A’LABS WHITEPRINT

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*Geo – GIaaS*

*OSM Data Downloader*

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| --- | --- | --- | --- |
| Approved by | | | |
| Mr.Rajasekar | Date | Mrs.Archana Devi | Date |

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| Ver. | Rev. owner | Reason for change | Reviewer | Status | Date |
| 0.1 | Mrs.Archana Devi | Initial Draft Version | Mr.Rajasekar | in progress | 06-Mar-2018 |
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# UNDERSTAND PROBLEM TO BE SOLVED

The **Spatial data non availability** is the major problem in geographical data. In OSM data downloader is that provide available spatial data and the user **layer of interest**. But Normally OSM data downloader provides the data with details, which is not actually needed to user. This will leads to size increase of memory and data parsing time also will increase. The network connectivity is needed to download the data which is also dependent with speed of downloading. And minimum data size restriction also included. Sometimes data losing may occurs.

The OSM Data Downloader system would:

* Help towards achieve increasing the speed of data downloading.
* Helps to reduce data losing.
* By improving the data downloading minimum file size restriction.
* To reduce the spatial data non availability.
* For improving parsing time while data processing.

**GEO-OSM Data Downloader:**

* The underlying concept behind GEO’s OSM data downloader is that to provide user area of interest exact data with required details.
* To provide proper and persevered shape of data.
* To provide offline data without network connectivity.
* Improve downloading speed of data.
* To improve file size restrictions.
* To reduce the spatial data non availability.

# EVALUATE EXISTING SOLUTIONS / COMPETITOR PRODUCTS

Evaluating the best competitor’s products for the OSM data downloader Systems, below are the major features captured as the best solutions.

**Trimble Data**  is providing OpenStreetMap data and Custom extracts in various formats .Users can extract their area of interest by drawing polygons on a map and choose from output formats including Shape files and KML, and finally specify "layer" filters. You can create an Area of Interest and customize your selection to include specific Map Features as well as change the output file format and Datum/Projection. Here, we select the Amenity, Building, and Highway layers for the Seattle area. Note: you can drag and drop a KML polygon (no larger than 1,000 vertices) for more precise Regions. Once you are satisfied with your selection then processing. Processing time depends on the size and complexity of the request.

**Geofabrik** is offering OpenStreetMap raw data extracts for various countries all over the world for free.  By offering these regional extracts data users do not always have to always download the full planet dump which is tens of gigabytes large and time-consuming to process. Over the years, Geofabrik Downloads has become the go-to place for anyone who wants to download OpenStreetMap data excerpts.

|  |  |  |  |
| --- | --- | --- | --- |
| **Features** | **Next-Geo**  **OSM Data Downloader** | **GeoFabrik** | **Trimble** |
| Commercial | Yes | No | Yes |
| Draw Features | No | No | Yes |
| User based layer of interest | Yes | No | Yes |
| Datum Projection | Yes | No | Yes |
| Raster support | No | No | Yes |
| Data Up-to-date | Yes | Yes | Yes |
| Sub Layer Lists | Yes | No | Yes |

# DELIBERATE THE MAJOR FEATURES AND FUNCTIONS

## 3.1 OSM Data Downloader

Here we are applying library concepts to drill down, processing and convert data into given data formats. That are

**imposm** is an importer for OpenStreetMap data. It reads PBF files and imports the data into PostgreSQL/ PostGIS databases. It is designed to create databases that are optimized for rendering/tile/map-services.

**Ogr2ogr** is an open source command line utility popular for converting to and from various vector spatial data formats. Converts simple features data between file formats. This program can be used to convert simple features data between file formats performing various operations during the process such as spatial or attribute selections, reducing the set of attributes, setting the output coordinate system or even reprojecting the features during translation.

