

Mapping guide: Doing your own map

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Background

The background to this mapping method is that STARTUP – an EU-funded research and innovation project – should study small cultural organisations and their role in local neighbourhoods. But there are no lists or maps of small cultural organisations so we needed to find a way to find them. In short, we had to do our own map! But how do you do a map of a category (small cultural organisations) that does not exist? So we had to invent a mapping methodology as well.

The bearing ideas of the methodology is presented in this guide as well as – since we believe in sharing as strongly as we believe that maps are tools for local empowerment – the mapping method. Start reading and soon you will be able to do your own map of categories you can shape yourself!

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As mentioned the tool and the related mapping processes was developed and tested in a full-scale experiment for research purposes in the cultural field, and yielded valid enough although not perfect results. When assessing the method with all participants, input was given for how to update the method and these considerations have been worked into this guide thus building it also on the lessons learned. One should also know, before starting, that there are no perfect maps – rather different mapping methods will always yield slightly various results.

Moreover, when developing the method we focused on cultural amenities (art spaces, theatres, music venues etc.) but have not tested it for all possible things to map (shops, factories, parks, schools etc.) and it is possible that for some phenomena the method does not fit, for reasons we do not know. Nevertheless, the underlying principles are easy to understand and the method easy to test also in your field of interest! When you compare your results with other available maps you will notice if, and if so in what respects, your map is better than others.

This mapping guide was written in Spring 2026 as part of a report (D2.3: Best practice of API cultural mapping, 2026) from the Startup-project. See "How to cite" the present text below.

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Introduction

The following guide is written in a step-to-step manner in order to facilitate for inexperienced map producers. But before starting a few words on the basic mapping methodology that underpins this way to produce maps.

The methodology proceeds from the simple idea that everything that you want to map which exists in reality also has a digital presence on the internet, and that this information could be used to construct a map. The assumption is not totally correct but is valid enough to start mapping. However, the opposite is not true, meaning that everything that exists on the internet does not exist in real life. Therefore, the dataset for your map, which stems from information on the internet, has to be checked, reduced and refined.

The second underpinning idea of the mapping methodology is participatory and draws on participatory mapping methodologies. This means that persons with good knowledge of the field that is to be mapped participate in the mapping and contribute both their actual knowledge of the field and their judgements in forming the concept of the map (i.e. the concept of that which is to be mapped). It is therefore good to employ this mapping method as a team consisting of a few persons with good knowledge of the field to be mapped. More people could be involved and participate later on.

It could be added that participatory mapping methods often build on non-codified knowledge and by including knowledgeable persons in the mapping process, their non-codified knowledge gets codified in the map. Other mapping methods often build on knowledge that have already been codified in lists, archives, statistics etc. This type of material is also used in the present mapping method, but we do not start from that type of material but rather from the non-codified knowledge in your mapping team, and then move on to the team's knowledge of materials with codified knowledge.

More concretely, the basic idea is to download all places of interest, what we call "hits", from open databases on the internet into one (1) dataset and then clean and refine that dataset till it fits your concept of the map. In order to download the

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places of interest from the open databases into the dataset you can install and use the digital mapping tool presented in this guide. The tool functions and has been tested and used in the STARTUP research and innovation project (read more at www.horizon-startup.eu) but is in an early stage of user interface development. This means that the “digital skeleton” has not been dressed with a nice looking user interface (i.e. the tool looks “raw” compared to most other apps or software you might be using). This, however, does not affect the functionality.

A few words on the dataset: The dataset is the underlying material that makes up the map. After doing all steps of this mapping methodology you are in full control of what is in the dataset, and only what is in the dataset is shown on your map. You refine the dataset in two ways – by deleting hits that are not correct or that does not fit your concept, and by adding hits that your team knows of but was not present in any of the open databases.

It is important to refine the dataset because the original databases may contain old data, doublets or other errors so human moderation of the dataset is needed.

Using the tool without refining the results will lead to an incorrect map. The databases used by the mapping tool comes from OvertureMaps which provide 200+ open databases with geo-located places. This is a great digital resource but also a bit “wild grown” meaning that the results must be refined by humans.

The mapping method is carried out in the following major phases. For all phases we suggest to work as a team. Work together and let everyone participate with their respective knowledge and input to the mapping process.

1. Install the mapping tool on your computer and test it.
2. Creating the ground map from open databases via the mapping tool. Based on this you get a map that contains many errors and needs to be refined, which is done in the next phases.
3. Clean the dataset. In this phase you clean the dataset (of the ground map) by taking away all hits that are not correct. It demands some time to check every hit but will lead to a map that in many respects is formally correct but most likely not exhaustive.

4. Curating your map. In this step you delete all hits that do not fit your concept of the map and save only those that do. You also add hits to make your map more complete, more exhaustive.
5. Post-mapping phase where you evaluate and test your map.

Some basic concepts

The final map is made in several steps with “temporary maps” related to the different steps in the method. The maps are:

Ground map – this is a very rough map that will contain many errors. We do not recommend using it in any other way than as a preparation for the next steps.

Refined map – the dataset for this map has been refined and all errors corrected.

Interim map – this map contains only hits that fit your concept which could be a help when you start searching for places to add to the final map.

Final map – this is the curated result of the whole mapping process.

Core and concept – this is what you want the final map will show, i.e. all objects that you decide to include on the map should be within the concept of the map. You formulate the core of that concept yourself in order to be able to include the places that fits with the concept of the map. The core helps you categorize and assess the objects to be excluded or included.

Category group – A category group is made up of a number of sub-categories.

Sub-category – A sub-category is a category that you have chosen from the list of available sub-categories. All objects related to a sub-category in the databases will end up on your ground map. Some sub-categories are large with many objects, some are small with only a few objects. (Please note that in the mapping tool a sub-category is called “category”)

Logical sector – A logical sector is a group of sub-categories. The sub-categories in a logical sector would cover all related objects in the databases. You select yourself what sub-categories to include in your logical sector.

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Object – An object is a geo-located place of interest. As a minimum it has a name, geo-coordinates (latitude and longitude). Every object belongs to a sub-category.

Hit – A hit is an object that the mapping tool found in the databases.

Bad hit – A bad hit is an object that you do not want on your final map. They should be cleaned from the dataset underpinning your map.

Good hit – A good hit is an object that you want to keep on the map and that fits your criteria for the map.

Added hit – An added hit is an object that you yourself add to the dataset underpinning the map.

Dataset – the dataset contains the objects and the information that will be visualized on your map.

Who has good knowledge of the mapped phenomena?

It is strongly recommended that persons with good knowledge of what is mapped are included in the team and the practical work with the map. Who then has this expertise? It varies of course but we proceed from the assumption that people in their professional life need to know what is happening on their “scene” or in their line of business and hence have the needed knowledge, especially if they have been working quite long on that scene. For example, an artist would be likely to have very good knowledge of all art spaces in his or her city since that is of professional interest. The same goes for a hotel or shop owner who needs to keep track of the competition, at least in his or her part of the city. A person working in theatre would most likely also have good knowledge of all other theatres in the city. Generally, persons with a special interest, professional or not, could be good persons to team up with and participate in the mapping.

Mapping ethics

In open societies there is very much information available. This does however not necessarily mean that all information should be used. When it comes to mapping ethics a judgement has to be made if putting the information regarding *each hit* on a map could be harmful for the people behind that place. For example, certain

minorities or groups of people live under threats. To put their places on a map that gets in the wrong hands could be outright dangerous for them. There might also be actors that for other reasons do not want to be mapped, that do not want to be “exposed” or do not seek public attention. So for every place you put on your final map (in Phase 4), an ethical judgement has to be made if it should be included or not. In our mapping methodology most places are present also digitally, so it would be easy to understand from their web sites or other digital presences if they seek to be public, or not. Moreover, if the place does not even have their own digital presence, this could be a hint if it is suitable to put them on a map or not.

