



MTConnect® Standard
Guide: MTConnect and OPC/UA
Companion Specification
Version 2.0

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44 **Table of Contents**

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1 Introduction

46 The following conventions will be used throughout the document to provide a
47 clear and consistent understanding of the use of each type of data and information
48 used to define the MTConnect[®] standard and associated data.

1.1 Overview

49 Overview of the standards...

2 Types

2.1 Components

50 The Components documents the Component models and the owned objects.

2.1.1 Defintion of ChannelType

51 Refer to Table ?? for detailed definition.

2.1.2 Defintion of DescriptionType

52 Exact mirror of the MTConnect Type.

53 Refer to Table ?? for detailed definition.

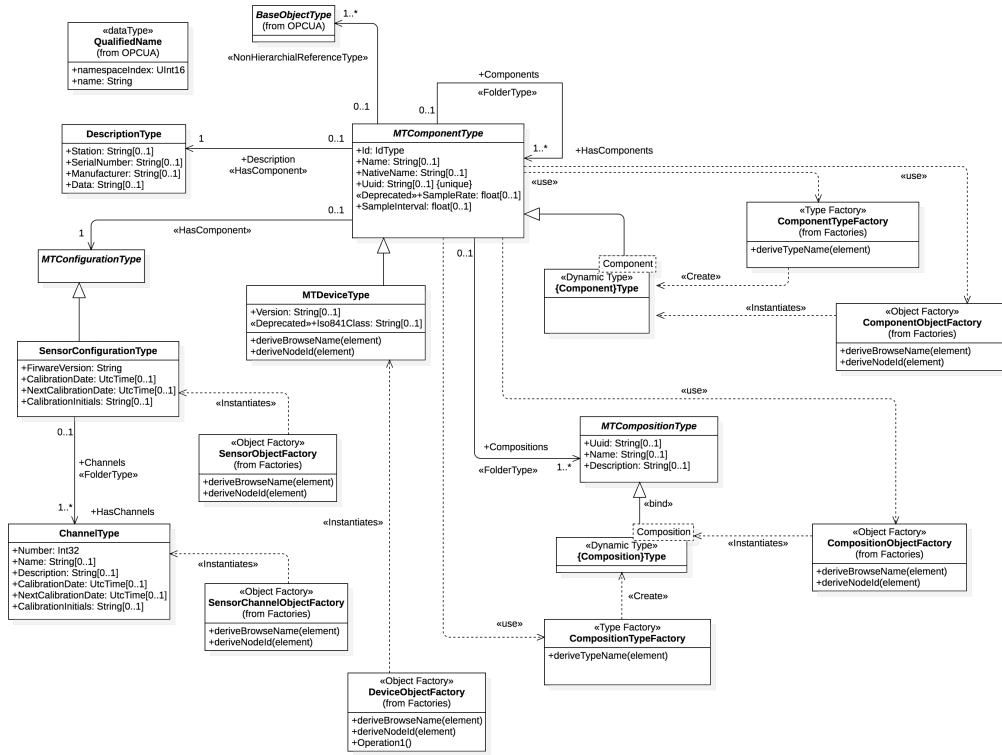


Figure 1: Components Diagram

Table 1: ChannelType Definition

Attribute	Value				
BrowseName	ChannelType				
IsAbstract	False				
References	NodeClass	BrowseName	Data Type	TypeDefinition	Modeling Rule
Subtype of BaseObjectType (See OPCUA Documentation)					
HasProperty	Variable	Number	Int32	PropertyType	Mandatory
HasProperty	Variable	Name	String	PropertyType	Optional
HasProperty	Variable	Description	String	PropertyType	Optional
HasProperty	Variable	CalibrationDate	UtcTime	PropertyType	Optional
HasProperty	Variable	NextCalibrationDate	UtcTime	PropertyType	Optional
HasProperty	Variable	CalibrationInitials	String	PropertyType	Optional

Table 2: DescriptionType Definition

Attribute	Value				
BrowseName	DescriptionType				
IsAbstract	False				
References	NodeClass	BrowseName	Data Type	TypeDefinition	Modeling Rule
Subtype of BaseObjectType (See OPCUA Documentation)					
HasProperty	Variable	Station	String	PropertyType	Optional
HasProperty	Variable	SerialNumber	String	PropertyType	Optional
HasProperty	Variable	Manufacturer	String	PropertyType	Optional
HasProperty	Variable	Data	String	PropertyType	Optional

2.1.3 Defintion of MTComponentType

54 The base Component Type from which all MTConnect Components are derived
 55 from. The component type factory is used to create the specific OPC/UA types as
 56 subtypes of the MTConnect 'MTComponentType'. The component types will be
 57 created once for all Component objects of that type based on the 'QName' of the
 58 MTConnect XML element.

