European Plastics and Rubber Machinery

EUROMAP

EUROMAP 102	Submodel Template of the Asset Administration Shell **Technical Data for Injection Molding Machines**

Draft 1.0, January 2026
56 pages

EUROMAP 102 (Draft 1.0) is identical with
IDTA 02044 “Technical Data for Injection Molding Machines”
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History

Date	Changes
2026-01-16	*Start of IDTA review period.*

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1 General

1.1 About this document

This document is a part of a specification series. Each part specifies the contents of a Submodel template for the Asset Administration Shell (AAS). The AAS is described in [1], [2], [3] and [6]. First exemplary Submodel contents were described in [4], while the actual format of this document was derived by the "Administration Shell in Practice" [5]. The format aims to be very concise, giving only minimal necessary information for applying a Submodel template, while leaving deeper descriptions and specification of concepts, structures and mapping to the respective documents [1] to [6].

The target group of the specification are developers and editors of technical documentation and manufacturer information, which are describing assets in smart manufacturing by means of the Asset Administration Shell (AAS) and therefore need to create a Submodel instance with a hierarchy of SubmodelElements. This document especially details on the question, which SubmodelElements with which semantic identification shall be used for this purpose.

This document was developed by a Joint Working Group (JWG) consisting of members of IDTA and EUROMAP. This document is identical to EUROMAP 102.

EUROMAP is the European umbrella association of the plastics and rubber machinery industry which accounts for annual sales of around 13.5 billion euro and a 40 per cent share of worldwide production. Almost 75 per cent of its European output is shipped to worldwide destinations. With global exports of 10.0 billion euro, EUROMAP’s around 1,000 machinery manufacturers are market leaders with nearly half of all machines sold being supplied by EUROMAP members.

EUROMAP provides technical recommendations for plastics and rubber machines. These guidelines encompass standards for machine descriptions, dimensions, electrical interfaces and energy measurement. Additionally, they include Industry 4.0 standards such as OPC UA and AAS, ensuring high levels of machine compatibility.

1.2 Scope of the Submodel

This Submodel template aims at the interoperable provision of information describing an injection molding machine (IMM) regarding to the asset of the respective Asset Administration Shell. The central element is the provision of properties [7], ideally interoperable by means of dictionaries such as ECLASS and IEC CDD (Common Data Dictionary). The purpose of this Submodel is to enhance the already published IDTA specification “Generic Frame for Technical Data for Industrial Equipment in Manufacturing” (02003-1-2) with specific properties of an injection molding machine. The focus of this document is the standardized description of relevant properties that represent the technical master data of an IMM. Master data in this context characterize the IMM capabilities, usually expressed in minimum, maximum, or boolean values, e.g., the maximum possible clamping force, minimal required mold height, or if the IMM has a centering groove. Typically, this master data is unalterable or fixed for a certain period.

This Submodel targets order management, production planning and control, and can be used for predictive maintenance. In order management, comparing the technical requirements of a plastic part to be produced from a customer with the technical capabilities of the manufacturer’s machinery is possible, e.g., for subcontracting. In a production planning scenario, performing a capability check to find suitable IMM for producing a plastic part in-house is conceivable [8]. Moreover, for production control, this Submodel enables resilience by allowing an accelerated rescheduling of jobs after a disturbance occurs, e.g., machine breakdown, by finding suitable alternative machinery. Lastly, the Submodel can be used for predictive maintenance by providing nominal values of single properties relevant for calculations, e.g., of the remaining useful life. This concept can serve as a basis for standardizing the respective Submodel. The conception is based on existing norms, studies of common practices at enterprises, directives, and standards to achieve far-reaching acceptance.

Besides the standardized Submodel, this template also introduces standardized SubmodelElementCollections (SMC) in order to improve interoperability while modeling aspects of IMM within other Submodels, e.g., the injection mold or periphery.

Scope of the document is a common injection moulding machine. Special designs will be considered in later revisions.

1.3 Relevant standards for the Submodel template

Following standards are relevant for application of this Submodel template:

DIN 24450 Maschinen zum Verarbeiten von Kunststoffen und Kautschuk; Begriffe

DIN EN ISO 472 Kunststoffe - Fachwörterverzeichnis

EUROMAP 1 Description of injection moulding machines

EUROMAP 2 Injection moulding machines - Mould fixing and connection dimensions

EUROMAP 4 Injection moulding machines - Determination of the actual injection efficiency

EUROMAP 5 Injection moulding process - Determination of important production data - Manufacturing Report

EUROMAP 6 Injection Moulding Machines - Determination of the duration of the dry cycle

EUROMAP 7 Injection moulding machines - Determination of the maximum clamping force

EUROMAP 8 Determination of the nominal opening force of injection moulding machines

EUROMAP 60.1 Determination of machine related energy efficiency class

EUROMAP 77 (OPC 40077, VDMA 40077) OPC UA interfaces for plastics and rubber machinery – Data exchange between injection moulding machines and MES

EUROMAP 83 (OPC 40083, VDMA 40083) OPC UA interfaces for plastics and rubber machinery – General Type definitions

So called property dictionaries are used identify information elements (see Terms and Definitions of [6]). Such property dictionaries include:

- ECLASS, see: https://www.eclasscontent.com/
- IEC CDD, see: https://cdd.iec.ch/cdd/iec61987/iec61987.nsf and https://cdd.iec.ch/cdd/iec62683/cdddev.nsf

In this document, properties are aimed to be described by ECLASS.

2 Submodel Template Technical Data

2.1 Approach

This document was developed by a Joint Working Group (JWG) consisting of members of IDTA and EUROMAP. It standardizes the use of the Submodel Template "Generic Frame for Technical Data for Industrial Equipment in Manufacturing" (IDTA 02003 Version 2.0) for plastic and rubber injection molding machines.

The foundation of this document is based on the project results of the interOpera subproject "Technical Data for Injection Molding" The properties defined in this project have now become ECLASS characteristics and have been adopted as IRDI where possible. The parameters from the interOpera project were discussed and reassigned to the modified information model structure, with new properties also being defined as IRIs.

The parameters defined in this submodel are mainly located in the SML TechnicalPropertyAreas, but some parameters are also defined in the SML SpecificDescriptions.

Typically, a series of injection molding machines is designed to allow for various injection units and clamping units within the series. The injection unit can consist of different combinations of screw and barrel, known as the plastification, which can be realized with several different nozzles.

Therefore, the Submodel Template has been developed to be used for two types of Asset Administration Shells:

1. **Product-Type-Shell**: Describes the series. Multiple injection units, plastification, and clamping units are possible (Multiplicity: OneToMany).
2. **Product-Instance-Shell**: Describes the machine at the time of delivery. Injection unit, plastification, and clamping unit is present only once (Multiplicity: One).

The use as a Product-Instance-Shell in use is not covered. For example, if the screw is replaced by the customer, the resulting parameters (e.g., maximum throughput, pressures…) are not automatically adjusted. This requires an additional feedback loop with the manufacturer.

Figure 1 shows an example of the difference between a Product-Type-Shell and a Product-Instance-Shell.

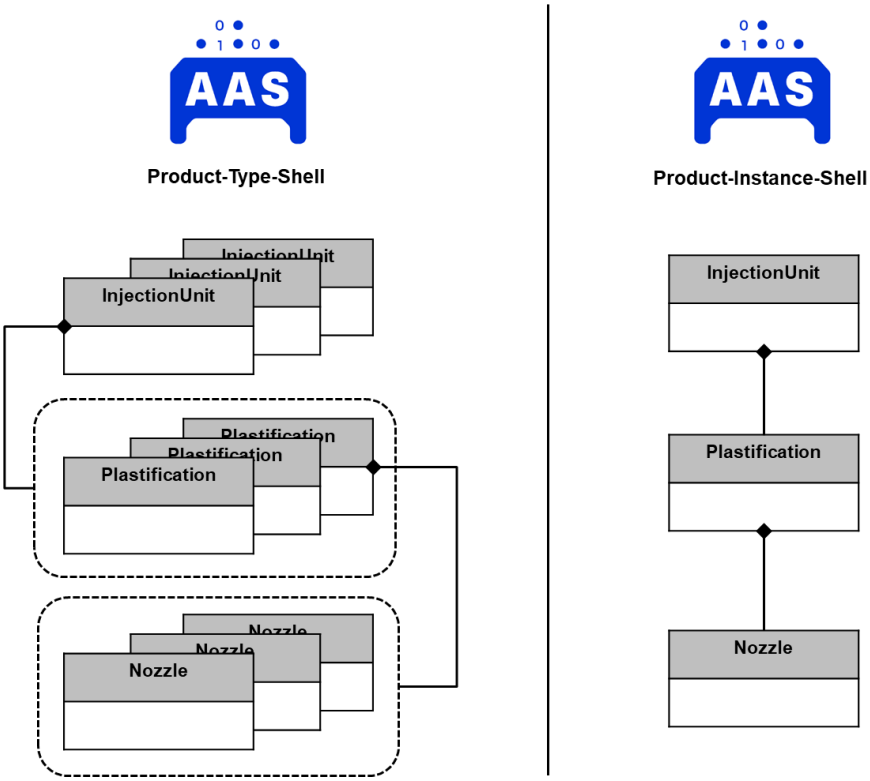

Figure 1: Difference between Product-Type-Shell and Product-Instance-Shell

2.2 UML Diagrams of Submodel

In this chapter, **Figure 2** to **Figure 8** show the UML diagrams of the Submodel with different levels of detail.

Figure 2 shows the UML Diagram of the Submodel TechnicalData with the Submodel Element List (SML) TechnicalPropertyAreas with the SMC Instance “EUROMAP”, which contains the technical properties defined in this specification.