In addition, maps form the understandings of space and is in this sense also a tool of power. Hence it is important that the maps are as correct and thorough as possible. The new mapping technology, that is a part of the present mapping method, makes it easy to make maps but in no sense lessen the need for thinking ethically or critically about maps and map making. ESRI, which is a leading actor in GIS-software, has developed a four-point “Mapmaker’s mantra” with key principles to help guide in ethical mapmaking, see

<https://www.esri.com/about/newsroom/arcnews/advancing-ethics-in-mapmaking>.

Please reflect on these points when doing your own map!

What can I map?

The mapping tool will function in the EU member states and most other European countries. It is constructed to map concrete “dot-like” places that have geo-coordinates (latitude and longitude). This means it fits well to map phenomena that have a clear presence connected to a particular spot. The tool is not constructed to map surfaces or lines. See examples in Figure 1 and 2.

The open databases that the mapping tool draws upon contain a large number of geo-located places, like cultural amenities, schools, sport clubs, shops, restaurants, cafés, companies etc. that are organized into 22 overarching “category groups” and within them 2100+ different sub-categories. With this mapping method you start with one or a few of the 2100+ sub-categories and then refine and curate the results so it fits your concept of what should be mapped. In this way you are not dependent on the present sub-categories in the tool but use

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them only as a start in your mapping process. In a sense you curate one or a few of the formal sub-categories into a category of your own.

A note on categories

Every category group or sub-category is represented by one or a few words that make it look very neat and with clear cut boundaries, but most categories are in reality messy with fuzzy boundaries. For example, in the sub-category “hotels” there should only be hotels, right? But when refining the dataset by checking every hit of what is categorized as a hotel you may notice that some hotels do not really fit with the stereotype of a hotel. There might be hotels that are more like guest houses, and there might be guest houses – in the sub-category “guest houses” – that are more like hotels. There might be campsites that also have rooms to let – are they hotels or campsites? Where should the line be drawn between hotels, guest houses, campsites and other places for accommodation? The issue of how to categorize can be demanding but also highly rewarding as herein lies the possibility to form your own concept of the map you are to produce, and in prolongation also make people aware of matters and places that are not yet visible as a category in its own right since they are linguistically “hidden” in more established categories. See further “Deciding the core of what should be mapped” in Phase 2.

What areas can I map?

The mapping tool is constructed to map municipalities or countries in most countries in Europe. You can choose one or several municipalities. To get a map over a region you can choose all municipalities within that region.

You can also set the tool to map countries but depending on the type of category you want to map this risks producing too many hits which in turn may be too demanding to manually check. We recommend to start mapping a smaller area, especially if you are interested in mapping a fairly common phenomenon. For phenomena in which not too many hits may be expected, like art academies, universities etc., it could on the other hand be good to start with a larger area like a country.

A note on the digital resources

The databases engaged by the mapping tool are available via Overturemaps, which is a collaborative member-based foundation and initiative to make spatial data open and interoperable. All data from Overture are made available with open data licenses. The initiative started in 2022 and this is how they present themselves:

[...] Overture's core contributors have been developing our common schema, datasets, platform, and system of unique, stable IDs known as GERS. Member companies contribute data and engineering expertise to enable the creation of global datasets that are accurate, comprehensive, and regularly updated to reflect changes in the world. By combining multiple data sources and fostering cross-company collaboration, we are able to achieve results no single organization could accomplish alone.

(<https://overturemaps.org/about/who-we-are/>)

The mapping tool also draws upon OpenStreetMap (served via CARTO), which is a community of mappers and which forms the base map (i.e. the background map on which your hits are placed) in the mapping tool, and Leaflet, which make API-mapping user-friendly, as well as DuckDB, which queries the Overture-data locally. Simply put, Leaflet makes it possible to display interactive maps in a web browser, and OpenStreetMap provides the data needed for the base map. Both are open source-initiatives and free to use.

The administrative boundaries (municipal and country borders) shown on the maps come from Eurostat GISCO LAU 2024 (© EuroGeographics for the administrative boundaries).

For more information on these map actors, their background and basic ideas, please visit their respective web sites: <https://overturemaps.org>, <https://openstreetmap.org>, <https://duckdb.org>, <https://leafletjs.com>, <https://carto.com>, and <https://ec.europa.eu/eurostat/web/gisco>

User case

Who can use the mapping method? And what is needed to use it? As mentioned, the method is both digital and participatory. Regarding the latter, the method builds on working together with persons who have good knowledge of the field which is to be mapped. Knowledgeable persons will contribute their knowledge of the field and the discussions one has with the others in the team could be highly rewarding in refining the concept of the map. It is about creating together!

How large should the team be? When we tested and developed the method the teams were rather small and three to five persons would most likely work well (it did for us) but the teams can likely be both smaller and larger, depending on size of the area and what is to be mapped.

How much time will it take? This totally depends on the complexity, the territory and the amount of hits of the mapped phenomena. Together with persons who know the field, small areas with not so many hits will be mapped fast. Large areas with many hits will take longer, and then most likely a larger team would be beneficial (but also take more time to administer).

Should the map be updated? Or is it a one-off? Before you start it is good to think through if, and if so how often, you might need to update the map. The interval between updates would be different for different types of mapped phenomena.

Regarding the digital part of the method anybody with rudimentary computer skills can use the mapping tool. However, we know from experience that for many users installing new software or working with programs/applications that do not have a nicely developed user interface (how it looks on the computer) may be demanding at first. Therefore, it is good to have a skilled computer person by your side when installing and testing the mapping tool in Phase 1 and when learning to convert files in Phase 3 and 4. However, after a few test runs this support should not be needed. For doing the actual mapping assessments, however, no particular computer skills are needed but as always it could be good to have someone to speak to regarding computer issues if need be.

For the advanced user

When you command the whole mapping process from start to finished map, you can start to experiment with work flows that would suit you and your team best. Feel free to develop the processes and adapt to the various mapping situations you may encounter. Sometimes one might want to initiate a map based on large community participation, and sometimes an even smaller group than we suggest in this guide might be more purposeful.

Moreover, the advanced user with computer skills could fairly easily reprogram the mapping tool to adapt it to his or her own purposes. An example is the pre-set borders (municipalities or countries) which can be re-programmed in the tool to get any type of areas to be mapped, e.g. part of a city, or one municipality and parts of the neighbouring municipalities, or a functional region etc. A detailed technical description of how the mapping tool is built is available on <https://github.com/Liistamo/overture-eu-mapper> and the code is open to fork. Feel free to remake and adapt!

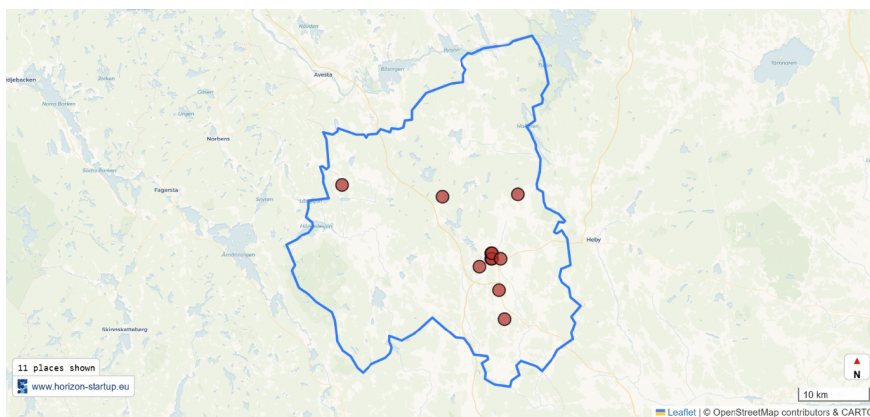


Figure 1. Example of how the map may look. This particular example shows a ground map of hotels in Sala, Sweden.

