Danube Reference Data and Services Infrastructure

Danube_Net (D1)

State-of-play and organisational context of the data infrastructure in the Czech Republic

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Revised by Karel Charvát

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**List of acronyms**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>API</td>
<td>application programming interface</td>
</tr>
<tr>
<td>DMVS</td>
<td>Digital Map of Public Administration</td>
</tr>
<tr>
<td>DRDSI</td>
<td>Danube Reference Data and Services Infrastructure</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>ESA</td>
<td>European Space Agency</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>EUSDR</td>
<td>EU Strategy for the Danube Region</td>
</tr>
<tr>
<td>HTML</td>
<td>Hyper Text Markup Language</td>
</tr>
<tr>
<td>INSPIRE</td>
<td>Infrastructure for Spatial Information in the European Community</td>
</tr>
<tr>
<td>LPIS</td>
<td>Land Parcel Information System</td>
</tr>
<tr>
<td>NSDI</td>
<td>national data infrastructure</td>
</tr>
<tr>
<td>OGC</td>
<td>Open Geospatial Consortium</td>
</tr>
<tr>
<td>ROB</td>
<td>Register of Inhabitants</td>
</tr>
<tr>
<td>ROS</td>
<td>Business Register</td>
</tr>
<tr>
<td>RPP</td>
<td>Register of Rights and Responsibilities of Public Authorities</td>
</tr>
<tr>
<td>RUIAN</td>
<td>Register of Territorial Identification, Addresses and Real Estates</td>
</tr>
<tr>
<td>SEA</td>
<td>Strategic Impact Assessment</td>
</tr>
<tr>
<td>SDI</td>
<td>spatial data infrastructure</td>
</tr>
<tr>
<td>SME</td>
<td>small and medium enterprises</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
</tbody>
</table>
1 Introduction

1.1 Outline of the task

This activity aims to characterise the state-of-play of the Czech national spatial data infrastructures (NSDI) with respect to the Danube Reference Data and Services Infrastructure (DRDSI) vertical priorities. The DRDSI is an initiative of the Joint Research Centre to provide scientific support to the EU Strategy for the Danube Region (Danube Strategy or EUSDR) aiming to provide a reference data and services platform (DRDSI Platform) to support decision making mechanisms in the countries of the Danube region.

The deliverable sets out comparable content between the countries participating in the EUSDR, covering details of organisations that could become key stakeholders from the region, including:

- potential metadata/data providers to the DRDSI Platform,
- key policy-making organisations in the participating countries related to data infrastructures and lists of relevant projects,
- research organisations that could have useful projects with data or data harmonisation activities,
- organisations that could support wider stakeholder engagement, including SMEs.

1.2 Outline of the document

The document lists key public and private sector data providers including the types of provided data, policy-making organisations, research organisations and organisations who can aid stakeholder engagement working within the Czech Republic, in cross-border contexts or at the regional level. The current legal context and funding of initiatives aiming at building a national data infrastructure are described. A list of completed and current projects related to the vertical priorities (either for data production or providing tools to support data-sharing) is also included.

1.3 Context of the country and the main players

Public Sector Information in the Czech Republic

Public sector information in the Czech Republic is still fragmented. Data are being collected by respective public administrations. Data sharing is limited due to historical development and data are collected several times and maintained at different levels of public administration. This can be seen to be against the basic INSPIRE principles.

However, the situation has improved significantly by introducing the INSPIRE Directive, the reuse of Public Sector Information (PSI) Directive, other legislation and eGovernment strategies. A major step was the set-up of four basic registers. In order to prevent duplication in data collection and maintenance of PSI, centralised basic registers were designed and implemented. The centralised solution keeps actual and widely used data and information. Basic registers are a central information source for information systems of public authorities.

The concept of basic registers is based on the need for secure data interchange between thousands of information systems of public administration. Basic registers contain reference data about inhabitants, companies, buildings, parcels, etc.

