

Emerald 5

**FCC Form 477 - Census Tract
MapPoint Address Geocoder
Emerald v5 Add-On**



**Emerald Management Suite
IEA Software, Inc.**

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Introduction

Emerald v5 add-on feature provides for geocoding existing MBR or service address to determine latitude and longitude. This is accomplished by forwarding customer address information to Microsoft MapPoint software via provided “emergeo” proxy application.

Once customer is located a geographic query is performed within Emerald to match location to US Census Tract boundary for FCC form 477 reporting.

All information latitude/longitude and census tract are displayed in custom data fields at the MBR level.

Mapping configuration is provided to map Emerald service type with broadband access technology, speed tiers and business or residential customer as defined within FCC form 477.

An exception report, summary and csv formatted exports for detail upload to FCC website is included.

System Requirements

- Emerald 5.0.79 or later
- Microsoft MapPoint version 2010 or later
- .NET Framework
- Microsoft SQL Server (Oracle not supported at this time)

Installation

Database installation

From within SQL Management studio open a new query. Change the query tool so that queries are run against the Emerald database. Next open and run layers.sql followed by geo.sql provided by IEA support. If upgrading from previous version of this add-on feature run only geo.sql included with the current web.zip file. **Please note when geo.sql is run ALL preexisting FCC477 service type mapping data will be LOST and shall have to be manually reconfigured** from Emerald Admin / Services / FCC477 Services.

Each script must run exactly once. Avoid running the script a second time or errors will be produced. Do not attempt to run these scripts from the Emerald / Database / SQL Query menu. Once both queries have been run from the Emerald Admin menu click ‘Apply’ so that all changes take effect.

Census tract dataset

To load the census tract dataset into Emerald download geographic import utility from <http://www.iea-software.com/ftp/emeraldv5/geo2/geoimport.exe> to a folder on the Emerald server.

Next from <http://www.iea-software.com/ftp/emeraldv5/geo2/census/> download census tract .zip archives corresponding to any US states you need to report FCC form 477 data into the same folder as above.

Unzip all archives downloaded from step above. From Windows command prompt run 'geoimport *.geo' to load downloaded dataset(s).

```
C:\Program Files\Emerald>geoimport.exe *.geo
Geographic Import version 1.0.1 Copyright (c) 2012-2013 IEA Software, Inc.

Processing file census_tract_HA.geo (1 of 1)
Layer Name: US Census Tract
Sublayer Name: census_tract_HA
Clearing sublayer.....
Import completed: Shapes 1458 of 1458, Points 1742948 of 1742948
```

Mappoint Geocoder (emergeo)

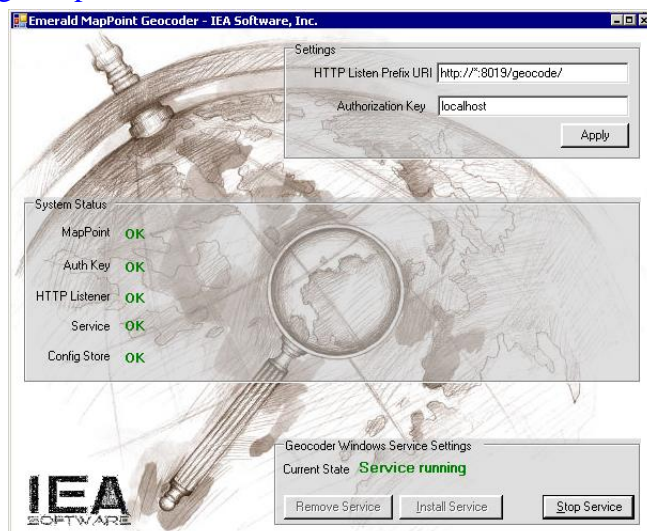
Prior to installing emergeo Microsoft MapPoint software must be installed. MapPoint may be installed on the Emerald server or a system accessible from the Emerald server. Emergeo is always installed on the computer where MapPoint is located.

Emergeo runs as a windows service under a user rather than system account. If necessary create a local windows user account for Emergeo. Before proceeding login to the system using this account and run MapPoint. The MapPoint end user license agreement must be accepted interactively from the user account otherwise Emergeo will not be able to access MapPoint.