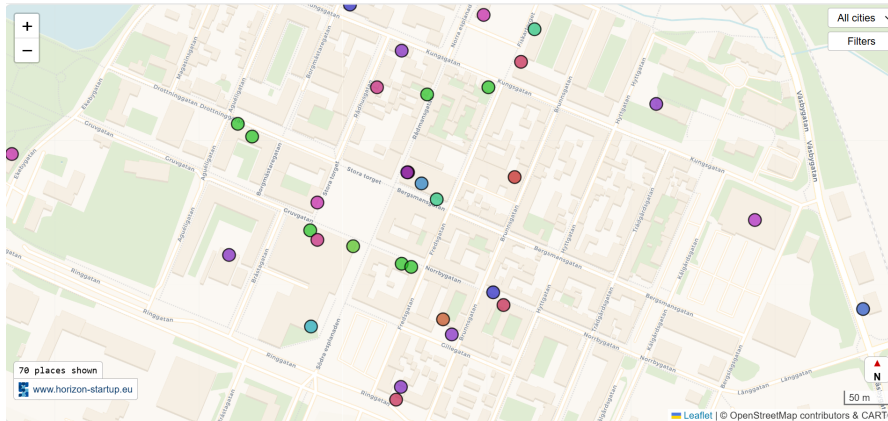


Figure 2. Close-up in a ground map (of restaurants) in Sala town. Streets and other details are also visible when zooming.

PHASE 1: Installing and testing the mapping tool

In order to use the STARTUP mapping tool you need (a) to install it on your computer and (b) you need to install the software Python (3.8 or later) if you do not have it already. The mapping tool is available in three versions for Linux, Mac and Windows respectively. When it is installed you test that it works, then repeat testing it until you are familiar with it and then go to Phase 2.

If you are not used to installing new software on your computer, it could be helpful to do this phase together with someone with computer skills. The manual is trying to be very pedagogical but we know from experience that a helping hand at this phase could facilitate. The instalment process should take about 10 minutes or less.

Install Python

You need to install Python 3.8 or later.

Mac / Linux: Go to <https://www.python.org/downloads/> and run the installer.

Windows: Open the Microsoft Store (<https://apps.microsoft.com/home>), search for Python", and click Install. Alternatively, go to <https://www.python.org/downloads/> and tick "Add Python to PATH" before installing. Then click Install.

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Already have Python? Skip this step. Not sure? Install anyway, it won't break anything.

Installing the mapping tool

The mapping tool consists of a folder called "overture-eu-mapper-main" that contains a number of files. When you install it, the folder with the files needs to be placed on your computer (but not in the download-folder). We recommend to place it somewhere where it is easy to find, for example on your desktop.

In order to install the mapping tool, go to:

<https://github.com/Liistamo/overture-eu-mapper>

Click on the green "Code"-button and choose "Download ZIP". Once downloaded you place the whole folder somewhere easy to find, for example on your desktop. As mentioned the folder is named "overture-eu-mapper-main" and you can keep the name, or rename it.

When you open the folder there will be a list of files. First identify and open the file "READ ME" in the folder. This file contains the same information as in this guide but in less words, but also information on the software licenses which all are open source and free to use. You can close the read me-file when you have checked it.

Then, identify the "Build"-file that is relevant for your computer (there is a Build-file for Linux, Mac and Windows respectively). Double-click on the relevant file. Your computer will most likely not recognize the publisher of the file (since we are not one of the giants like Mac, Google etc.) and will ask you if you trust the publisher (us). If you do, then press "Run".

When you click "Run", a new terminal window opens on your computer. It will soon start to be filled with text showing the progress of the installation. This might take a few minutes the first time it is done.

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The installation process is ready when you see the following at the end of the text in the new window (you might need to scroll down to see it):

Select cities or countries

Search by name. Repeat to add more.

Press ENTER with no text when done.

Search (ENTER = done):

When you see the above text, the installation is ready and you can start testing how the tool works.

Testing the mapping tool

After the installation, you can start testing the mapping tool. If the test is successful, the test map you have created will open automatically in your web browser if the browser is open. If the web browser is closed, the map will open when you open the web browser. When using the mapping tool, the tool will ask you a few simple questions and based on your answers, it will construct the map.

As shown at the end of the installation instruction above, the first question regards the city (municipality) or country that you want to map. Write the name, at the marker which is positioned after "Search (ENTER=done):", of the territory you want to map and press ENTER on your keyboard. In the example below we wrote "Sala", which is a small Swedish municipality.

The tool will now list all places that have that name and you have to choose the correct one by writing its number. Then press ENTER. In the example below, we chose the Swedish municipality "Sala" but since there are several places in the world with this combination of letters in their name, the tool will list all of them and you have to choose (see Figure 3). Select the correct Sala and then press ENTER.

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```
Select cities or countries
Search by name. Repeat to add more.
Press ENTER with no text when done.

