# Workshop App Development: ServiceMap


http://www.sii-mobility.org

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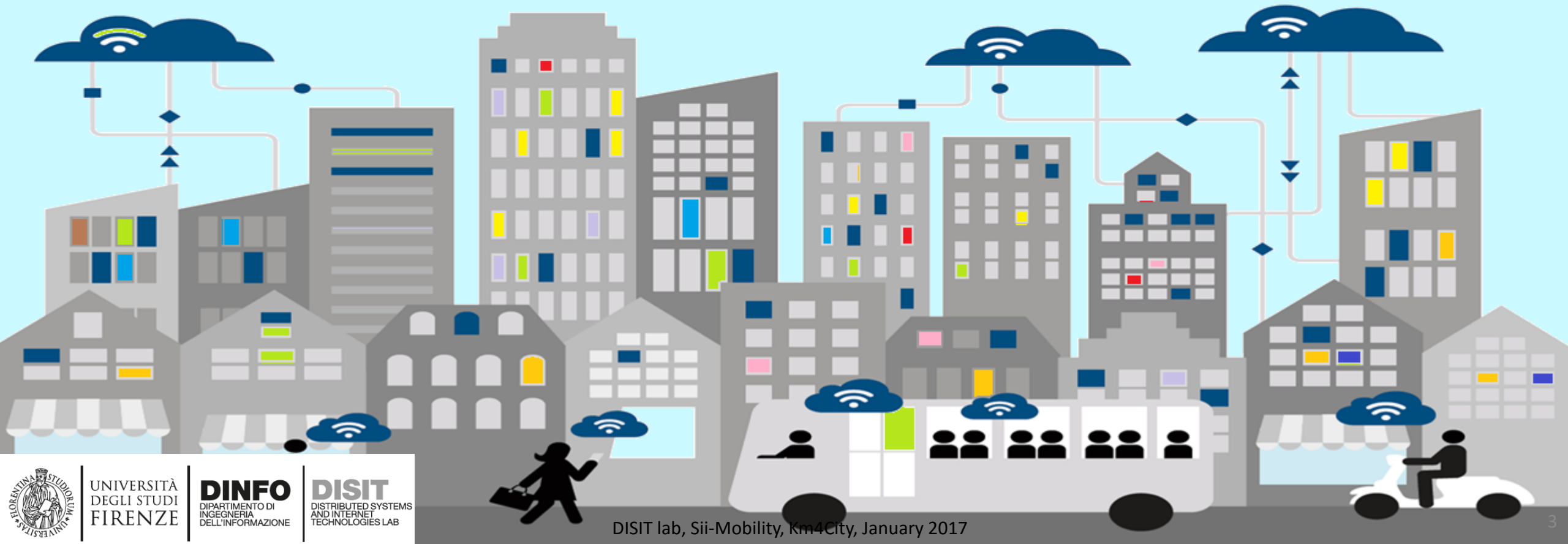
http://www.Km4City.org

Questions to be sent at km4city@disit.org

# Agenda

- 9:00-10:30 http://www.disit.org/6993
  - Sii-Mobility Overview
  - General Model
  - Engaging Users via Apps
  - Overview of development tools for Apps
  - How to Legally work with SDK
  - Planned Additional Modules for the Apps
  - Info and Documents
- 10:30-11:30
  - ServiceMap usage http://www.disit.org/6994
  - Smart City API http://www.disit.org/6995
- 11:00-12:30 http://www.disit.org/6992
  - Sii-Mobility Mobile App Kit on GitHub
  - How to develop new module
- 12:30-13:30: lunch
- 13:30-17:00:
  - Workshop on development: exercitations

# ServiceMap usage

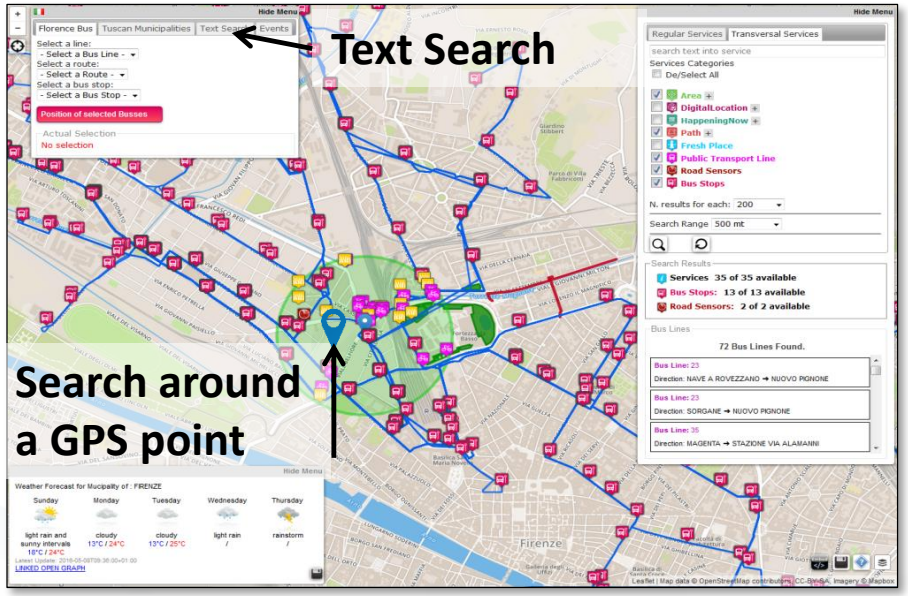


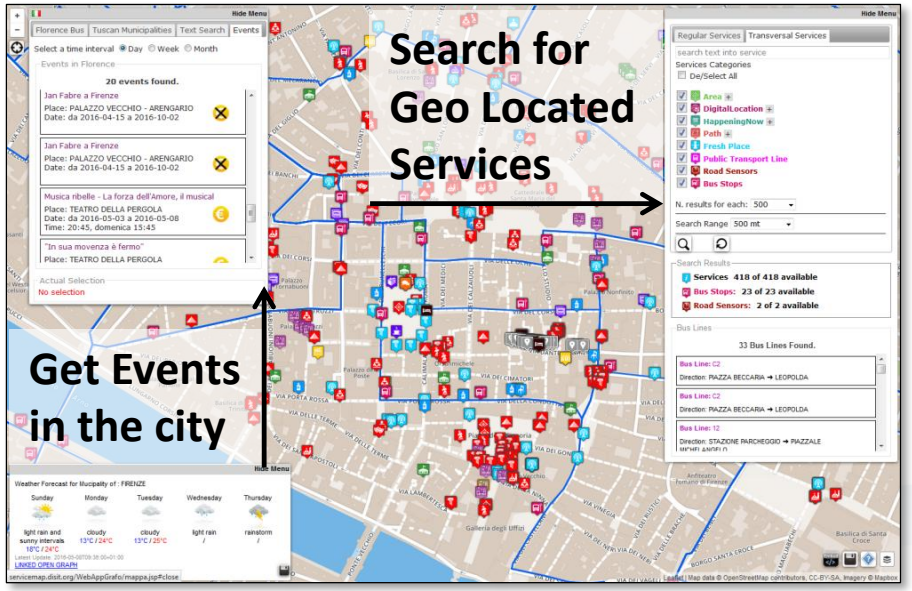
# ServiceMap: Available versions and usages

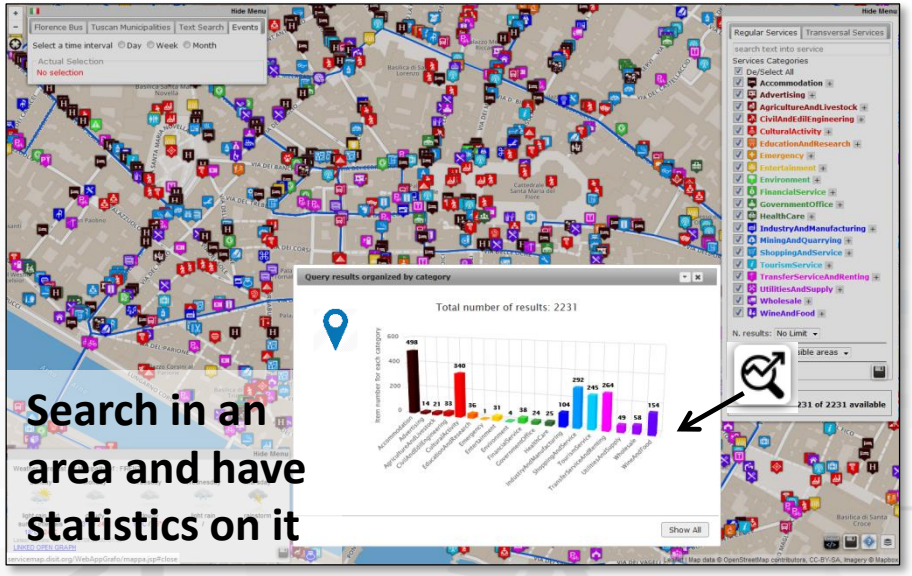
- Official Service: http://servicemap.disit.org
- Test Service: http://www.disit.org/ServiceMap

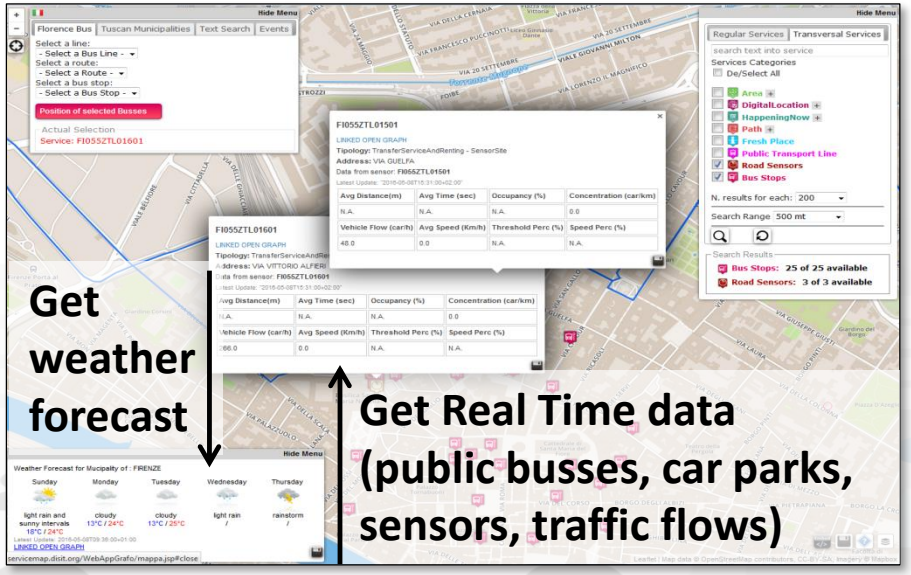
- Why use the Service Map?
  - Make searches on the data collected in the KM4City Knowledge Base in a visual modality
  - Have a set of APIs that can be used in your App

