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# BACKGROUND INFORMATION

## 1.1 Contracting Authority

EuroGeographics

## 1.2 EuroGeographics – Open Maps for Europe project owner and customer for the user interface

## EuroGeographics is an international not-for-profit organisation representing Europe’s National Mapping, Cadastral and Land Registration Authorities. We are based in Brussels, Belgium.

## Our strength lies in our extensive membership and we are proud to represent over 60 organisations from more than 40 countries covering the whole of geographical Europe, delivering benefits for each regardless of the geographical, technical, political, organisational, linguistic and business parameters in which they work. By providing a single point of contact, we enable government, business and citizens to benefit from their collective expertise, products and services.

## Our activities focus on maintaining a network that helps each member to improve their capabilities and role; facilitating access to our members’ data, services and expertise; and representing our members’ interests in those areas of policy development where they have a track record, significant expertise and a legitimate interest.

## EuroGeographics is the project owner for the Open Maps for Europe project and in terms of this tender will act as the client.

## 1.3 Open Maps for Europe project

## The Open Maps for Europe project, which builds on the results of the previously CEF-funded project Open ELS (2016-EU-IA-0046), will compile, integrate and harmonise geospatial data from more than 40 countries into pan European datasets. These datasets will be kept up-to-date and made discoverable and available through an easy to use online interface, and also through one or more national data portals of EuroGeographics members (e.g., IGN Belgium – geo.be), and through the European Data portal (EDP). Moreover, data will be offered free to use and reuse through an open data license.

## Datasets, not including Cadastral Index Map (CIM), will be managed and produced by our members, Federal Agency for Cartography and Geodesy (BKG) and National Institute of Geographic and Forest Information (IGN France). Close collaboration will be required with these members, our project partner National Geographic Institute of Belgium (IGN Belgium) and also EuroGeographics Head office team, specifically the Programme Manager based in London, and the Head of Operations and Association Management based in Brussels.

## More specifically, the project will:

## Extend the availability of open data under open data licenses for the EuroRegionalMap (ERM) and European digital elevation model (EuroDEM) datasets, introduce new open datasets to include Imagery from the Copernicus Earth Observation Program and the Cadastral Index Map (CIM), improve the quality of the existing EuroGlobalMap and Regional Gazetteer datasets and improve the EuroGeographics basemap. Additional information about these datasets can be found in Annex I;

## Compile and integrate national datasets into harmonised pan European datasets, ensuring these are sustained and updated, and that quality and coverage is improved;

## Enhance the user interface developed under Open ELS to enable the visualisation of open datasets via a map viewer and search functionalities. In addition, the user interface will be promoted by developing case studies and by linking it to the EDP and EuroGeographics web sites, as well as to national data portals of EuroGeographics members.

## Therefore, the project will support the Directive on Open Data and the re-use of Public Sector Information (PSI) Directive by helping to boost the development of information products and services based on the re-use and combination of geospatial data, a High Value Datasets category as defined in Annex I to such Directive.

## EuroGeographics is managing the three-year initiative which is 75 per cent funded by the European Commission through the 2019 CEF Telecom Call. It is working with IGN Belgium as a project partner. There will also be technical and dataset production support provided by BKG Germany and IGN France. Please see Annex II for a detailed organigram, detailing the various responsibilities.

## Prior to the Open Maps for Europe project, EuroGeographics was project coordinator for the Open ELS project and was part of a consortium in the development of the European Location Framework (ELF).

# EXPECTED RESULTS

**2.2 Results to be achieved by the Contractor**

It is expected that the Contractor will achieve the following results:

**LOT 1**

• Deliver an enhanced gateway with access to discover, view, license and download open datasets. The interface will include a map viewer and search functionality.

• Ensure that a first iteration of the user interface will be available 6 months after the award of the contract. Incremental developments to take place during the course of the project until October 2022 when a final version must be available.

