl/RDS416969>).

RDL: RECIPROCATING PUMP

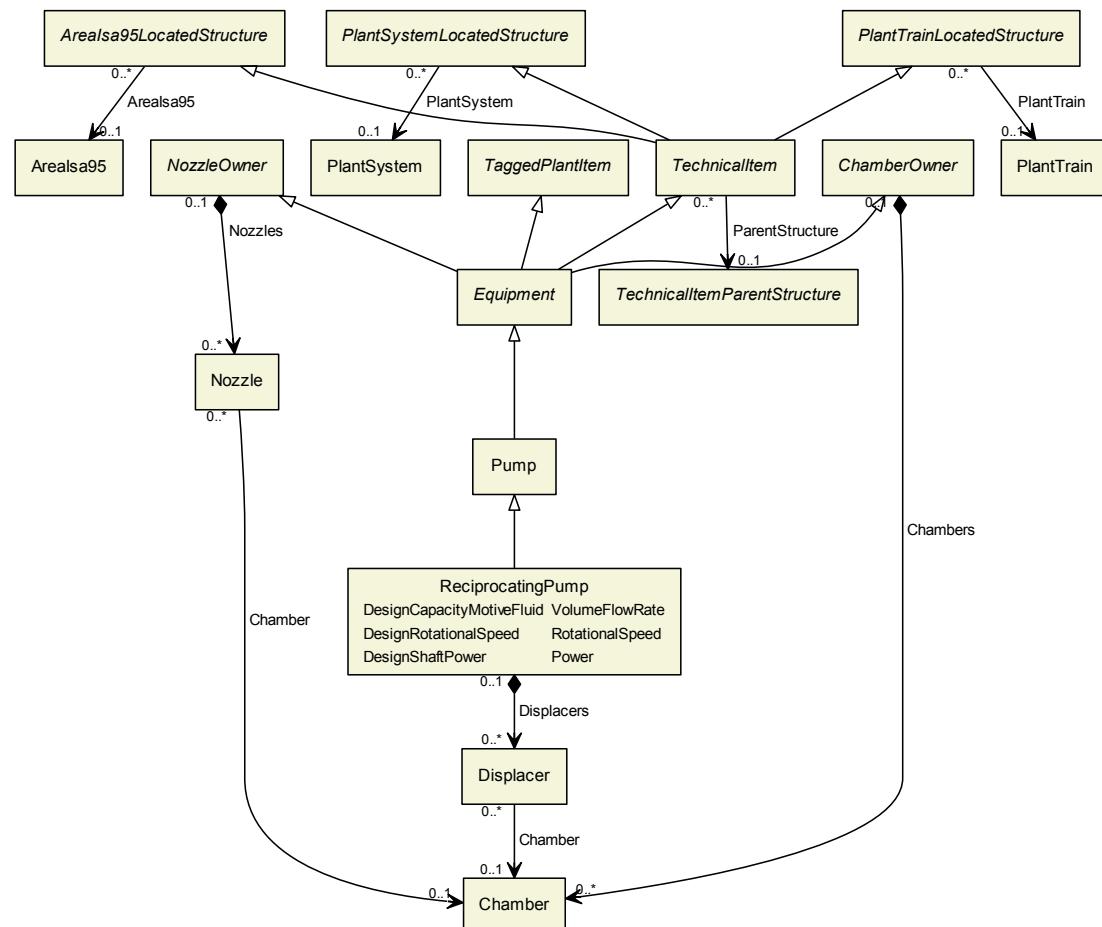
<http://data.posccaesar.org/rdl/RDS416969>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
    ComponentClass="ReciprocatingPump"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS416969" ...>
...
</Equipment>
```

9.39.1. Overview



Superclasses:

- **Pump**

Subclasses: No subclasses.

9.39.2. Components

9.39.2.1. Displacers

Description: The displacers of the [ReciprocatingPump](#).

Type: [Displacer](#)

Cardinality: 0..*

Proteus Schema Implementation: The <Equipment> element for the [Displacer](#) is a child of the <Equipment> element for the [ReciprocatingPump](#).

Example:

```
<Equipment
    ComponentClass="ReciprocatingPump"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS416969" ...>
    ...
    <Equipment
        ComponentClass="Displacer"
        ComponentClassURI="http://sandbox.dexpi.org/rdl/Displacer" ...>
        ...
    </Equipment>
    ...
</Equipment>
```

9.39.3. Model References

No model references.

9.39.4. Attributes

9.39.4.1. DesignCapacityMotiveFluid

Description: The design capacity for the motive fluid of the [ReciprocatingPump](#).

RDL: DESIGN CAPACITY MOTIVE FLUID

<http://sandbox.dexpi.org/rdl/DesignCapacityMotiveFluid>

Attribute Type: [VolumeFlowRate](#)

Example Value: 40 m³/h

Proteus Schema Implementation: [GenericAttribute](#) of the [ReciprocatingPump](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
    Name="DesignCapacityMotiveFluid"
    AttributeURI="http://sandbox.dexpi.org/rdl/DesignCapacityMotiveFluid"
    Value="40"
    Format="double"
    Units="MetreCubedPerHour"
    UnitsURI="http://data.posccaesar.org/rdl/RDS1321064" />
```

9.39.4.2. DesignRotationalSpeed

Description: The design rotational speed of the [ReciprocatingPump](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: RotationalSpeed

Example Value: 180 1/min

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

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="180"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.39.4.3. DesignShaftPower

Description: The design shaft power of the ReciprocatingPump.

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: Power

Example Value: 400 kW

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

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.40. RotaryCompressor

Description: A positive displacement compressor in which compression displacement is effected by the positive action of rotating elements (from <http://data.posccaesar.org/rdl/RDS435374>).

RDL: ROTARY COMPRESSOR

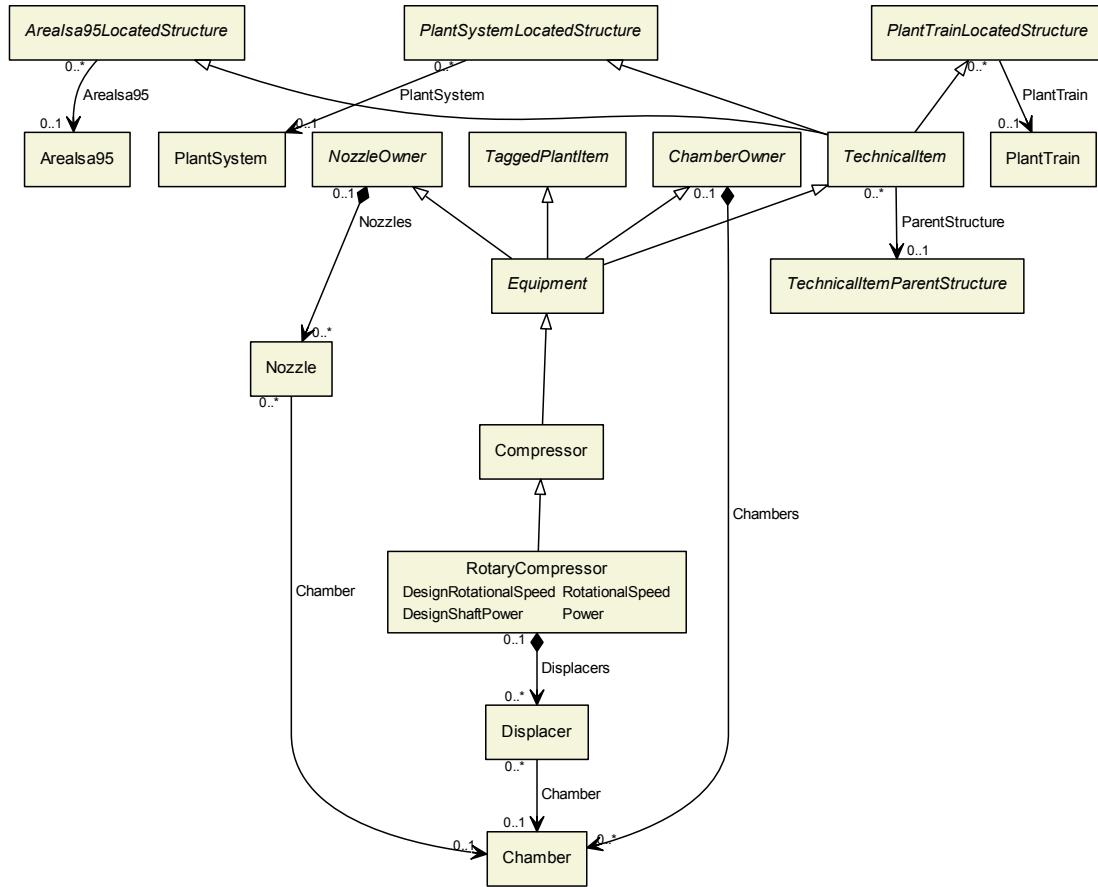
<http://data.posccaesar.org/rdl/RDS435374>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
  ComponentClass="RotaryCompressor"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS435374" ...>
...
</Equipment>
```

9.40.1. Overview



Superclasses:

- Compressor

Subclasses: No subclasses.

9.40.2. Components

9.40.2.1. Displacers

Description: The displacers of the [RotaryCompressor](#).

Type: Displacer

Cardinality: 0..*

Proteus Schema Implementation: The `<Equipment>` element for the [Displacer](#) is a child of the `<Equipment>` element for the [RotaryCompressor](#).

Example:

```
<Equipment  
    ComponentClass="RotaryCompressor"  
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS435374" ...>  
...  
<Equipment  
    ComponentClass="Displacer"  
    ComponentClassURI="http://sandbox.dexpi.org/rdl/Displacer" ...>  
...  
</Equipment>
```

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

9.40.3. Model References

No model references.

9.40.4. Attributes

9.40.4.1. DesignRotationalSpeed

Description: The design rotational speed of the [RotaryCompressor](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [RotaryCompressor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="180"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.40.4.2. DesignShaftPower

Description: The design shaft power of the [RotaryCompressor](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: [Power](#)

Example Value: 400 kW

Proteus Schema Implementation: [GenericAttribute](#) of the [RotaryCompressor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.41. RotaryMixer

RDL: ROTARY MIXER

<http://sandbox.dexpi.org/rdl/RotaryMixer>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and

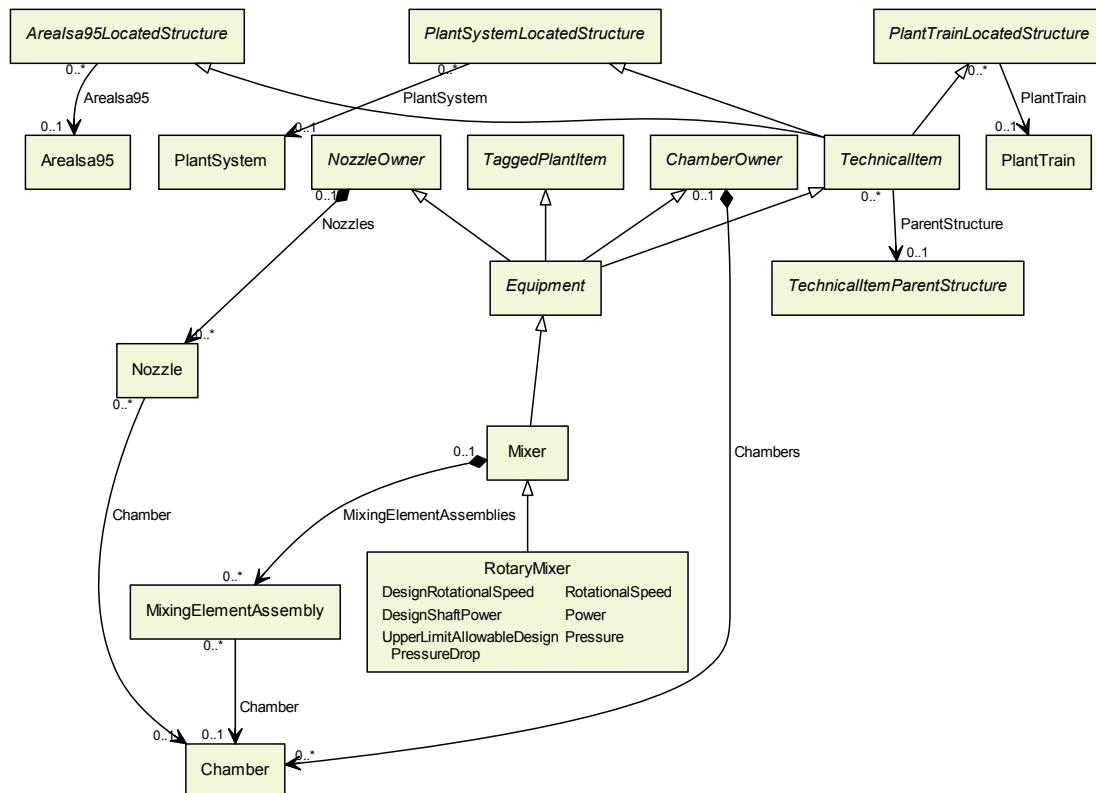
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ComponentClassUri attributes.

Example:

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

9.41.1. Overview



Superclasses:

- **Mixer**

Subclasses: No subclasses.

9.41.2. Components

No components.

9.41.3. Model References

No model references.

9.41.4. Attributes

9.41.4.1. DesignRotationalSpeed

Description: The design rotational speed of the **RotaryMixer**.

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [RotaryMixer](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="180"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.41.4.2. DesignShaftPower

Description: The design shaft power of the [RotaryMixer](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: [Power](#)

Example Value: 400 kW

Proteus Schema Implementation: [GenericAttribute](#) of the [RotaryMixer](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.41.4.3. UpperLimitAllowableDesignPressureDrop

Description: The maximum allowable design pressure drop of the [RotaryMixer](#).

RDL: UPPER LIMIT ALLOWABLE DESIGN PRESSURE DROP

<http://sandbox.dexpi.org/rdl/UpperLimitAllowableDesignPressureDrop>

Attribute Type: [Pressure](#)

Example Value: 2 bar

Proteus Schema Implementation: [GenericAttribute](#) of the [RotaryMixer](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="UpperLimitAllowableDesignPressureDrop"
  AttributeURI="http://sandbox.dexpi.org/rdl/UpperLimitAllowableDesignPressureDrop"
  Value="2"
  Format="double"
  Units="Bar"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1314539" />
```

9.42. RotaryPump

Description: A positive displacement pump that consists of a chamber containing gears, cams, screws, vanes, plungers or similar elements actuated by relative rotation of the drive shaft or casing and which has no separate inlet and outlet valves (from <http://data.posccaesar.org/rdl/RDS420749>).

RDL: ROTARY PUMP

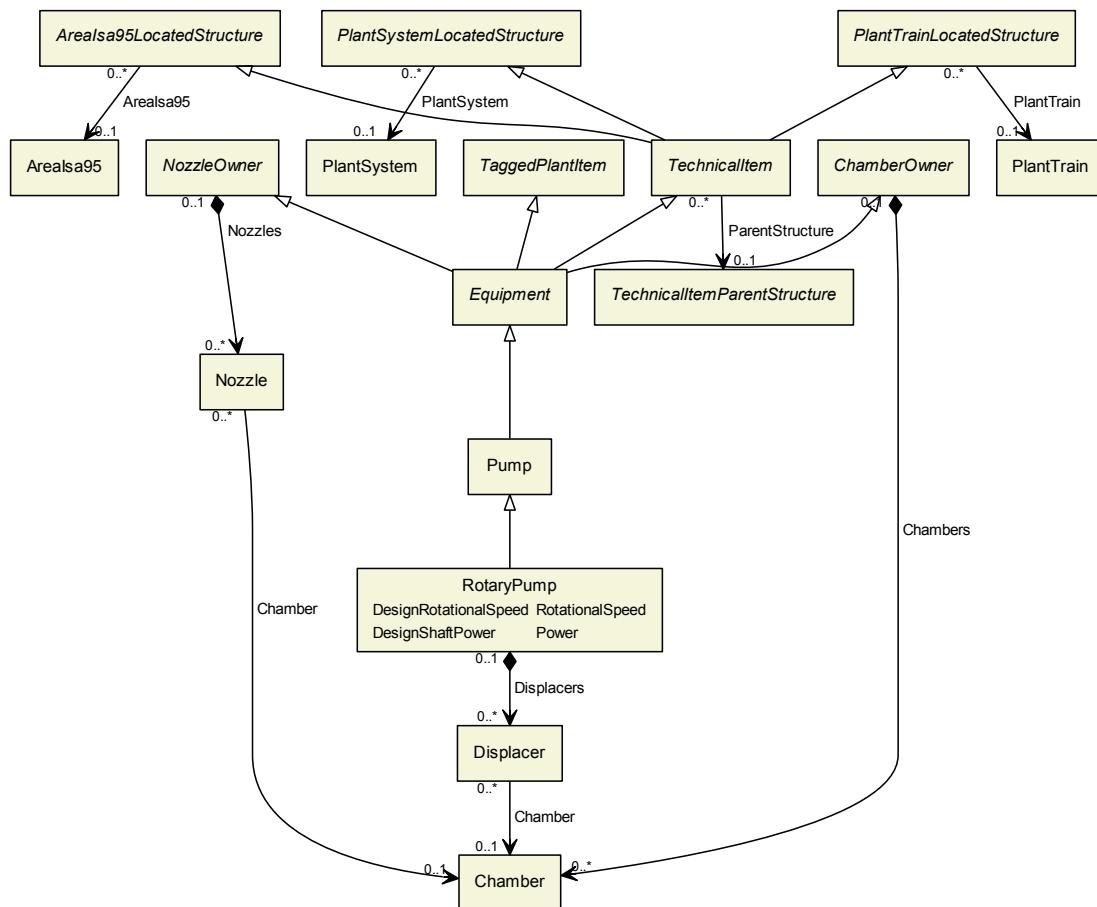
<http://data.posccaesar.org/rdl/RDS420749>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment  
    ComponentClass="RotaryPump"  
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS420749" ...>  
    ...  
</Equipment>
```

9.42.1. Overview



Superclasses:

- Pump

Subclasses: No subclasses.

9.42.2. Components

9.42.2.1. Displacers

Description: The displacers of the [RotaryPump](#).

Type: [Displacer](#)

Cardinality: 0..*

Proteus Schema Implementation: The <Equipment> element for the [Displacer](#) is a child of the <Equipment> element for the [RotaryPump](#).

Example:

```
<Equipment
    ComponentClass="RotaryPump"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS420749" ...>
...
<Equipment
    ComponentClass="Displacer"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/Displacer" ...>
...
</Equipment>
...
</Equipment>
```

9.42.3. Model References

No model references.

9.42.4. Attributes

9.42.4.1. DesignRotationalSpeed

Description: The design rotational speed of the [RotaryPump](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [RotaryPump](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
    Name="DesignRotationalSpeed"
    AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
    Value="180"
    Format="double"
    Units="RevolutionPerMinute"
    UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.42.4.2. DesignShaftPower

Description: The design shaft power of the [RotaryPump](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: Power

Example Value: 400 kW

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

Example:

```
<GenericAttribute  
  Name="DesignShaftPower"  
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"  
  Value="400"  
  Format="double"  
  Units="Kilowatt"  
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.43. ShellAndTubeHeatExchanger

Description: A tubular heat exchanger in which a tube bundle is surrounded by a shell (from <http://data.posccaesar.org/rdl/RDS419084>).

RDL: SHELL AND TUBE HEAT EXCHANGER

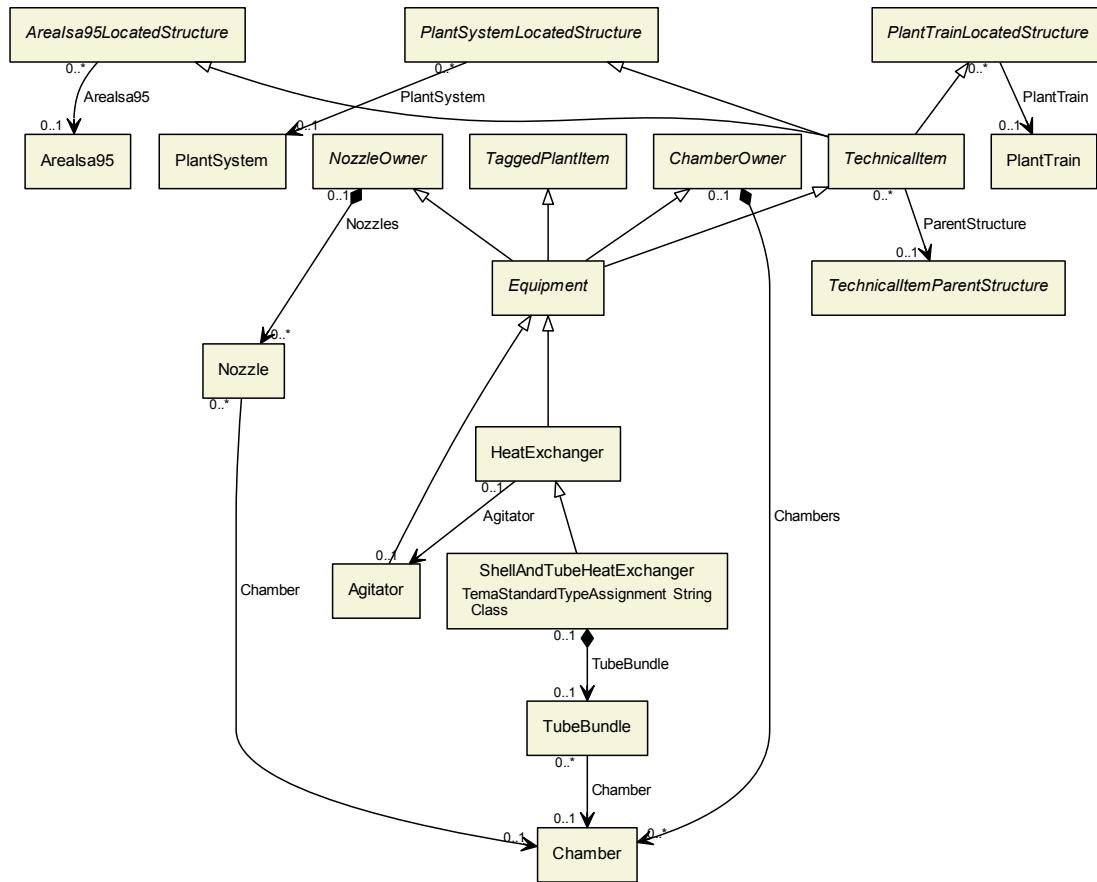
<http://data.posccaesar.org/rdl/RDS419084>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.43.1. Overview



Superclasses:

- [HeatExchanger](#)

Subclasses: No subclasses.

9.43.2. Components

9.43.2.1. TubeBundle

Description: The tube bundle of the [ShellAndTubeHeatExchanger](#).

Type: [TubeBundle](#)

Cardinality: 0..1

Proteus Schema Implementation: The <Equipment> element for the [TubeBundle](#) is a child of the <Equipment> element for the [ShellAndTubeHeatExchanger](#).

Example:

```

<Equipment
    ComponentClass="ShellAndTubeHeatExchanger"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS419084" ...>
    ...
    <Equipment
        ComponentClass="TubeBundle"
        ComponentClassURI="http://data.posccaesar.org/rdl/RDS415259" ...>
    ...
</Equipment>
    
```

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

9.43.3. Model References

No model references.

9.43.4. Attributes

9.43.4.1. TemaStandardTypeAssignmentClass

Description: The type of the [ShellAndTubeHeatExchanger](#) according to the Tubular Exchanger Manufacturers Association, Inc. (TEMA, <http://www.tema.org>). This is a three-letter code.

RDL: TEMA STANDARD TYPE ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/TemaStandardTypeAssignmentClass>

Attribute Type: String

Example Value: "AEL"

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

Example:

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

9.44. Silo

Description: A vessel that has a bottom in the shape of a cone and is intended to store solid particles (from <http://data.posccaesar.org/rdl/RDS1022399>).

RDL: SILO

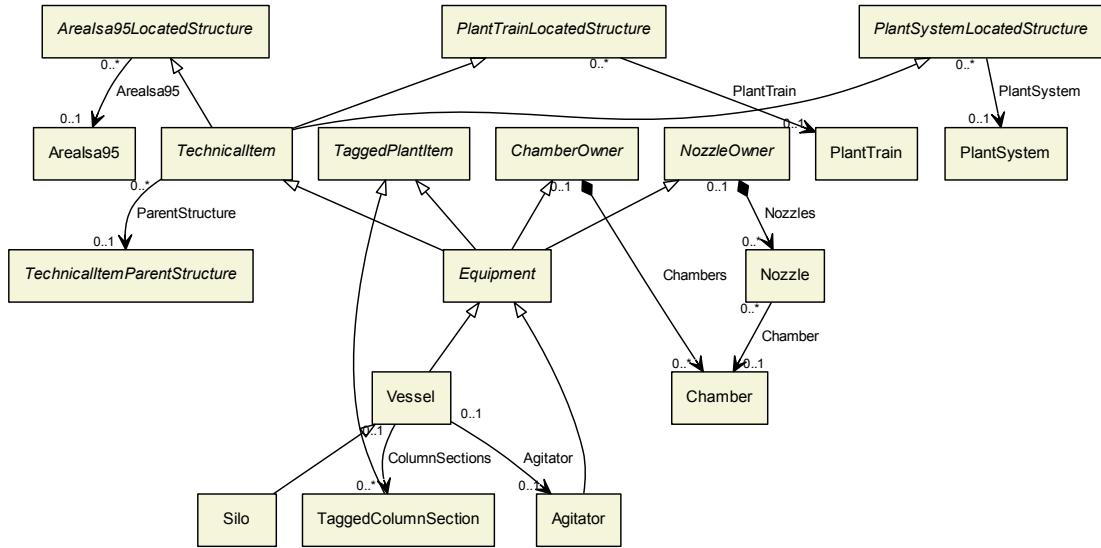
<http://data.posccaesar.org/rdl/RDS1022399>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment  
  ComponentClass="Silo"  
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS1022399" ...>  
...  
</Equipment>
```

9.44.1. Overview



Superclasses:

- [Vessel](#)

Subclasses: No subclasses.

9.44.2. Components

No components.

9.44.3. Model References

No model references.

9.44.4. Attributes

No attributes.

9.45. SpecialCompressor

Description: A [Compressor](#) that is not covered by any of the sibling classes of [SpecialCompressor](#).

RDL: SPECIAL COMPRESSOR

<http://sandbox.dexpi.org/rdl/SpecialCompressor>

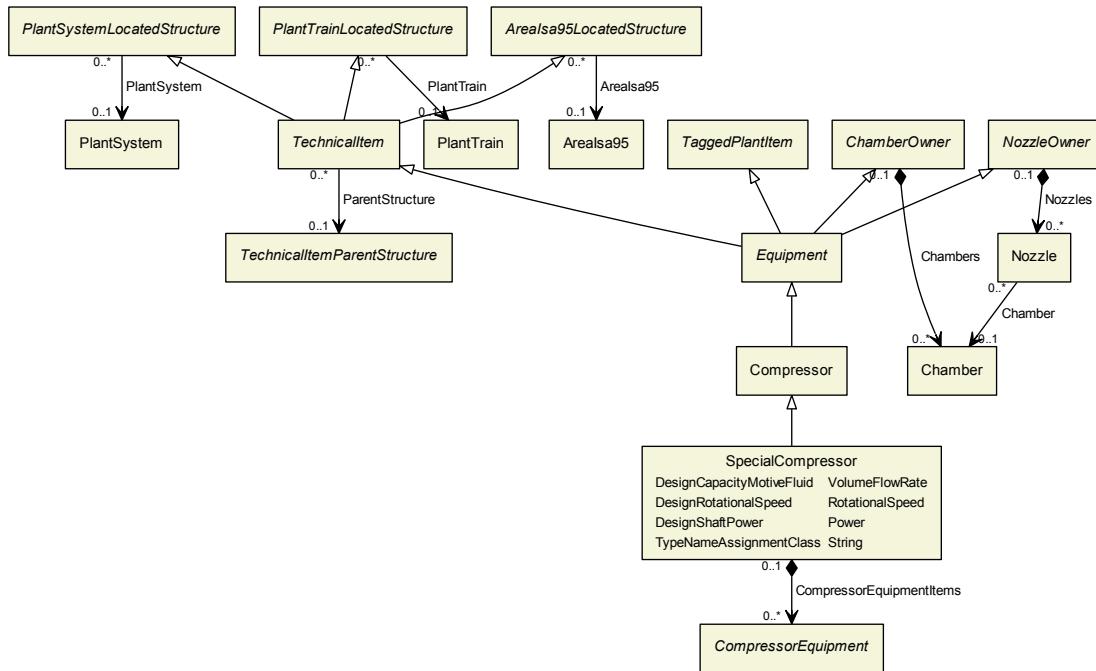
Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

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

9.45.1. Overview



Superclasses:

- Compressor

Subclasses: No subclasses.

9.45.2. Components

9.45.2.1. CompressorEquipmentItems

Description: The compressor equipment items of the [SpecialCompressor](#).

Type: CompressorEquipment

Cardinality: 0..*

Proteus Schema Implementation: The <Equipment> element for the CompressorEquipment (e.g., a Impeller) is a child of the <Equipment> element for the SpecialCompressor.

Example:

```
<Equipment
    ComponentClass="SpecialCompressor"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/SpecialCompressor" ...>
...
<Equipment
    ComponentClass="Impeller"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS414539" ...>
...
</Equipment>
...
</Equipment>
```

9.45.3. Model References

No model references.

9.45.4. Attributes

9.45.4.1. DesignCapacityMotiveFluid

Description: The design capacity for the motive fluid of the [SpecialCompressor](#).

RDL: DESIGN CAPACITY MOTIVE FLUID

<http://sandbox.dexpi.org/rdl/DesignCapacityMotiveFluid>

Attribute Type: [VolumeFlowRate](#)

Example Value: 40 m³/h

Proteus Schema Implementation: GenericAttribute of the [SpecialCompressor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignCapacityMotiveFluid"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignCapacityMotiveFluid"
  Value="40"
  Format="double"
  Units="MetreCubedPerHour"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1321064" />
```

9.45.4.2. DesignRotationalSpeed

Description: The design rotational speed of the [SpecialCompressor](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: GenericAttribute of the [SpecialCompressor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="180"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.45.4.3. DesignShaftPower

Description: The design shaft power of the [SpecialCompressor](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: [Power](#)

Example Value: 400 kW

Proteus Schema Implementation: GenericAttribute of the [SpecialCompressor](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
```

```
AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
Value="400"
Format="double"
Units="Kilowatt"
UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.45.4.4. TypeNameAssignmentClass

Description: The name of the type of the [SpecialCompressor](#).

RDL: TYPE NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/TypeNameAssignmentClass>

Attribute Type: [String](#)

Example Value: "top secret new compressor type"

Proteus Schema Implementation: [GenericAttribute](#) of the [SpecialCompressor](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="TypeNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TypeNameAssignmentClass"
  Value="top secret new compressor type"
  Format="string"/>
```

9.46. SpecialPump

Description: A [Pump](#) that is not covered by any of the sibling classes of [SpecialPump](#).

RDL: SPECIAL PUMP

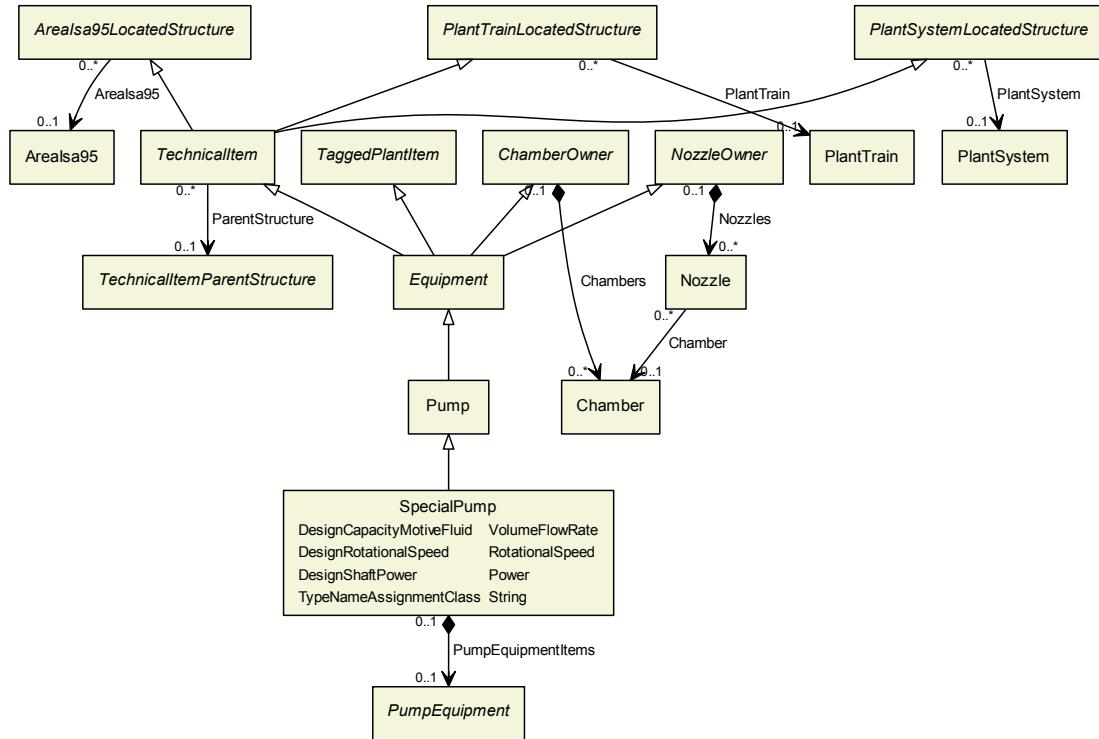
<http://sandbox.dexpi.org/rdl/SpecialPump>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.46.1. Overview



Superclasses:

- Pump

Subclasses: No subclasses.

9.46.2. Components

9.46.2.1. PumpEquipmentItems

Description: The pump equipment items of the [SpecialPump](#).

Type: [PumpEquipment](#)

Cardinality: 0..1

Proteus Schema Implementation: The <Equipment> element for the [PumpEquipment](#) (e.g., a [Impeller](#)) is a child of the <Equipment> element for the [SpecialPump](#).

Example:

```

<Equipment
    ComponentClass="SpecialPump"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/SpecialPump" ...>
...
<Equipment
    ComponentClass="Impeller"
    ComponentClassURI="http://data.posccaezar.org/rdl/RDS414539" ...>
...
</Equipment>
...
</Equipment>
  
```

9.46.3. Model References

No model references.

9.46.4. Attributes

9.46.4.1. DesignCapacityMotiveFluid

Description: The design capacity for the motive fluid of the [SpecialPump](#).

RDL: DESIGN CAPACITY MOTIVE FLUID

<http://sandbox.dexpi.org/rdl/DesignCapacityMotiveFluid>

Attribute Type: [VolumeFlowRate](#)

Example Value: 40 m³/h

Proteus Schema Implementation: [GenericAttribute](#) of the [SpecialPump](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignCapacityMotiveFluid"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignCapacityMotiveFluid"
  Value="40"
  Format="double"
  Units="MetreCubedPerHour"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1321064" />
```

9.46.4.2. DesignRotationalSpeed

Description: The design rotational speed of the [SpecialPump](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [SpecialPump](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="180"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.46.4.3. DesignShaftPower

Description: The design shaft power of the [SpecialPump](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: [Power](#)

Example Value: 400 kW

Proteus Schema Implementation: [GenericAttribute](#) of the [SpecialPump](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignShaftPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"
  Value="400"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.46.4.4. TypeNameAssignmentClass

Description: The name of the type of the [SpecialPump](#).