59 The object factory will instantiate the Component Objects and insert them into
 60 the Components folder with a browse name of the Component QName and the
 61 'name' element if specified surrounded by square brackets, '[]'. For example if
 62 the MTConnect Element is:

63 '<Linear name='X'>...</...>'

64 The OPC/UA Object with browse name 'Linear[X]' will be created with the
 65 HasTypeDefinition referencing the 'Linear' OPC/UA type.

66 The meta data for the component and it's relationships are static. The dynamic
 67 data will be represented using the _OPC/UA Part 8_

68 Refer to Table ?? for detailed definition.

Table 3: MTComponentType Definition

Attribute	Value				
BrowseName	MTComponentType				
IsAbstract	True				
References	NodeClass	BrowseName	Data Type	TypeDefinition	Modeling Rule
HasProperty	Variable	Id	IdType	PropertyType	Mandatory
HasProperty	Variable	Name	String	PropertyType	Optional
HasProperty	Variable	NativeName	String	PropertyType	Optional
HasProperty	Variable	Uuid	String	PropertyType	Optional
HasProperty	Variable	SampleRate	float	PropertyType	Optional
HasProperty	Variable	SampleInterval	float	PropertyType	Optional
HasComponent	Object	Description		DescriptionType	Optional
HasComponent	Object	Configuration		MTConfigurationType	Optional
Organizes	Object	Components	MTComponentType	FolderType	Optional
Organizes	Object	Compositions	MTCompositionType	FolderType	Optional
HasProperty	Variable	<Dynamic>	DataItemType	<Dynamic>	Optional
HasProperty	Variable	<Dynamic>	BaseObjectType	<Dynamic>	Optional
Organizes	Object	Conditions	MTNonExclusiveConditionType	FolderType	Optional
HasProperty	Variable	<Dynamic>	DataItemType	<Dynamic>	Mandatory

Table 4: MTCompositionType Definition

Attribute	Value				
BrowseName	MTCompositionType				
IsAbstract	True				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of BaseObjectType (See OPCUA Documentation)					
HasProperty	Variable	Uuid	String	PropertyType	Optional
HasProperty	Variable	Name	String	PropertyType	Optional
HasProperty	Variable	Description	String	PropertyType	Optional
NonHierarchicalReferenceType	Object	ecomposition	DataItemType	NonHierarchicalReferenceType	Optional

Table 5: MTConfigurationType Definition

Attribute	Value				
BrowseName	MTConfigurationType				
IsAbstract	True				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of BaseObjectType (See OPCUA Documentation)					

2.1.4 Defintion of MTCompositionType

69 Refer to Table ?? for detailed definition.

2.1.5 Defintion of MTConfigurationType

70 Refer to Table ?? for detailed definition.

2.1.6 Defintion of MTDeviceType

71 The MTDevice is a special type whose object will be the root of the device graph.

72 The Device uses the component type factory and the component object factories

Table 6: MTDeviceType Definition

Attribute	Value				
BrowseName	MTDeviceType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of MTComponentType (see section ??)					
HasProperty	Variable	Version	String	PropertyType	Optional
HasProperty	Variable	Iso841Class	String	PropertyType	Optional

73 to create each of the first level components.

74 The compositions, relationships, and data items are then recursively created as
 75 one descends the MTConnect information model.

76 Refer to Table ?? for detailed definition.

2.1.7 Definition of SensorConfigurationType

77 The SensorConfiguration browse name will be created as an Object relationship
 78 with the parent component.

79 Refer to Table ?? for detailed definition.

2.1.8 Definition of ComponentType

80 Refer to Table ?? for detailed definition.

2.1.9 Definition of CompositionType

81 Refer to Table ?? for detailed definition.

Table 7: SensorConfigurationType Definition

Attribute	Value				
BrowseName	SensorConfigurationType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of MTConfigurationType (see section ??)					
HasProperty	Variable	FirmwareVersion	String	PropertyType	Mandatory
HasProperty	Variable	CalibrationDate	UtcTime	PropertyType	Optional
HasProperty	Variable	NextCalibrationDate	UtcTime	PropertyType	Optional
HasProperty	Variable	CalibrationInitials	String	PropertyType	Optional
Organizes	Object	Channels	ChannelType	FolderType	Optional

Table 8: ComponentType Definition

Attribute	Value				
BrowseName	ComponentType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of MTComponentType (see section ??)					