# ServiceMap: type of searches (1)

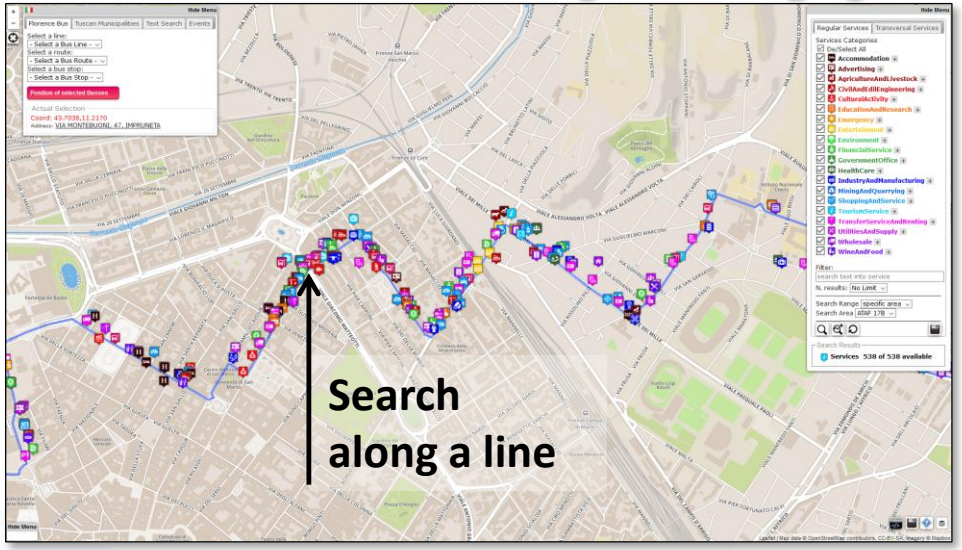


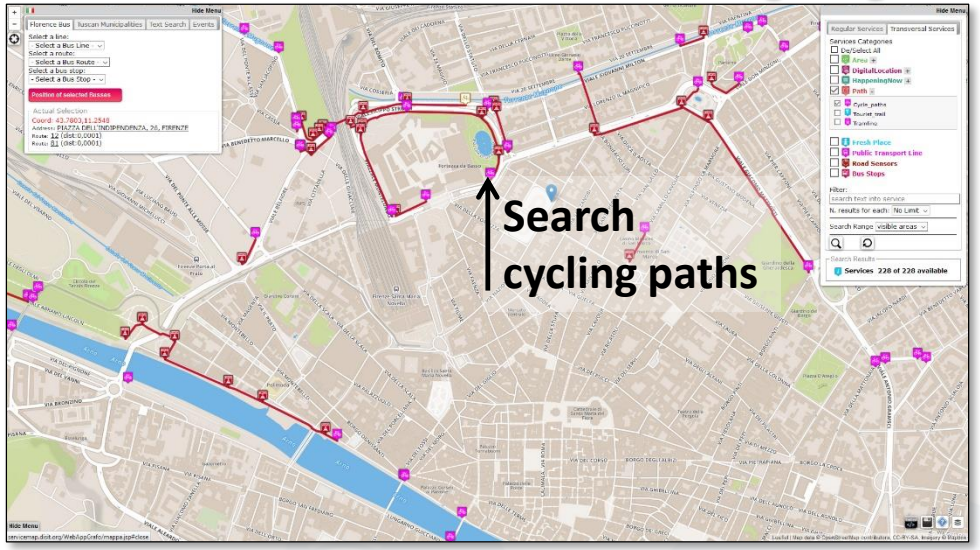



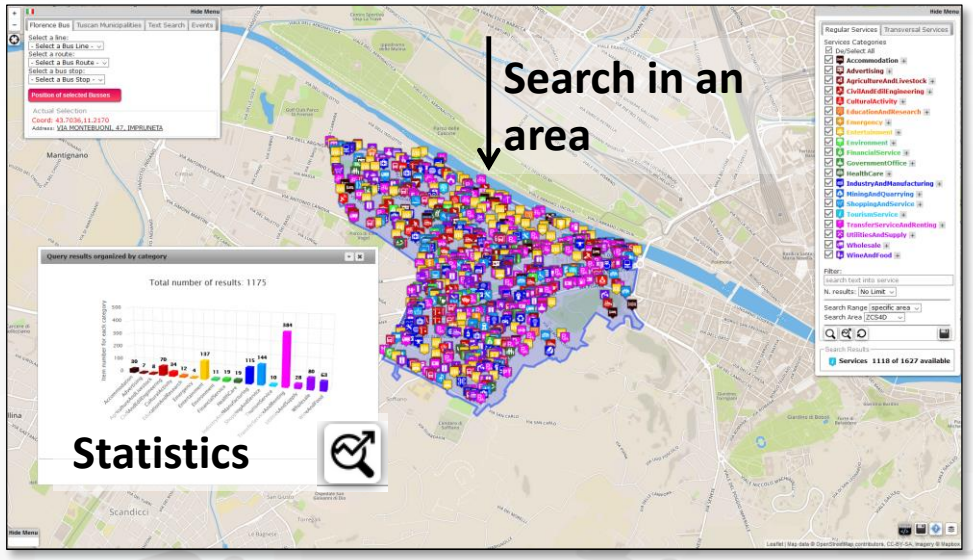



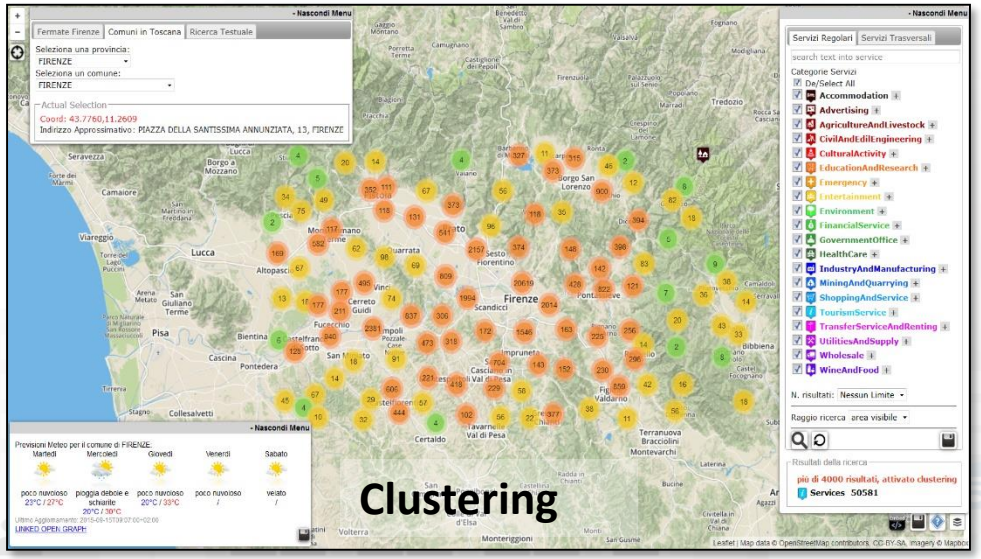



# ServiceMap: type of searches (2)



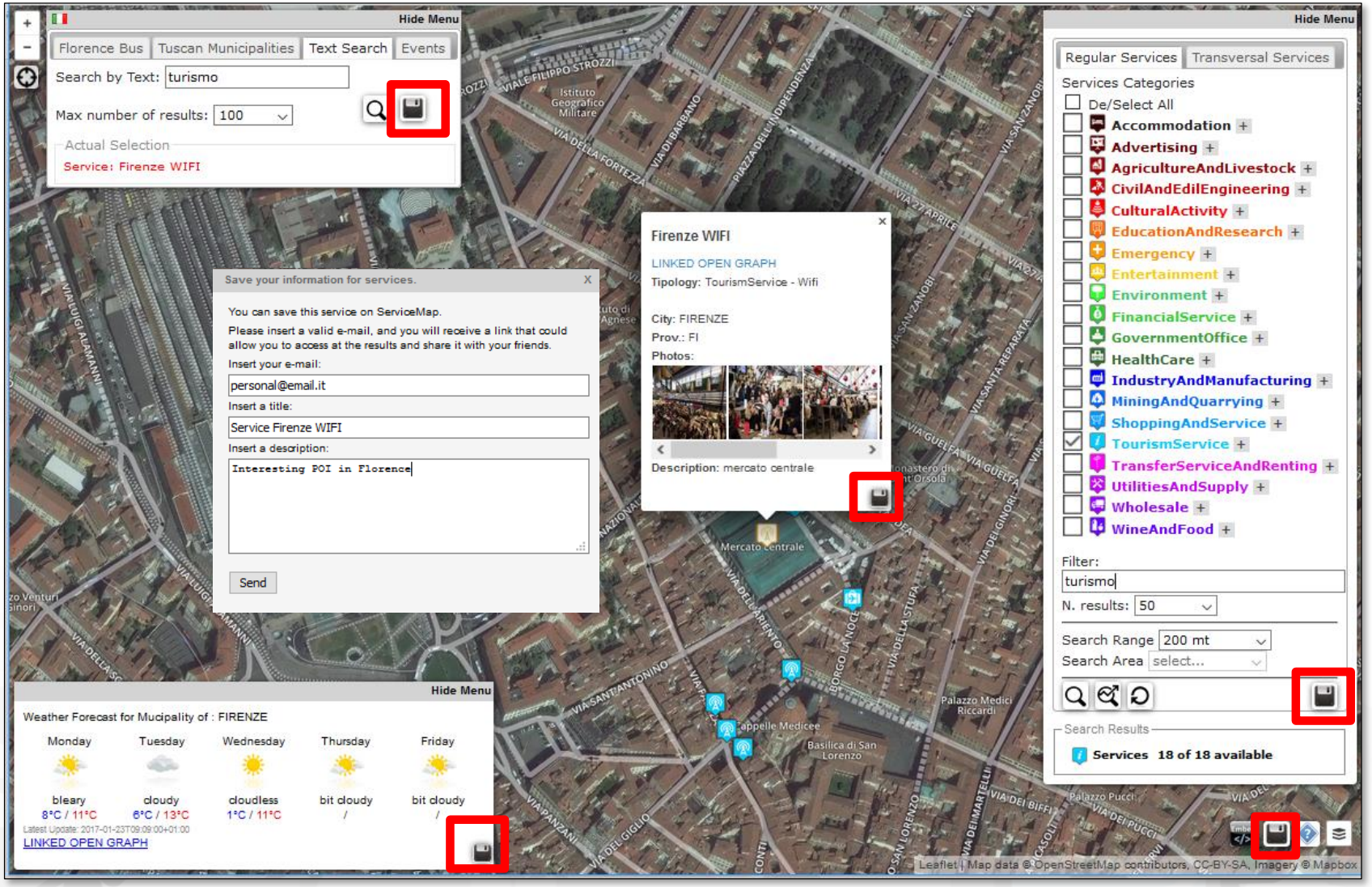



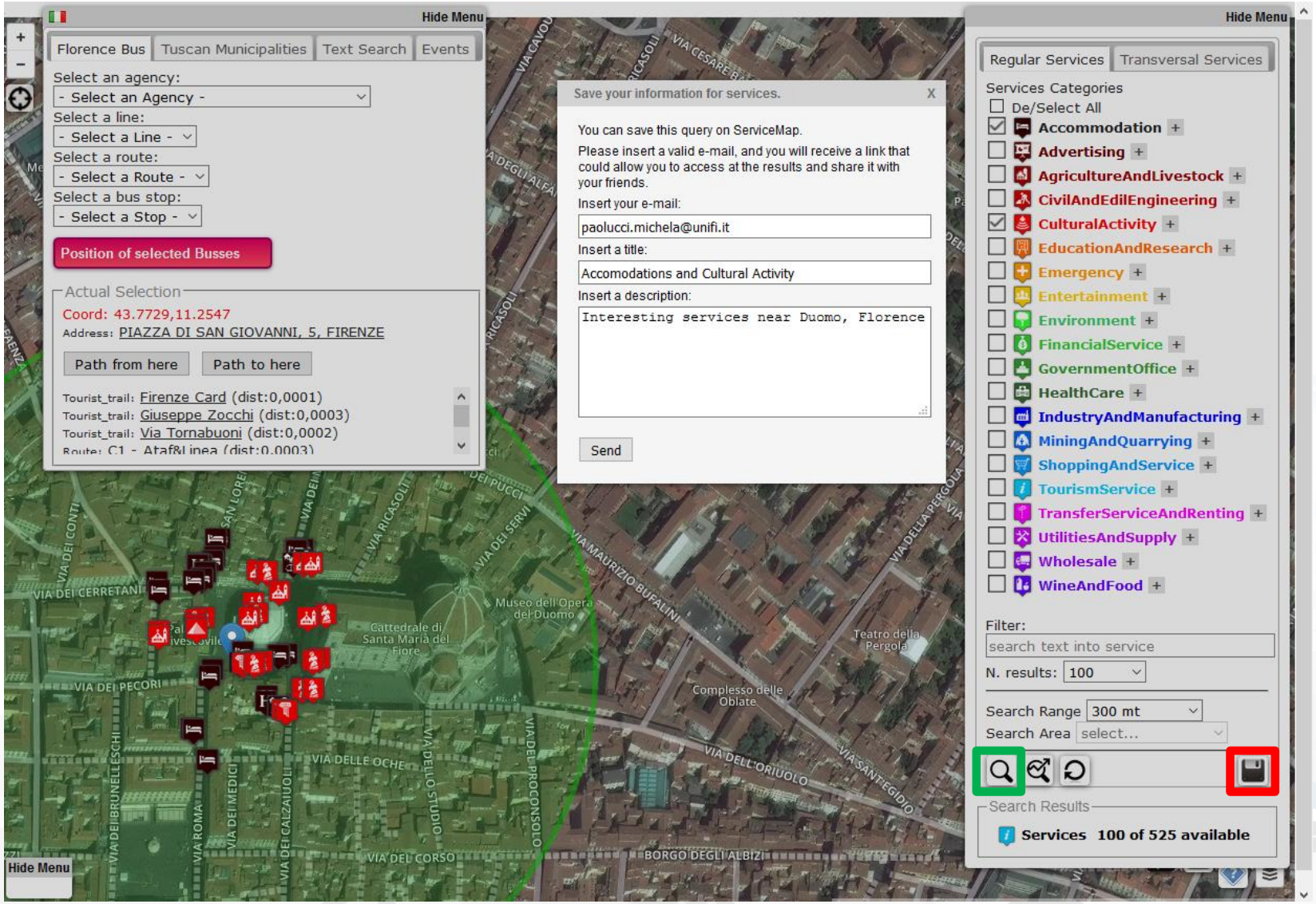



# ServiceMap: How receive/use the API?

- Make your search
- Click on the save button
- Complete the form:
  - E-mail
  - Description on your search
- Look at your e-mail
- Use the API received, in your App

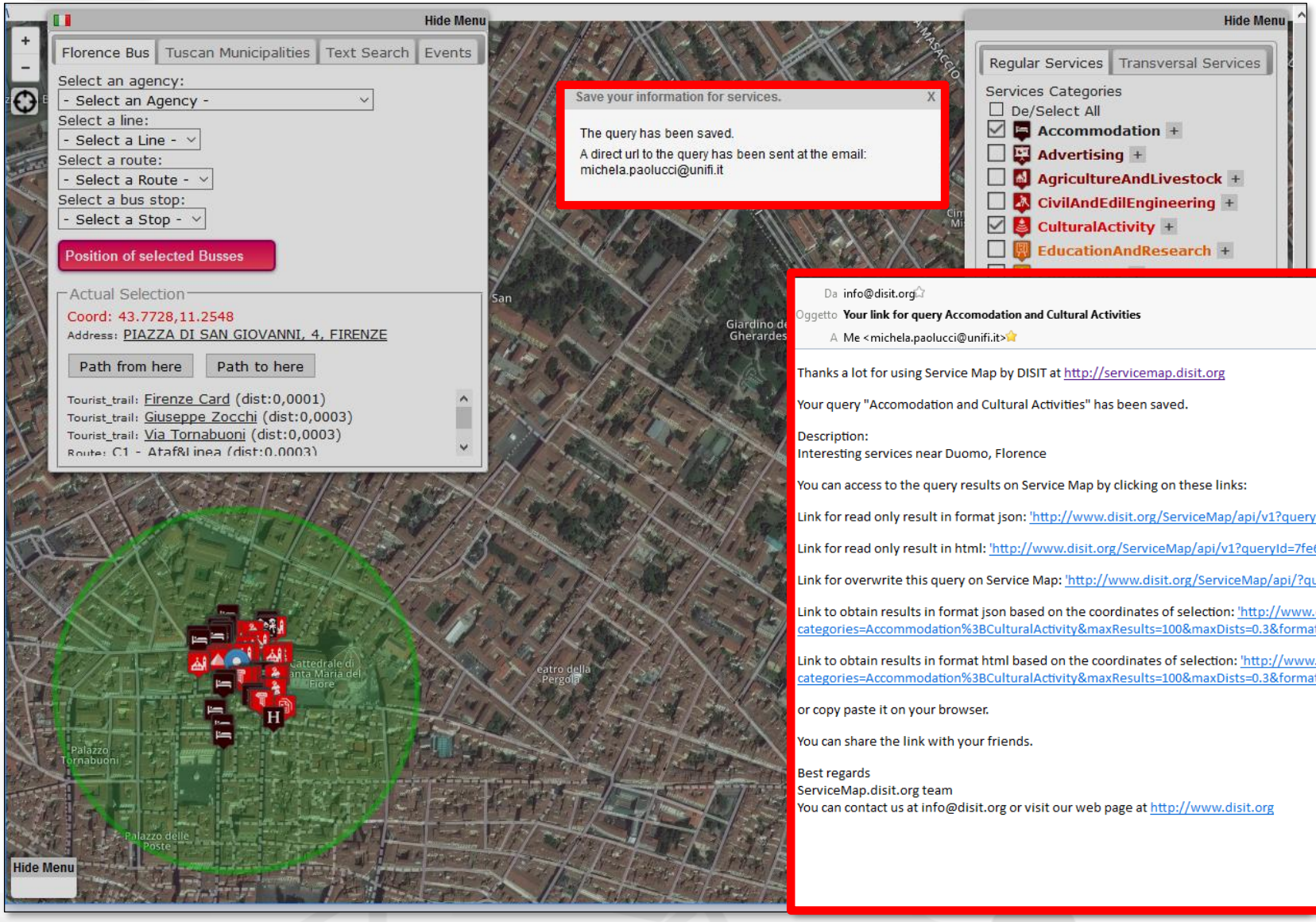


# ServiceMap: search services around a point (1)




- Select one or more categories from Regular Services (you can also use the textual Filter) and make your search
- Click on the save button (**in the tab Regular Services**)
- Complete the form:
  - E-mail
  - Description on your search
- Look at your e-mail
- Use the API received, in your App

# ServiceMap: search services around a point (2)




- Receive the ‘sent e-mail’ message
- Check your e-mail

Da info@disit.org
Oggetto **Your link for query Accomodation and Cultural Activities**
A Me <michela.paolucci@unifi.it>

Rispondi | Inoltra | Archivia | Indesiderata | Elimina | Altro

