
GEObusiness

The power of territorial analysis integrated in Microsoft Dynamics CRM.

User manual

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1. Installation

- a. Download the solution pack
- b. Change maximum size of files

From the main page choose: Settings → Administration → System Settings

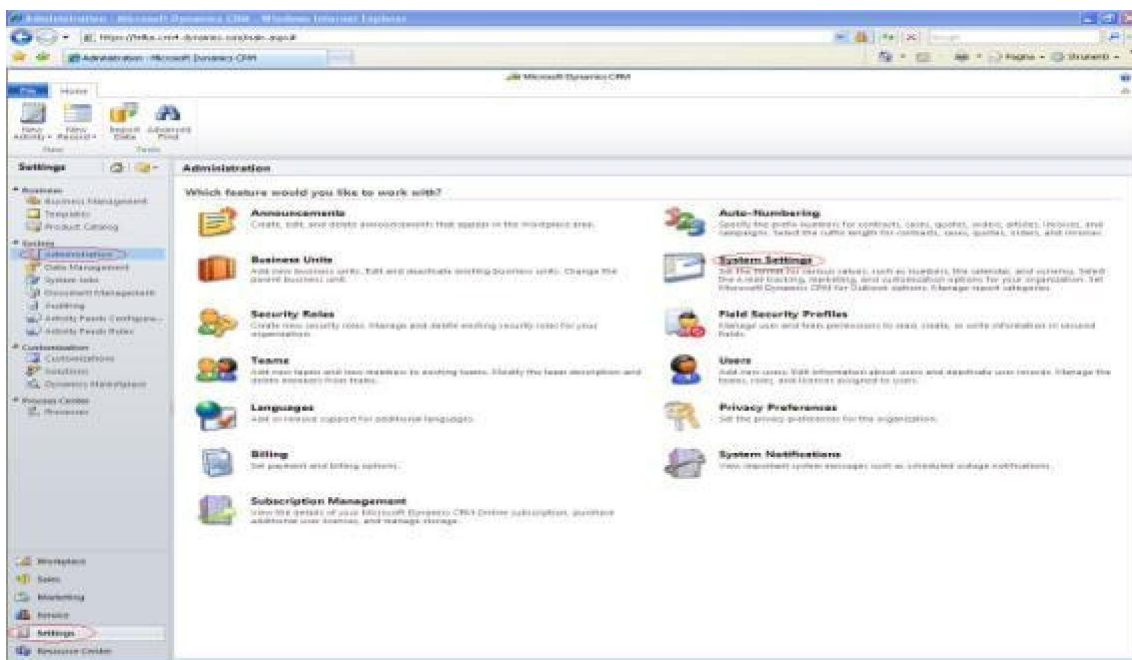


Figure 1.1 System settings

In the new page choose “E-mail” tab and modify value of “Maximum file size” setting this to 30.000.