Search (ENTER = done): Sala
Select (SPACE = toggle, ENTER = confirm):
> [*] Sala (SE)
[ ] Sala Baganza (IT)
[ ] Sala Biellese (IT)
[ ] Sala Bolognese (IT)
[ ] Sala Comacina (IT)
[ ] Sala Consilina (IT)
[ ] Sala Monferrato (IT)
[ ] Salach (DE)
[ ] Salagnac (FR)
[ ] Salagnon (FR)
[ ] Salaise-sur-Sanne (FR)
[ ] Salamanca (ES)
[ ] Salamonde (PT)
[ ] Salandra (IT)
[ ] Salangen (NO)
[ ] Salans (FR)
[ ] Salaparuta (IT)
[ ] Salar (ES)
[ ] Salara (IT)
[ ] Salares (ES)
Press <space>, <tab> for multi-selection and <enter> to accept
```

Figure 3. Screenshot of the terminal window when selecting municipality.

After you have pressed ENTER the computer will state what you have selected, and then you need to press ENTER one more time to confirm the choice. When you do that a list of "Category groups" will show.

After each category group the number of sub-categories in that group is mentioned. Please note that in the mapping tool sub-categories are called "categories" (without "sub"). But start with selecting one "Category group" to test the tool and press ENTER.

The tool will now state which category group you selected and ask you if you want to select among its sub-categories. You type "y" for yes, and "N" for no. Then press ENTER.

If you choose yes, then you will select among the sub-categories in that category group, and if you choose no, all places in that category group (in all sub-categories) will show on your test map. But if you chose yes, you will see a list of the sub-categories and you can make a choice which of these you will include in the test map. Do your selection and then press ENTER.

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Now the tool will ask you what version of the tool you wish to use. The default version is the latest version. At the time of writing this guide that is the recommended choice. Press ENTER on your keyboard to accept it.

The mapping tool now starts to build your map on the municipality of your choice and the categories you selected (in the example hotels in Sala, Sweden, see Figure 1). It may take a few minutes and when the tool is ready the map opens automatically in your web browser.

Nota bene! If the municipality you chose does not contain any hits in the selected categories, the tool will state this and ask you to press any key to continue. When you do that (press any key) the window closes and you have to start the test again with some other categories. Therefore, when you test the mapping tool for the first time, please select a category group or sub-categories that you know exist and are fairly common in the selected municipality, like restaurants or hotels.

A note on the web browser

As mentioned above the map will open automatically in your web browser. You may have several web browsers on your computer but the map will open in your default web browser. If your default web browser is closed when the map is created, the map will only open when you open your default web browser. The map will thus not by itself open your default web browser.

A note on the map shown on your web browser

Now test the functionality of the map and get familiar with how it works. Try zooming in and out and test clicking on the dots in the map. When you click on the dots in the map a small box will open with the name of the hit, its city and category, and in many cases also its web address.

In the top-right corner of the map, there is a filter so you can show one or a selection of your chosen sub-categories at a time, or all at once. If you selected several municipalities you can also filter on one or several of them. At the bottom of the filter box there is also a button called "Legend". If you press this, the legend is shown.

Repeat testing

We recommend to test the mapping tool several times with various municipalities and categories to get familiar with the tool and what it can (and cannot) do. We suggest to repeat testing the mapping tool until you are familiar with the different steps. The first time one tests the tool it normally takes some time (say 15-20 minutes), but after only a few times the testing goes very fast (less than a minute). It is also good to test what happens if you map a full "category group" vs a slim selection of sub-categories. Also compare this with the filtering possibilities in the test map.

In order to start one more test, go the folder "overture-eu-mapper-main" and double-click the build-file that fits your computer. Repeat testing the tool till you command it. Then start with Phase 2.

Quick guide for repeat testing

1. Open the folder you placed on your computer when installing the tool.
2. Double-click on the build-file for your computer (Linux, Mac or Windows) and run the program.
3. Select municipality (or country), i.e. the territory to be mapped.
4. Select category group and/or sub-categories, i.e. what should be mapped.
5. Press ENTER for choosing the default version of the mapping tool. The map is now created.
6. Check the map that opens automatically in your web browser.
7. Repeat from 1 till you are familiar with the mapping tool, then go to Phase 2.

PHASE 2: Creating the ground map

This phase with this mapping process is concerned with producing a "ground map". The ground map will contain many errors and should only be used as a start of the mapping process. In order to create your ground map, there are few things that you need to decide early in the process:

1. The municipality or country to be mapped.

2. The core of what you want to map and the sub-categories that relate to it

Deciding the territory to be mapped

This is a straight-forward process when using this mapping tool as it is for either municipalities or countries. The boundaries are based on Eurostat and are the official boundaries in the respective European countries. The tool functions for the EU member states and most other European countries. As mentioned you can use one or several municipalities or countries and if you want to map a region you can select all the municipalities or countries that are part of that region.

Deciding the core of what should be mapped

What is it that you want to map? Sometimes the categories in the mapping tool function well in the sense that they relate directly to what you want to map. But often you would be interested in mapping a phenomenon that does not exist as a category in its own right, neither in the mapping tool, and perhaps not as a word in language. Say that you want to map "design hotels" (sometimes called boutique hotels). This is a type of hotel but it does not exist as a sub-category in the mapping tool in the category group "Accommodation". Nevertheless, for some reason you want to do a map with only design hotels and the first thing you and your team then need to do is to formulate, tentatively at least, what the concept of design hotel means to you.

What is it that makes design hotels special from ordinary hotels? This you need to formulate for yourself either by relying on how others earlier have defined it, or by defining it yourself. Document (write down) what makes up the core, according to you, in the concept of design hotels before you start, but it is likely that conceptualizing design hotels according to your meaning will develop when you work through the material and decide for every hit if it fits or not.

Obviously there is no end to possibilities of formulating what you want to map. If it is not design hotels it might be family driven hotels, or family driven design hotels or something completely different. The important thing here is that you and your team decide what is interesting to map, formulate what is at the core of that and

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then form your map based on that. As will soon be clear, the sub-categories already present in the mapping tool is just a help, a tool, in your work.

Note on forming your core

The core will be decisive for what ends up on your final map and is basically a help in categorising objects in the dataset. The core is thus related to categorisation.

There are two basic ways to go about when you categorize. The first way is to decide a number of fixed criteria of what should be included in your category, and the second – which we recommend – is to focus on the core idea of your category (rather than criteria that set the boundaries of that category). You can of course choose fixed criteria but since the assessments are made based on the objects' websites and other digital presence, it could be difficult to find information on all of your criteria on each of the respective websites. However, if you chose to work with a conceptual core as a delimiting factor, all objects that have "family likeness" to that core can be included based on the information given on the objects' web sites even if that information is not complete.

We thus suggest to formulate, together in your team, what is the core of what you want to map and then start reducing the material accordingly. If we stick with the hotel example and say that you want to map all design hotels in your city you start with defining for yourself in the team what are the bearing traits of a design hotel. Then form a logical sector of sub-categories that will form the ground map, perhaps based on all sub-categories that are vaguely related to hotels. Then you reduce the ground map in Phase 3 by keeping only valid hits for the refined map. And then, when you do the final map in Phase 4, you decide for every hit that remains if it fits your concept of a design hotel. If not, you delete it, if it fits your concept – you keep it. And if you know of design hotels that were not present on the refined map, you and your team add them. And here you go, you have just produced a map of design hotels according to the team's own concept! Just remember to be transparent with how you did your choices so other people understand what is mapped.

Choosing relevant sub-categories

To use the mapping tool you need to decide which sub-categories you will use for the ground map, which in short is about deciding which sub-categories that relate to the core of what you want to map. As you noticed when testing the tool in Phase 1 there are about 2100 sub-categories to choose from. Each sub-category relates to objects in the 200+ databases. All objects, or hits as we call them, covered by your sub-categories will end up on your ground map.

