# **MDDF - description**

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Multi Dimensional Data Format structure contains 9 variables, where *d* and *TestParameters* are the most essential, because they contains the data which can be further processed. The other variables are used for the correct data description – coordinate system, time zone, etc.

MDDF file name following the scheme: MDDF\_EPIZODNAME\_file\_description.

Variable name	T y pe	Description
CRS	c h ar	Coordinate Reference System EPSG code (or local) mapping surveying (http://epsg.io), standard WGS84 (EPSG: 4326)
đ	st r u ct	<ul> <li>The variable containing the data. The data may be as a single variable, a vector or an array. <i>d</i> structure contains the following fields:</li> <li>Station_codename - Code name of the station</li> <li>Measurements - Number of measurements or sample collection in the field. Structure containing the following fields: <ul> <li>Date - Time of measured parameter/sample collection</li> <li>Tests - Number of test performed/ measured parameters. Structure containing the following fields:</li> <li>Test_name_id - Id of measured parameter/test</li> <li>Result - Result of measured parameter/test</li> <li>Result_duplicate (optional) - Quality assurance check</li> <li>Stage (optional) - Stage of monitoring</li> <li>Measurement_method (optional) - Method of measurement</li> </ul> </li> </ul>
dDescription	c ell	Description of the fields of 'd' variable. A cell contains two columns: the first contains the name of the field/column of data, the second contains a description of them. All data must be specified.
Description	c h ar	The text description of the data contained in the file
FormatName	c h ar	Name of data format MDDF (Multi Dimensional Data Format).
FormatVersi on	r e al	When changing/expansion of the format change its version. It can have one number after the decimal point.