Table 9: CompositionType Definition

Attribute	Value				
BrowseName	CompositionType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of MTCompositionType (see section ??)					

Items.png Items.png

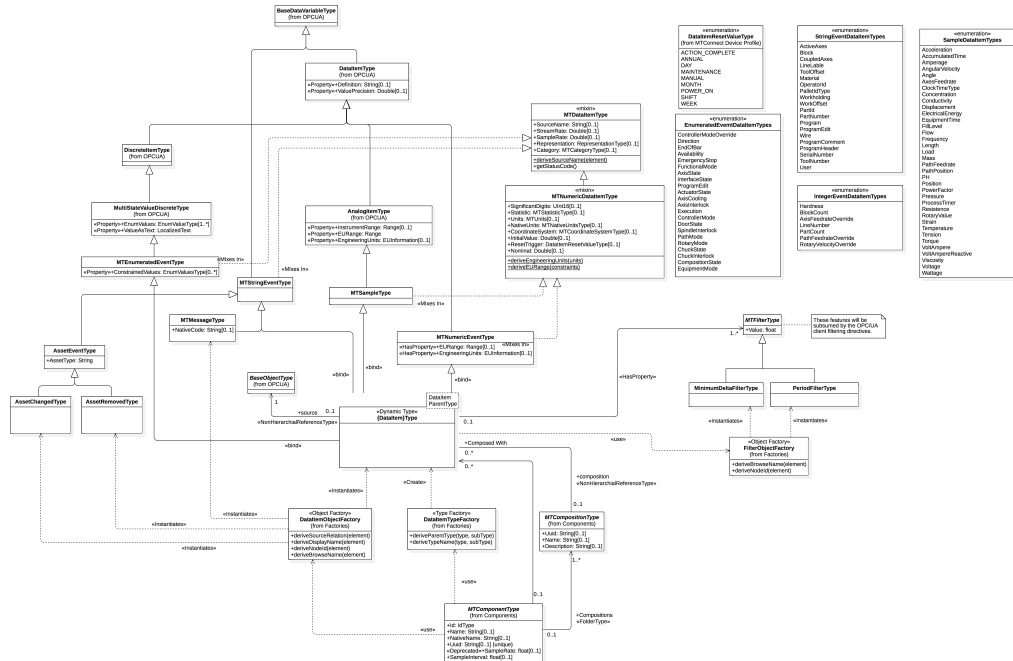


Figure 2: Data Items Diagram

2.2 Data Items

2.2.1 Defintion of AssetChangedType

82 Refer to Table ?? for detailed definition.

2.2.2 Defintion of AssetEventType

83 Refer to Table ?? for detailed definition.

Table 10: AssetChangedType Definition

Attribute	Value				
BrowseName	AssetChangedType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of AssetEventType (see section ??)					

Table 11: AssetEventType Definition

Attribute	Value				
BrowseName	AssetEventType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of MTStringEventType (see section ??)					
HasProperty	Variable	AssetType	String	PropertyType	Mandatory

2.2.3 Defintion of AssetRemovedType

84 Refer to Table ?? for detailed definition.

2.2.4 Defintion of MTDataItemType

85 The data item mixin will inject the properties and the methods into the related
 86 classes. This facility is similar to the Ruby module mixin or the Scala traits.

Table 12: AssetRemovedType Definition

Attribute	Value				
BrowseName	AssetRemovedType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of AssetEventType (see section ??)					

