



Inventory of geophysical data in the CR

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Presentation outline

- State-of-the-art
 - Inventory in the CGS
 - Inventory in the CzechGeo consortium
- Future plans



Inventory

of existing geological, geophysical and other relevant data maintained by CGS and other CzechGeo participants:

- types of data (structured and unstructured data, paper and digital documents, primary and derived documentation, historical and up-to-date etc.)
- types of data access (public and licensed, via web services and web applications)



Inventory in the CGS

- Analysis of geophysical data sources: archives, reports, central and local storages
- Inventory catalogue – structure of metadata, codelists, description - *ongoing*
- Identification of INSPIRE data (GeophMeasurement, Campaign)
- Metadata revision (CGS metadata catalogue) – metadata of consolidated data sets, public web map services and apps are harvested to National INSPIRE Geoportal

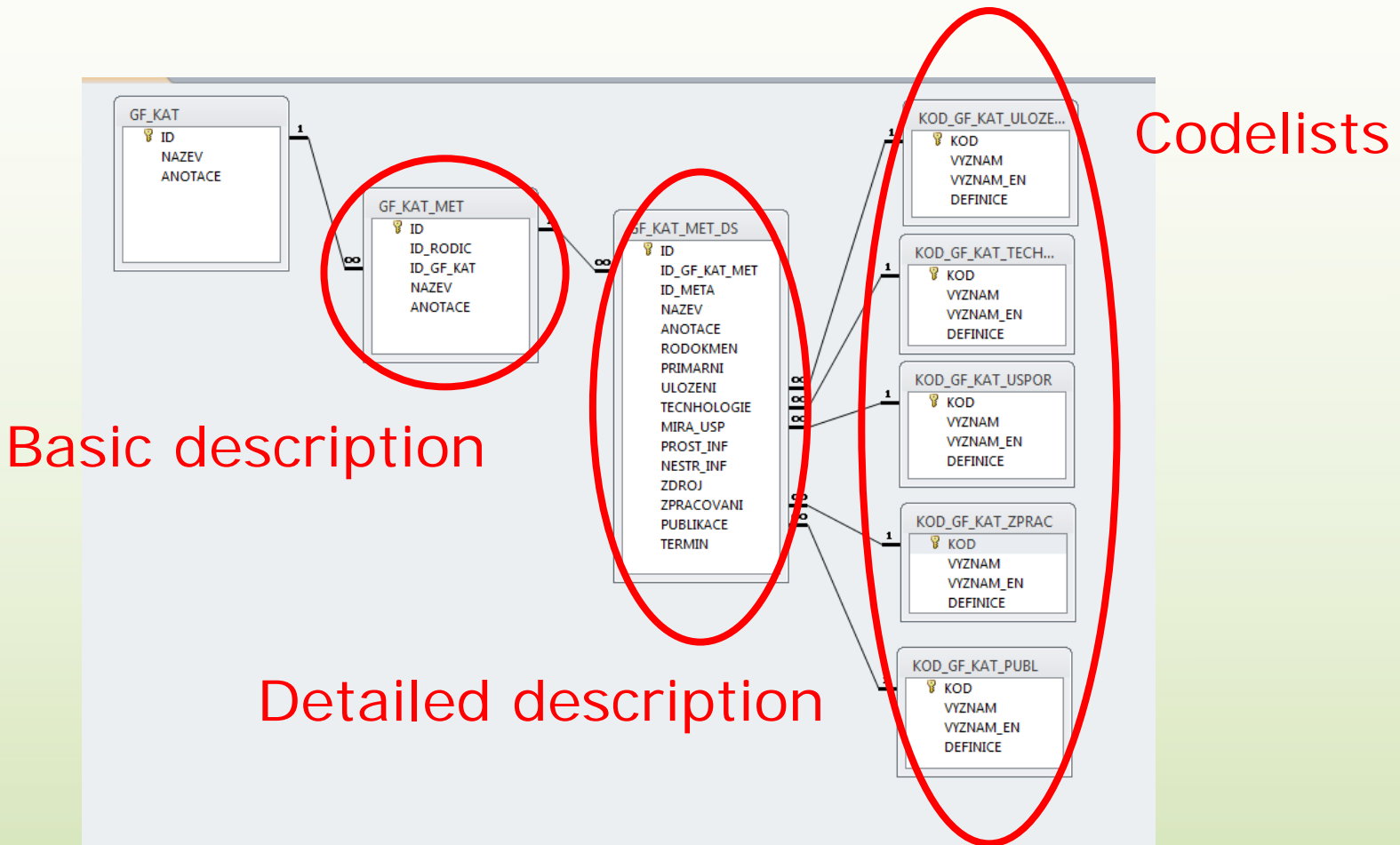


Geophysical data sources of the CGS

- **Central CGS archive**, originally from 3 institutions:
 - ✓ **CGS-Geofond Praha** (unpublished reports on geological and geophysical surveys; ASGI app)
 - ✓ **Geofyzika Brno**, state-owned enterprise (geophysical surveys on seismics, gravimetry, geomagnetics, geoelectrics, airborne geophysics etc.)
 - ✓ **CGS Praha** (geological mapping, petrophysics, radon prospection etc.)
- **Central CGS data storage:**
 - ✓ **consolidated** datasets and files: boreholes, radon, set of geoscientific maps 1:500K – radiometry etc.
 - ✓ **partly consolidated** datasets and files: gravimetry, well logging, seismic profiles (lines), VES, petrophysics, radiometry etc.
- **Local data storages:**
 - ✓ **unconsolidated** datasets and files: primary airborne geophysics, VES curves etc.



Data model of inventory catalogue





Structure of inventory catalogue

- Custodian (owner) and contact person
- Dataset name
- Relations and coupled resources
- Annotation (abstract)
- Origin (lineage)
- Geographical and temporal extent
- Type of geophysical method
- Data type (primary, derived, overview)
- Data format and storage technology
- Central data storage (yes/no)
- Metadata URL
- Access and distribution (legal constraints and type – web services, app)
- Web services URL
- Data management plan



Example of inventory record

No	10
Custodian	CGS
Dataset name	Seismic profiles (lines) - scans of time (migrate, depth) - sections
Coupled resources	ASGI
Annotation / abstract	Derived data - scans of seismic time-section, alternatively time-migrate and depth-transformed section