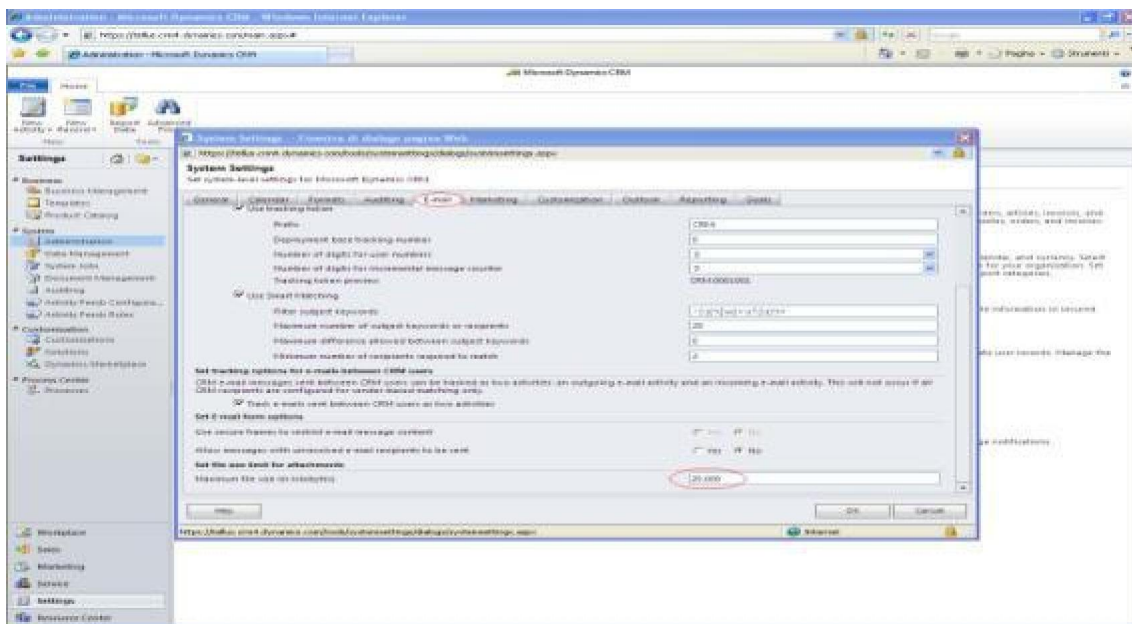


Figure 1.2 Maximum file size

c. Import solution

From the main page choose: Settings → Solutions → Import

In the new page choose the solution; once loaded choose next and wait for the importation. Once the solution is imported go to: Settings → Solutions → Publish all customizations

d. Associate all entities to GEOaddress

Once the solution is imported and published you need to create an association between entities in CRM and the “GEOaddress” entity. To do this, create a relationship between entities:

From main the page: Settings → Customizations → Customize system

In the new page go to: Entities → choose the interested entity → Relationship 1:N → New relationship one to many

In the entity creation page fill in all fields as follow (instead of “name” choose an arbitrary name); once you have filled in all fields save and close.

Repeat this procedure for each entity.

2. Creating GEOaddress

Creating GEOaddress allows you to bind geographic information to your entity.

To start binding GEOaddress to one entity of yours you have to proceed as follow:

- a. **Choose one entity of yours on the CRM (for example account)**
- b. **Click on the Create GEOaddress button on the ribbon bar**

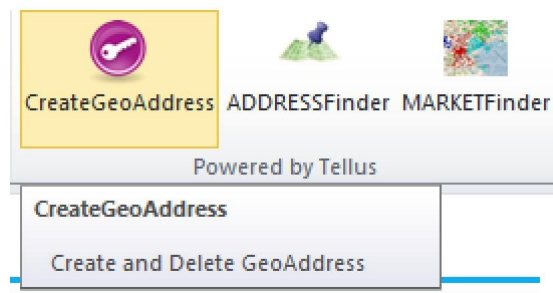


Figure 2.1: CreateGEOaddress button.

- c. **In the new window proceed selecting your CRM fields according to their geographic meaning.**
 - Name: is the name used by GEOBusiness solution to identify points on map. Required field.
 - Address: is the street where the entity is located. Required only if you want a good map position accuracy.
 - PostalCode: is the entity's postal code. It's not required but it can be useful to support the geocoding software finding the entity's position.
 - City: is the entity's city. Required field.
 - Province: is the entity's province (the second administrative level). Required field.
 - Region: is the entity's region.
 - Country: is the entity's country, it can't be provided but in this case you need to complete the Country value field (all entities are assumed to belong to the same country)
 - Longitude and Latitude: provide it if you already have the entity's coordinates.
- d. **Click on Bind: this function creates one GEOaddress entity related to every entity, copying values from your CRM fields to GEOaddress fields.**
- e. **You can decide to delete this binding at any time by clicking on "Delete GEOaddress".**

3. Geocoding entities with ADDRESSfinder

Geocoding entities functionality allows you updating the coordinates fields of the GEOaddress. It performs an automatic calculation based on your entities address and retrieving the longitude and latitude information. You must have a GEOaddress created (see point 1) to use this function.