## EPOS Thematic Core Service Anthropogenic Hazards

Test Particle Part Aname of residences are by parameter         • Min - Unit of estimates are by parameter         • Min - Unit of estimates are by parameter         • Min - Unit of estimates are by parameter         • Min - Unit of estimates are by parameter         • Min - Unit of estimates are by parameter         • Min - Unit of estimates are by parameter         • I - the real data without limits,         2 - the integer data,         3 - text value,         4 - the real number counded to 0.1 (shown as 11),         5 - time in Matab format serial time - the time display format; seconds with accuracy 1/10,         6 - the real data display in an engineering manner with one decimal place, eg. 3 5EB, (obsolete, recommended 2cd)         7 - the real data display in an engineering manner with the data place, (obsolete, recommended 2cd)         7 - the real data display in an engineering manner with the data place, (obsolete, recommended 2cd)         7 - the real data display in an engineering manner with the minimum b places before decimal and c decimal place.         0 - for number 3149.         10:	TestParamet ers	st r	The variable containing the parameters of data. The data may be as a single variable, a vector or an array. <i>TestParameters</i> structure contains the following fields:					
An array contains two columns: the first contains the name of the field/column of data, the second contains the data type number. All data must be specified. The Numbers of Data type:         1 - the real data without limits.         2 - the integer data.         3 - text value.         4 - the real number rounded to 0.1 (shown as 11).         5 - time in Mattab format serial time - the time display format; seconds with accuracy 1/10,         6 - the real data display in an engineering manner with one decimal place, e.g.: 3.5E6, (obsolete, recommended 2cd)         7 - the real data display in an engineering manner with two decimal place, (obsolete, recommended 2cd)         7 - the real data display in an engineering manner with two decimal place, (obsolete, recommended 2cd)         0 - to and care code digits) the real data is displayed in fix-point manner with at minimum b places before decimal and c decimal place, a.g.: 3.3E5         20:		u ct	<ul> <li><i>Test_name</i> – Name of test/measured parameter</li> <li><i>Unit</i> – Unit of test/measured parameter</li> <li><i>Type</i> – Data type number:</li> </ul>					
TestFaramet       c         Parameter       - Testingue (optional) - Technique         - TestFaramet       c         - C       - Cond card card cold cold cold card cold cold card cold cold cold cold cold card cold cold card cold cold cold cold cold cold cold col			An array contains two columns: the first contains the name of the field/column of data, the second contains the data type number. All data must be specified. The Numbers of Data type:					
Transformer       a         Performer       c         Performer       c         Performer       c)			1 – the real data without limits,					
3 - text value,         4 - the real number rounded to 0.1 (shown as 11),         5 - time in Matlab format serial time - the time display format; seconds with accuracy 1/10,         6 - the real data display in an engineering manner with one dacimal place, e.g.: 3.5E6, (obsolete, recommended 2cd)         7 - the real data display in an engineering manner with two decimal place, e.g.: 3.5E6, (obsolete, recommended 2cd)         bc - (b and care code digits) the real data is displayed in fix-point manner with at minimum b places before decimal and c decimal place, i.g. 3.1 <sup>5</sup> 11:, 3.1 <sup>4</sup> 12:, 3.15 <sup>+</sup> 23:, 03:,			2 – the integer data,					
TeetParamet       c         A - the real number rounded to 0.1 (shown as 11),         5 - time in Mattab format serial time - the time display format; seconds with accuracy 1/10,         6 - the real data display in an engineering manner with one decimal place, e.g.: 3.5E6, (obsolete, recommended 2c0)         7 - the real data display in an engineering manner with two decimal place, (obsolete, recommended 2c0)         bc - (b and c are code digits) the real data is displayed in fix-point manner with at minimum b places before decimal and c decimal place, e.g. For number 3.149.         10:       .3*         11:       .3.15*         20:       .03*         23:       .0.3.149*         the-the same manner as bc, but with place for a sign (space for sign .**, sign '.* for sign .*), with c decimal place and exponent expressed by d places. The sign in exponent is always displayed.         e.g. For number 0.001       e.g. For number 1000         211:       .1.0E-3*         212:       .1.0E-3*         212:       .1.0E-3*         212:       .1.0E-3*         212:       .1.0E-3*         212:       .1.0E+03*         212:       .1.0E+03*         212:       .1.0E+03*         212:       .1.0E+03*         212:       .1.0E+03*         212:       .1.0E+03* <td< th=""><th></th><th></th><th>3 – text value,</th></td<>			3 – text value,					
S = time in Mallab format serial time - the time display format; seconds with accuracy 1/10,       6 - the real data display in an engineering manner with one decimal place, e.g.: 3.5E6, (obsolete, recommended 2cd)         7 - the real data display in an engineering manner with two decimal place, (obsolete, recommended 2cd)       bc - (b and c are code digits) the real data is displayed in fix-point manner with at minimum b places before decimal and c decimal place,         e.g. For number 3.149.       10:			4 – the real number rounded to 0.1 (shown as 11),					
FestParameters       c       be composition of the fields of TestParameters' variable. A cell contains the name of the field         TreeZore       c       Accordy mol Time Zone (http://en.wikipedia.org/wiki/List_of_time_zone_abpreviations), normally UTC			5 – time in Matlab format serial time – the time display format; seconds with accuracy 1/10,					
TestParameter       c       Description of the fields of TestParameters' variable. A cell contains the name of the field         TrineZone       c       Accrogitation of the fields of TestParameters' variable. A cell contains the specified.         TrineZone       c       Accrogitation of the fields of TestParameters' variable. A cell contains the specified.			6 – the real data display in an engineering manner with one decimal place, e.g.: 3.5E6, (obsolete, recommended 2cd)					
bc - (b and c are code digits) the real data is displayed in fix-point manner with at minimum b places before decimal and c decimal place.       e.g. For number 3.149.         10:3^*			7 - the real data display in an engineering manner with two decimal place, (obsolete, recommended 2cd)					