Thanks a lot for using Service Map by DISIT at http://servicemap.disit.org

Your query "Accomodation and Cultural Activities" has been saved.

Description:
Interesting services near Duomo, Florence

You can access to the query results on Service Map by clicking on these links:

Link for read only result in format json: 'http://www.disit.org/ServiceMap/api/v1?queryId=7fe616b40d19011938a098b7bbe5d471&format=json'

Link for read only result in html: 'http://www.disit.org/ServiceMap/api/v1?queryId=7fe616b40d19011938a098b7bbe5d471&format=html'

Link for overwrite this query on Service Map: 'http://www.disit.org/ServiceMap/api/?queryId=c3b52ec8ceba34963f7796f46901f974'

Link to obtain results in format json based on the coordinates of selection: 'http://www.disit.org/ServiceMap/api/v1?selection=43.7728%3B11.2548&categories=Accommodation%3BCulturalActivity&maxResults=100&maxDists=0.3&format=json'

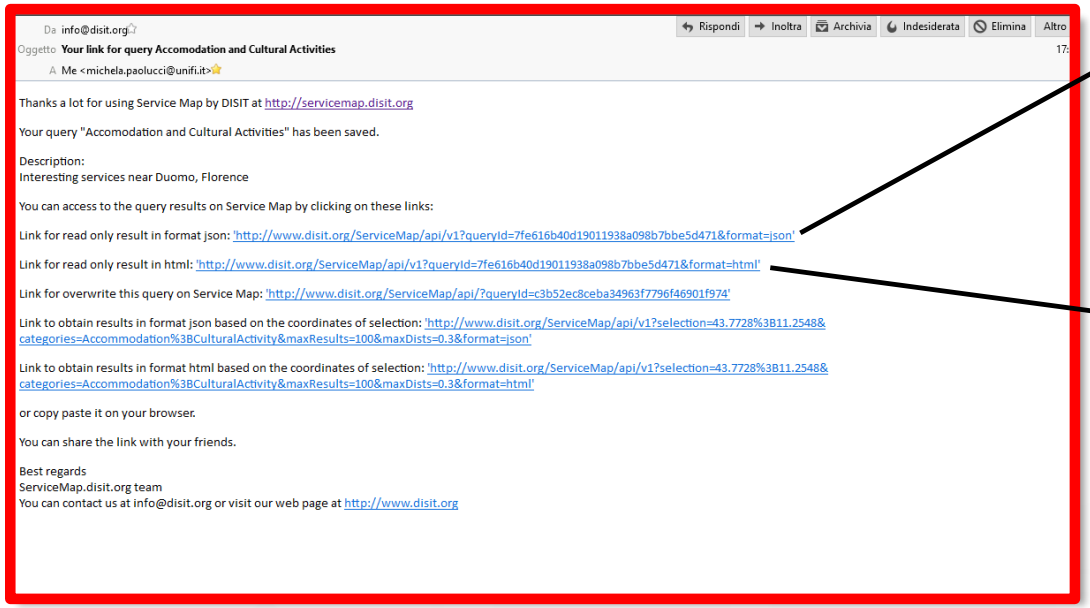
Link to obtain results in format html based on the coordinates of selection: 'http://www.disit.org/ServiceMap/api/v1?selection=43.7728%3B11.2548&categories=Accommodation%3BCulturalActivity&maxResults=100&maxDists=0.3&format=html'

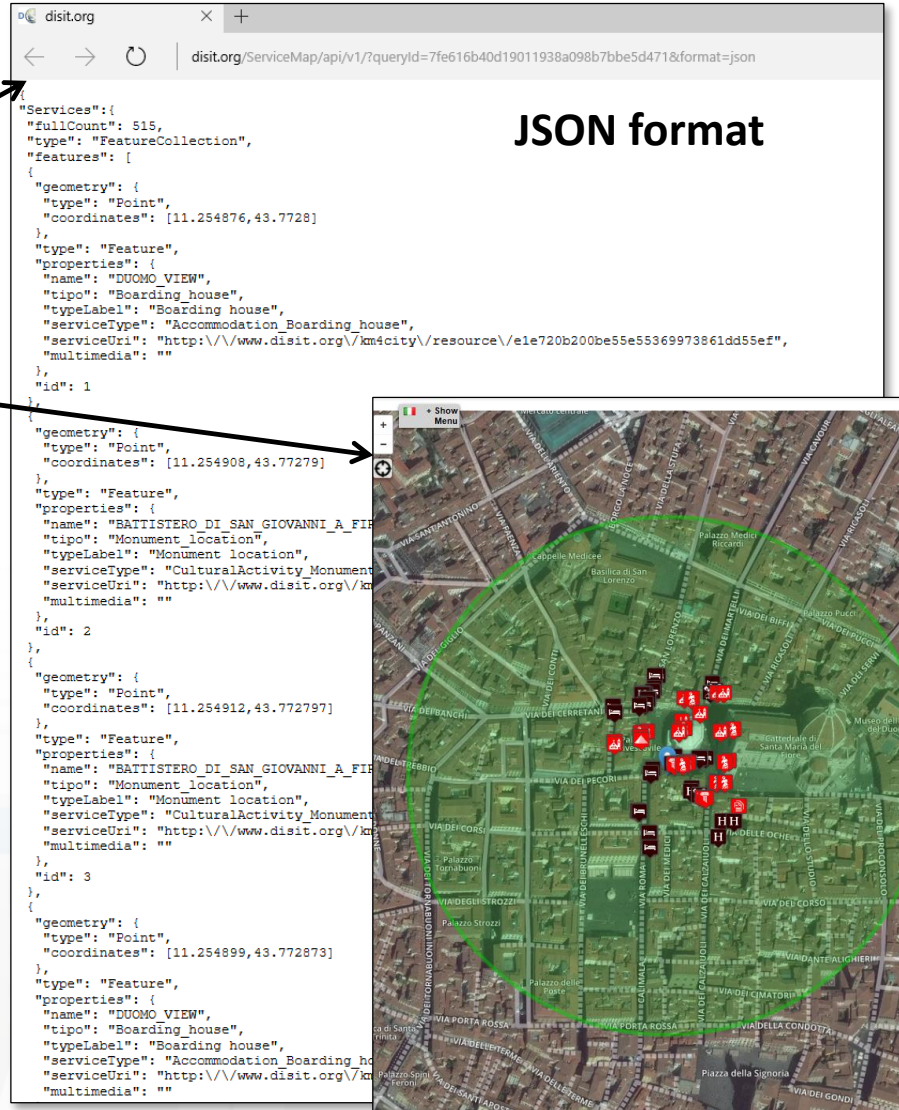
or copy paste it on your browser.