To start geocoding your entities:

- a. Choose one entity n the CRM (for example account)
- b. Click the ADDRESSfinder button on the ribbon bar

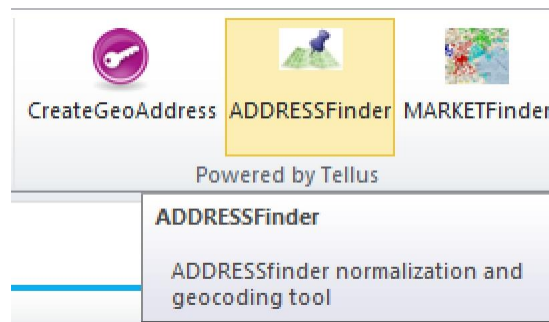


Figure 3.1: ADDRESSfinder button

- c. ADDRESSfinder will geocode all the entities. At the end of the procedure you will know how many addresses have been geocoded automatically.
- d. In the new window you can geocode the remaining addresses.

Country	<input type="text" value="Italia"/>
Province	<input type="text"/>
City	<input type="text" value="Prato"/>
Locality	<input type="text"/>
Postal Code	<input type="text" value="57100"/>
Address	<input type="text" value="Piazzale Martedi 334"/>
Number	<input type="text"/>

Figure 3.2 Normalization panel

- “Normalize” button allows you to re-normalize your entity, you can also edit the field of the entities.
- “On map” button allows you to point your entity directly on map.
- “Previous” button allows you to return to the previous entity record
- “Next” button allows you to proceed normalizing the next entity
- “End” button saves the normalization info.

	Country	County	Province	City	Locality	Postal Code	Address
<input type="checkbox"/> +	Italia	Lomb.	MI	Corsico		20094	Via Giuseppe Garibaldi
<input type="checkbox"/> +	Italia	Lomb.	MI	Bresso		20091	Via Giuseppe Garibaldi
<input type="checkbox"/> +	Italia	Lomb.	MI	Novate Milanese		20026	Via Giuseppe Garibaldi
<input type="checkbox"/> +	Italia	Lomb.	MI	Buccinasco		20090	Via Giuseppe Garibaldi

Figure 3.3 Grid of candidate addresses

- e. Once you tap on Normalize button, if there is more than one option, it's necessary you choose one of addresses in list. To confirm the selection check it on the first column.

4. Analyzing entities with MARKETfinder

Analyzing data on map allows you to visualize your entities on a geographic map performing several operation such as thematic maps and route planning.

In order to use this functionality you must have geocoded your data (see point 2). To start analysing your entities:

- a. Choose one entity on the CRM (for example account)
- b. Click on MARKETfinder button on the ribbon bar

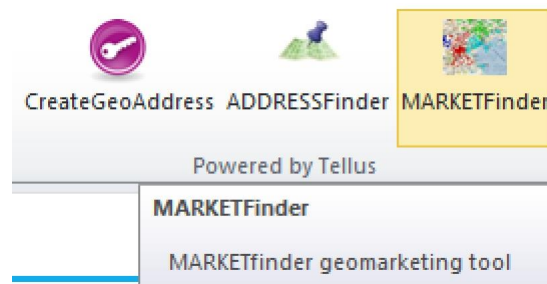


Figure 4.1 MARKETfinder button

- c. In a new window your geocoded entities are displayed.



Figure 4.2 MARKETfinder main page

1. Map and navigation

All points are positioned on a map provided by <http://it.bing.com/maps/>.

The default view is Road. You can also select the Aerial option (pictures taken from above, detail depends on the area you're analysing) or Bird's Eye (pictures taken from above at an angle of 45°, not available for all areas).

You can zoom in and zoom out using the mouse wheel or the graduated bar on the upper left of the screen. By pressing the CTRL key when you can trace a rectangle with the left mouse key obtaining a detailed zoom on a precise area.

You can also move the map on top of a desired zone.

2. Info

Clicking on a circle on the map will open a new browser window or tab. The window shows a dialogue screen of the CRM containing some point information.

3. Entity thematic maps

If you select the tab "Tematismo per entità" you can thematize the points by numeric values. A thematic map is a representation of every single entity with a different colour; the colour assigned to an element is chosen evaluating the value of one of its attributes and comparing it with the range of all the values of that attribute for all the entities on the map.

To create a thematic map of an attribute select it from the drop-down menu. As a result, all the elements on the map will be coloured according to the values shown on the legend that appears in the function's menu tab. By default the system creates five intervals, containing one fifth of the calculated values each. The intervals may not include all the same amount of points.

