



# Testing der INSPIRE Datenspezifikation für die Themen *Geology and Mineral Resources* Schwerpunkt *Geophysics*

3. Workshop am 05./06.10.2011 in Hannover (BGR)



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## Das Datenmodell *Geophysics* als Steckbrief

- ***Geophysics Core Model***

- Nur Angaben von Nachweisdaten zu:
  - Messungen
  - *Surveys*
  - Modellen (nur *SurfaceGrid*)
  - (Zu?) schlanke *Code Lists*

- ***Geophysics Extension Model***

- Detailliertere Angabe von Nachweisdaten zu:
  - Messungen (mehr Methoden)
  - *Surveys* (Unterteilung in *Campaigns* und *Projects*)
  - Modellen (*SpotModel*, *CurveModel*, *XSurfaceGrid*, *Solid*, *SolidGrid*)
- **Optionale** Einbindung von Messdaten über *Observation and Measurement*-Standard bzw. mittels des *Generic Conceptual Model*
- **Optionale** Einbindung von Messdaten in industriellen Standardformaten (z.B. SEG-Y, LAS)
- Offene, d.h. erweiterbare *Code Lists*

# Beispiel *Testing Geophysics – Seismic Line (I)*

Geopotenziale des tieferen Untergrundes im Oberrheingraben  
Geopotentials of the deep Upper Rhine Graben  
Potentiel géologique profond du Fossé rhénan supérieur

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Upper Rhine Graben

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**WHERE?**

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- Geological Cross Sections
- Geological Maps
- Geopotential Maps
- Hydrogeological Maps
- Structural Maps
- Thickness Maps

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**GeoRSS**

- GeORG Zones
- GeORG Seismic Line Drawings
- GeORG Geological Map - Lithology
- GeORG Geological Map - Tectonics
- GeORG Seismics
- GeORG Wells

**GeORG Portal Map Preview**

Layer tree

- Base Layer
- Overlays
  - GeORG Seismics
  - Topography
  - GeORG Zones

**Legend**

GeORG Seismics

- Germany
- France
- Switzerland

Topography

SRTM (Colour)

- Sub-project Switzerland
- Interior Modelling Zone
- Exterior Modelling Zone
- Pilot Modelling Area

GeORG Zones

- Sub-project Switzerland
- Interior Modelling Zone
- Exterior Modelling Zone
- Pilot Modelling Area

**Feature info**

Feature info	
surv_name	Bühl-1978
old_name	n/a
surv_short	buel_78
archive1	LBEG
arnum1	0081841
archive2	LGRB
arnum2	1384
provider	PEG
operator	Prakla-Seismos
acq_year	1978
prof_name	buel_7822
time_ms	2900
data_type	stacked_analogue
admin_unit	BW
segy	y
country	GER





## Beispiel Testing Geophysics – Seismic Line (II)

Application Schema 'GeophysicsCore' (version 2.0)							Example Seismic Survey (buel_78)	
Type	Documentation	Attribute / Association role / Constraint	Attribute / Association role / Constraint documentation	Values / Enumerations	Multiplicity	Voidable / Non-Voidable	Example Content	Remarks
GeophSurvey <small>Superty</small> <small>pes: AbstractGeophDataSer</small>	Data acquisition or processing activity bound to a specific geophysical method, limited area and time range.							
		resolutionScale	NOTE: this attribute type will be mapped to a temporary proxy for MD_RepresentativeFraction until support for GML3.2 is achieved. Reciprocal of equivalent scale of resolution for delineation of a feature's geometry. This is in contrast to positionAccuracy which is a measure of how well a feature is located relative to other features in the geographic reference system.	MD_RepresentativeFraction	1	voidable	60 m	value is equivalent to the approximate distances of CDPs (correct?)
		inspireId	External object identifier of the measurement. NOTE: An external object identifier is a unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object. The identifier is an identifier of the spatial object, not an identifier of the real-world phenomenon.	Identifier	1		LGRB-1384	ID is composed of: abbreviation of archive (LGRB) - archive number of seismic survey (1384)
		citation	An ISO 19115 citation with a human readable title and important dates.	CI_Citation	1		GeORG Seismics	equivalent to CI_Citation title of vector layer showing the location and extent of reprocessed 2D seismic data used for interpretation and 3D modelling in the GeORG project (see metadata catalogue <a href="http://132.230.99.27:8080/geonetwork">http://132.230.99.27:8080/geonetwork</a>
		startTime	Start of survey, campaign or project	TM_Position	1	voidable	11.09.1978	
		endTime	End of survey, campaign or project	TM_Position	1	voidable	11.09.1978	