Once user account is determined create a folder where emergeo application is to be stored. Within this folder unzip emergeo.zip archive from <http://www.iea-software.com/ftp/emeraldv5/geo2/emergeo.zip>

Run emergeo -config this loads interactive menu allowing configuration and review of current status.

Within configuration menu set an authorization key and check to make sure the HTTP listen port is not



blocked by any host or network based firewalls. The authorization key is a password needed for emergeo to respond to an incoming geocoding request. This key will later be entered into Emerald to establish communication.

Choose Install service entering credentials for a user account under which the geocoder will run as a windows service.

When all fields show green “OK” exit the emergeo application. Emergeo is successfully installed.

Emerald server changes

Unzip the archive <http://www.iea-software.com/ftp/emeraldv5/geo2/web.zip> to Emerald\web folder on the Emerald server. When uncompressing files be sure the directory structure is preserved. The following files will be unarchived.

Emerald\web\fcc477_fbd.ews
Emerald\web\fcc477_fbs.ews
Emerald\web\fcc477_fvs.ews
Emerald\web\geocode.ews
Emerald\web\admin\RegFCC477AccountTypes-edit.ews
Emerald\web\admin\RegFCC477AccountTypes-update.ews
Emerald\web\reports\geo_exception.ews
Emerald\web\reports\geo_summary.ews

Configuration

Emerald configuration

Service type mapping

Within Emerald MBR custom data fields and service to FCC mappings will be configured.

Login to Emerald as an administrator.

Admin Services Menu

Service Types Custom Data External Systems Package Types FCC477 Services

Configure FCC form 477 broadband categories

Service Type	Broadband Tech	Download Mbps	Upload Mbps	Residential	Voice Tech	Voice Transport
DSL	Asymmetric xDSL	14	4	Yes	VoIP	Copper
EMail	N/A (Not broadband)			Yes	N/A (Not Voice)	N/A or Over-the-top
ISDN	Other Copper Wireline	0.2010	0.2010	Yes	N/A (Not Voice)	N/A or Over-the-top
PPP	Other Copper Wireline	0.5120	0.5120	Yes	N/A (Not Voice)	N/A or Over-the-top
Wireless	Terrestrial Fixed Wireless	20	10	Yes	N/A (Not Voice)	N/A or Over-the-top

Update

From Emerald / Admin / Services / FCC 477 Services configure broadband access technology, download, upload and residential fields for each broadband service type. For Voice services set Voice technology and Voice Transport.

MBR Custom Data

Next from Emerald Admin / General / MBR Custom Data field menu add fields latitude, longitude and geocode msg to allow operators to manually enter coordinates by editing MBR if necessary.

New Field

MBR Custom Data Fields					
ID	Group	Field Name	Required	Sort Order	
1	All	Latitude	No	0	Delete
2	All	Longitude	No	0	Delete
3	All	Geocode Msg	No	0	Delete

Service Address

If there are instances where service address for FCC 477 reporting is different from the MBR Address from the Emerald Admin / General / Address Types menu create an address type with a label of 'Service Address'. Any MBR with an additional address field having this type shall be used instead of the MBR Address.

Emerald geocoder scheduling

Address geocoding and census tract matching are performed at regular intervals from Emerald scheduler. Two scheduled tasks are configured to apply incremental and full geocoding of address information.

To setup incremental geocoding From Emerald Admin / Scheduler / Configure Schedules menu create a new task configured as follows:

Field	Value
Task Type	'EWS'
Parameter	file=geocode.ews,url=http://myserver:8019/geocode,authkey=mykey,layer=US

