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Related electronic document A

Data model details

— Version 1.0 —

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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ISO/TS 22240 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 12, .

This second/third/... edition cancels and replaces the first/second/... edition (), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

This document gives a detailed description of the attributes of the data model elements as well as the relations between the elements. The meaning of the elements can be found in the TS 22240.

Part of each element is attributes where you find the term "(ODS base attribute)". Most of them are common in name and number in all elements. Therefore **only in element Safety_Test** a description of these attributes is given. For more information on this please check the ASAM-ODS documentation.

Some attributes are flagged as base attribute. In this case refer to the ASAM-ODS-documentation version 5.1. The ASAM-ODS base attribute Id is automatically filled by the ASAM-ODS data server. When writing to an ATF/XML file the id must be unique for each element and the writer is responsible for the value of this field.

The relations of an element to other elements are described in a separate section called "relation attributes". For each relation to a "related element" there is a "relation name" and an "inverse relation name". The latter is the name of the relation at the related element.

If a relation belongs to an ASAM ODS base relation the base relation name is shown.

For other relations the relation type is specified by SET[x,y] where x is the minimum number and y is the maximum number of related instances. If x is 0, no related instances are allowed. If x is 1, a related element is required. If y is 1, there is only one related instance allowed. "?" stands for several related instances allowed.

The descriptions are placed in alphabetical order for convenience.

1.1 Channel

This element is of the ASAM ODS base entity *AoMeasurementQuantity*.

Field descriptor	Data format	Remark	Mandatory
Id	DT_LONGLONG	(ODS base attribute) id. This field is automatically filled by the server	Yes, unique
Name_Of_The_Channel	DT_STRING	(ODS base attribute) name	Yes
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Rank	DT_LONG	(ODS base attribute) rank	
Dimension	DS_LONG	(ODS base attribute) dimension	
Standard_Deviation	DT_DOUBLE	(ODS base attribute) standard_deviation	
Type_Size	DT_LONG	(ODS base attribute) type_size	
Interpolation	DT_ENUM, interpolation_enum	(ODS base attribute) interpolation	Yes
Average	DT_DOUBLE	(ODS base attribute) average	
Datatype	DT_ENUM, datatype_enum	(ODS base attribute) datatype	Yes
Laboratory_Channel_Code	DT_STRING		
Customer_Channel_Code	DT_STRING		
Channel_Code	DT_STRING	see annex B 'Channel Code'	
Comments	DT_STRING	see annex B 'Dimension'	
Channel_Frequency_Class ²⁾	DT_STRING	see annex B 'Filter class'	
Reference_System	DT_STRING	Coordinate ref. system e.g. vehicle	
Transducer_Type	DT_STRING	<u>Type of transducer</u>	
Transducer_ID	DT_STRING	<u>Sensor ID</u>	
Pre_Filter_Type	DT_STRING	anti-aliasing filter	
Cut_Off_Frequency	DT_DOUBLE	-3dB frequency of Pre-filter in Hz	

Channel_Amplitude_Class	DT_DOUBLE	see ISO 6487	
Reference_Channel	DT_STRING	This is the Reference channel, usually the time channel.	
Data_Source	DT_STRING	possible values: transducer Channel data has been generated by transducer calculation Channel data has been calculated from other channels camera Channel data has been generated by film analysis simulation Channel data has been generated by simulation parameter Channel data can be constant or limit curve	
Data_Status	DT_STRING	possible values: ok channel failed meaningless data no data questionable data scaling factor applied system failed	
Sampling_Interval	DT_DOUBLE	time step expressed in seconds, attribute unit sec	
Bit_Resolution	DT_DOUBLE		
Time_Of_First_Sample	DT_DOUBLE	in seconds; 'minus' before impact, attribute unit sec	
First_Global_Maximum_Value ¹⁾	DT_DOUBLE	(ODS base attribute) maximum	
Time_Of_Maximum_Value ³⁾	DT_DOUBLE	Attribute unit sec	
First_Global_Minimum_Value ³⁾	DT_DOUBLE	(ODS base attribute) minimum	
Time_Of_Minimum_Value ³⁾	DT_DOUBLE	Attribute unit sec	
Start_Offset_Interval ³⁾	DT_DOUBLE	in seconds; 'minus' before impact, attribute unit sec	

End_Offset_Interval ³⁾	DT_DOUBLE	in seconds; 'minus' before impact, attribute unit sec	
Start_Validity_Interval	DT_DOUBLE	in seconds; 'minus' before impact, attribute unit sec	
End_Validity_Interval	DT_DOUBLE	in seconds; 'minus' before impact, attribute unit sec	
Result_Type	DT_STRING	(ODS base attribute) mime_type	