RDL: TYPE NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/TypeNameAssignmentClass>

Attribute Type: [String](#)

Example Value: "top secret new pump type"

Proteus Schema Implementation: [GenericAttribute](#) of the [SpecialPump](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="TypeNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TypeNameAssignmentClass"
  Value="top secret new pump type"
  Format="string" />
```

9.47. SpecialVessel

Description: A [Vessel](#) that is not covered by any of other subclasses of [Vessel](#).

RDL: SPECIAL VESSEL

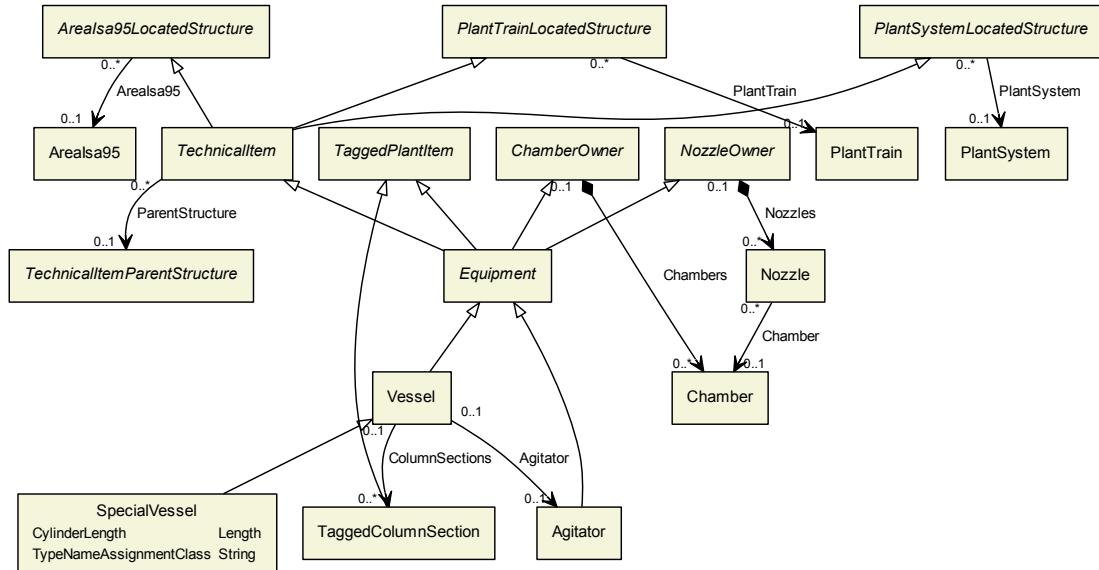
<http://sandbox.dexpi.org/rdl/SpecialVessel>

Proteus Schema Implementation: Proteus [Equipment](#) element with mandatory [ComponentClass](#) and [ComponentClassUri](#) attributes.

Example:

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

9.47.1. Overview



Superclasses:

- [Vessel](#)

Subclasses: No subclasses.

9.47.2. Components

No components.

9.47.3. Model References

No model references.

9.47.4. Attributes

9.47.4.1. CylinderLength

Description: The cylinder length of the [SpecialVessel](#).

RDL: CYLINDER LENGTH

<http://sandbox.dexpi.org/rdl/CylinderLength>

Attribute Type: [Length](#)

Example Value: 2 m

Proteus Schema Implementation: [GenericAttribute](#) of the [SpecialVessel](#) (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" />
```

9.47.4.2. TypeNameAssignmentClass

Description: The name of the type of the [SpecialVessel](#).

RDL: TYPE NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/TypeNameAssignmentClass>

Attribute Type: [String](#)

Example Value: "top secret new vessel type"

Proteus Schema Implementation: [GenericAttribute](#) of the [SpecialVessel](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="TypeNameAssignmentClass"
  AttributeURL="http://sandbox.dexpi.org/rdl/TypeNameAssignmentClass"
  Value="top secret new vessel type"
  Format="string" />
```

9.48. SpiralHeatExchanger

Description: A spiral heat exchanger

RDL: SPIRAL HEAT EXCHANGER

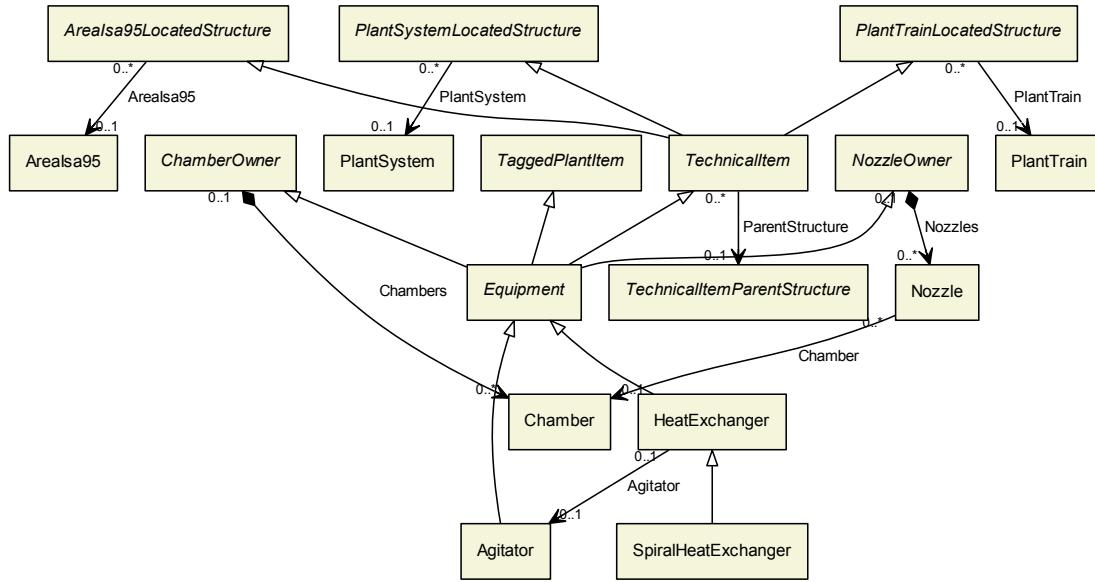
<http://sandbox.dexpi.org/rdl/SpiralHeatExchanger>

Proteus Schema Implementation: Proteus [Equipment](#) element with mandatory [ComponentClass](#) and [ComponentClassUri](#) attributes.

Example:

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

9.48.1. Overview



Superclasses:

- [HeatExchanger](#)

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. StaticMixer

RDL: STATIC MIXER

<http://data.posccaesar.org/rdl/RDS1016684>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

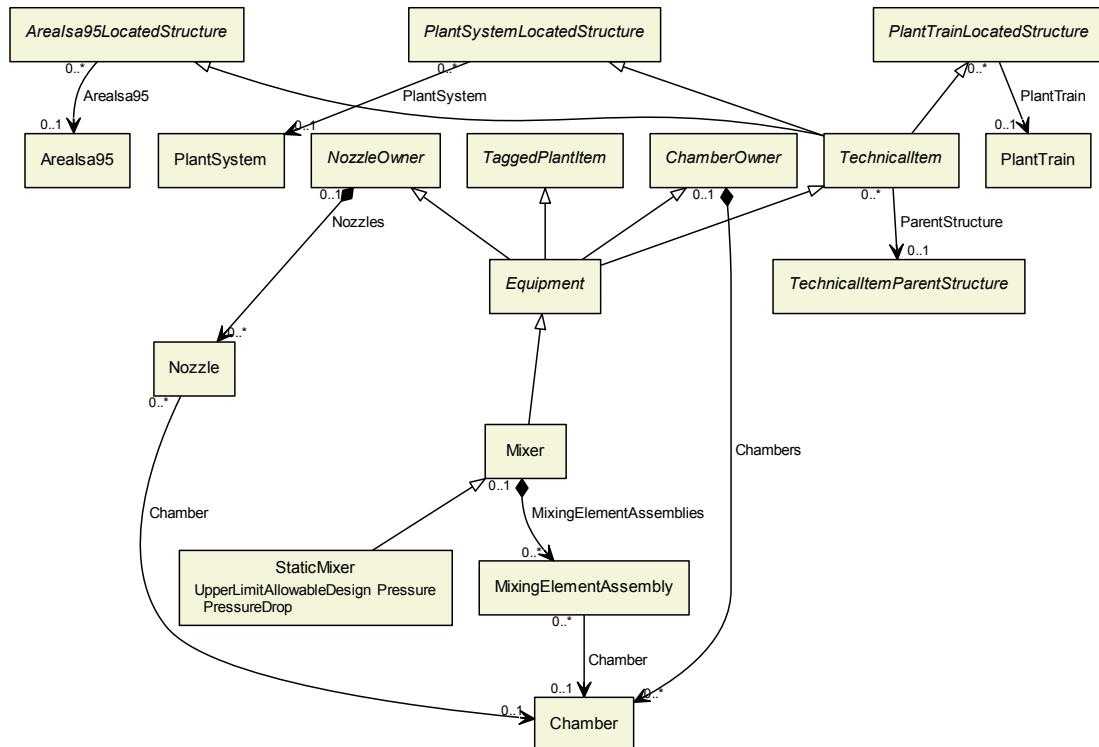
Example:

```

<Equipment
    ComponentClass="StaticMixer"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS1016684" ...>
...
</Equipment>

```

9.49.1. Overview



Superclasses:

- Mixer

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. UpperLimitAllowableDesignPressureDrop

Description: The maximum allowable design pressure drop of the [StaticMixer](#).

RDL: UPPER LIMIT ALLOWABLE DESIGN PRESSURE DROP

<http://sandbox.dexpi.org/rdl/UpperLimitAllowableDesignPressureDrop>

Attribute Type: Pressure

Example Value: 2 bar

Proteus Schema Implementation: GenericAttribute of the [StaticMixer](#) (use case [Physical Quantity](#)).

Example:

```

<GenericAttribute
  Name="UpperLimitAllowableDesignPressureDrop"
  AttributeURI="http://sandbox.dexpi.org/rdl/UpperLimitAllowableDesignPressureDrop"
  Value="2"
  
```

```
Format="double"
Units="Bar"
UnitsURI="http://data.posccaesar.org/rdl/RDS1314539" />
```

9.50. SubTaggedColumnSection

Description: A sub tagged column section.

RDL: COLUMN SECTION

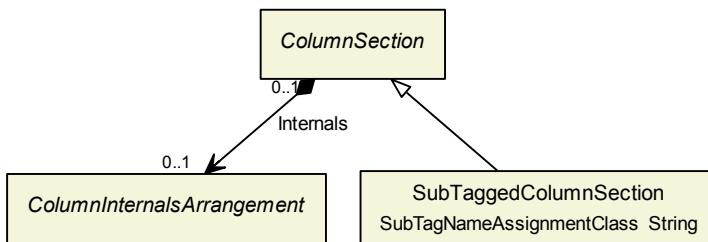
<http://sandbox.dexpi.org/rdl/ColumnSection>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.50.1. Overview



Superclasses:

- [ColumnSection](#)

Subclasses: No subclasses.

9.50.2. Components

No components.

9.50.3. Model References

No model references.

9.50.4. Attributes

9.50.4.1. SubTagNameAssignmentClass

Description: The sub tag name of the [SubTaggedColumnSection](#).

RDL: SUB TAG NAME ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass>

Attribute Type: [String](#)

Example Value: "Section1"

Proteus Schema Implementation: [GenericAttribute](#) of the [SubTaggedColumnSection](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="Section1"
  Format="string" />
```

9.51. TaggedColumnSection

Description: A fully tagged column section.

RDL: COLUMN SECTION

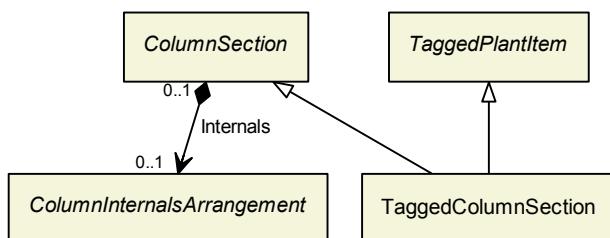
<http://sandbox.dexpi.org/rdl/ColumnSection>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.51.1. Overview



Superclasses:

- [ColumnSection](#)
- [TaggedPlantItem](#)

Subclasses: No subclasses.

9.51.2. Components

No components.

9.51.3. Model References

No model references.

9.51.4. Attributes

No attributes.

9.52. TaggedPlantItem

This class is abstract.

Description: A fully tagged item in a plant.

RDL: -

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

9.52.1. Overview

TaggedPlantItem

TagNameAssignmentClass	String
TagNamePrefixAssignmentClass	String
TagNameSequenceNumberAssignmentClass	String
TagNameSuffixAssignmentClass	String

Superclasses: No superclasses.

Subclasses:

- Equipment
- TaggedColumnSection

9.52.2. Components

No components.

9.52.3. Model References

No model references.

9.52.4. Attributes

9.52.4.1. TagNameAssignmentClass

Description: The tag number of the [TaggedPlantItem](#). 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" ...>
```

9.52.4.2. TagNamePrefixAssignmentClass

Description: The prefix part of the tag number of the [TaggedPlantItem](#). 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 [TaggedPlantItem](#) (use case String).

Example:

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

9.52.4.3. TagNameSequenceNumberAssignmentClass

Description: The sequence number part of the tag number of the [TaggedPlantItem](#). 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 [TaggedPlantItem](#) (use case String).

Example:

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

9.52.4.4. TagNameSuffixAssignmentClass

Description: The suffix part of the tag number of an [TaggedPlantItem](#) 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 [TaggedPlantItem](#) (use case String).

Example:

```
<GenericAttribute
  Name="TagNameSuffixAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TagNameSuffixAssignmentClass"
```

9. Equipment

```
Value="A"  
Format="string" />
```

9.53. Tank

Description: A vessel intended to contain fluid for storage. Typically a receiving or collecting function for further distribution. Typically with a vertical and cylindrical or square shape and a flat or conical bottom (from <http://data.posccaesar.org/rdl/RDS445139>).

RDL: TANK

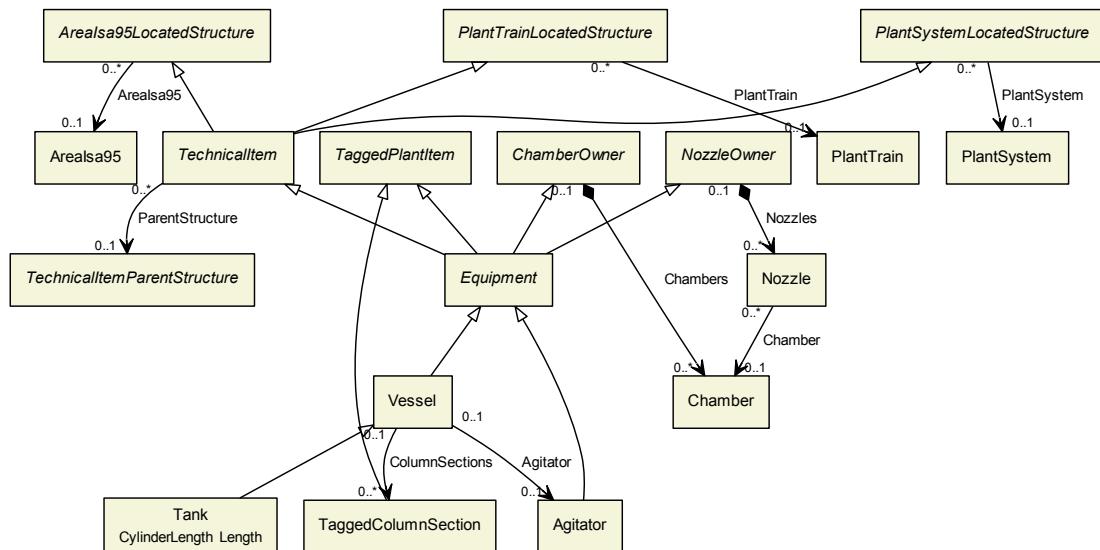
<http://data.posccaesar.org/rdl/RDS445139>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

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

9.53.1. Overview



Superclasses:

- **Vessel**

Subclasses: No subclasses.

9.53.2. Components

No components.

9.53.3. Model References

No model references.

9.53.4. Attributes

9.53.4.1. CylinderLength

Description: The cylinder length of the [Tank](#).

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" />
```

9.54. ThinFilmEvaporator

Description: A thin film evaporator.

RDL: THIN FILM EVAPORATOR

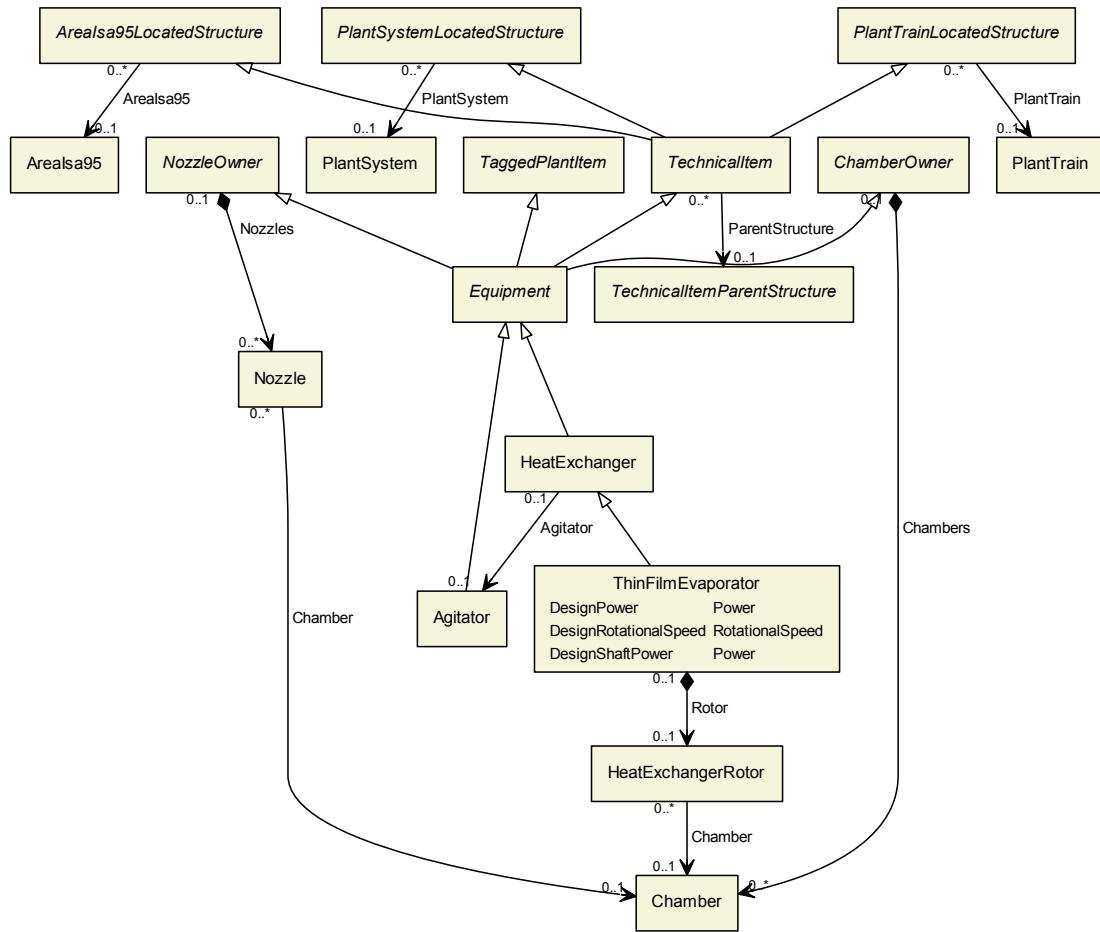
<http://sandbox.dexpi.org/rdl/ThinFilmEvaporator>

Proteus Schema Implementation: Proteus [Equipment](#) element with mandatory [ComponentClass](#) and [ComponentClassUri](#) attributes.

Example:

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

9.54.1. Overview



Superclasses:

- HeatExchanger

Subclasses: No subclasses.

9.54.2. Components

9.54.2.1. Rotor

Description: The rotor of the [ThinFilmEvaporator](#).

Type: [HeatExchangerRotor](#)

Cardinality: 0..1

Proteus Schema Implementation: The <Equipment> element for the [HeatExchangerRotor](#) is a child of the <Equipment> element for the [ThinFilmEvaporator](#).

Example:

```

<Equipment
    ComponentClass="ThinFilmEvaporator"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ThinFilmEvaporator" ...>
...
<Equipment
    ComponentClass="HeatExchangerRotor"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/HeatExchangerRotor" ...>

```

```

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

9.54.3. Model References

No model references.

9.54.4. Attributes

9.54.4.1. DesignPower

Description: The design power of the [ThinFilmEvaporator](#).

RDL: DESIGN POWER

<http://sandbox.dexpi.org/rdl/DesignPower>

Attribute Type: [Power](#)

Example Value: 500 kW

Proteus Schema Implementation: [GenericAttribute](#) of the [ThinFilmEvaporator](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignPower"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignPower"
  Value="500"
  Format="double"
  Units="Kilowatt"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.54.4.2. DesignRotationalSpeed

Description: The design rotational speed of the [ThinFilmEvaporator](#).

RDL: DESIGN ROTATIONAL SPEED

<http://sandbox.dexpi.org/rdl/DesignRotationalSpeed>

Attribute Type: [RotationalSpeed](#)

Example Value: 180 1/min

Proteus Schema Implementation: [GenericAttribute](#) of the [ThinFilmEvaporator](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute
  Name="DesignRotationalSpeed"
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignRotationalSpeed"
  Value="180"
  Format="double"
  Units="RevolutionPerMinute"
  UnitsURI="http://data.posccaesar.org/rdl/RDS1342304" />
```

9.54.4.3. DesignShaftPower

Description: The design shaft power of the [ThinFilmEvaporator](#).

RDL: DESIGN SHAFT POWER

<http://sandbox.dexpi.org/rdl/DesignShaftPower>

Attribute Type: Power

Example Value: 400 kW

Proteus Schema Implementation: [GenericAttribute](#) of the [ThinFilmEvaporator](#) (use case [Physical Quantity](#)).

Example:

```
<GenericAttribute  
  Name="DesignShaftPower"  
  AttributeURI="http://sandbox.dexpi.org/rdl/DesignShaftPower"  
  Value="400"  
  Format="double"  
  Units="Kilowatt"  
  UnitsURI="http://data.posccaesar.org/rdl/RDS1330919" />
```

9.55. TubeBundle

Description: A bundle that consists of several tubes assembled together allowing multiple flow paths from a single source (from <http://data.posccaesar.org/rdl/RDS415259>).

RDL: TUBE BUNDLE

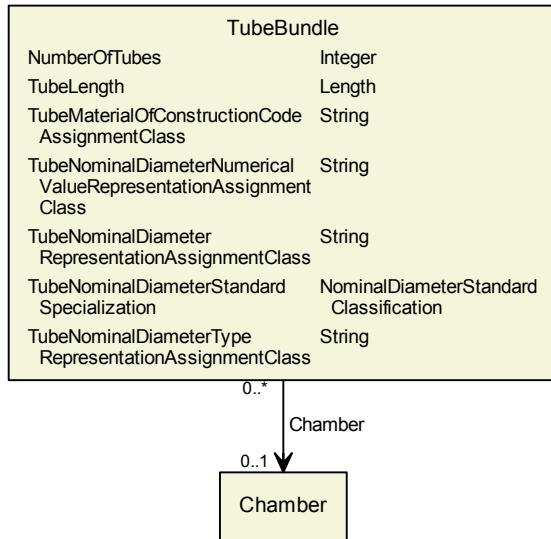
<http://data.posccaesar.org/rdl/RDS415259>

Proteus Schema Implementation: Proteus `<Equipment>` element with mandatory `ComponentClass` and `ComponentClassUri` attributes.

Example:

```
<Equipment  
  ComponentClass="TubeBundle"  
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS415259" ...>  
  ...  
</Equipment>
```

9.55.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

9.55.2. Components

No components.

9.55.3. Model References

9.55.3.1. Chamber

Description: The **Chamber** in which the **TubeBundle** is located, if applicable. The **Chamber** must be a component of the same object as the **TubeBundle**.

Type: [Chamber](#)

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 **TubeBundle**: **is located in**
- Association type for the association *target*, i.e., for the <Equipment> element representing the **Chamber**: **is the location of**

Both <Association> elements must be used.

Example:

```

<Equipment ID="TubeBundle1" ...>
  ...
  <Association Type="is located in" ItemID="Chamber1" />
  ...
</Equipment>
...
<Equipment ID="Chamber1" ...>
  ...
  <Association Type="is the location of" ItemID="TubeBundle1" />
  ...

```

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

9.55.4. Attributes

9.55.4.1. NumberOfTubes

Description: The number of tubes of the [TubeBundle](#).

RDL: NUMBER OF TUBES

<http://data.posccaesar.org/rdl/RDS363959>

Attribute Type: Integer

Example Value: 36

Proteus Schema Implementation: [GenericAttribute](#) of the [TubeBundle](#) (use case [Integer](#)).

Example:

```
<GenericAttribute  
  Name="NumberOfTubes"  
  AttributeURI="http://data.posccaesar.org/rdl/RDS363959"  
  Value="36"  
  Format="integer" />
```

9.55.4.2. TubeLength

Description: The length of the tubes of the [TubeBundle](#).

RDL: TUBE LENGTH

<http://data.posccaesar.org/rdl/RDS363869>

Attribute Type: Length

Example Value: 2200 mm

Proteus Schema Implementation: [GenericAttribute](#) of the [TubeBundle](#) (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" />
```

9.55.4.3. TubeMaterialOfConstructionCodeAssignmentClass

Description: A code that gives the material of construction of the tubes of the [TubeBundle](#).

RDL: TUBE MATERIAL OF CONSTRUCTION CODE ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/TubeMaterialOfConstructionCodeAssignmentClass>

Attribute Type: String

Example Value: "1.4306"

Proteus Schema Implementation: [GenericAttribute](#) of the [TubeBundle](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="TubeMaterialOfConstructionCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/TubeMaterialOfConstructionCodeAssignmentClass"
  Value="1.4306"
  Format="string" />
```

9.55.4.4. TubeNominalDiameterNumericalValueRepresentationAssignmentClass

Description: A readable representation of the numerical value of the nominal diameter of the tubes. 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: TUBE NOMINAL DIAMETER NUMERICAL VALUE REPRESENTATION ASSIGNMENT CLASS
<http://sandbox.dexpi.org/rdl/TubeNominalDiameterNumericalValueRepresentationAssignmentClass>

Attribute Type: String

Example Value: "25"

Proteus Schema Implementation: GenericAttribute of the [TubeBundle](#) (use case String).

Example:

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

9.55.4.5. TubeNominalDiameterRepresentationAssignmentClass

Description: A readable representation of the nominal diameter of the tubes. 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: TUBE NOMINAL DIAMETER REPRESENTATION ASSIGNMENT CLASS
<http://sandbox.dexpi.org/rdl/TubeNominalDiameterRepresentationAssignmentClass>

Attribute Type: String

Example Value: "DN 25"

Proteus Schema Implementation: GenericAttribute of the [TubeBundle](#) (use case String).

Example:

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

9.55.4.6. TubeNominalDiameterStandardSpecialization

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

RDL: TUBE NOMINAL DIAMETER STANDARD SPECIALIZATION

9. Equipment

<http://sandbox.dexpi.org/rdl/TubeNominalDiameterStandardSpecialization>

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 TubeBundle (use case Classification).

Example:

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

9.55.4.7. TubeNominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter of the tubes. 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: TUBE NOMINAL DIAMETER TYPE REPRESENTATION ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/TubeNominalDiameterTypeRepresentationAssignmentClass>

Attribute Type: String

Example Value: "DN"

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

Example:

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

9.56. Vessel

Description: A container intended for storage and/or processing of fluids (from <http://data.posccaesar.org/rdl/RDS414674>).

RDL: VESSEL

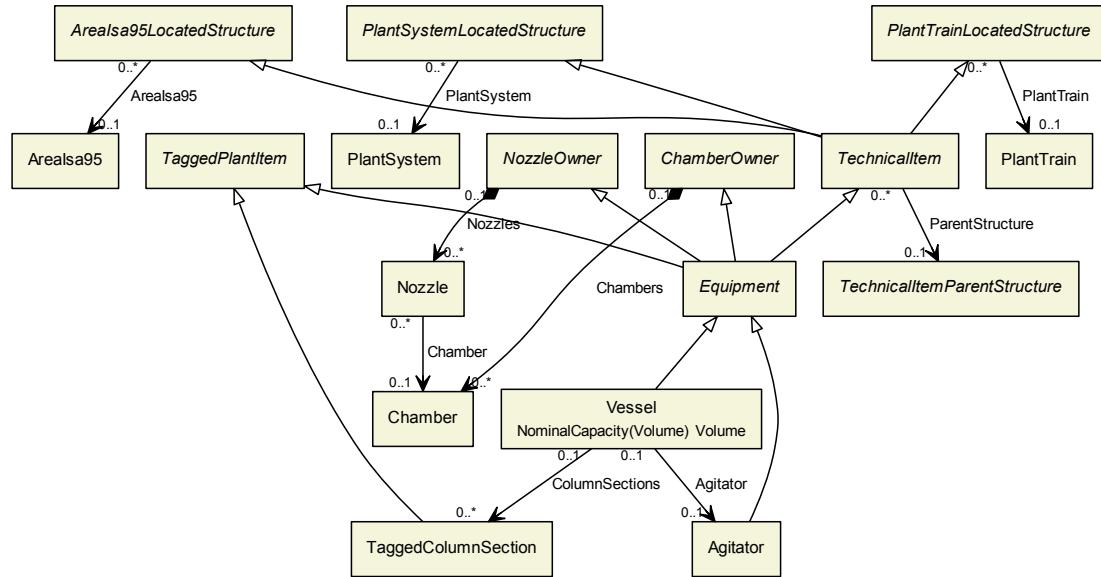
<http://data.posccaesar.org/rdl/RDS414674>

Proteus Schema Implementation: Proteus <Equipment> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<Equipment
  ComponentClass="Vessel"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS414674" ...>
...
</Equipment>
```

9.56.1. Overview



Superclasses:

- Equipment

Subclasses:

- PressureVessel
- Silo
- SpecialVessel
- Tank

9.56.2. Components

No components.

9.56.3. Model References

9.56.3.1. Agitator

Description: The [Agitator](#) of the [Vessel](#), if applicable.

Type: [Agitator](#)

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus <Association> elements:

- Association type for the association *source*, i.e., for the <Equipment> element representing the [Vessel](#): is the location of
- Association type for the association *target*, i.e., for the <Equipment> element representing the [Agitator](#): is located in

Both <Association> elements must be used.

Example:

9. Equipment

```
<Equipment ID="Vessel1" ...>
...
<Association Type="is the location of" ItemID="Agitator1" />
...
</Equipment>
...
<Equipment ID="Agitator1" ...>
...
<Association Type="is located in" ItemID="Vessel1" />
...
</Equipment>
```

9.56.3.2. ColumnSections

Description: The column sections of the [Vessel](#), if applicable.

Type: [TaggedColumnSection](#)

Source Multiplicity: 0..1

Target Multiplicity: 0..*

Proteus Schema Implementation: Proteus <Association> elements:

- Association type for the association *source*, i.e., for the <Equipment> element representing the [Vessel](#):
is the location of
- Association type for the association *target*, i.e., for the <Equipment> element representing the [TaggedColumnSection](#): is located in

Both <Association> elements must be used.

Example:

```
<Equipment ID="Vessel1" ...>
...
<Association Type="is the location of" ItemID="TaggedColumnSection1" />
...
</Equipment>
...
<Equipment ID="TaggedColumnSection1" ...>
...
<Association Type="is located in" ItemID="Vessel1" />
...
</Equipment>
```

9.56.4. Attributes

9.56.4.1. NominalCapacity(Volume)

Description: The nominal volumetric capacity of the [Vessel](#).

RDL: NOMINAL CAPACITY (VOLUME)

[http://sandbox.dexpi.org/rdl/NominalCapacity\(Volume\)](http://sandbox.dexpi.org/rdl/NominalCapacity(Volume))

Attribute Type: [Volume](#)

Example Value: 7.2 m³

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

Example:

```
<GenericAttribute  
    Name="NominalCapacity(Volume)"  
    AttributeURI="http://sandbox.dexpi.org/rdf/NominalCapacity(Volume)"  
    Value="7.2"  
    Format="double"  
    Units="MetreCubed"  
    UnitsURI="http://data.posccaesar.org/rdf/RDS1349099"/>
```


10. Piping

10.1. 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.

10.2. AngleBallValve

Description: An angle ball valve.

RDL: ANGLE BALL VALVE

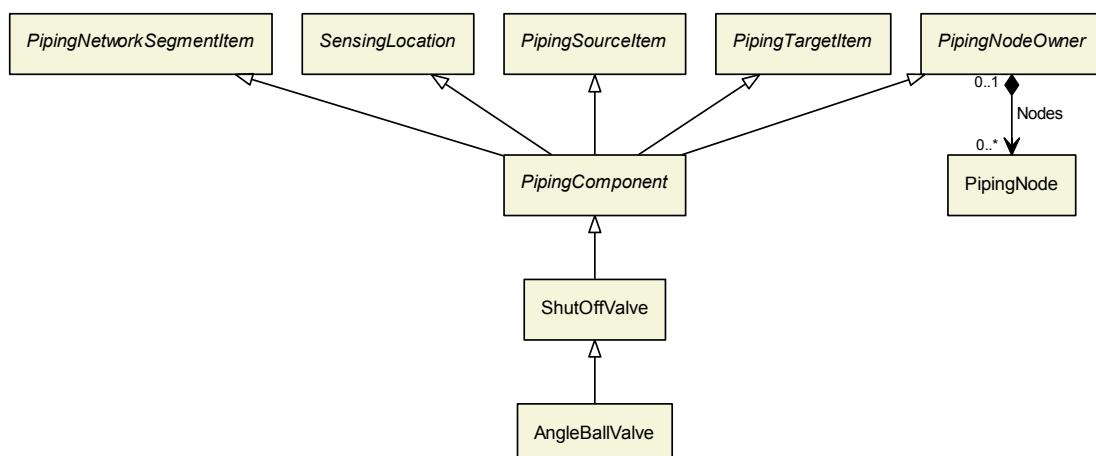
<http://sandbox.dexpi.org/rdl/AngleBallValve>

Proteus Schema Implementation: Proteus `<PipingComponent>` element with mandatory `ComponentClass` and `ComponentClassUri` attributes.

Example:

```
<PipingComponent
    ComponentClass="AngleBallValve"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/AngleBallValve" ...>
...
</PipingComponent>
```

10.2.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

10.2.2. Components

No components.

10.2.3. Model References

No model references.

10.2.4. Attributes

No attributes.

10.3. AngleGlobeValve

Description: A globe valve that deviates from the in-line design, i.e. with a body shape designed to adjust the flow direction with a specified angle relative to the straight through-flow an in-line valve would have provided for (from <http://data.posccaesar.org/rdl/RDS882944>).

RDL: ANGLE GLOBE VALVE

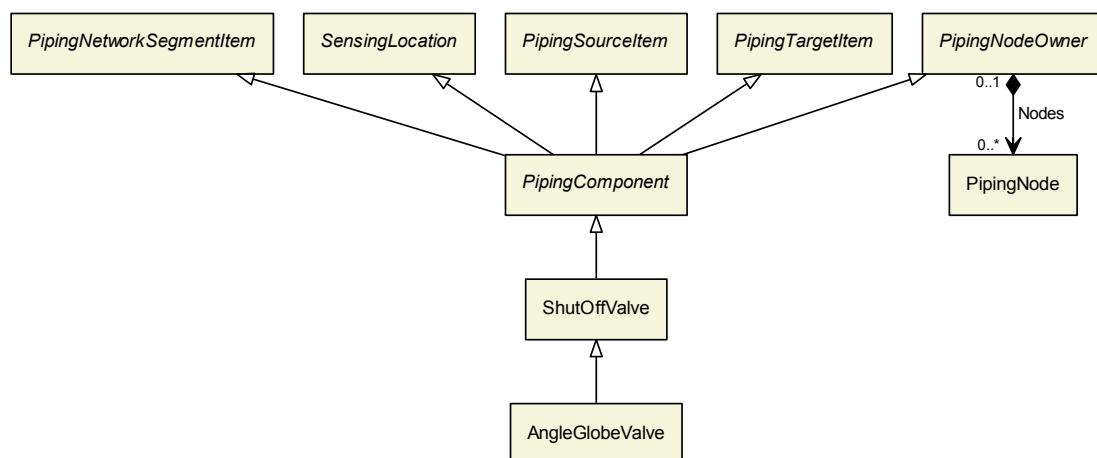
<http://data.posccaesar.org/rdl/RDS882944>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="AngleGlobeValve"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS882944" ...>
    ...
</PipingComponent>
```

10.3.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

10.3.2. Components

No components.

10.3.3. Model References

No model references.

10.3.4. Attributes

No attributes.

10.4. AnglePlugValve

Description: An angle plug valve.