	<p>Census Tract,Partial=1</p> <p>Note: 'myserver' is replaced with the address of the system running emergeo. 'mykey' is replaced with the authorization key configured within emergeo.</p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Description</th></tr> </thead> <tbody> <tr> <td>File</td><td>EWS template to process 'geocode.ews'</td></tr> <tr> <td>URL</td><td>URL pointing to address and port of the Emerald MapPoint Geocoder proxy (Emergeo) 'http://myserver:8019/geocode'</td></tr> <tr> <td>AuthKey</td><td>Authorization key configured within Emergeo required to accept geocoding requests</td></tr> <tr> <td>Layer</td><td>Name of the census tract layer to search for Tract and County 'US Census Tract'.</td></tr> <tr> <td>Partial</td><td> <p>When "1" only partial geocoding is performed for only those MBRs missing position or census tract data. This is the normal mode intended to run regularly in intervals of minutes to hours.</p> <p>When "0" geocoding and census tract lookup is performed for all MBRs. This option allows global changes such as a change of the layer, individual MBRs to be reflected in geocode results. This is intended to run on regular intervals of days to weeks.</p> </td></tr> </tbody> </table>	Parameter	Description	File	EWS template to process 'geocode.ews'	URL	URL pointing to address and port of the Emerald MapPoint Geocoder proxy (Emergeo) 'http://myserver:8019/geocode'	AuthKey	Authorization key configured within Emergeo required to accept geocoding requests	Layer	Name of the census tract layer to search for Tract and County 'US Census Tract'.	Partial	<p>When "1" only partial geocoding is performed for only those MBRs missing position or census tract data. This is the normal mode intended to run regularly in intervals of minutes to hours.</p> <p>When "0" geocoding and census tract lookup is performed for all MBRs. This option allows global changes such as a change of the layer, individual MBRs to be reflected in geocode results. This is intended to run on regular intervals of days to weeks.</p>
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Description	Geocode and match census tracts (incremental)												
Run Interval	1 hour												

Once completed create a second task to perform full geocoding on daily or weekly basis as follows:

Field	Value
Task Type	'EWS'
Parameter	file=geocode.ews,url=http://myserver:8019/geocode,authkey=mykey,layer=US Census Tract,Partial=0
Description	Geocode and match census tracts (full)

Run Interval	1 week
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Reporting

Following reports options are available.

Geocoder Exceptions

Accessed from Emerald Client / Reports / Custom Reports / General / Geocoder Exceptions. This report lists any problems with the geocoded data such as accounts not yet having been geocoded, missing configuration or processing errors. For accurate results it is recommended the exception report be checked and any issues resolved before generating reports for FCC 477 reporting.

FCC 477 Summary

Accessed from Emerald Client / Reports / Custom Reports / General / FCC 477 Summary. Report provides informational summary by county and by state for each broadband technology and data rate.

FCC Form 477 - Fixed Broadband Deployment data file helper

Accessed from Emerald Client / Reports / FCC477 Net Deploy menu option. When selected a form and instructions are presented to assist in generating csv file formatted for upload to FCC website. This form requires import of external service area mapping data at census block level.

FCC Form 477 - Fixed Broadband Subscriptions csv file generator

Accessed from Emerald Client / Reports / FCC477 Net Subs menu option. When selected a single csv file formatted for upload to FCC website is generated for all states.

FCC Form 477 - Fixed Voice Subscription csv file generator

Accessed from Emerald Client / Reports / FCC477 Voice Subs menu option. When selected a single csv file formatted for upload to FCC website is generated for all states.

FCC Form 477 - Interconnected VoIP Subscription (State Data)

Accessed from Emerald Client / Reports / General / FCC 477 Summary menu option. When selected the report displays in addition to broadband summary state level VoIP summary data for manual entry into FCC website.

Q & A

Q. What if an MBR has multiple services at various locations.

A. This scenario is not supported by Emerald v5.

Q. An address is not being recognized by MapPoint how can I manually enter a latitude and longitude for this address?

A. Edit MBR, in the custom data field labeled 'Geocode Msg' enter the word SKIP, finally manually set latitude and longitude in fields provided. SKIP keyword prevents the system from further attempts at geocoding existing address possibly overwriting set coordinates.

Q. How can I run the reporting for a previous point in time?

A. Reports are only able to show current data as of the time report is generated.

Q. Why can't Emerald generate fixed broadband deployment using existing Emerald account data?

A. Emerald does not have any coverage maps. Attempting to leverage locations of existing customers to infer service area based only on locations of existing customers is virtually guaranteed to produce incorrect results. The question asked by this section is "from where can anyone currently obtain service". It has nothing to do with data relating to location of existing customers. The census block (rather than census tract) level required by FCC for this section is extremely granular typically covering only 5-10 square acres of land.