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Safety_Tests	Safety_Test	measurement
Channels		
Physical_Unit	Physical_Unit	unit
Channels		
Possible_Channel	Possible_Channel	quantity
Channels		
Dimension_Code	Dimension_Code	Set[1:1] there must be a Dimension_code
Channels		
Direction_Code	Direction_Code	Set[1:1] there must be a Direction_Code
Channels		
Filter_Class_Code	Filter_Class_Code	Set[1:1] there must be a Filter_Class_Code.
Channels		
Test_Object_Code	Test_Object_Code	Set[1:1] there must be a Test_Object_Code.
Channels		
Position_Code	Position_Code	Set[1:1] there must be a Position_Code .
Channels		
Main_Loc_Code	Main_Loc_Code	Set[1:1] there must be a Main_Loc_Code .
Channels		
Fine_Loc_1_Code	Fine_Loc_1_Code	Set[1:1] there must be a Fine_Loc_1_Code .
Channels		
Fine_Loc_2_Code	Fine_Loc_2_Code	Set[1:1] there must be a

Channels		Fine_Loc_2_Code .
Fine_Loc_3_Code	Fine_Loc_3_Code	Set[1:1] there must be a Fine_Loc_3_Code .
Channels		
Diagrams	Diagram	Set[0:?]
Channel_AT_Diagram		
Local_Columns	Local_Column	local_column
Channels		
VSTD_Interfaces	VSTD_Interfaces	Set[0:?]
Channel		
VSTD_Interfaces	VSTD_Interfaces	Set[0:?]
Channel		
Test_Objects	Test_Object	Set[0:1]
Channels		
Test_Components	Test_Component	Set [0:1]
Channels		

1.2 Code elements

1.2.1 Element Test_Object_Code

This element belongs to the ASAM ODS base entity *AoUnitUnderTest*

Field descriptor	Data format	Remark	Mandatory
Test_Object	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Sort_By_Key	DT_DOUBLE	is needed in the ISO-MME database.	
Source	DT_STRING	Source and history of the code	

Relation attributes

Relation name	Related Element	ODS-base-relation, relation
---------------	-----------------	-----------------------------

Inverse relation name		range
Channels	Channel	Set [0:?]
Test_Object_Code		
Possible_Channels	Possible_Channel	Set [0:?]
Test_Object_Code		
Test_Objects	Test_Object	Set [0:?]
Code_Of_Test_Objec		
Possible_Components	Possible_Component	children
Test_Object_Code		

1.2.2 Element Position_Code

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory
Position	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Sort_By_Key	DT_DOUBLE	It is needed in the ISO-MME database	
Source	DT_STRING		

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Channels	Channel	Set [0:?]
Position_Code		
Possible_Channels	Possible_Channel	Set [0:?]
Position_Code		

1.2.3 Element Main_Loc_Code

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory
Transducer_Main_Location	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Sort_By_Key	DT_DOUBLE	it is needed in the ISO-MME database	
Source	DT_STRING		

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Channels	Channel	Set [0:?]
Main_Loc_Code		
Possible_Channels	Possible_Channel	Set [0:?]
Main_Loc_Code		
Test_Components	Test_Component	Set [0:?]
Is_In_Position		

1.2.4 Element Fine_Loc_1_Code

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory
Fine_Location_1	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Sort_By_Key	DT_DOUBLE	it is needed in the ISO-MME database	
Source	DT_STRING		

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Channels	Channel	Set [0:?]	
Fine_Location_1_Code			
Possible_Channels	Possible_Channel	Set [0:?]	
Fine_Location_1_Code			

1.2.5 Element Fine_Loc_2_Code

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory
Fine_Location_2	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Sort_By_Key	DT_DOUBLE	it is needed in the ISO-MME database	
Source	DT_STRING		

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Channels	Channel	Set [0:?]
Fine_Location_2_Code		
Possible_Channels	Possible_Channel	Set [0:?]
Fine_Location_2_Code		

1.2.6 Element Fine_Loc_3_Code

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory
Fine_Location_3	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
External_References	DS_EXTERNALREFERENCE	(ODS base attribute) external_references	
Sort_By_Key	DT_DOUBLE	it is needed in the ISO-MME database	
Source	DT_STRING		

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Channels	Channel	Set [0:?]
Fine_Location_3_Code		
Possible_Channels	Possible_Channel	Set [0:?]
Fine_Location_3_Code		

1.2.7 Element Dimension_Code

This element belongs to the ASAM ODS base entity *AoAny*. The element *Physical_Dimension* will be used for the unit conversion in ASAM ODS.