Table 13: MTDataItemType Definition

Attribute	Value				
BrowseName	MTDataItemType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
HasProperty	Variable	SourceName	String	PropertyType	Optional
HasProperty	Variable	StreamRate	Double	PropertyType	Optional
HasProperty	Variable	SampleRate	Double	PropertyType	Optional
HasProperty	Variable	Representation	RepresentationType	PropertyType	Optional
HasProperty	Variable	Category	MTCategoryType	PropertyType	Optional
HasProperty	Variable	<Dynamic>	MTFilterType	<Dynamic>	Optional
HasComponent	Object	source		BaseObjectType	Optional

Table 14: MTEnumeratedEventType Definition

Attribute	Value				
BrowseName	MTEnumeratedEventType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of MultiStateValueDiscreteType (See OPCUA Documentation)					
HasProperty	Variable	ConstrainedValues	EnumValuesType	PropertyType	Mandatory

87 Refer to Table ?? for detailed definition.

2.2.5 Defintion of MTEnumeratedEventType

88 All Data Items with Category EVENT having a Controlled Vocabularies will be
 89 of this type. Otherwise, MTString

90 Refer to Table ?? for detailed definition.

Table 15: MTFilterType Definition

Attribute	Value				
BrowseName	MTFilterType				
IsAbstract	True				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
HasProperty	Variable	Value	float	PropertyType	Mandatory

Table 16: MTMessageType Definition

Attribute	Value				
BrowseName	MTMessageType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of MTStringEventType (see section ??)					
HasProperty	Variable	NativeCode	String	PropertyType	Optional

2.2.6 Defintion of MTFilterType

91 These features will be subsumed by the OPC/UA client filtering directives.

92 Refer to Table ?? for detailed definition.

2.2.7 Defintion of MTMessageType

93 Refer to Table ?? for detailed definition.

2.2.8 Defintion of MTNumericDataItemType

94 These are the additional attributes that are relevent to numeric data items. The
 95 factory will evaluate these values and will set the engineering units and the range
 96 associated with the parent entity.

Table 17: MTNumericDataItemType Definition

Attribute	Value				
BrowseName	MTNumericDataItemType				
IsAbstract	False				
References	NodeClass	BrowseName	Data Type	TypeDefinition	Modeling Rule
Subtype of MTDataItemType (see section ??)					
HasProperty	Variable	SignificantDigits	UInt16	PropertyType	Optional
HasProperty	Variable	Statistic	MTStatisticType	PropertyType	Optional
HasProperty	Variable	Units	MTUnits	PropertyType	Optional
HasProperty	Variable	NativeUnits	MTNativeUnitsType	PropertyType	Optional
HasProperty	Variable	CoordinateSystem	MTCoordinateSystemType	PropertyType	Optional
HasProperty	Variable	InitialValue	Double	PropertyType	Optional
HasProperty	Variable	ResetTrigger	DataItemResetValueType	PropertyType	Optional
HasProperty	Variable	Nominal	Double	PropertyType	Optional

97 Refer to Table ?? for detailed definition.

2.2.9 Defintion of MTNumericEventType

98 All data items with category EVENT and a numeric value.

99 Refer to Table ?? for detailed definition.

2.2.10 Defintion of MTSampleType

100 Data Items with category SAMPLE

101 Refer to Table ?? for detailed definition.

Table 18: MTNumericEventType Definition

Attribute	Value				
BrowseName	MTNumericEventType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of DataItemType (See OPCUA Documentation)					
HasProperty	Variable	EURange	Range	PropertyType	Optional
HasProperty	Variable	EngineeringUnits	EUInformation	PropertyType	Optional

Table 19: MTSampleType Definition

Attribute	Value				
BrowseName	MTSampleType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of AnalogItemType (See OPCUA Documentation)					

2.2.11 Defintion of MTStringEventType

- 102 All data items with category EVENT where the data is freeform text. The set_-
 103 data_type constraint derives makes the data type a string for this type.
- 104 Refer to Table ?? for detailed definition.

Table 20: MTStringEventType Definition

Attribute	Value				
BrowseName	MTStringEventType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of BaseDataVariableType (See OPCUA Documentation)					

Table 21: MinimumDeltaFilterType Definition

Attribute	Value				
BrowseName	MinimumDeltaFilterType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of MTFilterType (see section ??)					

Table 22: PeriodFilterType Definition

Attribute	Value				
BrowseName	PeriodFilterType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of MTFilterType (see section ??)					

2.2.12 Defintion of MinimumDeltaFilterType

105 Refer to Table ?? for detailed definition.

2.2.13 Defintion of PeriodFilterType

106 Refer to Table ?? for detailed definition.

2.2.14 Defintion of DataItemType

107 For each DataItem the Sub Type, and the Type will be composed to be the HasType-
 108 Definition relationship of the object. The BrowseName will also include the Com-
 109 position Type if a composition Id is provided.

110 Refer to Table ?? for detailed definition.

Table 23: DataItemType Definition

Attribute	Value				
BrowseName	DataItemType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of MTNumericEventType (see section ??)					