There are 4 basic registers:
- **Register of Inhabitants** (ROB) – maintained by the Ministry of the Interior of the Czech Republic,
- **Business Register** (ROS) – a register of legal and natural persons that is maintained by the Czech Statistical Office,
- **Register of Territorial Identification, Addresses and Real Estates** (RUIAN) – maintained by the Czech Office for Surveying, Mapping and Cadastre,
- **Register of Rights and Responsibilities of Public Authorities** (RPP) - maintained by of the Ministry of the Interior of the Czech Republic.

These basic registers together with the **Information System of Basic Registers** (responsibility of the Ministry of the Interior of the Czech Republic) form a reference information base for public administration in the Czech Republic.

**Figure 1 Schema of basic registers in the Czech Republic**

Next to the above mentioned organisations, there are other key players including the Ministry of Environment, Ministry of Transport, Ministry of Regional Development, Ministry of Industry and Trade, Ministry of Culture, all the Regions, municipalities and professional organisations and associations. The main link between these registers and the EUSDR is data. Data from these registers are guaranteed by the public administration and form a common foundation for other thematic data needed for essential tasks and analyses in EUSDR and DRDSI. Selected data from these registers are publicly available and can be used for the DRDSI straight away. As an example, the entire cadastre geometry and selected attributes are publicly available for download.

### 2 Data providers

The key data providers that should be considered for providing data into the DRDSI platform are listed in Table 1. The list is not limited only to INSPIRE data providers but also to non-spatial and commercial data providers. The commercial sector in this report has been limited to several examples, as the number and the variety of data are both enormous.

The list is also not exhaustive and focuses on the key data providers relevant to the DRDSI, i.e. those relevant to the Danube Region. The list excludes data providers outside the Czech Republic on the EU level such
as European Environmental Agency (e.g. Urban Atlas, Corine Land Cover), EUROSTAT or European Space Agency (ESA).