TestParamet resuBerantet and Column of data, the second contains a description of them. All data must be specified.       e.g. For number 3.149.         10:       ,3"         11:       ,3.1"         12:       ,3.15"         20:       ,03"         23:       ,03.149"         1bc- the same manner as bc, but with place for a sign (space for sign ,+", sign '-' for sign ,-"), 2cd- (c and d are code digits), the real data is displayed in an engineering manner, with place for a sign (space for sign ,+", sign '-' for sign ,-"), with c decimal place and exponent expressed by d places. The sign in exponent is always displayed.         e.g. For number 0.001       e.g. For number 1000         211:       ,1.0E-3"         222:       ,1.00E-3"         221:       ,1.0E-3"         221:       ,1.0E-3"         222:       ,1.00E+03"			bc – (b and c are code digits) the real data is displayed in fix-point manner with at minimum b places before decimal and c decimal place,					
TestParamet esDescription       c       Accrognto fibe fields of "TestParameters' variable. A cell contains two columns: the first contains the name of the field rotum of data, the second contains a description of them. All data must be specified.         TimeZone       c       Acronym of Time Zone (http://en.wikipedia.org/wiki/List_of_time_zone_abbreviations), normally UTC			e.g. For number 3.149.					
TestParamet ersDescription       c         Accreditation (optional) – Technique         • Coll (optional) – Entities of TestParameters' variable. A cell contains two columns: the first contains the name of the field         restParamet ersDescription       c         Accrement of the second contains a description of them. All data must be specified.         ThreeZone       c         Acorym of Time Zone (http://en.wikipedia.org/wiki/List_of_time_zone_abbreviations), normally UTC			10: "3"					
12: ,3.15°         20: ,03°         23: ,03.149°         1bc- the same manner as bc, but with place for a sign (space for sign ,*', sign '-' for sign ,-''),         2cd- (c and d are code digits), the real data is displayed in an engineering manner, with place for a sign (space for sign ,*', sign '-' for sign ,-''), with c decimal place and exponent expressed by d places. The sign in exponent is always displayed.         e.g. For number 0.001       e.g. For number 1000         211: ,1.0E-3*       211: ,1.0E+3*         221: ,1.0E-3*       211: ,1.0E+3*         212: ,1.0E-3*       212: ,1.0E+3*         212: ,1.0E-3*       212: ,1.0E+3*         222: ,1.00E-3*       222: ,1.00E+3*         222: ,1.00E-03*       222: ,1.00E+3*         222: ,1.00E-03*       222: ,1.00E+3*         221: ,1.0E+03*       222: ,1.00E+3*         222: ,1.00E-03*       222: ,1.00E+3*         221: ,1.0E+03*       222: ,1.00E+3*         222: ,1.00E-03*       222: ,1.00E+3*         • Technique (optional) – Technique       • LOD (optional) – Data type number of LOD         • Accreditation (optional) – Accreditation body       • Accreditation is a description of the field column of tata, the second contains a description of them. All data must be specified.         TImeZone       c       Acronym of Time Zone (http://en.wikipedia.org/wiki/List_of_time_zone_abbreviations), normally UTC			11: "3.1"					
20:       .03"         23:       .03.149"         1bc- the same manner as bc, but with place for a sign (space for sign ,+", sign '.' for sign ,-"),         2cd- (c and d are code digits), the real data is displayed in an engineering manner, with place for a sign (space for sign ,+", sign '.' for sign ,-"), with c decimal place and exponent expressed by d places. The sign in exponent is always displayed.         e.g. For number 0.001       e.g. For number 1000         211:       .1.0E-3"         2221:       .1.00E-3"         212:       .1.00E-3"         212:       .1.00E-3"         212:       .1.00E-03"         212:       .1.00E+03"         222:       .1.00E+03"         . Teschnique (optional) – Technique			12: "3.15"					
23:			20: "03"					
TestParamet ersDescription       c       Description of the fields of 'TestParameters' variable. A cell contains two columns: the first contains the name of the field         TimeZone       c       Acronym of Time Zone (http://en.wikipedia.org/wiki/List_of_time_zone_abbreviations), normally UTC			23: "03.149"					
2cd- (c and d are code digits), the real data is displayed in an engineering manner, with place for a sign (space for sign ,+*, sign '-' for sign ,-''), with c decimal place and exponent expressed by d places. The sign in exponent is always displayed.         e.g. For number 0.001       e.g. For number 1000         211:       ,1.0E-3*         221:       ,1.00E-3*         221:       ,1.00E-3*         221:       ,1.00E-3*         222:       ,1.00E+3*         222:       ,1.00E+03*         23:       .222:         ,1.00D/ype (optional) – Technique         . LOD (optional) – Data type number of LOD         . Accreditation (optional) – Data type number of LOD         . Accreditation (optional) – Accreditation body			1bc- the same manner as bc, but with place for a sign (space for sign "+", sign '-' for sign "-"),					
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Image: Section of the fields of 'TestParameters' variable. A cell contains two columns: the first contains the name of the field column of data, the second contains a description of them. All data must be specified.       Image: Section of the field section (http://en.wikipedia.org/wiki/List_of_time_zone_abbreviations), normally UTC         TimeZone       c       Acronym of Time Zone (http://en.wikipedia.org/wiki/List_of_time_zone_abbreviations), normally UTC			221: "1.00E-3" 221: "1.00E+3"					
Image: space spac			212: "1.0E-03" 212: "1.0E+03"					
<ul> <li>Technique (optional) – Technique</li> <li>LOD (optional) – Limit of detection (Lower and Upper)</li> <li>LODType (optional) – Data type number of LOD</li> <li>Accreditation (optional) – Accreditation body</li> </ul> TestParamet ersDescription <ul> <li>c ell</li> <li>Description of the fields of 'TestParameters' variable. A cell contains two columns: the first contains the name of the field /column of data, the second contains a description of them. All data must be specified. TimeZone <ul> <li>c h ar</li> </ul></li></ul>			222: "1.00E-03" 222: "1.00E+03"					
TestParamet       c       Description of the fields of 'TestParameters' variable. A cell contains two columns: the first contains the name of the field         TimeZone       c       Acronym of Time Zone (http://en.wikipedia.org/wiki/List_of_time_zone_abbreviations), normally UTC			<ul> <li><i>Technique (optional)</i> – Technique</li> <li><i>LOD (optional)</i> – Limit of detection (Lower and Upper)</li> <li><i>LODType (optional)</i> – Data type number of LOD</li> <li><i>Accreditation (optional)</i> – Accreditation body</li> </ul>					
<i>TimeZone</i> c Acronym of Time Zone (http://en.wikipedia.org/wiki/List_of_time_zone_abbreviations), normally UTC	TestParamet ersDescription	c ell	Description of the fields of 'TestParameters' variable. A cell contains two columns: the first contains the name of the field /column of data, the second contains a description of them. All data must be specified.					
	TimeZone	c h ar	Acronym of Time Zone (http://en.wikipedia.org/wiki/List_of_time_zone_abbreviations), normally UTC					