• Establish a production process and provide the following:

* Web Feature Services (OGC WFS) for accessing open datasets
* Web Map Services (OGC WMS) for viewing styled maps (e.g., in geoportals of EuroGeographics members)
* A search service that supports searching map features by coordinates (reverse geocoding) or by address / name of a landmark (forward geocoding)
* APIs required to enable these datasets to be discoverable and available through the Belgian geoportal and the European Data Portal
* Metadata for all applicable datasets to both the GeoDCAT-AP[[1]](#footnote-1) (Data Catalogue Vocabulary) and ISO/GMD[[2]](#footnote-2) (Geographic Metadata) standards and a corresponding OGC Catalogue Service (CSW)

• Be focussed on a user centric approach to development and delivery

LOT 1 activities include the discovery work to define the user interface requirements, and the implementation of the enhanced user interface. It will also include maintenance and support until December 2022 and relevant travel expenses.

**LOT 2**

• Establish a new production process and provide a stable service of open cadastral data. This data should be available as a service and a download through the interface by February 2022 at the latest.

LOT 2 activities include the creation of a new process to provide open cadastral data, host the data and provide updates, maintenance and support until December 2022. It should also include any relevant travel expenses.

# SCOPE OF THE WORK

## 3.1 General

### Vision for the User Interface

**Approach**

We expect a user interface to be developed and enhanced, building on the lessons learned and experiences gained from the current user interface (created under the OpenELS project) to meet user requirements.

We would like to be able to release quickly, having a staggered approach to allow for development to start quickly and produce immediate tangible results. The first dataset to be launched should be EuroGlobalMap. It will also provide an effective and quick feedback loop in order that changes can be reviewed, tested and implemented with EuroGeographics Head Office, the supporting members and end users. We would like to include user feedback on functionality of features, allowing us to turn these on and off based on feedback. Continuous improvement is critical and the service should be incrementally developed.

A first iteration of the user interface should be available 6 months after the award of the contract. Incremental developments should then continue to take place quickly during the course of the project until October 2022 when a final version must be available. This must include Cadastral Index Map which will be made available by February 2022.

EuroGeographics is open to technical solution suggestions and innovations from the Contractor(s) to enable the successful delivery of the work.

### Users

## It is envisaged that users will be a mix of individuals and organisations, both business and public use. For guidance usage of EuroGeographics’ existing open dataset includes government departments, academic institutions, businesses including SME’s and interested individuals.

## It is difficult to predict levels of usage. We would anticipate that around 2000 users would register in the first 6-12 months, based on interest in current EuroGeographics open data products. Registration and usage would be expected to occur mainly during European working hours, 08.00-18.00 CET. Peaks of registration and use may occur due to promotional activity. No large launch event is proposed. The project will be promoted via social media, various industry events and through the use of case studies. The interface should be scalable to cope with varying demand.

## Users can be expected to have basic technical understanding in the use of web mapping and feature services. The public interface is not designed for data suppliers/contributors to submit, test or manage data.

# TENDER EQUIREMENTS

## 4.1.1 LOT 1 - The Open Maps for Europe Interface must:

## • Build on the lessons learned and experience gained during the technical delivery of the Open ELS user interface <https://www.euro-geo-opendata.eu/>

## Utilise open source software for the interface where possible, advising EuroGeographics of any requirements linked to the use of that software e.g. publishing of code, attribution etc

## • Make available as soon as possible all the open data datasets to the interface. The user must be able to visualise and access all datasets. The open datasets will include EuroRegionalMap (ERM), EuroDEM, the Imagery layer, Regional Gazetteer EuroGlobalMap (EGM) and Cadastral index Map (CIM);

## • Make available the following datasets as downloads; EuroRegionalMap (ERM), EuroDEM, Imagery, Regional Gazetteer, EuroGlobalMap (EGM) and Cadastra Index Map (CIM) from Lot 2.

## • Enhance the user experience. Datasets must be easily identifiable and discoverable. This will be done through the creation of a map viewer and search functionality, which will be enhanced by the integration of the Regional Gazetteer dataset for the search functionality and the EuroGeographics basemap;

## • Manage license verification as part of the gateway;

## • Further improve the visibility of the open datasets. The gateway will be directly linked from the EuroGeographics website (https://eurogeographics.org/), and all data must also be discoverable and be available via the solutions currently in place for IGN Belgium’s national geodata portal (geo.be);

## • Existing APIs will be utilised and made available via the enhanced gateway. This will enable information about the open datasets to be accessible and ensure the open data is discoverable and available to the European Data Portal and its users.