You can share the link with your friends.

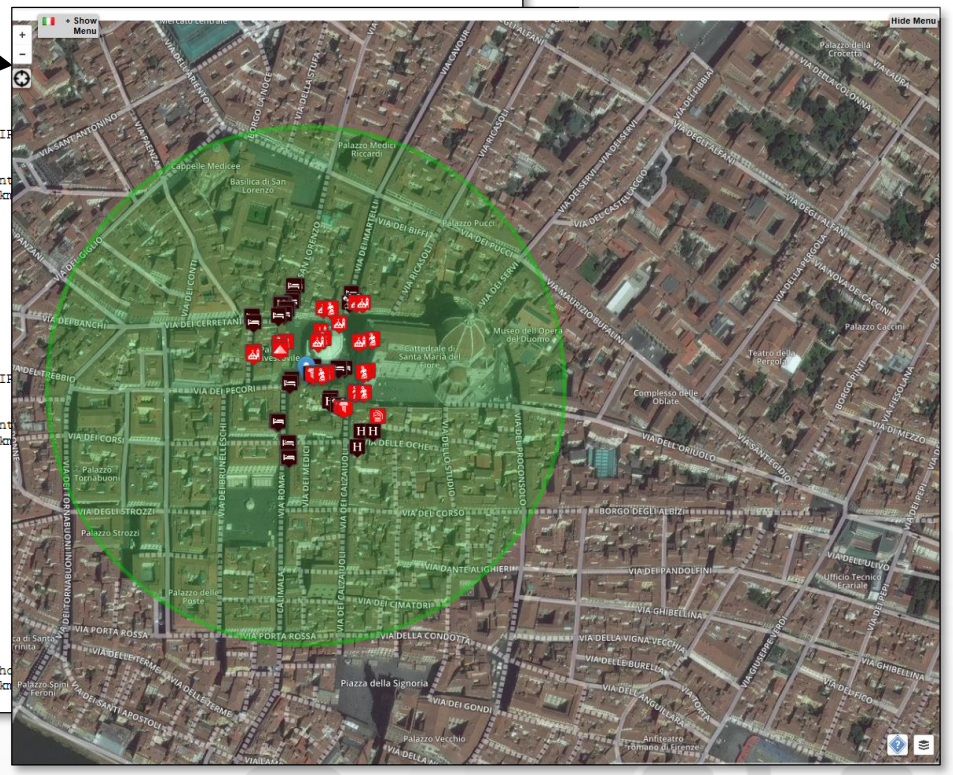
Best regards
ServiceMap.disit.org team
You can contact us at info@disit.org or visit our web page at http://www.disit.org

# ServiceMap: search services around a point (3)



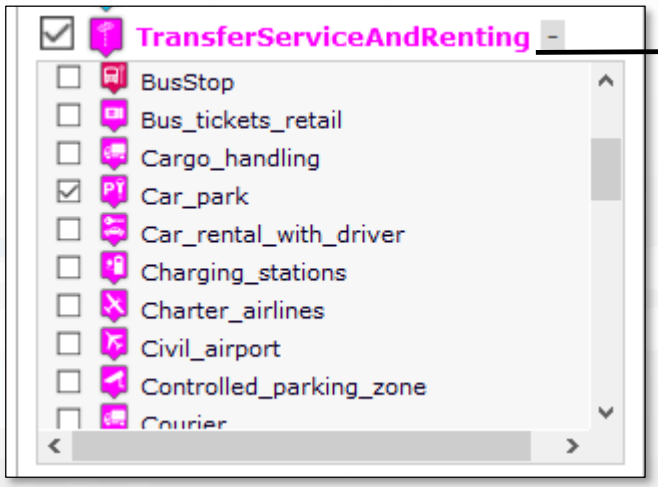

HTML format

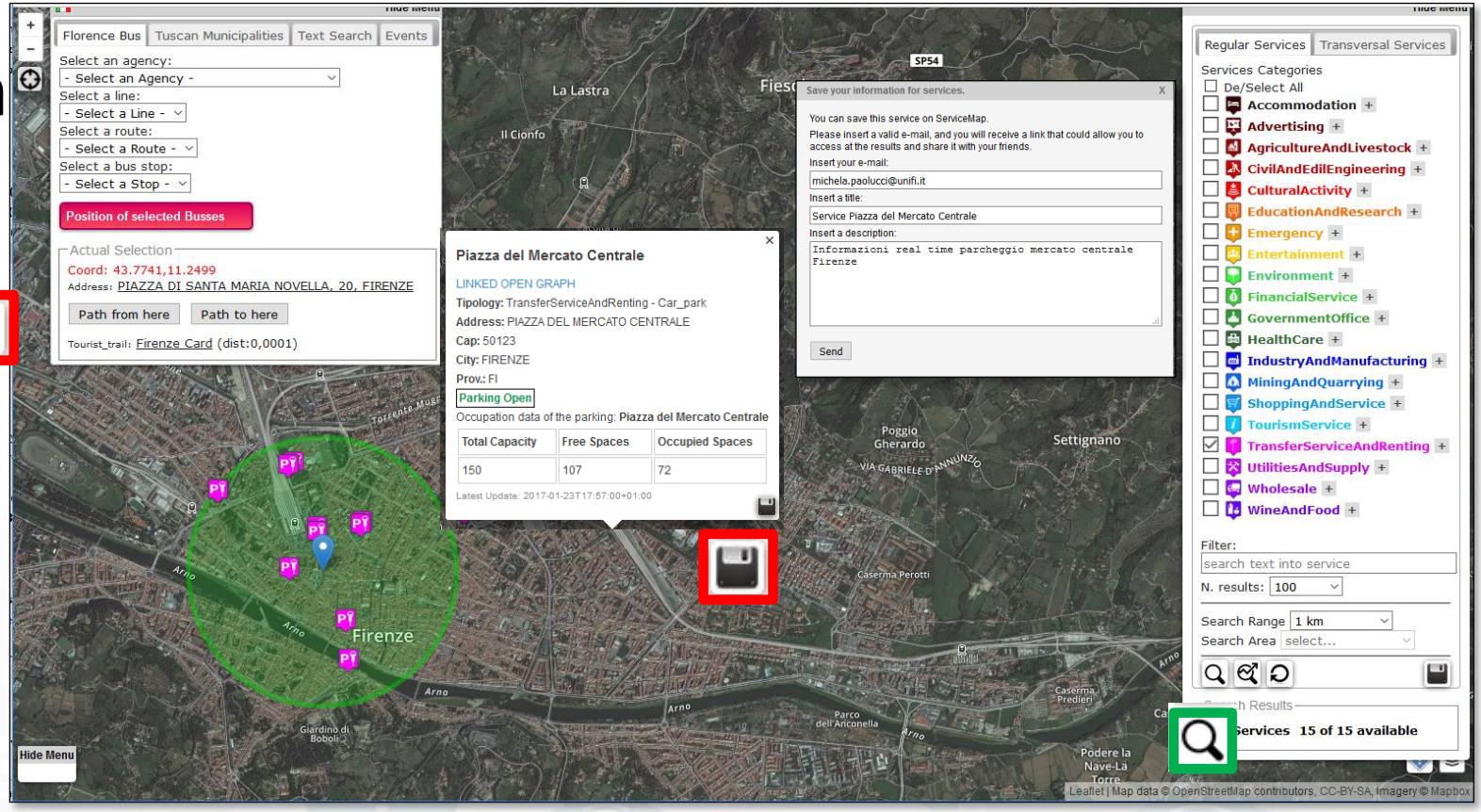



- Follow the links
  - JSON & Html
- Use the API in your APP

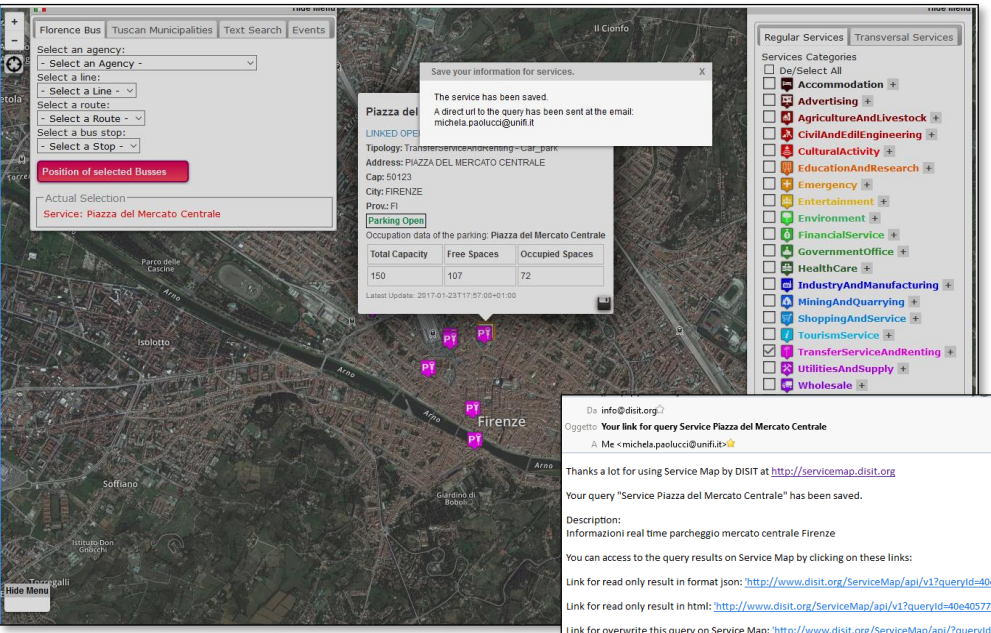
# ServiceMap: Real time Services (a Car Park 1)

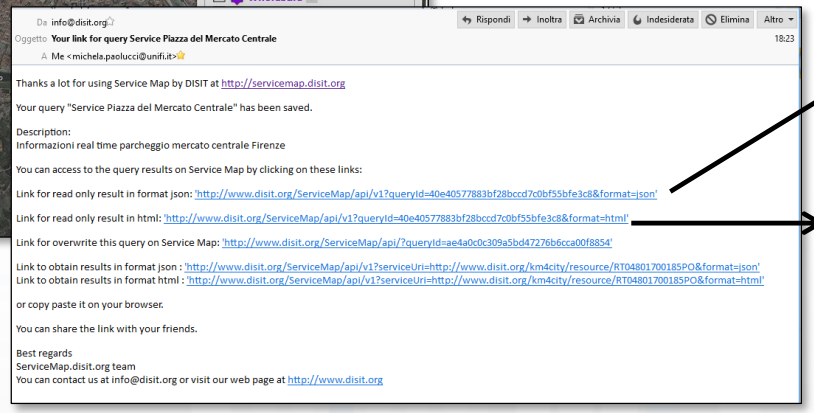
- Select the category ‘TransferServiceAndRenting > Car_park’ from the Regular Services tab
- Click on the search button
- Choose your car park
- Click on the save button
- Complete the form