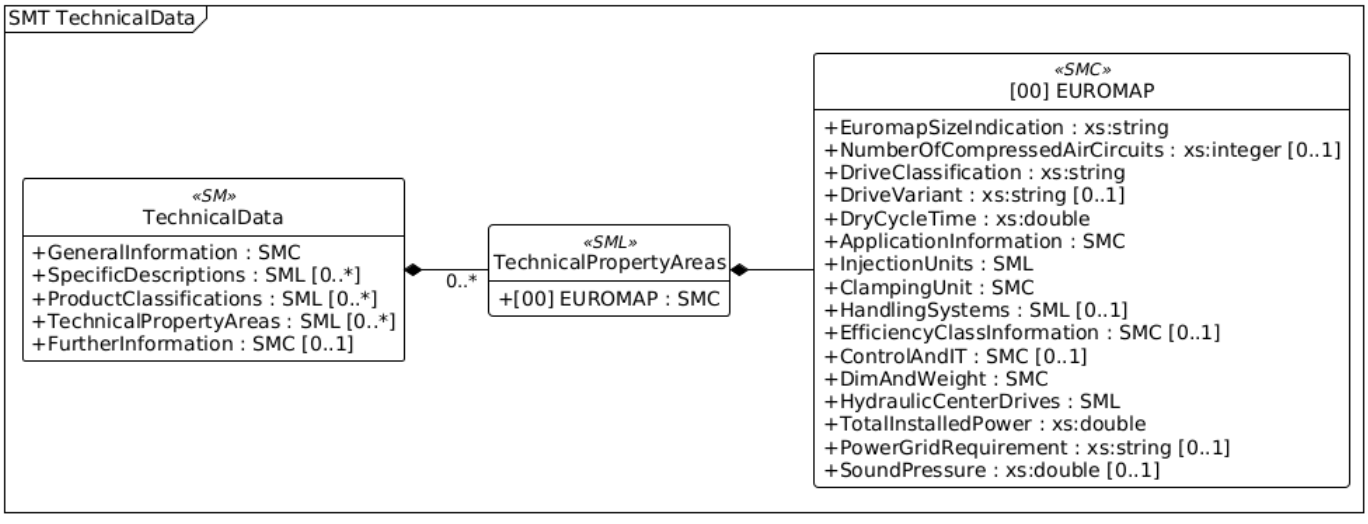

Figure 2: UML Diagram of SM TechnicalData with SML TechnicalPropertyAreas and SMC “EUROMAP”

Figure 3 shows the UML Diagram of the Submodel with all child elements.

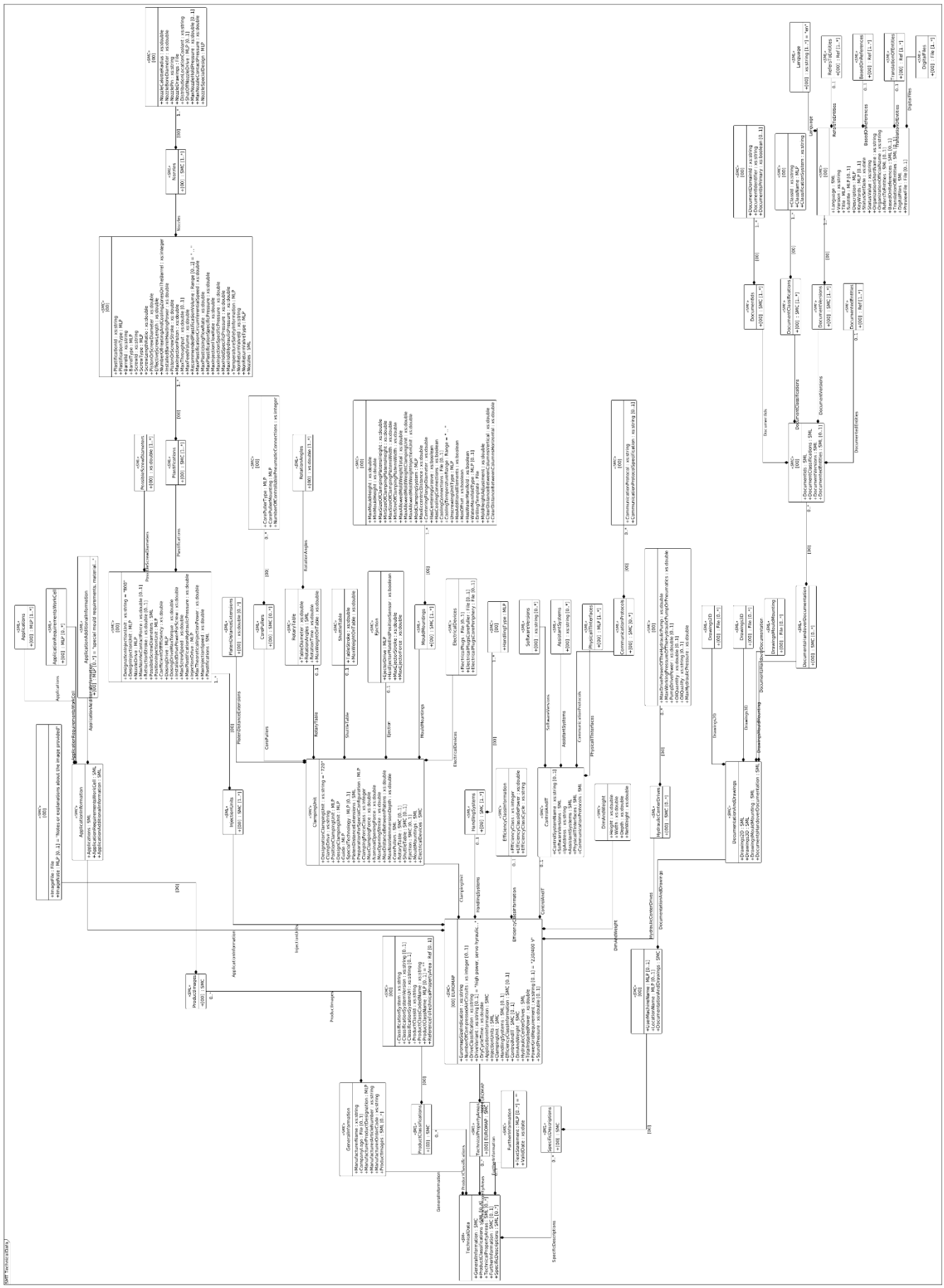

Figure 3: UML Diagram of Submodel with all child elements

Figure 4 shows the UML diagram of the Submodel with only the properties, which are defined in this specification.