## Beispiel Testing Geophysics – Seismic Line (III)

1	Application Schema 'GeophysicsCore' (version 2.0)							Example Seismic Line (buel_7822)	
2	Type	Documentation	Attribute Association role Constraint	Attribute / Association role /	Values / Enumerations	Multiplicity	Voidable / Non-Voidable	Example Content	Remarks
9			verticalExtent	Vertical extent of the sampling	EX_VerticalExtent	1	voidable	2900 ms	Seismic profile in time domain, therefore vertical extent is in milliseconds (correct?)
10			distributionInfo	Distribution metadataLink to measured data access point	MD_Distribution	1	voidable	http://132.230.99.27:8080/geo-server/wms?	points to the WMS service of the GeORG Project; direct access to data is restricted by rights of use policies
11			largerWork	reference to a larger work, typically a campaign or project	MD_Identifier	1..*	voidable	Bühl-1978	
12			relatedModel	Reference to the geophysical model that was created from the measurement	MD_Identifier	1..*	voidable	n/a	
13			dataOwner	Owner of the modelOwnership is usually inherited from campaign to measurement. If not, data owner may be defined for separate measurements.	CI_ResponsibleParty	1	voidable	GDF SUEZ E&P Deutschland GMBH	
14			projectedGeometry	2D projection of the feature to the ground surface. This is going to be used by WMS to display the 3D feature	ProjectedGeometry	1..*		Trace (see file buel_7822.gml); SRS = Gauß-Krüger-Zone 3 (EPSG: 31467)	
15			platformType	platform from which the measurement was carried out	PlatformTypeValue* ground* fixWingedAirplane* helicopter* researchVessel* satellite	1		ground	
16			shape	Curve geometry, equivalent to the reference curve of the measurement	GM_Curve	1		see projectedGeometry	redundant with projectedGeometry (correct?)
17			profileType	The geophysical method	ProfileTypeValue* seismicLine* boreholeLogging	1		seismicLine	
18			seismicLineType	The type of seismic line (2D or 3D)	SeismicLineTypeValue* 2D* 3D	1		2D	

# Beispiel Testing Geophysics – Seismic Survey (I)

Geopotenziale des tieferen Untergrundes im Oberrheingraben  
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archive2	LGRB
arnum2	1384
provider	PEG
operator	Prakla-Seismos
acq_year	1978
prof_name	buel_7822
time_ms	2900
data_type	stacked_analogue
admin_unit	BW
segy	y
country	GER