Table 1 List of data providers

<table>
<thead>
<tr>
<th>Id.</th>
<th>Organisation</th>
<th>Organisation Type</th>
<th>Data Types</th>
</tr>
</thead>
</table>
| 1   | Czech Office for Surveying, Mapping and Cadastre ([http://geoportal.cuzk.cz](http://geoportal.cuzk.cz)) | Public | - Cadastral data including buildings (ISKN - Information System of the Cadastre of Real Estate)  
- Topographic data (Fundamental Base of Geographic Data)  
- Geographical names  
- Imageries (orthophotomaps)  
- Boundaries (administrative)  
- Geodetic control  
- Altimetry  
- Addresses |
- Macroeconomic data  
- Register of business  
- External trade data – data on import and export |
- Environmental and strategic impact assessment data (EIA, SEA)  
- Environmental pollution (e.g. chemical)  
- Waste management data and indicators  
- Soil protection data  
- Emissions  
- Bioenergy |
| 3.1 | Czech Hydrometeorological Institute ([www.chmi.cz](http://www.chmi.cz)) | Public, an institution of the Ministry of the Environment | - Weather data  
- Water quality  
- Air quality |
- Hydrogeology  
- Soils  
- Natural resources  
- Quarries and mines  
- Radon  
- Geohazards (e.g. landslides)  
- Geophysical and geochemical data  
- Drills,
<table>
<thead>
<tr>
<th>Id.</th>
<th>Organisation</th>
<th>Organisation Type</th>
<th>Data Types</th>
</tr>
</thead>
</table>
| 3.3 | Nature Conservation Agency of the Czech Republic ([www.nature.cz](http://www.nature.cz)) | Public, an institution of the Ministry of the Environment | - national parks  
- preserved landscape areas  
- (national) wildlife parks and beauty spots  
- memorable trees  
- UNESCO Biosphere Reserves  
- NATURA 2000  
- habitats and biotopes  
- Rights and responsibilities related with the above mentioned features |
- Hydrology data (e.g. rivers, ponds, reservoirs, dams, wetlands)  
- Flood zones  
- Water power plants and other features (e.g. weirs, sluices, ship locks, waterfalls, monitoring stations, water treatment stations) |
| 3.5 | Cave Administration of the Czech Republic ([http://www.jeskynecr.cz/?lang=en](http://www.jeskynecr.cz/?lang=en)) | Public, an institution of the Ministry of the Environment | - Data on karsts and caves |
- Water quality  
- Flood zones and models  
- Water level monitoring |
- Cycling routes |
<p>| 12.1| Road and Motorway Directorate of the Czech Republic (<a href="http://www.rsd.cz/en">http://www.rsd.cz/en</a>) | Public, an institution of the Ministry of Transport | - Roads and motorways and related objects such as tunnels and bridges |</p>
<table>
<thead>
<tr>
<th>Id.</th>
<th>Organisation</th>
<th>Organisation Type</th>
<th>Data Types</th>
</tr>
</thead>
</table>
- Digital model of territory (DMU-25) |
- Spatial planning data |
- Agriculture data (food and livestock production, vineyards, orchards, etc.) |
| 15.1 | Forest Management Institute ([http://www.uhul.cz/](http://www.uhul.cz/)) | Public, an institution of the Ministry of Agriculture | - Forest data including boundaries, species, classifications, hunting zones, etc.  
- Biomass data |
| 15.2 | Forests of the Czech Republic ([http://www.lesycr.cz](http://www.lesycr.cz)) | Public, an institution created by the Ministry of Agriculture | - Forest management plans |
| 17 | Research Institute for Soil and Water Conservation ([http://www.vumop.cz](http://www.vumop.cz)) | Public research institute | - Soil exposure to water and air erosion  
- Hydrological characteristics of soil  
- Physical and chemical characteristics of soil and land including exposition, granularity, slope and type.  
- Price of agriculture land  
- Land protection |
| 18 | Regions of the Czech Republic | Public | - Spatial planning data  
- Utilities  
- Renewable energies |
- Digital terrain model |
There are many data providers, some data are collected by several organisations (duplication in data collection and maintenance), some data are not centralised and are stored locally but the way of data access differs. This includes some examples of OGC web services as often used by INSPIRE (e.g. cadastral data, geological data), HTML tables and Excel files, as well as data with no remote access at all. Most data that should be considered for the DRDSI come from the public sector.

It is rather difficult to estimate what data might be missing for the DRDSI platform. In terms of reference data, the coverage given in Table 1 seems to cover the most important datasets. There is probably no need for additional data collection, but rather for integration of data from various sources. For example, health data are stored by several health institutes. All of them categorise data slightly differently, they have different coverage and are in general heterogeneous. The primary focus should be on existing data which are decentralised. DRDSI could help to address insufficiently documented data, which are difficult to discover and reuse.

The Czech Republic has several open data initiatives. Some of them are driven by groups of individuals and organisations, such as OpenData.cz1 or Otakar Motejl Fund2 (Open Society Fund Prague3). Others are driven by public administrations through European and national legislation and other measures. It has received widespread attention, for example in the ePSI Platform: “In the middle of April, the pilot version of the Czech National Open Data Catalogue4 was launched. After two years of waiting, Czech state institutions and local municipalities now have their own space where they can put their own open data.”5

Considering that 90% of data, sometimes claimed to be as much as 99% of data, have a spatial character, it is notable that there are no links between the open data initiatives and the geospatial community in the Czech Republic. Spatial data should make a basis for all non-spatial data and be linked to them. It seems that open data initiatives work independently from INSPIRE and other initiatives. This is also obvious from the previously quoted article. Making links between the geospatial and open data communities would, therefore, be beneficial.

Moreover, data published usually do not comply with any standard and therefore it is hard to reuse them.

From the public administration or governmental point of view, there are several documents underlying access to open data and their reuse, mainly the Free Access to Information Act from 1999. This Act provides citizens free access to public sector information. However, sharing information with citizens (or others outside of government) requires certain organisational changes, some investment and extra effort. These are the main barriers to making information accessible through the Internet.

