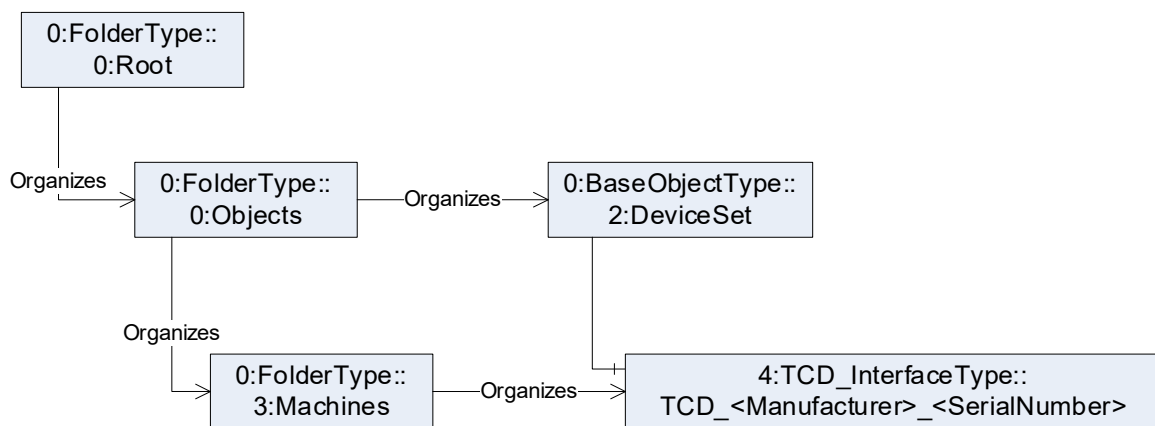


OPC 40082-1 Instance for umati Demonstrator

The namespace for the instances is manufacturer specific, e.g.
http://samplemanufacturer.org/umati_opc40082-1_sample_instance/

Table 2 shows the complete structure of the instance needed for the umati demonstrator. The demonstrator requires, that all mandatory elements of the *TCD_InterfaceType* are existent, even if there are not displayed in the dashboard. If the value of a variable a not displayed, is can be filled with a static dummy value (e.g. empty string). All displayed values are highlighted in light-blue.

Important: In OPC 40082-1 it is defined, that the instance of the *TCD_InterfaceType* is located under the Object *DeviceSet*. For umati it is necessary to add it under the Machines folder defined by OPC UA for machinery. In practice it is not necessary to create a new instance. It is sufficient to have an *Organizes Reference* from the *Machines* folder to the instance located under *DeviceSet*



In addition, OPC 40082-1 uses the *MachineInformationType* defined in OPC 40083. For participation in the umati demonstrator it is necessary to create in parallel an instance of the *MachineIdentificationType* defined in OPC UA for Machinery.

Table 1 – Namespaces used in this document

NamespaceURI	Namespace Index	Example
http://opcfoundation.org/UA/	0	0:NodeVersion
http://opcfoundation.org/UA/PlasticsRubber/TCD/	1	Default namespace of OPC 40082-1 → no prefix used, e.g. TCD_InterfaceType
http://opcfoundation.org/UA/DI/	2	2:DeviceClass
http://opcfoundation.org/UA/PlasticsRubber/GeneralTypes/	3	3:MachineInformationType
http://opcfoundation.org/UA/Machinery	4	4:MachineIdentificationType

Table 2 – Sample instance of TCD_InterfaceType

BrowseName	Type	Example Value	Remarks
Objects			
↳ Machines			
↳ TCD_<Manufacturer>_<SerialNumber>	TCD_InterfaceType		
↳ 2:Identification	4:MachineIdentificationType		1)
– 2:ProductInstanceUri		"http://samplemanufacturer.com/TCD1234"	2)
– 2:Manufacturer	0:LocalizedText	"Sample Manufacturer"	
– 2:Model	0:LocalizedText	"TCD 3000"	3)
– 2:SerialNumber	0:String	"1234"	
– 2:DeviceClass	0:String	"Temperature Control Device"	
– 4:Location	0:String	"K 14 F42/N 51.260407 E 6.744588"	3), 4)
↳ Identification	3:IdentificationType		
– 2:DeviceClass	0:String	"Temperature Control Device"	
– 2:Manufacturer	0:LocalizedText	"Sample Manufacturer"	
– 2:Model	0:LocalizedText	"TCD 3000"	
– 2:SerialNumber	0:String	"1234"	
↳ MachineConfiguration	3:MachineConfigurationType		2)
– 3:UserMachineName	0:String	"My TCD"	2)
– 3:LocationName	0:String	"K 14 F42/N 51.260407 E 6.744588"	2)
– 3:TimeZoneOffset	0:TimeZoneDataType	offset: 0 daylightSavingInOffset: true	2)
↳ TCDSpecification	TCDSpecificationType		
– ConnectedLoad	0:AnalogItemType → 0:Double	10.2	2)
– EURange	0:Range	Low: 0 High: 20	2)
– EngineeringUnits	0:EUIInformation	namespaceUri: "http://www.opcfoundation.org/UA/ units/un/cefact" unitId: 4937556 displayName: "kw" description: "kilowatt"	2)
– MaxTemperature	0:AnalogItemType → 0:Double	160	
– EURange	0:Range	Low: 0 High: 200	2)
– EngineeringUnits	0:EUIInformation	namespaceUri: "http://www.opcfoundation.org/UA/ units/un/cefact" unitId: 4408652 displayName: "°C" description: "degree Celsius"	
– NominalFlowRate	0:AnalogItemType → 0:Double	45	2)
– EURange	0:Range	Low: 0 High: 100	2)
– EngineeringUnits	0:EUIInformation	namespaceUri: "http://www.opcfoundation.org/UA/ units/un/cefact" unitId: 19506 displayName: "l/min" description: "litre per minute"	2)
– PowerValue	0:AnalogItemType → 0:Double	8	2)
– EURange	0:Range	Low: 0 High: 20	2)
– EngineeringUnits	0:EUIInformation	namespaceUri: "http://www.opcfoundation.org/UA/ units/un/cefact" unitId: 4937556 displayName: "kw" description: "kilowatt"	2)
↳ Operation	OperationType		
– ActiveErrors	3:ActiveErrorDataType	empty array / NULL	2)
– DeviceMappingNumber	0:UInt32	1	2)
– HighestAlarmSeverity	0:UInt16	0	2)
– OperationMode	OperatingModeEnumeration	2 (= NORMAL_OPERATION)	

BrowseName	Type	Example Value	Remarks
↳ DeviceZone	DeviceZoneType		
↳ Temperature	3:ControlledParameterType		
– ActualValue	0:AnalogItemType → 0:Double	122.4	
– EURange	0:Range	Low: 0 High: 200	2)
– EngineeringUnits	0:EUIInformation	namespaceUri: "http://www.opcfoundation.org/UA/ units/un/cefact" unitId: 4408652 displayName: "°C" description: "degree Celsius"	

- 1) Not included in OPC 40084-1 TCD_InterfaceType. To be added in the instance
- 2) This variable is mandatory in the model but will not be displayed in the demonstrator
- 3) Not mandatory in OPC UA for Machinery but for this model and will be displayed in the demonstrator
- 4) See <https://showcase.umati.org/Dashboard.html#location-of-fair-machine-and-software-icons-on-the-dashboard> for rules for filling the location.