RDL: ANGLE PLUG VALVE

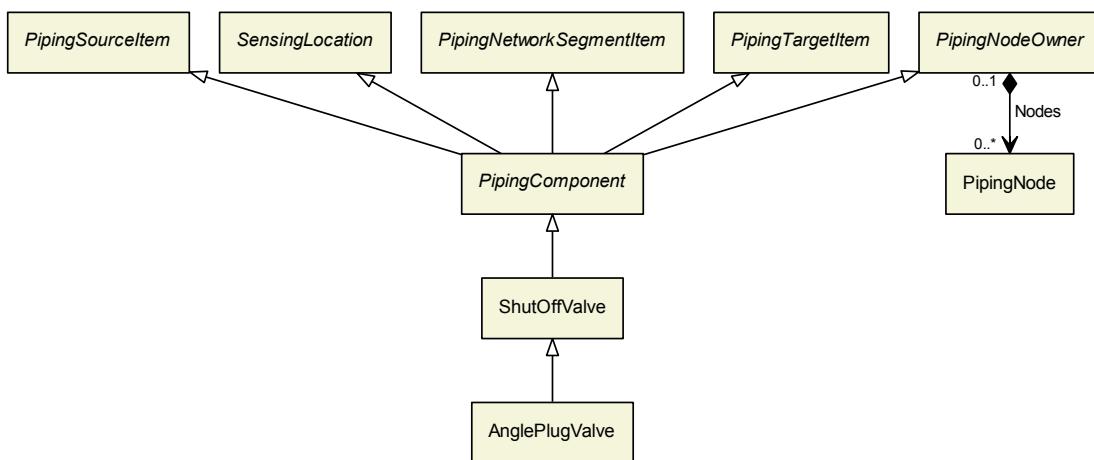
<http://sandbox.dexpi.org/rdl/AnglePlugValve>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="AnglePlugValve"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/AnglePlugValve" ...>
...
</PipingComponent>
```

10.4.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

10.4.2. Components

No components.

10.4.3. Model References

No model references.

10.4.4. Attributes

No attributes.

10.5. AngleValve

Description: A valve that has valve ports which are not in-line (from <http://data.posccaesar.org/rdl/RDS5789384>).

RDL: ANGLE VALVE

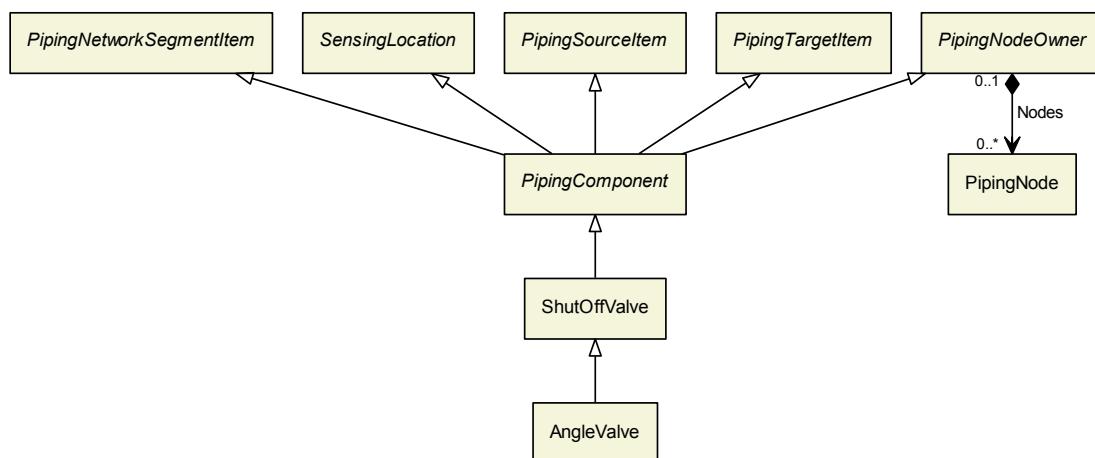
<http://data.posccaesar.org/rdl/RDS5789384>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="AngleValve"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS5789384" ...>
...
</PipingComponent>
```

10.5.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

10.5.2. Components

No components.

10.5.3. Model References

No model references.

10.5.4. Attributes

No attributes.

10.6. BallValve

Description: A rotary valve that has a ball closure member (from <http://data.posccaesar.org/rdl/RDS416654>).

RDL: BALL VALVE

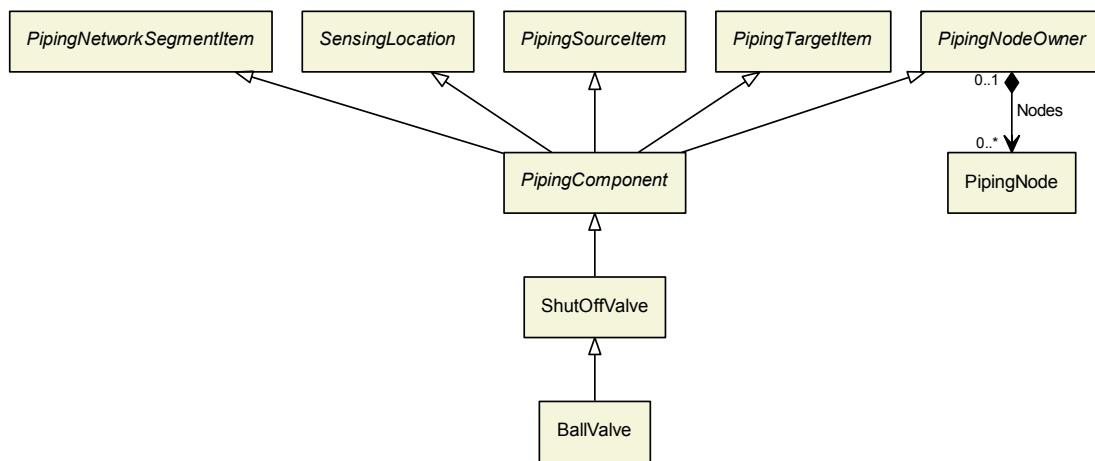
<http://data.posccaesar.org/rdl/RDS416654>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="BallValve"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS416654" ...>
...
</PipingComponent>
```

10.6.1. Overview



Superclasses:

- [ShutOffValve](#)

Subclasses: No subclasses.

10.6.2. Components

No components.

10.6.3. Model References

No model references.

10.6.4. Attributes

No attributes.

10.7. BlindFlange

Description: A pipe flange that is without a central opening and used to shut off a flanged pipe end (from <http://data.posccaesar.org/rdl/RDS414719>).

RDL: BLIND FLANGE

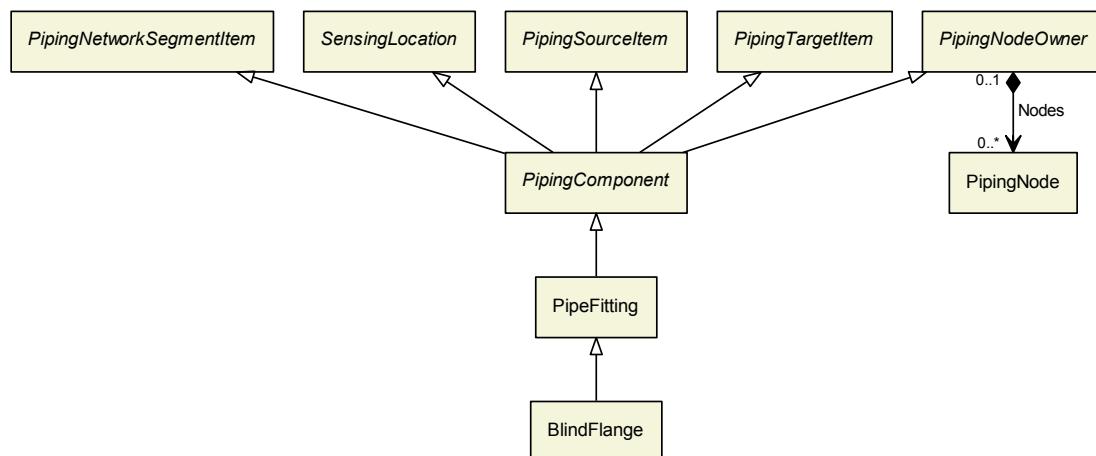
<http://data.posccaesar.org/rdl/RDS414719>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="BlindFlange"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS414719" ...>
...
</PipingComponent>
```

10.7.1. Overview



Superclasses:

- [PipeFitting](#)

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. BreatherValve

Description: A breather valve.

RDL: BREATHER VALVE

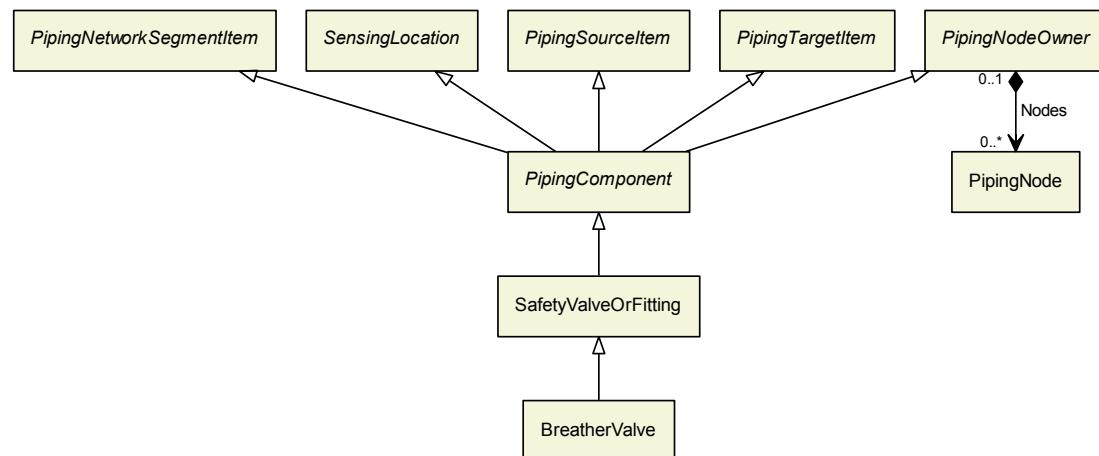
<http://sandbox.dexpi.org/rdl/BreatherValve>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="BreatherValve"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/BreatherValve" ...>
...
</PipingComponent>
```

10.8.1. Overview



Superclasses:

- [SafetyValveOrFitting](#)

Subclasses: No subclasses.

10.8.2. Components

No components.

10.8.3. Model References

No model references.

10.8.4. Attributes

No attributes.

10.9. ButterflyValve

Description: A rotary valve that has a closure member of a disc type with a shaft parallel, or near parallel, to the plane of the disc, with an axis of rotation transverse to the flow direction (from <http://data.posccaesar.org/>).

[org/rdl/RDS416609](http://data.posccaesar.org/rdl/RDS416609)).

RDL: BUTTERFLY VALVE

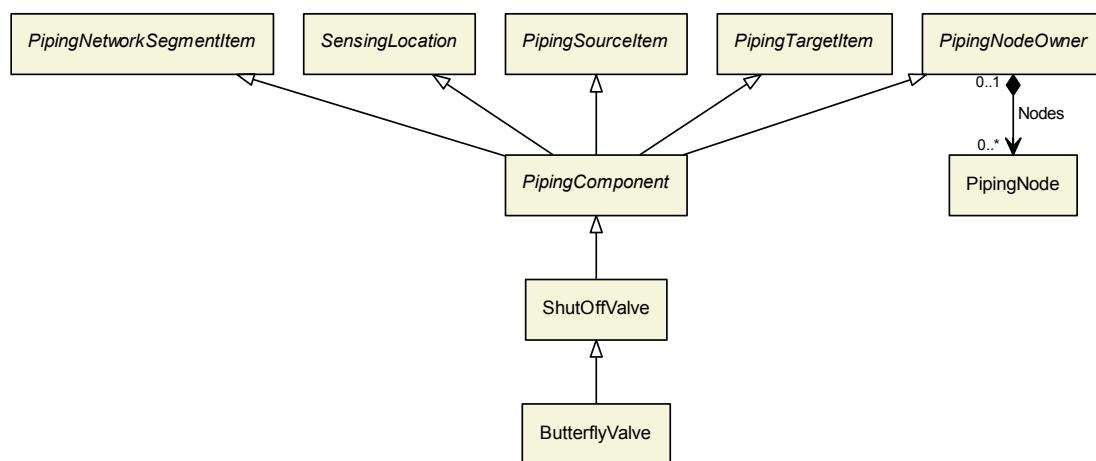
<http://data.posccaesar.org/rdl/RDS416609>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="ButterflyValve"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS416609" ...>
...
</PipingComponent>
```

10.9.1. Overview



Superclasses:

- [ShutOffValve](#)

Subclasses: No subclasses.

10.9.2. Components

No components.

10.9.3. Model References

No model references.

10.9.4. Attributes

No attributes.

10.10. CheckValve

Description: A valve that permits fluid to flow in one direction only (from <http://data.posccaesar.org/rdl/RDS292229>).

RDL: CHECK VALVE

<http://data.posccaesar.org/rdl/RDS292229>

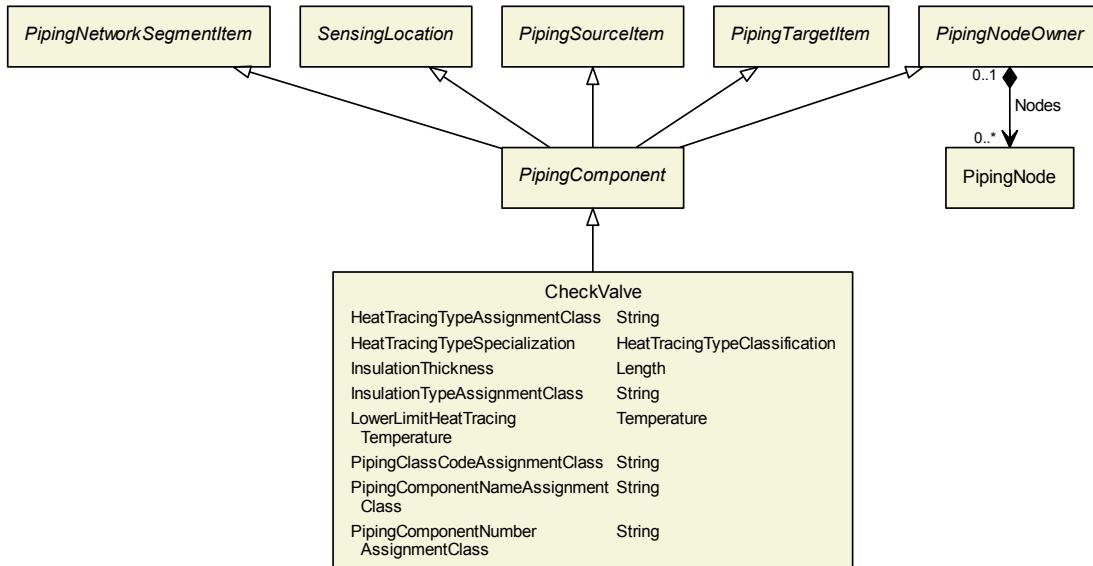
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass

and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="CheckValve"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS292229" ...>
...
</PipingComponent>
```

10.10.1. Overview



Superclasses:

- [PipingComponent](#)

Subclasses:

- [GlobeCheckValve](#)
- [SwingCheckValve](#)

10.10.2. Components

No components.

10.10.3. Model References

No model references.

10.10.4. Attributes

10.10.4.1. HeatTracingTypeAssignmentClass

Description: The heat tracing type related to 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" />
```

10.10.4.2. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type related to 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" />
```

10.10.4.3. InsulationThickness

Description: The insulation thickness of the CheckValve.

RDL: INSULATION THICKNESS

<http://data.posccaesar.org/rdl/RDS4238040>

Attribute Type: Length

Example Value: 40 mm

Proteus Schema Implementation: GenericAttribute of the CheckValve (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" />
```

10.10.4.4. InsulationTypeAssignmentClass

Description: The identification code for the insulation type related to 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" />
```

10.10.4.5. 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" />
```

10.10.4.6. 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" />
```

10.10.4.7. 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" />
```

10.10.4.8. 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" />
```

10.11. ClampedFlangeCoupling

Description: A clamped flange coupling.

RDL: CLAMPED FLANGE COUPLING

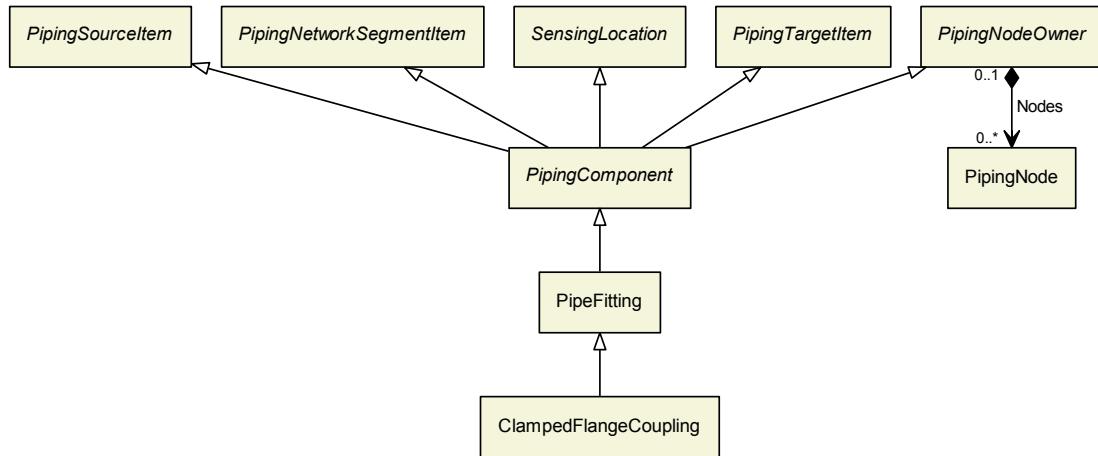
<http://sandbox.dexpi.org/rdl/ClampedFlangeCoupling>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent  
  ComponentClass="ClampedFlangeCoupling"  
  ComponentClassURI="http://sandbox.dexpi.org/rdl/ClampedFlangeCoupling" ...>  
...  
</PipingComponent>
```

10.11.1. Overview



Superclasses:

- [PipeFitting](#)

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. Compensator

Description: A device compensating for axial or radial movement between two elements that is connected (from <http://data.posccaesar.org/rdf/RDS1280084541>).

RDL: COMPENSATOR

<http://data.posccaesar.org/rdf/RDS1280084541>

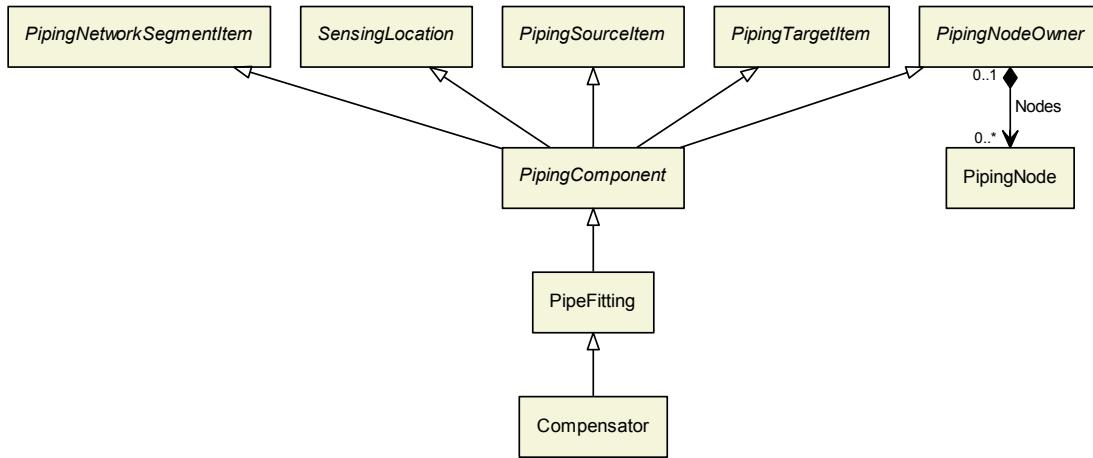
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="Compensator"
  ComponentClassURI="http://data.posccaesar.org/rdf/RDS1280084541" ...>
...
</PipingComponent>
  
```

10.12.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

10.12.2. Components

No components.

10.12.3. Model References

No model references.

10.12.4. Attributes

No attributes.

10.13. ConicalStrainer

Description: A strainer where the screen has a conical tubular shape (from <http://data.posccaesar.org/rdl/RDS16044540>).

RDL: CONICAL STRAINER

<http://data.posccaesar.org/rdl/RDS16044540>

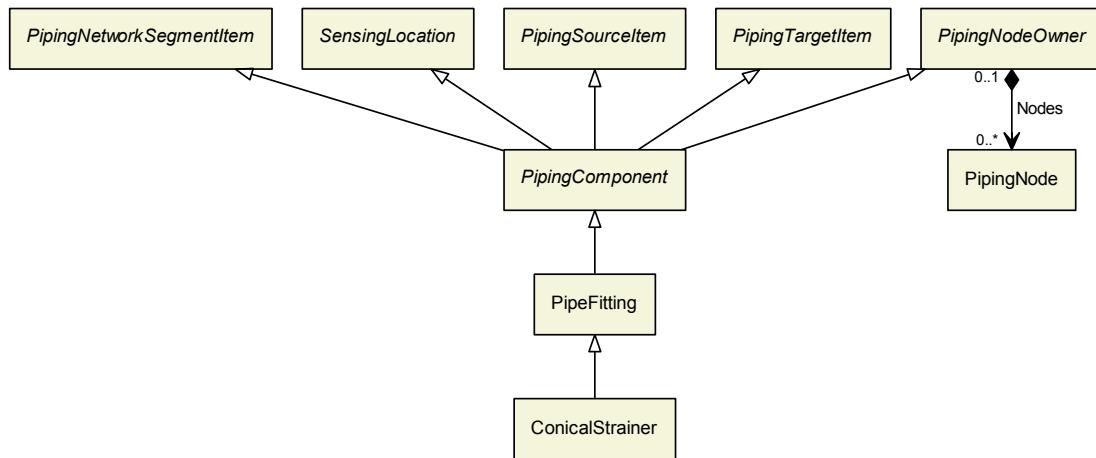
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="ConicalStrainer"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS16044540" ...>
  ...
</PipingComponent>
  
```

10.13.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.13.2. Components

No components.

10.13.3. Model References

No model references.

10.13.4. Attributes

No attributes.

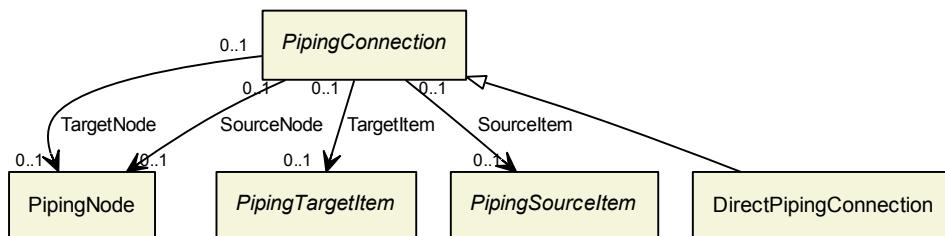
10.14. DirectPipingConnection

Description: A direct connection between two piping items, i.e. a connection that is not realized by a pipe.

RDL: -

Proteus Schema Implementation: There is no direct implementation of [DirectPipingConnection](#) in Proteus Schema. A [DirectPipingConnection](#) rather corresponds to cases where Proteus Schema allows direct connections between piping-related items without a <Centerline> (corresponding to a [Pipe](#)) between, e.g., between two [PipingComponents](#) or between a [PipingComponent](#) and a [PropertyBreak](#).

10.14.1. Overview



Superclasses:

- PipingConnection

Subclasses: No subclasses.

10.14.2. Components

No components.

10.14.3. Model References

No model references.

10.14.4. Attributes

No attributes.

10.15. ElectromagneticFlowMeter

Description: A velocity flow meter that is measuring flow rate of a conductive fluid running through a magnetic field by measuring the charge created when fluid interacting with the field (from <http://data.posccaesar.org/rdl/RDS1009664>).

RDL: ELECTROMAGNETIC FLOW METER

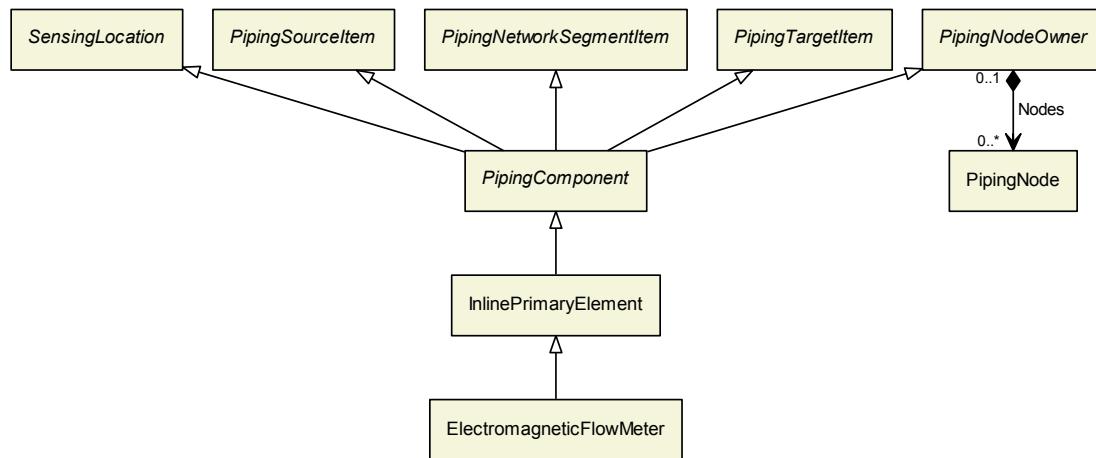
<http://data.posccaesar.org/rdl/RDS1009664>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="ElectromagneticFlowMeter"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS1009664" ...>
    ...
</PipingComponent>
```

10.15.1. Overview



Superclasses:

- [InlinePrimaryElement](#)

Subclasses: No subclasses.

10.15.2. Components

No components.

10.15.3. Model References

No model references.

10.15.4. Attributes

No attributes.

10.16. FlameArrestor

Description: An 'arrestor' which is a trap covering an opening, e.g of a ventilation system or a pipe, to prevent flames from entering the system (from <http://data.posccaesar.org/rdl/RDS1325028651>).

RDL: FLAME ARRESTOR

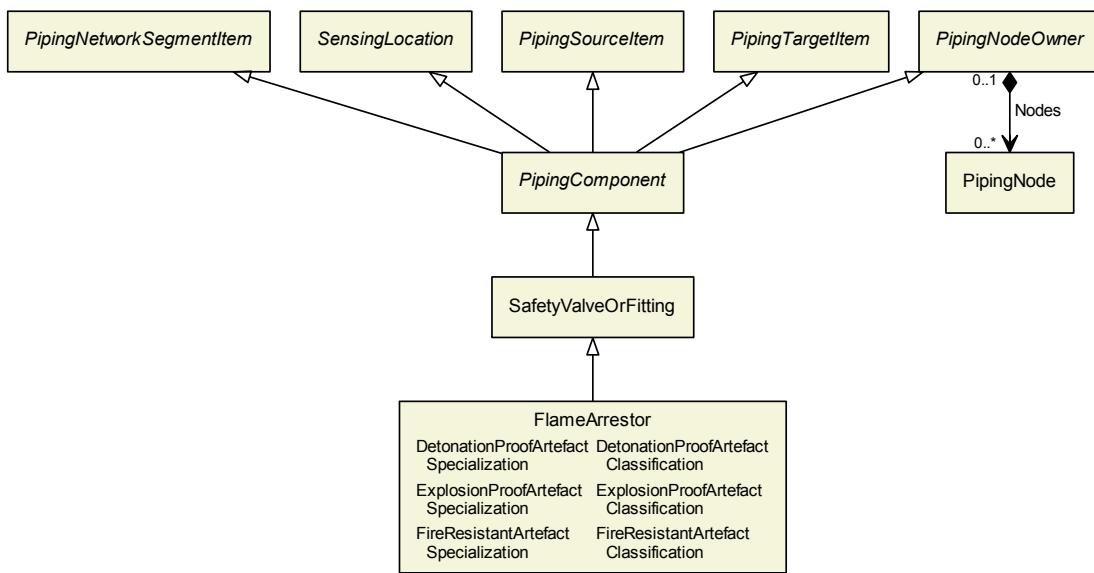
<http://data.posccaesar.org/rdl/RDS1325028651>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="FlameArrestor"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS1325028651" ...>
...
</PipingComponent>
```

10.16.1. Overview



Superclasses:

- [SafetyValveOrFitting](#)

Subclasses: No subclasses.

10.16.2. Components

No components.

10.16.3. Model References

No model references.

10.16.4. Attributes

10.16.4.1. 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 artifact

(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="NonDetonationProofArtifact"
  ValueURI="http://sandbox.dexpi.org/rdl/NonDetonationProofArtefact"
  Format="anyURI"/>
```

10.16.4.2. 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 artifact

(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="ExplosionProofArtifact"
  ValueURI="http://sandbox.dexpi.org/rdl/ExplosionProofArtefact"
  Format="anyURI"/>
```

10.16.4.3. 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"
  AttributeURL="http://sandbox.dexpi.org/rdl/FireResistantArtefactSpecialization"
  Value="FireResistantArtefact"
  ValueURI="http://data.posccaesar.org/rdl/RDS7907520"
  Format="anyURI"/>
```

10.17. Flange

Description: A physical object that is a projecting flat rim, plate, collar, or rib (from <http://data.posccaesar.org/rdl/RDS13307654>).

RDL: FLANGE

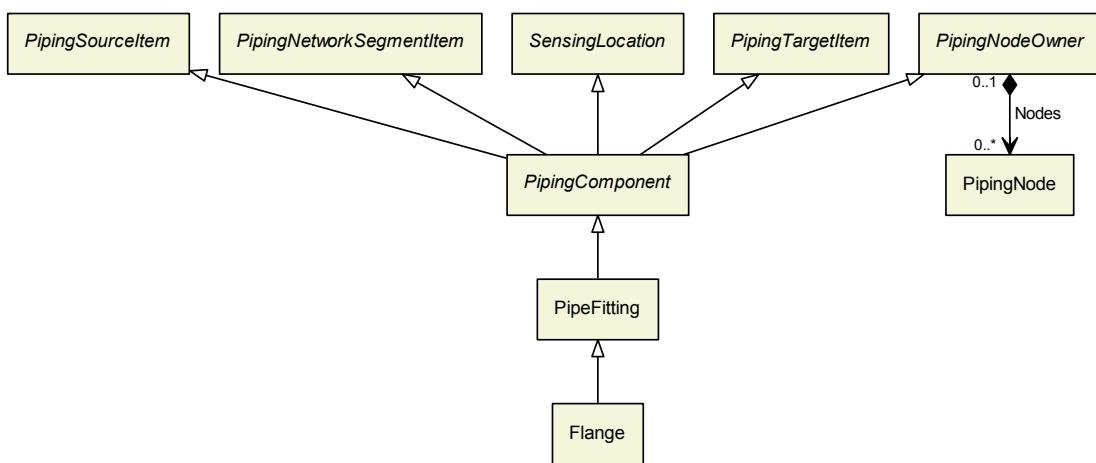
<http://data.posccaesar.org/rdl/RDS13307654>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
  ComponentClass="Flange"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS13307654" ...>
...
</PipingComponent>
```

10.17.1. Overview



Superclasses:

- PipeFitting

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. FlangedConnection

Description: A flanged connection.

RDL: FLANGED CONNECTION

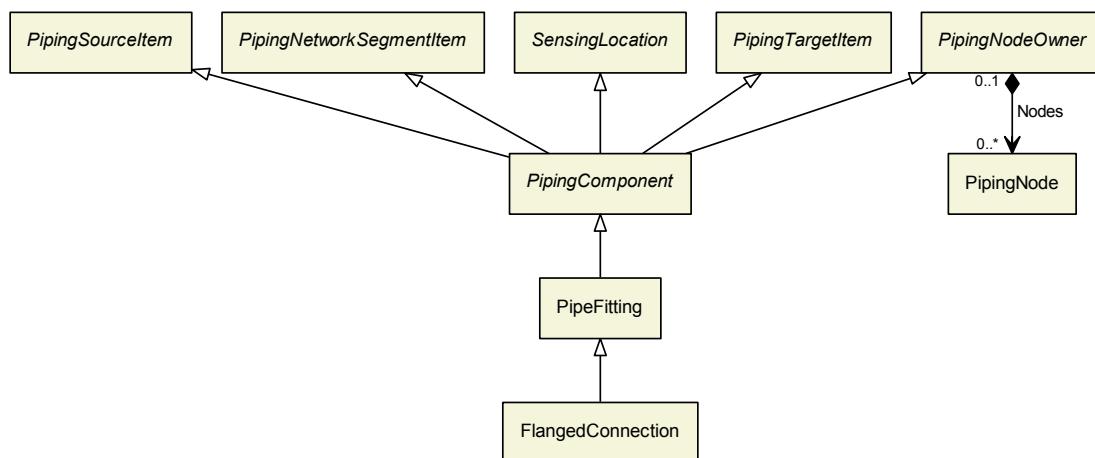
<http://sandbox.dexpi.org/rdl/FlangedConnection>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="FlangedConnection"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/FlangedConnection" ...>
...
</PipingComponent>
```

10.18.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.18.2. Components

No components.

10.18.3. Model References

No model references.

10.18.4. Attributes

No attributes.

10.19. FlowDetector

Description: A detector that is intended to detect whether a fluid flow exists (from <http://data.posccaesar.org/rdl/RDS1008719>).

RDL: FLOW DETECTOR

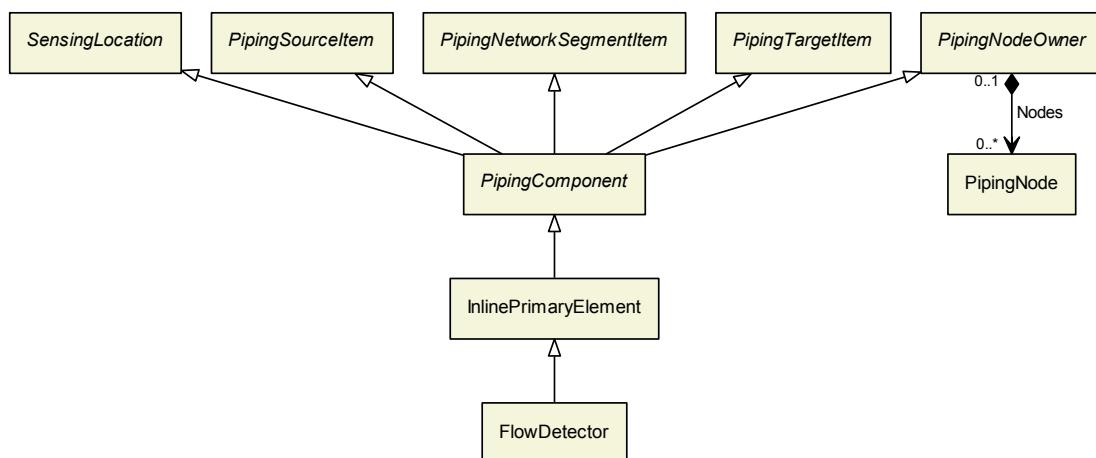
<http://data.posccaesar.org/rdl/RDS1008719>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="FlowDetector"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS1008719" ...>
...
</PipingComponent>
```

10.19.1. Overview



Superclasses:

- [InlinePrimaryElement](#)

Subclasses: No subclasses.

10.19.2. Components

No components.

10.19.3. Model References

No model references.

10.19.4. Attributes

No attributes.

10.20. FlowInPipeConnectorSymbol

Description: A pipe connector symbol that indicates that a preceding part of a [PipingNetworkSegment](#) is represented somewhere else, either on the same P&ID, or on some other P&ID.