## • For all open datasets, where not already created, metadata will be produced to both the GeoDCAT-AP (Data Catalogue Vocabulary) and ISO/GMD (Geographic Metadata) standards. The data production teams will deliver metadata in the format of their choice and a process should be created to derive both required metadata formats (note that all metadata will be accessible via download and via an OGC Catalogue Service (CSW)

## • An OGC Web Feature Service (WFS) should be provided for the following datasets: EuroRegionalMap (ERM), EuroGlobalMap (EGM), EuroGeographics BaseMap. Data will be provided by EuroGeographics members.

## • An OGC Web Map Service (WMS) should be provided for the following datasets: EuroRegionalMap, EuroDEM, Regional Gazetteer, EuroGlobalMap, the Imagery layer and EuroGeographics basemap. This includes creating a production process for the high-quality visualization of these datasets to allow end users to clearly see the data they can gain access to. The provider should use the datasets provided under this project.

## • The EuroGeographics basemap, created under the OpenELS project, will be enhanced by improving the cartographic appearance and improving the zoom facility by utilising the other open data datasets (which will become available under this project) to provide a greater level of detail where available.

## • Be structured to allow expansion of geographical coverage and incorporate additional services in the future, and scalable in terms of volume of users.

## 4.1.2 LOT2 – Creation of Cadastral Index Map. This should include the following:

## • Creating a production process to create the service considering various factors including the update process, data storage capacity, and the effectiveness of the database manager where the CIM data is stored

## • Getting the raw open data from at least 5 EuroGeographics Member’s cadastral services with a view to increasing this after the initial launch of the CIM[[3]](#footnote-3) service.

## • Consolidate and standardise the data

## • Style the data, and cache various scales

## • Create the relevant metadata to both GeoDCAT-AP (Data Catalogue Vocabulary) and ISO/GMD (Geographic Metadata) standards

## • Host and deliver it as a service to the user interface

* Make available download options for the dataset, via the user interface, bearing in mind the complexity of the data involved

## • Maintain and update the service and downloads for the project duration

**4.1.3 Important information on the interdependency of both Lots – \*\*Please read carefully\*\***

The Cadastral index Map (CIM) is quite a different dataset compared to the others and is much more complex. As this contract is being offered in two different Lots, it is very possible that separate contractors will be selected to deliver one Lot each. It is therefore a requirement for the providers of both Lot1 and Lot2 to have close interaction to ensure that CIM can successfully be made available through the interface. EuroGeographics is happy to facilitate this relationship and ensure relevant technical advice is provided by its members where necessary. Providers should consider this in the planning of the execution of their work.

## Specific work

**4.2.1 Look and feel**

• The EuroGeographics website should be the main access point to the Open Maps for Europe User Interface (<https://eurogeographics.org/>).

• The Open Maps for Europe User Interface will have its own URL[[4]](#footnote-4) as well, and include a link back to the EuroGeographics main website, and some basic information about EuroGeographics (supplied by EuroGeographics).

• It will be visibly related, through use of similar look and feel (such as brand, colours and fonts used) and evidence of the EuroGeographics logo. Required design elements such as logos will be provided.

• Visual design will need to be approved by EuroGeographics at an early stage.

• Users access it via the EuroGeographics website on a seamless journey from the Maps for Europe section (<https://eurogeographics.org/maps-for-europe/>) and Home page (<https://eurogeographics.org/>)

• APIs should be utilised and made available to allow EuroGeographic’s members to enable the datasets to be discoverable through their own geoportals.

• The initial user view should emphasise the pan-European and thematic nature of the datasets available through Open Maps for Europe. This will require a prominent map display to illustrate this point.

• The main interface URL should be able to added to, to take users straight to the data, allowing them to embed it in their own sites if necessary (want to expose the data from the URL if possible)

• The site look and feel should be reflected in notifications sent to users.

• The site should look modern and be easy to navigate and use.

• The user-visible portions of the interface should meet W3C AAA accessibility guidelines

**4.2.2 Functions available to users**

**Search and discover services**

• The datasets which are available under Open Maps for Europe will be searchable against any element of the dataset metadata with a simple search interface across all fields available for non-experts as well as a field-wise “advanced search”.

• It needs to be clear to the user what geographic coverage is available for each dataset, as the number of countries contributing data are different for each and will evolve during the life of the project.