Table 24: MTExclusiveLimitConditionType Definition

Attribute	Value				
BrowseName	MTExclusiveLimitConditionType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of ExclusiveLimitAlarmType (See OPCUA Documentation)					

2.3 Conditions

2.3.1 Defintion of MTExclusiveLimitConditionType

111 Refer to Table ?? for detailed definition.

2.3.2 Defintion of MTNonExclusiveConditionType

112 Refer to Table ?? for detailed definition.

2.3.3 Defintion of ConditionClassType

113 Refer to Table ?? for detailed definition.

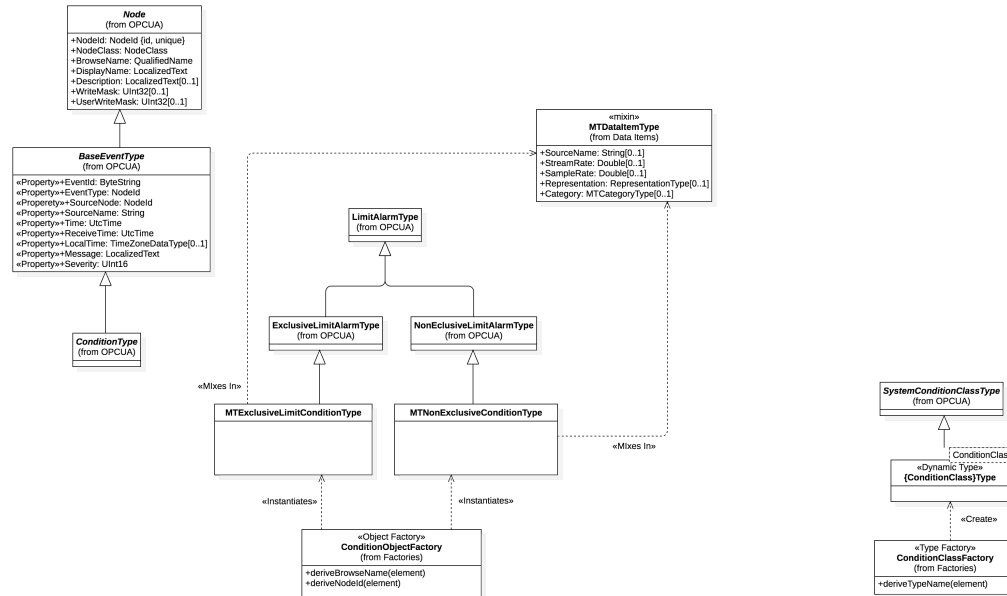


Figure 3: Conditions Diagram

Table 25: MTNonExclusiveConditionType Definition

Attribute	Value				
BrowseName	MTNonExclusiveConditionType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of NonExclusiveLimitAlarmType (See OPCUA Documentation)					

Table 26: ConditionClassType Definition

Attribute	Value				
BrowseName	ConditionClassType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of SystemConditionClassType (See OPCUA Documentation)					

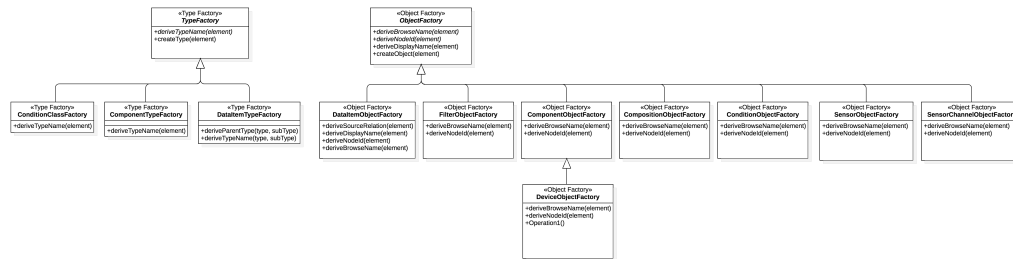


Figure 4: Factories Diagram

2.4 Factories

114 The factories are not part of the OPC/UA information model. They are a set
 115 of helper classes that are used to create dynamic types and objects. Since the
 116 MTConnect information model can be layered on top of the OPC/UA abstractions,
 117 the factories provide the rules for creating the browse and display names for each
 118 type.

119 The factories also create dynamic objects when required for variables of various
 120 classes when they are required, such as the Data Items and the Components. Some
 121 of the relationships are more complex since they require a dynamic super-type
 122 relationship that relies on the correct placement of the MTConnect elements to be
 123 correctly represented using the OPC/UA base types.