# ServiceMap: Real time Services (a Car Park 2)



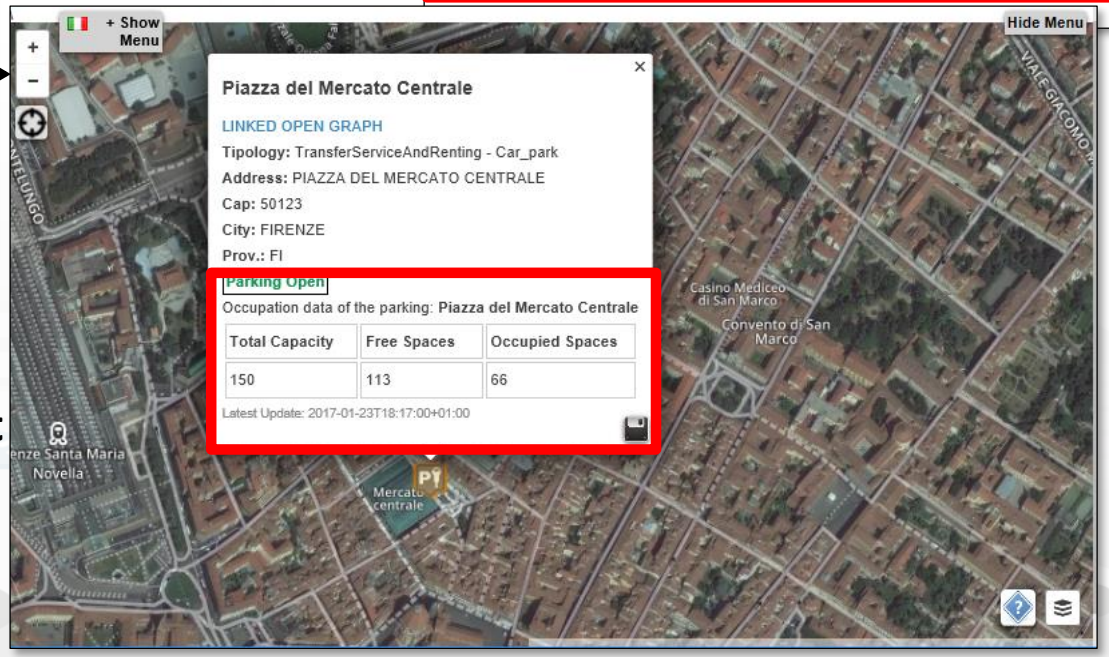




**JSON format**

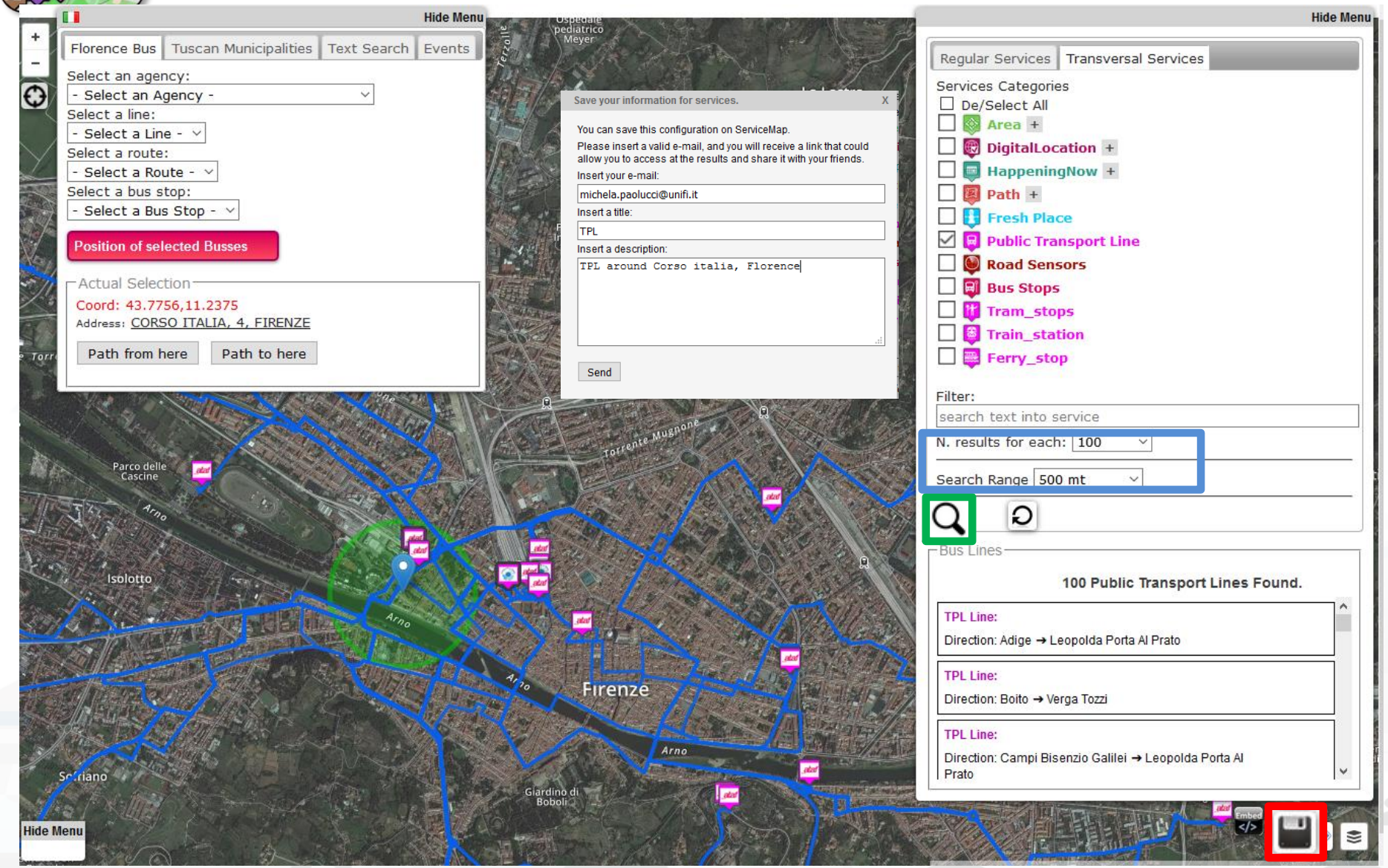

```
{ "Service":
{"type": "FeatureCollection",
"features": [

{  "geometry": {
      "type": "Point",
      "coordinates": [ 11.25372, 43.776573 ]
},
"type": "Feature",
"properties": {
    "name": "Piazza del Mercato Centrale",
    "typeLabel": "Car park",
    "serviceType": "TransferServiceAndRenting_Car_park",
    "phone": "",
    "fax": "",
    "website": "",
    "province": "FI",
    "city": "FIRENZE",
    "cap": "50123",
    "email": "",
    "linkDBpedia": [],
    "note": "",
    "description": "",
    "description2": "",
    "multimedia": "",
    "serviceUri": "http://www.disit.org/km4city/resource/RT04801700185PO",
    "address": "PIAZZA DEL MERCATO CENTRALE", "civic": "",
    "wktGeometry": "",
    "photos": [],
    "photoThumbs": [],
    "photoOrigs": [],
    "avgStars": 0.0,
    "starsCount": 0,
    "comments": []},
"id": 1
}
,"realtime":
{ "head": {"parkingArea":[ "Piazza del Mercato Centrale"],"vars":[ "capacity", "freeParkingLots","
"results": {
"bindings": [
{"capacity": {"value": "150"  },"freeParkingLots": { "value": "113"  },"occupiedParkingLots": {"va
}
]}}}
```


**HTML format**

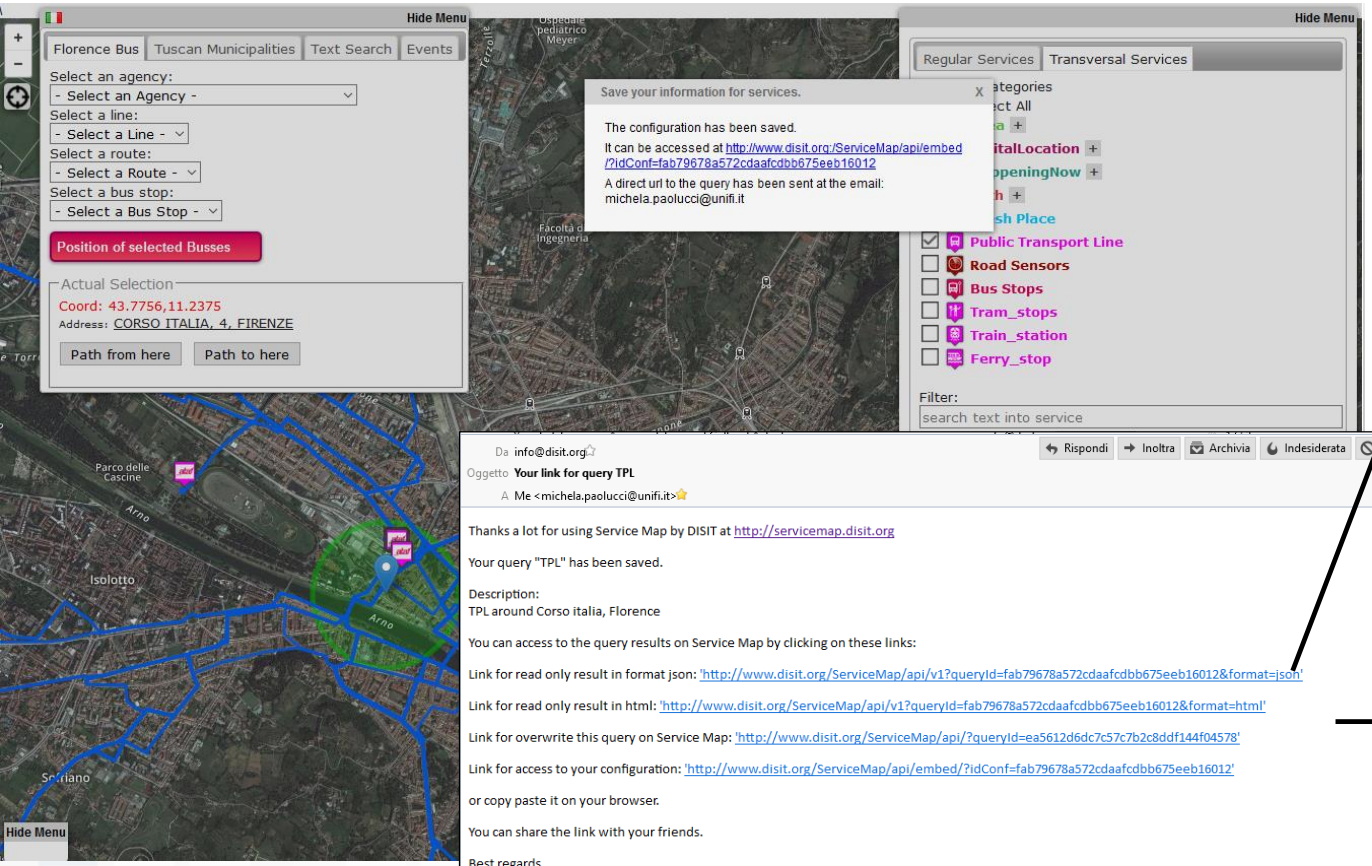


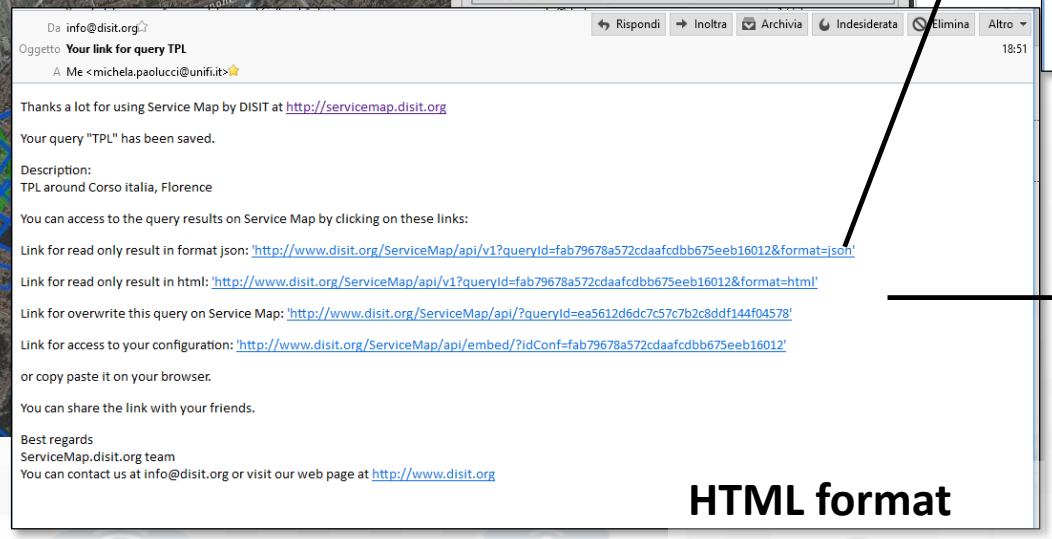
# ServiceMap: TPL (1)




