

OPC 40084-9 Instance for umati Demonstrator

The namespace for the instances is manufacturer specific, e.g.
`http://samplemanufacturer.com/umati_sample_cutter_instance/`

Table 2 shows the complete structure of the instance needed for the umati demonstrator. The demonstrator requires, that all mandatory elements of the *Cutter_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: Version 2.0 of OPC 40084-9 must be used which defines, that the instance of the *Cutter_InterfaceType* is located under the Machines folder defined by OPC UA for machinery and that the *MachineIdentificationType* (also defined in OPC UA for Machinery) is used for the identification.

Table 1 – Namespaces used in this document

| NamespaceURI | Namespace Index | Example |
|--|-----------------|-----------------------------|
| <code>http://opcfoundation.org/UA/</code> | 0 | 0:NodeVersion |
| <code>http://opcfoundation.org/UA/DI/</code> | 2 | 2:DeviceClass |
| <code>http://opcfoundation.org/UA/PlasticsRubber/GeneralTypes/</code> | 3 | 3:UsersType |
| <code>http://opcfoundation.org/UA/PlasticsRubber/Extrusion_v2/GeneralTypes/</code> | 4 | 4:ExtrusionDeviceType |
| <code>http://opcfoundation.org/UA/Machinery/</code> | 5 | 6:MachineIdentificationType |

The default namespace OPC 40084-9 is not listed since all *BrowseNames* without prefix use this default namespace.

Table 2 – Sample instance of OPC 40084-9

| BrowseName | Type | Example Value | Remarks |
|--|--|---|---------|
| Objects | | | |
| ↳ Machines | | | |
| ↳ Cutter_<Manufacturer>_<SerialNumber> | Cutter_InterfaceType | | |
| – 4:IsPresent | 0:Boolean | true | 1) |
| – 4:LineId | 0:String | "Profile line 1" | 1) |
| – 3:SupportedLogbookEvents | 3:LogbookEventsEnumeration[] | empty array / NULL | 1) |
| ↳ 2:Identification | 5:MachineIdentificationType | | |
| – 2:ProductInstanceUri | | "https://samplemanufacturer.com/Cutter1234" | 1) |
| – 2:Manufacturer | 0:LocalizedText | "Sample Manufacturer" | |
| – 2:Model | 0:LocalizedText | "Cutter 3000" | 2) |
| – 2:SerialNumber | 0:String | "1234" | |
| – 2:DeviceClass | 0:String | "Cutter" | |
| – 5:Location | 0:String | "K 14 F42/N 51.260407 E 6.744588" | 2), 3) |
| – ControllerName | 0:String | "My Controller" | 1) |
| ↳ 6:MachineryBuildingBlocks | 0:FolderType | | |
| ↳ 2:Identification | 5:MachineIdentificationType | Reference to the instance <i>Identification</i> above | |
| ↳ 2:MachineryItemState | 4:ExtrusionMachineryItemState_StateMachineType | | |
| – CurrentState | 0:LocalizedText | "Executing" | |
| – Id | 0:NodeId | ns=4;i=5092 | 1) |
| ↳ 4:ExtrusionExecutingSubState | 4:ExtrusionExecutingSubState_StateMachineType | | 1) |
| – CurrentState | 0:LocalizedText | "ControlledRun" | 1) |
| – Id | 0:NodeId | ns=4;i=5070 | 1) |
| ↳ 2:MachineryOperationMode | 5:MachineryOperationMode_StateMachineType | | |
| – CurrentState | 0:LocalizedText | "Processing" | 1) |
| – Id | 0:NodeId | ns=5;i=5026 | 1) |
| ↳ CuttingProducts | | | |
| – ActualCuttingProductId | 0:String | "Profile42 400mm" | 1) |
| ↳ CuttingProduct_1 | CuttingProductType | | |
| – Id | 0:String | "Profile42 400mm" | |
| – Length | 0:AnalogItemType → 0:Double | 400 | |
| – EngineeringUnits | 0:EUIInformation | namespaceUri: "http://www.opcfoundation.org/UA/units/un/cefact" unitId: 5066068 displayName: "mm" description: "millimetre" | |
| – SetOutput | 0:UInt64 | 1000 | 1) |
| – ActualOutput | 0:UInt64 | 100 | 1) |
| – TotalOutput | 0:UInt64 | 100 | |

- 1) This variable is mandatory in the model but will not be displayed in the demonstrator
- 2) Not mandatory in OPC UA for Machinery but for this model and will be displayed in the demonstrator
- 3) See <https://showcase.umatl.org/Dashboard.html#location-of-fair-machine-and-software-icons-on-the-dashboard> for rules for filling the location.
- 4) Container object is mandatory in the model, but no instances inside (besides Variable *NodeVersion*) needed.