**Process Flow:**

* User can choose country level data.
* Processing data based on selection
* User can choose sub layer of data
* Data drill down to fetch layer list
* User can choose either particular data from layer list or entire data/draw to fetch data.
* Define the datum projection
* Also define the supported output formats
* Download the data. Data should be based on user selection

# DEFINE OUR SOLUTION/UNIQUE SELLING PROPOSITION

For the major functions and features, below are the unique selling propositions

* The advantages of this working offline are you don't need to pay or obtain a license key.
* We can use our own data for any purpose.
* Data updating until up-to date using diff concepts.
* Data security due to data from our server.
* Increase performance speed of data downloading.
* Layer list option for user to select required data.
* Data authentication.
* Free of cost
* User based area of interest
* Secure data repository

# DEFINE THE ROAD MAP FOR THE SOLUTION/PRODUCT

The road map for the application is listed below:

* 1. OSM data parsing on the fly.
  2. Updated data.
  3. Segregate layer list/sub layers based on user selection.
  4. User based layer of interest
  5. Data maintenance/Can updates our own data.
  6. Add Draw Features
  7. Will support Raster data

# FOR THE NEXT ROAD MAP ITEM DOCUMENT THE DETAILED REQUIREMENTS

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Prioritized Requirements List - OSM Data Downloader** | | | | | | | | | | | | | | | |
| **Requirement** | | | | | **Priority** | | **Status** | | | **Requirement reflected in:- (Y=yes, N=no, D=dropped)** | | | | | **Comment** |
| **Reference Num** | **Theme** | **As/An** | **I want to** | **So that** | **MoSCoW** | **Date (dd/mm/yy)** | **Status (Original, New, Amended)** | **Date (dd/mm/yy)** | **A’Labs** | | **CDA** | **Deployable Solution** | **Deployed Solution** |  | |
|
| 1 | Functional | Manager | Manage Goals | User can Add, Update organizational goals and my goals | M |  | New |  | Y | |  | Y |  |  | |
| 2 | Functional | Reviewer | Manage Team Member Goals | User can Add, Update their Goals | M |  | New |  | Y | |  | Y |  |  | |
| 3 | Functional | Manager | Competency Tracking | User can track competency record of organization and employee | M |  | New |  | Y | |  | Y |  |  | |
| 4 | Functional | Reviewer/Reviewee | Self Competency Tracking | User can track competency record of mine | M |  | New |  | Y | |  | Y |  |  | |
| 5 | Functional | Peer reviweer | Coding evaluation | Developer can evaluate coding standards | M |  | New |  | Y | |  | Y |  |  | |

# QUANTIFIED COSTS / ESTIMATED COSTS

As specified in the proposal.

# BENEFITS

**Data Security:**

We are the custodians of all the data. So the data will be safe and secure.

**Data customization/maintenance:**

Data maintenance is the primary one in osm data downloader. Here data

is maintaining up-to-date. We can integrate our own data.

**Layer selection:**

User can choose and view the list of layers. They can use more data from us and also be secure in data.

**Spatial Layer of Interest:**

User can achieve data of area of interest. Also this OSM data downloader is free of cost.

# KEY ASSUMPTIONS, RISKS AND DEPENDENCIES

## 9.1. Assumptions Definition

Assumptions spell out rules that will govern the development and function of this site, including exceptions, conditions and anything else that warrants explanation, but is not already explicitly covered.

### 9.1.1. Global Assumptions

* NEXT will use NEXT DEV server and NEXT UAT servers throughout the development cycle of, up to and including User Acceptance.
* NEXT will develop the application exclusively in English. Language translation or multi-language can be done as a change request.
* Any functional requirements which are not covered in this document or in contract agreement will be considered as CR or will be covered in next phase.

### 9.1.2. General Assumptions

* The user of the application will know how use the computer
* User knows to run the program and the user access will be provided with login credentials.
* User knows the functionalities of the application

## 9.2. Risk

* Risks at data updation.

## 9.3. Dependencies

# ANNEXURES

# Document / Record References

|  |  |  |
| --- | --- | --- |
| **S.No** | **Description of Document** | **Format No.** |
| **1.** | https://wiki.openstreetmap.org/wiki/Databases\_and\_data\_access\_APIs |  |
| **2.** | https://www.geofabrik.de/ |  |
| **3.** | https://market.trimbledata.com |  |