To close a thematic map based on an entity, see chapter "Layer management".

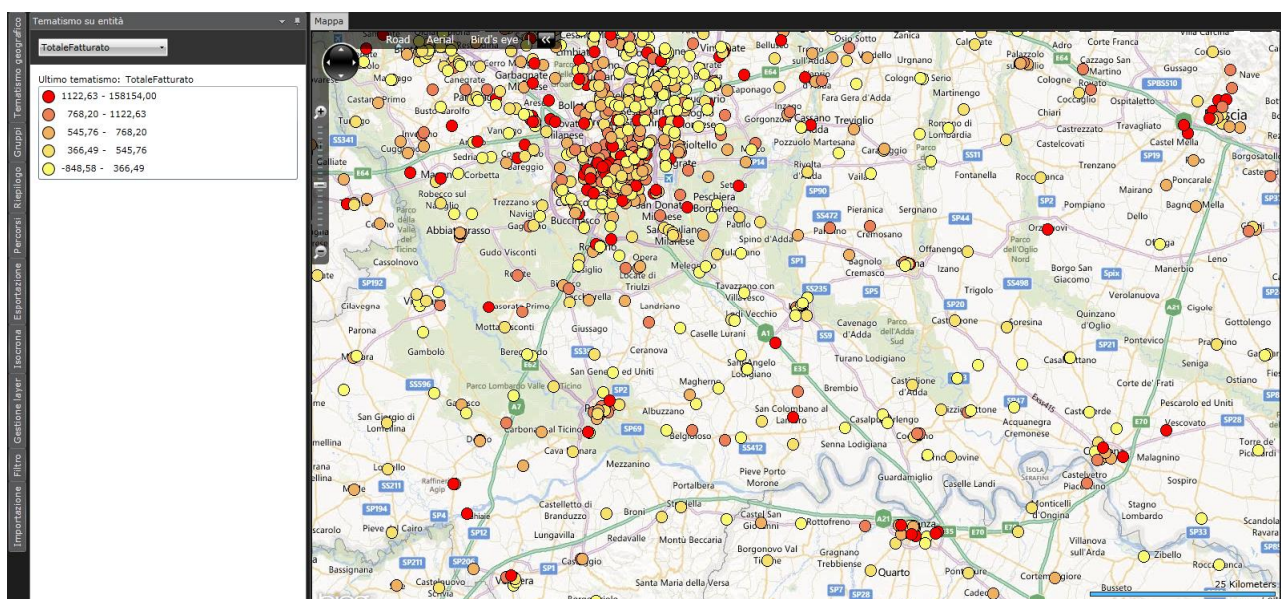


Figure 4.3 An example of entity data mapping.

4. Geographic thematic maps

Tab “Tematismo geografico” allows you to create a thematic map referred on a chosen administrative level and based on one numeric value.

First of all, choose the administrative level of the analysis: City, Province, Region or State. To create a map based on an attribute of the entities, select “Dati entità” from the drop-down menu. To thematize the areas according to one of the demographic attributes included in the application select “Dati socioeconomici”. Finally, choose the reference attribute for the creation of the map. As a result all the administrative divisions (of the selected level) will be coloured according to the values shown on the legend that appears in the function’s menu tab. A black border will display the limits of the areas. If you selected “Dati entità”, the only areas coloured will be the ones that contain at least one entity (for those the system can calculate a value). The derived value of this attribute will be the sum of all the elements contained in the same area in the chosen administrative level. Instead, if you selected “Dati socioeconomici” all the divisions in the State will be coloured. By default the system creates five intervals, containing one fifth of the calculated values each. Therefore the intervals may not include all the same amount of points. To repeat the thematization of another attribute of the same data source just select it from the drop-down menu. To create a map based on an attribute of the other data source (for example, first “Dati entità” then “Dati socioeconomici”) select the data source before you can choose the attribute. To change the administrative level just repeat all the operation.

With the geographic thematic map you can also colour the entities by the result of an expression between two attributes. In this case: select the desired administrative level and click on “Espressione” button; this will open a window where you can pick the two attributes (among all available from “Dati entità” and “Dati socioeconomici”), and an operator (+, -, *, /). Tap “Ok ” to confirm the operation and create the map. If one or more attributes come from “Dati entità” the only areas coloured will be the ones containing at least one point, for which the system can calculate a value.