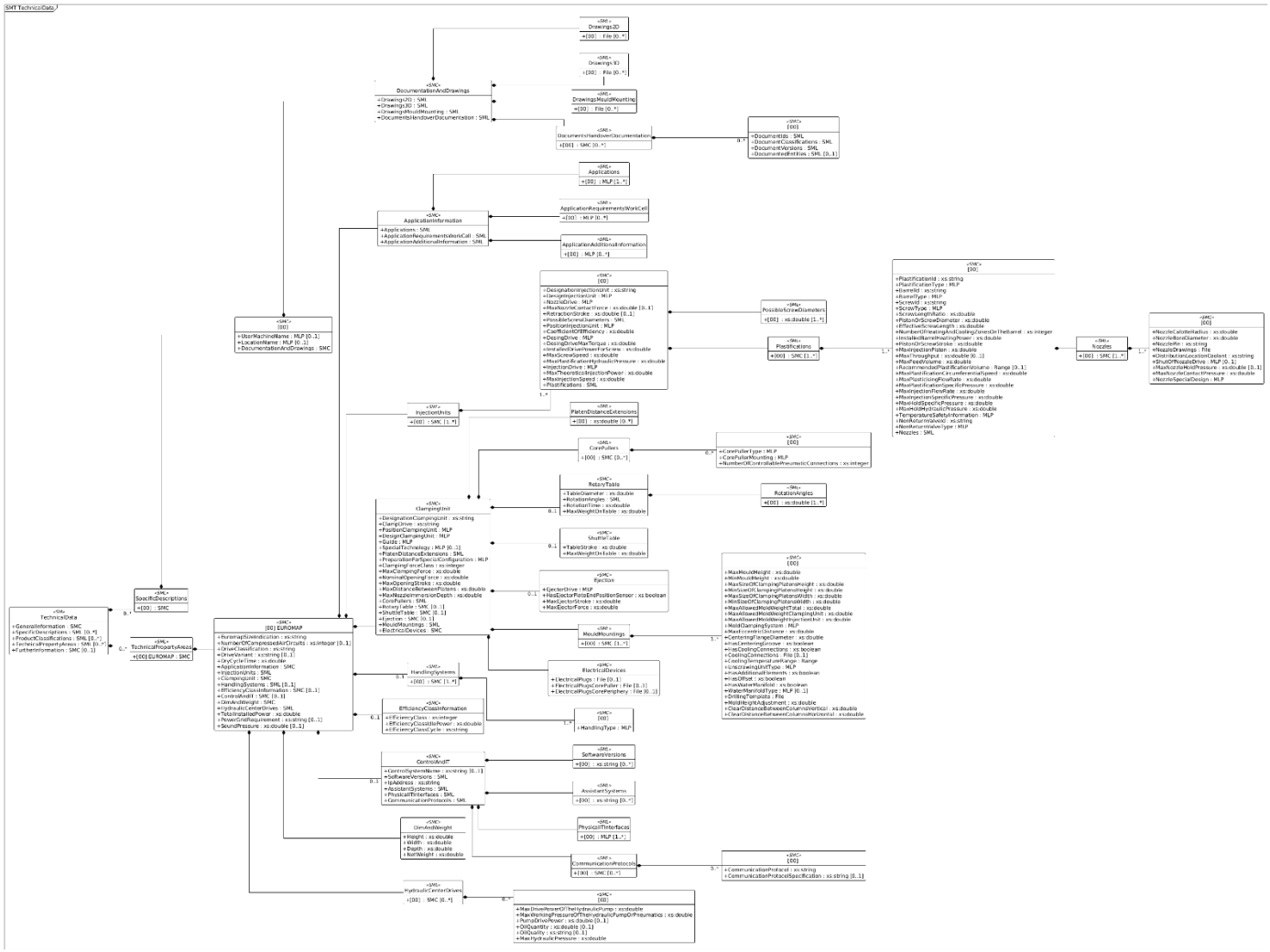

Figure 4: UML Diagram of the Submodel with all Properties defined in this SMT

Figure 5 shows the UML diagram of the SML SpecificDescriptions

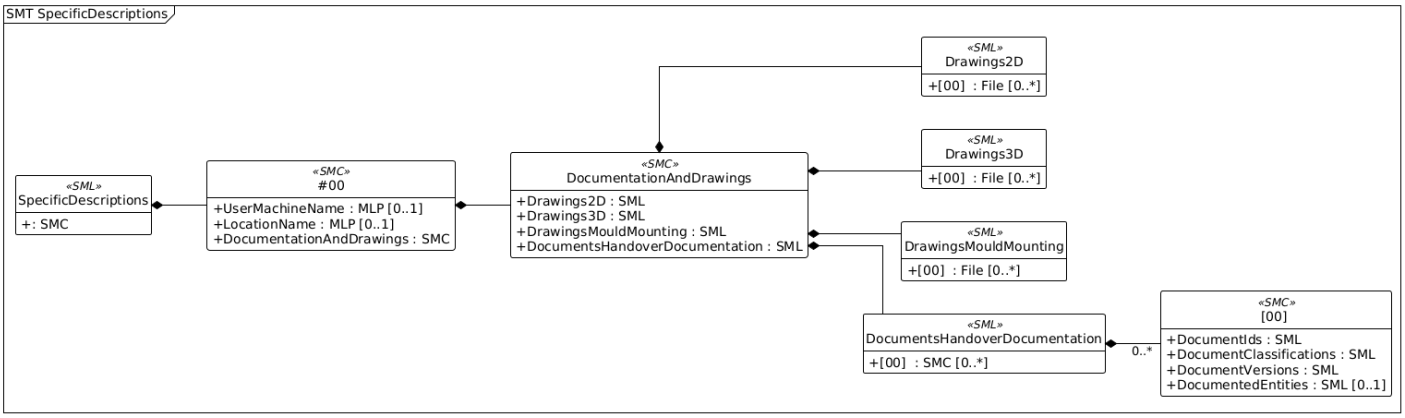

Figure 5: UML Diagram of the SML SpecificDescriptions with child SMCs

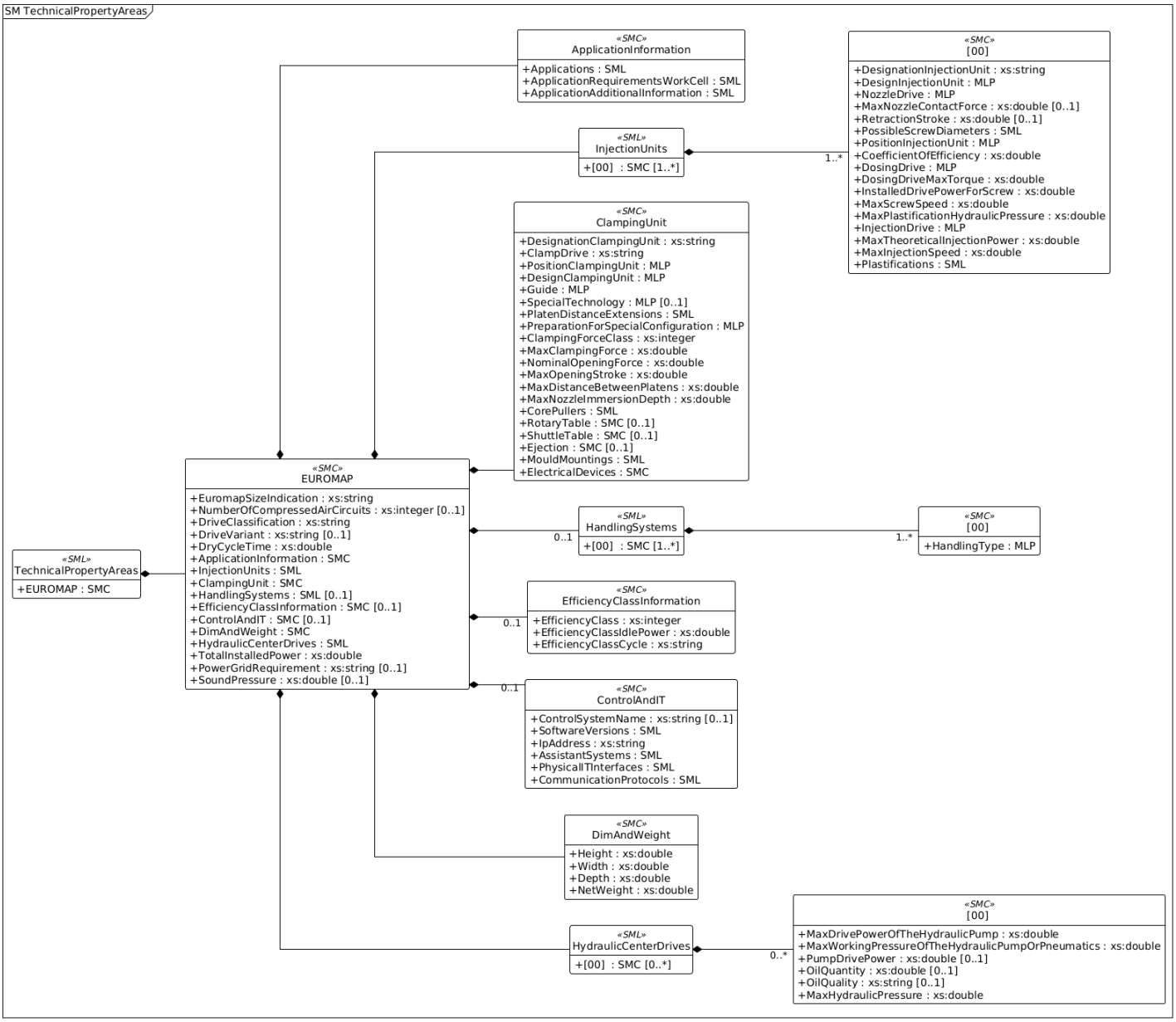

Figure 6: UML Diagram of SMI TechnicalPropertyAreas with first-level child elements

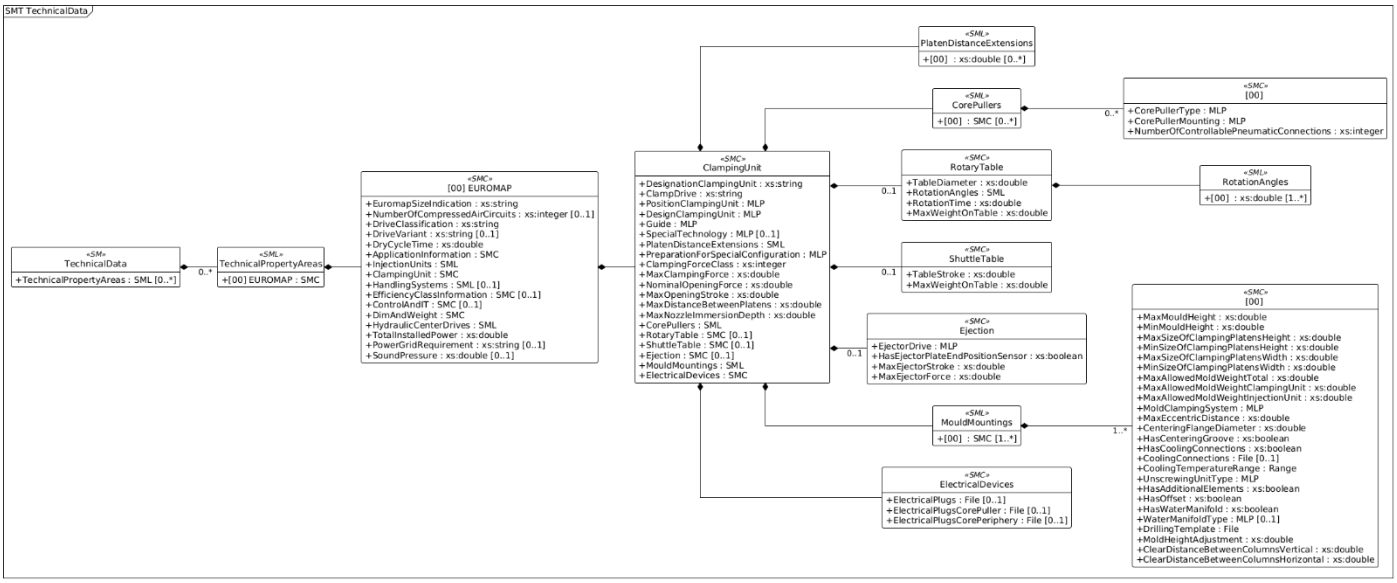

Figure 7: UML Diagram of SMC ClampingUnit with child SMCs

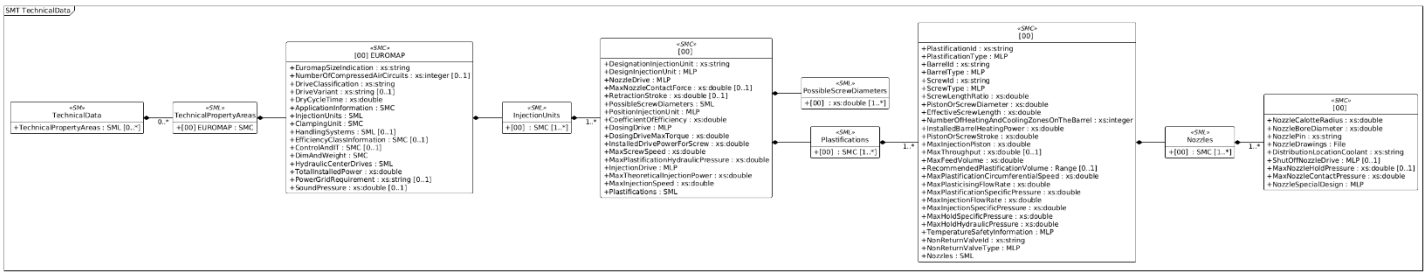

Figure 8: UML Diagram of SMC InjectionUnit with child SMCs

2.3 Attributes for the Submodel “Technical Data”

The Submodel Template is based on the Submodel Template “Generic Frame for Technical Data for Industrial Equipment in Manufacturing” (IDTA 02003 Version 2.0). The top level structure as well as other elements are defined in IDTA 02003. In the following chapters, only the elements defined in this specification are listed explicitly.

The following attributes need to be set for the Submodel instance.