• Users should be able to interact and interpret the datasets easily

**Register and access services**

• The interface needs to enable easy licensing acceptance of the open data license for end users so it is not a burden.

• The provider should suggest best practice in accepting and managing open data licenses for end users.

• The provider should consider how metrics can be collected about levels of use. Administrative reporting of user activity by dataset must be available to EuroGeographics to allow for adequate reporting.

* Any collection of data will comply with GDPR and a statement will be included

**License**

• The user should accept the licence for a specific service through a suitable simple process. The system should allow for additional licences to be added in future. Information relating to the licence, such as a fair use policy and required attribution, should also be clear to the user.

**Demonstrate**

• The interface will provide an embedded web map to allow searching of the services.

* The web map should allow users to pan, zoom and interrogate the services (for example using “get feature info” functionality). Users should be able to view a high-quality visualization of these datasets to allow them to clearly see the data they can gain access to.

• The web map and search functionality will be enhanced by the integration of the Regional Gazetteer dataset.

## • The EuroGeographics basemap, created under the OpenELS project, will be enhanced by improving the cartographic appearance and improving the zoom facility by utilising the open data datasets (which will become available under this project) to provide a greater level of detail where available.

***The user interface should build on the learnings and experiences of the technical work already completed for Open ELS. EuroGeographics can provide access to final reports delivered by the Open ELS project.***

**Access documentation**

The user guides and documentation specific to each dataset should be available to users. These will be provided as documents by EuroGeographics to be loaded to or linked from the interface.

**Access support**

Users should be able to use a form to contact the administrators / support team for help and advice on issues of registration or access to the datasets. Form responses should be directed to EuroGeographics. Technology should be used as much as possible to support end users and not create a burden on the small EuroGeographics Head office team.

**Extendable**

The interface should be extendable in the future to be able to include more datasets and also additional licences.

**Security**

Security should be considered, particularly data scraping, and the impact on stability and infrastructure.

**Ownership**

Intellectual property rights and copyright for the content of materials and reports produced by the contractor shall become the property of the EuroGeographics. EuroGeographics will own the User interface following completion of the project. Note EuroGeographics must have the rights to publish the code depending on what technology is used.

# LOGISTICS AND TIMING

## 5.1 Start date & Period of implementation of tasks

The intended commencement date shall be within three weeks from the date of contract signature and the period of execution of the contract will be until 31st December 2022. Please refer to Articles 19.1 and 19.2 of the Special Conditions for the actual commencement date and period of execution.

**5.2 Deliverables and timing:**

* The providers should report every month to EuroGeographics on progress, highlighting results, challenges and risks.
* The first iteration of the user interface will be available 6 months after the award of the contract.
* Further iterations should be published quickly allowing for a version of the user interface to be reported to the Commission in August 2021.
* Incremental developments should continue to take place during the course of the project until October 2022 when a final version must be available.

Meeting requirements are:

* At least one meeting a year to the EuroGeographics Head office in Brussels
* One technical visit every six months to a technical provider
* One trip to the European Commission for the presentation of the results
* Hosting a technical meeting at the contractor’s site once a year
* Ad hoc (online) meetings with the various data providers where necessary to support the deliverables of the project.
* Ad hoc meetings with NGI Belgium to ensure the discovery of the datasets in their National Geoportal.

Please provide your milestones and dates for:

* uploading and access of the datasets,
* enabling licensing of the datasets
* the development of the visualisation,
* provision of metrics detailing use per dataset

If you have further suggestions for milestone delivery and dates please do detail these in the Schedule.

**5.3 Additional Costs**

Other costs should be factored in to your proposal including travel costs in relation to the follow-up and coordination of this contract.

There will be some travel expected which would be as follows:

* At least one meeting a year to the EuroGeographics Head office in Brussels
* One technical visit every six months to either Germany or France
* One trip to the European Commission for the presentation of the results

Other costs will include:

* Hosting a technical meeting at the contractor’s site once a year.

# CONTRACT MANAGEMENT AND REPORTING

## 6.1 Contract management

**6.1.1 Responsible body**

EuroGeographics has support from members to oversee the implementation of the contract (please refer to section 3.3.2).