To close a geographic thematic map, see chapter “Layer management”.

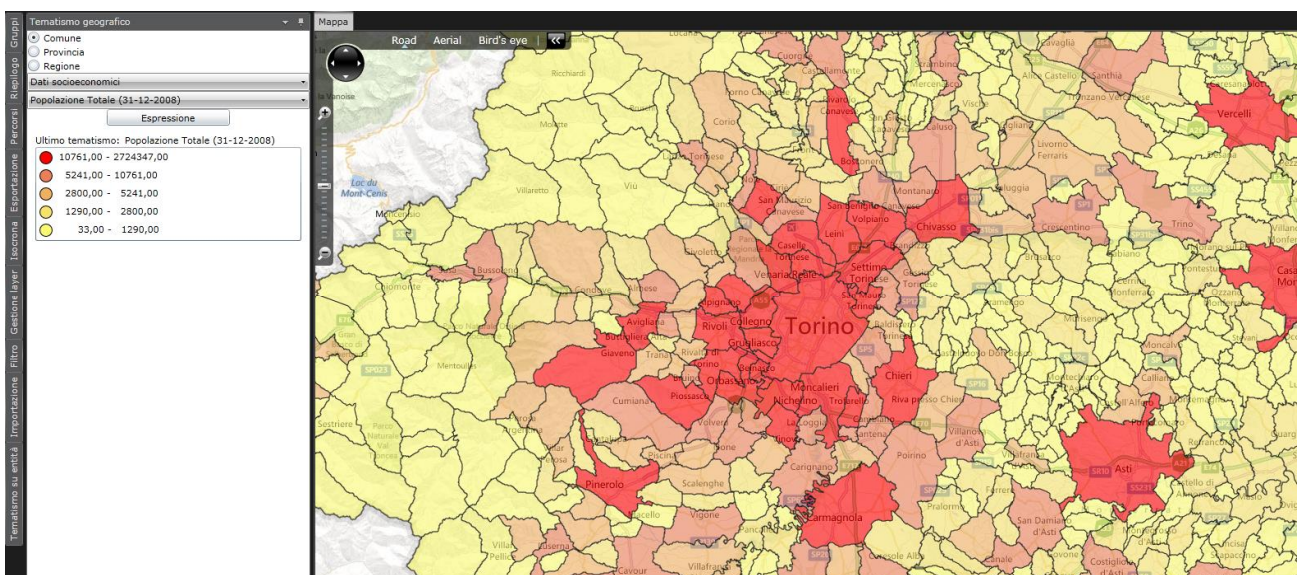


Figure 4.4 An example of geographic data mapping

5. Layer management

“Controllo Layer” tab allows you to:

1. delete a geographic thematic map (option “Nascondi tematismo geografico”);
2. delete an entity thematic map or close a group (option “Nascondi tematismo su entità”)
3. hide the points to visualize only the map with its thematic map or isochrones (option “Nascondi entità”).

After checking the options you need tap on “Conferma”. To display the points uncheck the “Nascondi entità” option and then click on “Conferma”.

6. Route

In the “Percorsi” tab you can create an itinerary through two or more points on the map. Firstly, check the box “Attivo (S/N)”; then, click on the map (or on the spots) to acquire the points that will form the route to compute. Every click will create in the list a new row with selected point’s pair of coordinates (Longitude and Latitude). You can remove a point from the list using the button “-” next to it. When you’ve selected all the points you need, click the button “Calcola itinerario”: the system will estimate the best route between two points, starting from the first one to the last, returning the total time and distance to cover the entire itinerary (CAUTION! The system does not calculate the best sequence of access between all selected points, but only the best route between point and point in the order in which they were selected). You will also see the route on the map. To delete all you can simply click on “Elimina itinerario”.