Table 1: Attributes of the Submodel Instance

idShort:	TechnicalData
Class:	Submodel
semanticId:	0173-1#01-AHX837#002
Parent:	InjectionMoldingMachine
Explanation:	Submodel containing technical data of the asset and associated product classificatons

[SME type] idShort	semanticId [preferred name] definition@en	[valueType] unit [unitId]	card.
[SMC] GeneralInformation	0173-1#02-ABK161#002/0173-1#01-AHX838#002 [General information] General information, for example ordering and manufacturer information	[-] -	1
[SML] ProductClassifications	0173-1#02-ABK162#002 [Product classifications] Product classifications by association of product classes with common classification systems	[-] -	0..*
[SML] TechnicalPropertyAreas	0173-1#02-ABK163#002 [Technical property areas] List of all technical property areas	[-] -	0..*
[SMC] FurtherInformation	0173-1#02-ABK164#002 [Further information] Further information on the product, the validity of the information provided and this data record	[-] -	0..1
[SML] SpecificDescriptions	0173-1#02-ABM221#001 [Specific descriptions] Specific description areas for multiple use cases or areas of application	[-] -	0..*

2.4 SML “TechnicalPropertyAreas”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 2: Attributes of the Submodel Element List “TechnicalPropertyAreas”

idShort:	TechnicalPropertyAreas		
Class:	SubmodelElementList		
semanticId:	0173-1#02-ABK163#002		
Parent:	TechnicalData		
Explanation:	List of all technical property areas		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SMC] EUROMAP	0173-1#02-ABL358#002/0173-1#01-AHX773#002 [Technical property area] Specific property area referenced by a product classification	[-] -	1

2.4.1 SMC “EUROMAP”

The technical properties describing an injection moulding machine specified in this standard are provided in in the SMC instance of a technical property area named “EUROMAP”.

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 3: Attributes of the Submodel Element Collection “EUROMAP”

idShort:	EUROMAP		
Class:	SubmodelElementCollection		
semanticId:	0173-1#02-ABL358#002/0173-1#01-AHX773#002		
Parent:	TechnicalPropertyAreas		
Explanation:	Specific property area referenced by a product classification		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop] EuromapSizeIndication	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/EuromapSizeIndication/1/0 [EUROMAP size indication] Consists of the sizes by which the injection moulding machine is identified: these are clamping force in kN and the calculated injection piston (or screw) displacement in cm3 (related to an injection pressure of 1000 bars). In an horizontal clamping unit, the clamping force in kN is identified by a suffix H. In the case of a vertical clamping or injection unit, the corresponding numerical value is supplemented by a suffix V. Where	[String] -	1

	there is injection into the separating plate, in the horizontal clamping and injection unit, suffix L is added to the numerical values. If two injection units are provided, the calculated displacement in cm3 of the second unit must be linked to the numerical value for the calculated displacement (stroke volume) in cm3 of the first injection unit by a stroke (/). Examples: 17800 H - 16170, 600 V -35/60		
[Prop] NumberOfCompressedAirCircuits	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/NumberOfCompressedAirCircuits/1/0 [Number of compressed air circuits] Number of compressed air circuits in the injection moulding machine	[Integer] -	0..1
[Prop] DriveClassification	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DriveClassification/1/0 [Drive Classification] Classification of the machine drive	[String] -	1
[Prop] DriveVariant	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DriveVariant/1/0 [drive variant] Additional information about the drive variant.	[String] -	0..1
[Prop] DryCycleTime	0173-1#02-ABL655#001 [Dry cycle time] Measure of the basic speed of the machine. It includes all cycle operations except plasticizing, mold filling, and cooling of the molded part	[Double] s [0173-1#05-AAA203#003]	1
[SMC] ApplicationInformation	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ApplicationInformation/1/0 [Application additional information] Additional information regarding the Application of the injection moulding machine	[-] -	1
[SML] InjectionUnits	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/InjectionUnits/1/0 [injection units] A list of injection units	[-] -	-
[SMC] ClampingUnit	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ClampingUnit/1/0 [Clamping Unit] The clamping unit is that portion of an injection molding machine in which the mold is mounted on supporting platens and usually guided by four tie-bars	[-] -	1
[SML]	https://admin-	[-]	0..1

HandlingSystems	shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/HandlingSystems/1/0 [handling systems] A list of handling systems applicable to the machine	-	
[SMC] EfficiencyClassInformation	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/EfficiencyClassInformation/1/0 [efficiency class] Information about the energy efficiency class of the injection moulding machine according to EUROMAP 60.1	[-] -	0..1
[SMC] ControlAndIT	0173-1#01-AHY674#001 [Control And IT] Features of the machine control and the IT interfaces	[-] -	0..1
[SMC] DimAndWeight	0173-1#01-AHY660#001 [Dimension And Weight] Contains the dimensions and weight of the asset	[-] -	1
[SML] HydraulicCenterDrives	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/HydraulicCenterDrives/1/0 [hydraulic center drives] A list of hydraulic center drives	[-] -	1
[Prop] TotalInstalledPower	0173-1#02-ABL656#001 [total installed power] power, which is installed in total	[Double] kW [0173-1#05-AAA756#005]	1
[Prop] PowerGridRequirement	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PowerGridRequirement/1/0 [power grid requirement] Requirements to the power grid, power supply, electrical connection	[String] -	0..1
[Prop] SoundPressure	0173-1#02-AAZ121#003 [1m-area measure sound pressure level] Sound pressure level measured at 1 m distance from the machine surface	[Double] dB(A) -	0..1

2.5 SMC “ApplicationInformation”

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 4: Attributes of the Submodel Element Collection “ApplicationInformation”

idShort:	ApplicationInformation		
Class:	SubmodelElementCollection		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ApplicationInformation/1/0		
Parent:	EUROMAP		
Explanation:	Information about the application and resulting requirements		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SML] Applications	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Applications/1/0 [applications] Provides a list of applications	[-] -	1
[SML] ApplicationRequirementsWorkCell	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ApplicationRequirementsWorkCell/1/0 [application requirements on work cell] A list of requirements on the work cell resulting from the application	[-] -	1
[SML] ApplicationAdditionalInformation	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ApplicationAdditionalInformation/1/0 [application additional information] A list of additional information regarding the the application	[-] -	-

2.5.1 SML “Applications”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 5: Attributes of the Submodel Element List “Applications”

idShort:	Applications
Class:	SubmodelElementList
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Applications/1/0
Parent:	ApplicationInformation
Explanation:	A list of applications

[SME type] idShort	semanticId [preferred name] definition@en	[valueType] unit [unitId]	card.
[MLP]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Application/1/0 [Application] E.g., general use, special application; for thermoplastics, thermoplastics containing expanding agents, duomers, rubber	[-] -	1..*

2.5.2 SML "ApplicationRequirementsWorkCell"

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 6: Attributes of the Submodel Element List "ApplicationRequirementsWorkCell"

idShort:	ApplicationRequirementsWorkCell		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ApplicationRequirementsWorkCell/1/0		
Parent:	ApplicationInformation		
Explanation:	A list of requirements on the work cell resulting from the application		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[MLP]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ApplicationRequirementsWorkCell/1/0 [application requirements on work cell] requirements on the work cell resulting from the application	[-] -	0..*

2.5.3 SML "ApplicationAdditionalInformation"

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 7: Attributes of the Submodel Element List "ApplicationAdditionalInformation"

idShort:	ApplicationAdditionalInformation
Class:	SubmodelElementList
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ApplicationAdditionalInformation/1/0
Parent:	ApplicationInformation
Explanation:	A list of additional information regarding the the application

[SME type] idShort	semanticId [preferred name] definition@en	[valueType] unit [unitId]	card.
[MLP]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ApplicationInformation/1/0 [Application additional information] Additional information regarding the Application of the injection moulding machine	[-] -	0..*

2.6 SML “InjectionUnits”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 8: Attributes of the Submodel Element List “InjectionUnits”

idShort:	InjectionUnits		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/InjectionUnits/1/0		
Parent:	EUROMAP		
Explanation:	A list of injection units		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SMC]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/InjectionUnit/1/0 [Injection Unit] The injection unit, also called the plasticator, prepares the proper plastic melt and via the injection unit transfers the melt into the next component that is the mold	[-] -	1..*

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 9: Attributes of the Submodel Element Collection “InjectionUnit”

idShort:	
Class:	SubmodelElementCollection
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/InjectionUnit/1/0
Parent:	InjectionUnits
Explanation:	Technical properties that belongs to the injection unit. The injection unit, also called the plasticator, prepares the proper plastic melt and via the injection unit transfers the melt into the next component that is the mold

[SME type] idShort	semanticId [preferred name] definition@en	[valueType] unit [unitId]	card.
[Prop] DesignationInjectionUnit	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DesignationInjectionUnit/1/0 [Designation of the injection unit] -	[String] -	1
[MLP] DesignInjectionUnit	0173-1#02-ABL595#001 [Design] Design of a component or an element	[-] -	1
[MLP] NozzleDrive	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/NozzleDrive/1/0 [Nozzle drive] Type of the nozzle drive, e.g., electromechanical, hydraulic	[-] -	1
[Prop] MaxNozzleContactForce	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MaxNozzleContactForce/1/0 [Maximum nozzle contact force] maximum contact force of the nozzle	[Double] N [0173-1#05-AAA561#005]	0..1
[Prop] RetractionStroke	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/RetractionStroke/1/0 [Injection unit retraction stroke] Retraction stroke of the injection unit	[Double] mm [0173-1#05-AAA480#005]	0..1
[SML] PossibleScrewDiameters	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PossibleScrewDiameters/1/0 [possible screw diameters] A list of possible screw diameters compatible with the injection unit	[-] -	1
[MLP] PositionInjectionUnit	0173-1#02-ABL594#001 [Position injection unit] position of the injection unit, e.g., horizontal, vertical, pivoted, dosplaceable	[-] -	1
[Prop] CoefficientOfEfficiency	0173-1#02-ABL652#001 [Coefficient of efficiency] Ratio of maximal actual injection power and maximal theoretical injection power	[Double] 1 [0173-1#05-AAA006#005]	1
[MLP] DosingDrive	0173-1#02-ABL596#001 [Screw drive]	[-] -	1