The task now is to go through all sub-categories in all category groups in the list and mark the ones that relate to what you want to map. For example, if you want to map "architectural offices" you select all sub-categories that relate to architecture like "Architecture"," Architect", "Architectural design" and "Landscape architect". All these together is what we call a "logical sector" and the sub-categories you choose may be part of one or several of the tool's "category groups". You yourself of course chose how you want to form your logical sector by deciding what sub-categories to include in it.

To download or to get an overview of all sub-categories, please visit:

https://github.com/OvertureMaps/schema/blob/main/docs/schema/concepts/by-theme/places/overture_categories.csv.

You create a logical sector by selecting all sub-categories that cover your area of interest but please note that the sub-categories of interest may be diffused into several category groups. We therefore recommend to look through all sub-categories in all category groups so you can make an informed choice. If we return to the example above about design hotels, the logical sector – i.e. the sub-categories in the tool that are likely to include design hotels – could be the "hotel" sub-category but also the sub-categories "guest house", "inn", and "lodge" might be worth including as well as sub-categories that might be less likely to include design hotels, like "motel" or "hostel". Actually, just to be on the sure side to not miss an interesting object, one would in this case perhaps include all or most of the sub-categories from the "Accommodation" category group in one's logical sector, as well as look through all other sub-categories to be able to actively decide if any of them fit or not.

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We thus suggest to use rather broad logical sectors (i.e. include all relevant sub-categories but also sub-categories that only maybe are relevant). This is so since your ground map will then be richer (i.e. have more hits). In the example about architectural offices we might thus have included also "Architecture tours" as a sub-category in this logical sector just to make sure to have covered everything in the databases that relates to architecture.

It could be good to know that there are always limits to the sub-categories and what they cover. For example, there might be architects that self-classify as artists and thus maybe can be found in the sub-categories related to art and not in sub-categories related to architecture. The broader you make your logical sector, the larger the chance to also cover the objects that do not fit neatly in pre-formulated categories. On the other hand, the larger the logical sector, the more irrelevant hits will be produced on the ground map. It is therefore good to test your sub-categories by pre-mapping before finalizing your selection of sub-categories. Test your sub-categories and get a sense of how they play out on your ground map before finalizing it.

Documentation: Once you have decided which sub-categories should be part of your logical sector, you document it. Your documentation could be important if you want to go back in the process and make changes, and it would also facilitate to explain to others how you went about creating the map.

Collaboration: Although this step can be done by one person we still suggest to select the sub-categories, and do the testing (pre-mapping), within the team so you all agree on what ends up on the ground map. This is also a way to secure that no important sub-categories are missed.

Recommendation: We recommend to work with one logical sector at a time. If you want a map that contains two or more logical sectors that is doable but it is easier to first work through phase 3 and 4 for one sector, and then work through phase 3 and 4 for the next sector. This is so since each logical sector assumable relates to different cores of what you want to map.

Creating the ground map

Once you have decided all the relevant sub-categories (i.e. your “logical sector”) you mark them in the tool. Don’t forget to document your choices. Then run the tool to create the ground map. Then go to Phase 3.

Nota bene! The ground map will contain many errors and bad hits and should not be used for anything other than as a foundation for Phase 3 and 4, where the results are refined.

Quick guide to Phase 2

1. Choose the area to be mapped.
2. Formulate the core of what you want to map. Document it.
3. Go through all sub-categories in the tool and test (pre-map) the ones that seem to relate to your core. Decide if it should be part of your “logical sector” or not.
4. Finalize your selection of sub-categories (i.e. your logical sector) and mark these in the mapping tool. Document your choices.
5. Run the mapping tool to create the ground map, which will open in your web browser.
6. Go to Phase 3.

PHASE 3: Cleaning the dataset – producing the refined map

In the third phase you will clean the ground map from all bad hits so only valid hits remain. Cleaning the dataset from bad hits will make it easier in Phase 4, which is conceptual rather than just cleaning away doublets and other “noise”. The cleaning could be time demanding but it is done in a simple way in a few basic steps. The first step is to download the dataset (on which the ground map is built), the second step is to “manually” assess every hit (every object) that is in the dataset and delete those that are not valid. The third step is to get the refined dataset into the

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mapping tool in order to create your "Refined map". When this is done, proceed to phase 4.

In other words, in this phase you take out the dataset (a CSV-file) for the ground map from the mapping tool, reduce the objects in that file to only include "good hits", and then put the new dataset (a new CSV-file) back into the mapping tool. When you run the mapping tool, it will use your new file instead of the old.

Download the dataset

In order to download the dataset you go to your ground map which is in your web browser and press "Filter". The filter box will open and in the top right corner of it is a button called "CSV". Press the CSV-button and when you do that a CSV-file is created and downloaded to your computer. Place the file somewhere where it is easy to find. The information in the file is your dataset for the ground map.

When you open the file you will see a matrix with information on every object in your dataset. For every object there is its name, category, city/municipality and its geo-coordinates (latitude and longitude). For many objects also the object's website is listed.

Make a copy of the dataset

We recommend to make a copy of the dataset and saving it together with your other documentation. The idea is that one copy of the dataset-file relates to your ground map and is saved as documentation. The other copy is the one you refine by deleting hits. If you have a copy saved that has not been refined, it will facilitate to go back in the process to double-check individual hits, if need be.

A note on which file formats that work

The mapping tool uses CSV-files to build the maps, so the file you work with needs to stay in CSV-format throughout the process. On many computers a CSV-file will open in Excel (or a similar program) by default, and depending on which version you have, Excel may not be ideal for deleting the bad hits and may also try to save the file in its own format (such as .xlsx). If that happens, the mapping tool will not

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be able to build the new refined map from it, so make sure the file is still a CSV-file before you put it back into the mapping tool.

Keeping the file in CSV-format, or converting it back from Excel if needed, can be done in many ways, but we have tested it via Google Sheets, which is likely to work independent of what versions of Excel (or similar) you have on your computer.

The following description is thus based on working with Google Sheets to convert files back and forth from Excel (or similar) to CSV-files.

Google Sheets is a free cloud service so we do not recommend to put sensitive material in it.

Convert your CSV-file to Google Sheets

In order to get all the information of the objects in the dataset in an easy-to-work-with-format, we suggest to convert the downloaded CSV-file to Google Sheets. You may need a Google account to be able to use the Google Sheets, which is located on the Google Drive-platform. Visit <https://docs.google.com/spreadsheets/> and follow the steps below.

1. Click "New" (in the upper left corner) and then click "File upload". Select the CSV-file you downloaded from the mapping tool, and it will be uploaded to your Google Drive.
2. When the upload is complete, locate the file in your Google Drive, right-click on it (or click the three dots next to it) and choose "Open with" and then "Google Sheets".
3. A dialog box called "Import file" will open. Choose "Replace spreadsheet" (to the left in the box) and choose "Detect automatically" (or set it to "Comma") (to the right in the box). **Also, importantly, un-tick "Convert text to numbers, dates and formulas"**.
4. Press "Import data" and the dataset is now visible in nicely ordered rows and columns in the spreadsheet. Also, the websites of the objects are clickable which makes cleaning the dataset (much) easier.

Cleaning the dataset from bad hits

Now when the dataset is created and shared with the team the next step can start – the cleaning step. This step is needed as the dataset is likely to contain “noise” in the form of doublets, or hits that (no longer) represent something that exists in real life, or hits that are in different languages (a type of doublet), or hits that for some reason have been misplaced in the original databases. When you start cleaning the dataset you will notice that, at least for some sub-categories, there are quite a few of these “bad hits”.

The cleaning step is “manual” and is based on your assessments of each individual hit. It will thus take some time. We recommend to do it together in the team, so you can discuss hesitant cases. We also recommend to do the cleaning in a concentrated effort, i.e. not five or ten minutes here and there but if possible the whole dataset in a row.

How to practically do the cleaning? The cleaning is based on checking and assessing the objects’ current digital presence. Concretely this is often an object’s website but as some objects do not have websites, the larger social media platforms could also be searched and the objects’ presence there assessed. For some objects the assessment will be very clear and easy, e.g. websites that state when it was last updated, or it is obvious that the information on the website about the object is new. Then you can assume that the actor behind is active and exists in real life. All these objects are what we call “valid hits” and the job is to identify these in the dataset and delete the rest (i.e. delete all “bad hits”).

