

INSPIRE Good Practice: Building one access point to dispersed data sources

Name of the GP

Building one access point to dispersed data sources

Description of the GP

Many INSPIRE related dataset are maintained on a local level. Municipalities often publish network services containing the same dataset with different spatial extend specific to a particular municipality. In such a case, a proxy service can be created, integrating services maintained by municipalities. Such proxy service form user perspective offers one seamless dataset for the bigger area consisting of many municipalities.

An example is cadastral data maintained in Poland by 380 districts (powiaty). According to Polish law, each local government is obliged to publish network services providing the spatial data it is responsible for. This leads to a situation where there are thousands of network services available to the users publishing data covering a few data themes e.g. cadastral parcels, addresses. What differs these datasets is spatial extend they cover.

To facilitate access to such services few one-access-points have been developed by the Head Office of Geodesy and Cartography (GUGiK) that works on top of the local services as a proxy. Thus, a potential user doesn't have to remember or search for endpoints of each local service.

INSPIRE component(s)

The GP addresses network services INSPIRE component.

References

Normative reference

Izdebski W. (2017) Analysis of the cadastral data published in the Polish Spatial Data Infrastructure, accessed on 16th of September 2020 from http://www.izdebski.edu.pl/kategorie/Publikacje/2017_WaldemarIzdebski_Analysis_of_the_cadastral_data_published_in_the_Polish_SDI.pdf

Other references

EuroGeographics (2019) accessed on 16th of September 2020 from https://eurogeographics.org/wp-content/uploads/2019/11/Poland_Gugik_Integratedservices.pdf

Surma E., Władziński R. (2020) Poland: Change in access to cadastral data based on the amendment of geodetic and cartographic law, accessed on 16th of September 2020 from https://eurogeographics.org/wp-content/uploads/2019/12/Poland_PCC_Zagreb_16_06_2020v1.pdf

Relevance & expected benefits

The proposed GP goes beyond the requirements of the IRs and TGs to improve the usability/usefulness of the infrastructure.

Although in practice the datasets are published by many data providers maintaining only a part of the dataset, the potential user is only aware of one endpoint of the service providing access to the particular dataset. It saves time – a user does not have to search for endpoints of network services published by each local data provider. Additionally, it improves usability and hides the complexity of the infrastructure because integrated, proxy service from the user perspective provides access to one, seamless dataset.

Intended Outcome

Potential users should access dispersed datasets form a single endpoint.

This can be for example done as a single national endpoint per dataset integrating services published by municipalities as in Poland or as a single European access point per INSPIRE theme integrating services provided by the Member States.

Evidence of implementation & support

There are following integrating services available:

- KIEG – providing cadastral data (cadastral parcels and buildings) <https://integracja.gugik.gov.pl/cgi-bin/KrajowaIntegracjaEwidencjiGruntow>
- KIUT- providing utilities data (electricity, water, telecommunication, sewers, gas and other networks) <https://integracja.gugik.gov.pl/cgi-bin/KrajowaIntegracjaUzbrojeniaTerenu>
- KIBDOT – providing high scale topographic data (containing the location of fences, trees, curbs, etc.) <https://integracja.gugik.gov.pl/cgi-bin/KrajowaIntegracjaBazDanychObiektowTopograficznych>

The integrating services have been created utilising Open Source MapServer software. Figure 1 shows the conceptual idea of integrating service based on KIEG example. The proxy service based on the bounding box of the request redirects the request to the appropriate local service. If the bounding box covers areas of two or more districts the proxy service sends the request to all relevant local services, then it merges (flattens) pictures returned form each district services and sends the merged response to the user.