	Type of the screw drive, e.g., electromechanical, hydraulic		
[Prop] DosingDriveMaxTorque	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DosingDriveMaxTorque/1/0 [Dosing drive maximum torque] Maximum torque of the dosing drive.	[Double] Nm [0173-1#05-AAA212#005]	1
[Prop] InstalledDrivePowerForScrew	0173-1#02-ABL639#001 [Installed drive power for screw] For electrical or hydraulic rotary drive	[Double] kW [0173-1#05-AAA756#003]	1
[Prop] MaxScrewSpeed	0173-1#02-ABL638#001 [Maximum Screw speed] From … to … stepless, adjustable in steps. Remark: when diameter is changed, please consider the dependencies to other properties, which will also change	[Double] min-1 [0173-1#05-AAA650#003]	1
[Prop] MaxPlastificationHydraulicPressure	0173-1#02-ABL649#001 [Maximum plastification hydraulic pressure] Maximal plastification pressure in cylinder	[Double] bar [0173-1#05-AAA044#002]	1
[MLP] InjectionDrive	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/InjectionDrive/1/0 [Injection drive] Type of the injection unit drive, e.g., electromechanical, hydraulic, pneumatic	[-] -	1
[Prop] MaxTheoreticalInjectionPower	0173-1#02-ABL647#001 [Maximum theoretical injection power] Product (kW) of theoretical injection capacity and maximal injection pressure p max as defined in EUROMAP 1	[Double] kW [0173-1#05-AAA756#003]	1
[Prop] MaxInjectionSpeed	0173-1#02-ABL648#001 [Maximum injection speed] Maximal injection speed (e.g. mm/s)	[Double] mm/s [0173-1#05-AAA068#003]	1
[SML] Plastifications	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Plastifications/1/0 [plastifications] A list of plastifications compatible with the injeciton unit	[-] -	1

2.6.1 SML “PossibleScrewDiameters”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 10: Attributes of the Submodel Element List “PossibleScrewDiameters”

idShort:	PossibleScrewDiameters		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PossibleScrewDiameters/1/0		
Parent:			
Explanation:	A list of possible screw diameters compatible with the injection unit		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PossibleScrewDiameter/1/0 [possible screw diameter] Provides information about one possible screw diameter with this injection unit.	[Double] mm [0173-1#05-AAA480#005]	1..*

2.6.2 SML “Plastifications”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 11: Attributes of the Submodel Element List “Plastifications”

idShort:	Plastifications		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Plastifications/1/0		
Parent:			
Explanation:	A list of plastifications compatible with the injeciton unit		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SMC]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Plastification/1/0 [plastification] Contains the technical data for the plastification. Plastification is defined as the combination of screw and barrel.	[-] -	1..*

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 12: Attributes of the Submodel Element Collection “Plastification”

idShort:			
Class:	SubmodelElementCollection		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Plastification/1/0		
Parent:	Plastifications		
Explanation:	Contains the technical data for the plastification. Plastification is defined as the combination of screw and barrel.		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop] PlastificationId	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PlastificationId/1/0 [Plastification ID] ID of the functional group plastification. Consists of barrel and screw.	[String] -	1
[MLP] PlastificationType	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PlastificationType/1/0 [Type of plastification] Information about the type of plastification.	[-] -	1
[Prop] BarrelId	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/BarrelId/1/0 [Barell ID] ID of (only) the barrel. In combination with the screw, this forms the plastification unit.	[String] -	1
[MLP] BarrelType	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/BarrelType/1/0 [Type of barrel] Provides information about the type of barrel.	[-] -	1
[Prop] ScrewId	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ScrewId/1/0 [Screw ID] ID of (only) the screw. In combination with the barell, this forms the plastification unit.	[String] -	1
[MLP] ScrewType	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ScrewType/1/0 [Type of screw] Provides information about the type of screw.	[-] -	1

[Prop] ScrewLengthRatio	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ScrewLengthRatio/1/0 [Screw L/D ratio] Screw L/D ratio. Calculated as screw length divided by screw diameter.	[Double] 1 [0173-1#05-AAA006#005]	1
[Prop] PistonOrScrewDiameter	0173-1#02-AAH150#005 [Piston or screw diameter] Outside diameter of the screw that plasticizes and injects the material into the mold	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] EffectiveScrewLength	0173-1#02-BAA919#006 [Effective screw length] Length of the screw calculated from the front of the feed throat opening to the end of the screw flights in the screw forward position; may be shown as the ratio of the effective screw length to the screw diameter	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] NumberOfHeatingAndCoolingZonesOnTheBarrel	0173-1#02-AAP478#003 [Number of heating and cooling zones on the barrel (cylinder)] The number of plasticizing barrel zones with individual temperature control	[Integer] -	1
[Prop] InstalledBarrelHeatingPower	0173-1#02-ABL644#001 [Installed barrel (cylinder) heating power] The maximum power rating of heaters used to heat the plasticizing phase	[Double] kW [0173-1#05-AAA756#003]	1
[Prop] PistonOrScrewStroke	0173-1#02-ABL637#001 [Piston or screw stroke] The distance the screw pumps back for the desired shot size	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] MaxInjectionPiston	0173-1#02-ABL636#001 [Maximum Injection piston] During the injection stoke, in addition to melting by conduction, the relative motion that exists between the screw and barrel provides a contribution to melting	[Double] cm³ [0173-1#05-AAA100#003]	1
[Prop] MaxThroughput	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MaxThroughput/1/0 [plastification max throughput] Maximum throughput of the plasitifcation unit	[Double] kg/h [0173-1#05-AAA493#005]	0..1
[Prop] MaxFeedVolume	0173-1#02-ABL651#001 [Maximum feed volume] The maximal volume of the feeder	[Double] cm³ [0173-1#05-AAA100#003]	1
[Range]	https://admin-	[-]	0..1

RecommendedPlastificationVolume	shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/RecommendedPlastificationVolume/1/0 [recommended plastification volume] recommended range of the plastification volume	cm³ [0173-1#05-AAA100#003]	
[Prop] MaxPlastificationCircumferentialSpeed	0173-1#02-ABL646#001 [Maximum plastification circumferential speed] Maximal screw circumferential speed for plastification (e.g. mm/s)	[Double] m/s [0173-1#05-AAA434#003]	1
[Prop] MaxPlasticisingFlowRate	0173-1#02-ABL645#001 [Maximum plasticising flow rate] The volume of material the machine can transfer into the mold in a second at maximum injection speed. Used to determine the time required by the machine to inject a pre-determined volume of material into the mold	[Double] g/s [0173-1#05-AAA385#003]	1
[Prop] MaxPlastificationSpecificPressure	0173-1#02-ABL650#001 [Maximum plastification specific pressure] Maximal plastification pressure in front of the screw tip	[Double] bar [0173-1#05-AAA044#002]	1
[Prop] MaxInjectionFlowRate	0173-1#02-AAC971#004 [Maximum injection flow rate] Maximum possible flow rate of the injected melt	[Double] cm³/s [0173-1#05-AAA459#003]	1
[Prop] MaxInjectionSpecificPressure	0173-1#02-ABL643#001 [Maximum Injection pressure] Maximum melt pressure during filling time calculated by dividing the max theoretical injection force by the screw/piston section area	[Double] bar [0173-1#05-AAA044#002]	1
[Prop] MaxHoldSpecificPressure	0173-1#02-ABL604#001 [Maximum hold specific pressure] Melt pressure(s) which is/are applied during holding time(s) calculated by dividing the max. theoretical holding force(s) by the screw/piston section area	[Double] bar [0173-1#05-AAA044#002]	1
[Prop] MaxHoldHydraulicPressure	0173-1#02-ABL603#001 [Maximum hold hydraulic pressure] Maximal holding pressure in the hydraulic cylinder	[Double] bar [0173-1#05-AAA044#002]	1
[MLP] TemperatureSafetyInformation	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/TemperaturesSafetyInformation/1/0 [Temperature safety information] Safety-relevant information regarding the temperature (e.g. material-specific)	[-] -	1

[Prop] NonReturnValveId	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/NonReturnValveId/1/0 [non-return valve ID] ID of the non-return valve	[String] -	1
[MLP] NonReturnValveType	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/NonReturnValveType/1/0 [non-return valve type] Provides information about the type of non-return valve	[-] -	1
[SML] Nozzles	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Nozzles/1/0 [nozzles] A list of nozzles compatible with this plastification	[-] -	1

2.6.2.1 SML “Nozzles”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 13: Attributes of the Submodel Element List “Nozzles”

idShort:	Nozzles		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Nozzles/1/0		
Parent:			
Explanation:	A list of nozzles compatible with this plastification		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SMC]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Nozzle/1/0 [Nozzle] The nozzle performs the following tasks: Increasing the flow rate of the melt, connection point between injection unit and mold, closure of the cylinder	[-] -	1..*

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 14: Attributes of the Submodel Element Collection “Nozzle”

idShort:	
Class:	SubmodelElementCollection
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Nozzle/1/0

Parent:	Nozzles		
Explanation:	The nozzle performs the following tasks: Increasing the flow rate of the melt, connection point between injection unit and mold, closure of the cylinder		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop] NozzleCalotteRadius	0173-1#02-ABL640#001 [Nozzle calotte radius] The radius of the nozzle	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] NozzleBoreDiameter	0173-1#02-BAA454#006 [Nozzle bore diameter] The diameter of the nozzle	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] NozzlePin	0173-1#02-ABL641#001 [Nozzle Pin] Defines the nozzle connection	[String] -	1
[File] NozzleDrawings	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/NozzleDrawings/1/0 [Technical drawings of the nozzle] Technical drawing(s) of the nozzle	[-] -	1
[Prop] DistributionLocationCoolant	0173-1#02-ABL642#001 [Distribution location coolant] Indicates where the coolant is distributed	[String] -	1
[MLP] ShutOffNozzleDrive	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ShutOffNozzleDrive/1/0 [Shut-off nozzle drive] Type of the nozzle drive, e.g., electromechanical, hydraulic	[-] -	0..1
[Prop] MaxNozzleHoldPressure	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MaxNozzleHoldPressure/1/0 [Nozzle maximum hold pressure] Maximum hold pressure of the nozzle.	[Double] bar [0173-1#05-AAA044#002]	0..1
[Prop] MaxNozzleContactPressure	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MaxNozzleContactPressure/1/0 [Maximum nozzle contact pressure] Maximum nozzle contact pressure	[Double] bar [0173-1#05-AAA044#002]	1

[MLP] NozzleSpecialDesign	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/NozzleSpecialDesign/1/0 [Nozzle special design] Information about special design of the nozzle (e.g. long-reach nozzle)	[-] -	1