Origin / lineage	Scans of archival seismic-section films (black and white) in TIFF format, for application resampled into JPG format. For limited access of users, the intranet application version was created.
Geographical extent	Bohemia#Vienna Basin#Carpathian flysch zone
Temporal extent	1972-1993
Group of method	Seismics
Method	Reflection seismics
Data type	Primary
Data format	FZS#GDB
Technology	FS#RDBO
Branch	Brno
Contact person	Eva Hudečková
E-mail	eva.hudeckova@geology.cz
Central data storage	yes
Metadata URL (dataset)	https://micka.geology.cz/records/54d27991-f884-41a5-a29e-38930a010852?language=cze
Access - other (text)	
Access - via service	No
Access - via application	MA - licensed access
Metadata URL (app / service)	https://micka.geology.cz/records/553de558-85f4-4f25-aefe-75580a010852
Web map app/service	http://mapy.geology.cz/GISViewer/?mapProjectId=10000
Data management	1
Notes	

Seismic profiles – scans of time-sections



Example of seismic metadata records

CGS Metadata Catalogue

Search > Found (5)

Found by: Title Ascending

Geophysical Surveys
Supervisor: RNDr. Eva Hudečková
This database contains information on geophysical measurements made mainly by Geofyzika state enterprise, Brno and its successor organizations since the early 1950s. Areas covered by regional surveys are depicted on 1:200 000 scale maps and local small-scale measurements at scale of 1:50 000.
Metadata Contact: Mgr. Pavla Kramolišová, Date Stamp: 2017-07-04

Check-shooting
Supervisor: RNDr. Eva Hudečková
This database contains state-funded downholes seismic (check-shooting) surveys measured in the Czech Republic in 1968-1994 (1998).
Metadata Contact: Mgr. Olga Moravcová, Ph.D., Date Stamp: 2017-11-02

Seismic profiles
Supervisor: Ing. Martin Paleček
WMS service displays state-funded seismic profiles measured in the Czech Republic in 1966-1994 (1998).
Metadata Contact: Mgr. Pavla Kramolišová, Date Stamp: 2017-08-29

Seismic profiles
Supervisor: RNDr. Eva Hudečková
This database contains state-funded seismic profiles measured in the Czech Republic in 1966-1994 (1998). The database contains 996 profiles.
Metadata Contact: Mgr. Pavla Kramolišová, Date Stamp: 2017-08-29

Seismic profiles
Supervisor: RNDr. Eva Hudečková
Map application displays state-funded seismic profiles measured in the Czech Republic in 1966-1994 (1998).
Metadata Contact: Mgr. Pavla Kramolišová, Date Stamp: 2017-08-29

Seismic profiles

CGS Metadata Catalogue

Search > Found (5)

Found by: Title Ascending

Seismic profiles
dataset

Basic metadata

Identification

Abstract
This database contains state-funded seismic profiles measured in the Czech Republic in 1966-1994 (1998). The database contains 996 profiles.