Field descriptor	Data format	Remark	Mandatory
Dimension	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Sort_By_Key	DT_DOUBLE	it is needed in the ISO-MME database	
Source	DT_STRING		
Mass_Exp	DT_LONG	mass_exp	
Molar_Amount_Exp	DT_LONG	molar_amount_exp	
Temperature_Exp	DT_LONG	temperature_exp	
Time_Exp	DT_LONG	time_exp	
Luminous_Intensity_Exp	DT_LONG	luminous_intensity_exp	
Current_Exp	DT_LONG	current_exp	
Length_Exp	DT_LONG	length_exp	

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Channels	Channel	Set [0:?]
Dimension_Code		
Possible_Channels	Possible_Channel	Set [0:?]
Dimension_Code		
Units	Physical_Unit	Set[0:?]
Dimension_Codes		
VSTD_Interfaces	VSTD_Interface	Set[0:?]
Dimension_Code		

1.2.8 Element Direction_Code

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory
Direction	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Sort_By_Key	DT_DOUBLE	it is needed in the ISO-MME database	
Source	DT_STRING		

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Channels	Channel	Set [0:?]	
Direction_Code			
Possible_Channels	Possible_Channel	Set [0:?]	
Direction_Code			

1.2.9 Element Filter_Class_Code

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory
Filter_Class	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Sort_By_Key	DT_DOUBLE	it is needed in the ISO-MME database	
Source	DT_STRING		

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Channels	Channel	Set [0:?]
Filter_Class_Code		
Possible_Channels	Possible_Channel	Set [0:?]
Fine_Location_3_Code		
VSTD_Interfaces	VSTD_Interface	Set [0:?]
Filter_Class_Code		

1.3 Element Contact

This element belongs to the ASAM ODS base entity *AoAny*, not to the ASAM ODS base entity *AoUser*, because *AoUser* is reserved for the ASAM ODS security.

Field descriptor	Data format	Remark	Mandatory
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
External_References	DS_EXTERNALREFERENCE	(ODS base attribute) external_references	
Comments	DT_STRING		
Contact_Name	DT_STRING	Person to contact	
Contact_Phone	DT_STRING	Phone number	
Contact_Email	DT_STRING	(ODS base attribute) name	Yes, unique
Contact_Fax	DT_STRING	Fax number	
Organisation	DT_STRING	Organisation to which the person belongs, e.g. name of laboratory	

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Safety_Tests	Safety_Test	Set [0:?]
Contact		
Contact_Relation_Type	Contact_Relation_Type	Set [0:1]
Contacts		

1.4 Element Contact_Relation_Type

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Contact_Relation_Type	DT_STRING	Specifies the type of contact, e.g. 'Customer' or 'Laboratory'	Yes
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	

Relation attributes

Relation name	Related Element	ODS-base-relation, range
Inverse relation name		
Safety_Tests	Safety_Test	Set [0:?]
Contact_Relation_Types		
Contacts	Contact	Set [0:?]
Contact_Relation_Types		

1.5 Element Correction_Parameter

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory.
Id	DT_LONGLONG	(ODS base attribute) id	Yes, unique
Name	DT_STRING	(ODS base attribute) name	Yes
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
ExternalReference	DS_EXTERNAL_REFERENCE	(ODS base attribute) external_references to documents required for the correction parameters (see ISO/TS 13499)	

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Movie	Movie	Parent
Correction_Parameters		

1.6 Element Diagram

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory.
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Name	DT_STRING	(ODS base attribute) name	Yes
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
External_References	DS_STRING	(ODS base attribute) external_references	

Relation attributes

Relation name	Related Element	ODS-base-relation, range
Inverse relation name		
Channel_AT_Diagram	Channel	Set[0,?]
Diagrams		

1.7 Element Image_History

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) Id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) versoin_date	
External_References	DS_EXTERNALREFERENCE	(ODS base attribute) external_references External file with image processing information (e.g. sharpening, white balance, see ISO/TS 13499)	

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Movie	Movie	parent
Image_Histories		

1.8 Element Local_Column

This element belongs to the ASAM ODS base entity *AoLocalColumn*.