RDL: FLOW IN PIPE CONNECTOR SYMBOL

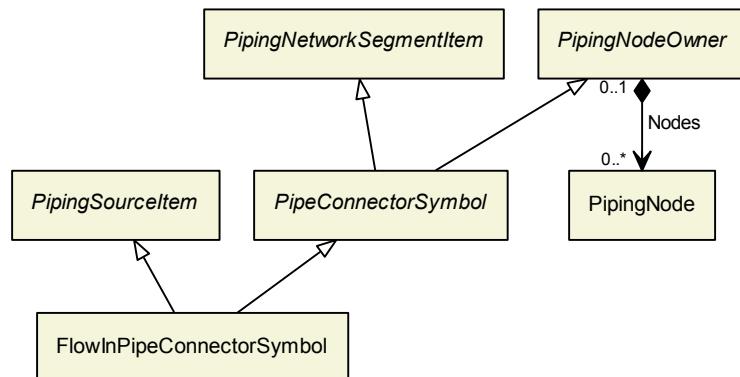
<http://sandbox.dexpi.org/rdl/FlowInPipeConnectorSymbol>

Proteus Schema Implementation: Proteus <PipeConnectorSymbol> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipeConnectorSymbol
    ComponentClass="FlowInPipeConnectorSymbol"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/FlowInPipeConnectorSymbol" ...>
...
</PipeConnectorSymbol>
```

10.20.1. Overview



Superclasses:

- `PipeConnectorSymbol`
- `PipingSourceItem`

Subclasses: No subclasses.

10.20.2. Components

No components.

10.20.3. Model References

No model references.

10.20.4. Attributes

No attributes.

10.21. FlowNozzle

Description: A nozzle with a smooth entry and a sharp exit (from <http://data.posccaesar.org/rdl/RDS821024>).

RDL: FLOW NOZZLE

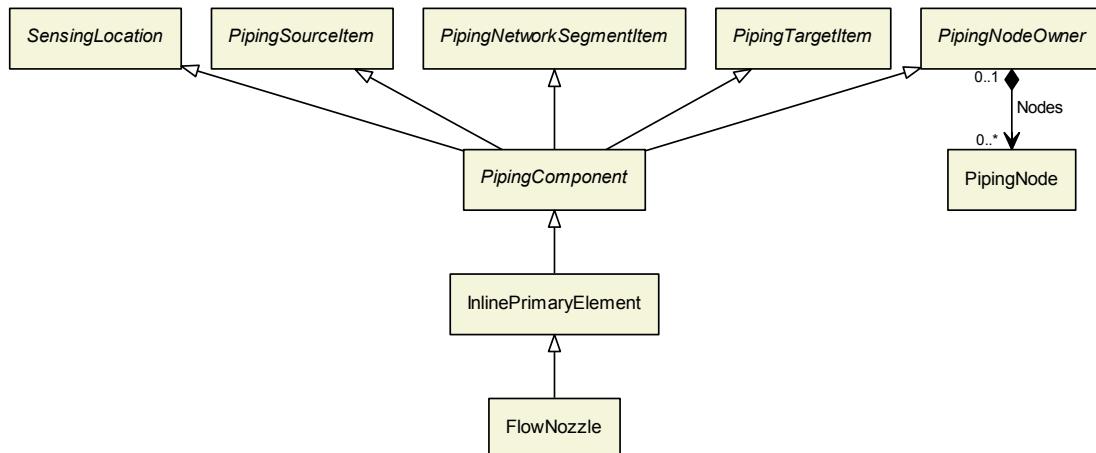
<http://data.posccaesar.org/rdl/RDS821024>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="FlowNozzle"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS821024" ...>
...
</PipingComponent>
```

10.21.1. Overview



Superclasses:

- [InlinePrimaryElement](#)

Subclasses: No subclasses.

10.21.2. Components

No components.

10.21.3. Model References

No model references.

10.21.4. Attributes

No attributes.

10.22. FlowOutPipeConnectorSymbol

Description: A pipe connector symbol that indicates that a subsequent part of a [PipingNetworkSegment](#) is represented somewhere else, either on the same P&ID, or on some other P&ID.

RDL: FLOW OUT PIPE CONNECTOR SYMBOL

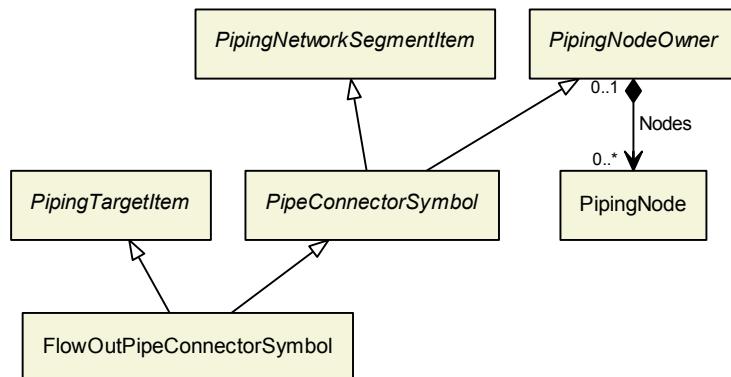
<http://sandbox.dexpi.org/rdl/FlowOutPipeConnectorSymbol>

Proteus Schema Implementation: Proteus <PipeConnectorSymbol> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipeConnectorSymbol
    ComponentClass="FlowOutPipeConnectorSymbol"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/FlowOutPipeConnectorSymbol" ...>
...
</PipeConnectorSymbol>
```

10.22.1. Overview



Superclasses:

- [PipeConnectorSymbol](#)
- [PipingTargetItem](#)

Subclasses: No subclasses.

10.22.2. Components

No components.

10.22.3. Model References

No model references.

10.22.4. Attributes

No attributes.

10.23. Funnel

Description: A hollow cone with a tube extending from the smaller end and that is designed to catch and direct a downward flow (from <http://data.posccaesar.org/rdl/RDS6689917>).

RDL: FUNNEL

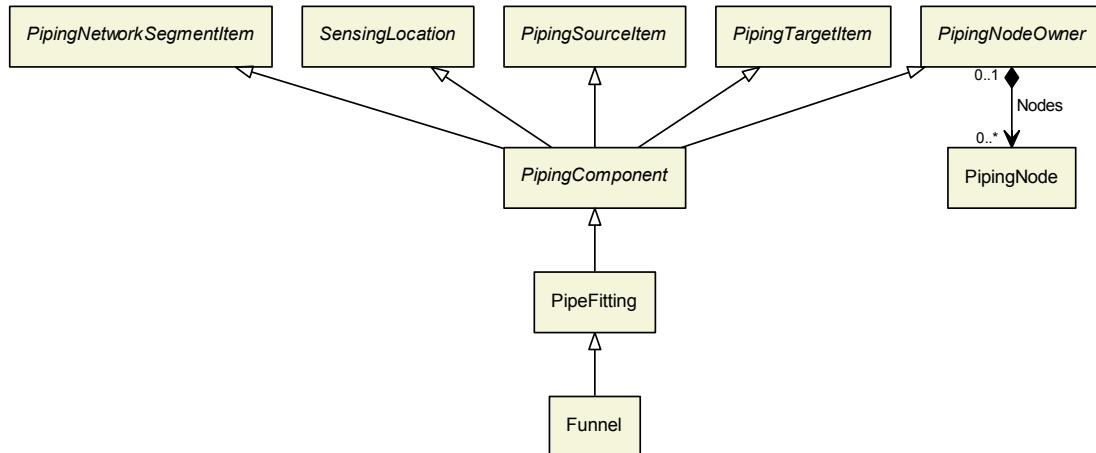
<http://data.posccaesar.org/rdl/RDS6689917>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="Funnel"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS6689917" ...>
...
</PipingComponent>
```

10.23.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.23.2. Components

No components.

10.23.3. Model References

No model references.

10.23.4. Attributes

No attributes.

10.24. GateValve

Description: A valve that is a valve where the closure member is a gate or disc with a linear motion parallel, or nearly parallel, to the plane of flat seats, which are transverse to the direction of flow (from <http://data.posccaesar.org/rdl/RDS416519>).

RDL: GATE VALVE

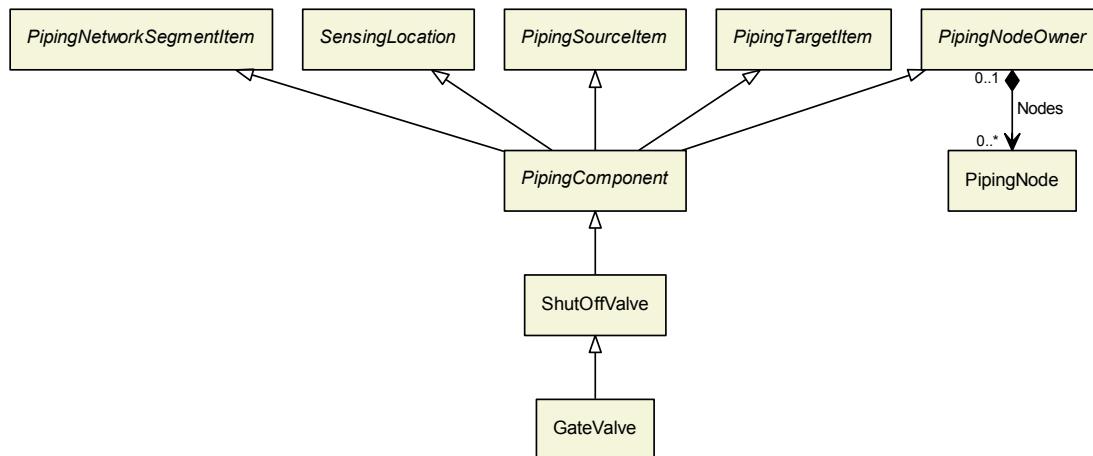
<http://data.posccaesar.org/rdl/RDS416519>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="GateValve"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS416519" ...>
...
</PipingComponent>
```

10.24.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

10.24.2. Components

No components.

10.24.3. Model References

No model references.

10.24.4. Attributes

No attributes.

10.25. GlobeCheckValve

Description: A globe check valve.

RDL: GLOBE CHECK VALVE

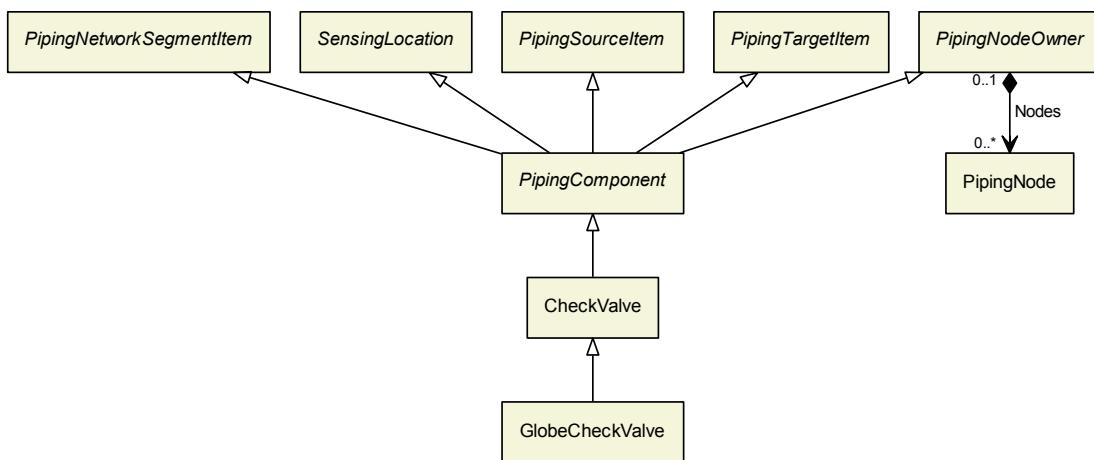
<http://sandbox.dexpi.org/rdl/GlobeCheckValve>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="GlobeCheckValve"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/GlobeCheckValve" ...>
...
</PipingComponent>
```

10.25.1. Overview



Superclasses:

- [CheckValve](#)

Subclasses: No subclasses.

10.25.2. Components

No components.

10.25.3. Model References

No model references.

10.25.4. Attributes

No attributes.

10.26. GlobeValve

Description: A valve that is a valve where the closure member is a disc or piston operating with linear motion normal to the flat or shaped seat (from <http://data.posccaezar.org/rdl/RDS416204>).

RDL: GLOBE VALVE

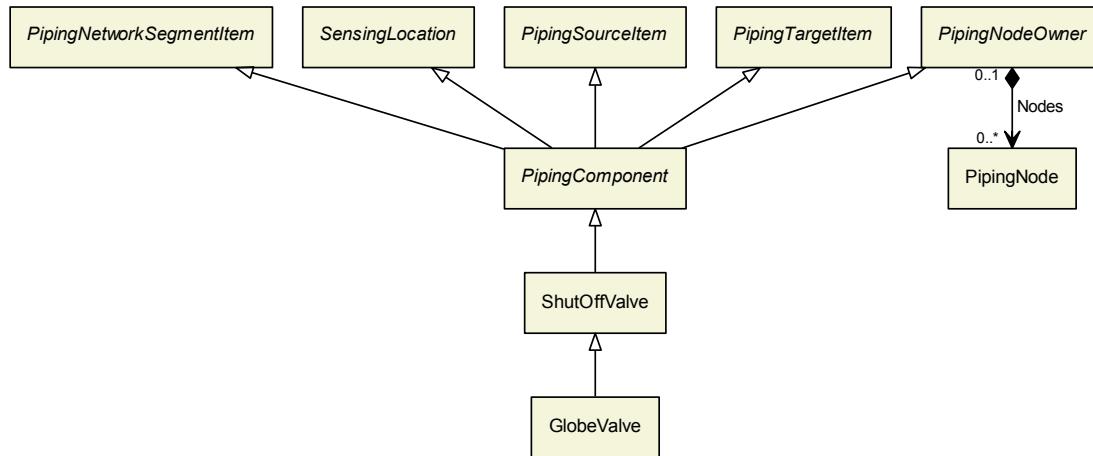
<http://data.posccaesar.org/rdl/RDS416204>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="GlobeValve"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS416204" ...>
...
</PipingComponent>
```

10.26.1. Overview



Superclasses:

- [ShutOffValve](#)

Subclasses: No subclasses.

10.26.2. Components

No components.

10.26.3. Model References

No model references.

10.26.4. Attributes

No attributes.

10.27. Hose

Description: A tubular which is flexible and capable of conveying liquids under pressure (from <http://data.posccaesar.org/rdl/RDS302174>).

RDL: HOSE

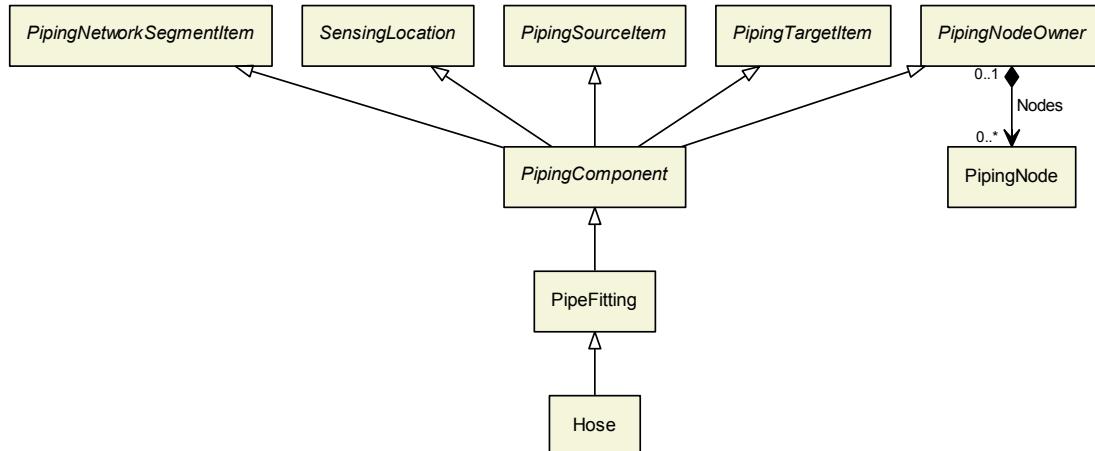
<http://data.posccaesar.org/rdl/RDS302174>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="Hose"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS302174" ...>
...
</PipingComponent>
```

10.27.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.27.2. Components

No components.

10.27.3. Model References

No model references.

10.27.4. Attributes

No attributes.

10.28. IlluminatedSightGlass

Description: An illuminated sight glass.

RDL: ILLUMINATED SIGHT GLASS

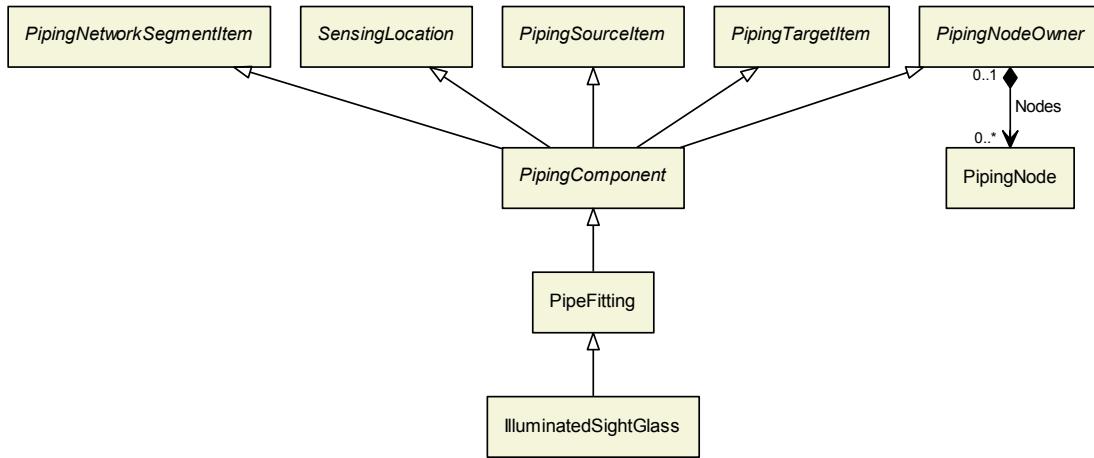
<http://sandbox.dexpi.org/rdl/IlluminatedSightGlass>

Proteus Schema Implementation: Proteus `<PipingComponent>` element with mandatory `ComponentClass` and `ComponentClassUri` attributes.

Example:

```
<PipingComponent
    ComponentClass="IlluminatedSightGlass"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/IlluminatedSightGlass" ...>
...
</PipingComponent>
```

10.28.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.28.2. Components

No components.

10.28.3. Model References

No model references.

10.28.4. Attributes

No attributes.

10.29. InLineMixer

Description: A static mixer that is intended to be supported by connected equipment. Typically supported by piping (from <http://data.posccaesar.org/rdl/RDS43167562195>).

RDL: IN-LINE MIXER

<http://data.posccaesar.org/rdl/RDS43167562195>

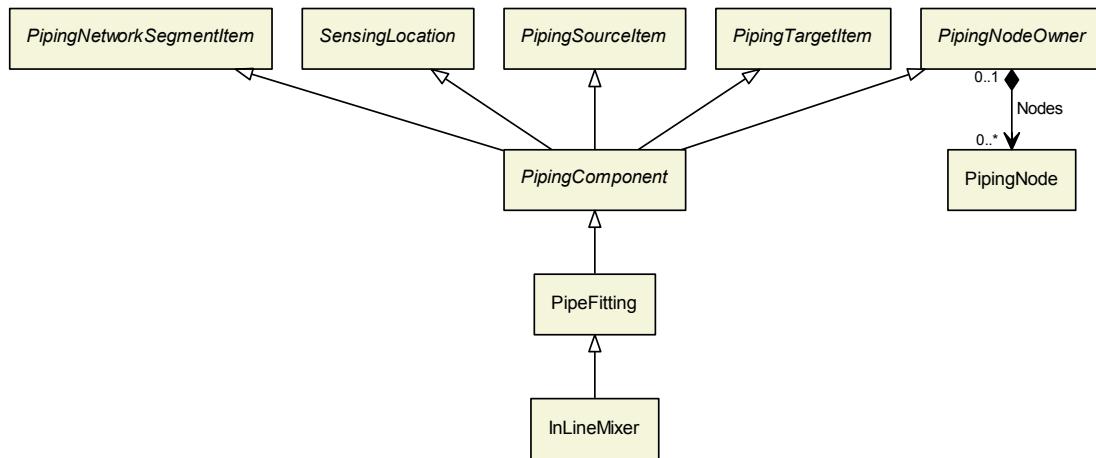
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="In-lineMixer"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS43167562195" ...>
  ...
</PipingComponent>
  
```

10.29.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.29.2. Components

No components.

10.29.3. Model References

No model references.

10.29.4. Attributes

No attributes.

10.30. *InlinePrimaryElement*

Description: An inline primary element.

RDL: INLINE PRIMARY ELEMENT

<http://sandbox.dexpi.org/rdl/InlinePrimaryElement>

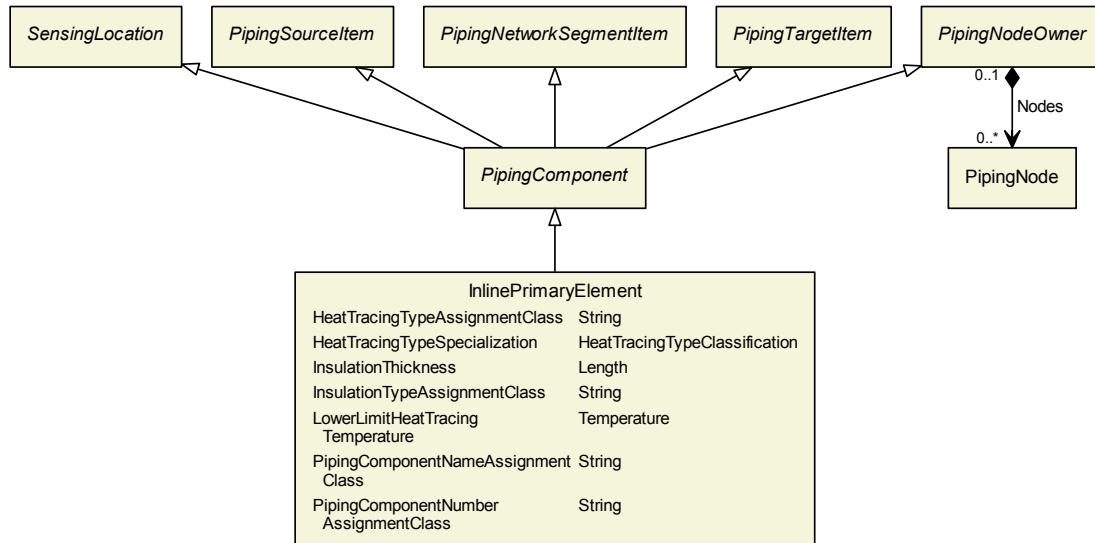
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="InlinePrimaryElement"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/InlinePrimaryElement" ...>
...
</PipingComponent>
  
```

10.30.1. Overview



Superclasses:

- PipingComponent

Subclasses:

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

10.30.2. Components

No components.

10.30.3. Model References

No model references.

10.30.4. Attributes

10.30.4.1. HeatTracingTypeAssignmentClass

Description: The heat tracing type related to 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" />
```

10.30.4.2. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type related to 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" />
```

10.30.4.3. InsulationThickness

Description: The insulation thickness of the [InlinePrimaryElement](#).

RDL: INSULATION THICKNESS

<http://data.posccaesar.org/rdl/RDS4238040>

Attribute Type: [Length](#)

Example Value: 40 mm

Proteus Schema Implementation: GenericAttribute of the [InlinePrimaryElement](#) (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" />
```

10.30.4.4. InsulationTypeAssignmentClass

Description: The identification code for the insulation type related to 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" />
```

10.30.4.5. 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" />
```

10.30.4.6. 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" />
```

10.30.4.7. 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" />
```

10.31. LineBlind

Description: A functional unit used to blind off a process stream (from <http://data.posccaesar.org/rdl/RDS280034>).

RDL: LINE BLIND

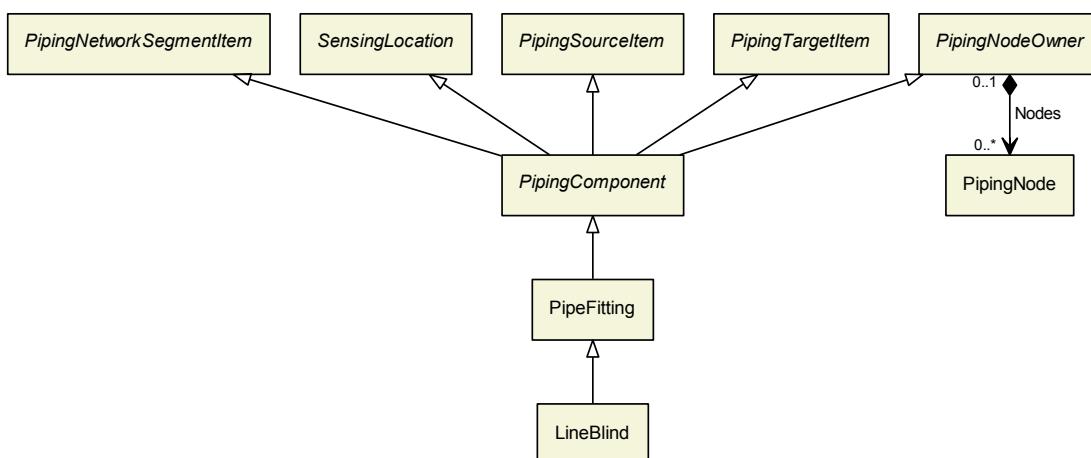
<http://data.posccaesar.org/rdl/RDS280034>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
  ComponentClass="LineBlind"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS280034" ...>
...
</PipingComponent>
```

10.31.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.31.2. Components

No components.

10.31.3. Model References

No model references.

10.31.4. Attributes

No attributes.

10.32. NeedleValve

Description: A globe valve that has a closure member with the shape of a conical plug (needle) which closes into a small seat (from <http://data.posccaesar.org/rdl/RDS421064>).

RDL: NEEDLE VALVE

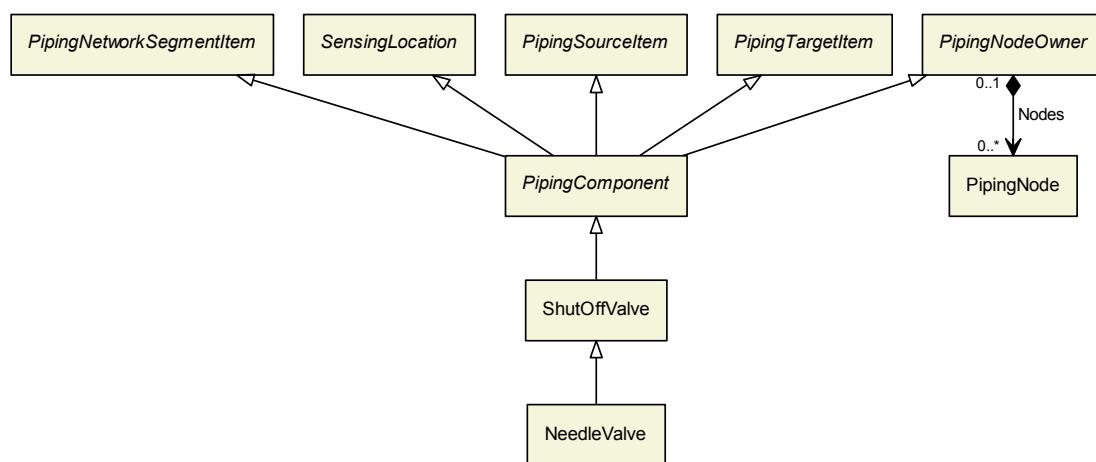
<http://data.posccaesar.org/rdl/RDS421064>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
  ComponentClass="NeedleValve"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS421064" ...>
...
</PipingComponent>
```

10.32.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

10.32.2. Components

No components.

10.32.3. Model References

No model references.

10.32.4. Attributes

No attributes.

10.33. OrificePlate

Description: An 'artefact' that is a thin plate with a specified hole in the middle. It is usually placed in a pipe to measure the rate of fluid flow (from <http://data.posccaesar.org/rdl/RDS418364>).

RDL: ORIFICE PLATE

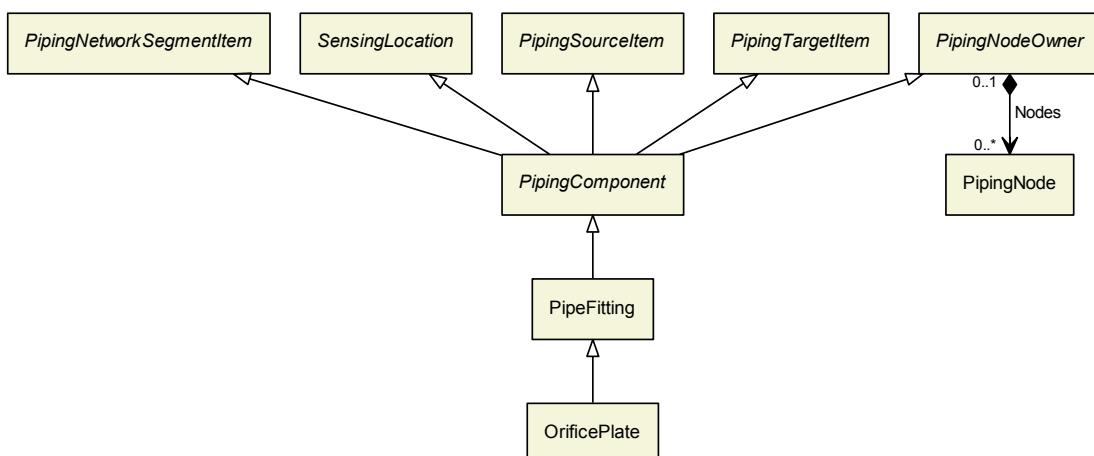
<http://data.posccaesar.org/rdl/RDS418364>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="OrificePlate"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS418364" ...>
...
</PipingComponent>
```

10.33.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.33.2. Components

No components.

10.33.3. Model References

No model references.

10.33.4. Attributes

No attributes.

10.34. Penetration

Description: A device intended to provide a penetration (from <http://data.posccaesar.org/rdl/RDS13068275>).

RDL: PENETRATION

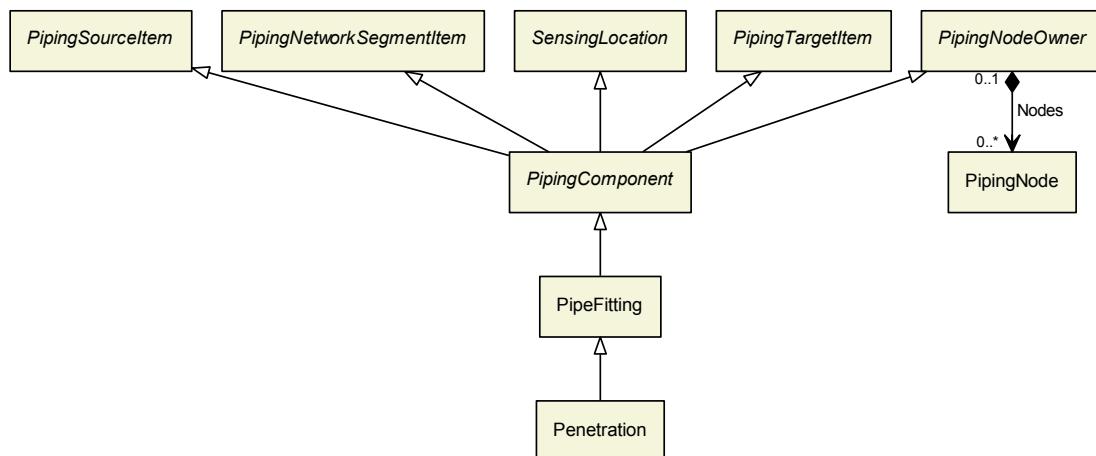
<http://data.posccaesar.org/rdl/RDS13068275>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="Penetration"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS13068275" ...>
...
</PipingComponent>
```

10.34.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

10.34.2. Components

No components.

10.34.3. Model References

No model references.

10.34.4. Attributes

No attributes.

10.35. Pipe

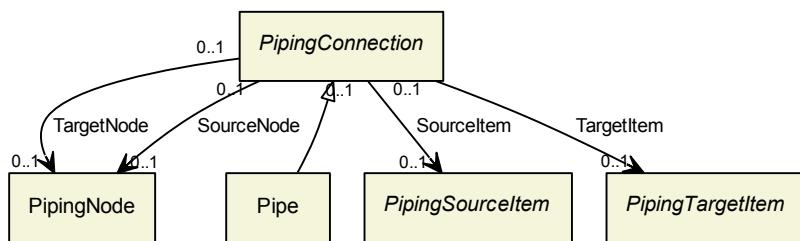
Description: An elementary piece of piping, i.e., not interrupted by any item.

RDL: PIPE

<http://data.posccaesar.org/rdl/RDS421199>

Proteus Schema Implementation: A `Pipe` is implemented as a `<Centerline>` element within a `<PipingNetworkSegment>` element. The `SourceItem`, `SourceNode`, `TargetItem`, and `TargetNode` attributes inherited from `PipingConnection` are not directly implemented in Proteus Schema. They are rather given implicitly by the order of `<Centerline>` and other elements in the `<PipingNetworkSegment>`, and by the `NodeFlowSpecialization` of the `PipingNodes` involved. For details, see the Proteus Schema specification.

10.35.1. Overview



Superclasses:

- `PipingConnection`

Subclasses: No subclasses.

10.35.2. Components

No components.

10.35.3. Model References

No model references.

10.35.4. Attributes

No attributes.

10.36. PipeConnectorSymbol

This class is abstract.

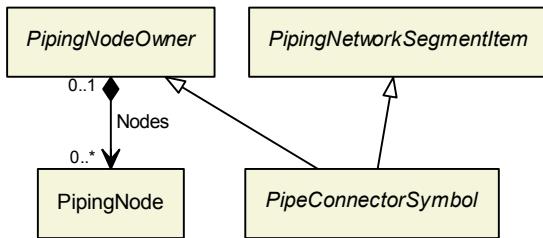
Description: A pipe connector symbol. It is usually drawn as an arrow.

RDL: PIPE CONNECTOR SYMBOL

<http://sandbox.dexpi.org/rdl/PipeConnectorSymbol>

Proteus Schema Implementation: Proteus `<PipeConnectorSymbol>` element with mandatory `ComponentClass` and `ComponentClassUri` attributes.

10.36.1. Overview



Superclasses:

- [PipingNetworkSegmentItem](#)
- [PipingNodeOwner](#)

Subclasses:

- [FlowInPipeConnectorSymbol](#)
- [FlowOutPipeConnectorSymbol](#)

10.36.2. Components

No components.

10.36.3. Model References

No model references.

10.36.4. Attributes

No attributes.

10.37. PipeCoupling

Description: An 'artefact' that is a one-piece cylindrical section intended to join pipes and/or piping components (from <http://data.posccaesar.org/rdl/RDS415664>).

RDL: PIPE COUPLING

<http://data.posccaesar.org/rdl/RDS415664>

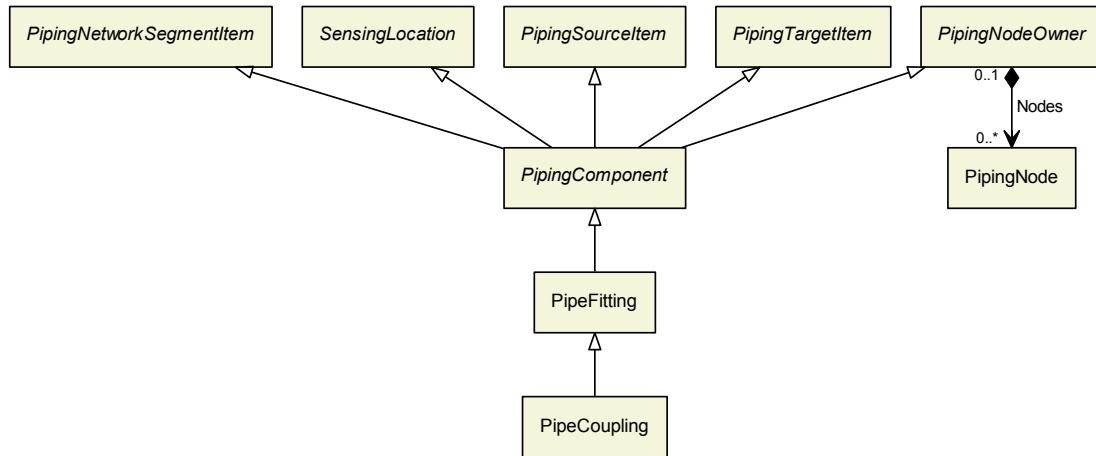
Proteus Schema Implementation: Proteus <*PipingComponent*> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="PipeCoupling"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS415664" ...>
...
</PipingComponent>
  
```

10.37.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.37.2. Components

No components.

10.37.3. Model References

No model references.

10.37.4. Attributes

No attributes.

10.38. PipeFitting

Description: A pipe fitting.