* + 1. **Management structure**

This contract will be co-ordinated and managed by EuroGeographics, with the support of key members specially formed to oversee this contract. This team will have the responsibility to approve the work delivered by the contractor. All project deliverables need to be approved and accepted by the team in order to be considered as completed. The day-to-day running of this contract will be the responsibility of the Head of Operations and Association Management within EuroGeographics. It will be up to the discretion of this person to identify any issues to be brought to the attention of the expert team.

## 6.2 Reporting requirements

The contractor will submit the following reports in English in one original and one copy:

* Monthly progress reports
* Report after each deliverable/milestone is completed

There should be regular contact between the contractor and EuroGeographics to enable the swift and continued improvements to the interface. This should be by email and video calls.

The deadline for sending the final report is 30 days after receipt of comments on the draft final report (if required). The detailed analyses underpinning the recommendations will be presented in annexes to the main report. The final report must be provided along with the corresponding invoice.

## 6.2 Submission and approval of reports

The reports referred to above must be submitted to the EuroGeographics. One original and one copy of each of the reports referred to above must be submitted in English for approval.

**Annex I –Technical Requirements and Dependencies**

The user interface should follow the web services pattern “publish-find-bind”: information about services is *published* in the user interface, where users can *find* the services they want to *bind* to. The user interface plays no role in the actual transfer of data between users and services, it only provides information about the services, e.g., how to access them.

**Publish**

Open Datasets offered through the gateway will include:

**EuroRegionalMap** – this geospatial topographic dataset is created to standard technical specifications and is produced through our unique production process. It includes official data from 51 European countries and territories, including all EU members states, and is harmonised across borders. It is currently available on DVD or through an FTP download, but through this project it should be available to download or consume as a service through the enhanced gateway. This activity will make this dataset more accessible technically and through open licensing, resulting in an outcome of increased use by end users, and enabling the re-use of the public sector information contained within the dataset. ERM is usually released once a year but provision should be made for another update annually. Vector data will be provided by a EuroGeographics member (currently: BKG Germany).

See also:

* https://eurogeographics.org/maps-for-europe/euroregionalmap/
* https://eurogeographics.org/wp-content/uploads/2020/04/ERM\_2020\_Specification.pdf

**EuroDEM** – this digital elevation model is harmonised to standard technical specifications, and includes official data from 40 countries and territories. It should be made available through the enhanced gateway to download or consume as a service. This activity will make this dataset accessible both technically and through the open licensing, resulting in an outcome of increased use by end users, and the re-use of the public sector information contained within the dataset. EuroDEM is a static dataset and is not updated. Raw data will be provided by a EuroGeographics member (currently: BKG Germany).

See also:

* <https://eurogeographics.org/maps-for-europe/eurodem/>
* <https://eurogeographics.org/wp-content/uploads/2020/07/EuroDEM_UserGuide_v1.2.pdf>
* <https://eurogeographics.org/wp-content/uploads/2020/08/EuroDEM_ProdDescription_v1_1_Final.pdf>

**Regional Gazetteer** – this gazetteer containing authoritative multilingual geographical names from 36 countries and territories was developed under the Open ELS project and is currently available through the Open ELS User Interface as a web feature service and available in GeoPackage format on request. During the duration of this project it will be improved through additional coverage and will be embedded into the enhanced interface to provide a user-friendly search function, aiding the discovery across all datasets available through the gateway. The Regional Gazetteer is updated when coverage is increased. Vector data and a Web Feature Service (WFS) will be provided by a EuroGeographics member (currently: BKG, Germany). Search functionality has to be implemented by the tenderer. The tenderer should consider the process to implement updates quickly, and expect one update per year.

See also:

* <https://www.euro-geo-opendata.eu/service/open-regional-gazetteer-service>
* <https://thinkwhere-public.s3-eu-west-1.amazonaws.com/eurogeographics/User+Documentation/RegGaz/ReleaseNote_RegionalGazetteer.pdf>
* <https://thinkwhere-public.s3-eu-west-1.amazonaws.com/eurogeographics/User+Documentation/RegGaz/RegionalGazetteer_specification_1_1.pdf>

**Image Service** – a harmonised open imagery layer will be included as an open data service available through the enhanced gateway. This imagery is derived from satellite Sentinel-2-data which is a component of the European Copernicus Earth Observation program. The dataset contains data from 2018 and 2019. The resolution is 10m and covers the whole of Europe. The dataset will be updated annually and should be made available through a service for viewing and downloading. Image data and a Web Map Service (WMS) will be provided by a EuroGeographics member (currently: BKG, Germany).