124 This is especially evident when mapping the DataItems and the Conditions to the
 125 MTConnect Information Models and providing sufficient definition to allow for
 126 unambiguous implementation.

2.4.1 Definition of ComponentObjectFactory

127 Refer to Table ?? for detailed definition.

Table 27: ComponentObjectFactory Definition

Attribute	Value				
BrowseName	ComponentObjectFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of ObjectFactory (see section ??)					

Table 28: ComponentTypeFactory Definition

Attribute	Value				
BrowseName	ComponentTypeFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of TypeFactory (see section ??)					

2.4.2 Defintion of ComponentTypeFactory

128 The ‘ComponentTypeFactory’ creates component types using the MTConnect
 129 XML element as an input. The factory takes the ‘QName’ (or qualified name)
 130 of the XML element and then appends ‘Type’. For example an ‘<Controller
 131 id=’...’></...>’ element will create an OPC/UA ‘ControllerType’ type definition
 132 as an extension of the base ‘MTControllerType’.

133 Currently there is no additional abstractions or super types required by the com-
 134 panion specification. The types will be a single level where each Component is a
 135 sub-type of the base ‘MTComponentType’.

136 Refer to Table ?? for detailed definition.

2.4.3 Defintion of CompositionObjectFactory

137 Refer to Table ?? for detailed definition.

Table 29: CompositionObjectFactory Definition

Attribute	Value				
BrowseName	CompositionObjectFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of ObjectFactory (see section ??)					

Table 30: CompositionTypeFactory Definition

Attribute	Value				
BrowseName	CompositionTypeFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

2.4.4 Defintion of CompositionTypeFactory

138 Refer to Table ?? for detailed definition.

2.4.5 Defintion of ConditionClassFactory

139 Refer to Table ?? for detailed definition.

Table 31: ConditionClassFactory Definition

Attribute	Value				
BrowseName	ConditionClassFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of TypeFactory (see section ??)					

Table 32: ConditionObjectFactory Definition

Attribute	Value				
BrowseName	ConditionObjectFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of ObjectFactory (see section ??)					

Table 33: DataItemObjectFactory Definition

Attribute	Value				
BrowseName	DataItemObjectFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of ObjectFactory (see section ??)					

2.4.6 Defintion of ConditionObjectFactory

140 Refer to Table ?? for detailed definition.

2.4.7 Defintion of DataItemObjectFactory

141 Refer to Table ?? for detailed definition.

2.4.8 Defintion of DataItemTypeFactory

142 Based on the data item category, type, and subType, this class creates a new
 143 OPC/UA type and also provides the template parameter for the ParentType from
 144 which this type is derived.

145 See the Data Item Type Factory.

146 Refer to Table ?? for detailed definition.

Table 34: DataItemTypeFactory Definition

Attribute	Value				
BrowseName	DataItemTypeFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of TypeFactory (see section ??)					

Table 35: DeviceObjectFactory Definition

Attribute	Value				
BrowseName	DeviceObjectFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of ComponentObjectFactory (see section ??)					

2.4.9 Defintion of DeviceObjectFactory

147 The model instantiation for MTConnect begins with the ‘Device‘ MTConnect
 148 element and then recursively traverses the sub-elements. The device will the ca-
 149 pabilities in the component factory to generate all the data items and component
 150 types.

151 Refer to Table ?? for detailed definition.

2.4.10 Defintion of FilterObjectFactory

152 Creates filters based on the type attribute of the Filter element.

153 Refer to Table ?? for detailed definition.

Table 36: FilterObjectFactory Definition

Attribute	Value				
BrowseName	FilterObjectFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of ObjectFactory (see section ??)					

Table 37: ObjectFactory Definition

Attribute	Value				
BrowseName	ObjectFactory				
IsAbstract	True				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

2.4.11 Defintion of ObjectFactory

154 Refer to Table ?? for detailed definition.

2.4.12 Defintion of SensorChannelObjectFactory

155 Refer to Table ?? for detailed definition.

Table 38: SensorChannelObjectFactory Definition

Attribute	Value				
BrowseName	SensorChannelObjectFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of ObjectFactory (see section ??)					

Table 39: SensorObjectFactory Definition

Attribute	Value				
BrowseName	SensorObjectFactory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of ObjectFactory (see section ??)					