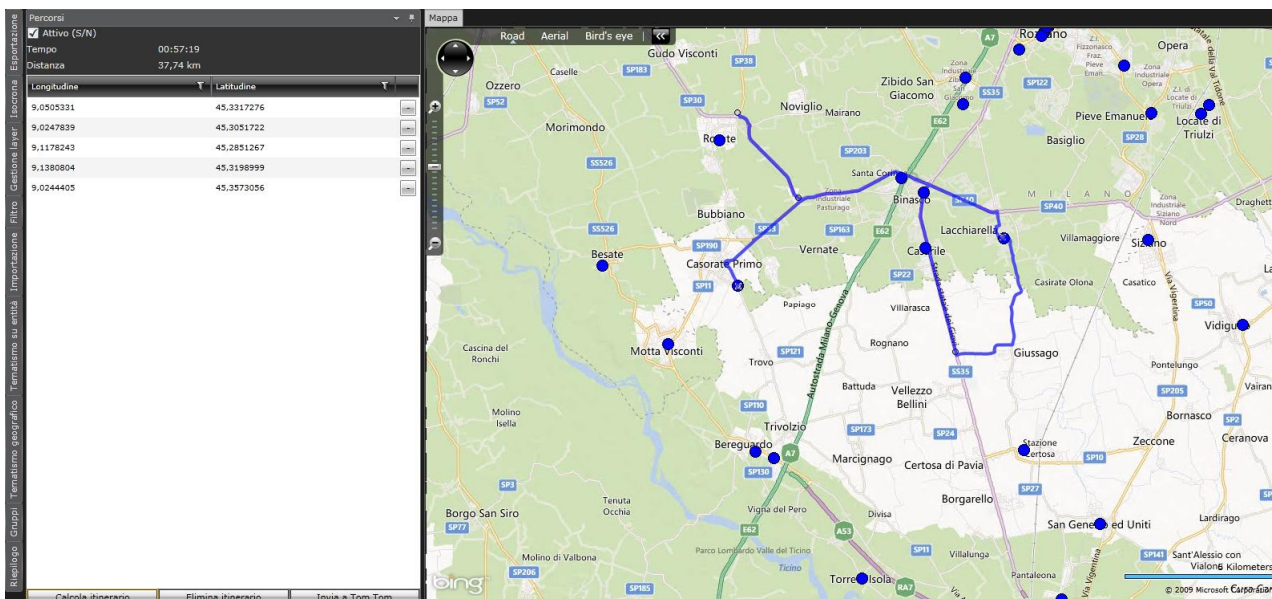


Figure 4.5 A route plotted on map

In the case there’s a Tom Tom device associated to our user, it’s also possible to send this just computed route to the Tom Tom device, clicking on the button “Invia a Tom Tom”.

7. Group


In the “Gruppi” tab you can represent elements with different colours depending on the grouping field chosen among the ones defined like this during the data import.

To load a group you have to select the grouping field from the drop-down menu “Select”. The elements on the map will be coloured with different tints, one per every voice. In the function’s menu tab will also appear a legend.

In the “Riepilogo” tab you can see a summary of the total of the numeric values for each voice of the group. You can also save the summary table in an Excel format clicking the “Esporta” button.

Riepilogo								
Esporta								
NomeAgente	Dermatologica	GinecologiaParafarmacoQ	GinecologiaParafarmaco	PediatricaQ	Pediatrica	TotaleQuantità	TotaleFatturato	
> Aosta	2091,15	2858	11474,66	554	1917,57	4265	15483,38	
Bernardini Italo	12213,66	49623	224849,9	6625	19555,25	59032	256618,83	
Cajafa Anna Nives	2438,95	8445	42217,62	3757	10573,49	12677	55230,05	
Carnesecchi Elisabetta	1899,27	3173	14915,28	2087	5080,61	5679	21895,16	
Comassio Lucio	14432,18	64302	284348,3	14738	41375,36	82855	340155,97	
De Piaggi Roberto	8494,67	33832	157424,28	19613	51894,28	55491	217813,21	
Ferro Sergio	25214,64	51703	250766,26	22126	59038,78	80282	335019,6	
Galante Sandro	17441,98	51057	250745,64	11387	32242,13	66879	300429,84	
Giro Maurizio	17512,13	55641	262932,81	13457	37090,55	72411	317535,49	
Gregori Giovanni	9706,5	47588	224719,19	12965	34629,99	62825	269055,75	
Ladoni Monica	10115,05	34329	153841,71	8907	28396,1	46004	192352,7	
Lendaro Paolo	4537,65	23625	113673,72	10110	31847,11	34425	150058,42	
Maccarrone Alfio Davide	28285,1000000001	111790	516419,73	48036	131279,67	166022	675984,500000001	
Mazzurana Marco	22420,04	32364	164593,66	20520	47022,79	57129	234036,31	
Muscato Massimo	10499,63	53067	249844,26	11506	34401,21	67567	294745,16	
Porrati Massimo	10190,87	40625	180335,82	22503	59758,76	65369	250285,53	
Reatti Maurizio	25784,16	92146	430364,9	32507	98231,28	129694	554380,21	
Rossi Enrico	4372,99	15234	64197,37	4695	9847,62	20612	78417,96	
Rossi Massimiliano	0	33	112,05	3	58,8	36	170,85	