1 http://opendata.cz/en
2 http://www.motejl.cz
3 http://www.osf.cz/home-eng
5 http://www.epsiplatform.eu/content/open-data-guidelines-czech-republic
The Czech Republic joined the Open Government Partnership\(^6\) in 2011. The implementation of the open data policy is not as fast as foreseen and the Czech Republic is behind the schedule in most of the activities.

### 3 Policy-making organisations

As stated in the contribution of the Czech Republic to the Danube Strategy\(^7\): “the Czech Republic sees the EUSDR as an overarching framework for efficient and closer cooperation which will help us to tackle common problems, drawbacks and bottlenecks which hinder the socio-economic advancement.”


The main contact person for the **EU Strategy for the Danube Region** is:

- Eliška Gerthnerová, gerthnerova.eliska@vlada.cz, tel. +420 224 002 166

The Czech Republic is the coordinator of the **Priority Area 2**: “To encourage more sustainable energy”. The Czech citizens and organisations are being informed about the Danube Strategy through a website\(^8\).

There many policy-making organisations in the Czech Republic. The core organisations include all the ministries which are listed in Table 2. The table include also the Czech national mapping agency as one of the key players in the area of spatial data related policies.

#### Table 2 List of policy-making organisations

<table>
<thead>
<tr>
<th>Id.</th>
<th>Organisation</th>
<th>Organisation Type</th>
<th>Policy area</th>
<th>Projects</th>
</tr>
</thead>
</table>

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\(^6\) [http://www.opengovpartnership.org/country/czech-republic/](http://www.opengovpartnership.org/country/czech-republic/)


\(^8\) [http://podunajskastrategie.webnode.cz/](http://podunajskastrategie.webnode.cz/) (only in Czech)
<table>
<thead>
<tr>
<th>Id.</th>
<th>Organisation</th>
<th>Organisation Type</th>
<th>Policy area</th>
<th>Projects</th>
</tr>
</thead>
</table>
| 4   | Ministry of the Environment of the Czech Republic (http://www.mzp.cz/en) | Central government | - use of mineral resources, energy, gas and heat production, mining, crude oil, natural gas, solid fuels, nuclear materials, and other commodities  
- technical standardisation, metrology and state quality control  
- industrial research, engineering and technology development  
- electronic communication and postal services | National INSPIRE Geoportal (http://geoportal.gov.cz) |
| 5   | Ministry of the Interior of the Czech Republic (http://www.mvcr.cz/mvcren/) | Central government | - water resources management and protection  
- air protection  
- nature and landscape protection  
- farmland protection  
- geological service  
- mineral resources, mining and quarrying supervision  
- waste management  
- assessment of activities and their impact on environment including cross-border activities  
- hunting, fishing and forest management in national parks | Digital Map of Public Administration |
| 7   | Ministry of Regional Development (http://www.mmr.cz/en/Homepage) | Central government | - regional business support  
- housing policy  
- territorial (spatial) planning  
- building rules  
- housing-related legislation  
- investment policy  
- tourism |  |
- water management and quality  
- food industry |  |
<table>
<thead>
<tr>
<th>Id.</th>
<th>Organisation</th>
<th>Organisation Type</th>
<th>Policy area</th>
<th>Projects</th>
</tr>
</thead>
</table>
- relations of the Czech Republic with other states, international organizations and integrative blocks  
- coordination of activities resulting from bilateral and multilateral cooperation |
- military defence policy |
- health research activities  
- natural spas and mineral water resources |
- pension funds  
- state property privatization  
- insurance companies |
- cultural and educational activities  
- cultural monuments  
- press, radio and television broadcasting  
- Copyright Act  
- production and trade in the culture area |
| 16  | Czech Office for Surveying, Mapping and Cadastre ([http://geoportal.cuzk.cz](http://geoportal.cuzk.cz)) | Central body of public administration | - surveying and cadastre |
- Protection of citizens from radiation |
Table 3 focuses on data related infrastructures, not only general public administration services but also their modernisation, including Smart Administration or the general concept of eGovernment.