Field descriptor	Data format	Remark	Mandatory
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Name	DT_STRING	(ODS base attribute) name	Yes
Version	DT_STRING	(ODS base attribute) version	
Mime_Type	DT_STRING	(ODS base attribute) mime_type	
Independent	DT_SHORT	(ODS base attribute) independent	
Sequence_Representation	DT_ENUM, seq_rep_enum	(ODS base attribute) sequence_representation	
Global_Flag	DT_SHORT	(ODS base attribute) global_flag	
Flags	DS_SHORT	(ODS base attribute) flags	
Generation_Parameters	DS_DOUBLE	(ODS base attribute) generation_parameters	
Raw_Data_Type	DT_ENUM, datatype_enum	(ODS base attribute) raw_datatype	
Values		(ODS base attribute) values	

The values can be of different datatype, that is why no datatype is given.

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Submatrix	Submatrix	submatrix
Local_Columns		
Channel	Channel	Measurement_quantity
Local_Columns		

1.9 Element Movie

This element belongs to the ASAM ODS base entity *AoAny*.

Field descriptor	Data format	Remark	Mandatory
Id	DT_LONGLONG	(ODS base attribute) id	Yes, unique
Name	DT_STRING	(ODS base attribute) name	Yes, unique in Safety_Test
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
External_References	DT_STRING	(ODS base attribute) external_references to movie file	
Origin	DT_STRING	e.G.HyGe or Simulation	
Camera_Type	DT_STRING		
Camera_Id	DT_STRING	ID of the camera used to produce the movie	
Lens_ID	DT_STRING		
Lens_Type	DT_STRING		
Focus	DT_STRING		
Lens_Focal_Length	DT_LONG		
Number_Of_Images	DT_LONG		
Film_Speed	DT_FLOAT		
Shutter_Speed	DT_FLOAT		
Aperture	DT_FLOAT		
Time_Zero	DT_LONG		
Reference_Channel_Name	DT_STRING	Referenced channel e.g. in case of non equidistant time	
Width_Of_Image	DT_LONG	Pixel	
Height_Of_Image	DT_LONG	Pixel	
Aspect_Ratio_Of_Image	DT_FLOAT	1.0 for square-pixels	
Colour	DT_STRING	B/W or RGB or YUV	

Codec_used	DT_STRING	INDEO	
Compression	DT_STRING	JPEG 70%	

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Image_Histories	Image_History	children
Movie		
Correction_Parameters	Correction_Parameter	children
Movie		
Safety_Test	Safety_Test	Set[1:1]
Movies		
Test_Object_AT_Movie	Test_Object	Set[0:?]
Movies		
Test_Object_AT_Movie	Test_Object	Set[0:?]
Movies		
Test_Component	Test_Component	Set[0:1]
Movies		

1.10 Element Photo

This element belongs to the ASAM ODS base entity *AoAny*.

This element contains information concerning all digital still photographs.

Field descriptor	Data format	Remark	Madatory
Name	DT_STRING	(ODS base attribute) id	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
External_References	DS_STRING	(ODS base attribute) external_references	
Camera_Type	DT_STRING		
Category	DT_STRING	e.g. Post, Pre, During	
Direction	DT_STRING	e.g. left hand side	
Aperture	DT_FLOAT		
Exposure_Time	DT_FLOAT	S	
Width_Of_Image	DT_LONG	Pixel	
Height_Of_Image	DT_LONG	Pixel	
Aspect_Ratio_Of_Pixels	DT_FLOAT	1.0 for square pixels	
Colour	DT_STRING	e.g. B/W, RGB, YUV	
Compression	DT_STRING		

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Safety_Test	Safety_Test	Set[1:1]	
Photos			
Test_Object_AT_Photo	Test_Object	Set[0:?]	
Photos			
Test_Component	Test_Component	Set[0:1]	
Photos			

1.11 Element Physical_Dimension

This element belongs to the ASAM ODS base entity *AoPhysicalDimension*.

Field descriptor	Data format	Remark	Mandatory
Dimension	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Mass_Exp	DT_LONG	(ODS base attribute) mass_exp	
Mass_Exp_Den	DT_LONG	(ODS base attribute) mass_exp_den	
Molar_Amount_Exp	DT_LONG	(ODS base attribute) molar_amount_exp	
Molar_Amount_Exp_Den	DT_LONG	(ODS base attribute) molar_amount_exp_den	
Temperature_Exp	DT_LONG	(ODS base attribute) temperature_exp	
Temperature_Exp_Den	DT_LONG	(ODS base attribute) temperature_exp_den	
Time_Exp	DT_LONG	(ODS base attribute) time_exp	
Time_Exp_Den	DT_LONG	(ODS base attribute) time_exp_den	
Luminous_Intensity_Exp	DT_LONG	(ODS base attribute) luminous_intensity_exp	
Luminous_Intensity_Exp_Den	DT_LONG	(ODS base attribute) luminous_intensity_exp_den	
Current_Exp	DT_LONG	(ODS base attribute) current_exp	
Current_Exp_Den	DT_LONG	(ODS base attribute) current_exp_den	
Length_Exp	DT_LONG	(ODS base attribute) length_exp	
Length_Exp_Den	DT_LONG	(ODS base attribute) length_exp_den	