Figure 4.6 An example of a summary of data for a loaded group

You can also balance the zone to change the attribution of the elements, moving them from a voice of the group to another. To do this, click on the button "Enable selection" (); then, by consecutive clicks on the map, draw a selection that contains entirely inside all those points that you want to assign to a new group. To close the selection you must click at the centre of the first point that was selected (red circle with a black one inside). While you’re in tracing mode, to navigate on the map just go near its borders to cause it to move in that direction. When you’ve finished tracing the selection you have to choose from the drop-down menu the group field that you want to change, then in the second menu you will pick the value to which the points will be assigned. If this value isn’t already in the drop-down menu you just have to type it in the box to create it. To confirm the operation you always have to click on the “Assegna” button. You can assign some elements to a group and at the same time visualize on the map a different one.

8. Isochrones

Selecting the tab “Isocrona” you can calculate areas equidistant, in time or distance, from a point selected on the map. Firstly you need to select the button “Acquisisci punto” (when this button is active the arrows on it turn black), then you can click on the isochrones starting point on the map (this can be a casual point on the map or a circle). Once you’ve clicked on a point the X and Y fields in the menu tab will be filled with its coordinates.

After this you have to choose how to calculate the isochrones: inserting a time in the [hh]:mm format, or a distance in meters. In the first case the system will follow the road network from the starting point and will

stop once reached the time set, covering each road with a different speed based on its type (ex.: highways faster than urban streets). The result will be a polyline that connects the points reached and, usually, is stretched on the main roads. In the second case instead the system will stop once reached the meters set; the result will be once again a polyline connecting those points. To launch the procedure you must click on the “Calcola isocrona” button.

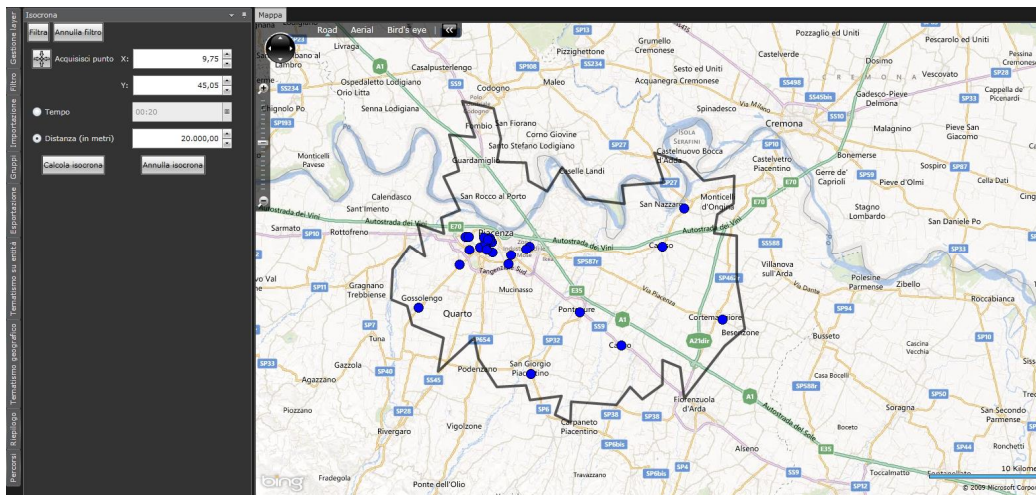


Figure 4.7: An example of the representation of an isodistance of 20Km with the filter activated

If you want to change the time or distance of travel, or visualize the graph for a distance or a time without changing the starting point, you can just change the parameters and then click again on the “Calcola isocrona” button.