Table 3 Support for the national data infrastructure

<table>
<thead>
<tr>
<th>Id.</th>
<th>Organisation</th>
<th>Key legal acts</th>
<th>Key initiatives</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Ministry of the Environment, other organisations involved in the implementation</td>
<td>Act No. 380/2009 Coll., amending Act No. 123/1998 Coll., establishing the right to information on the environment</td>
<td>INSPIRE</td>
<td>State budget, EU funds</td>
</tr>
<tr>
<td>3</td>
<td>Ministry of the Interior</td>
<td>Various acts and strategies</td>
<td>Digital Map of Public Administration (DMVS)</td>
<td>European Regional Development Fund, Integrated Operational Programme other national sources</td>
</tr>
<tr>
<td>4</td>
<td>Ministry of the Interior</td>
<td>Act No. 111/2009 Coll., on basic registers</td>
<td>Information System of Public Administration (basic registers) – a part of the eGovernment initiative</td>
<td>European Regional Development Fund, state budget</td>
</tr>
</tbody>
</table>
The most important initiative, next to the INSPIRE implementation, is the recent activity coordinated by the Ministry of Interior of the Czech Republic – The Strategy for the Development of the Spatial Information Infrastructure in the Czech Republic to 2020 (GeoInfoStrategy). The GeoInfoStrategy was approved by Resolution of the Government of the Czech Republic No. 815 from 8th October 2014. The network of organisations involved in the GeoInfoStrategy definition includes the key players needed for the DRDSI. Currently, the Action Plan for the GeoInfoStrategy is being defined. It is the most active support for the national data infrastructure which is covering not only INSPIRE data but also other data. Such work takes place alongside developments in base registers, as highlighted above, and efforts to promote open data, which may have datasets of relevance to the EUSDR that could be presented via the DRDSI.

4 Research organisations

There are many research institutes in the Czech Republic including public research centres, universities, private and non-profit organisations. Table 4 is an overview of the key ones which might be relevant to the Danube Region. However, the research tackles specific aspects ranging from historical development to social issues associated with ICT. The list of research organisations and projects that are somehow related to the Danube Region can be very extensive (hundreds of research organisations and thousands of projects). The table includes only an overview and a selection of projects relevant to the Danube Region - some of them very specific, whereas others are creating a general framework which can be used anywhere else outside the Danube Region.

There are also several networks and education centres (non-profit) which are not research organisations. Some of them are supporting the EUSDR, for example the Bridge to Education organisation involved in the CE-Agein Platform project.

There are also many organisations involved in international projects specialised on biomass, for example the Czech Biomass Association.

Table 4 List of research organisations

<table>
<thead>
<tr>
<th>Id.</th>
<th>Organisation</th>
<th>Type</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Research Institute for Soil and Water Conservation (<a href="http://www.vumop.cz">http://www.vumop.cz</a>)</td>
<td>Public research institute</td>
<td>Specific research in the field of landscape, soil and water protection and exploitation.</td>
</tr>
<tr>
<td>4</td>
<td>The Czech Academy of Sci-</td>
<td>Public</td>
<td>The Czech Academy of Sciences is set up as a complex of</td>
</tr>
</tbody>
</table>

9 [http://www.ce-ageing.eu](http://www.ce-ageing.eu)