2.7 SMC “ClampingUnit”

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 15: Attributes of the Submodel Element Collection “ClampingUnit”

idShort:	ClampingUnit
Class:	SubmodelElementCollection
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ClampingUnit/1/0
Parent:	EUROMAP
Explanation:	Technical properties that belongs to the clamping unit. The clamping unit is that portion of an injection molding machine in which the mold is mounted on supporting platens and usually guided by four tie-bars

[SME type] idShort	semanticId [preferred name] definition@en	[valueType] unit [unitId]	card.
[Prop] DesignationClampingUnit	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DesignationClampingUnit/1/0 [Designation of clamping unit] Designation of Clamping Unit	[String] -	1
[Prop] ClampDrive	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ClampDrive/1/0 [clamp drive] Information about the drive of the clamping unit	[String] -	1
[MLP] PositionClampingUnit	0173-1#02-ABL590#001 [position clamping unit] position of the clamping unit, e.g., horizontal, vertical, pivoted	[-] -	1
[MLP] DesignClampingUnit	0173-1#02-ABL591#001 [design clamping unit] design of the clamping unit, e.g., toggle linkage, direct hydraulic	[-] -	1
[MLP] Guide	0173-1#02-ABL592#001 [Guide] Guidance for different components or elements	[-] -	1
[MLP] SpecialTechnolo	0173-1#02-ABL593#001	[-]	0..1

gy	[Special Technology] Indicates whether it is a special technology	-	
[SML] PlatenDistanceExtensions	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PlatenDistanceExtensions/1/0 [platen distance extensions] A list of possible platen distance extensions	[-] -	1
[MLP] PreparationForSpecialConfiguration	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PreparationForSpecialConfiguration/1/0 [Preparation for special configuration] Information about preparation for special configuration (e.g. rotary table)	[-] -	1
[Prop] ClampingForceClass	0173-1#02-ABL597#001 [Clamping force class] Group of similar injection molding machines with similar clamping forces	[Integer] -	1
[Prop] MaxClampingForce	0173-1#02-AAJ507#004 [Maximum clamping force] The maximum clamping force is the maximum force applied by the clamping unit of an injection moulding machine	[Double] kN [0173-1#05-AAA737#003]	1
[Prop] NominalOpeningForce	0173-1#02-ABL602#001 [Nominal opening force] The nominal opening force F_On is the opening force generated during the opening of the closing device when the maximum closing force F_s,max has previously been exerted. It corresponds to the compression a_on (mm) of the columns and the elongation b_on (mm) of the test block	[Double] kN [0173-1#05-AAA737#003]	1
[Prop] MaxOpeningStroke	0173-1#02-ABL598#001 [Maximum opening stroke] Distance by which the mold fixing platens move away from each other for demolding at maximal mold parting line speed	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] MaxDistanceBetweenPlatens	0173-1#02-ABL599#001 [Maximum distance between platens] Used to determine maximum permissible mold height	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] MaxNozzleImmersionDepth	0173-1#02-ABL606#001 [Maximum nozzle immersion depth] The maximal depth the nozzle is allowed to immerse into the mold	[Double] mm [0173-1#05-AAA480#003]	1
[SML] CorePullers	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/CorePullers/1/0 [core pullers]	[-] -	1

	A list of core pullers		
[SMC] RotaryTable	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/RotaryTable/1/0 [rotary table] -	[-] -	0..1
[SMC] ShuttleTable	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ShuttleTable/1/0 [shuttle table] Provides information about the shuttle table, if installed	[-] -	0..1
[SMC] Ejection	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Ejection/1/0 [Ejection] Ejectors are the moving components in an injection mold that eject the plastic part after the mold is opened	[-] -	0..1
[SML] MouldMountings	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MouldMountings/1/0 [mould mountings] A list of mould mounting properties	[-] -	1
[SMC] ElectricalDevices	0173-1#01-AHY667#001 [Electrical Devices] Contains documents (e.g., connection diagrams) of the interfaces for the electrical devices	[-] -	1

2.7.1 SML “PlatenDistanceExtensions”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 16: Attributes of the Submodel Element List “PlatenDistanceExtensions”

idShort:	PlatenDistanceExtensions		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PlatenDistanceExtensions/1/0		
Parent:	ClampingUnit		
Explanation:	A list of possible platen distance extensions		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop]	https://admin-	[Double]	0..*

	shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PlatenDistanceExtension/1/0 [Platen distance extension] Extension steps for the platen opening	mm [0173-1#05-AAA480#005]	

2.7.2 SML "CorePullers"

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 17: Attributes of the Submodel Element List "CorePullers"

idShort:	CorePullers		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/CorePullers/1/0		
Parent:	ClampingUnit		
Explanation:	A list of core pullers		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SMC]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/CorePuller/1/0 [Core Pullers] Core pullers are needed to move the hydraulic cylinders, which in turn move sliders or jaws. They control components that belong to the mold	[-] -	0..*

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 18: Attributes of the Submodel Element Collection "CorePuller"

idShort:			
Class:	SubmodelElementCollection		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/CorePuller/1/0		
Parent:	CorePullers		
Explanation:	Core pullers are needed to move the hydraulic cylinders, which in turn move sliders or jaws. They control components that belong to the mold		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[MLP] CorePullerType	0173-1#02-ABL625#001 [Core puller type] Type of core pullers that can be installed	[-] -	1

[MLP] CorePullerMounting	0173-1#02-ABL626#001 [Core puller mounting] Mounting of core pullers	[-] -	1
[Prop] NumberOfControllablePneumaticConnections	0173-1#02-ABL627#001 [Number of controllable pneumatic connections] Total number of available pneumatic connections that the machine can control	[Integer] 1 [0173-1#05-AAA006#003]	1

2.7.3 SMC "RotaryTable"

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 19: Attributes of the Submodel Element Collection "RotaryTable"

idShort:	RotaryTable		
Class:	SubmodelElementCollection		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/RotaryTable/1/0		
Parent:	ClampingUnit		
Explanation:	Provides information about a rotary table, if installed		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop] TableDiameter	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/TableDiameter/1/0 [rotary table diameter] Diameter of the rotary table	[Double] mm [0173-1#05-AAA480#003]	1
[SML] RotationAngles	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/RotationAngles/1/0 [rotation angles] A list of possible rotation angles	[-] -	1
[Prop] RotationTime	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/RotationTime/1/0 [rotation time] Rotation time of the rotary table: Time for the rotary table to perform a full rotation	[Double] s [0173-1#05-AAA203#005]	1
[Prop] MaxWeightOnTable	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MaxWeightOnTable/1/0 [Maximum weight on table]	[Double] kg [0173-1#05-AAA731#005]	1

	Maximum weight on the rotary or shuttle table		

2.7.3.1 SML “RotationAngles”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 20: Attributes of the Submodel Element List “RotationAngles”

idShort:	RotationAngles		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/RotationAngles/1/0		
Parent:	RotaryTable		
Explanation:	A list of possible rotation angles		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/RotationAngle/1/0 [Rotation angle] rotation angle of the rotary table	[Double] ° [0173-1#05-AAA117#005]	1..*

2.7.4 SMC “ShuttleTable”

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 21: Attributes of the Submodel Element Collection “ShuttleTable”

idShort:	ShuttleTable		
Class:	SubmodelElementCollection		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ShuttleTable/1/0		
Parent:	ClampingUnit		
Explanation:	Provides information about the shuttle table, if installed		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop] TableStroke	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/TableStroke/1/0 [stroke of shuttle table] Stroke of the shuttle table	[Double] mm [0173-1#05-AAA480#003]	1
[Prop]	https://admin-	[Double]	1

MaxWeightOnTable	shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MaxWeightOnTable/1/0 [Maximum weight on table] Maximum weight on the rotary or shuttle table	kg [0173-1#05-AAA731#005]	

2.7.5 SMC "Ejection"

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 22: Attributes of the Submodel Element Collection "Ejection"

idShort:	Ejection		
Class:	SubmodelElementCollection		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Ejection/1/0		
Parent:	ClampingUnit		
Explanation:	Ejectors are the moving components in an injection mold that eject the plastic part after the mold is opened		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[MLP] EjectorDrive	0173-1#02-ABL628#001 [Operation of ejector plates] Indicates whether the ejector plates are driven electrically or hydraulically	[-] -	1
[Prop] HasEjectorPlateEndPositionSensor	0173-1#02-ABL633#001 [Has ejector plate end position sensor] Indicates whether a sensor is present that detects the end position of the ejector plate	[Boolean] -	1
[Prop] MaxEjectorStroke	0173-1#02-ABL634#001 [Maximum ejector stroke] Distance of the ejectors in the mold during demolding	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] MaxEjectorForce	0173-1#02-ABL635#001 [Maximum ejector force] The maximal force that can be applied to the ejector	[Double] kN [0173-1#05-AAA737#003]	1

2.7.6 SML "MouldMountings"

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 23: Attributes of the Submodel Element List "MouldMountings"

idShort:	MouldMountings

Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MouldMountings/1/0		
Parent:	ClampingUnit		
Explanation:	A list of mould mounting properties		
[SME type] idShort	semanticId [preferred name] definition@en	[valueType] unit [unitId]	card.
[SMC]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MouldMounting/1/0 [Mold Mounting] Features relevant to the assembly or attachment of the injection mold	[-] -	1..*