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Test_Component_Attributes	Test_Component_Attribute	Set[0:?]
Unit		
Units	Physical_Unit	Units

Dimension		
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1.12 Element Physical_Unit

This element belongs to the ASAM ODS base entity *AoUnit*.

Field descriptor	Data format.	Remark	Mandatory
Id	DT_LONGLONG	(ODS base attribute) Id This field is automatically filled by the server	Yes, unique
Name	DT_STRING	(ODS base attribute) name	Yes
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Mime_Type	DS_STRING	(ODS base attribute) mime_type	
Factor	DT_DOUBLE	(ODS base attribute) factor	
Offset	DT_DOUBLE	(ODS base attribute) offset	

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Dimension_Codes	Dimension_Codes	Set[0:?]	
Units			
Dimension	Physical_Dimension	Phys_dimension	
Units			
Channels	Channel	measurement_quantities	
Physical_Unit			
Possible_Channels	Possible_Channel	quantities	
Unit			
VSTD_Interfaces	VSTD_Interface	Set[0:?]	
Physical_Unit			
Possible_Component_Attributes	Possible_Component_Attribute	Set[0:?]	
Unit			

1.13 Element Possible_Channel

This element belongs to the ASAM ODS base entity AoQuantity.

Field descriptor	Data format	Remark	Mandatory
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Name	DT_STRING	(ODS base attribute) name	yes
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Mime_Type	DT_STRING	(ODS base attribute) mime_type	
Default_Data_Type	DT_ENUM, datatype_enum	(ODS base attribute) default_datatype	
Default_Channel_Name	DT_STRING	(ODS base attribute) default_mq_name	
Default_Rank	DT_LONG	(ODS base attribute) default_rank	
Default_Dimension	DS_LONG	(ODS base attribute) default_dimension	
Default_Type_Size	DT_LONG	(ODS base attribute) default_typesize	
Comments	DT_STRING		
Result_Type	DT_STRING		

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Filter_Class_Code	Filter_Class_Code	Set[0:1]
Possible_Channels		
Dimension_Code	Dimension_Code	Set[0:1]
Possible_Channels		
Direction_Code	Direction_Code	Set[0:1]
Possible_Channels		
Fine_Location1_Code	Fine_Loc_1_Code	Set[0:1]
Possible_Channels		
Fine_Location2_Code	Fine_Loc_2_Code	Set[0:1]
Possible_Channels		

Fine_Location3_Code	Fine_Loc_3_Code	Set[0:1]
Possible_Channels		
Position_Code	Position_Code	Set[0:1]
Possible_Channels		
Test_Object_Code	Test_Object_Code	Set[0:1]
Possible_Channels		
Unit	Physical_Unit	default_unit
Possible_Channels		
Channels	Channel	measurement_quantities
Possible_Channel		
Poss_Channel_Group2Group	Possible_Channel_Group	groups
Possible_Channel2Group		

1.14 Element Possible_Channel_Group

This element belongs to the ASAM ODS base entity AoQuantityGroup.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Possible_Channel2Group	Possible_Channel	quantities	
Poss_Channel_Group2Group			

1.15 Element Possible_Component

This element belongs to the ASAM ODS base entity AoUnitUnderTestPart.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Comments	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Is_Part_Of	Possible_Component	parent_unit_under_test_part	
Uses			
Uses	Possible_Component	children	
Is_Part_Of			
Test_Components	Test_Components	Set[0:?]	
Is_Of_Type			
Test_Object_Code	Test_Object_Code	parent_unit_under_test	
Possible_Components			
Possible_Component_Attributes	Possible_Component_Attribute	children	
Is_Part_Of			

1.16 Element Possible_Component_Attribute

This element belongs to the ASAM ODS base entity AoUnitUnderTestPart.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Comment	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Mandatory	DT_BOOLEAN	The attribute must be filled in the test.	
Value_List_Mandatory	DT_BOOLEAN	Only values from the value list may be entered.	
Datatype	DT_ENUM, component_attribute_datatype	Number, Date, Text, Boolean, Number_with_Unit	Yes