10 km  
5 mi





# Beispiel Testing Geophysics – Seismic Survey (II)

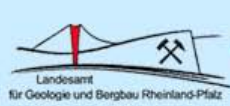
	A	B	C	D	E	F	G	H	I	J
1	Application Schema 'GeophysicsCore' (version 2.0)								Example Seismic Survey (buel_78)	
	Type	Documentation	Attribute / Association role / Constraint	Attribute / Association role / Constraint documentation	Values / Enumerations	Multiplicity	Voidable / Non-Voidable		Example Content	Remarks
2										
3	GeophSurvey <small>Superty pes: AbstractGeophDataSet</small>	Data acquisition or processing activity bound to a specific geophysical method, limited area and time range.								
4			resolutionScale	NOTE: this attribute type will be mapped to a temporary proxy for MD_RepresentativeFraction until support for GML3.2 is achieved. Reciprocal of equivalent scale of resolution for delineation of a feature's geometry. This is in contrast to positionAccuracy which is a measure of how well a feature is located relative to other features in the geographic reference system.	MD_RepresentativeFraction	1	voidable		60 m	value is equivalent to the approximate distances of CDPs (correct?)
5			inspireId	External object identifier of the measurement.NOTE An external object identifier is a unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object. The identifier is an identifier of the spatial object, not an identifier of the real-world phenomenon.	Identifier	1			LGRB-1384	ID is composed of: abbreviation of archive (LGRB) - archive number of seismic survey (1384)
6			citation	An ISO 19115 citation with a human readable title and important dates.	CI_Citation	1			GeORG Seismics	equivalent to CI_Citation title of vector layer showing the location and extent of reprocessed 2D seismic data used for interpretation and 3D modelling in the GeORG project (see metadata catalogue <a href="http://132.230.99.27:8080/geo/network">http://132.230.99.27:8080/geo/network</a>
7			startTime	Start of survey, campaign or project	TM_Position	1	voidable		11.09.1978	
8			endTime	End of survey, campaign or project	TM_Position	1	voidable		11.09.1978	



## Beispiel Testing Geophysics – Seismic Survey (III)

	A	B	C	D	E	F	G	H	I	J
1	Application Schema 'GeophysicsCore' (version 2.0)								Example Seismic Survey (buel_78)	
2	Type	Documentation	Attribute / Association role / Constraint	Attribute / Association role / Constraint documentation	Values / Enumerations	Multiplicity	Voidable / Non-Voidable	Example Content	Remarks	
9			verticalExtent	Vertical extent of the sampling configuration Geophysical measurements often have vertical extent. Example: A borehole logging measurement is usually displayed on maps as a point, but the sampling takes place in a vertical or inclined borehole	EX_VerticalExtent	1	voidable	2900 ms	All seismic profiles are in time domain, therefore vertical extent is in milliseconds. All seismic profiles of the survey are 2900 ms long (What if time length varies within the profiles of one survey?)	
10			distributionInfo	Distribution metadata Link to measured data access point	MD_Distribution	1	voidable	<a href="http://132.230.99.27:8080/geonetwork/wms?">http://132.230.99.27:8080/geonetwork/wms?</a>	points to the WMS service of the GeORIG project; direct access to data is restricted by rights of use policies	
11			projectedGeometry	2D projection of the feature to the ground surface. This is going to be used by WMS to display the 3D feature	ProjectedGeometry	1..*		Polygon (see file buel_78.gml); SRS = Gauß-Krüger Zone 3 (EPSG:31463)		
12			surveyType	Type of survey	DataSetTypeValue* 2DSeismicSurvey* 3DSeismicSurvey* airborneGeophysicalSurvey* gravitySurvey* magneticSurvey	1		2DSeismicSurvey		
13			principalInvestigator	Main responsible for the investigation	CI_ResponsibleParty	1	voidable	Preussag AG, BEB, Mobil Oil AG	the companies that awarded the contract for seismic investigation at that time (correct)	
14			dataOwner	Owner of geophysical data created by the survey	CI_ResponsibleParty	1	voidable	GDF SUEZ E&P Deutschland GmbH	the company that nowadays owns the seismic data (correct?)	
15			client	Responsible party to which the survey is carried out	CI_ResponsibleParty	1	voidable	?	definition / difference to principalInvestigator not clear	
16			custodian	Party responsible to maintain data related to the survey	CI_ResponsibleParty	1		LGRB Freiburg	the geological survey where the seismic data is deposited (correct?)	
17			contractor	Party responsible to carry out the survey	CI_ResponsibleParty	1	voidable	PRAKLA-SEISMOS	company that carried out the seismic measurement (correct?)	





## Resultate

- **Mapping der Eingangsdaten ohne größeren Informationsverlust**
- **In den meisten Fällen 1:1 Mapping der Attribute möglich**
  - Ausnahme: zusätzliche Archiv-IDs
  - Ausnahme: Administrative Einheiten
- **Informationen zum Datenformat und zu Prozessierungsmethoden nicht in GeophysicsCore, sondern prinzipiell im Geophysics Extension Model möglich**