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 24: Attributes of the Submodel Element Collection “MouldMounting”

idShort:			
Class:	SubmodelElementCollection		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MouldMounting/1/0		
Parent:	MouldMountings		
Explanation:	Properties that refer to the mounting of the mold		
[SME type] idShort	semanticId [preferred name] definition@en	[valueType] unit [unitId]	card.
[Prop] MaxMouldHeight	0173-1#02-ABL607#001 [Maximum possible mould height] Maximum height (thickness) of mold admitted between platens	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] MinMouldHeight	0173-1#02-ABL608#001 [Minimum required mould height] Minimum height (thickness) of mold admitted between platens	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] MaxSizeOfClampingPlatensHeight	0173-1#02-ABL609#001 [Maximum height of clamping platens] Maximal possible height of a mold that can be mounted on the machine	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] MinSizeOfClampingPlatensHeigh	0173-1#02-ABL611#001 [Minimum height of clamping platens]	[Double] mm [0173-1#05-	1

t	Minimal required height of a mold that can be mounted on the machine	AAA480#003]	
[Prop] MaxSizeOfClampingPlatensWidth	0173-1#02-ABL610#001 [Maximum width of clamping platens] Maximal possible width of a mold that can be mounted on the machine	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] MinSizeOfClampingPlatensWidth	0173-1#02-ABL612#001 [Minimum width of clamping platens] Minimal required width of a mold that can be mounted on the machine	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] MaxAllowedMoldWeightTotal	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MaxAllowedMoldWeightTotal/1/0 [Maximum allowed mold weight total] The weight of the injection mold, which may be maximum equipped on the machine	[Double] kg [0173-1#05-AAA731#005]	1
[Prop] MaxAllowedMoldWeightClampingUnit	0173-1#02-ABL613#001 [Maximum allowed mold weight clamping unit] The weight of half of the injection mold, which may be maximum equipped on the clamping unit of the machine	[Double] kg [0173-1#05-AAA731#003]	1
[Prop] MaxAllowedMoldWeightInjectionUnit	0173-1#02-ABL614#001 [Maximum allowed mold weight injection unit] The weight of half of the injection mold, which may be maximum equipped on the injection unit of the machine	[Double] kg [0173-1#05-AAA731#003]	1
[MLP] MoldClampingSystem	0173-1#02-ABL615#001 [Mold clamping system] Specifies, which mold clamping option the injection molding machine offers. Injection molds are generally mounted on the mold fixing platens of the clamping unit with mechanical clamping elements and connected to the power supply lines via appropriate connections	[-] -	1
[Prop] MaxEccentricDistance	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MaxEccentricDistance/1/0 [Maximum eccentric distance] Maximum possible distance for eccentric injecting	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] CenteringFlangeDiameter	0173-1#02-AAA030#009 [Centering flange diameter] Diameter of the centering flange	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] HasCenteringGroove	0173-1#02-ABL616#001 [Has centering groove] Indicates whether the machine is equipped with a centering groove	[Boolean] -	1

[Prop] HasCoolingConnections	0173-1#02-AAH991#006 [Has cooling connections] Indicates whether the injection molding machine has interfaces for cooling media (=temperature control connections)	[Boolean] -	1
[File] CoolingConnections	0173-1#02-ABL617#001 [Cooling connections] Wiring diagram of the temperature control connections, if available	[-] -	0..1
[Range] CoolingTemperatureRange	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/CoolingTemperatureRange/1/0 [Cooling temperature range] Operating range of the cooling system	[-] °C [0173-1#05-AAA567#006]	1
[MLP] UnscrewingUnitType	0173-1#02-ABL618#001 [Unscrewing unit type] To be able to unscrew the threaded core, the molded part must be secured against rotation	[-] -	1
[Prop] HasAdditionalElements	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/HasAdditionalElements/1/0 [Has additional elements] Indicates whether additional elements are present	[Boolean] -	1
[Prop] HasOffset	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/HasOffset/1/0 [Has Offset] Indicates whether clamping elements reduce the space available for mold assembly, so that feature maxMouldHeight must be reduced by the corresponding length. If the value is TRUE, this must be taken into account during planning	[Boolean] -	1
[Prop] HasWaterManifold	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/HasWaterManifold/1/0 [Has water manifold] Indicates whether the injection molding machine has a water manifold for coolant	[Boolean] -	1
[MLP] WaterManifoldType	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/WaterManifoldType/1/0 [Water manifold type] Information about the type of water manifold.	[-] -	0..1
[File] DrillingTemplate	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DrillingTemplate/1/0	[-] -	1

	[Drilling template] Specifies the drilling template on the fixed and moveable platen		
[Prop] MoldHeightAdjustment	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/MouldHeightAdjustment/1/0 [Mold height adjustment] Mold height adjustment	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] ClearDistanceBetweenColumnsVertical	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ClearDistanceBetweenColumnsVertical/1/0 [vertical clear distance between tie bar columns] The vertical clearance between tie-bars over which the moving platen slides. Used to determine maximum permissible mold dimensions	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] ClearDistanceBetweenColumnsHorizontal	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ClearDistanceBetweenColumnsHorizontal/1/0 [horizontal clear distance between tie bar columns] The horizontal clearance between tie-bars over which the moving platen slides. Used to determine maximum permissible mold dimensions	[Double] mm [0173-1#05-AAA480#003]	1

2.7.7 SMC “ElectricalDevices”

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 25: Attributes of the Submodel Element Collection “ElectricalDevices”

idShort:	ElectricalDevices		
Class:	SubmodelElementCollection		
semanticId:	0173-1#01-AHY667#001		
Parent:	ClampingUnit		
Explanation:	Contains documents (e.g., connection diagrams) of the interfaces for the electrical devices		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[File] ElectricalPlugs	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ElectricalPlugs/1/0 [Electrical plugs] Overview (e.g., in the form of a connection diagram) of the electrical plugs	[-] -	0..1
[File] ElectricalPlugsCorePuller	0173-1#02-ABL622#001 [Electrical plugs core puller] Overview (e.g., in the form of a connection diagram) of the electrical plugs	[-] -	0..1

	for the core pullers		
[File] ElectricalPlugsCorePeriphery	0173-1#02-ABL623#001 [Electrical plugs core periphery] Overview (e.g., in the form of a connection diagram) of the electrical plugs for the core periphery	[-] -	0..1

2.8 SML “HandlingSystems”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 26: Attributes of the Submodel Element List “HandlingSystems”

idShort:	HandlingSystems		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/HandlingSystems/1/0		
Parent:	EUROMAP		
Explanation:	A list of handling systems applicable to the machine		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SMC]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/HandlingSystem/1/0 [Handling system] Provides information about handling systems, if installed.	[-] -	1..*

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 27: Attributes of the Submodel Element Collection “HandlingSystem”

idShort:			
Class:	SubmodelElementCollection		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/HandlingSystem/1/0		
Parent:	HandlingSystems		
Explanation:	Provides information about handling systems, if installed.		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[MLP] HandlingType	0173-1#02-ABL631#001 [Handling type] Specifies how the molded parts are demolded, i.e., whether they are free-	[-] -	1

	falling or removed with a handling device		

2.9 SMC “EfficiencyClassInformation”

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 28: Attributes of the Submodel Element Collection “EfficiencyClassInformation”

idShort:	EfficiencyClassInformation		
Class:	SubmodelElementCollection		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/EfficiencyClassInformation/1/0		
Parent:	EUROMAP		
Explanation:	Information about the energy efficiency class of the injection moulding machine according to EUROMAP 60.1		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop] EfficiencyClass	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/EfficiencyClass/1/0 [Efficiency class] Indication of classification (from 1 - 10): EUROMAP 60.1 (cycle I) efficiency class: 4+ / If the opening stroke is different to EUROMAP 6, the stroke has to be given with value. Example with opening stroke 500 mm: EUROMAP 60.1 (cycle I, os = 500 mm) efficiency class: 4+	[Integer] -	1
[Prop] EfficiencyClassIdlePower	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/EfficiencyClassIdlePower/1/0 [Efficiency class idle power] Machine Idle power as stated in EUROMAP 60.1	[Double] kW [0173-1#05-AAA756#005]	1
[Prop] EfficiencyClassCycle	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/EfficiencyClassCycle/1/0 [efficiency class cycle] Information about the cycle used to determine the efficiency class	[String] -	1

2.10 SMC “ControlAndIT”

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 29: Attributes of the Submodel Element Collection “ControlAndIT”

idShort:	ControlAndIT
Class:	SubmodelElementCollection

semanticId:	0173-1#01-AHY674#001		
Parent:	EUROMAP		
Explanation:	Features of the machine control and the IT interfaces		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop] ControlSystemName	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/ControlSystemName/1/0 [Control system name] Name of the control system of the machine	[String] -	0..1
[SML] SoftwareVersions	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/SoftwareVersions/1/0 [software versions] A list of available software versions of the control system	[-] -	1
[Prop] IpAddress	0173-1#02-AAO695#004 [IP Address] Internet protocol address: addresses of the currently used IP comprise four bytes (integers between 0 and 255) which must be separated by periods. These integers identify the network and subnetworks as well as the computer itself. The IP addresses are generally only used internally. On the user interface, names in clear text are generally used instead. The assignment of names to addresses is carried out by a DNS. IP addresses for participation in the internet are assigned by the NIC's because they must be unique worldwide. The assignment takes place in certain network classes depending on the size of the company. The interpretation of the IP address is determined by network masks. Not all addresses (i.e. not all combinations of four integers 0-255) may be used. Many are reserved for special functions. Since with the boom in the use of the internet the number of available IP addresses will become insufficient, new IP protocols (IPv6) are under development. These use addresses with 16 bytes	[String] -	1
[SML] AssistantSystems	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/AssistantSystems/1/0 [assistant systems] A list of available assistant systems	[-] -	1
[SML] PhysicalITInterfaces	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PhysicalITInterfaces/1/0 [physical IT interfaces] A list of available physical IT interfaces	[-] -	1
[SML] Communication	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Communicat	[-] -	1

Protocols	ionProtocols/1/0 [communication protocols] A list of available communication protocols		

2.10.1 SML "SoftwareVersions"

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 30: Attributes of the Submodel Element List "SoftwareVersions"

idShort:	SoftwareVersions		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/SoftwareVersions/1/0		
Parent:	ControlAndIT		
Explanation:	A list of available software versions of the control system		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop]	0112/2///61987#ABA601#008 [SoftwareVersion] version of the software used by the device	[String] -	0..*

2.10.2 SML "AssistantSystems"

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 31: Attributes of the Submodel Element List "AssistantSystems"

idShort:	AssistantSystems		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/AssistantSystems/1/0		
Parent:	ControlAndIT		
Explanation:	A list of available assistant systems		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop]	0173-1#02-ABL657#001 [Has assistant system] Indicates if the injection molding machine is equipped with an assistant system, e.g., for controlling. Since diverse assistent system exist, no valuelist exist. Please name the assistant system as text	[String] -	0..*

2.10.3 SML "PhysicalITInterfaces"

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 32: Attributes of the Submodel Element List "PhysicalITInterfaces"

idShort:	PhysicalITInterfaces		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PhysicalITInterfaces/1/0		
Parent:	ControlAndIT		
Explanation:	A list of available physical IT interfaces		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[MLP]	0173-1#02-ABL659#001 [Physical IT interface] Physical IT interface (e.g., plugs) that is present for realizing the data transfer	[-] -	1..*