RDL: PIPE FITTING

<http://sandbox.dexpi.org/rdl/PipeFitting>

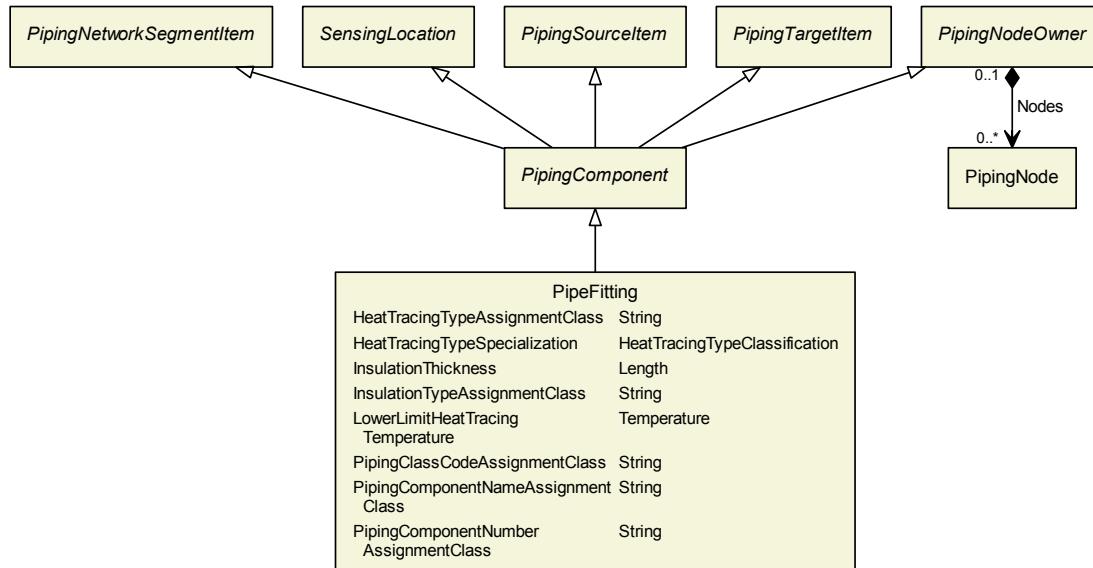
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="PipeFitting"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/PipeFitting" ...>
...
</PipingComponent>
  
```

10.38.1. 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

10.38.2. Components

No components.

10.38.3. Model References

No model references.

10.38.4. Attributes

10.38.4.1. HeatTracingTypeAssignmentClass

Description: The heat tracing type related to 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" />
```

10.38.4.2. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type related to 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" />
```

10.38.4.3. InsulationThickness

Description: The insulation thickness of the [PipeFitting](#).

RDL: INSULATION THICKNESS

<http://data.posccaesar.org/rdl/RDS4238040>

Attribute Type: [Length](#)

Example Value: 40 mm

Proteus Schema Implementation: [GenericAttribute](#) of the [PipeFitting](#) (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" />
```

10.38.4.4. InsulationTypeAssignmentClass

Description: The identification code for the insulation type related to 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" />
```

10.38.4.5. 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" />

```

10.38.4.6. 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" />

```

10.38.4.7. 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" />

```

10.38.4.8. 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" />
```

10.39. PipeFlangeSpacer

Description: A 'spacer' and an 'artefact' that is intended to be inserted between two pipe flanged ends to provide the distance between the flanges required to insert a 'pipe flange spade' (from <http://data.posccaesar.org/rdl/RDS472724>).

RDL: PIPE FLANGE SPACER

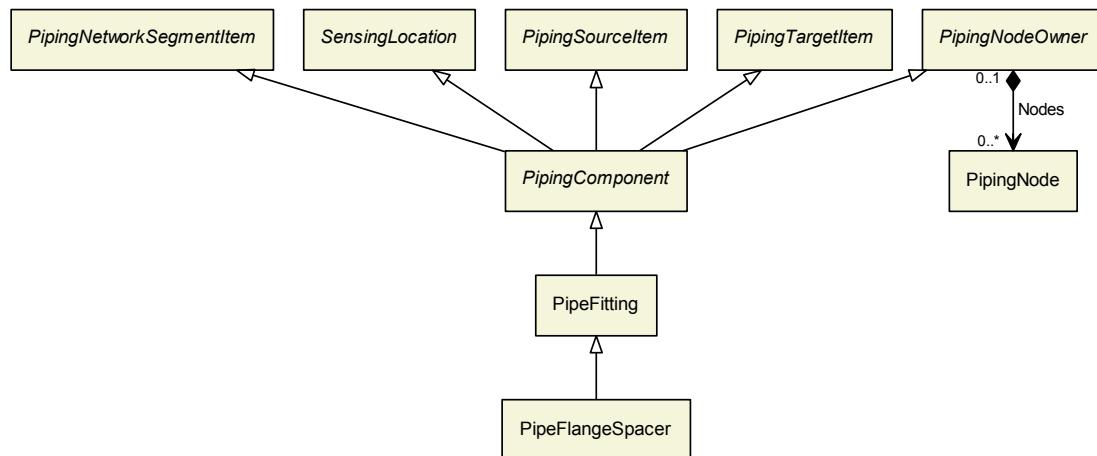
<http://data.posccaesar.org/rdl/RDS472724>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
  ComponentClass="PipeFlangeSpacer"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS472724" ...>
...
</PipingComponent>
```

10.39.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.39.2. Components

No components.

10.39.3. Model References

No model references.

10.39.4. Attributes

No attributes.

10.40. PipeFlangeSpade

Description: A 'line blind' and an 'artefact' that is a circular plate with no central opening and holes to match mating flanged ends. It is also equipped with a handle (from <http://data.posccaesar.org/rdl/RDS472679>).

RDL: PIPE FLANGE SPADE

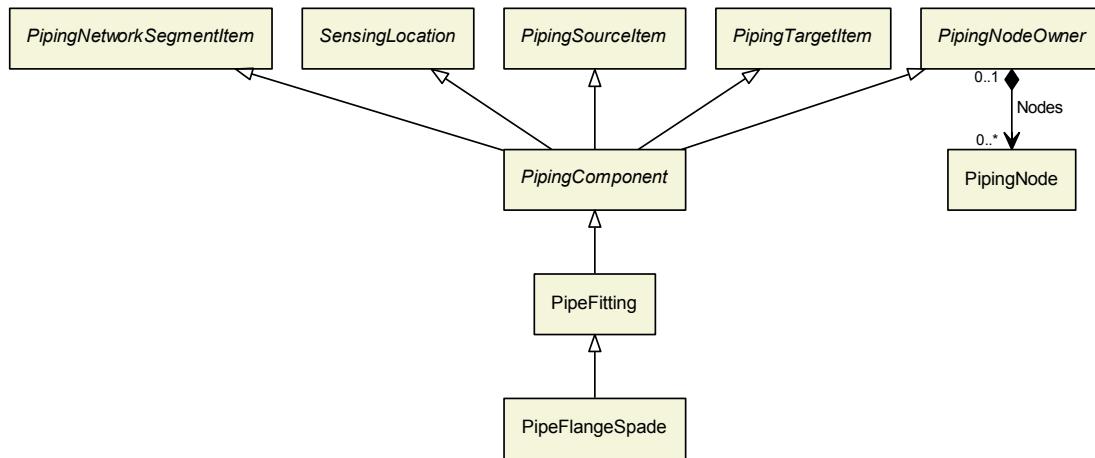
<http://data.posccaesar.org/rdl/RDS472679>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="PipeFlangeSpade"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS472679" ...>
...
</PipingComponent>
```

10.40.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.40.2. Components

No components.

10.40.3. Model References

No model references.

10.40.4. Attributes

No attributes.

10.41. PipeReducer

Description: An 'artefact' that has different nominal pipe size at the two ends, intended to connect pipes or piping components (from <http://data.posccaesar.org/rdl/RDS416294>).

RDL: PIPE REDUCER

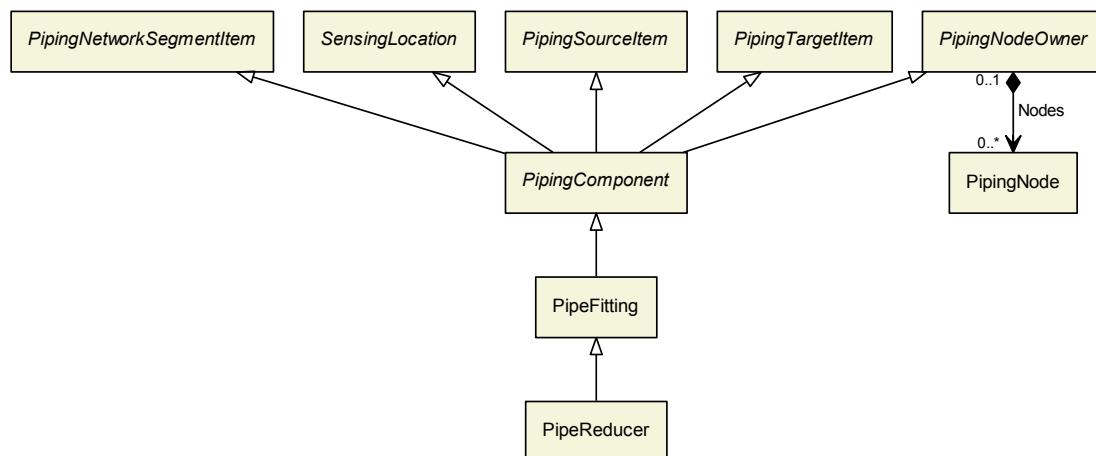
<http://data.posccaesar.org/rdl/RDS416294>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="PipeReducer"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS416294" ...>
...
</PipingComponent>
```

10.41.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.41.2. Components

No components.

10.41.3. Model References

No model references.

10.41.4. Attributes

No attributes.

10.42. PipeTee

Description: An 'artefact' that has three piping ends in T-shape, including a branch at 90 degrees (from <http://data.posccaesar.org/rdl/RDS427724>).

RDL: PIPE TEE

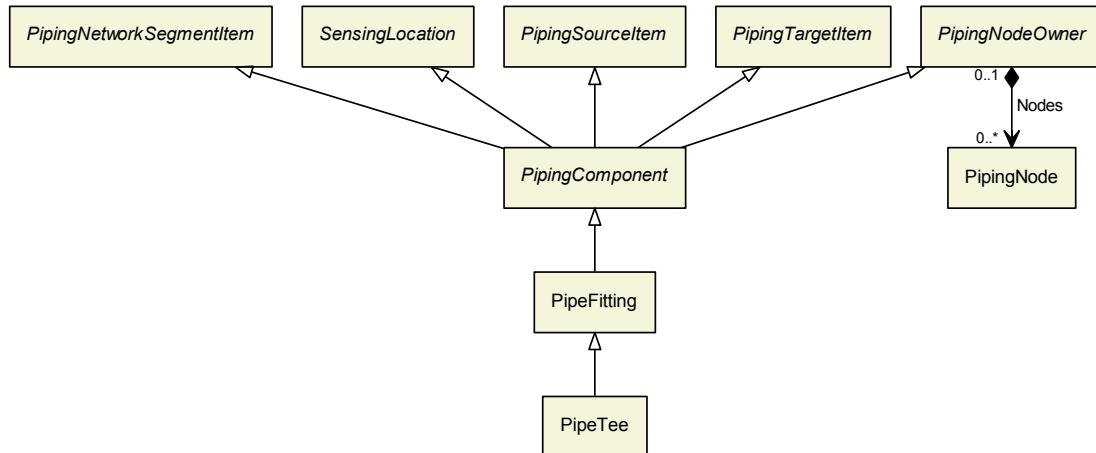
<http://data.posccaesar.org/rdl/RDS427724>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="PipeTee"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS427724" ...>
...
</PipingComponent>
```

10.42.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.42.2. Components

No components.

10.42.3. Model References

No model references.

10.42.4. Attributes

No attributes.

10.43. PipingComponent

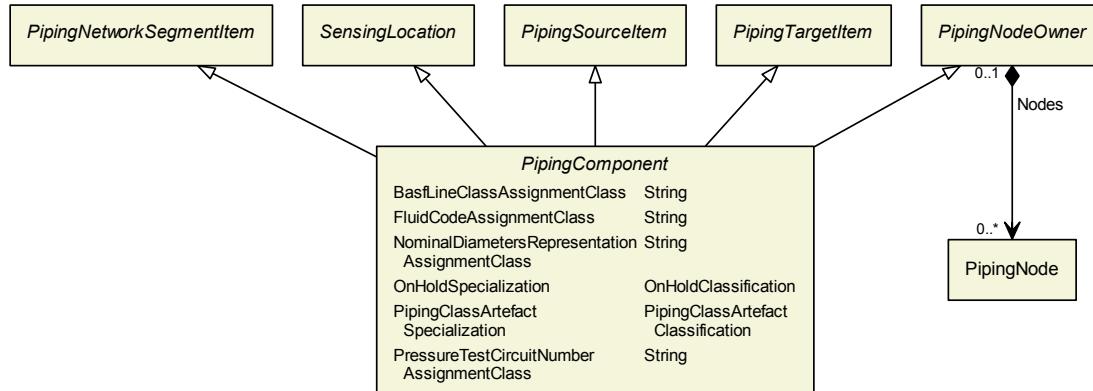
This class is abstract.

Description: A piping component

RDL: -

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

10.43.1. Overview



Superclasses:

- [PipingNetworkSegmentItem](#)
- [PipingNodeOwner](#)
- [PipingSourceItem](#)
- [PipingTargetItem](#)
- [SensingLocation](#)

Subclasses:

- [CheckValve](#)
- [InlinePrimaryElement](#)
- [PipeFitting](#)
- [SafetyValveOrFitting](#)
- [ShutOffValve](#)

10.43.2. Components

No components.

10.43.3. Model References

No model references.

10.43.4. Attributes

10.43.4.1. 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"
  AttributeURL="http://sandbox.dexpi.org/rdl/BasfLineClassAssignmentClass"
  Value="801"
  Format="string" />
```

10.43.4.2. FluidCodeAssignmentClass

Description: The identification code of the fluid related to 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: "MNb"

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

Example:

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

10.43.4.3. 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"/>
```

10.43.4.4. 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"/>
```

10.43.4.5. 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"/>
```

10.43.4.6. 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" />
```

10.44. PipingConnection

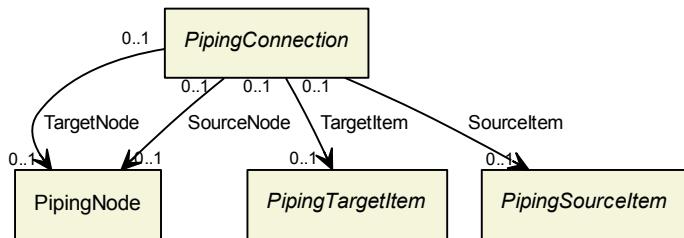
This class is abstract.

Description: An elementary connection between two piping items.

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

10.44.1. Overview



Superclasses: No superclasses.

Subclasses:

- DirectPipingConnection
- Pipe

10.44.2. Components

No components.

10.44.3. Model References

10.44.3.1. Sourceltem

Description: The PipingSourceItem at which the PipingConnection starts.

Type: PipingSourceItem

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus implementation is subclass-specific.

10.44.3.2. SourceNode

Description: The [PipingNode](#) at which the [PipingConnection](#) starts. The **SourceNode** must belong to the [SourceItem](#).

Type: [PipingNode](#)

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus implementation is subclass-specific.

10.44.3.3. TargetItem

Description: The [PipingTargetItem](#) at which the [PipingConnection](#) starts.

Type: [PipingTargetItem](#)

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus implementation is subclass-specific.

10.44.3.4. TargetNode

Description: The [PipingNode](#) at which the [PipingConnection](#) ends. The **TargetNode** must belong to the [TargetItem](#).

Type: [PipingNode](#)

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: Proteus implementation is subclass-specific.

10.44.4. Attributes

No attributes.

10.45. PipingNetworkSegment

Description: The piping limited by a Node and a Break, Node and Connector, two Nodes, two Breaks, two Connectors or a Break and a Connector. The last five providing there are no Breaks or Connectors in between. In the last three cases the Segment will coincide with a Piping Branch (from <http://data.posccaesar.org/rdf/RDS267704>).

RDL: PIPING NETWORK SEGMENT

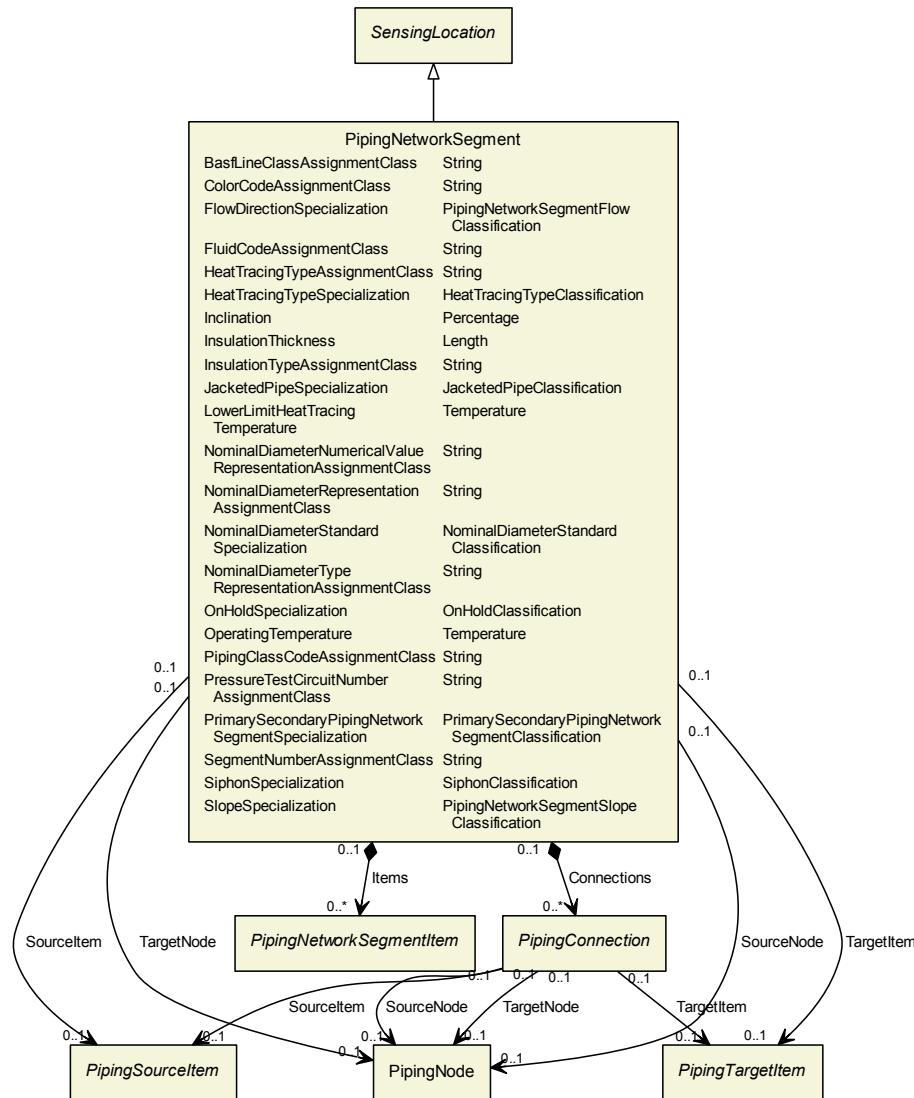
<http://data.posccaesar.org/rdf/RDS267704>

Proteus Schema Implementation: Proteus <PipingNetworkSegment> element with mandatory Component-Class and ComponentClassUri attributes.

Example:

```
<PipingNetworkSegment  
    ComponentClass="PipingNetworkSegment"  
    ComponentClassURI="http://data.posccaesar.org/rdf/RDS267704" ...>  
    ...  
</PipingNetworkSegment>
```

10.45.1. Overview



Superclasses:

- [SensingLocation](#)

Subclasses: No subclasses.

10.45.2. Components

10.45.2.1. Connections

Description: The connections of the [PipingNetworkSegment](#).

Type: [PipingConnection](#)

Cardinality: 0..*

Proteus Schema Implementation: In case the [PipingConnection](#) is a [Pipe](#), the corresponding [`<CenterLine>`](#) element is a child of the [`<PipingNetworkSegment>`](#) element. Two [`<CenterLine>`](#) elements must be separated by at least one element representing a [PipingNetworkSegmentItem](#), e.g., a [`<PipingComponent>`](#).

In case the [PipingConnection](#) is a [DirectPipingConnection](#), there is no corresponding Proteus element. A [DirectPipingConnection](#) is rather given implicitly, e.g., by two successive [`<PipingComponent>`](#) elements.

Example:

```
<PipingNetworkSegment ...>
...
<PipingComponent ... >
...
</PipingComponent>
<CenterLine ... >
<!-- This Centerline is a Pipe. -->
</CenterLine>
<PipingComponent ... >
...
</PipingComponent>
<!-- An implicit DirectPipingConnection! -->
<PipingComponent ... >
...
</PipingComponent>
...
</PipingNetworkSegment>
```

10.45.2.2. Items

Description: The items of the [PipingNetworkSegment](#).

Type: [PipingNetworkSegmentItem](#)

Cardinality: 0..*

Proteus Schema Implementation: The Proteus element for the [PipingNetworkSegmentItem](#) (e.g., a [<PipingComponent>](#) in case of a [CheckValve](#)) is a child of the [<PipingNetworkSegment>](#) element for the [PipingNetworkSegment](#).

Example:

```
<PipingNetworkSegment
    ComponentClass="PipingNetworkSegment"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS267704" ...>
...
<PipingComponent
    ComponentClass="CheckValve"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS292229" ...>
...
</PipingComponent>
...
</PipingNetworkSegment>
```

10.45.3. Model References

10.45.3.1. SourceItem

Description: The item at which the [PipingNetworkSegment](#) starts.

Type: [PipingSourceItem](#)

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: The [SourceItem](#) 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 XML element corresponding to the [SourceItem](#), e.g., a [Nozzle](#) or a [PipingComponent](#).

The example below demonstrates the case that FromID refers to the first item of the PipingNetworkSegment itself.

Example:

```
<PipingNetworkSegment ...>
...
<PipingComponent ID="PipingComponent1" ...>
    <!-- The first item of the PipingNetworkSegment. -->
</PipingComponent>
...
<Connection FromID="PipingComponent1" ... />
...
</PipingNetworkSegment>
```

10.45.3.2. SourceNode

Description: The Node at which the PipingNetworkSegment starts.

Type: PipingNode

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: The SourceNode 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 zero-based index of the <Node> element within the <ConnectionPoints> element associated with the owner of the PipingNode. The owner itself is given by means of the FromID XML attribute of the <Connection> element (see Proteus Schema Implementation of [SourceItem](#)).

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="PipingComponent1" ...>
    <!-- This is the last item of this PipingNetworkSegment. -->
    ...
    <ConnectionPoints NumPoints="3">
        <Node ...> ... </Node>
        <Node ...> ... </Node>
        <Node Type="process" ...>
            <!-- This node has index 2. -->
        </Node>
    </ConnectionPoints>
    ...
</PipingComponent>
...
</PipingNetworkSegment>
...
<PipingNetworkSegment ...>
...
    <Connection FromID="PipingComponent1" FromNode="2" .../>
    ...
</PipingNetworkSegment>
```

10.45.3.3. TargetItem

Description: The item at which the PipingNetworkSegment ends.

Type: PipingTargetItem

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: The TargetItem 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 XML element corresponding to the TargetItem, e.g., a Nozzle or a PipingComponent. The example below demonstrates the case that ToID refers to the last item of the PipingNetworkSegment itself.

Example:

```
<PipingNetworkSegment ...>
...
<PipingComponent ID="PipingComponent1" ...>
    <!-- The last item of the PipingNetworkSegment. -->
</PipingComponent>
...
<Connection ToID="PipingComponent1" ... />
...
</PipingNetworkSegment>
```

10.45.3.4. TargetNode

Description: The Node at which the PipingNetworkSegment ends.

Type: PipingNode

Source Multiplicity: 0..1

Target Multiplicity: 0..1

Proteus Schema Implementation: The TargetNode 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 zero-based index of the <Node> element within the <ConnectionPoints> element associated with the owner of the PipingNode. The owner itself is given by means of the ToID XML attribute of the <Connection> element (see Proteus Schema Implementation of TargetItem).

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="PipingComponent1" ...>
    <!-- This is the last item of this PipingNetworkSegment. -->
...
<ConnectionPoints NumPoints="3" >
    <Node ...> ... </Node>
    <Node ...> ... </Node>
    <Node Type="process" ...>
        <!-- This node has index 2. -->
    </Node>
</ConnectionPoints>
```

```

...
</PipingComponent>
...
<Connection ToID="PipingComponent1" ToNode="2" .../>
...
</PipingNetworkSegment>

```

10.45.4. Attributes

10.45.4.1. 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" />

```

10.45.4.2. 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" />

```

10.45.4.3. 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" ...>
```

10.45.4.4. FluidCodeAssignmentClass

Description: The identification code of the fluid related to 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: "MNb"

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

Example:

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

10.45.4.5. HeatTracingTypeAssignmentClass

Description: The heat tracing type related to 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" />
```

10.45.4.6. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type related to 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"/>
```

10.45.4.7. 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"/>
```

10.45.4.8. InsulationThickness

Description: The insulation thickness of the [PipingNetworkSegment](#).

RDL: INSULATION THICKNESS

<http://data.posccaesar.org/rdl/RDS4238040>

Attribute Type: Length

Example Value: 40 mm

Proteus Schema Implementation: GenericAttribute of the [PipingNetworkSegment](#) (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" />
```

10.45.4.9. InsulationTypeAssignmentClass

Description: The identification code for the insulation type related to 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" />
```

10.45.4.10. 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" />
```

10.45.4.11. 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" />
```

10.45.4.12. NominalDiameterNumericalValueRepresentationAssignmentClass

Description: A readable representation of the numerical value of the nominal diameter of the PipingNetworkSegment. 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" />
```

10.45.4.13. NominalDiameterRepresentationAssignmentClass

Description: A readable representation of the nominal diameter of the PipingNetworkSegment. 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" />
```

10.45.4.14. 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"/>
```

10.45.4.15. NominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter of the [PipingNetworkSegment](#). 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"/>
```

10.45.4.16. 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" />
```

10.45.4.17. 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" />
```

10.45.4.18. 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" />
```

10.45.4.19. 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"/>
```

10.45.4.20. 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"/>
```

10.45.4.21. 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"/>
```

10.45.4.22. 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"/>
```

10.45.4.23. 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"/>
```

10.46. PipingNetworkSegmentItem

This class is abstract.

Description: An item that can be part of a [PipingNetworkSegment](#).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

10.46.1. Overview

PipingNetworkSegmentItem

Superclasses: No superclasses.

Subclasses:

- [PipeConnectorSymbol](#)
- [PipingComponent](#)

10.46.2. Components

No components.

10.46.3. Model References

No model references.

10.46.4. Attributes

No attributes.

10.47. PipingNetworkSystem

Description: A fluid system of interconnected piping network branches limited by Unit Operation Inlet/Outlet and Piping Network Terminators. In this context Piping includes e.g. plumbing and tubing (from <http://data.posccaesar.org/rdl/RDS270359>).

RDL: PIPING NETWORK SYSTEM

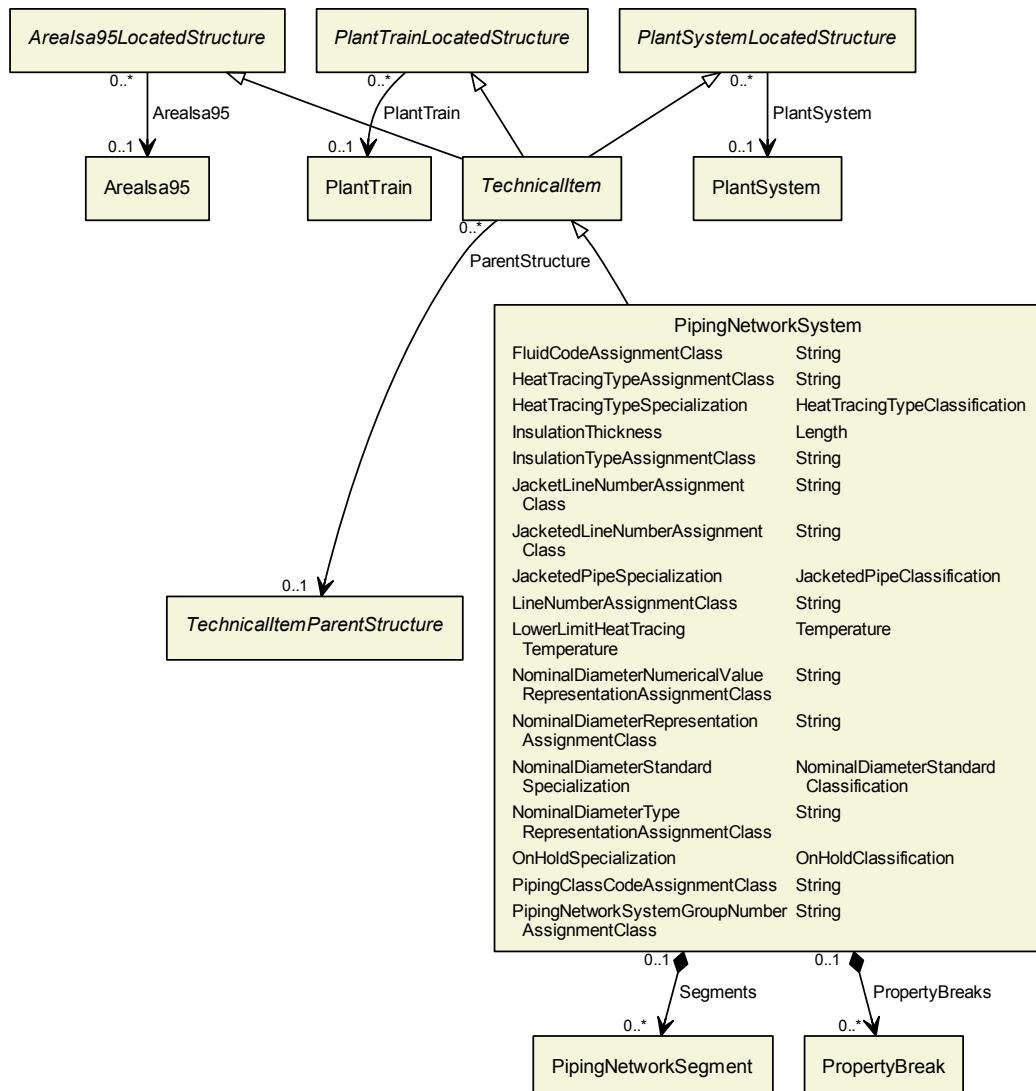
<http://data.posccaesar.org/rdl/RDS270359>

Proteus Schema Implementation: Proteus <PipingNetworkSystem> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingNetworkSystem  
    ComponentClass="PipingNetworkSystem"  
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS270359" ...>  
    ...  
</PipingNetworkSystem>
```

10.47.1. Overview



Superclasses:

- [TechnicalItem](#)

Subclasses: No subclasses.

10.47.2. Components

10.47.2.1. PropertyBreaks

Description: The [PropertyBreaks](#) of the [PipingNetworkSystem](#).

Type: [PropertyBreak](#)

Cardinality: **0..***

Proteus Schema Implementation: The `<PropertyBreak>` element for the [PropertyBreak](#) is a child of the `<PipingNetworkSystem>` element for the [PipingNetworkSystem](#).

Example:

```
<PipingNetworkSystem
  ComponentClass="PipingNetworkSystem"
```

```

ComponentClassURI="http://data.posccaesar.org/rdl/RDS270359" ...>
...
<PropertyBreak
  ComponentClass="PropertyBreak"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/PropertyBreak" ...>
...
</PropertyBreak>
...
</PipingNetworkSystem>
```

10.47.2.2. Segments

Description: The segments of the [PipingNetworkSystem](#).

Type: [PipingNetworkSegment](#)

Cardinality: 0..*

Proteus Schema Implementation: The [<PipingNetworkSegment>](#) element for the [PipingNetworkSegment](#) is a child of the [<PipingNetworkSystem>](#) element for the [PipingNetworkSystem](#).

Example:

```

<PipingNetworkSystem
  ComponentClass="PipingNetworkSystem"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS270359" ...>
...
<PipingNetworkSegment
  ComponentClass="PipingNetworkSegment"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS267704" ...>
...
</PipingNetworkSegment>
...
</PipingNetworkSystem>
```

10.47.3. Model References

No model references.

10.47.4. Attributes

10.47.4.1. FluidCodeAssignmentClass

Description: The identification code of the fluid related to 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: "MNb"

Proteus Schema Implementation: [GenericAttribute](#) of the [PipingNetworkSystem](#) (use case [String](#)).

Example:

```

<GenericAttribute
  Name="FluidCodeAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/FluidCodeAssignmentClass"
  Value="MNb"
```

```
Format="string" />
```

10.47.4.2. HeatTracingTypeAssignmentClass

Description: The heat tracing type related to 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" />
```

10.47.4.3. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type related to 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" />
```

10.47.4.4. InsulationThickness

Description: The insulation thickness of the [PipingNetworkSystem](#).

RDL: INSULATION THICKNESS

<http://data.posccaesar.org/rdl/RDS4238040>

Attribute Type: Length

Example Value: 40 mm

Proteus Schema Implementation: GenericAttribute of the [PipingNetworkSystem](#) (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" />
```

10.47.4.5. InsulationTypeAssignmentClass

Description: The identification code for the insulation type related to 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" />
```

10.47.4.6. 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" />
```

10.47.4.7. 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" />
```

10.47.4.8. 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" />
```

10.47.4.9. 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" />
```

10.47.4.10. 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" />
```

10.47.4.11. NominalDiameterNumericalValueRepresentationAssignmentClass

Description: A readable representation of the numerical value of the nominal diameter of the [PipingNetworkSystem](#). 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" />
```

10.47.4.12. NominalDiameterRepresentationAssignmentClass

Description: A readable representation of the nominal diameter of the [PipingNetworkSystem](#). 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" />
```

10.47.4.13. 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"/>
```

10.47.4.14. NominalDiameterTypeRepresentationAssignmentClass

Description: A readable representation of the type of the nominal diameter of the [PipingNetworkSystem](#). 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"/>
```

10.47.4.15. 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"/>
```

10.47.4.16. 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"/>
```

10.47.4.17. 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"/>
```

10.48. PipingSourceItem

This class is abstract.

Description: An item that can be the source of a [PipingConnection](#) (attribute [SourceItem](#)) or a [PipingNetworkSegment](#) (attribute [SourceItem](#)).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

10.48.1. Overview

PipingSourceItem

Superclasses: No superclasses.

Subclasses:

- [FlowInPipeConnectorSymbol](#)
- [Nozzle](#)
- [PipingComponent](#)
- [PropertyBreak](#)

10.48.2. Components

No components.

10.48.3. Model References

No model references.

10.48.4. Attributes

No attributes.

10.49. PipingTargetItem

This class is abstract.

Description: An item that can be the target of a [PipingConnection](#) (attribute [TargetItem](#)) or a [PipingNetworkSegment](#) (attribute [TargetItem](#)).

RDL: -

Proteus Schema Implementation: Proteus implementation is subclass-specific.

10.49.1. Overview

PipingTargetItem

Superclasses: No superclasses.

Subclasses:

- [FlowOutPipeConnectorSymbol](#)
- [Nozzle](#)
- [PipingComponent](#)
- [PropertyBreak](#)

10.49.2. Components

No components.

10.49.3. Model References

No model references.

10.49.4. Attributes

No attributes.

10.50. PlugValve

Description: A rotary valve that has a quarter turn action in which the closure member is a cylindrical or tapered plug which operates by rotating on its axis and sealing against a downstream seat (from <http://data.posccaesar.org/rdl/RDS421109>).

RDL: PLUG VALVE

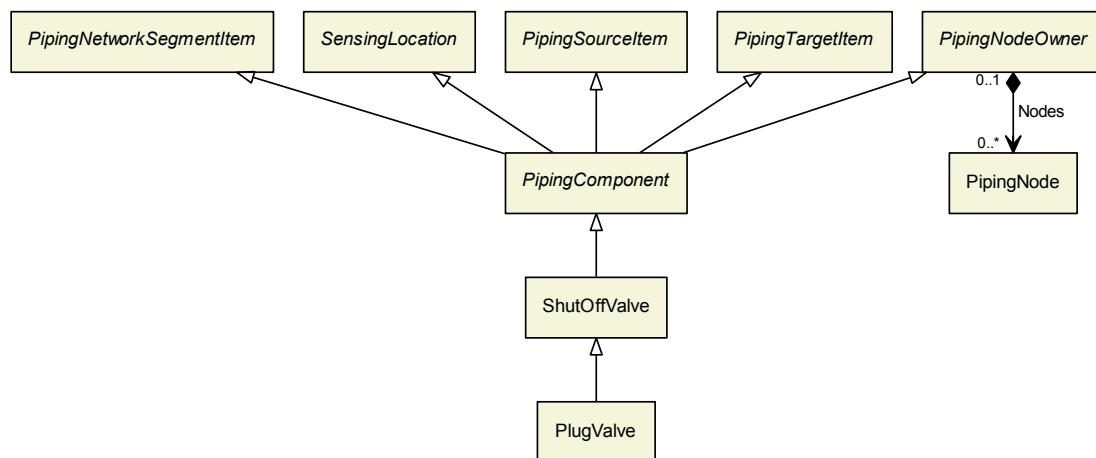
<http://data.posccaesar.org/rdl/RDS421109>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="PlugValve"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS421109" ...>
...
</PipingComponent>
```

10.50.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

10.50.2. Components

No components.

10.50.3. Model References

No model references.

10.50.4. Attributes

No attributes.

10.51. PositiveDisplacementFlowMeter

Description: A flow meter that measures the volumetric flow rate of a liquid or gas by separating the flow stream into known volumes and counting them over time (from <http://data.posccaesar.org/rdl/RDS418094>).