**EuroGlobalMap** – EuroGlobalMap is created through the generalisation of other EuroGeographics datasets (ERM and EBM), it covers 45 countries and territories, including all EU members states, and is already available as open data through the standard EuroGeographics open data license. This dataset is continually updated, and in the latest release included a new feature class, NUTS\_3 to portray the statistical regions of level 3 from Nomenclature of Territorial Units for Statistics (NUTS). This data is currently available as a download from the main EuroGeographics website, and as a service through the Open ELS user interface. We will improve the end user experience by offering it as a download from the enhanced gateway, instead of through the EuroGeographics website, thus making it more easily discoverable from one single gateway. The quality of EGM will continue to be improved through the development of the other EuroGeographics dataset, and the unique production system that creates it. EGM is updated annually. Vector data and a Web Feature Service (WFS) will be provided by a EuroGeographics member (currently: IGN France).

See also:

* <https://www.euro-geo-opendata.eu/service/open-euroglobalmap-feature-service>

* <https://eurogeographics.org/wp-content/uploads/2020/09/EGM_2020_UserGuide.pdf>
* <https://eurogeographics.org/wp-content/uploads/2020/09/EGM_2020_DataSpecification.pdf>

**EuroGeographics Basemap** – The basemap was created as part of the OpenELS project to provide a backdrop to the open data services. It is based on two of EuroGeographics current datasets, EGM and ERM and is in raster format. The tenderer should build on the EuroGeographics basemap to enhance the user experience; by improving the cartographic appearance and enhancing the zoom features to provide a greater level of detail where available, based on the other open data datasets, which will become available under this project. It should be user friendly, encouraging use of our datasets. The stylesheets developed should be made available to end users of the datasets to support their own visualisations, to provide added value.

**Cadastral Index Map (LOT2) –** the CIM service was launched initially with 5 countries, as a map feature service as part of the OpenELS project. CIM provides a unique dataset. CIM was a view service that provides a simplified and harmonised view of INSPIRE cadastral parcels, administrative units, addresses and buildings for pan-European use. CIM was built with the INSPIRE WMS of the members.

The INSPIRE WMS that was provided by members allowed end users to identify the features and to obtain by getfeatureinfo both

• the national cadastral reference, that gives users the opportunity to get more information through the cadastral national services,

• and the complete address of the cadastral parcel or building.

The Cadastral Index Map portrayal style takes into account the INSPIRE default portrayal for themes CP, BU, AD and AU, the combination of all of them and the range of scales

Under this project we will enhance the CIM service by technically engineering it to create a harmonised dataset, which will be made available as open data through the enhanced gateway.

Due to the new technical solution, we will also be able to build on the coverage of the service increasing it from 5 countries, during the course of the project, and beyond. The tenderer should propose a process for the harvesting of Cadastral data and include the cost of hosting the data. The CIM should contain only open data available from the members of EuroGeographics. The Inspire themes that should be considered as Administrative Units, Cadastral Parcels, Addresses and Buildings. An example of a member who makes this data available is the [General Directorate for the Cadastre](https://eurogeographics.org/member/general-directorate-for-the-cadastre/), Spain. Their Cadastral portal can be found [here](https://www.sedecatastro.gob.es/OvcInicio.aspx?ticket=ST-6209-5V3XjxGoYoqp1seBrh7Q-manssopro02.catastro.minhac.es).

http://www.catastro.minhap.gob.es/webinspire/index\_eng.html

http://ovc.catastro.meh.es/cartografia/INSPIRE/spadgcwms.aspx

**Download**

The following datasets should be able to be downloaded by end users:

* EuroRegionalMap (several Gigabytes, formats: e.g., Geopackage, Shapefile)
* EuroDEM (up to several Terabytes, formats: e.g., GeoTIFF)
* Regional Gazetteer (several Gigabytes, formats: e.g., Geopackage, Shapefile)
* Image Service (up to several Terabytes, formats: e.g., GeoTIFF)
* EuroGlobalMap (size to be clarified, formats: e.g., Geopackage, Shapefile)
* Cadastral Index Map (size to be clarified, formats: e.g., Geopackage, Shapefile)

The user interface should be able to present multiple download links per dataset to allow the relevant production team to provide the dataset in several formats.