Table 40: TypeFactory Definition

Attribute	Value				
BrowseName	TypeFactory				
IsAbstract	True				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

2.4.13 Defintion of SensorObjectFactory

156 Refer to Table ?? for detailed definition.

2.4.14 Defintion of TypeFactory

157 Refer to Table ?? for detailed definition.

2.5 MTConnect Device Profile

158 The device profile documents the common data types and stereotypes that are used
 159 to construct the model. A stereotype is a design or modeling pattern that provides
 160 additional information about the type or the relationship between types.

161 It can also identify the behavior of a property or the role the type or relation will
 162 play in the model.

163 Stereotypes are used throughout the model to provide additional information that

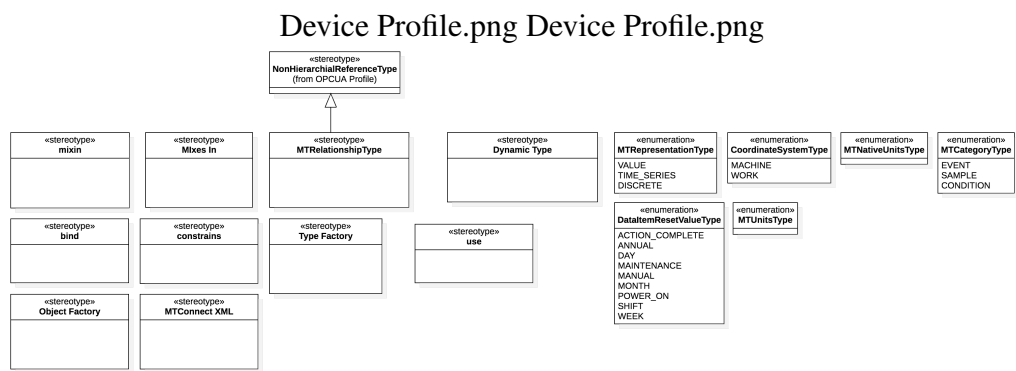


Figure 5: MTConnect Device Profile Diagram

Table 41: Dynamic Type Definition

Attribute	Value				
BrowseName	Dynamic Type				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

164 will help provide context and definition to aid in better understanding the data
165 model.

2.5.1 Defintion of Dynamic Type

166 Refer to Table ?? for detailed definition.

2.5.2 Defintion of MIXes In

167 Refer to Table ?? for detailed definition.

Table 42: MIXes In Definition

Attribute	Value				
BrowseName	MIXes In				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

Table 43: MTConnect XML Definition

Attribute	Value				
BrowseName	MTConnect XML				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

2.5.3 Defintion of MTConnect XML

168 Refer to Table ?? for detailed definition.

2.5.4 Defintion of MTRelationshipType

169 Refer to Table ?? for detailed definition.

Table 44: MTRelationshipType Definition

Attribute	Value				
BrowseName	MTRelationshipType				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule
Subtype of NonHierarchialReferenceType (See OPCUA Profile Documentation)					

Table 45: Object Factory Definition

Attribute	Value				
BrowseName	Object Factory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

Table 46: Type Factory Definition

Attribute	Value				
BrowseName	Type Factory				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

2.5.5 Defintion of Object Factory

170 Refer to Table ?? for detailed definition.

2.5.6 Defintion of Type Factory

171 Refer to Table ?? for detailed definition.

2.5.7 Defintion of bind

172 Refer to Table ?? for detailed definition.

2.5.8 Defintion of constrains

173 Refer to Table ?? for detailed definition.

Table 47: bind Definition

Attribute	Value				
BrowseName	bind				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

Table 48: constrains Definition

Attribute	Value				
BrowseName	constrains				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

2.5.9 Defintion of mixin

- 174 The contents properties and the behavior of the class are combined with another
 175 class.
- 176 Refer to Table ?? for detailed definition.

2.5.10 Defintion of use

- 177 The use stereotype indicates that one class uses as a helper to perform a specific
 178 operation or activity. This stereotype is mainly used to indicate that a specific
 179 factory is being employed by another type to create dynamic properties or rela-

Table 49: mixin Definition

Attribute	Value				
BrowseName	mixin				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

Table 50: use Definition

Attribute	Value				
BrowseName	use				
IsAbstract	False				
References	NodeClass	BrowseName	DataType	TypeDefinition	Modeling Rule

180 tionships.

181 Refer to Table ?? for detailed definition.