<table>
<thead>
<tr>
<th>Id.</th>
<th>Organisation</th>
<th>Type</th>
<th>Projects</th>
</tr>
</thead>
</table>
| 5   | Public institutions of higher education | Universities | - Danube Future (http://www.danubefuture.eu) - Palacký University, Charles University Prague, Czech University of Life Sciences in Prague  
- Regional Sustainable Energy Policy (http://www.restep.cz/en/project-information) – coordinated by the Czech University of Life Sciences Prague  
- Flora and vegetation of harbours on the rivers Elbe and Danube in Central Europe: their composition, formation, dynamics and share on plant invasions and migration  
- Estimation of the building of water channel Danube - Oder - Elbe from the view of landscape ecology, water management, economy and law  
- Fish biodiversity in the Morava and Dyje confluence area – supporting and stabilization of rare and endangered species populations |
| 6   | Czech Hydrometeorological Institute (www.chmi.cz) | Public research institute | - Implementation of new streamflow forecasting tools in the frame of flood forecasting service in the Czech Republic  
- The "water/rock/landscape" system interaction principles and its application in groundwater protection in the Czech Republic  
- Hydroecological Information System  
- Research and Implementation of New Instruments for Forecasts of Floods and Run-off within Security of Warning and Forecast Flood Service in the CR  
- Many other projects can be found here. |
| 10  | Czech Centre for Science and Society | Non-profit association | - EnviroGRIDS http://www.envirogrids.net |
| 11  | The Silva Tarouca Research Institute for Landscape and Ornamental Gardening (http://www.vukoz.cz/) | Public | - Transnational Ecological Networks (TRANSECONET) + University of Jan Evangelista Purkyne in Usti and Labem, Public Benefit Corporation Bohemian Switzerland |
In general, there are many projects related somehow to the Danube Region. However, the number of projects which are directly connected to the EUSDR in a cross-border context is limited.

Data sources used by individual research organisations are usually provided through respective data providers. The conditions for using data for research purposes differ. In general, however, data providers are willing to provide data for no cost. However, the use of data is limited purely for the research or project purposes. Many research organisations are also collecting their own data and creating an organisational database. The willingness to share such collected data is limited.

5 Stakeholder engagement organisations and networks

The key organisations and networks are listed in Table 5. There is major overlap of the INSPIRE stakeholder group and the DRDSI stakeholders including data providers and users.

### Table 5 List of stakeholder engagement organisations

<table>
<thead>
<tr>
<th>Id.</th>
<th>Organisation</th>
<th>Coverage</th>
<th>Areas of interest</th>
<th>Other details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nemoforum</td>
<td>National</td>
<td>A network of public, professional (private) and academic institutions. The aim is to support communication in the field of land- and real estate information between public administration and citizens.</td>
<td><a href="http://www.cuzk.cz/English/About-us/Nemoforum/Nemoforum-uvod.aspx">http://www.cuzk.cz/English/About-us/Nemoforum/Nemoforum-uvod.aspx</a></td>
</tr>
<tr>
<td>5</td>
<td>Open Geoinfra-</td>
<td>National</td>
<td>An organisation supporting free and</td>
<td>Members are individuals:</td>
</tr>
<tr>
<td>Id.</td>
<td>Organisation</td>
<td>Coverage</td>
<td>Areas of interest</td>
<td>Other details</td>
</tr>
<tr>
<td>-----</td>
<td>--------------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>Association of Regions of the Czech Republic (<a href="http://www.asociaceckraju.cz/association-of-regions-of-the-czech-republic/">http://www.asociaceckraju.cz/association-of-regions-of-the-czech-republic/</a>)</td>
<td>National</td>
<td>The main aim is to promote the regions’ joint interests, especially overseeing the overall development of the territory and tending to the needs of its citizens</td>
<td>Members are all Czech regions and the City of Prague.</td>
</tr>
</tbody>
</table>

Most of the above mentioned organisations provide an umbrella body for various kinds of actors. These bodies usually provide coordination in different topics related to data, software or services. Members of these bodies can better coordinate activities towards public authorities and create a space for discussion. Apart from the Czech INSPIRE community, there is no intention of the organisations to collect data. The INSPIRE community is built based on the INSPIRE legislation, which is also the main driver. OpenData.cz aims mainly at educating university students, as well as providing training and media coverage on open data, helping to encourage its use in practice.