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Value_List	Value_List	Set[0:1]
Possible_Component_Attributes		
Is_Part_Of	Possible_Component	parent_unit_under_test_part
Possible_Component_Attributes		
Test_Component_Attributes	Test_Component_Attributes	Set[0:?]
Is_Of_Type		
Unit	Physical_Unit	Set[0:1]
Possi_Component_Attributes		

Enumeration component_attribute_datatype

Item name	Item value	Remark
Number	0	The value is any number, integer or float in an ASAM-ODS format

Date	1	The value is a date in ASAM-ODS date format.
Text	2	The value is a text
Boolean	3	The value is a Boolean.
Number_with_Unit	4	The value is a number, and there is a relation to a physical unit.

1.17 Element Report

This element belongs to the ASAM ODS base entity AoAny.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
External_References	DS_EXTERNAL_REFERENCE	(ODS base attribute) external_references	

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Safety_Test	Safety_Test	Set[0:1]	
Reports			

1.18 Element Requirement

This element belongs to the ASAM ODS base entity AoTestSequence.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
External_References	DS_EXTERNAL_REFERENCE	(ODS base attribute) external_references	

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Safety_Test	Safety_Test	Set[0:1]	
Requirements			

1.19 Element Safety_Test

This element belongs to the ASAM ODS base entity AoMeasurement.

Field descriptor	Data format	Remark	Mandatory
Id	DT_LONGLONG	(ODS base attribute). This field is automatically filled by the server.	Yes, unique
Name	DT_STRING	(ODS base attribute) The name of the Safety_Test, i.e. the test number.	Yes
Description	DT_STRING	(ODS base attribute) Additional element to keep more Information about a instance of this type. In most cases the most comprehensive description of a Test	
Version	DT_STRING	(ODS base attribute) Additional attribute to extend the name. This shall be the version of VSIM this Safety_Test has been created with.	
Version_Date	DT_DATE	(ODS base attribute) Additional element to create a more precise Information about a instance of this type	
External_References	DS_EXTERNALREFERENCE	(ODS base attribute) A pointer to an external document. This adds the capability to incorporate documents of any type	
Laboratoy_Test_Ref_Number	DT_STRING	Test number of the laboratory	
Customer_Test_Ref_Number	DT_STRING	Test number of the customer	
Customer_Project_Ref_Number	DT_STRING	Number of the customer project	
Customer_Order_Number	DT_STRING		
Customer_Cost_Unit	DT_STRING		
Title	DT_STRING		
Timestamp	DT_DATE	Creation date of the data.	
Reference_Temperature	DT_FLOAT	measurement point depends on type of the test	
Relative_Air_Humidity	DT_FLOAT	measurement point depends on type of the test	
Date_Of_The_Test	DT_DATE		
Instrumentation_Standard	DT_STRING	incl. Version number or edition date	

Relation attributes

Relation name	Related Element	ODS-base-relation, relation
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Inverse relation name		range
Subtype_Of_Test	Subtype_Of_Test	test
Safety_Tests		
Contact	Contact	Set[0:1]
Safety_Tests		
Contact_Relation_Types	Contact_Relation_Type	Set[0:?]
Safety_Tests		
Requirements	Requirements	Set[0:?]
Safety_Tests		
Movies	Movie	Set[0:?]
Safety_Tests		
Photos	Photo	Set[0:?]
Safety_Tests		
Reports	Report	Set[0:?]
Safety_Tests		
VSTD_Interfaces	VSTD_Interface	Set[0:?]
Safety_Tests		
Test_Objects	Test_Object	Set[0:?]
Safety_Tests		
Channels	Channel	Measurement_quantities
Safety_Test		
SubMatrices	Submatrix	submatrices
Safety_Test		

1.20 Element Submatrix

This element belongs to the ASAM ODS base entity AoSubMatrix.