Identifier CZ-00025798-CGS_G-GGM-SEIS-LIN-DB

Keywords Czech Geological Survey - Concepts, version 1.0: geophysics
GEMET - INSPIRE themes, version 1.0: Geology
GEMET - Concepts, version 3.1: science/natural science/earth science/geophysics monitoring/seismic monitoring
geological process/seismic activity

Free Seismic profile
Seismics
formát seismických dat
násobnost překrytí
technologie měření
CDP

Language Czešt

Temporal extent From 1966

Spatial Representation vector

Spatial Resolution Equivalent Scale = 1:50000

Resource Locator Web page (CS)
Map application (CS)
WMS (CS)



CGS geophysical data - current status

- Inventory: 49 data sources
 - 18 structured datasets (ArcSDE, Oracle)
 - 11 structured datasets (local file systems)
 - 3 unstructured datasets (centrally stored file systems)
 - 8 unstructured datasets (local file systems)
 - 9 sets of analog documents
- CGS Metadata catalogue (geophysical from all geological recs.)
<https://micka.geology.cz>
 - Datasets: 22 (109)
 - Services: 10 (63)
 - Applications: 4 map+2 database apps (30+39)
 - **Total: 38 (241) public records**
 - **Harvest to European INSPIRE Geoportal: 5 (29)**



Inventory of data sources of the CzechGeo participants

- Analysis of available metadata catalogues (National and European INSPIRE Geoportal, web pages of the CzechGeo institutions)
- Workshop on metadata and INSPIRE directive – task distribution
- Description of data storage and workflow
- Identification of INSPIRE data (GeophMeasurement, Campaign)
- Inventory catalogue – structure of metadata, codes



CzechGeo institutions

Storage	Metadata	Contact	Inventory catalogue - draft	INSPIRE Metadata	Inst. Abbr.	Institution	City
yes	yes	yes	ongoing	harvesting	CGS	Czech Geological Survey	Praha
?	no	yes	yes	no	GFU	Institute of Geophysics of the CAS	Praha
?	no	yes	yes	no	USMH	Institute of Rock Structure and Mechanics of the CAS	Praha
?	ongoing	yes	yes	ongoing	UGN	Institute of Geonics of the CAS	Ostrava
?	no	yes	yes	no	UFZ	Institute of Physics of the Earth, Faculty of Science, Masaryk University	Brno
?	no	yes	yes	no	MFF	Faculty of Mathematics and Physics, Charles University	Praha
?	?	?	?	?	PrF	Faculty of Science, Charles University	Praha
?	no	yes	yes	no	VUGTK	Research Institute of Geodesy, Topography and Cartography	Zdiby



Data relevant to INSPIRE

LayerGroup-návrh	Třída/TypeValue	GFU	USMH	UGN	UFZ	MFF	PrF	VUGTK	CGS
	GEOPHMEASUREMENT								
	StationTypeValue								
Geofyzikální monitorovací stanice / observatoře	gravityStation							1	
	magneticStation	1							
	seismologicalStation	1	1	1	1	1			
Geelektrické sondování	magnetotelluricSounding	1							
	verticalElectricSounding								1
	timeDomainEMSounding								
	frequencyDomainEMSounding								
	ProfileTypeValue								
Geofyzika ve vrtech	boreholeLogging								1
	conePenetrationTest								1
	verticalSeismicProfile								1
Geelektrické profilování	georadarProfile								1
	multielectrodeDCProfile								1
Letecká geofyzika	flightLine								1
Seismika	seismicLine								1
	CAMPAIGN								
	SurveyTypeValue								
Gravimetrie	groundGravitySurvey	1	1					1	1
Magnetometrie	groundMagneticSurvey	1	1						1
Seismologie	seismologicalSurvey	1	1	1					
Letecká geofyzika	airborneGeophysicalSurvey								1



CzechGeo geophysical data - current status

- Inventory catalogue:
 - CGS: 49
 - GFU: 12
 - MFF: 4
 - MU: 2
 - UGN: 1
 - USMH: 2
 - VUGTK: 5
 - **Total: 75 data sources**
- National INSPIRE Geoportal:
 - <https://geoportal.gov.cz>
 - Datasets: 23
 - Services: 10
 - Applications: 6 (4 map+2 database apps)
 - **Total: 39 public records**
 - **Harvest to European INSPIRE Geoportal: 5**



Future plans

- Geophysical data sources review (inventory)
- Updated metadata in National INSPIRE catalogue by each CzechGeo institution
- Harvesting of relevant records to European INSPIRE Geoportal and EGDI catalogue (source for EPOS) by each CzechGeo institution
- Data consolidation in CGS
- Standardization of data exchange within CzechGeo consortium
- Data harmonisation for INSPIRE, availability via view and download services



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Thank you for your attention!

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