2.10.4 SML "CommunicationProtocols"

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 33: Attributes of the Submodel Element List "CommunicationProtocols"

idShort:	CommunicationProtocols		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/CommunicationProtocols/1/0		
Parent:	ControlAndIT		
Explanation:	A list of available communication protocols		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SMC] -	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/CommunicationProtocol/1/0 [communication protocol] A collection of properties describing one communication protocol	[-] -	0..*

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 34: Attributes of the Submodel Element Collection “CommunicationProtocol”

idShort:	-		
Class:	SubmodelElementCollection		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/CommunicationProtocol/1/0		
Parent:	CommunicationProtocols		
Explanation:	A collection of properties describing one communication protocol		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop] Communication Protocol	0173-1#02-ABL658#001 [Communication protocol] This variable is used to specify the used communication protocol that is used between the sensor and the control system of the TCD	[String] -	1
[Prop] Communication ProtocolSpecification	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/CommunicationProtocolSpecification/1/0 [Communication protocol specification] Provides additional information regarding the communcation protocol. E.g. EUROMAP 77, OPC 40082-1...	[String] -	0..1

2.11 SMC “DimAndWeight”

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 35: Attributes of the Submodel Element Collection “DimAndWeight”

idShort:	DimAndWeight		
Class:	SubmodelElementCollection		
semanticId:	0173-1#01-AHY660#001		
Parent:	EUROMAP		
Explanation:	Contains the dimensions and weight of the asset		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[Prop] Height	0173-1#02-AAC850#008 [Height] Height of a component or an element	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] Width	0173-1#02-BAF016#008 [Width]	[Double] mm	1

	Width of a component or an element	[0173-1#05-AAA480#003]	
[Prop] Depth	0173-1#02-BAB577#010 [Depth] for objects with fixed orientation or in preferred utilization position, the rear , generally away from the observer expansion is described as depth	[Double] mm [0173-1#05-AAA480#003]	1
[Prop] NetWeight	0173-1#02-BAD875#009 [Net weight] Net weight of a component or an element	[Double] kg [0173-1#05-AAA731#005]	1

2.12 SML “HydraulicCenterDrives”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 36: Attributes of the Submodel Element List “HydraulicCenterDrives”

idShort:	HydraulicCenterDrives		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/HydraulicCenterDrives/1/0		
Parent:	EUROMAP		
Explanation:	A list of hydraulic center drives		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SMC]	0173-1#01-AHY673#001 [Drive] In engineering, drive refers to both the process of driving a working machine and the means used to do so.	[-] -	0..*

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 37: Attributes of the Submodel Element Collection “HydraulicCenterDrive”

idShort:	
Class:	SubmodelElementCollection
semanticId:	0173-1#01-AHY673#001
Parent:	HydraulicCenterDrives
Explanation:	In engineering, drive refers to both the process of driving a working machine and the means used to do so.

[SME type] idShort	semanticId [preferred name] definition@en	[valueType] unit [unitId]	card.
[Prop] MaxDrivePowerOfTheHydraulicPump	0173-1#02-ABL653#001 [Maximum drive power of the hydraulic pump] The maximum possible drive power of a hydraulic pump	[Double] kW [0173-1#05-AAA756#003]	1
[Prop] MaxWorkingPressureOfTheHydraulicPumpOrPneumatics	0173-1#02-ABL654#001 [Maximum working pressure of the hydraulic pump or pneumatics] The maximum possible working pressure of a hydraulic pump	[Double] bar [0173-1#05-AAA044#002]	1
[Prop] PumpDrivePower	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/PumpDrivePower/1/0 [Pump drive power] Power of the pump drive	[Double] kW [0173-1#05-AAA756#003]	0..1
[Prop] OilQuantity	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/OilQuantity/1/0 [oil quantity] Oil quantity in the hydraulic circuit	[Double] l [0173-1#05-AAA179#005]	0..1
[Prop] OilQuality	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/OilQuality/1/0 [oil quality] (recommended) oil quality	[String] -	0..1
[Prop] MaxHydraulicPressure	0173-1#02-ABL605#001 [Maximum hydraulic pressure] Maximal pressure in the hydraulic cylinder	[Double] bar [0173-1#05-AAA044#002]	1

2.13 SML “SpecificDescriptions”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 38: Attributes of the Submodel Element List “SpecificDescriptions”

idShort:	SpecificDescriptions
Class:	SubmodelElementList
semanticId:	0173-1#02-ABM221#001
Parent:	TechnicalData
Explanation:	Specific description areas for multiple use cases or areas of application

[SME type] idShort	semanticId [preferred name] definition@en	[valueType] unit [unitId]	card.
[SMC]	0173-1#02-ABM221#001/0173-1#01-AHY912#001 [Specific description] Specific description for a use case or area of application	[-] -	

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 39: Attributes of the Submodel Element Collection "SpecificDescription"

idShort:	
Class:	SubmodelElementCollection
semanticId:	0173-1#02-ABM221#001/0173-1#01-AHY912#001
Parent:	SpecificDescriptions
Explanation:	Specific description for a use case or area of application

[SME type] idShort	semanticId [preferred name] definition@en	[valueType] unit [unitId]	card.
[MLP] UserMachineName	0173-1#02-ABA685#003 [component name] human-readable localized text for the machine given by enduser.	[-] -	0..1
[MLP] LocationName	0173-1#02-ABA686#001 [location] location of the machine in a scheme specific to the end user	[-] -	0..1
[SMC] DocumentationAndDrawings	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DocumentationAndDrawings/1/0 [documentation and drawings] Contains drawing files (2D / 3D) of the IMM and other documents	[-] -	1

2.13.1 SMC "DocumentationAndDrawings"

The following attributes need to be set for the Submodel Element Collection (SMC) instance.

Table 40: Attributes of the Submodel Element Collection "DocumentationAndDrawings"

idShort:	DocumentationAndDrawings
Class:	SubmodelElementCollection
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DocumentationAndDrawings/1/0

Parent:			
Explanation:	This SMC contains drawing files (2D / 3D) of the IMM and other documents		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SML] Drawings2D	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Drawings2D/1/0 [drawings 2D] A List of 2D drawing files	[-] -	1
[SML] Drawings3D	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Drawings3D/1/0 [drawings 3D] A list of 3D drawing files	[-] -	1
[SML] DrawingsMouldMounting	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DrawingsMouldMounting/1/0 [drawings mould mounting] A List of mould mounting drawings	[-] -	1
[SML] DocumentsHandoverDocumentation	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DocumentsHandoverDocumentation/1/0 [documents handover documentation] A list of documents from handover documentation	[-] -	1

2.13.1.1 SML “Drawings2D”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 41: Attributes of the Submodel Element List “Drawings2D”

idShort:	Drawings2D		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Drawings2D/1/0		
Parent:	DocumentationAndDrawings		
Explanation:	A List of 2D drawing files		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[File]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Drawing2D/	[-]	0..*

	1/0 [2D Drawing] A 2D drawing file	-	

2.13.1.2 SML “Drawings3D”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 42: Attributes of the Submodel Element List “Drawings3D”

idShort:	Drawings3D		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Drawings3D/1/0		
Parent:	DocumentationAndDrawings		
Explanation:	A list of 3D drawing files		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[File]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/Drawing3D/1/0 [3D Drawing] A 3D drawing file (e.g. CAD)	[-] -	0..*

2.13.1.3 SML “DrawingsMouldMounting”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 43: Attributes of the Submodel Element List “DrawingsMouldMounting”

idShort:	DrawingsMouldMounting		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DrawingsMouldMounting/1/0		
Parent:	DocumentationAndDrawings		
Explanation:	A List of mould mounting drawings		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[File]	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DrawingMouldMounting/1/0	[-] -	0..*

	[Drawing mould mounting 2D] A 2D drawing file of the mould mounting		

2.13.1.4 SML “DocumentsHandoverDocumentation”

The following attributes need to be set for the Submodel Element List (SML) instance.

Table 44: Attributes of the Submodel Element List “DocumentsHandoverDocumentation”

idShort:	DocumentsHandoverDocumentation		
Class:	SubmodelElementList		
semanticId:	https://admin-shell.io/idta/euromap/SubmodelTemplate/TechnicalDataIMM/DocumentsHandoverDocumentation/1/0		
Parent:	DocumentationAndDrawings		
Explanation:	A list of documents from handover documentation		
[SME type] idShort	**semanticId [preferred name] definition@en**	**[valueType] unit [unitId]**	**card.**
[SMC] -	0173-1#02-ABI500#003/0173-1#01-AHF579#003 [-] -	[-] - -	0..*

Explanations on used table formats

General

The used tables in this document try to outline information as concise as possible. They do not convey all information on Submodels and SubmodelElements. For this purpose, the definitive definitions are given by a separate file in form of an AASX file of the Submodel template and its elements.

Tables on Submodels and SubmodelElements

For clarity and brevity, a set of rules is used for the tables for describing Submodels and SubmodelElements.

- The tables follow in principle the same conventions as in [5].
- The table heads abbreviate 'cardinality' with 'card'.
- The tables often place two informations in different rows of the same table cell. In this case, the first information is marked out by sharp brackets [] form the second information. A special case are the semanticIds, which are marked out by the format: (type)(local)[idType]value.
- The types of SubmodelElements are abbreviated:

SME type	SubmodelElement type
Property	Property
MLP	MultiLanguageProperty
Range	Range
File	File
Blob	Blob
Ref	ReferenceElement
Rel	RelationshipElement
SMC	SubmodelElementCollection
SML	SubmodelElementList

- If an idShort ends with '__00__', this indicates a suffix of the respective length (here: 2) of decimal digits, in order to make the idShort unique. A different idShort might be choosen, as long as it is unique in the parent's context.
- The Keys of semanticId in the main section feature only idType and value, such as: [IRI]https://admin-shell.io/vdi/2770/1/0/DocumentId/Id. The attributes "type" and "local" (typically "ConceptDescription" and "(local)" or "GlobalReference" and (no-local)") need to be set accordingly; see [6].
- If a table does not contain a column with "parent" heading, all represented attributes share the same parent. This parent is denoted in the head of the table.
- Multi-language strings are represented by the text value, followed by '@'-character and the ISO 639 language code: example@EN.
- The [valueType] is only given for Properties.

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