- Select the category ‘Public Transport Line’ from the Transversal Services tab
- Select:
  - Number of results
  - Range
- Click on the search button
- Click on the save button
- Complete the form

# ServiceMap: TPL (2)



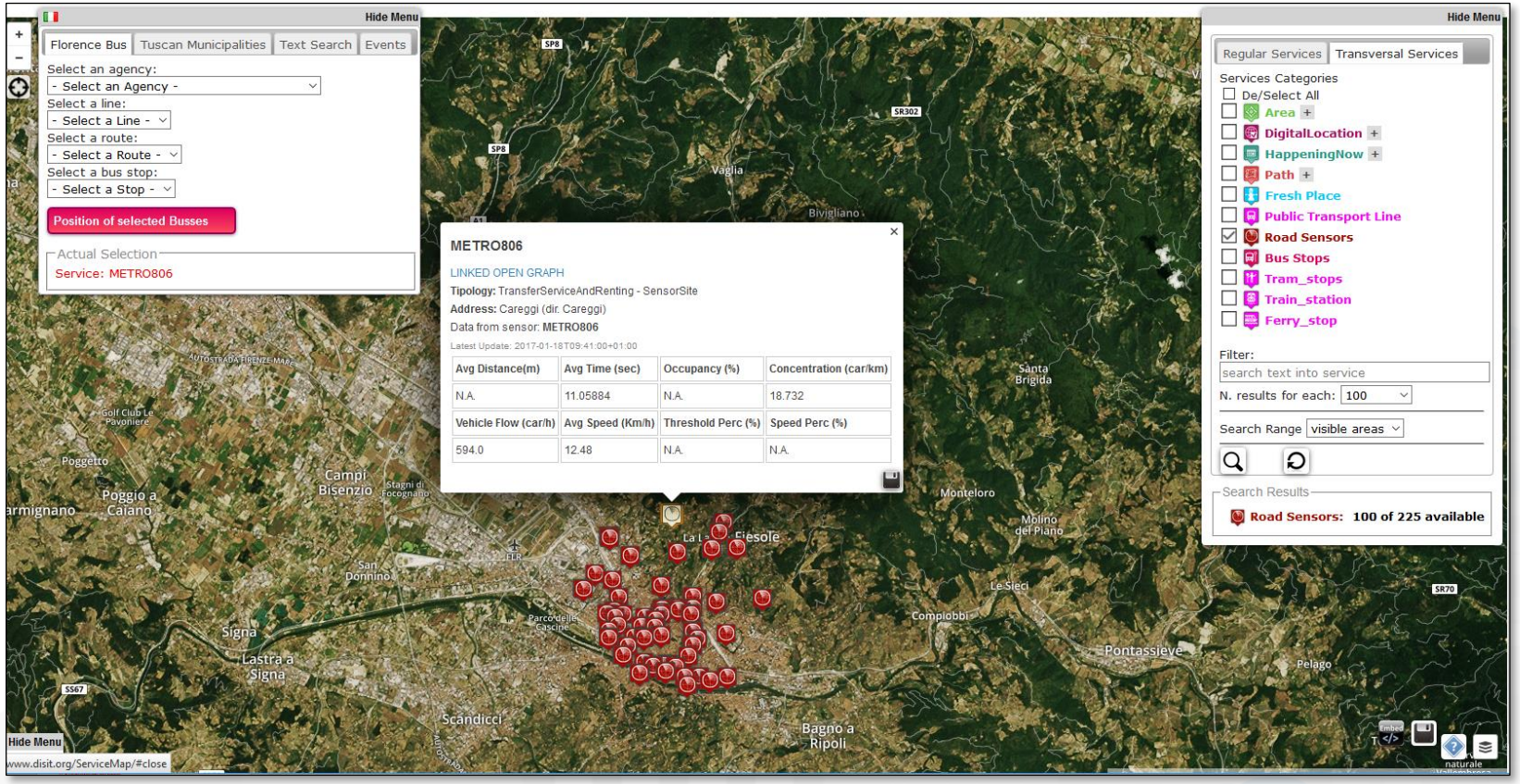




**HTML format**

**JSON format**


```
{
"Services":{
 "fullCount": 30,
 "type": "FeatureCollection",
 "features": [
 {
  "geometry": {
   "type": "Point",
   "coordinates": [11.237404,43.775467]
  },
  "type": "Feature",
  "properties": {
   "name": "STIRERIA DORIS S.R.L. UNIPERSONALE",
   "tipo": "Textile_Manufacturing",
   "typeLabel": "Textile Manufacturing",
   "serviceType": "IndustryAndManufacturing_Textile_manufacturing",
   "serviceUri": "http://www.disit.org/km4city/resource/7243fae3cde1a5fde2c5edccde4bdeaf",
   "multimedia": ""
  },
  "id": 1
 },
 {
  "geometry": {
   "type": "Point",
   "coordinates": [11.237404,43.775467]
  },
  "type": "Feature",
  "properties": {
   "name": "EL-SID S.R.L.",
   "tipo": "Wholesale_Food_Beverages_Tobacco",
   "typeLabel": "Wholesale Food Beverages Tobacco",
   "serviceType": "Wholesale_Wholesale_food_beverages_tobacco",
   "serviceUri": "http://www.disit.org/km4city/resource/02638525fc9c4d84b71601c1366e5435",
   "multimedia": ""
  },
  "id": 2
 },
```

# Search a sensor in a Visible Area, RealTime, Embed (1)




- Select the category ‘Road Sensors’ from the Transversal Services tab
- Search on ‘Visible area’
- Select one Sensor (e.g. Metro806)
- Click on the search button
- Click on the save button
- Complete the form
- Check your e-mail

# Search a sensor in a Visible Area, RealTime, Embed (1)

Da info@disit.org
Oggetto **Your link for query Service METRO806** 19:17
A Me <michela.paolucci@unifi.it>

Rispondi | Inoltra | Archivia | Indesiderata | Elimina | Altro

Thanks a lot for using Service Map by DISIT at http://servicemap.disit.org

Your query "Service METRO806" has been saved.

Description:
Road sensor (Embed modality)

You can access to the query results on Service Map by clicking on these links:

Link for read only result in format json: 'http://www.disit.org/ServiceMap/api/v1?queryId=446b24123abf4483b4df2396276a620c&format=json'

Link for read only result in html: 'http://www.disit.org/ServiceMap/api/v1?queryId=446b24123abf4483b4df2396276a620c&format=html'

Link for overwrite this query on Service Map: 'http://www.disit.org/ServiceMap/api/?queryId=b1f93b1412ceb372734f9cc4d4368266'

Link to obtain results in format json : 'http://www.disit.org/ServiceMap/api/v1?serviceUri=http://www.disit.org/km4city/resource/METRO806&format=json'
Link to obtain results in format html : 'http://www.disit.org/ServiceMap/api/v1?serviceUri=http://www.disit.org/km4city/resource/METRO806&format=html'

or copy paste it on your browser.

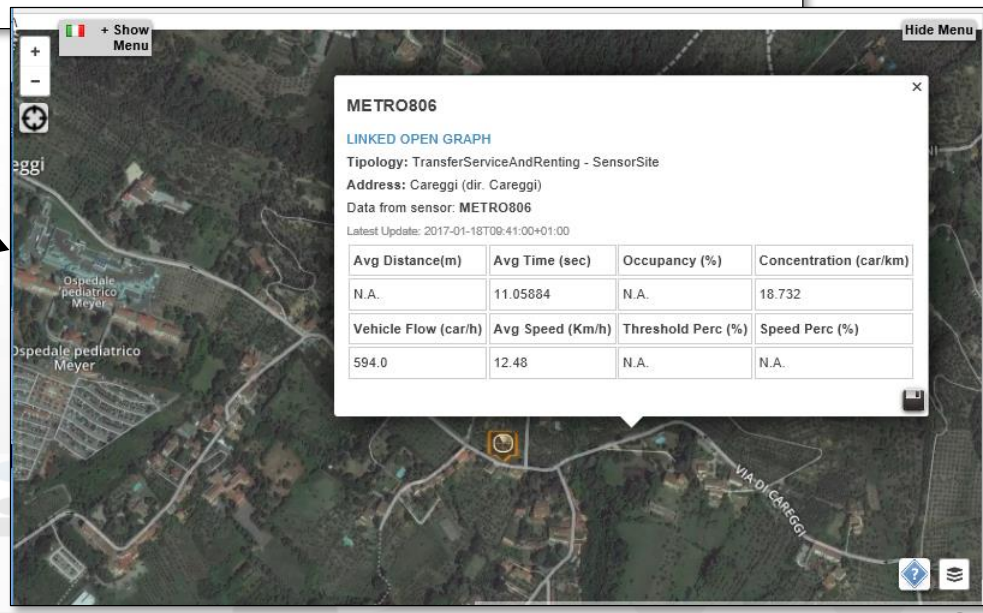
You can share the link with your friends.

Best regards
ServiceMap.disit.org team
You can contact us at info@disit.org or visit our web page at http://www.disit.org

