





# Inventory of geophysical data in the CR

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22.11.2017, CzechGeo Workshop







# **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 upto-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





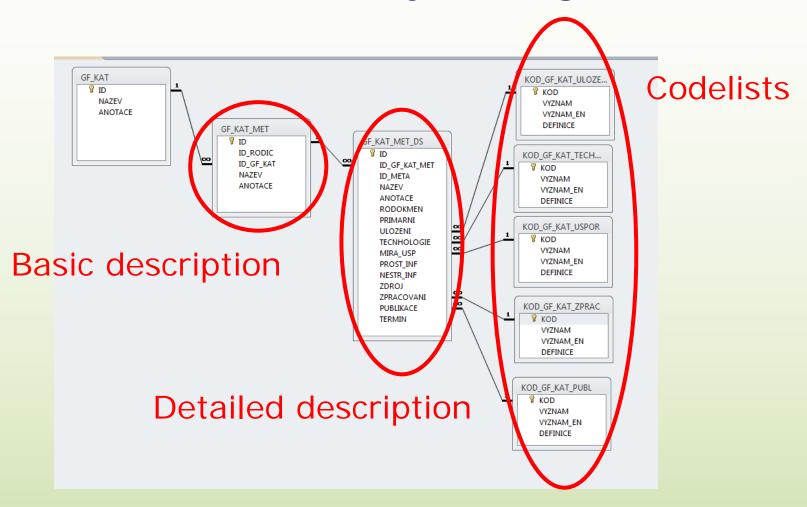
## Geophysical data sources of the CGS

- 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  - CGS-Geofond Praha (unpublished reports on geological and geophysical surveys; ASGI app)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





### Geophysical data sources of the CGS - inventory catalogue

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Seismic profiles – scans of time-sections





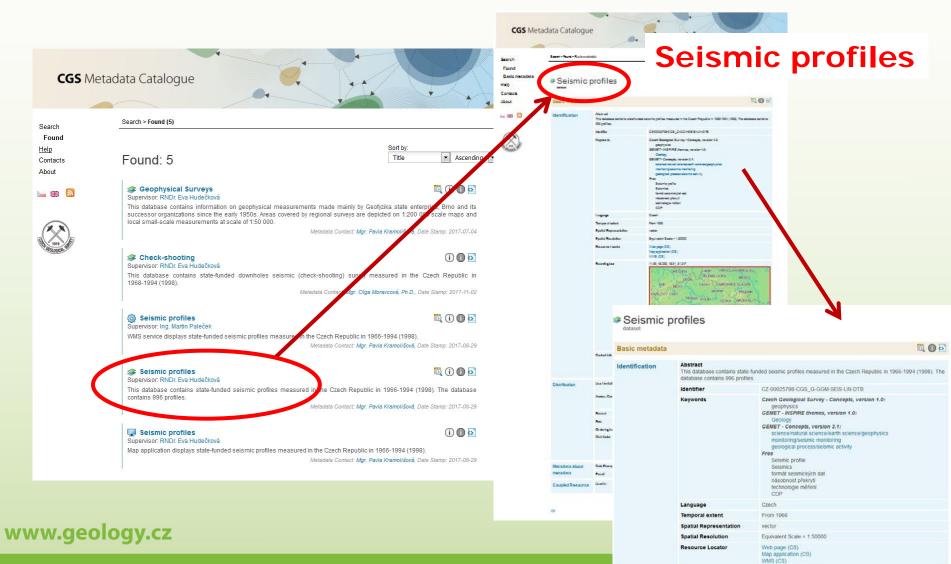
#### **Example of inventory record**

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 app resampled into JPG format. For limited access of users, the intranet application was created.	
Geographical extent		
Temporal extent	1972-1993	
Group of method	Seismics	
Method	Reflection seismics	
Data type	Primary Seismic	profiles –
Data format	123#000	
Technology	FS#RDBO SCANS Of	time-sections
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?lang	guage=cze
Acces - 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		
Notes		





#### **Example of seismic metadata records**







#### 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.) <u>https://micka.geology.cz</u>
  - 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					1.1.1.1.1.						
	StationTypeValue											
Geofyzikální	gravityStation							1				
monitorovací stanice /	magneticStation	1										
observatoře	seismologicalStation	1	1	1	1	1						
	magnetotelluricSounding	1										
Geoelektrické sondování	verticalElectricSounding								1			
Geoelektricke sondovani	timeDomainEMSounding											
	frequencyDomainEMSounding											
	ProfileTypeValue											
	boreholeLogging								1			
Geofyzika ve vrtech	conePenetrationTest								1			
24 	verticalSeismicProfile								1			
Constal de tablé sons félore és é	georadarProfile								1			
Geoelektrické profilování	multielectrodeDCProfile								1			
Letecká geofyzika	flightLine	1					1		1			
Seismika	seismicLine								1			
	CAMPAIGN											
	SurveyTypeValue											
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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: <u>https://geoportal.gov.cz</u>
  - 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









#### **Acknowledgement:**

Large infrastructure CzechGeo/EPOS is in the years 2016- 2019 supported by the project LM2015079 of the Ministry of Education, Youth and Sports of the Czech Republic.

## Thank you for your attention!

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