RDL: POSITIVE DISPLACEMENT FLOW METER

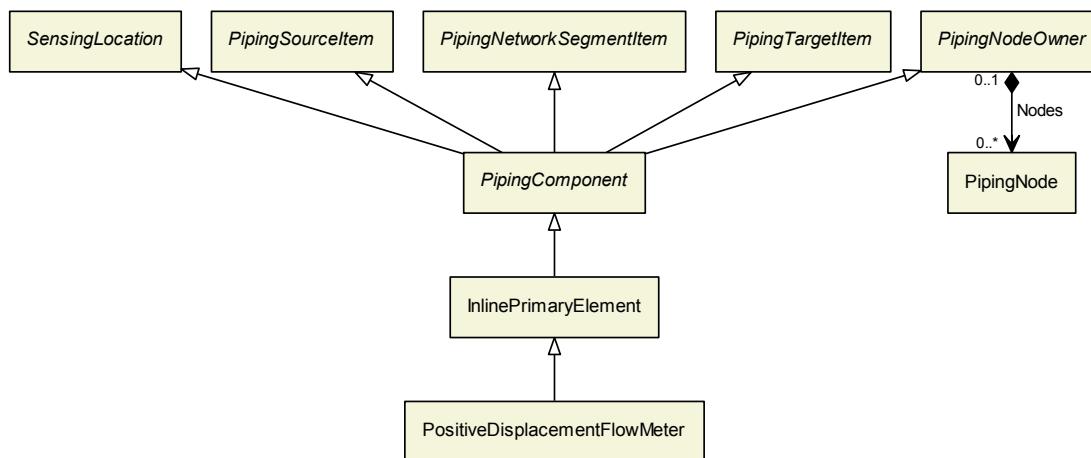
<http://data.posccaesar.org/rdl/RDS418094>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="PositiveDisplacementFlowMeter"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS418094" ...>
...
</PipingComponent>
```

10.51.1. Overview



Superclasses:

- [InlinePrimaryElement](#)

Subclasses: No subclasses.

10.51.2. Components

No components.

10.51.3. Model References

No model references.

10.51.4. Attributes

No attributes.

10.52. PropertyBreak

Description: A symbol indicating a change in the piping properties.

RDL: PROPERTY BREAK

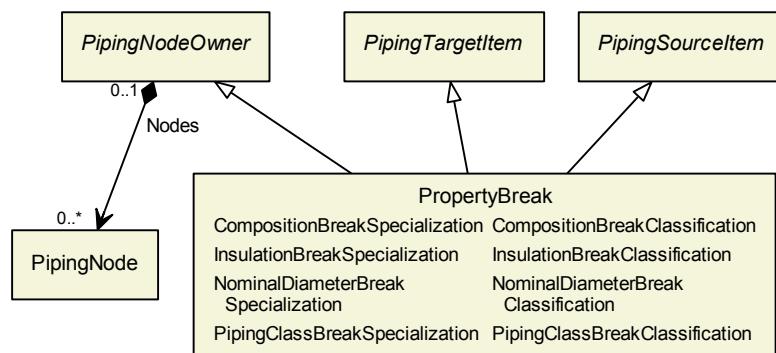
<http://sandbox.dexpi.org/rdl/PropertyBreak>

Proteus Schema Implementation: Proteus <PropertyBreak> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PropertyBreak
    ComponentClass="PropertyBreak"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/PropertyBreak" ...>
...
</PropertyBreak>
```

10.52.1. Overview



Superclasses:

- PipingNodeOwner
- PipingSourceItem
- PipingTargetItem

Subclasses: No subclasses.

10.52.2. Components

No components.

10.52.3. Model References

No model references.

10.52.4. Attributes

10.52.4.1. 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"/>
```

10.52.4.2. 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: insulation 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"/>
```

10.52.4.3. 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"/>
```

10.52.4.4. 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" />
```

10.53. RuptureDisc

Description: A physical object that is designed to burst at a certain excess pressure. It is part of a rupture disc assembly (from <http://data.posccaesar.org/rdl/RDS8372601>).

RDL: RUPTURE DISC

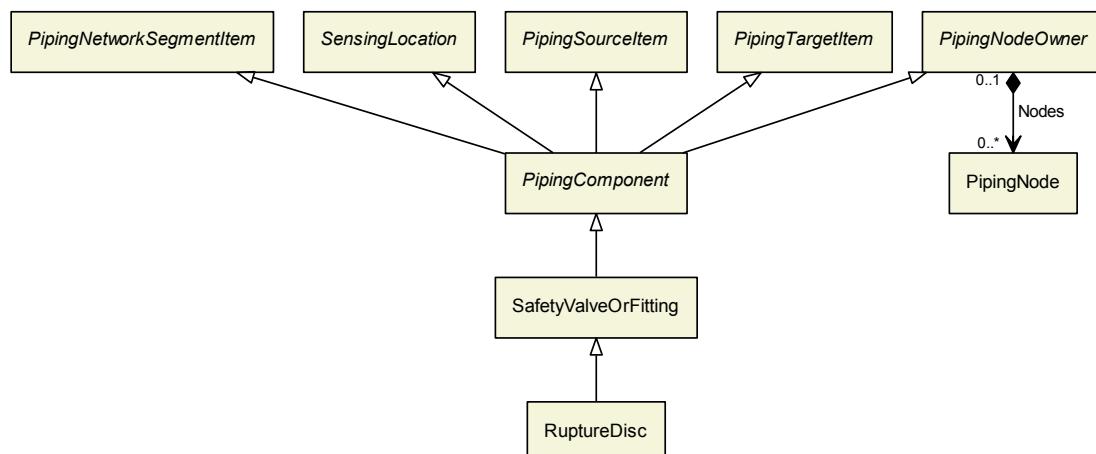
<http://data.posccaesar.org/rdl/RDS8372601>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
  ComponentClass="RuptureDisc"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS8372601" ...>
...
</PipingComponent>
```

10.53.1. Overview



Superclasses:

- SafetyValveOrFitting

Subclasses: No subclasses.

10.53.2. Components

No components.

10.53.3. Model References

No model references.

10.53.4. Attributes

No attributes.

10.54. SafetyValveOrFitting

Description: A safety valve or fitting.

RDL: SAFETY VALVE OR FITTING

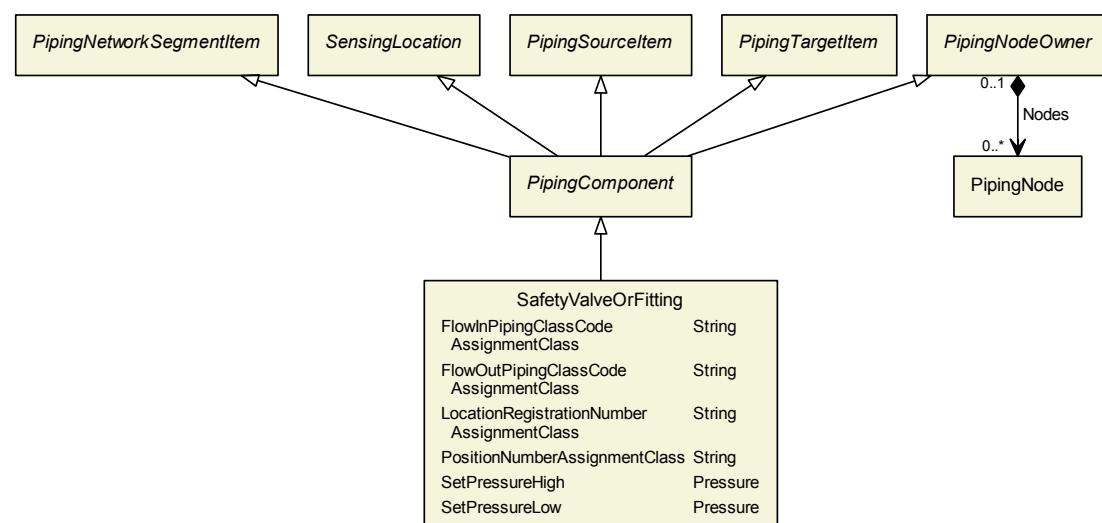
<http://sandbox.dexpi.org/rdl/SafetyValveOrFitting>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
    ComponentClass="SafetyValveOrFitting"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/SafetyValveOrFitting" ...>
...
</PipingComponent>
```

10.54.1. Overview



Superclasses:

- PipingComponent

Subclasses:

- BreatherValve
- FlameArrestor
- RuptureDisc
- SpringLoadedAngleGlobeSafetyValve
- SpringLoadedGlobeSafetyValve

10.54.2. Components

No components.

10.54.3. Model References

No model references.

10.54.4. Attributes

10.54.4.1. 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"/>
```

10.54.4.2. 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"/>
```

10.54.4.3. 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" />
```

10.54.4.4. 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" />
```

10.54.4.5. 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" />
```

10.54.4.6. 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" />
```

10.55. ShutOffValve

Description: A shut off valve.

RDL: SHUT OFF VALVE

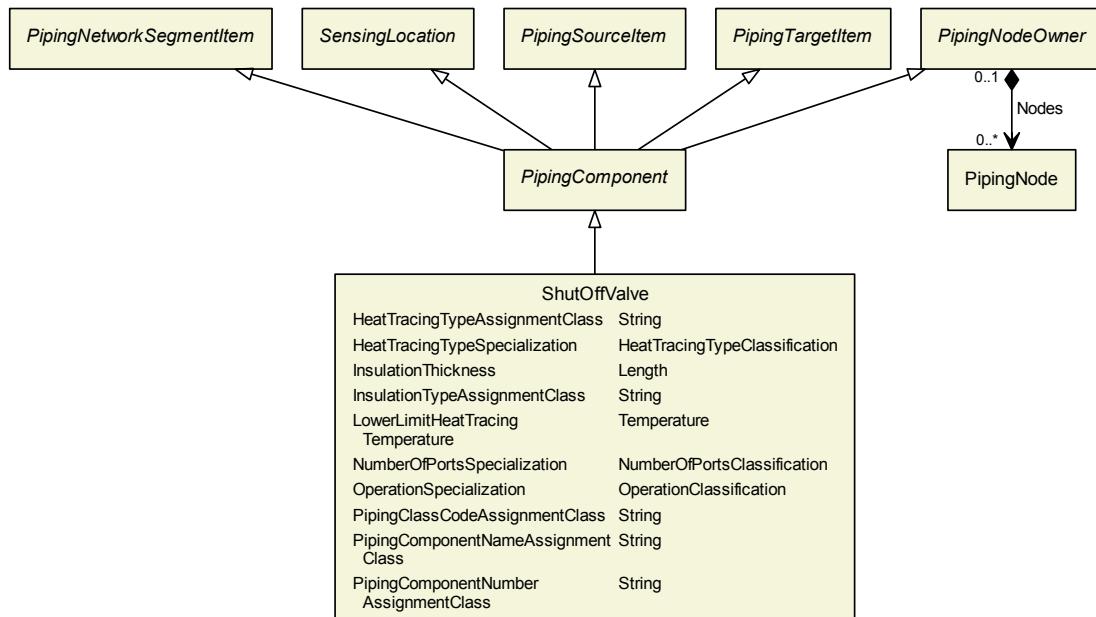
<http://sandbox.dexpi.org/rdl/ShutOffValve>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
  ComponentClass="ShutOffValve"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/ShutOffValve" ...>
...
</PipingComponent>
```

10.55.1. Overview



Superclasses:

- [PipingComponent](#)

Subclasses:

- [AngleBallValve](#)
- [AngleGlobeValve](#)
- [AnglePlugValve](#)
- [AngleValve](#)
- [BallValve](#)
- [ButterflyValve](#)
- [GateValve](#)
- [GlobeValve](#)
- [NeedleValve](#)
- [PlugValve](#)
- [StraightwayValve](#)

10.55.2. Components

No components.

10.55.3. Model References

No model references.

10.55.4. Attributes

10.55.4.1. HeatTracingTypeAssignmentClass

Description: The heat tracing type related to 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" />
```

10.55.4.2. HeatTracingTypeSpecialization

Description: A specialization indicating the heat tracing type related to 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" />
```

10.55.4.3. InsulationThickness

Description: The insulation thickness of the [ShutOffValve](#).

RDL: INSULATION THICKNESS

<http://data.posccaesar.org/rdl/RDS4238040>

Attribute Type: [Length](#)

Example Value: 40 mm

Proteus Schema Implementation: [GenericAttribute](#) of the [ShutOffValve](#) (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" />

```

10.55.4.4. InsulationTypeAssignmentClass

Description: The identification code for the insulation type related to 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" />

```

10.55.4.5. 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" />

```

10.55.4.6. 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" />
```

10.55.4.7. 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" />
```

10.55.4.8. 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" />
```

10.55.4.9. 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" />
```

10.55.4.10. 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" />
```

10.56. SightGlass

Description: A physical object that is transparent and intended for viewing a vessel or piping system interior (from <http://data.posccaesar.org/rdl/RDS648674>).

RDL: SIGHT GLASS

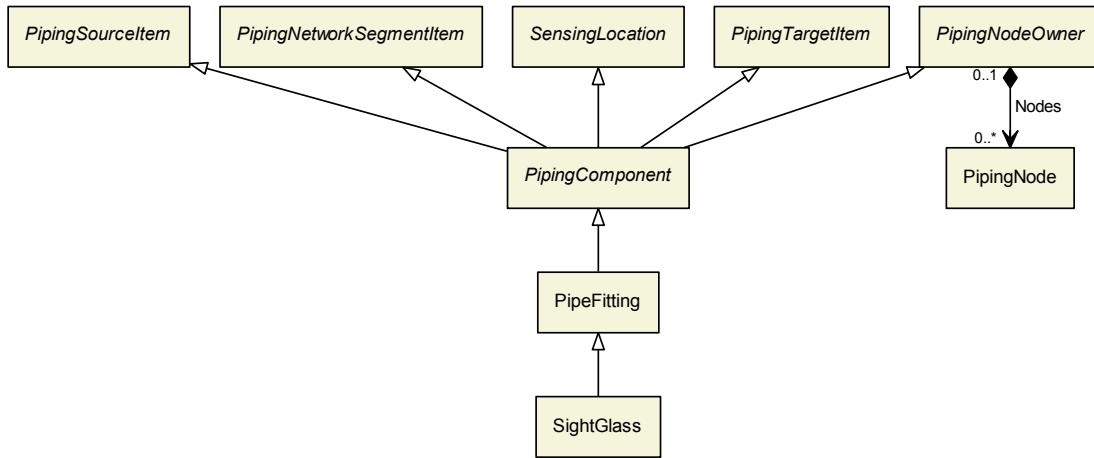
<http://data.posccaesar.org/rdl/RDS648674>

Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<PipingComponent
  ComponentClass="SightGlass"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS648674" ...>
...
</PipingComponent>
```

10.56.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.56.2. Components

No components.

10.56.3. Model References

No model references.

10.56.4. Attributes

No attributes.

10.57. Silencer

Description: A device intended to reduce a noise level (from <http://data.posccaesar.org/rdl/RDS1049368591>).

RDL: SILENCER

<http://data.posccaesar.org/rdl/RDS1049368591>

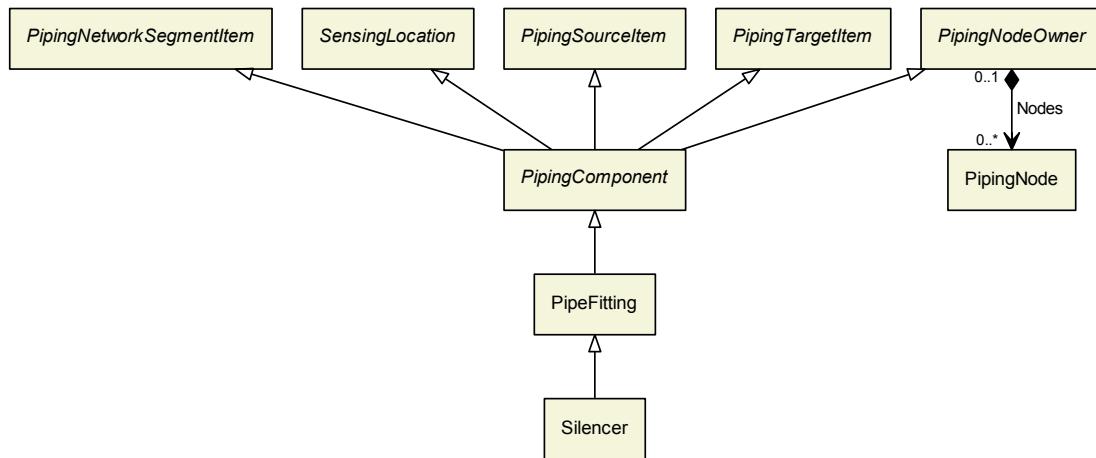
Proteus Schema Implementation: Proteus <**PipingComponent**> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="Silencer"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS1049368591" ...>
...
</PipingComponent>
  
```

10.57.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.57.2. Components

No components.

10.57.3. Model References

No model references.

10.57.4. Attributes

No attributes.

10.58. SpringLoadedAngleGlobeSafetyValve

Description: A spring-loaded angle globe safety valve.

RDL: SPRING LOADED ANGLE GLOBE SAFETY VALVE

<http://sandbox.dexpi.org/rdl/SpringLoadedAngleGlobeSafetyValve>

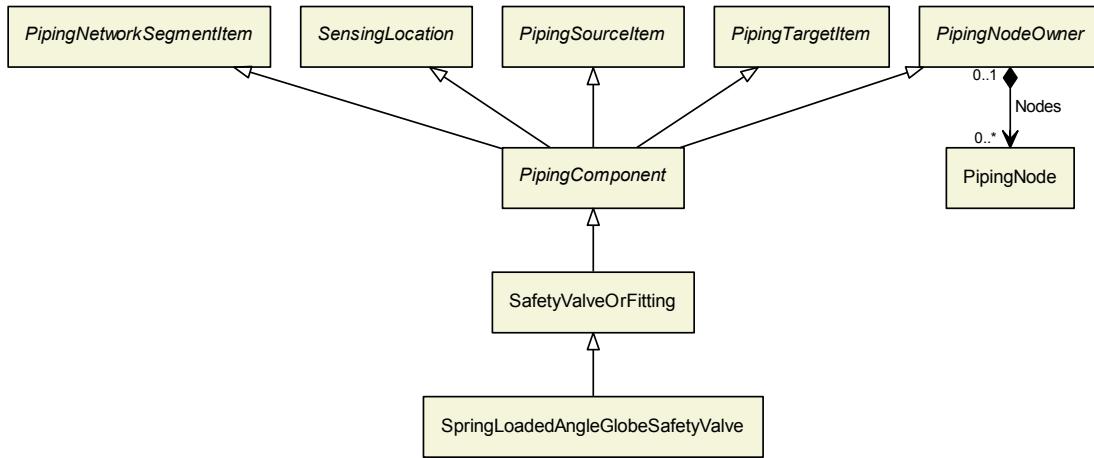
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
    ComponentClass="SpringLoadedAngleGlobeSafetyValve"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/SpringLoadedAngleGlobeSafetyValve" ...>
...
</PipingComponent>
  
```

10.58.1. Overview



Superclasses:

- [SafetyValveOrFitting](#)

Subclasses: No subclasses.

10.58.2. Components

No components.

10.58.3. Model References

No model references.

10.58.4. Attributes

No attributes.

10.59. SpringLoadedGlobeSafetyValve

Description: A spring-loaded globe safety valve.

RDL: SPRING LOADED GLOBE SAFETY VALVE

<http://sandbox.dexpi.org/rdl/SpringLoadedGlobeSafetyValve>

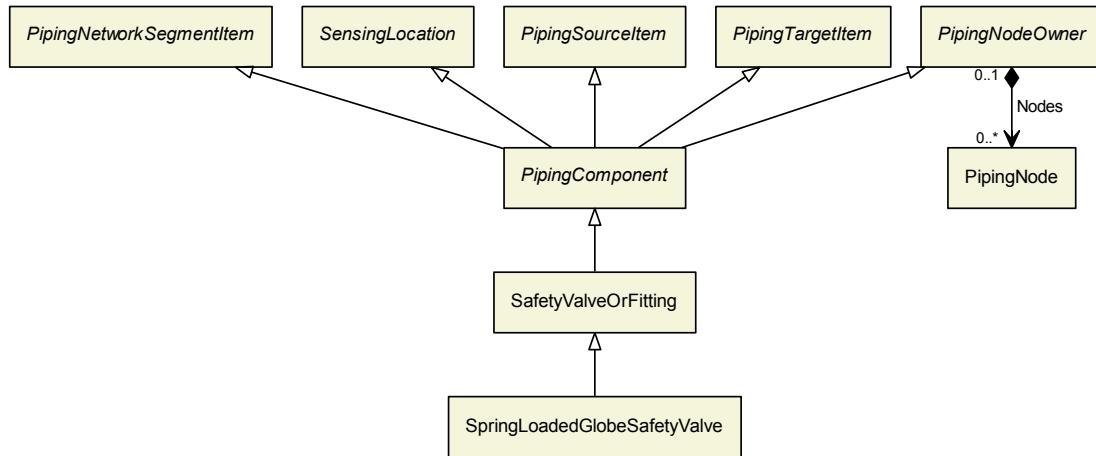
Proteus Schema Implementation: Proteus <`PipingComponent`> element with mandatory `ComponentClass` and `ComponentClassUri` attributes.

Example:

```

<PipingComponent
    ComponentClass="SpringLoadedGlobeSafetyValve"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/SpringLoadedGlobeSafetyValve" ...>
...
</PipingComponent>
  
```

10.59.1. Overview



Superclasses:

- [SafetyValveOrFitting](#)

Subclasses: No subclasses.

10.59.2. Components

No components.

10.59.3. Model References

No model references.

10.59.4. Attributes

No attributes.

10.60. SteamTrap

Description: A trap that consists of a chamber into which condensed steam from steam pipes etc. is allowed to drain, and which automatically ejects it without permitting the escape of steam (from <http://data.posccaesar.org/rdl/RDS5782388>).

RDL: STEAM TRAP

<http://data.posccaesar.org/rdl/RDS5782388>

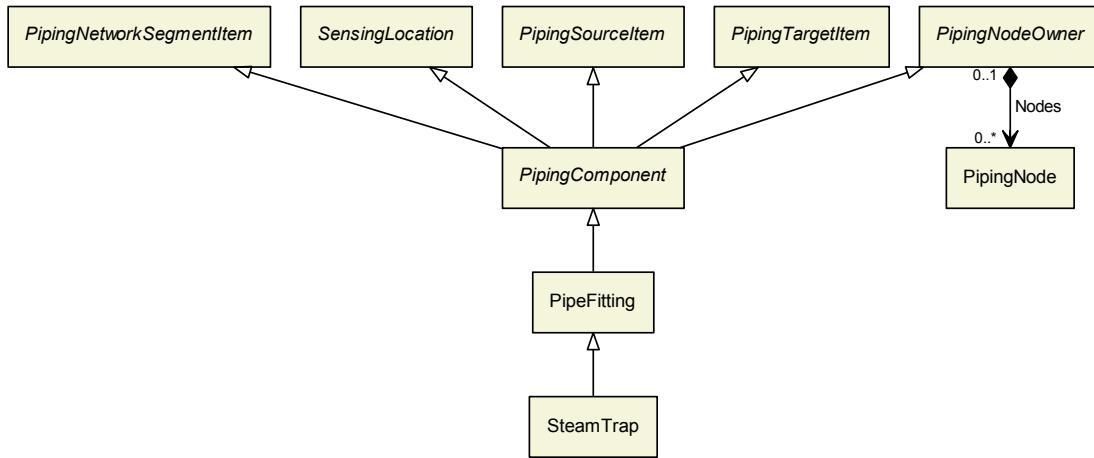
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="SteamTrap"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS5782388" ...>
...
</PipingComponent>
  
```

10.60.1. Overview



Superclasses:

- PipeFitting

Subclasses: No subclasses.

10.60.2. Components

No components.

10.60.3. Model References

No model references.

10.60.4. Attributes

No attributes.

10.61. StraightwayValve

Description: A valve that is straight, i.e. the centerlines perpendicular to the ends are in-line with no offset (from <http://data.posccaesar.org/rdl/RDS9390905>).

RDL: STRAIGHTWAY VALVE

<http://data.posccaesar.org/rdl/RDS9390905>

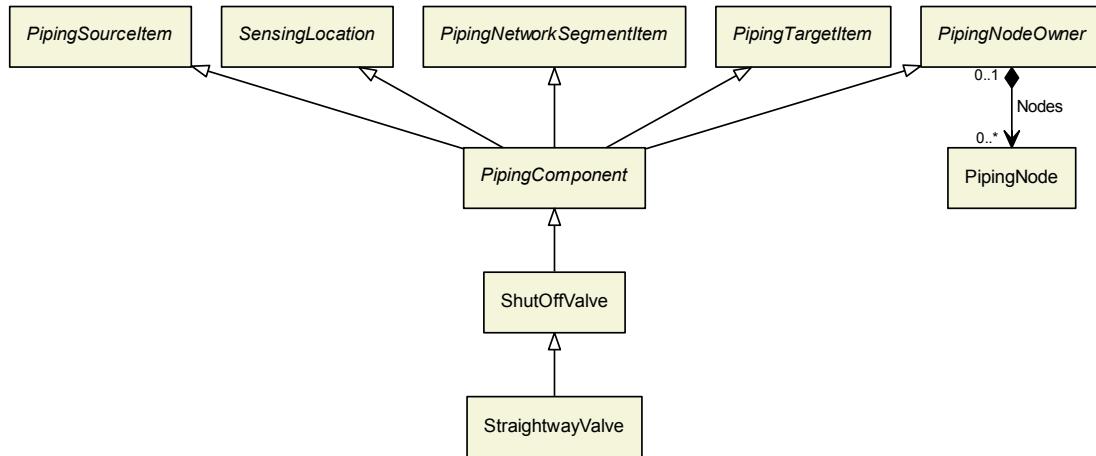
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="StraightwayValve"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS9390905" ...>
  ...
</PipingComponent>
  
```

10.61.1. Overview



Superclasses:

- ShutOffValve

Subclasses: No subclasses.

10.61.2. Components

No components.

10.61.3. Model References

No model references.

10.61.4. Attributes

No attributes.

10.62. Strainer

Description: A mechanical separator that is separating solid particles from a fluid by passing the fluid through a wire mesh, screen or metal plates containing perforations or slits (from <http://data.posccaesar.org/rdl/RDS422504>).

RDL: STRAINER

<http://data.posccaesar.org/rdl/RDS422504>

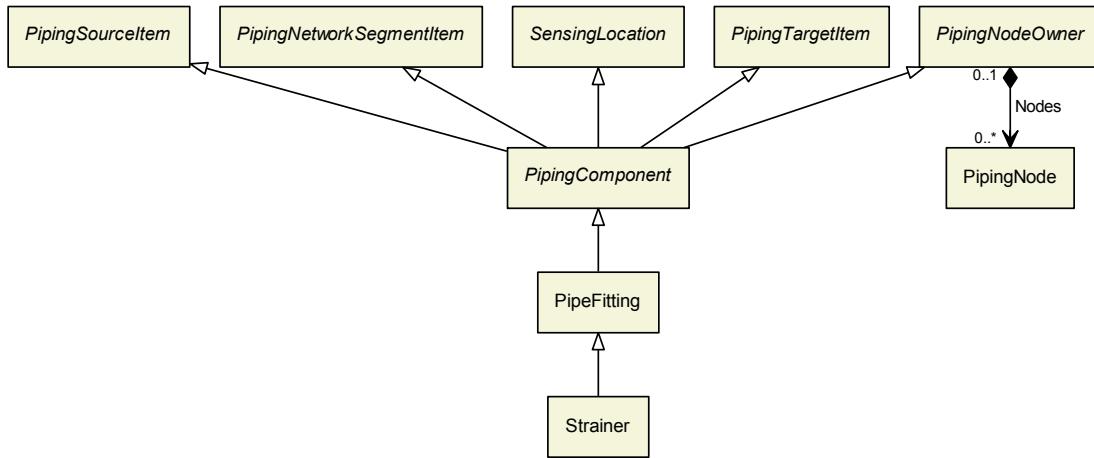
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="Strainer"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS422504" ...>
...
</PipingComponent>
  
```

10.62.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.62.2. Components

No components.

10.62.3. Model References

No model references.

10.62.4. Attributes

No attributes.

10.63. SwingCheckValve

Description: A check valve that is a check valve where the closure member is a disc which swings freely on a hinge and which opens automatically when flow is established and closes automatically when flow ceases or is reversed (from <http://data.posccaesar.org/rdl/RDS610424>).

RDL: SWING CHECK VALVE

<http://data.posccaesar.org/rdl/RDS610424>

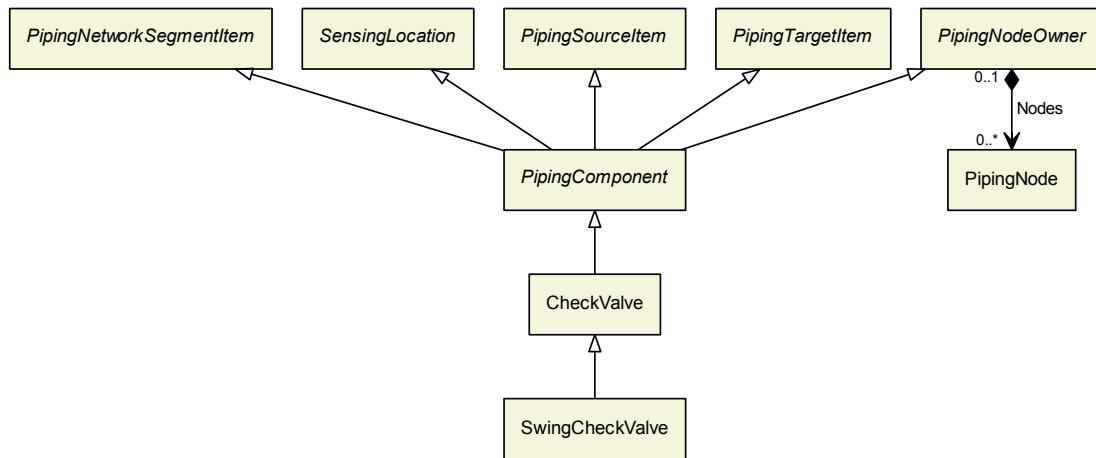
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="SwingCheckValve"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS610424" ...>
...
</PipingComponent>
  
```

10.63.1. Overview



Superclasses:

- [CheckValve](#)

Subclasses: No subclasses.

10.63.2. Components

No components.

10.63.3. Model References

No model references.

10.63.4. Attributes

No attributes.

10.64. TurbineFlowMeter

Description: A velocity flow meter that uses a multi bladed rotor to measure fluid flow rate in units of volumetric flow through a closed conduit (from <http://data.posccaesar.org/rdl/RDS417914>).

RDL: TURBINE FLOW METER

<http://data.posccaesar.org/rdl/RDS417914>

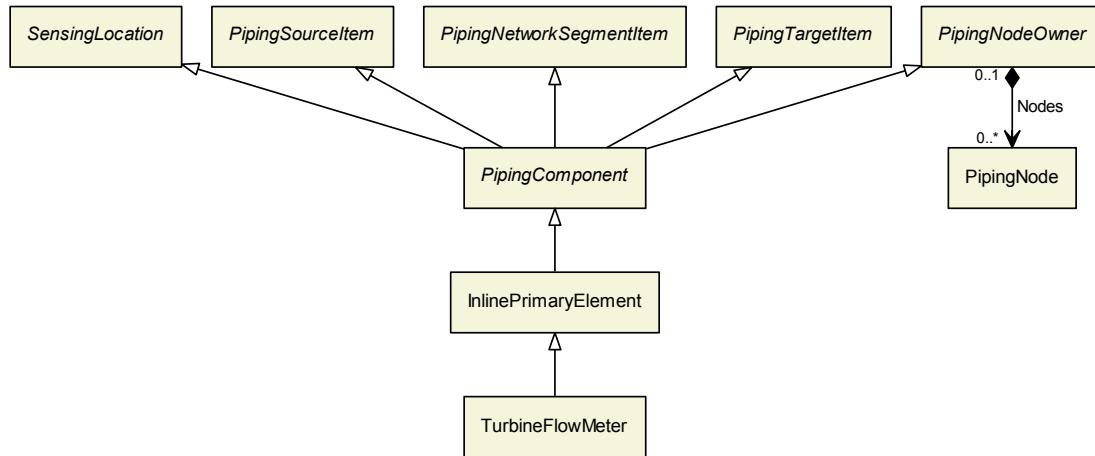
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="TurbineFlowMeter"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS417914" ...>
...
</PipingComponent>
  
```

10.64.1. Overview



Superclasses:

- [InlinePrimaryElement](#)

Subclasses: No subclasses.

10.64.2. Components

No components.

10.64.3. Model References

No model references.

10.64.4. Attributes

No attributes.

10.65. VariableAreaFlowMeter

Description: A flow meter consisting of a vertical tube with a conically shaped bore which widens to the top in which a solid body (float) is supported by the force exerted by the fluid stream (from <http://data.posccaesar.org/rdl/RDS418229>).

RDL: VARIABLE AREA FLOW METER

<http://data.posccaesar.org/rdl/RDS418229>

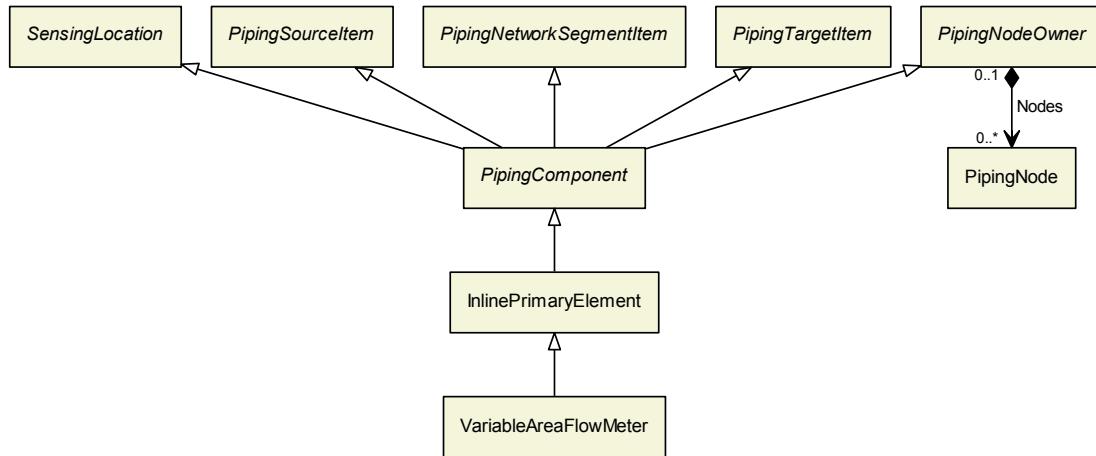
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="VariableAreaFlowMeter"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS418229" ...>
...
</PipingComponent>
  
```

10.65.1. Overview



Superclasses:

- [InlinePrimaryElement](#)

Subclasses: No subclasses.

10.65.2. Components

No components.

10.65.3. Model References

No model references.

10.65.4. Attributes

No attributes.

10.66. VentilationDevice

Description: A 'device' that allows gas or vapour to leave a container under excess pressure (from <http://data.posccaesar.org/rdl/RDS1049335351>).