Field descriptor	Data format	Remark	Mandatory
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Name	DT_STRING	(ODS base attribute) name	Yes
Mime_Type	DT_STRING	(ODS base attribute) mime_type	
Number_Of_Rows	DT_LONG	(ODS base attribute) number_of_rows	YES

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Local_Columns	Local_Column	Local_columns
Submatrix		
Safety_Test	Safety_Test	measurement
Submatrices		

1.21 Element Subtype_Of_Test

This element belongs to the ASAM ODS base entity *AoSubTest*.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
External_References	DS_EXTERNAL_REFERENCE	(ODS base attribute) external_references	

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Safety_Tests	Safety_Test	children	
Subtype_Of_Test			
Type_Of_Test	Type_Of_Test	parent_test	
Subtype_Of_Tests			
Parent_Subtype_Of_Test	Subtype_Of_Test	Set [0:1]	
Child_Subtype_Of_Tests			
Child_Subtype_Of_Tests	Subtype_Of_Test	Set [0:?]	
Parent_Subtype_Of_Test			

The relation Parent_Subtype_Of_Test with the inverse relation Child_Subtype_Of_Tests can be used to build a free hierarchy of Subtype_Of_Test instances. This hierarchy is an application hierarchy, ASAM ODS allows only a fix test hierarchy.

1.22 Element Test_Component

This element belongs to the ASAM ODS base entity AoUnitUnderTestPart.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Is_Of_Type	Possible_Component	Set[0:1]	
Test_Components			
Is_In_Position	Main_Loc_Code	Set[0:1]	
Test_Components			
Belongs_To	Test_Object	parent_unit_under_test	
Test_Components			
Is_Part_Of	Test_Component	parent_unit_under_test_part	
Uses			
Uses	Test_Component	children	
Is_Part_Of			
Movies	Movie	Set[0:?]	
Test_Components			
Photos	Photo	Set[0:?]	
Test_Components			
Test_Component_Attributes	Test_Component_Attribute	Children	
Is_Part_Of			
Channels	Channel	Set[0:?]	
Test_Components			

1.23 Element Test_Component_Attribute

This element belongs to the ASAM ODS base entity AoUnitUnderTestPart.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Value	DT_STRING	The value of the attribute. In case of data type number_with_unit a relation to Physical_Unit is mandatory.	Yes
Comment	DT_STRING	(ODS base attribute) description	

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Is_Part_Of	Test_Component	parent_unit_under_test_part
Test_Component_Attributes		
Is_Of_Type	Possible_Component_Attribute	Set[0:1]
Test_Component_Attributes		
Unit	Physical_Unit	Set[0:1]
Test_Component_Attributes		

1.24 Element Test_Object

This element belongs to the ASAM ODS base entity AoUnitUnderTest.

This element contains the attributes of an object being tested. A test object is the unit of all parts with the same velocity and movement behaviour during the test.

Field descriptor	Data format	Remark	Mandatory.
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes unique
Name_Of_Test_Object	DT_STRING	(ODS base attribute) name See ISO-MME	Yes
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
External_References	DT_STRING	(ODS base attribute) external_references	
Velocity_Test_Object	DT_DOUBLE	See ISO-MME	
Mass_Test_Object	DT_DOUBLE	See ISO-MME	
Driver_Position_Object	DT_STRING	See ISO-MME	
Impact_Side_Test_Object	DT_STRING	See ISO-MME	
Type_Of_Test_Object	DT_STRING	See ISO-MME	
Class_Of_Test_Object	DT_STRING		

Relation attributes

Relation name	Related Element	ODS-base-relation, relation range
Inverse relation name		
Code_Of_Test_Object	Test_Object_Code	Set[0:1]
Test_Objects		
Safety_Test	Safety_Test	Set[0:1]
Test_Objects		
Movies	Movie	Set[0:?]
Test_Objects		
Photos	Photo	Set[0:?]
Test_Objects		
Test_Components	Test_Component	children

Belongs_To		
VSIM	VSIM	Environment
Test_Objects		
Channels	Channel	Set[0:?]
Test_Objects		

1.25 Element Type_Of_Test

This element belongs to the ASAM ODS base entity AoTest.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
External_References	DS_EXTERNAL_REFERENCE	(ODS base attribute) external_references	

Relation attributes

Relation name	Related Element	ODS-base-relation, range
Inverse relation name		
Subtype_Of_Tests	Subtype_Of_Test	children
Type_Of_Test		
VSIM	VSIM	environment
Type_Of_Tests		

1.26 Element Value

This element belongs to the ASAM ODS base entity AoAny.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description Long name of the value	

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Is_Member_Of	Value_List	parent	
Values			

1.27 Element Value_List

This element belongs to the ASAM ODS base entity AoAny.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Values	Value	children	
Is_Member_Of			
Possible_Component_Attributes	Possible_Component_Attribute	Set[0:?]	
Value_List			

1.28 Element VSIM

This element belongs to the ASAM ODS base entity AoEnviroment.