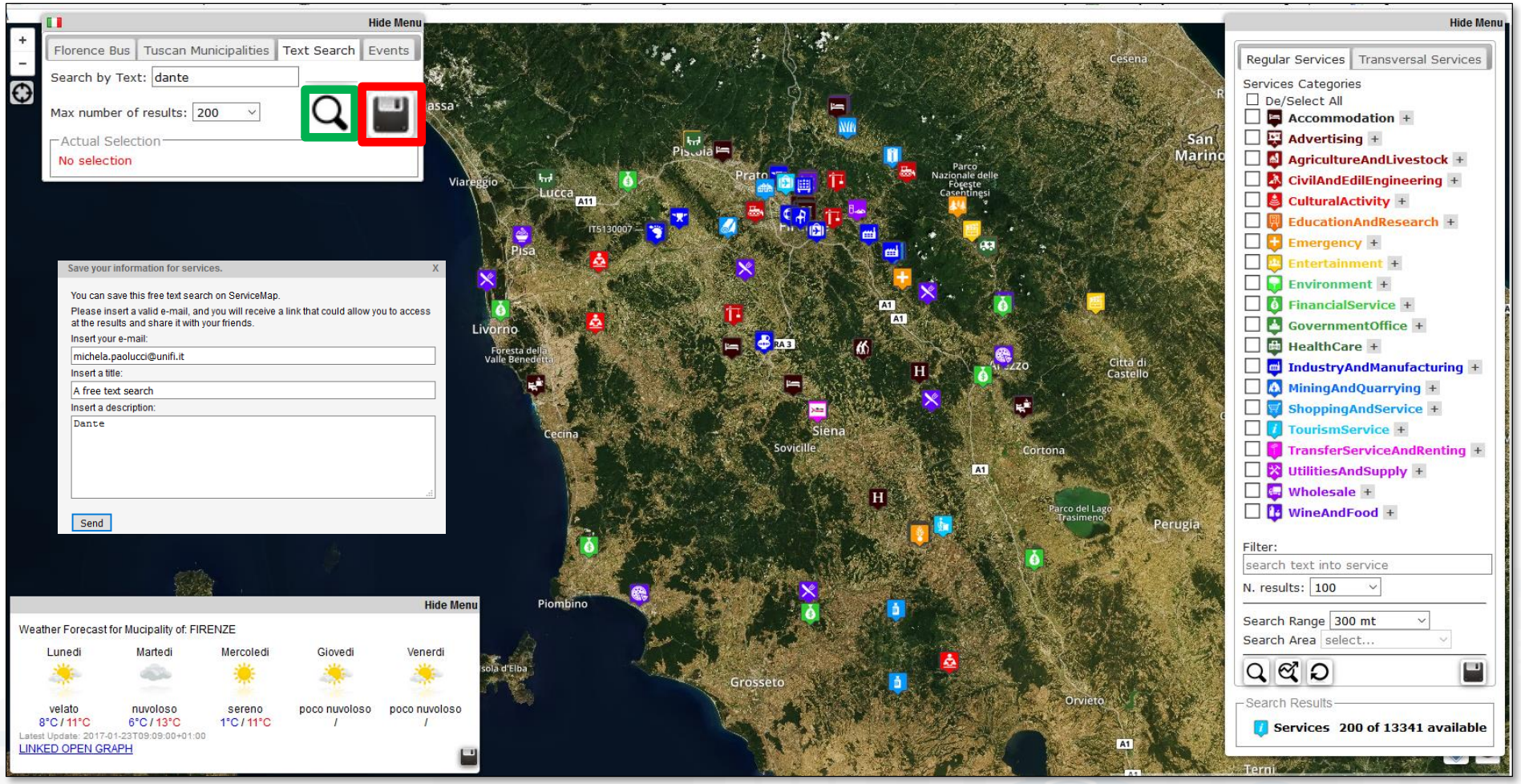
**JSON format**


```
{"Sensor":
{ "type": "FeatureCollection", "features": [
{  "geometry": {       "type": "Point",      "coordinates": [         11.26052,
    "photos": [],
    "photoThumbs": [],
    "photoOrigs": [],
    "avgStars": 0.0,
    "starsCount": 0,
    "comments": []},  "id": 1  }
]}
"realtime":
{ "head": {"sensor":[ "METRO806"],"vars":[ "avgDistance", "avgTime","occupancy","conce
"results": {
"bindings": [
{
"avgDistance": {"type": "literal","value": "Not Available"  },
"avgTime": {"type": "literal","value": "11.05884"  },
"occupancy": {"type": "literal","value": "Not Available"  },
"concentration": {"type": "literal","value": "18.732"  },
"vehicleFlow": {"type": "literal","value": "594.0"  },
"averageSpeed": {"type": "literal","value": "12.48"  },
"thresholdPerc": {"type": "literal","value": "Not Available"  },
"speedPercentile": {"type": "literal","value": "Not Available"  },
"instantTime": {"type": "literal","value": "2017-01-18T09:41:00+01:00"  }
}
]}}
}
```


**HTML format**



# TextSearch: dante (1)




- Write you text in the ‘Text Search tab’
- Click on save and then on the search button
- Complete the form
- Check your e-mail

# TextSearch: dante (2)

Da info@disit.org
Oggetto **Your link for query A free text search**
A Me <michela.paolucci@unifi.it>

Rispondi | Inoltra | Archivia | Indesiderata | Elimina | Altro

19:27

Thanks a lot for using Service Map by DISIT at http://servicemap.disit.org

Your query "A free text search" has been saved.

Description:
Dante

You can access to the query results on Service Map by clicking on these links:

Link for read only result in format json: 'http://localhost:8080/ServiceMap/api/v1?queryId=2506c48481fd6cb5fbc0215eda6fbe6c&format=json'

Link for read only result in html: 'http://localhost:8080/ServiceMap/api/v1?queryId=2506c48481fd6cb5fbc0215eda6fbe6c&format=html'

Link for overwrite this query on Service Map: 'http://localhost:8080/ServiceMap/api/?queryId=e2ec36a010916634bdca8c4900694ac8'

Link to obtain results in format json : 'http://localhost:8080/ServiceMap/api/v1?search=dante&selection=&limit=100&format=json'
Link to obtain results in format html : 'http://localhost:8080/ServiceMap/api/v1?search=dante&limit=100&format=html'

or copy paste it on your browser.

You can share the link with your friends.

Best regards
ServiceMap.disit.org team
You can contact us at info@disit.org or visit our web page at http://www.disit.org

**JSON format**


```
{
 "fullCount": 13402,
 "type": "FeatureCollection",
 "features": [
 {
  "geometry":{
   "type": "Point",
   "coordinates": [11.2981,43.333]
  },
  "type": "Feature",
  "properties": {
  "serviceUri": "http://www.disit.org/km4city/resource/Bus_sienamobilita_Stop_S0083_13",
  "name": "Dante 3",
  "tipo": "servizio",
  "photoThumbs": [],
  "multimedia": "",
  "civic": ""
  ,"serviceType": "TransferServiceAndRenting_BusStop"
  ,"typeLabel": "Bus Stop"
  ,"busLines": "0S5 - 0S9 - 572 - 60N - S37 - S77"
  ,"agency": "Siena Mobilità"
  ,"agencyUri": "http://www.disit.org/km4city/resource/Bus_sienamobilita_Agency_167"
  },
 "id": 1
 }
,  {
  "geometry":{
   "type": "Point",
   "coordinates": [11.2965,43.3309]
  },
  "type": "Feature",
  "properties": {
  "serviceUri": "http://www.disit.org/km4city/
  "name": "Dante",
  "tipo": "servizio",
  "photoThumbs": [],
  "multimedia": "",
  "civic": ""
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  ,"typeLabel": "Bus Stop"
  ,"busLines": "0S5 - 0S9 - 572 - 60N - S37 -
  ,"agency": "Siena Mobilità"
  ,"agencyUri": "http://www.disit.org/km4city/
  },
 "id": 2
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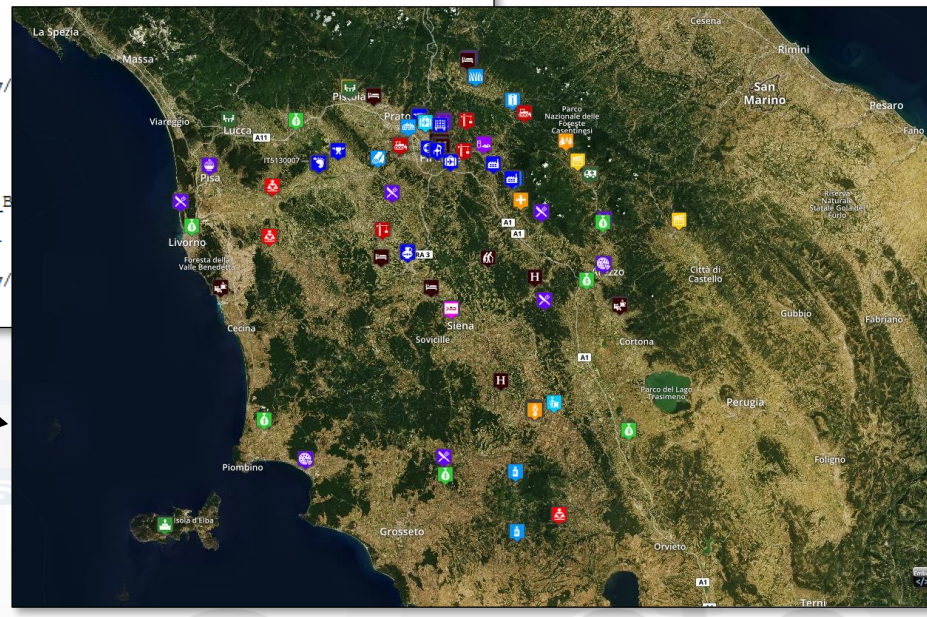
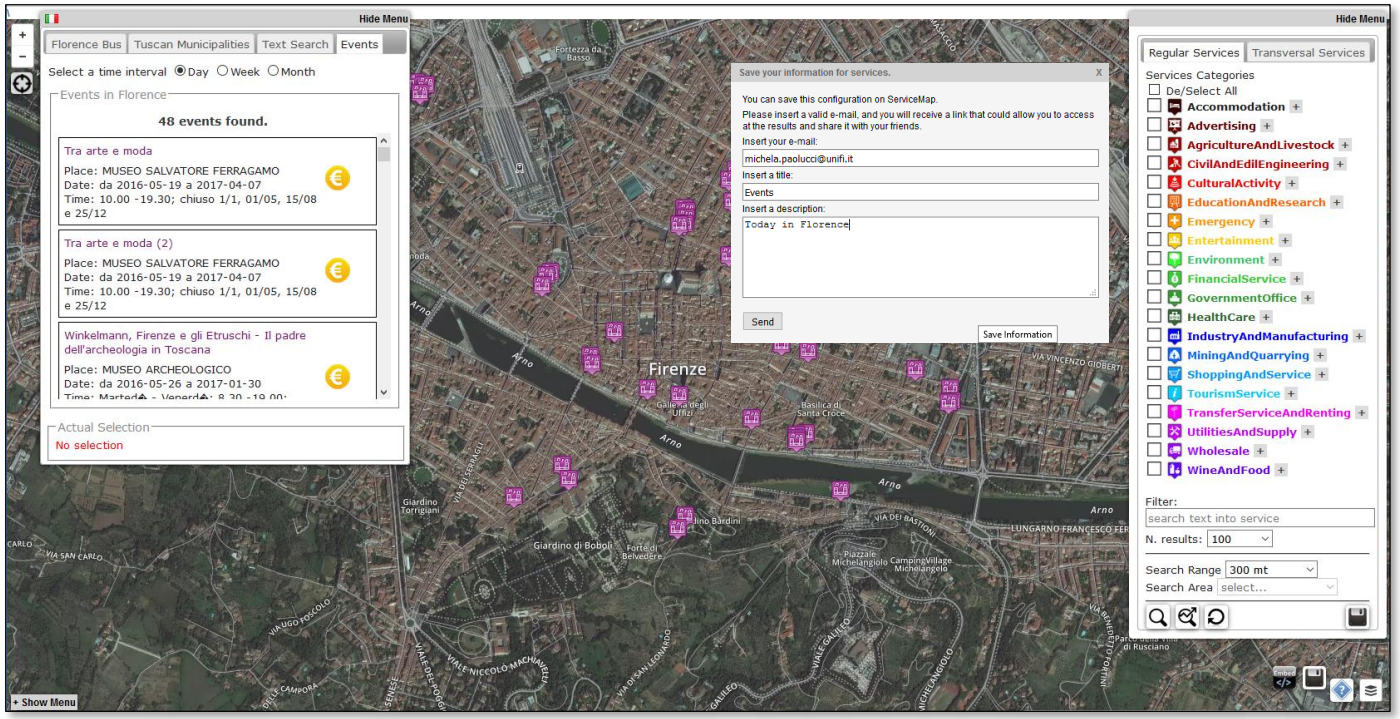
**HTML format**



# Events (1)




## JSON format