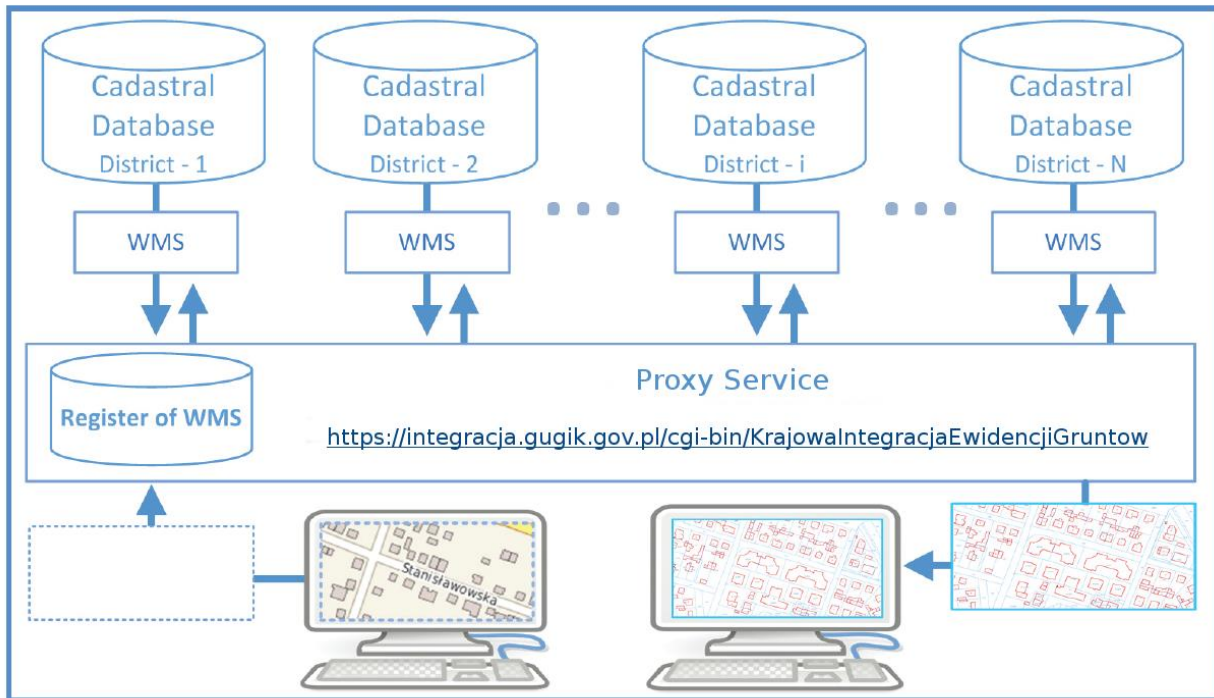


Figure 1 Conceptual idea behind proxy service based on KIEG example

To homogenise portrayal and content of integrated network service standards have been created and endorsed by GUGiK and all major companies developing the software that helps local governments in Poland maintain the spatial data. The standards are available for [KIEG](#) and [KIUT](#). They contain common rules for portrayal, names of layers and GetFeatureInfo responses. Additionally, there is [a web application](#) available for validating KIEG and KIUT services published by districts against abovementioned standards.

Figure 2 shows statistics of the request send to KIEG each month.

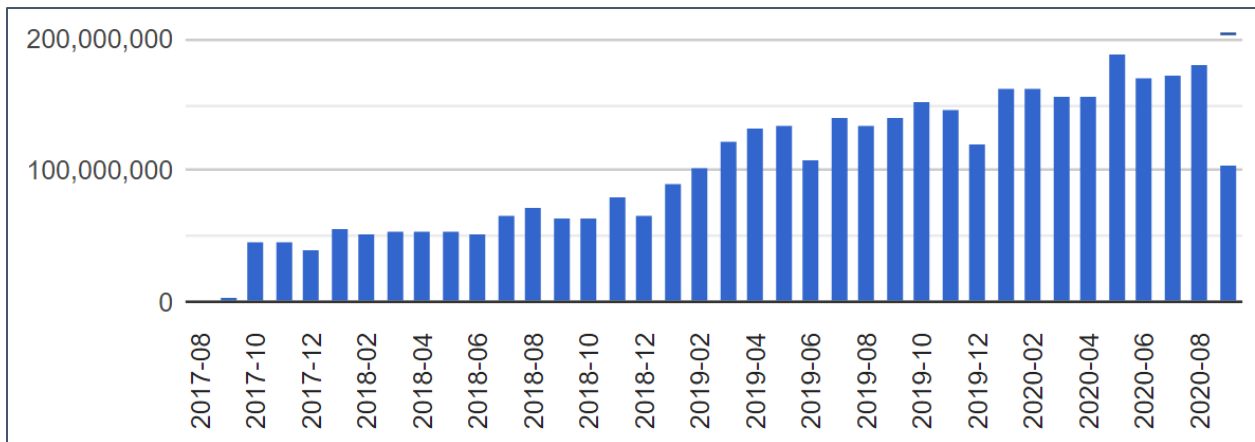


Figure 2 Statistic presenting the number of request to KIEG service monthly

Figure 3, Figure 4 and Figure 5 show examples of GetMap responses (maps) returned respectively by KIEG, KIUT and KIBDOT services.