How to go about cleaning the dataset?

We suggest to start with a sub-category that is highly relevant for your map and then just work from the top of that sub-category by visiting the object’s website and make an assessment if the website is active and if it relates to an object that exists also in real life. If you deem the object to actually exist in real life and that it represents an actor that is still active, you go on to the next object in the list. The trick is thus to assess every hit by assessing its current digital presence. Does the actor behind that digital presence exist in real life? Are they still active (in real life)?

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And is the digital presence indicating that the object is related to the correct sub-category? (If the hit is valid, but placed in the wrong sub-category, you can change it but we recommend to do that in Phase 4, see below).

The list of objects will be ordered in sub-categories in your Google spreadsheet. When you have finished with one sub-category, you go on to take the next sub-category. We thus suggest to work through each sub-category at a time, starting with the most relevant.

If the object listed in the spreadsheet do not have a website listed to it, use the name of the object to do an internet search and see if they can find the object. If you find it you do the assessment and if it is a valid hit, you can add its website address to your spreadsheet. If the search engine you use do not find its website it could be that the actor only uses social media platforms like Facebook, Instagram or similar for their public communication so you can visit these social media platforms and search directly in them. If the hit is valid, also these web addresses can be added to your spreadsheet.

But what happens if I do not find it? Well, we would consider it a bad hit that should be deleted (see below). This is so either because the actor is no longer active and thus has closed its website, or the actor do not want to be public. For actors who do not want to be public, you should make an ethical consideration if mapping it is the right thing to do (see further Mapping ethics above).

What do I do if I find a “bad hit”?

Not all hits in your dataset are likely to be valid hits. Some might be doublets and then you obviously only need to save one. You are also likely to visit websites that only contain old information and/or have not been updated for years. Then you may assume that the object has closed down and no longer exists in real life.

These types of bad hits exist in the original databases as they, at least some of them, have not been cleaned for inactive objects. A third possibility as to why a hit is a bad hit is that it does not belong to the sub-categories you mapped for the ground map. This is not so usual but it happens that objects are misplaced in the original databases and therefore end up in your dataset even though it does not

belong to any of your sub-categories. The dataset may also contain objects in other languages with Cyrillic, Chinese or other types of letters and signs. These are likely to be doublets, which can be checked by visiting the stated website.

All the bad hits you find should be deleted from the dataset. However, we recommend to not delete continuously as you work through the list but first mark them, e.g. with colour, and then delete them all at once after discussing in the team. You can also mark hesitant cases (in another colour) that you want to discuss more thoroughly in the team if it should be deleted or not.

When you have deleted all bad hits, you have cleaned the dataset. The new clean dataset can now be used to produce the Refined map. But before you move on, make sure to keep your Google spreadsheet intact as it will be used further in Phase 4.

Producing the refined map

In order to produce the refined map, you first need to convert your spreadsheet into a CSV-file. This file should then be put back into the mapping tool. How do I do that? Just follow the steps below:

1. In your Google spreadsheet with the refined dataset, click "File" at the top, choose "Download", and then choose "Comma Separated Values (.csv)".
2. The file is now saved to your computer in the "Downloads" folder.
3. Open the "Downloads" folder and find the new CSV-file. (Do not open the file.)
4. Open the "overture-eu-mapper"-folder you created in Phase 1, and then open the sub-folder called "Input".
5. Move the new CSV-file (without opening it) from the "Downloads" folder into the "Input"-folder.

You have now put the new and refined dataset into the mapping tool! In order to produce the refined map based on this dataset you just need to:

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1. Go back to the folder "overture-eu-mapper" and press the Build-file that relates to your computer and the refined map is created and opens in your web browser.

Quick guide to Phase 3

1. Download the dataset for the Ground map.
2. Make a copy of it and save as documentation.
3. Convert another copy of the downloaded file to Google spreadsheets.
4. Clean the dataset from bad hits by deleting them. Save all valid hits.
5. Convert your Google spreadsheet to a CSV-file (but also keep your Google spreadsheet intact).
6. Put the new CSV-file in the Input folder in the mapping tool.
7. Run the Build-file in the mapping tool to create the Refined map.
8. Go to Phase 4.

PHASE 4: Producing the final map

In this fourth phase you finalise the map. It is about being "conceptual" and only letting hits that fits your concept stay in the dataset. You proceed much like in Phase 3 by deleting all hits but this time your assessment should be "conceptual" so you delete the hits that do not fit your concept. In this phase you also add hits to the dataset that you know fits your concept but were not present in your ground map (and is hence not present in your dataset).

Reminder of the mapping ethics

You are soon about to finalise your map and we would here like to remind of the mapping ethics discussed in the introduction. When making the assessments of what should stay in the dataset and what should be added, you should also make an ethical assessment of every object that ends up in your final dataset. Is it ethically responsible to put that place on the map? Please revisit the mapping ethics-section in the introduction before starting the final steps to conclude your map.

Delete hits that do not fit the concept

Practically viewed, you delete hits in Phase 4 in the same way as in Phase 3, but this time you should be more “conceptual” in your assessments of each hit. This means that all hits that do not fit your concept of what is mapped should be deleted. Back to the example with hotels – all hotels, guest houses etc. that are not design hotels should thus be deleted. Your dataset will thus now include only design hotels and nothing else.

To start finalising the mapping process, go back to your refined dataset in your Google spreadsheet and work in this. It is the same spreadsheet from which you did the CSV-file for the Refined map, so there should be no noise in the form of bad hits in it. Nevertheless, all the hits you saved in Phase 3 are not likely to fit your concept of the map. In Phase 4, these are now bad non-conceptual hits.

As in Phase 3, we suggest to colour mark all bad non-conceptual hits and then discuss in the team before you delete them from the Google spreadsheet. Thus, colour mark and then delete all at once after discussion in the team. And, as before, you can mark in another colour “hesitant cases” that might be needed to discuss more thoroughly in the team.

How do I assess if the hit is conceptual or not?

All hits that do not fit the concept should be deleted, and only those hits that fit your concept should remain in the dataset. We call these “conceptual hits”. To determine if a hit is conceptual or not you need to assess it by visiting the object’s webpage or other digital presence and compare with your conceptual core, formulated in Phase 2.

Work as before through the list starting with the sub-category that is most likely to contain many “conceptual hits”. Assess the objects in the dataset by visiting their webpage and assess how well they relate to the core concept you formulated in Phase 2.

When working through the dataset you are likely to experience that some sub-categories are “better” than others in the sense that they contain more of hits

that respond to your concept of what is to be mapped, i.e. the core you formulated in Phase 2. However, you are also likely to find hits that only partly respond to the core and you have to decide if it should be included or not. The hit may have some “family likeness” with the core or the other hits you already selected but differ in some other respects.

To decide what fits with your concept is a central part of the work and most likely you will, at some stage in this process, run into the “categorization problem” meaning that you need to decide if a hit fits your concept, or not, and it is not always easy where to draw the boundary between what should be excluded from the map, and that which is to be included in the map. This could lead to that you and your team feel the need to update the conceptual core that you defined in Phase 2. If needed, and based on your discussions in the team, you can update and adapt the conceptual core so it fits better with the hits you decide to keep. Just make sure to document your new and final conceptual core.

A note on developing the core

There is nothing strange about refining the conceptual core so it fits better. You have now worked through the material together with experts from the field and most likely learned a lot from the process. If you reformulate the core a bit as you go along, the conceptualisation is likely to be more grounded now at the end of the process than in the beginning, leading to a conceptually more stringent map.

Obviously however, if you change the concept as you go along, you need to go back to the top of the list and make sure that all hits that remain in the dataset fits the new version of your concept.