Once the isochrones are visualized on the map you can click on “Filtra” to show only the points that are contained in it. In this case the totals in the “Riepilogo” tab will also be updated accordingly and it’s possible to download a file containing only the filtered data from the “Esporta” tab.

To undo these changes use “Annulla filtro”, to undo the isochrones use “Annulla isocrona”.

9. Filter

In the “Filtro” tab you can filter the data using the fields in the input file. When you want to create a filter on a field you have to click on the funnel-like button next to its name. Then you can select from the list the values you want to filter, or you can use the boxes “Show rows with values that”. In these boxes you can set up to two conditions with the AND clause (both are valid at the same time) or with the OR clause (it’s valid one or the other). You can set one condition from the list and one with the boxes, in this case they will be considered using an AND clause. You can also set conditions on different fields and in this case they will too be considered using an AND clause. While the conditions set selecting voices in the list are automatically applied, to apply the ones created with the boxes you must click the “Filter” button. To cancel a filter you need to click on “Clear Filter” in each field where you had set a condition. Once a filter is applied, you will see on the map only the filtered points and in the tab “Riepilogo” you will see only the totals of those points.

If you click on the labels above each field you can order its values in an increasing or decreasing order, both the numeric and the alphanumeric ones.

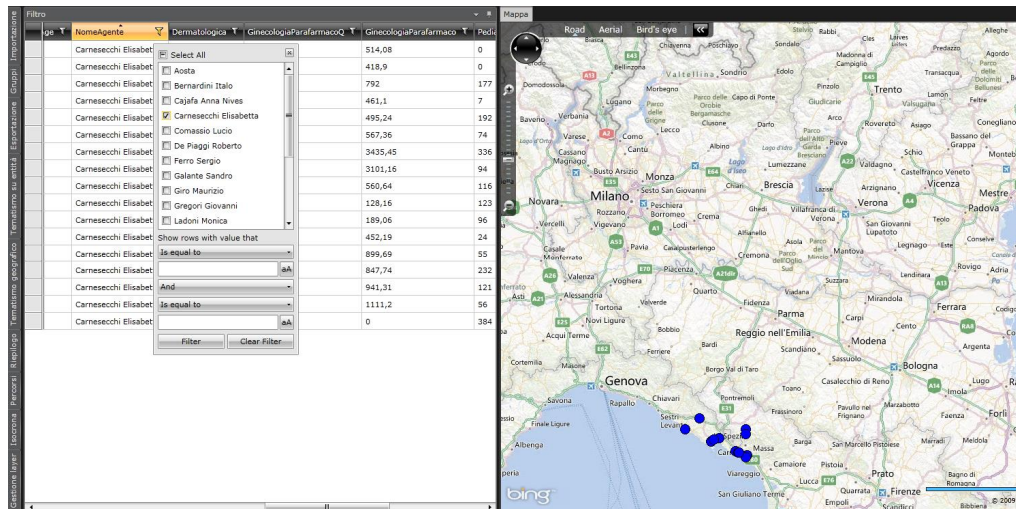


Figura 4.8: An example of a filter in action

10. Summary

In the “Riepilogo” tab you can see the total of all the numeric fields for all the points seen in the map. If you load a group, here you will see the total of the numeric data divided by the chosen group. If you activate a filter (even using the isochrones filter option), the values will be updated showing only the totals of the filtered data. The “Num” column contains the total number of the elements loaded, eventually on more rows if a group is loaded.

You can always export the summary table in the Excel format, clicking on the “Esporta” button.

If you click on the labels above each field you can order its values in an increasing or decreasing order, both the numeric and the alphanumeric ones.

11. Export

Selecting the tag “Esporta” will open a tab where you can export the data with the same structure they were uploaded, in an .xml file (compatible with Excel) or in a .csv file (text file with fields delimited by a semicolon). This file will include the coordinates eventually calculated in the initial geocoding phase and eventual changes made with the group balancing function.