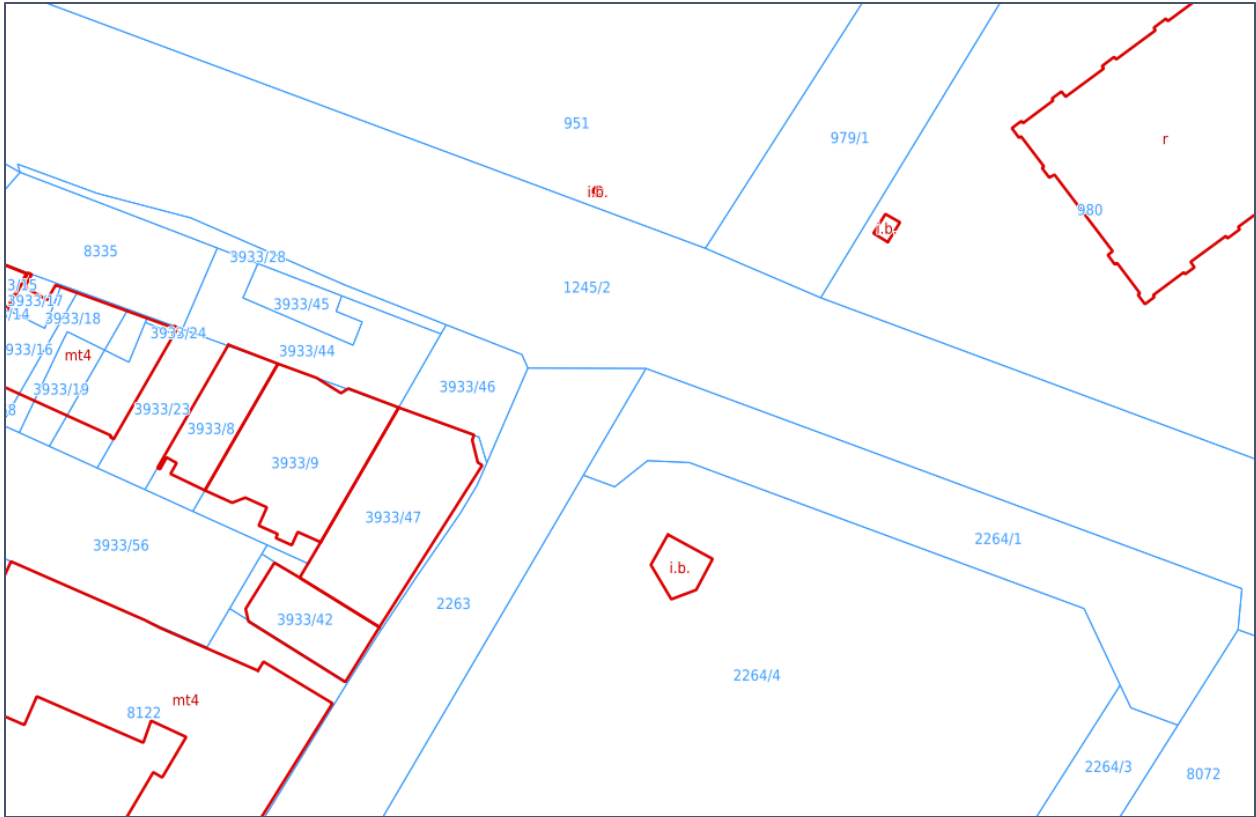


Figure 3 Example of KIEG service response to the [GetMap request](#)