The download for any dataset should also include a copy of the license and metadata.

**Web Map Service:**

The following datasets should be published as Web Map Services (OGC WMS Standard):

* EuroRegionalMap
* EuroDEM
* Regional Gazetteer
* EuroGeographics Basemap
* EuroGlobalMap
* Image Service (provided by BKG)
* Cadastral Index Map

The user interface should be able to present additional services provided by the production teams. Integration of services that offer a WMTS API should also be possible.

**Web Feature Services:**

The following datasets should be published as Web Feature Services: (OGC WFS Standard):

* EuroRegionalMap
* Regional Gazetteer (provided by BKG)
* EuroGlobalMap

These should be published as Web Feature Services (WFS) to OGC standards from a central database.

The user interface should be able to present additional services provided by the production teams.

Each party in this project will create the INSPIRE metadata for their own data & services. The contractor must ensure that all datasets will have metadata with the GeoDCAT-APapplication profile to enable the EDP to consume them and ISO/GMD-based metadata for CSW API’s to allow them to be discovered through other geoportals including geo.be. For this, the metadata must use the INSPIRE profile and follow the implementation guide of NGIB for the creation and maintenance of the metadata. If the contractor provides additional services using this data (e.g., a WMS), they will be responsible for the creation of metadata for those services.

**APIs, File Formats and Data Models**

Please note that adaptations to the source data models (e.g. attribute names/structure inside the data) will not be possible. The contractor must deal with the data as it is. New API’s, file formats and data models should not be created where possible.

Current OGC standard API’s and file formats should be used to enable EuroGeographic’s members to consume the datasets. Use of other widespread file formats (e.g., Shapefiles) is acceptable in addition. Adoption of further existing guidelines (e.g., INSPIRE) is preferable for the design of keyword lists, table columns, etc.

Generally, at least the following versions of the API standards need to be supported:

For WMS, version 1.3(.x) – see <https://www.ogc.org/standards/wms>

For WFS, version 2.0(.x) – see <https://www.ogc.org/standards/wfs> (“Simple WFS” conformance is sufficient)

For CSW, version 2.0(.x) – see <https://www.ogc.org/standards/cat>

**Find and Bind (Search/Discover)**

The user interface for the Open Maps for Europe services enable users to search, discover, acquire, license, download and use the web services.

The search and discover should be based on OGC CSW standard. This allows the EuroGeographics members and others to harvest the EuroGeographics metadata catalogue and to include the datasets in their geoportals in an automatic process.

The user interface should integrate **a metadata catalogue** based on a discovery service (CSW). This metadata catalogue will have several functionalities for the metadata search using different filters like attribute name (e.g. name of the dataset) or full text search and specific keywords. Metadata should be downloadable in XML, HTML and PDF format.

The metadata catalogue should include a preview map of the data including bounding box, zoom scroll functionalities.

The metadata catalogue should include the possibility of direct download of the data, licence document, data samples and data specifications.

Using CSW one can search for metadata using different filters like BBOX (Bounding Box), attribute name (e.g. name of the dataset) or full text search.

Returned records (in XML) should be visualised on a user interface as a metadata (HTML) and possible on a map including bounding box and/or sample data.

**Annex II –Technical Responsibilities - Organigram**

EuroGeographics responsible

BKG is responsible

LOT 1 Contractor is responsible

IGN FR is responsible

1. <https://inspire.ec.europa.eu/good-practice/geodcat-ap> [↑](#footnote-ref-1)
2. https://inspire.ec.europa.eu/Technical-Guidelines2/Metadata/654 [↑](#footnote-ref-2)
3. it is important to emphasize that CIM is created with Member’s WMS that have the getfeatureinfo functionality that allows clicking on each parcel to get its national identifier and a URL that link to the other data of the particular parcel in the country's geoportal data and clicking in the address point, the complete address. [↑](#footnote-ref-3)
4. These have been purchased by EuroGeographics already [↑](#footnote-ref-4)