Field descriptor	Data format	Remark	Mandatory
Name	DT_STRING	(ODS base attribute) name	Yes
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Description	DT_STRING	(ODS base attribute) description	
ASAM_ODS_Version	DT_STRING	(ODS base attribute) asam_ods_version	
ASAM_ODS_Version_Date	DT_DATE	(ODS base attribute) version_date	
VSIM_Version	DT_STRING		
VSIM_Version_Date	DT_DATE		

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Type_of_Tests	Type_of_Test	tests	
VSIM			
Test_Objects	Test_Object	equipments	
VSIM			

1.29 Element VSTD_Interface

This element belongs to the ASAM ODS base entity AoEquipment.

Field descriptor	Data format	Remark	Mandatory
Id	DT_LONGLONG	(ODS base attribute) id This field is automatically filled by the server	Yes, unique
Name	DT_STRING	(ODS base attribute) name	Yes
Version	DT_STRING	(ODS base attribute) version	
Version_Date	DT_DATE	(ODS base attribute) version_date	
Description	DT_STRING	(ODS base attribute) description	
External_References	DS_STRING	(ODS base attribute) external_references	
Location_15_Code	DT_STRING	ISO Code without filter class	
Tranducer_Id_Number	DT_STRING	Equal to Id_Module_Number or customer specific number	
Id_Module_Number	DT_STRING	Unique number to locate and assign the plugged sensors	
Company_Specific_Channel_Code	DT_STRING	Only used if code is differing from ISO code	
Warm_Up_Time_S	DT_DOUBLE	Time, until the sensor reaches his operating temperature	
Excitation_voltage_v	DT_DOUBLE	e.g. 5 or 10	
Sensitivity	DT_DOUBLE	Output voltage per physical unit	
Shunt_Gain_Pos	DT_DOUBLE	Requested gain for shunt measurement	
Shunt_Gain_Neg	DT_DOUBLE	Requested gain for shunt measurement	
Shunt_Flag_Pos	DT_DOUBLE	YES / NO	
Shunt_Flag_Neg	DT_DOUBLE	YES / NO	
Shunt_value_mv_Pos	DT_DOUBLE	0	
Shunt_value_mv_Neg	DT_DOUBLE	0	
Shunt_Deviation_Pos	DT_DOUBLE	Maximum pos. deviation value	
Shunt_Deviation_Neg	DT_DOUBLE	Maximum pos. deviation value	
Shunt_ref_value_mv_Pos	DT_DOUBLE	Expected pos. shunt value	
Shunt_ref_value_mv_Neg	DT_DOUBLE	Expected neg. shunt value	
Offset_Deviation	DT_DOUBLE	Max deviation of expected offset value	

SAE_Sign	DT_DOUBLE	1 / -1	
Preferred_Measurement_Range	DT_DOUBLE	In physical units	
Electrical_Method	DT_STRING	Voltage, fullbridge, halfbridge	
SW_Offset_Adjust	DT_STRING	YES / NO	
DA_Profile	DT_STRING	On the basis of the customer specific DA_Profile(s), parameters like DA system, sensors, measurement ranges are set	
HW_Offset_Adjust	DT_STRING	YES / NO	
HW_Offset_Percentage	DT_DOUBLE		
Cut_Off_Frequency	DT_DOUBLE	See RED A.1.10	
Sampling_Rate	DT_DOUBLE	In Hz	
Shunt_Method	DT_STRING	Location, where the shunt resistor is located (sensor, internal, external...)	
Id_Module_Type	DT_STRING	Vendor of the ID module	
Pre_Trigger_Time	DT_DOUBLE	Recording time before t0 in ms	
Post_Trigger_Time	DT_DOUBLE	Recording time after t0 in ms	
ISO9000	DT_STRING	YES / NO	
Event_ms_Time	DT_DOUBLE	Airbagtimer firing output time delay	
Offset_Reference_Value	DT_DOUBLE	Expected offset value after offset correction	
Unit_iparent_VSTD_Interface	DT_DOUBLE		
FCC_Id_VSTD_Interface	DT_DOUBLE		

Relation attributes

Relation name	Related Element	ODS-base-relation, range	relation
Inverse relation name			
Safety_Test	Safety_Test	Set[1:1]	
VSTD_Interfaces			
Physical_Unit	Physical_Unit	Set[0:1]	
VSTD_Interfaces			
Dimension_Code	Dimension_Code	Set[0:1]	
VSTD_Interfaces			
Channel	Channel	Set[0:1]	
VSTD_Interfaces			

Filter_Class_Code	Filter_Class_Code	Set[0:1]
VSTD_Interfaces		