Also, do not change the core too much. If you substantially change the core you might miss sub-categories (selected for the Ground map) that would have been relevant with that new core. So only adapt the core so it better fits the work you are doing, and not too much so you have to re-do the mapping.

Rename the sub-category to your fit your concept

The mapping process started with choosing sub-categories in the mapping tool. These might now be re-named to fit your concept. For example, if you started with the sub-category "hotels" and then reduced the dataset to only include "design hotels" you might want the legend on the map to correspond to what is on the map (i.e. "design hotels").

Changing the name of the sub-category is easy. In your spreadsheet there is a column for sub-category so just change what is written there. When you later convert the spreadsheet to a CSV-file and add that file to the mapping tool, the map legend will also change. Basically what is in the CVS-file, is what is shown on the map.

Documenting the interim dataset and producing an interim map

Before moving on to finding and adding new hits to the dataset, we suggest documenting the dataset which now contains only hits that fits your concept. You can also use the dataset to produce an interim map. The interim map is likely to make it easier to find new places. Also, document the interim dataset since it makes it easier to go back in the process if needed.

In order to produce the interim map, you first need to convert your spreadsheet into a CSV-file that is put back into the mapping tool. You do that in the same way as before (when doing the refined map), so we repeat the steps:

1. In your Google spreadsheet with the Interim dataset, click "File" at the top, choose "Download", and then choose "Comma Separated Values (.csv)".
2. The file is now saved to your computer in the "Downloads" folder.
3. Open the "Downloads" folder and find the new CSV-file. (Do not open the file.)
4. Open the "overture-eu-mapper"-folder you created in Phase 1, and then open the sub-folder called "Input".
5. Move the new CSV-file (without opening it) from the "Downloads" folder into the "Input"-folder.

6. Go back to the folder "overture-eu-mapper" and press the Build-file that relates to your computer and the Interim map is created and opens in your web browser.

Finding new objects

As mentioned above the databases used for the ground map may not include all the places in your territory that exist in real life. Therefore, these have to be added to your dataset. But how do you find them? Well, here is where we rely on participatory mapping methodologies in the form of the experts of the field engaged in your team. If anybody knows of places, we argue, it would be persons that in their professional life need to keep track of the developments in their professional field. As mentioned above, what is needed are persons that are knowledgeable (professional or not) and can function as experts of your field of interest.

Adding hits to the dataset is done in a few steps:

First, decide in your team how you will save the new places you find. We suggest to establish a "side list" where you gather all new places and the needed information. Obviously, only places that fit the concept of the map (your core) should be included on the side list.

The role of the side list is to keep all new places separate from the dataset until you have agreed in the team that they should be added to the map. It is enough, to start at least, with only adding the name and web address of the places to the side list. After deciding in your team about each object on the side list, the rest of the information needed (city, sub-category, geo-coordinates) should be added before you add the places to the dataset.

So how to start filling the side list with new objects? We suggest the following order of steps and you can work through the list systematically or stop when you and the experts in your team are confident that you have very good coverage of the places you are interested in. As mentioned above, there are no perfect maps, so you stop when you agree with the team that the map is good enough for your

purposes. Do not forget to document how you went about to search for the new places.

1. Team discussion: Start with an open discussion in your team if anybody knows of places that would fit your concept but is not present in the dataset. It might be helpful to produce an Interim map based on the conceptual dataset (i.e. the dataset produced so far in Phase 4 and that only contains conceptual hits), and use this interim map in your discussion about places you know of but that are not present in the map or in the dataset.
2. Available material: Your team includes experts and they are likely to be members in organisations, unions or networks with persons with similar interests. These often produce or publish material for their members and this material can be used to identify places. The expert team members might also think of other ways to find available material that could be used to identify places.
3. Other maps: If there are other maps available covering similar places these maps can be checked – compare them with your interim map to identify places the databases might miss.
4. Other digital map services: Test searching for your concept on other digital map services, like Google maps or Apple maps. Test searching with variants of your concept (i.e. phrase variants of your concept and see if their algorithms pick up any interesting places for you.
5. Broaden the group of experts: The experts in your team might know of other experts who might have complementary knowledge. This could be especially relevant for the parts of the territory that your team is not as familiar with.
6. Finding other ways: Calling or e-mailing to places you already have identified, state that you are making a map and wonder if they (who are in that business) might know of other places in their vicinity. This might perhaps be worth trying especially for the parts of your territory that seem to be relatively “empty” of places.

7. There is basically no end to the ways you may go about to find more places – it would all depend on how thorough you need to be. In the end it is about reaching a level of confidence in your team that the map will have very good coverage of the places that you are interested in.

Add the places you find to your side list, and when you and your team are finished searching for new places to add, you save the side list for documentation. As mentioned, you stop searching for new places when you and your team are confident that the map with the places you have found will give you very good coverage of the concept you are interested in.

When you and your team have agreed on the final side list, you can move on to add the places of the side list to your dataset. The interim dataset plus the side list will then make up your final dataset.

Documentation: Describe the various ways you have employed to search for new places. Save the description among your other documentation. Also save the side list among your documentation.

Adding the new hits to the dataset

Now it is time to use the side list and add the places you found to your dataset. When adding hits to the dataset in your Google spreadsheet you need to add, in the correct columns, first the name of the place, the sub-category it belongs to, the web address of the place, the city, and the geo-coordinates (latitude and longitude). See below for a user-friendly way to find latitude and longitude for these new places.

There are several ways to find the exact latitude and longitude (geo-coordinates) but an easy and user-friendly way is to use Google Maps. Open Google Maps and search for the name of the place that you wish to find the geo-coordinates to. When Google Maps finds the place it will mark it with a symbol. Right-click on the symbol and a dialogue box will open (see Figure 4). At the top of the dialogue box there is a row with figures. These figures are, starting from the left, the latitude and longitude of the place.

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Copy the figures from the dialogue box and place them in the respective latitude and longitude columns in your Google spreadsheet. To copy the row with figures it likely is enough to double-click on the row.

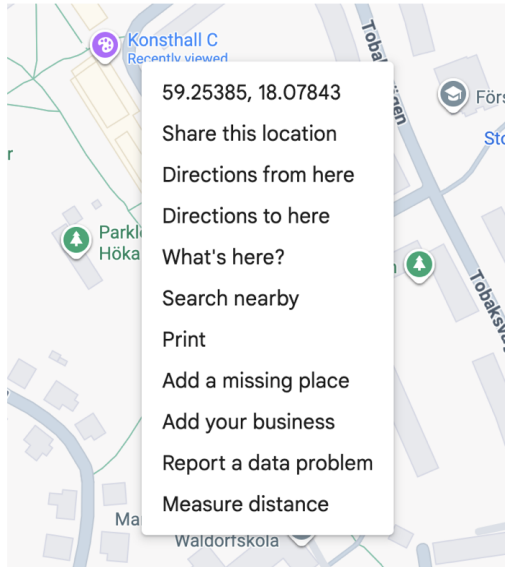


Figure 4. At the top of the dialogue box you find the figures with latitude and longitude. Excerpt from Google Maps.

Producing the Final map

Now you have a dataset adapted to your concept and can finalise the map. This is done in the same way as in Phase 3, i.e. you convert the Google spreadsheet with your final dataset into a CSV-file and paste that file in the Input-folder in the mapping tool. The mapping tool will use the last CSV-file you put into it (so you do not have to delete the previous datasets put there).

To produce the final map, you just repeat the procedure from Phase 3, but with the new CSV-file instead. Thus, in order to produce the Final map, you do the following steps (it is the same procedure as before):

1. In your Google spreadsheet with the refined dataset, click "File" at the top, choose "Download", and then choose "Comma Separated Values (.csv)".
2. The file is now saved to your computer in the "Downloads" folder.
3. Open the "Downloads" folder and find the new CSV-file. (Do not open the file.)

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4. Open the "overture-eu-mapper"-folder you created in Phase 1, and then open the sub-folder called "Input".
5. Move the new CSV-file (without opening it) from the "Downloads" folder into the "Input"-folder.

You have now put the new and final dataset into the mapping tool! In order to produce the Final map based on this dataset you just need to:

1. Go back to the folder "overture-eu-mapper" and press the Build-file that relates to your computer and the Final map is created and opens in your web browser!

Quick guide to Phase 4

1. Go back to your Google spreadsheet
2. Delete all hits in the dataset that do not fit your concept. This is your interim dataset.
3. Search for new places and establish a side list with the hits you find and want to add. These are thus hits you know exist in real life but are not (yet) present in the dataset. Save a copy of the side list for documentation.
4. Add the hits of the side list to the dataset. This is your final dataset.
5. Convert your Google spreadsheet with the final dataset to a CSV-file. Save a copy as your documentation.
6. Put another copy of the new CSV-file in the Input folder in the mapping tool.