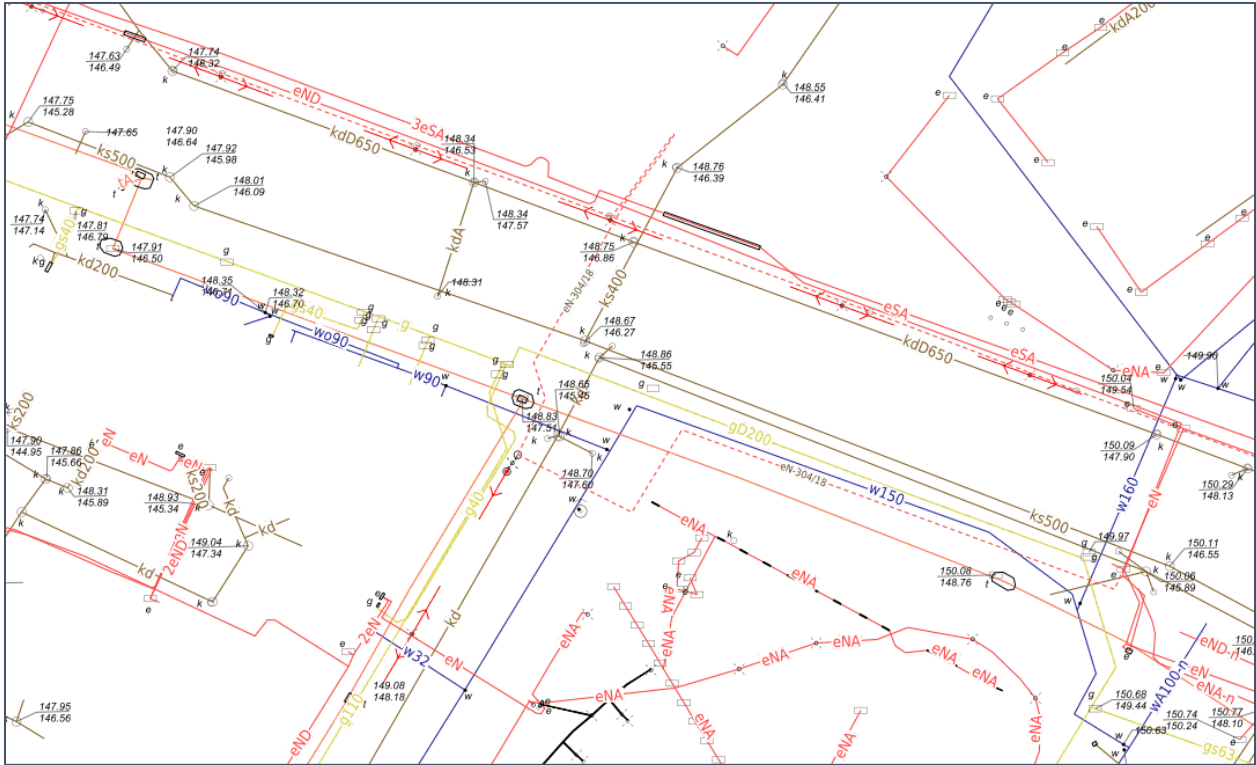


Figure 4 Example of KIUT service response to the [GetMap request](#)

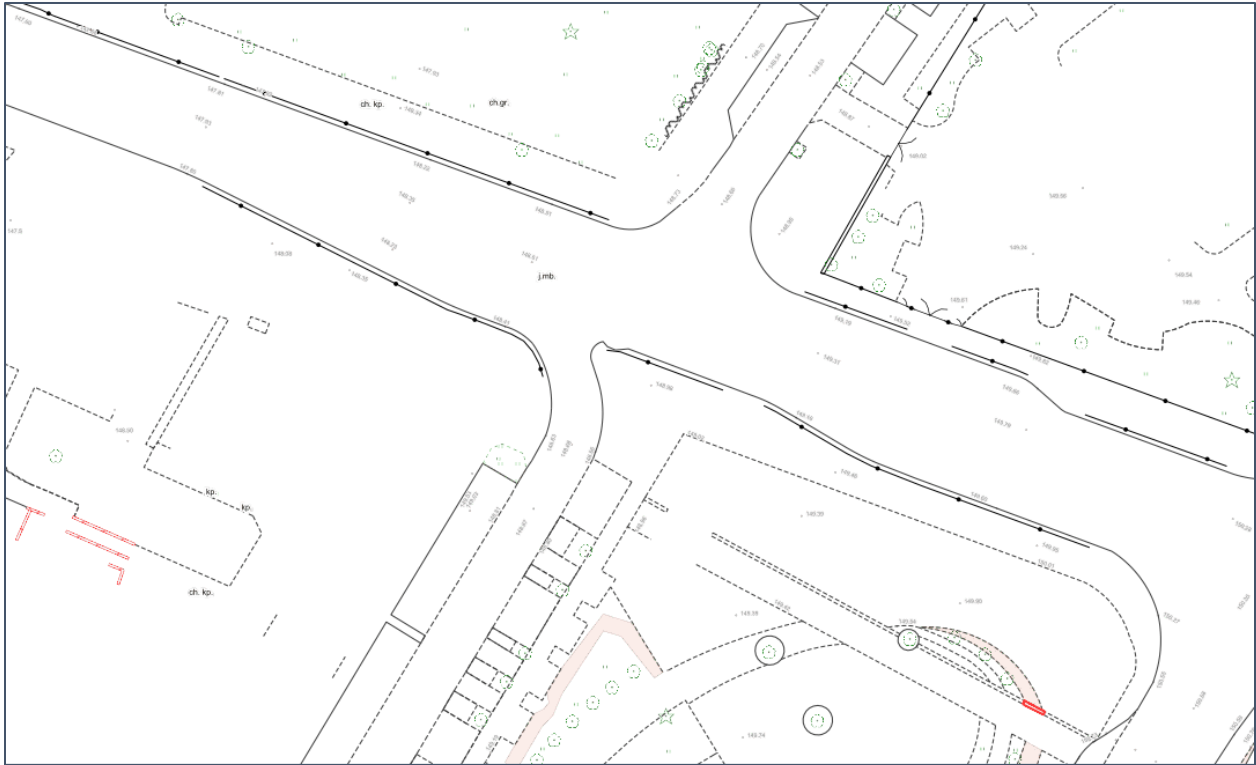


Figure 5 Example of KIBDOT service response to the [GetMap request](#)

Limitations

It is necessary to create and maintain a proxy service and optionally develop some standardization documents. This requires some human resources and IT infrastructure. Furthermore, the services published on a local level have to be standardised at least to some extent to be integrated by a proxy service.