```
{ "Event":{"type": "FeatureCollection", "features": [
{ "geometry": {      "type": "Point",      "coordinates": [       11.251058,       43.769848   ] },"type": "Feature",  "properties": {
{ "geometry": {      "type": "Point",      "coordinates": [       11.251058,       43.769848   ] },"type": "Feature",  "properties": {
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{ "geometry": {      "type": "Point",      "coordinates": [       11.249968,       43.765274   ] },"type": "Feature",  "properties": {
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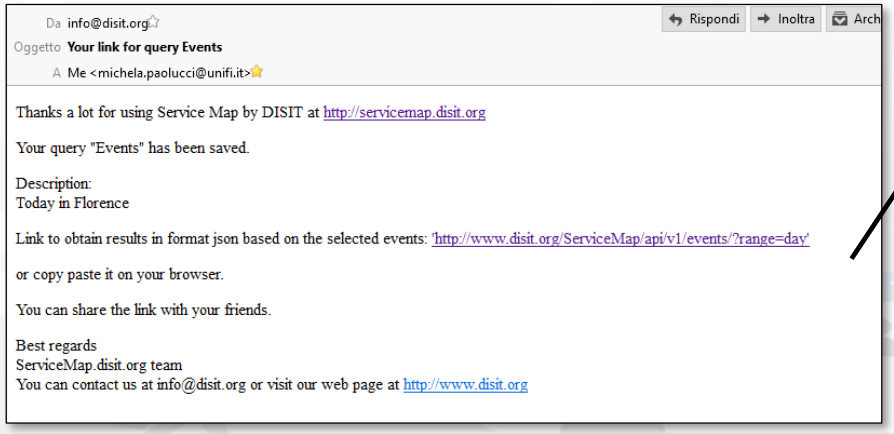
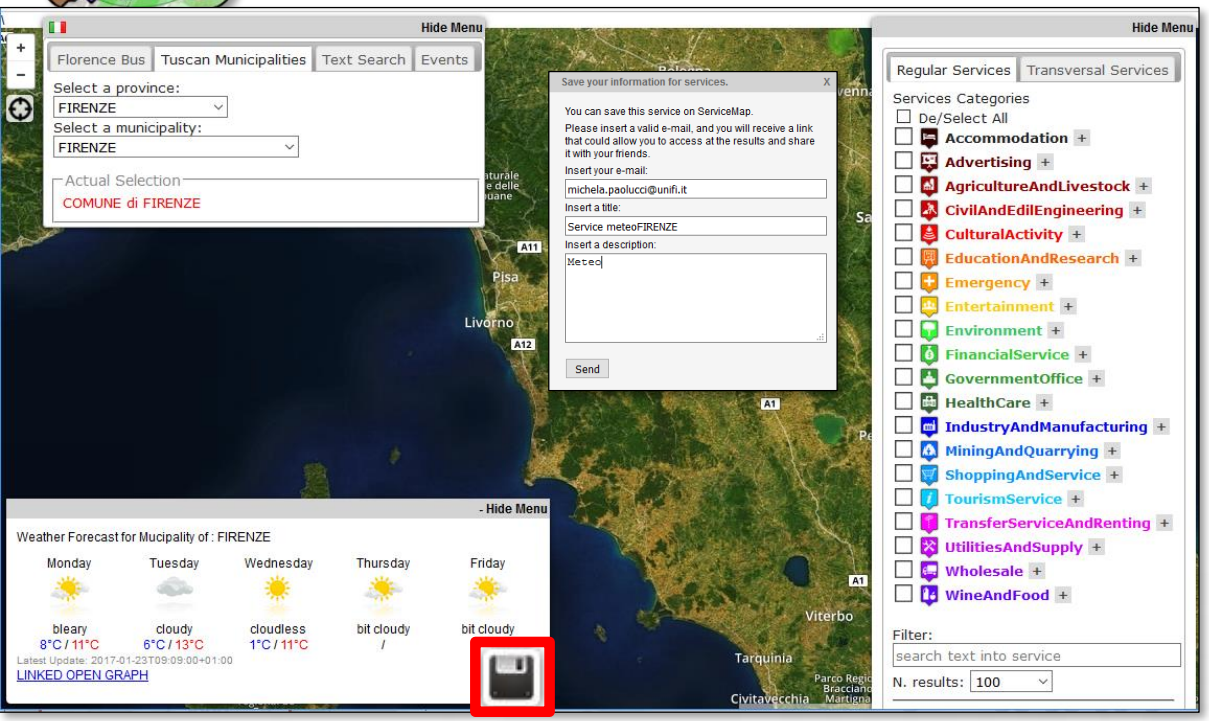
```


- Search events
  - Day
  - Week
  - Month



# Meteo




## JSON format


```
{ "head": {"location": "FIRENZE","vars":[ "day", "description","minTemp","maxTemp","instantDateTime"]},
"results": {
"bindings": [
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,
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,
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,
{"day": {"type": "literal","value": "Giovedi"  },"description": { "type": "literal","value": "poco nuvoloso"  },"minTemp": {"
,
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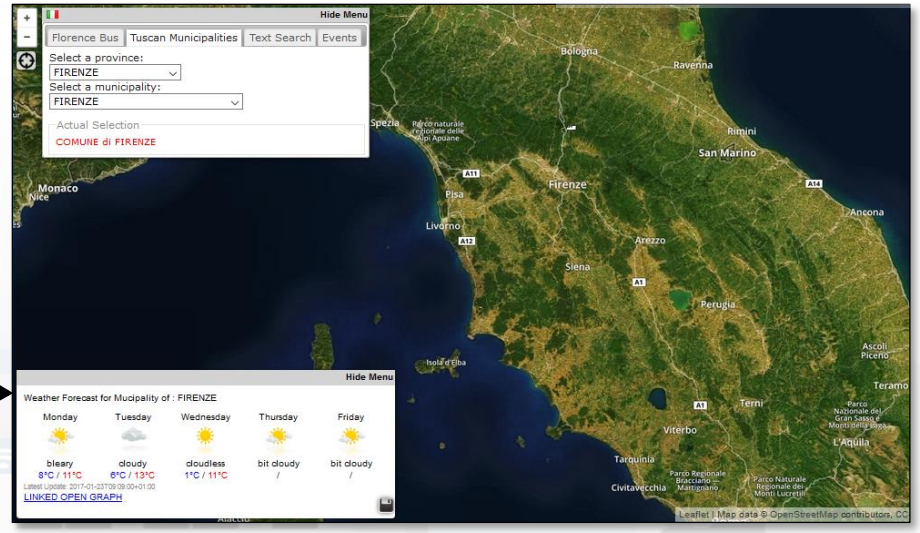
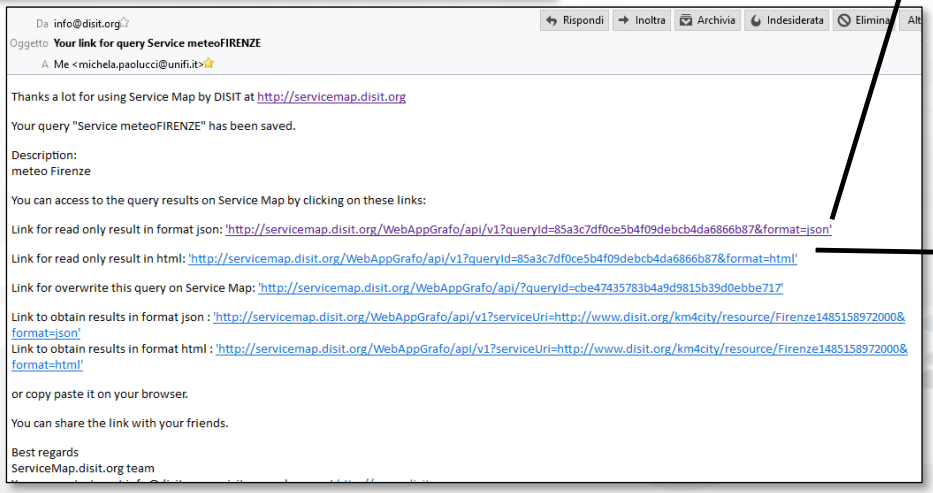
]}}
```


## HTML format




- Select the locality (one on the Tuscan Municipalities)

# Documentation

- **Documentation Smart City API, version 1, January 2017**
  - http://www.disit.org/6991 (document from Sii-Mobility)
- **App Kit development page:**
  - http://www.disit.org/6977 (slides ready, and video to appear)
- **Ontology and Km4City Tools:**
  - Http://www.km4city.org
  - http://www.disit.org/6506 Ontology and documentation
- **Sii-Mobility is Open Source on GitHub as DISIT lab:**
  - https://github.com/disit
  - https://github.com/disit/siiMobilityAppKit (mobile App kit)
- **Data Ingestion processes and tools, tutorial:**
  - http://www.sii-mobility.org/index.php/documentazione/slide-e-altro
  - http://www.disit.org/6690
- **Deliverables of Sii-Mobility:**
  - http://www.sii-mobility.org/index.php/documentazione/deliverable
- **FAQ of Sii-Mobility:**
  - http://www.sii-mobility.org/index.php/il-progetto/faq
- **Promotional Kit for «Toscana dove cosa App»**
  - http://www.sii-mobility.org/index.php/documentazione/kit-promozionale-app-toscana

# Open Source

**Km4City, Sii-Mobility, RESOLUTE, REPLICATE: smart city big data open source tools. Km4City is a knowledge base and a research line of DISIT lab mainly developed before the start of Sii-Mobility, RESOLUTE, REPLICATE projects. While it has been mainly improved by them. Those projects are complementar each other and almost all of them use and contribute the Km4City research line.ServiceMap smart city knowledge base tool**: smart city service tool (mainly developed for Sii-Mobility project) for accessing to km4city knowledge base, for service browsing and query, for **Smart City API** for mobile and for mobile development tool, http://www.disit.org/km4city

- **Km4City ontology model and files** are accessible from http://www.disit.org/km4city improved with the support of projects as Sii-mobility, REPLICATE and RESOLUTE
- **SCE, Smart City/Cloud Engine front end interface,** SCE is part of DISCES a Distributed SCE Scheduler Tools (SCE: Smart City/Cloud Engine), a DISIT tool for smart environments. It is currently in use in Km4City tools, and in ICARO Cloud project and service, see CLOUD page. Developed for ICARO, and then improved for Sii-Mobility, and used in many other projects
- **SCE, Smart City/Cloud Engine backend,** SCE is part of DISCES a Distributed SCE Scheduler Tools (SCE: Smart City/Cloud Engine), a DISIT tool for smart environments. It is currently in use in Km4City tools, and in ICARO Cloud project and service, see CLOUD page. Developed for ICARO, and then improved for Sii-Mobility, and used in many other projects
- **DIM-RIM**: Data Ingestion Manager and RDF Indexing Manager, WEB page on DISIT lab with user manuals, DIM and RIM area used in Km4City and tools, Sii-Mobility smart city national SCN project, RESOLUTE H2020
- **Dashboard Builder and executo**r: a tool for creating dashboard for smart city. See Km4City example of dashboard as reported in http://www.km4city.org/controlroomtools.html for the documentation see http://www.disit.org/6935 which is manual with examples regarding widgets. Developed for REPLICATE Project, and used in others as Sii-Mobility, RESOLUTE.
- **Sii-Mobility Dev Kit Mobile AppKm4city**: Open Source version of the Sii-Mobility mobile and web app, open modular (the full version is operative and accessible on all stores as "Firenze dove cosa", or " Toscana dove cosa", you can install from http://www.km4city.org/app ). Developed for Sii-Mobility, adopted for the training and development meeting of the 24 January 2017, and as a basis for the Hackathon of 7-8 April 2017 in Florence.

# Acknowledgement


- Thanks to the European Commission for founding. All slides reporting logo of **RESOLUTE H2020** are representing tools and research founded by European Commission for the RESOLUTE project. **RESOLUTE** has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement n° 653460).
- Thanks to the European Commission for founding. All slides reporting logo of **REPLICATE H2020** are representing tools and research founded by European Commission for the REPLICATE project. **REPLICATE** has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement n° 691735).
- Thanks to the MIUR for co-founding and to the University of Florence and companies involved. All slides reporting logo of **Sii-Mobility** are representing tools and research founded by MIUR for the Sii-Mobility SCN MIUR project.
- **Km4City** is an open technology exploited by those projects and line of research of DISIT Lab. Some of the innovative solutions and research issues developed into the above mentioned projects are also compliant and contributing to the Km4City approach and thus are contributing to the open Km4City model of DISIT lab.

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Sii-Mobility

# Workshop App Development: ServiceMap


http://www.sii-mobility.org

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