7. Run the Build-file in the mapping tool to create the final map.
8. Congratulations! The final map is now produced!
9. Read the Post-mapping phase and save the map as a pdf-file.

Post-mapping phase

When you have produced your final map, a few post-mapping steps remain. These are concerned with making the map accessible in another format than "browser-format", but also with evaluating your work and the map. You should also start thinking if, and if so, how and when the map should be updated.

Save the map

The final map you just created is visible in your web browser but often you want to make it accessible in some way. Share the map, send it around or perhaps use it in a publication of some kind. Then the format needs to be converted from the "browser"-format to something else. To facilitate this process we have included a "screenshot"-button in the tool. You find the screenshot-button in the filter box next to the button you used to create CSV-files. When you press it the mapping tool makes a screenshot of your map (without the filter box).

In order to get the "right size" of the map you zoom in and out and place the centre of the map at the centre of the screen. Test it till you get it the way you want.

Evaluate your work and your map

Take a post-mapping discussion with the team and evaluate the map and your work process. Are there parts of it that you think are better than other parts? What are the strengths and weaknesses of the map? Can you strengthen the weaker sides somehow? These are examples of questions for such a post-mapping discussion.

It is also good to try to evaluate the map in more concrete ways. In some cases there might be maps to compare with in order to evaluate your map and then you compare your results with these other maps. This is an easy way to tell how well your map compares with others.

Often, however, there are no other maps to compare with and your map will be the first one on that concept over that territory. This also means that there are no easy ways to tell exactly how exhaustive or accurate your map is. Nevertheless, you might still want to evaluate your map and then there are two ways, which both are similar to the "finding new places"-steps in Phase 4 but here done with a different purpose. Either you try to find some other material than maps to compare with, often in written form (like lists of relevant places) from various actors that in some sense are actors on the field. This is time demanding and could be difficult and was most likely to be tested or at least contemplated in Phase 4.

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A better way, we think, is to show and discuss your map with further experts in the field, i.e. make more people with the right knowledge participate by helping with the evaluation. This can be done in a number of ways and would be in line with participatory mapping methods. This is the way we recommend since these experts also are likely to be interested in your map. If they know of places that are not on the map, you can go back to Phase 4 and add them. You might want to seek out experts that are located in various parts of the territory you have mapped and hence are likely to have good local knowledge of the field.

A variant of evaluating the map is also to go public with the final map, state that it is a "test version" and ask for further additions. This way is also in line with participatory mapping methodologies. Depending on how you go live with the map, you can invite people to check it and/or add to it. If they know of places not yet on the map, you can add them by going back to Phase 4, or when updating the map (see below).

In any case, the more tests, and perhaps a combination of various tests, of the map that you do, the more confident you will be of the status and exhaustiveness of the map. Also, the more you involve other people in your testing and evaluating of the map, the better it will be known and used.

When sharing and communicating the map

Now that the map is created, evaluated and perhaps also tested it is good to also include in short text on what it shows (the concept) and how it was made (the method) including also how it was evaluated. To be open and transparent only increases the map's credibility since people who use the map will understand how the map was made and what knowledge it represents.

When you share the map or use it somehow it is thus good to state how the map was done and what the information in it represents. State that the map represents information based on the expert knowledge in your team and draws upon the open databases in Overturemaps.

Depending on the situation you may want to add that there are no perfect maps and that you are open to add places in coming updates of the map.

Updating the map

All maps that are not one-offs need to be updated. It would be good to decide early on if the map is meant to be updated regularly, or not, and if so how and with how long time intervals. For phenomena that change fairly fast, like some cultural initiatives, a short interval is better than a long. For matters that are fairly constant, like hotels, the interval could be longer. In any case, document the steps you employ in the updating process. During the interval period, you may of course continuously "gather" places that you might have missed for the final map or that come into existence during the interval. It is possible to continuously update the map but the description below is written to support a concentrated update effort at suitable intervals rather than continuous updates.

Updating is done in two main steps – deleting hits that have ceased to exist in real life, and by adding hits that have entered into existence since the map was made or last updated. How to go about? We suggest to gather your team (the same as before but it could also include new members with complementary knowledge, or a change of members as long as they have relevant expertise), visit your documentation and discuss the core concept till all (new) team members understand it and then plan the update.

Practically viewed you will have to go through the dataset for the final map and delete all hits that have gone bad since the map was first produced, or last updated. For adding hits, you establish a new side list for updates and fill it in with places that have entered into existence since you last worked with the map. In order to find these new places you may employ the same procedures as in Phase 4.

Basically what you do when updating the map is that you employ the relevant steps in Phase 4 one more time but now based on the dataset for the final map. In addition to that, you may double check the sub-categories you initially selected from Overturemaps and see if the databases have been updated with new hits. This might be done by running the mapping tool with the same sub-categories as before, create a CSV-file and then compare that file with your documented file for your ground map. The two files may be compared automatically with relevant

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software, but you need of course to assess manually if the new hits, if there are any, fits the concept of your map.

You can also let other people add to the map for updates. A variant of updating the map is thus to let anybody contribute. Obviously you review the suggestions before adding them to the map, so the suggestions actually fit the concept of the map. Including other people would further increase the participatory aspects of the mapping and can be made in a number of ways, both digitally via a website, social media, etc., or in real life actions, workshops, meetings etc. You can develop these different ways so it fits your map, situation and the related community, but we suggest to ensure a process of feedback to the people that choose to come with suggestions. Feedback and appreciation is important to keep the engagement in related communities if you chose this option for updating.

Before finishing the update, make sure to save the new dataset and other documentation concerning the update among the other documentation you have. Apart from making it easier to go back in the process or answering questions about your data, in this way also a series of maps from different times will be possible to make, so then it will be possible to study the spatial change of your concept over time.

Save the documentation

We have throughout this guide stressed the need to document your mapping process. The documentation should by now contain the following:

1. Core concept of what you want to map, i.e. your concept, and potential updates of the core made in Phase 4.
2. The chosen sub-categories that were employed to create the Ground map.
3. The dataset of the Ground Map
4. The dataset of the Refined Map
5. The dataset for the Interim Map
6. The side list of places to add to the final dataset.
7. A description of how you searched for new places to add.
8. The dataset of the Final Map

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9. (If the map is updated, the dataset, side list and description of how and when the map was updated.)

Save the documentation and you can always reconstruct the different phases if need be or answer detailed questions about your map and data.

Licenses

Maps built with this tool combine open data and open-source software. The maps you make with the tool are free to use, share and publish but you need to keep the attribution line visible on the map.

If you want to check the licenses yourself, please find the open sources employed by the mapping tool and information on their licenses below:

Places:	Overture Maps Foundation (CDLA Permissive 2.0 / ODbL), https://overturemaps.org
Tiles:	CARTO, based on OpenStreetMap (CC BY 3.0 / ODbL), https://carto.com/attributions
Software:	DuckDB (MIT); Leaflet (BSD-2-Clause); html2canvas (MIT)
Boundaries:	© EuroGeographics for the administrative boundaries
Source:	Eurostat GISCO LAU 2024 https://ec.europa.eu/eurostat/web/gisco

Join the mapping community

Finally, now when you have created a map underpinned by your own unique dataset, we also tip about the possibility to join and potentially share the dataset with the mapping communities on Openstreetmap. You do this by registering an account with Openstreetmap.org (it is free) and find and contact the relevant community.

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Read more about the project at www.horizon-startup.eu



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