#### Table 1. The structure of Multi Dimensional Data Format

ield name

Storage format

### EPOS Thematic Core Service Anthropogenic Hazards

d	Station_codename	char
	Measurements	struct
	Measurements.Date	double
	Measurements.Tests	struct
	Measurements.Tests.Test_name_id	double
	Measurements.Tests.Result	double
	Measurements.Tests.Result_duplicate	double
	Measurements.Stage	char
	Measurements.Measurement_method	char
TestParameters	Test_name	char
	Unit	char
	Туре	double
	Technique	char
	LOD	double
	LODType	double
	Accreditation	char

Table 2. The format of fields 'd' and 'TestParameters' variables

#### Data details:

'd' structure contains the following fields:

 Station\_codename - Code name of the station

 Measurements - Number of measurements or sample collection in the field. Structure containing the following fields:

 Date - Time of measured parameter/sample collection

 Tests - Number of test performed/ measured parameters.. Structure containing the following fields:

 Test\_name\_id - Id of measured parameter/test

 Result - Result of measured parameter/test

 Result\_duplicate (optional) - Quality assurance check

 Stage (optional) - Stage of monitoring

 Measurement\_method (optional) - Method of measurement

### 'TestParameters' structure contains the following fields:

Test\_name – Name of test/measured parameter Unit – Unit of test/measured parameter Type – Data type number Technique (optional) – Technique LOD (optional) – Limit of detection (Lower and Upper) LODType (optional) – Data type number of LOD Accreditation (optional) – Accreditation body

Back to top