Data are in the possession of public administration. There is a push from many organisations to make it available. However, due to historical developments, public administrations in the Czech Republic are not as flexible when compared to countries such as Norway, Finland, Denmark, Netherlands or the UK.

### 6 Conclusions

The analysis of the current situation has been performed based on the author’s knowledge of the situation in the Czech Republic in the field of data infrastructures and data sharing. Several persons were consulted in order to clarify some issues, for example the party responsible for the EUSDR implementation in the Czech Republic.

The information on the progress in the EUSDR implementation in the Czech Republic is not easily accessible through the internet and exists mainly as internal documents which cannot be shared. Based on the conversation with Mrs Gerthenrová, the Office of the Government is preparing a new website that should have this kind of information. The website should be set up during 2015.

For the purposes of dissemination and awareness-raising of the DRDSI in the Czech Republic, the following website was set-up:\textsuperscript{11}

The DRDSI aims and ideas were presented at the Czech and Slovak INSPIRE conference held in Prague in November 2014. Several questions were raised. The main issue was that data providers are not willing to publish their data for other parties without being involved in projects that use their data. In other words, some data providers are willing to share data only when they receive some financial contribution.

There is a big potential for the DRDSI exploitation in the Czech Republic. The problem to engage data providers seems to be mainly financial support for the implementation of necessary services and also lack of

\textsuperscript{11}http://drdsi.webnode.cz (only in Czech)
any legislative support. This is true especially for public data providers whose mission and work is steered by existing legislation. They usually only do the things they are obliged to do by law, due to the limited budget they receive.

Most data providers are implementing INSPIRE. It is a long term process and takes a lot of resources. Introducing another initiative that they should support is difficult. The DRDSI should be seen as a support to INSPIRE implementation as INSPIRE metadata are reused in the DRDSI platform’s catalogue. This could encourage other organisations to submit metadata/data into INSPIRE, provide endpoints to other existing metadata catalogues and, where/if relevant, endpoints for open data portals.

How to proceed further? The recommendation is to start from small and achieve a quick win. It would be good to base the platform on existing projects such as the CentropeMAP\textsuperscript{12} whose objectives were similar to the DRDSI and there are data, methodologies and tools to build on:

- Development and further extension of spatial and attribute data for the entire Centrope region (Figure 2)
- Harmonisation of data formats and procedures for common data use
- Implementation of a basic online data catalogue
- Visualisation of regional spatial data
- Consulting on the potential for integrating spatial monitoring data for planning purposes
- Networking and international communication with stakeholders from all parts of the Centrope region

The availability of statistical data and spatial reference data such as statistical units is good in most countries and can serve as a good starting point for data harmonisation, visualisation and publication in different formats and through different APIs. Also, these datasets are crucial reference data for many applications such as logistics, traffic volumes, renewable energy production and energy consumption. Figure 3 shows an example of a map from the Centrope region covering a cross-border area of the Czech Republic, Austria, Slovakia and Hungary. There are follow up initiatives based in the Centroe region, e.g. centrope tt\textsuperscript{13}.

\textsuperscript{12} http://centropemap.org

\textsuperscript{13} http://www.centrope-tt.info
Figure 2 Centrope region

Figure 3 CentropeMAP thematic map (Population density and migration)
The cooperation in this CentropeMAP region is supported by other projects, for example EXPAK\textsuperscript{14}.

Another example of simple use of statistical data and statistical units is the Location Evaluation app\textsuperscript{15} developed with the Plan4business project\textsuperscript{16} which provides a mapping interface (Figure 4) to provide regional reports (Figure 5).

![Figure 4 Location Evaluator application](image)

\textsuperscript{14} \url{http://www.expak.at/expak/display/index}

\textsuperscript{15} \url{http://www.whatstheplan.eu/evaluator}

\textsuperscript{16} \url{http://www.plan4business.eu}
Figure 5 Location Evaluator – regional report