RDL: VENTILATION DEVICE

<http://data.posccaesar.org/rdl/RDS1049335351>

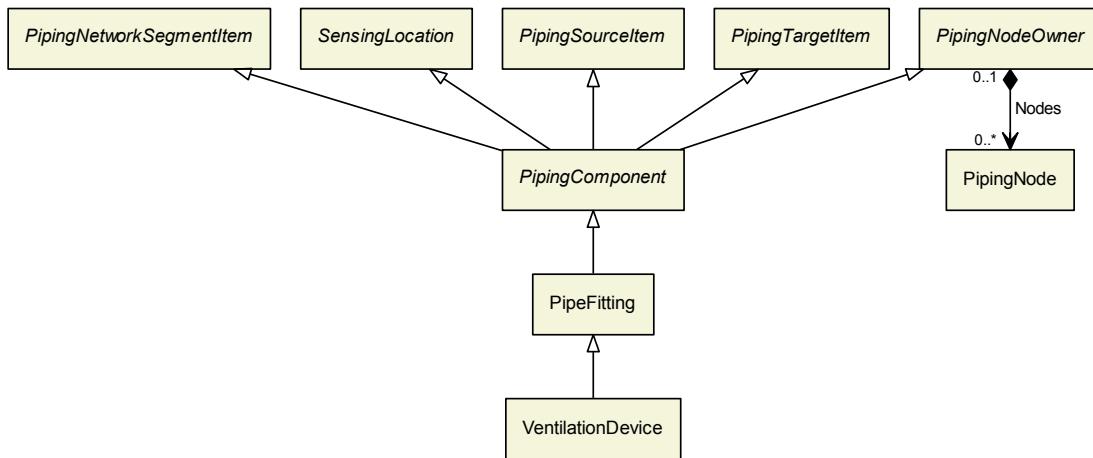
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="VentilationDevice"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS1049335351" ...>
...
</PipingComponent>
  
```

10.66.1. Overview



Superclasses:

- [PipeFitting](#)

Subclasses: No subclasses.

10.66.2. Components

No components.

10.66.3. Model References

No model references.

10.66.4. Attributes

No attributes.

10.67. VenturiTube

Description: A 'measuring device' that has a constriction with a relative long passage with a smooth coned entry and exit (from <http://data.posccaesar.org/rdl/RDS648044>).

RDL: VENTURI TUBE

<http://data.posccaesar.org/rdl/RDS648044>

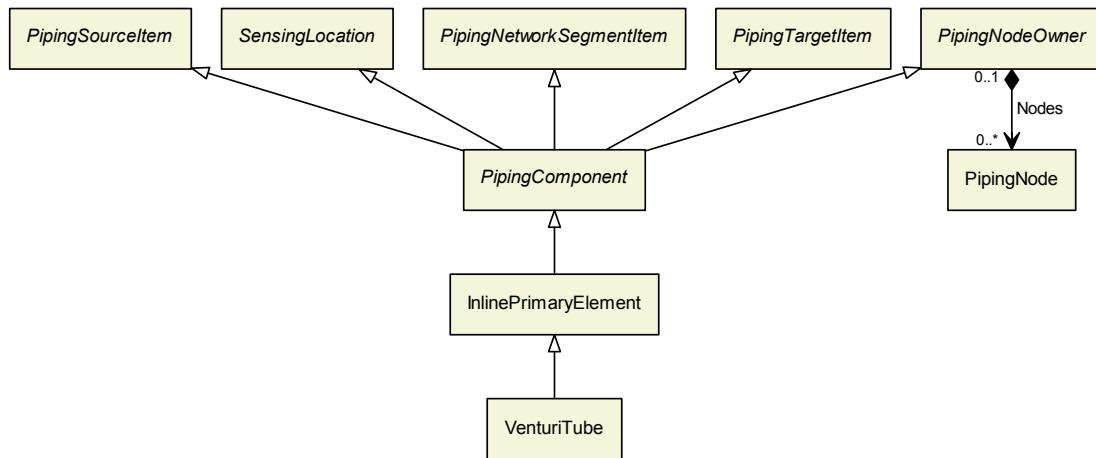
Proteus Schema Implementation: Proteus <**PipingComponent**> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="VenturiTube"
  ComponentClassURI="http://data.posccaesar.org/rdl/RDS648044" ...>
  ...
</PipingComponent>
  
```

10.67.1. Overview



Superclasses:

- [InlinePrimaryElement](#)

Subclasses: No subclasses.

10.67.2. Components

No components.

10.67.3. Model References

No model references.

10.67.4. Attributes

No attributes.

10.68. VolumetricFlowDetector

Description: A volumetric flow detector.

RDL: VOLUMETRIC FLOW DETECTOR

<http://sandbox.dexpi.org/rdl/VolumetricFlowDetector>

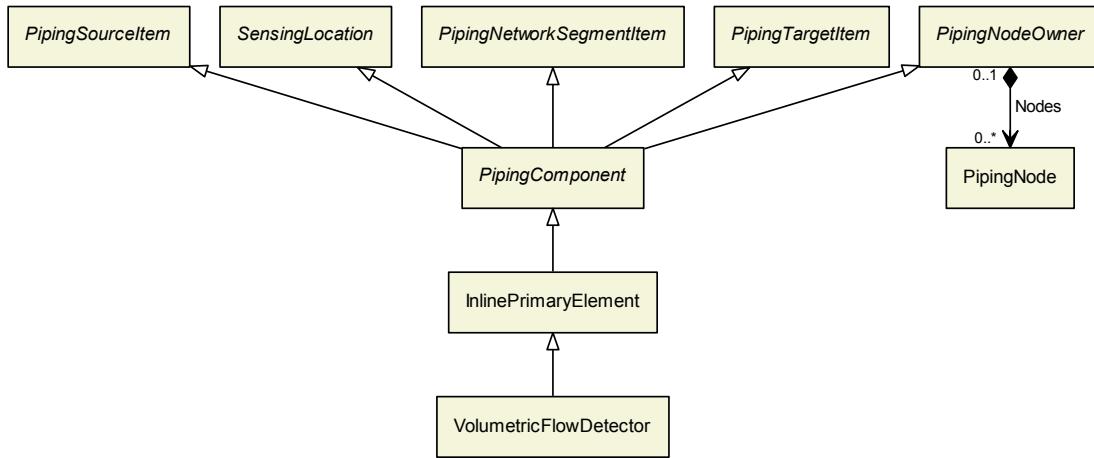
Proteus Schema Implementation: Proteus <PipingComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<PipingComponent
  ComponentClass="VolumetricFlowDetector"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/VolumetricFlowDetector" ...>
...
</PipingComponent>
  
```

10.68.1. Overview



Superclasses:

- [InlinePrimaryElement](#)

Subclasses: No subclasses.

10.68.2. Components

No components.

10.68.3. Model References

No model references.

10.68.4. Attributes

No attributes.

11. Instrumentation

11.1. ActuatingFunction

Description: A function for acting control structures relating to the process.

RDL: ACTUATING FUNCTION

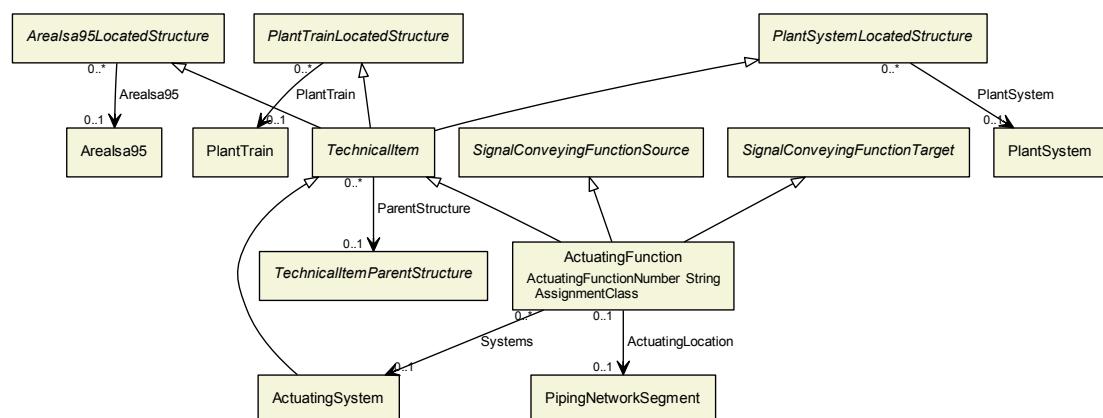
<http://sandbox.dexpi.org/rdl/ActuatingFunction>

Proteus Schema Implementation: Proteus <ActuatingFunction> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<ActuatingFunction  
    ComponentClass="ActuatingFunction"  
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ActuatingFunction" ...>  
...  
</ActuatingFunction>
```

11.1.1. Overview



Superclasses:

- [SignalConveyingFunctionSource](#)
- [SignalConveyingFunctionTarget](#)
- [TechnicalItem](#)

Subclasses: No subclasses.

11.1.2. Components

No components.

11.1.3. Model References

11.1.3.1. 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 <Association> elements must be used.

Example:

```
<ActuatingFunction ID="ActuatingFunction1" ...>
...
<Association Type="is located in" ItemID="PipingNetworkSegment1"/>
...
</ActuatingFunction>
...
<PipingNetworkSegment ID="PipingNetworkSegment1" ...>
...
<Association Type="is the location of" ItemID="ActuatingFunction1"/>
...
</PipingNetworkSegment>
```

11.1.3.2. 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 <Association> elements must be used.

Example:

```
<ActuatingFunction ID="ActuatingFunction1" ...>
...
<Association Type="is fulfilled by" ItemID="ActuatingSystem1"/>
...
</ActuatingFunction>
...
<ActuatingSystem ID="ActuatingSystem1" ...>
```

```

...
<Association Type="fulfills" ItemID="ActuatingFunction1" />
...
</ActuatingSystem>
```

11.1.4. Attributes

11.1.4.1. 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" />
```

11.2. ActuatingSystem

Description: An assembly of artefacts that is designed to fulfill an [ActuatingFunction](#).

RDL: ACTUATING SYSTEM

<http://sandbox.dexpi.org/rdl/ActuatingSystem>

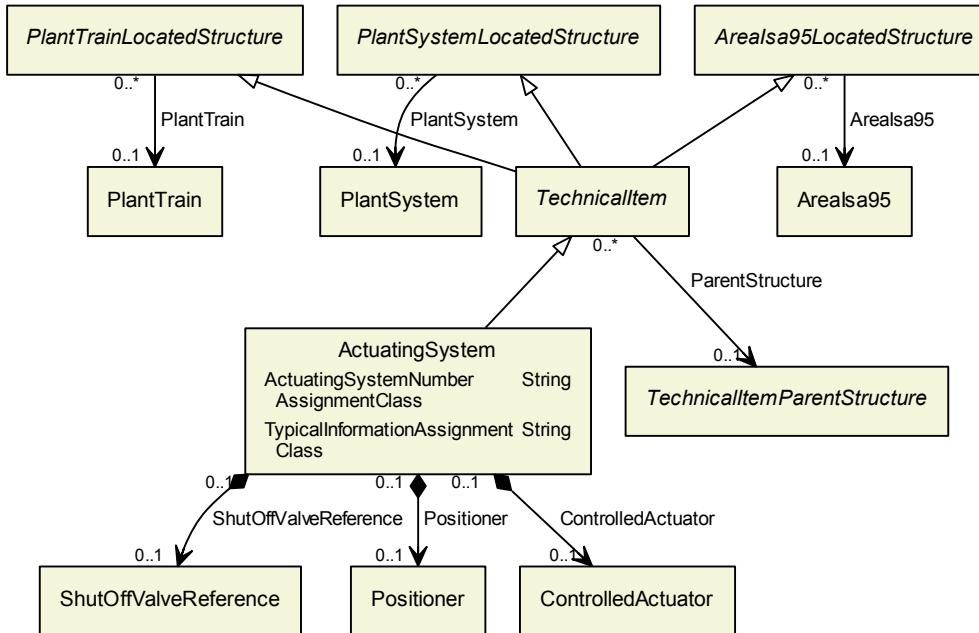
Proteus Schema Implementation: Proteus [ActuatingSystem](#) element with mandatory [ComponentClass](#) and [ComponentClassUri](#) attributes.

Example:

```

<ActuatingSystem
  ComponentClass="ActuatingSystem"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/ActuatingSystem" ...>
  ...
</ActuatingSystem>
```

11.2.1. Overview



Superclasses:

- *TechnicalItem*

Subclasses: No subclasses.

11.2.2. Components

11.2.2.1. ControlledActuator

Description: The *ControlledActuator* of the *ActuatingSystem*.

Type: *ControlledActuator*

Cardinality: 0..1

Proteus Schema Implementation: The *<ActuatingSystemComponent>* element for the *ControlledActuator* is a child of the *<ActuatingSystem>* element for the *ActuatingSystem*.

Example:

```

<ActuatingSystem
  ComponentClass="ActuatingSystem"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/ActuatingSystem" ...>
...
<ActuatingSystemComponent
  ComponentClass="ControlledActuator"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/ControlledActuator" ...>
...
</ActuatingSystemComponent>
...
</ActuatingSystem>
  
```

11.2.2.2. Positioner

Description: The [Positioner](#) of the [ActuatingSystem](#).

Type: [Positioner](#)

Cardinality: 0..1

Proteus Schema Implementation: The `<ActuatingSystemComponent>` element for the [Positioner](#) is a child of the `<ActuatingSystem>` element for the [ActuatingSystem](#).

Example:

```
<ActuatingSystem
    ComponentClass="ActuatingSystem"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ActuatingSystem" ...>
    ...
    <ActuatingSystemComponent
        ComponentClass="Positioner"
        ComponentClassURI="http://sandbox.dexpi.org/rdl/Positioner" ...>
        ...
    </ActuatingSystemComponent>
    ...
</ActuatingSystem>
```

11.2.2.3. ShutOffValveReference

Description: The [ShutOffValveReference](#) of the [ActuatingSystem](#).

Type: [ShutOffValveReference](#)

Cardinality: 0..1

Proteus Schema Implementation: The `<ActuatingSystemComponent>` element for the [ShutOffValveReference](#) is a child of the `<ActuatingSystem>` element for the [ActuatingSystem](#).

Example:

```
<ActuatingSystem
    ComponentClass="ActuatingSystem"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ActuatingSystem" ...>
    ...
    <ActuatingSystemComponent
        ComponentClass="ShutOffValveReference"
        ComponentClassURI="http://sandbox.dexpi.org/rdl/ShutOffValveReference" ...>
        ...
    </ActuatingSystemComponent>
    ...
</ActuatingSystem>
```

11.2.3. Model References

No model references.

11.2.4. Attributes

11.2.4.1. 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"/>
```

11.2.4.2. 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"/>
```

11.3. 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 power input.

RDL: CONTROLLED ACTUATOR

<http://sandbox.dexpi.org/rdl/ControlledActuator>

Proteus Schema Implementation: Proteus `<ActuatingSystemComponent>` element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<ActuatingSystemComponent  
  ComponentClass="ControlledActuator"  
  ComponentClassURI="http://sandbox.dexpi.org/rdl/ControlledActuator" ...>  
  ...  
</ActuatingSystemComponent>
```

11.3.1. Overview

ControlledActuator	
DeviceTypeNameAssignmentClass	String
FailActionRepresentationAssignmentClass	String
FailActionSpecialization	FailActionClassification
SubTagNameAssignmentClass	String

Superclasses: No superclasses.

Subclasses: No subclasses.

11.3.2. Components

No components.

11.3.3. Model References

No model references.

11.3.4. Attributes

11.3.4.1. 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: "pressure transmitter"

Proteus Schema Implementation: [GenericAttribute](#) of the [ControlledActuator](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="DeviceTypeNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/DeviceTypeNameAssignmentClass"
  Value="pressure transmitter"
  Format="string" />
```

11.3.4.2. 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" />
```

11.3.4.3. 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" />
```

11.3.4.4. 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: "ST1"

Proteus Schema Implementation: [GenericAttribute](#) of the [ControlledActuator](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="ST1"
  Format="string" />
```

11.4. InlinePrimaryElementReference

Description: A reference to an [InlinePrimaryElement](#) that is part of a [PipingNetworkSegment](#).

RDL: INLINE PRIMARY ELEMENT REFERENCE

<http://sandbox.dexpi.org/rdl/InlinePrimaryElementReference>

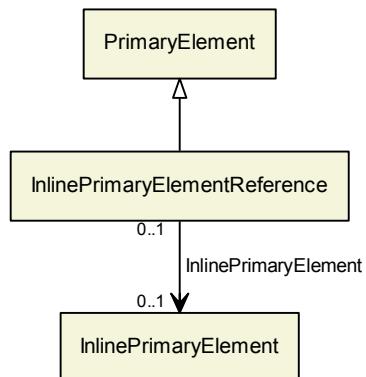
Proteus Schema Implementation: Proteus `<ProcessSignalGeneratingSystemComponent>` element with mandatory `ComponentClass` and `ComponentClassUri` attributes.

Example:

```
<ProcessSignalGeneratingSystemComponent
  ComponentClass="InlinePrimaryElementReference"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/InlinePrimaryElementReference" ...>
```

```
...  
</ProcessSignalGeneratingSystemComponent>
```

11.4.1. Overview



Superclasses:

- [PrimaryElement](#)

Subclasses: No subclasses.

11.4.2. Components

No components.

11.4.3. Model References

11.4.3.1. [InlinePrimaryElement](#)

Description: The [InlinePrimaryElement](#) 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 <ProcessSignalGeneratingSystemComponent> 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 <Association> elements must be used.

Example:

```
<ProcessSignalGeneratingSystemComponent ID="InlinePrimaryElementReference1" ...>
...
<Association Type="refers to" ItemID="InlinePrimaryElement1" />
...
</ProcessSignalGeneratingSystemComponent>
...
<PipingComponent ID="InlinePrimaryElement1" ...>
...
<Association Type="is referenced by" ItemID="InlinePrimaryElementReference1" />
```

...
</PipingComponent>

11.4.4. Attributes

No attributes.

11.5. InstrumentationLoopFunction

Description: An identified collection of related [ProcessInstrumentationFunctions](#) that interact for a known purpose.

RDL: INSTRUMENTATION LOOP FUNCTION

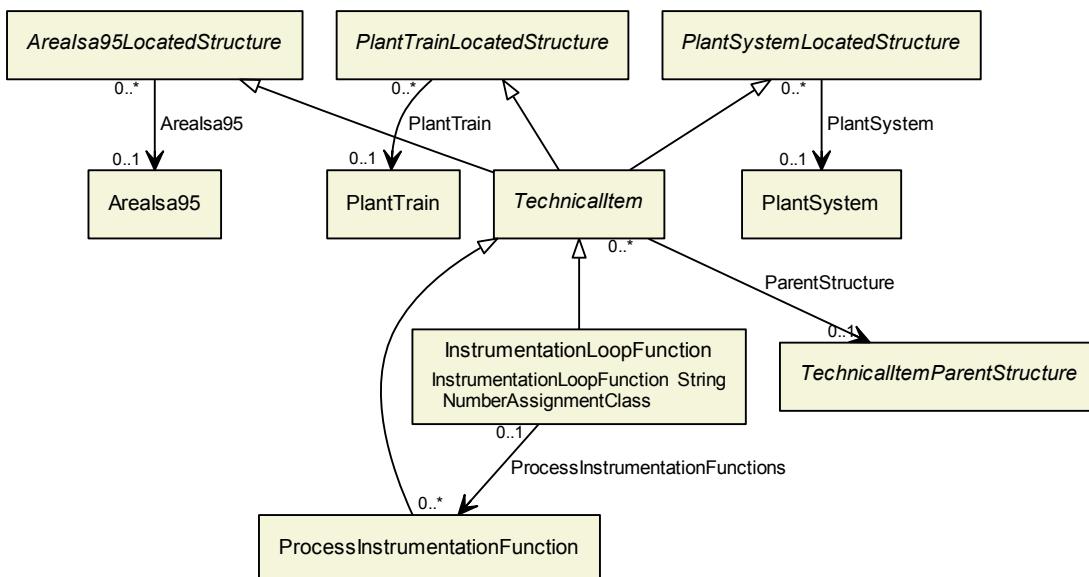
<http://sandbox.dexpi.org/rdl/InstrumentationLoopFunction>

Proteus Schema Implementation: Proteus <InstrumentationLoopFunction> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<InstrumentationLoopFunction
    ComponentClass="InstrumentationLoopFunction"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/InstrumentationLoopFunction" ...>
...
</InstrumentationLoopFunction>
```

11.5.1. Overview



Superclasses:

- [TechnicalItem](#)

Subclasses: No subclasses.

11.5.2. Components

No components.

11.5.3. Model References

11.5.3.1. 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 <Association> elements must be used.

Example:

```
<InstrumentationLoopFunction ID="InstrumentationLoopFunction1" ...>
...
<Association Type="is a collection including" ItemID="ProcessInstrumentationFunction1"/>
...
</InstrumentationLoopFunction>
...
<ProcessInstrumentationFunction ID="ProcessInstrumentationFunction1" ...>
...
<Association Type="is a part of" ItemID="InstrumentationLoopFunction1"/>
...
</ProcessInstrumentationFunction>
```

11.5.4. Attributes

11.5.4.1. 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" />
```

11.6. MeasuringLineFunction

RDL: MEASURING LINE FUNCTION

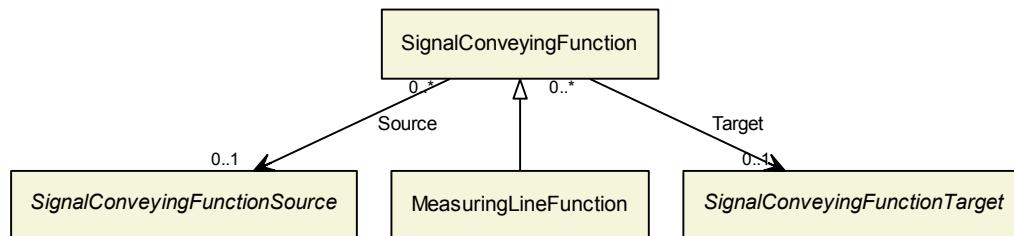
<http://sandbox.dexpi.org/rdl/MeasuringLineFunction>

Proteus Schema Implementation: Proteus <InformationFlow> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<InformationFlow
    ComponentClass="MeasuringLineFunction"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/MeasuringLineFunction" ...>
...
</InformationFlow>
```

11.6.1. Overview



Superclasses:

- [SignalConveyingFunction](#)

Subclasses: No subclasses.

11.6.2. Components

No components.

11.6.3. Model References

No model references.

11.6.4. Attributes

No attributes.

11.7. OfflinePrimaryElement

Description: A [PrimaryElement](#) that is not part of a [PipingNetworkSegment](#).

RDL: OFFLINE PRIMARY ELEMENT

<http://sandbox.dexpi.org/rdl/OfflinePrimaryElement>

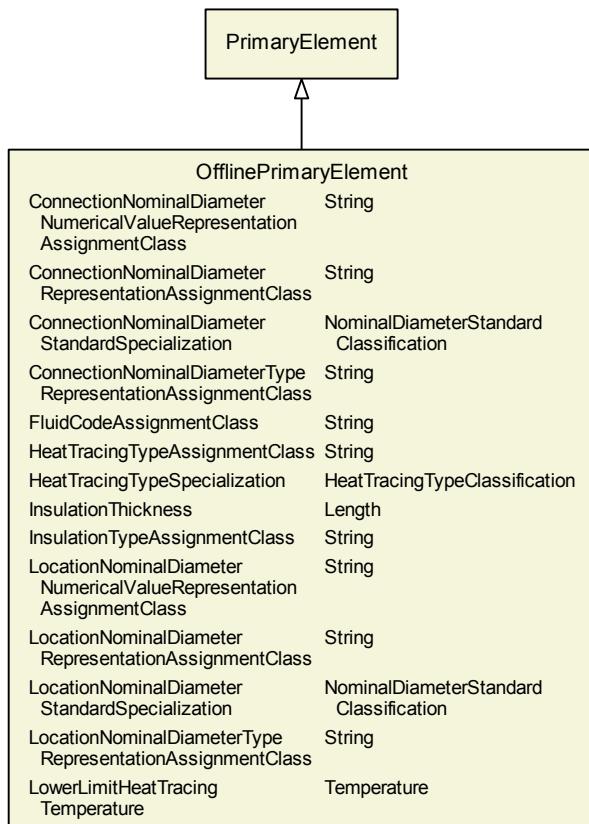
Proteus Schema Implementation: Proteus <ProcessSignalGeneratingSystemComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<ProcessSignalGeneratingSystemComponent
    ComponentClass="OfflinePrimaryElement"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/OfflinePrimaryElement" ...>
```

...
</ProcessSignalGeneratingSystemComponent>

11.7.1. Overview



Superclasses:

- PrimaryElement

Subclasses: No subclasses.

11.7.2. Components

No components.

11.7.3. Model References

No model references.

11.7.4. Attributes

11.7.4.1. 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: "25"

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

Example:

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

11.7.4.2. 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: "DN 25"

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

Example:

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

11.7.4.3. 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: 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="ConnectionNominalDiameterStandardSpecialization"
  AttributeURI="http://sandbox.dexpi.org/rdl/ConnectionNominalDiameterStandardSpecialization"
  Value="Din2448ObjectDn25"
  ValueURI="http://sandbox.dexpi.org/rdl/Din2448ObjectDn25"
  Format="anyURI" />
```

11.7.4.4. 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: "DN"

Proteus Schema Implementation: [GenericAttribute](#) of the [OfflinePrimaryElement](#) (use case [String](#)).

Example:

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

11.7.4.5. 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" />
```

11.7.4.6. 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" />
```

11.7.4.7. 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" />
```

11.7.4.8. 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" />
```

11.7.4.9. 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" />
```

11.7.4.10. 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" />
```

11.7.4.11. 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" />
```

11.7.4.12. 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" />
```

11.7.4.13. 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" />
```

11.7.4.14. 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" />
```

11.8. Positioner

Description: A positioner.

RDL: POSITIONER

<http://sandbox.dexpi.org/rdl/Positioner>

Proteus Schema Implementation: Proteus <ActuatingSystemComponent> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<ActuatingSystemComponent
    ComponentClass="Positioner"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/Positioner" ...>
    ...
</ActuatingSystemComponent>
```

11.8.1. Overview

Positioner
DeviceTypeNameAssignmentClass String
SubTagNameAssignmentClass String

Superclasses: No superclasses.

Subclasses: No subclasses.

11.8.2. Components

No components.

11.8.3. Model References

No model references.

11.8.4. Attributes

11.8.4.1. 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: "pressure transmitter"

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

Example:

```
<GenericAttribute
    Name="DeviceTypeNameAssignmentClass"
    AttributeURI="http://sandbox.dexpi.org/rdl/DeviceTypeNameAssignmentClass"
    Value="pressure transmitter"
    Format="string" />
```

11.8.4.2. 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: "ST1"

Proteus Schema Implementation: [GenericAttribute](#) of the [Positioner](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="ST1"
  Format="string" />
```

11.9. 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 with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<ProcessSignalGeneratingSystemComponent
  ComponentClass="PrimaryElement"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/PrimaryElement" ...>
  ...
</ProcessSignalGeneratingSystemComponent>
```

11.9.1. Overview

PrimaryElement
SubTagNameAssignmentClass String

Superclasses: No superclasses.

Subclasses:

- [InlinePrimaryElementReference](#)
- [OfflinePrimaryElement](#)

11.9.2. Components

No components.

11.9.3. Model References

No model references.

11.9.4. Attributes

11.9.4.1. 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: "ST1"

Proteus Schema Implementation: [GenericAttribute](#) of the [PrimaryElement](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="ST1"
  Format="string" />
```

11.10. ProcessControlFunction

Description: A requirement for control structures relating to Process Engineering.

RDL: PROCESS CONTROL FUNCTION

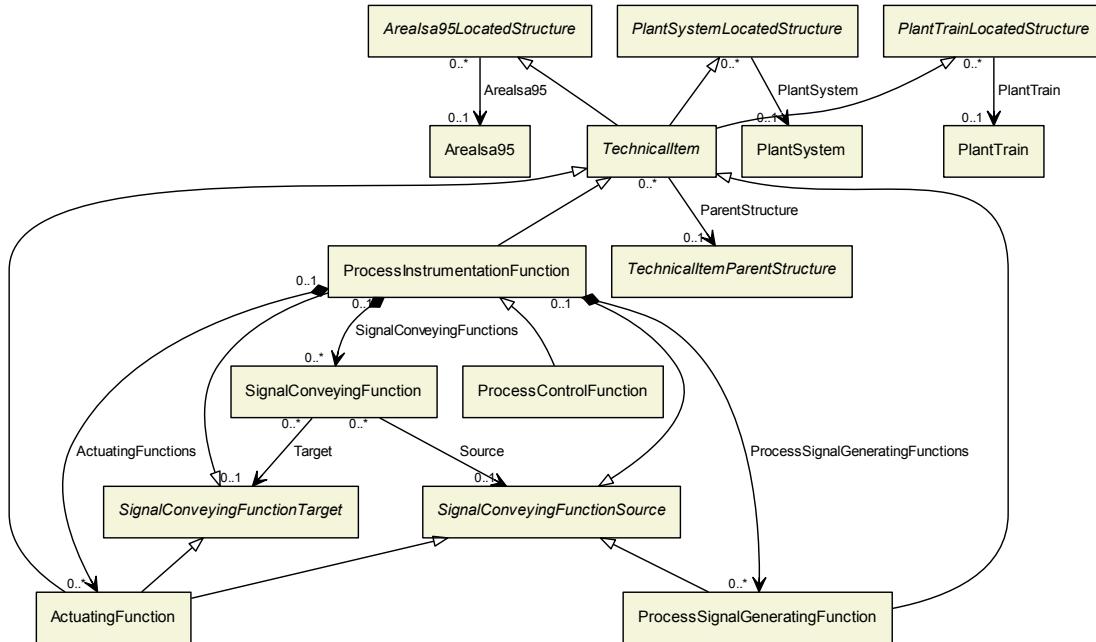
<http://sandbox.dexpi.org/rdl/ProcessControlFunction>

Proteus Schema Implementation: Proteus [<ProcessInstrumentationFunction>](#) element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<ProcessInstrumentationFunction
  ComponentClass="ProcessControlFunction"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/ProcessControlFunction" ...>
...
</ProcessInstrumentationFunction>
```

11.10.1. Overview



Superclasses:

- **ProcessInstrumentationFunction**

Subclasses: No subclasses.

11.10.2. Components

No components.

11.10.3. Model References

No model references.

11.10.4. Attributes

No attributes.

11.11. ProcessInstrumentationFunction

Description: A requirement for instrumentation and/or control structures relating to Process Engineering.

RDL: PROCESS INSTRUMENTATION FUNCTION

<http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunction>

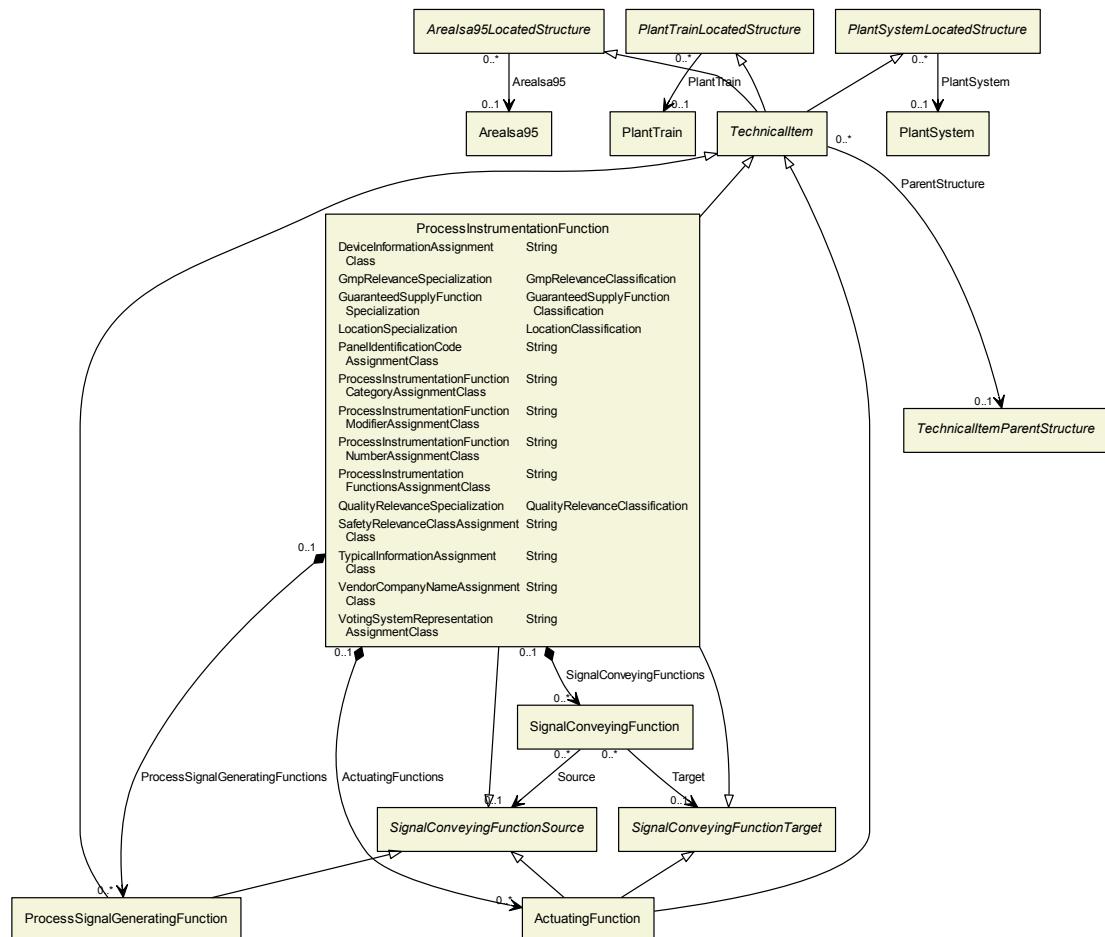
Proteus Schema Implementation: Proteus <**ProcessInstrumentationFunction**> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```

<ProcessInstrumentationFunction
  ComponentClass="ProcessInstrumentationFunction"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunction" ...>
...
</ProcessInstrumentationFunction>
  
```

11.11.1. Overview



Superclasses:

- [SignalConveyingFunctionSource](#)
- [SignalConveyingFunctionTarget](#)
- [TechnicalItem](#)

Subclasses:

- [ProcessControlFunction](#)

11.11.2. Components

11.11.2.1. ActuatingFunctions

Description: The [ActuatingFunctions](#) that are part of this [ProcessInstrumentationFunction](#).

Type: [ActuatingFunction](#)

Cardinality: 0..*

Proteus Schema Implementation: The <ActuatingFunction> element for the [ActuatingFunction](#) is a child of the <ProcessInstrumentationFunction> element for the [ProcessInstrumentationFunction](#).

Example:

```
<ProcessInstrumentationFunction
    ComponentClass="ProcessInstrumentationFunction"
```

```

ComponentClassURI="http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunction" ...>
...
<ActuatingFunction
    ComponentClass="ActuatingFunction"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ActuatingFunction" ...>
...
</ActuatingFunction>
...
</ProcessInstrumentationFunction>
```

11.11.2.2. ProcessSignalGeneratingFunctions

Description: The [ProcessSignalGeneratingFunctions](#) that are part of this [ProcessInstrumentationFunction](#).

Type: [ProcessSignalGeneratingFunction](#)

Cardinality: 0..*

Proteus Schema Implementation: The <ProcessSignalGeneratingFunction> element for the [ProcessSignalGeneratingFunction](#) is a child of the <ProcessInstrumentationFunction> element for the [ProcessInstrumentationFunction](#).

Example:

```

<ProcessInstrumentationFunction
    ComponentClass="ProcessInstrumentationFunction"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunction" ...>
...
<ProcessSignalGeneratingFunction
    ComponentClass="ProcessSignalGeneratingFunction"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingFunction" ...>
...
</ProcessSignalGeneratingFunction>
...
</ProcessInstrumentationFunction>
```

11.11.2.3. SignalConveyingFunctions

Description: The [SignalConveyingFunctions](#) that are part of this [ProcessInstrumentationFunction](#).

Type: [SignalConveyingFunction](#)

Cardinality: 0..*

Proteus Schema Implementation: The <InformationFlow> element for the [SignalConveyingFunction](#) is a child of the <ProcessInstrumentationFunction> element for the [ProcessInstrumentationFunction](#).

Example:

```

<ProcessInstrumentationFunction
    ComponentClass="ProcessInstrumentationFunction"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ProcessInstrumentationFunction" ...>
...
<InformationFlow
    ComponentClass="SignalConveyingFunction"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/SignalConveyingFunction" ...>
...
</InformationFlow>
...
</ProcessInstrumentationFunction>
```

11.11.3. Model References

No model references.

11.11.4. Attributes

11.11.4.1. 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" />
```

11.11.4.2. 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" />
```

11.11.4.3. 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" />
```

11.11.4.4. 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" />
```

11.11.4.5. 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" />
```

11.11.4.6. 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" />
```

11.11.4.7. 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" />
```

11.11.4.8. 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" />
```

11.11.4.9. 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" />
```

11.11.4.10. 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" />
```

11.11.4.11. 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" />
```

11.11.4.12. TypicalInformationAssignmentClass

Description: Typical information about the ProcessInstrumentationFunction.

RDL: TYPICAL INFORMATION ASSIGNMENT CLASS

<http://sandbox.dexpi.org/rdl/TypicalInformationAssignmentClass>

Attribute Type: String

Example Value: "F4"

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

Example:

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

11.11.4.13. 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" />
```

11.11.4.14. 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" />
```

11.12. ProcessSignalGeneratingFunction

Description: A function for instrumentation and/or control structures relating to Process Engineering

RDL: PROCESS SIGNAL GENERATING FUNCTION

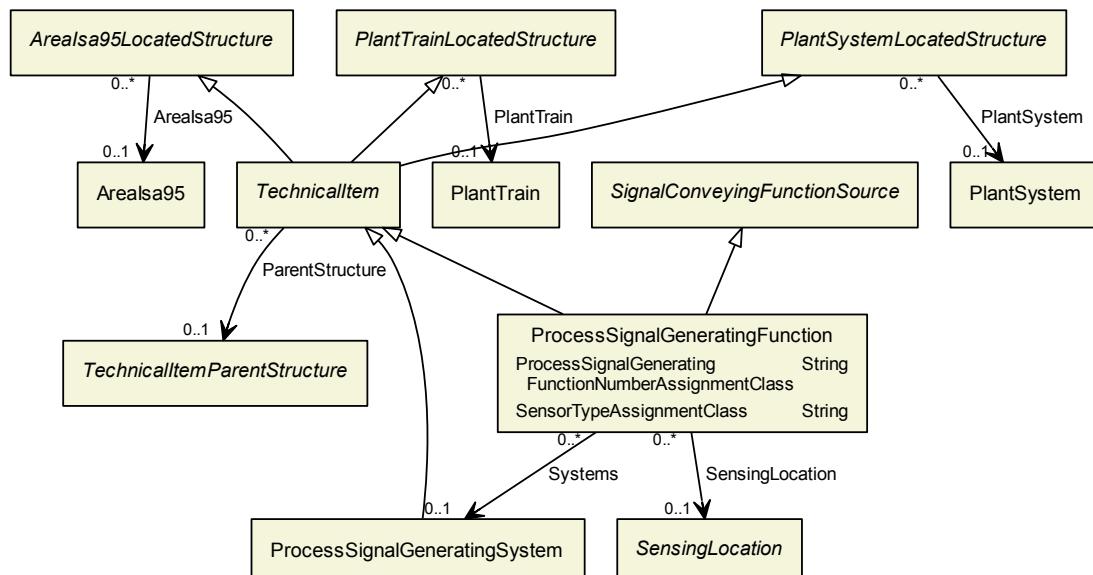
<http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingFunction>

Proteus Schema Implementation: Proteus <ProcessSignalGeneratingFunction> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<ProcessSignalGeneratingFunction
  ComponentClass="ProcessSignalGeneratingFunction"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingFunction" ...>
...
</ProcessSignalGeneratingFunction>
```

11.12.1. Overview



Superclasses:

- SignalConveyingFunctionSource
- TechnicalItem

Subclasses: No subclasses.

11.12.2. Components

No components.

11.12.3. Model References

11.12.3.1. SensingLocation

Description: The sensing location of the [ProcessSignalGeneratingFunction](#).

Type: [SensingLocation](#)

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 <Nozzle> element representing the [SensingLocation](#): is the location of

Both <Association> elements must be used.

Example:

```
<ProcessSignalGeneratingFunction ID="ProcessSignalGeneratingFunction1" ...>
  ...
  <Association Type="is located in" ItemID="Nozzle1" />
  ...
</ProcessSignalGeneratingFunction>
...
<Nozzle ID="Nozzle1" ...>
  ...
  <Association Type="is the location of" ItemID="ProcessSignalGeneratingFunction1" />
  ...
</Nozzle>
```

11.12.3.2. 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 <Association> elements must be used.

Example:

```
<ProcessSignalGeneratingFunction ID="ProcessSignalGeneratingFunction1" ...>
...
<Association Type="is fulfilled by" ItemID="ProcessSignalGeneratingSystem1" />
...
</ProcessSignalGeneratingFunction>
...
<ProcessSignalGeneratingSystem ID="ProcessSignalGeneratingSystem1" ...>
...
<Association Type="fulfills" ItemID="ProcessSignalGeneratingFunction1" />
...
</ProcessSignalGeneratingSystem>
```

11.12.4. Attributes

11.12.4.1. 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" />
```

11.12.4.2. 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" />
```

11.13. ProcessSignalGeneratingSystem

Description: An assembly of artefacts that is designed to fulfill one or more [ProcessSignalGeneratingFunctions](#).

RDL: PROCESS SIGNAL GENERATING SYSTEM

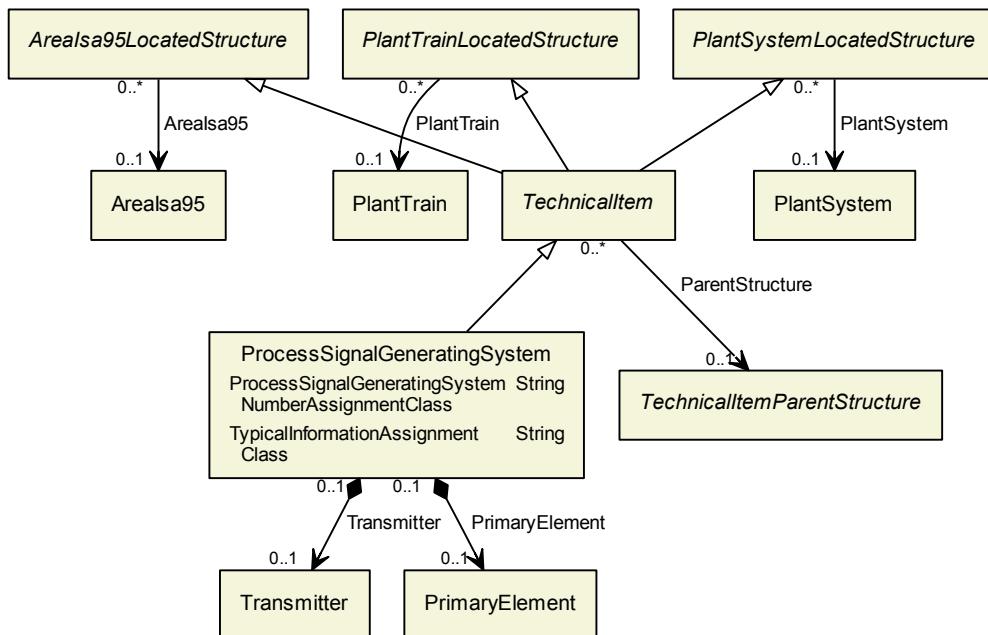
<http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingSystem>

Proteus Schema Implementation: Proteus <ProcessSignalGeneratingSystem> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<ProcessSignalGeneratingSystem
    ComponentClass="ProcessSignalGeneratingSystem"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingSystem" ...>
...
</ProcessSignalGeneratingSystem>
```

11.13.1. Overview



Superclasses:

- [TechnicalItem](#)

Subclasses: No subclasses.

11.13.2. Components

11.13.2.1. PrimaryElement

Description: The [PrimaryElement](#) of the [ProcessSignalGeneratingSystem](#).

Type: [PrimaryElement](#)

Cardinality: 0..1

Proteus Schema Implementation: The <ProcessSignalGeneratingSystemComponent> element for the [PrimaryElement](#) is a child of the <ProcessSignalGeneratingSystem> element for the [ProcessSignalGeneratingSystem](#).

Example:

```
<ProcessSignalGeneratingSystem  
    ComponentClass="ProcessSignalGeneratingSystem"  
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingSystem" ...>  
...  
    <ProcessSignalGeneratingSystemComponent  
        ComponentClass="PrimaryElement"  
        ComponentClassURI="http://sandbox.dexpi.org/rdl/PrimaryElement" ...>  
...  
    </ProcessSignalGeneratingSystemComponent>  
...  
</ProcessSignalGeneratingSystem>
```

11.13.2.2. Transmitter

Description: The [Transmitter](#) of the [ProcessSignalGeneratingSystem](#).

Type: [Transmitter](#)

Cardinality: 0..1

Proteus Schema Implementation: The [<ProcessSignalGeneratingSystemComponent>](#) element for the [Transmitter](#) is a child of the [<ProcessSignalGeneratingSystem>](#) element for the [ProcessSignalGeneratingSystem](#).

Example:

```
<ProcessSignalGeneratingSystem  
    ComponentClass="ProcessSignalGeneratingSystem"  
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ProcessSignalGeneratingSystem" ...>  
...  
    <ProcessSignalGeneratingSystemComponent  
        ComponentClass="Transmitter"  
        ComponentClassURI="http://data.posccaezar.org/rdl/RDS267929" ...>  
...  
    </ProcessSignalGeneratingSystemComponent>  
...  
</ProcessSignalGeneratingSystem>
```

11.13.3. Model References

No model references.

11.13.4. Attributes

11.13.4.1. 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" />
```

11.13.4.2. 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" />
```

11.14. SensingLocation

This class is abstract.

Description: An object than can act as a [SensingLocation](#) of a [ProcessSignalGeneratingFunction](#).

RDL: -

11.14.1. Overview

SensingLocation

Superclasses: No superclasses.

Subclasses:

- [Nozzle](#)
- [PipingComponent](#)
- [PipingNetworkSegment](#)

11.14.2. Components

No components.

11.14.3. Model References

No model references.

11.14.4. Attributes

No attributes.

11.15. ShutOffValveReference

Description: A reference to a [ShutOffValve](#).

RDL: SHUT OFF VALVE REFERENCE

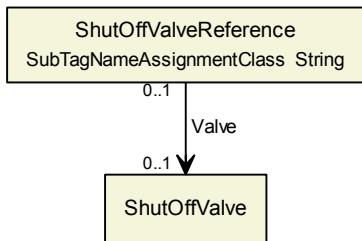
<http://sandbox.dexpi.org/rdl/ShutOffValveReference>

Proteus Schema Implementation: Proteus `<ActuatingSystemComponent>` element with mandatory `ComponentClass` and `ComponentClassUri` attributes.

Example:

```
<ActuatingSystemComponent
    ComponentClass="ShutOffValveReference"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/ShutOffValveReference" ...>
    ...
</ActuatingSystemComponent>
```

11.15.1. Overview



Superclasses: No superclasses.

Subclasses: No subclasses.

11.15.2. Components

No components.

11.15.3. Model References

11.15.3.1. 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 <Association> elements must be used.

Example:

```
<ActuatingSystemComponent ID="ShutOffValveReference1" ...>
...
<Association Type="refers to" ItemID="ShutOffValve1" />
...
</ActuatingSystemComponent>
...
<PipingComponent ID="ShutOffValve1" ...>
...
<Association Type="is referenced by" ItemID="ShutOffValveReference1" />
...
</PipingComponent>
```

11.15.4. Attributes

11.15.4.1. 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: "ST1"

Proteus Schema Implementation: [GenericAttribute](#) of the [ShutOffValveReference](#) (use case [String](#)).

Example:

```
<GenericAttribute
  Name="SubTagNameAssignmentClass"
  AttributeURL="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"
  Value="ST1"
  Format="string" />
```

11.16. SignalConveyingFunction

Description: A function for conveying a signal.

RDL: SIGNAL CONVEYING FUNCTION

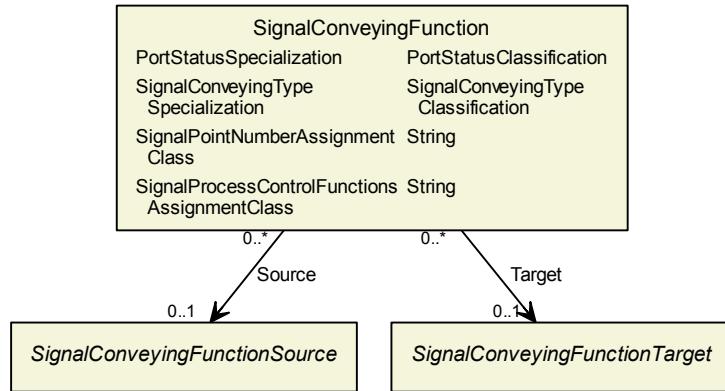
<http://sandbox.dexpi.org/rdl/SignalConveyingFunction>

Proteus Schema Implementation: Proteus <InformationFlow> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<InformationFlow
  ComponentClass="SignalConveyingFunction"
  ComponentClassURI="http://sandbox.dexpi.org/rdl/SignalConveyingFunction" ...>
...
</InformationFlow>
```

11.16.1. Overview



Superclasses: No superclasses.

Subclasses:

- [MeasuringLineFunction](#)
- [SignalLineFunction](#)

11.16.2. Components

No components.

11.16.3. Model References

11.16.3.1. Source

Description: The source of the signal conveyed by this [SignalConveyingFunction](#).

Type: [SignalConveyingFunctionSource](#)

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 [SignalConveyingFunctionSource](#): is logical start of

Both <Association> elements must be used.

Example:

```

<InformationFlow ID="SignalConveyingFunction1" ...>
...
<Association Type="has logical start" ItemID="ActuatingFunction1" />
...
</InformationFlow>
...
<ActuatingFunction ID="ActuatingFunction1" ...>
...
<Association Type="is logical start of" ItemID="SignalConveyingFunction1" />
...
</ActuatingFunction>
  
```

11.16.3.2. Target

Description: The target of the signal conveyed by this [SignalConveyingFunction](#).

Type: [SignalConveyingFunctionTarget](#)

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 [SignalConveyingFunctionTarget](#): is logical end of

Both <Association> elements must be used.

Example:

```
<InformationFlow ID="SignalConveyingFunction1" ...>
...
<Association Type="has logical end" ItemID="ProcessInstrumentationFunction1"/>
...
</InformationFlow>
...
<ProcessInstrumentationFunction ID="ProcessInstrumentationFunction1" ...>
...
<Association Type="is logical end of" ItemID="SignalConveyingFunction1"/>
...
</ProcessInstrumentationFunction>
```

11.16.4. Attributes

11.16.4.1. 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"/>
```

11.16.4.2. 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"/>
```

11.16.4.3. 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"/>
```

11.16.4.4. 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"/>
```

11.17. SignalConveyingFunctionSource

This class is abstract.

Description: An object than can act as the [Source](#) of a [SignalConveyingFunction](#).

RDL: -

11.17.1. Overview

SignalConveyingFunctionSource

Superclasses: No superclasses.

Subclasses:

- [ActuatingFunction](#)
- [ProcessInstrumentationFunction](#)
- [ProcessSignalGeneratingFunction](#)

11.17.2. Components

No components.

11.17.3. Model References

No model references.

11.17.4. Attributes

No attributes.

11.18. SignalConveyingFunctionTarget

This class is abstract.

Description: An object than can act as the [Target](#) of a [SignalConveyingFunction](#).

RDL: -

11.18.1. Overview

SignalConveyingFunctionTarget

Superclasses: No superclasses.

Subclasses:

- [ActuatingFunction](#)
- [ProcessInstrumentationFunction](#)

11.18.2. Components

No components.

11.18.3. Model References

No model references.

11.18.4. Attributes

No attributes.

11.19. SignalLineFunction

RDL: SIGNAL LINE FUNCTION

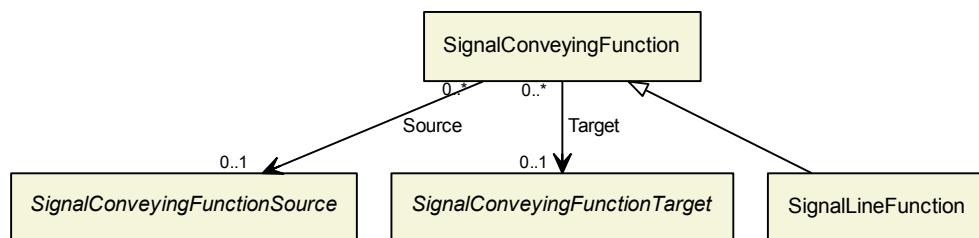
<http://sandbox.dexpi.org/rdl/SignalLineFunction>

Proteus Schema Implementation: Proteus <InformationFlow> element with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<InformationFlow
    ComponentClass="SignalLineFunction"
    ComponentClassURI="http://sandbox.dexpi.org/rdl/SignalLineFunction" ...>
...
</InformationFlow>
```

11.19.1. Overview



Superclasses:

- [SignalConveyingFunction](#)

Subclasses: No subclasses.

11.19.2. Components

No components.

11.19.3. Model References

No model references.

11.19.4. Attributes

No attributes.

11.20. 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 with mandatory ComponentClass and ComponentClassUri attributes.

Example:

```
<ProcessSignalGeneratingSystemComponent
    ComponentClass="Transmitter"
    ComponentClassURI="http://data.posccaesar.org/rdl/RDS267929" ...>
    ...
</ProcessSignalGeneratingSystemComponent>
```

11.20.1. Overview

Transmitter
DeviceTypeNameAssignmentClass String
SubTagNameAssignmentClass String

Superclasses: No superclasses.

Subclasses: No subclasses.

11.20.2. Components

No components.

11.20.3. Model References

No model references.

11.20.4. Attributes

11.20.4.1. 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" />
```

11.20.4.2. 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: "ST1"

Proteus Schema Implementation: [GenericAttribute](#) of the [Transmitter](#) (use case [String](#)).

Example:

```
<GenericAttribute  
  Name="SubTagNameAssignmentClass"  
  AttributeURI="http://sandbox.dexpi.org/rdl/SubTagNameAssignmentClass"  
  Value="ST1"  
  Format="string" />
```

12. Attribute Types

12.1. Attribute Types for Physical Quantities

This section contains the attribute types for physical quantities (see Sec. 2.2.1.2).

12.1.1. 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. 3.2.1.3). The quotation marks have been added because some designations contain spaces.

Scale	Designations
Degree-angle	"deg"
Radian	"rad"

12.1.2. 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. 3.2.1.3). 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"

12.1.3. HeatTransferCoefficient

RDL: HEAT TRANSFER COEFFICIENT

<http://data.posccaesar.org/rdl/RDS352304>

Scales: The following table lists the admissible scales for values of the attribute type HeatTransferCoefficient.

Scale	Symbol	RDL
BritishThermalUnitPerSecondFootSquaredDegreeFahrenheit	BTU/(s ft ² °F)	http://data.posccaesar.org/rdl/RDS43164893196
CaloriePerHourCentimetreSquaredDegreeCelsius	cal/(h cm ² °C)	http://data.posccaesar.org/rdl/RDS4316590599
JoulePerSecondSquareMetreDegreeCelsius	J/(s m ² °C)	http://data.posccaesar.org/rdl/RDS43167563253
KilocaloriePerHourSquareMetreDegreeCelsius	kcal/(h m ² °C)	http://data.posccaesar.org/rdl/RDS43167564168
KilojoulePerHourSquareMetreKelvin	kJ/(h m ² K)	http://data.posccaesar.org/rdl/RDS43167566108
KilowattPerMetreSquaredKelvin	kW/(m ² K)	http://data.posccaesar.org/rdl/RDS43167567170

12.1.4. 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

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Scale	Symbol	RDL
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
Micrometre	μm	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. 3.2.1.3). 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"

12.1.5. 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*.

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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
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. 3.2.1.3). 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"

12.1.6. 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

12.1.7. 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

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Scale	Symbol	RDL
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/RDS1344554
Watt	W	http://data.posccaesar.org/rdl/RDS1348154

12.1.8. 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. 3.2.1.3). The quotation marks have been added because some designations contain spaces.

Scale	Designations
Bar	"bar"
BarAbsolute	"bara"
BarGauge	"barg"
Kilopascal	"kPa"
Megapascal	"MPa"
Millipascal	"mPa"
Pascal	"Pa"
PhysicalAtmosphere	"atm"
PoundForcePerInchSquared	"psi"
TechnicalAtmosphere	"at"

12.1.9. 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

12.1.10. 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. 3.2.1.3). The quotation marks have been added because some designations contain spaces.

Scale	Designations
DegreeCelsius	"degC"
DegreeFahrenheit	"degF"
Kelvin	"degK", "K"

12.1.11. 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
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. 3.2.1.3). The quotation marks have been added because some designations contain spaces.

Scale	Designations
CentimetreCubed	"cc"

12.1.12. 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
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

12.2. Attribute Types for Classifications

This section contains the attribute types for classifications (see Sec. 2.2.1.3).

12.2.1. ChamberFunctionClassification

Classifications: The following table lists the admissible classifications for values of the attribute type ChamberFunctionClassification.

Classification	Symbol	RDL
Cooling	cooling	http://data.posccaesar.org/rdl/RDS9684422
Heating	heating	http://data.posccaesar.org/rdl/RDS9666872
Processing	processing	http://data.posccaesar.org/rdl/RDS9658367
Tempering	tempering	http://sandbox.dexpi.org/rdl/Tempering

12.2.2. 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

12.2.3. 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	not confidential	http://sandbox.dexpi.org/rdl/NonConfidentialInformation

12.2.4. 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

12.2.5. 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

12.2.6. 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

12.2.7. 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

12.2.8. 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

12.2.9. 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

12.2.10. 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

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Scale	Symbol	RDL
TubularHeatTracingSystem	tubular heat tracing system	http://data.posccaesar.org/rdl/RDS11854645

12.2.11. InsulationBreakClassification

Classifications: The following table lists the admissible classifications for values of the attribute type `InsulationBreakClassification`.

Classification	Symbol	RDL
InsulationBreak	insulation break	http://sandbox.dexpi.org/rdl/InsulationBreak
NoInsulationBreak	no insulation break	http://sandbox.dexpi.org/rdl/NoInsulationBreak

12.2.12. 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

12.2.13. 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

12.2.14. 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/MainFlowInNode
MainFlowOutNode	main flow out	http://sandbox.dexpi.org/rdl/MainFlowOutNode

12.2.15. 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

12.2.16. NominalDiameterStandardClassification

Classifications: The following table lists the admissible classifications for values of the attribute type `NominalDiameterStandardClassification`.

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Scale	Symbol	RDL
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
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/RDS2086340831
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/RDS208634082226
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

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Scale	Symbol	RDL
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

12.2.17. NominalPressureStandardClassification

Classifications: The following table lists the admissible classifications for values of the attribute type NominalPressureStandardClassification.

Classification	Symbol	RDL
Class1000KpaArtefact	Class 1000 kpa	http://sandbox.dexpi.org/rdl/Class1000KpaArtefact
Class10000PsiArtefact	Class 10000 psi	http://sandbox.dexpi.org/rdl/Class10000PsiArtefact
Class125LbsArtefact	Class 125 lbs	http://sandbox.dexpi.org/rdl/Class125LbsArtefact
Class150LbsArtefact	Class 150 lbs	http://sandbox.dexpi.org/rdl/Class150LbsArtefact
Class1500LbsArtefact	Class 1500 lbs	http://sandbox.dexpi.org/rdl/Class1500LbsArtefact
Class15000PsiArtefact	Class 15000 psi	http://sandbox.dexpi.org/rdl/Class15000PsiArtefact
Class16BarArtefact	Class 16 bar	http://sandbox.dexpi.org/rdl/Class16BarArtefact
Class2000PsiArtefact	Class 2000 psi	http://sandbox.dexpi.org/rdl/Class2000PsiArtefact
Class20000PsiArtefact	Class 20000 psi	http://sandbox.dexpi.org/rdl/Class20000PsiArtefact
Class250PsiArtefact	Class 250 psi	http://sandbox.dexpi.org/rdl/Class250PsiArtefact
Class2500LbsArtefact	Class 2500 lbs	http://sandbox.dexpi.org/rdl/Class2500LbsArtefact
Class300LbsArtefact	Class 300 lbs	http://sandbox.dexpi.org/rdl/Class300LbsArtefact
Class300PsiArtefact	Class 300 psi	http://sandbox.dexpi.org/rdl/Class300PsiArtefact
Class3000PsiArtefact	Class 3000 psi	http://sandbox.dexpi.org/rdl/Class3000PsiArtefact
Class315BarArtefact	Class 315 bar	http://sandbox.dexpi.org/rdl/Class315BarArtefact
Class345BarArtefact	Class 345 bar	http://sandbox.dexpi.org/rdl/Class345BarArtefact
Class350BarArtefact	Class 350 bar	http://sandbox.dexpi.org/rdl/Class350BarArtefact
Class400LbsArtefact	Class 400 lbs	http://sandbox.dexpi.org/rdl/Class400LbsArtefact
Class4000PsiArtefact	Class 4000 psi	http://sandbox.dexpi.org/rdl/Class4000PsiArtefact
Class4500LbsArtefact	Class 4500 lbs	http://sandbox.dexpi.org/rdl/Class4500LbsArtefact
Class4500PsiArtefact	Class 4500 psi	http://sandbox.dexpi.org/rdl/Class4500PsiArtefact
Class50BarArtefact	Class 50 bar	http://sandbox.dexpi.org/rdl/Class50BarArtefact
Class5000PsiArtefact	Class 5000 psi	http://sandbox.dexpi.org/rdl/Class5000PsiArtefact
Class517BarArtefact	Class 517 bar	http://sandbox.dexpi.org/rdl/Class517BarArtefact
Class600LbsArtefact	Class 600 lbs	http://sandbox.dexpi.org/rdl/Class600LbsArtefact
Class6000PsiArtefact	Class 6000 psi	http://sandbox.dexpi.org/rdl/Class6000PsiArtefact
Class690BarArtefact	Class 690 bar	http://sandbox.dexpi.org/rdl/Class690BarArtefact
Class800LbsArtefact	Class 800 lbs	http://sandbox.dexpi.org/rdl/Class800LbsArtefact
Class800PsiArtefact	Class 800 psi	http://sandbox.dexpi.org/rdl/Class800PsiArtefact
Class850KpaArtefact	Class 850 kpa	http://sandbox.dexpi.org/rdl/Class850KpaArtefact
Class900LbsArtefact	Class 900 lbs	http://sandbox.dexpi.org/rdl/Class900LbsArtefact
Class9000LbsArtefact	Class 9000 lbs	http://sandbox.dexpi.org/rdl/Class9000LbsArtefact
En1333Pn10Artefact	PN 10 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn10Artefact
En1333Pn100Artefact	PN 100 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn100Artefact
En1333Pn16Artefact	PN 16 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn16Artefact
En1333Pn160Artefact	PN 160 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn160Artefact
En1333Pn2,5Artefact	PN 2,5 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn2,5Artefact
En1333Pn25Artefact	PN 25 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn25Artefact
En1333Pn250Artefact	PN 250 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn250Artefact
En1333Pn320Artefact	PN 320 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn320Artefact
En1333Pn40Artefact	PN 40 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn40Artefact
En1333Pn400Artefact	PN 400 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn400Artefact
En1333Pn6Artefact	PN 6 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn6Artefact
En1333Pn63Artefact	PN 63 (EN 1333)	http://sandbox.dexpi.org/rdl/En1333Pn63Artefact

12.2.18. 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

12.2.19. 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

12.2.20. 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

12.2.21. 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

12.2.22. 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

12.2.23. 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

12.2.24. 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

12.2.25. PortStatusClassification

Classifications: The following table lists the admissible classifications for values of the attribute type PortStatusClassification.

Classification	Symbol	RDL
StatusHighHighHighPort	HHH	http://sandbox.dexpi.org/rdl/StatusHighHighHighPort
StatusHighHighPort	HH	http://data.posccaesar.org/rdl/RDS323099
StatusHighPort	H	http://data.posccaesar.org/rdl/RDS323144
StatusLowLowLowPort	LLL	http://sandbox.dexpi.org/rdl/StatusLowLowLowPort
StatusLowLowPort	LL	http://data.posccaesar.org/rdl/RDS323189
StatusLowPort	L	http://data.posccaesar.org/rdl/RDS323234

12.2.26. 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

12.2.27. 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

12.2.28. 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

12.2.29. 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

A. Changelog

Version 1.2

Changes with Impact on Proteus Exchange Files

- Renamed classes with modified RDL reference:
 - Area → [Arealsa95](#)
 - Enterprise → [Isa95Enterprise](#)
 - IndustrialComplex → [IndustrialComplexIso10209-2012](#)
 - PlantSection → [PlantSectionIso10209-2012](#)
 - Site → [Sitelsa95](#)
- Renamed attributes with modified RDL reference:
 - MetaData.TotalNumberOfSheetsAssignmentClass → [TotalNumberOfSheets](#), type changed from string to integer
- Fixed RDL reference of [ColumnInternalsArrangement](#)
- [PipeConnectorSymbol](#) is now abstract
- RDL for Terawatt was <http://data.posccaesar.org/rdl/RDS1348154> (WATT), now <http://data.posccaesar.org/rdl/RDS1344554> (TERAWATT)
- SubTagNameAssignmentClass of [Chamber](#), [SubTaggedColumnSection](#), etc.: now always <GenericAttribute>
- <Node> elements relevant for piping must have an XML attribute Type="process", see Proteus implementation of [PipingNode](#)

Changes without Impact on Proteus Exchange Files

- Renamed classes:
 - DirectFluidConnection → [DirectPipingConnection](#)
 - FluidConnection → [PipingConnection](#)
 - Node → [PipingNode](#)
 - NodeOwner → [PipingNodeOwner](#)
- Renamed attributes:
 - IndustrialComplex.Structure → [ParentStructure](#)
 - ProcessPlant.Structure → [ParentStructure](#)
 - PlantSection.Structure → [ParentStructure](#)
 - TechnicalItem.Structure → [ParentStructure](#)
 - PlantModel.Structures → [StructureItems](#)
 - SignalConveyingFunction.From → [Source](#)
 - SignalConveyingFunction.To → [Target](#)
 - Plant.TaggedItems → [TaggedPlantItems](#)
- [PipeConnectorSymbol](#) is now derived from [PipingNodeOwner](#)

A. Changelog

- Items of PortStatusClassification renamed (now same as RDL)
- Hidden range classes now explicit
- Other minor changes to improve overall consistency

Changes in Proteus Schema 4.0.1 RC 2

- <Extent> is always optional
- <Centerline>: coordinates are now optional

B. Example P&ID

The example P&ID created by the DEXPI group (see Fig. B.1) has been implemented in an XMpLant file¹. Figure B.2 shows the graphical content of this XMpLant file; the figure has been generated with the DEXPI graphics validator.

¹The document is attached as a separate file.

B. Example P&ID

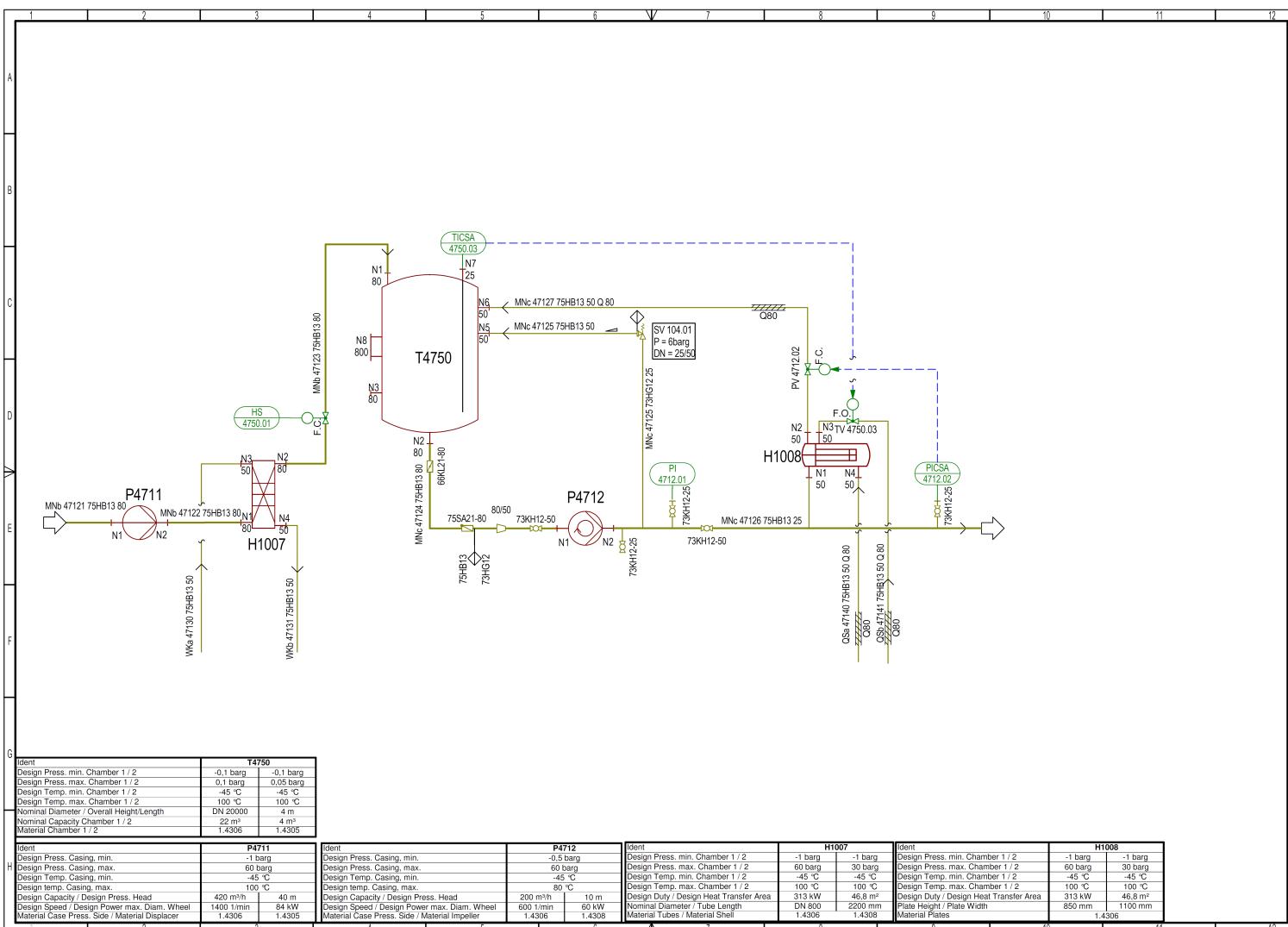


Figure B.1.: Original DEXPI example flowsheet.

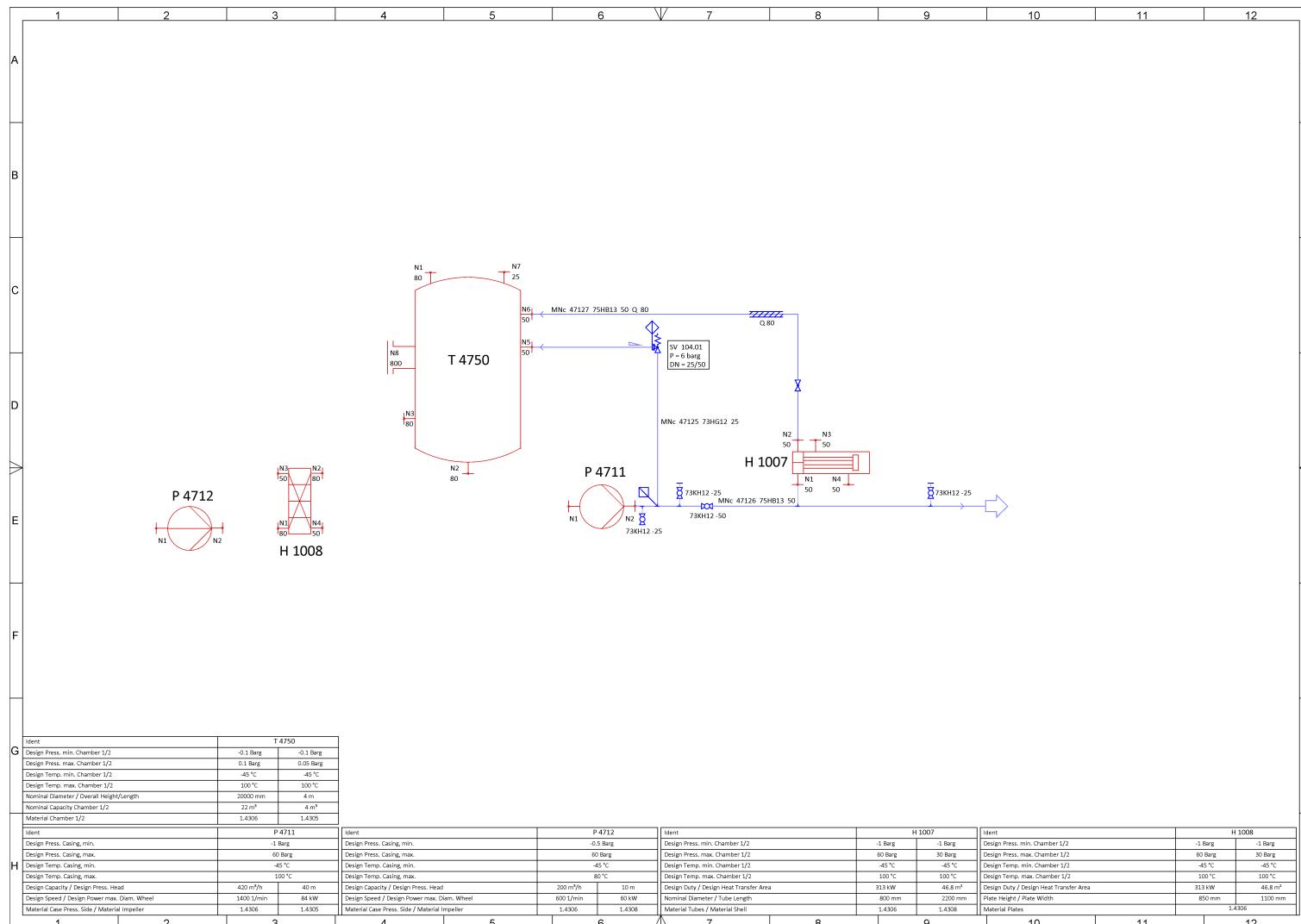


Figure B.2.: DEXPI example flowsheet, generated from the XMpLant implementation.

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