

# PostLBS

Universal WebAPI Platform for Visualizing Geospatial Analysis  
- Routing, Geocoding, Thematic mapping and More!

Jun Koike  
Toru Mori  
Orkney, Inc.



- What is “PostLBS” Platform?
- Demonstration
- Milestones

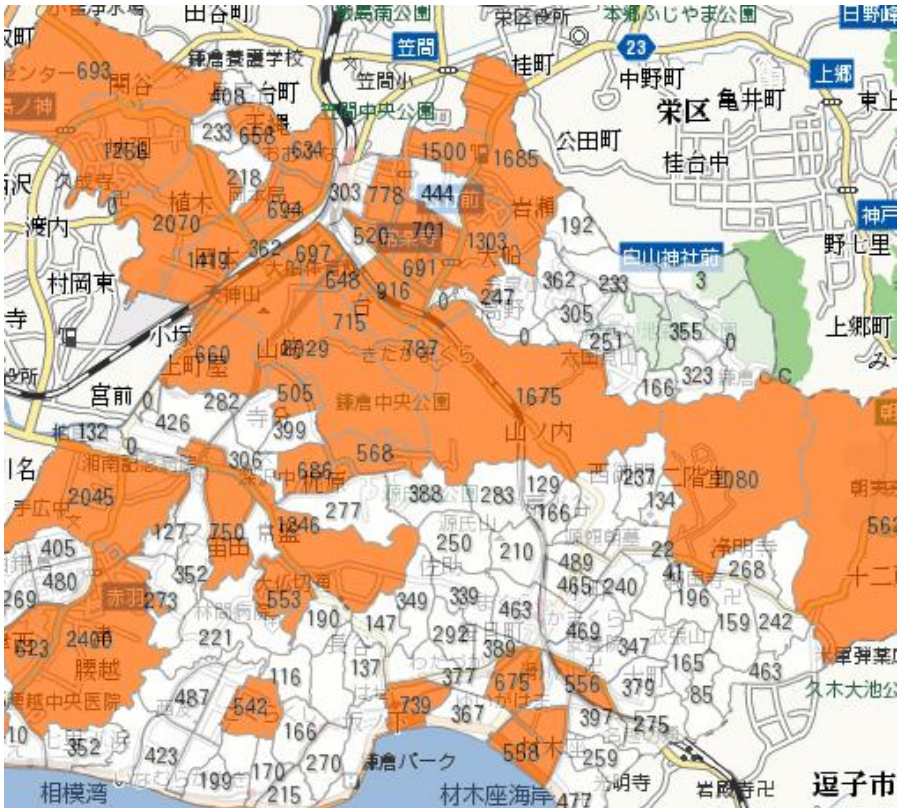
# About Us

- Orkney, Inc.
  - Founded in 2002
  - Pioneer Company providing FOSS4G solutions in Japan
  - i18n Contributes to MapServer and GRASS
  - pgRouting, geocoder.ja
  - One of the largest supporters of OSGeo Japanese Chapter
  
- About me
  - Technical Consultant
  - Using FOSS4G tools since 2005
  - Orkney since 2007

WHAT IS POSTLBS?

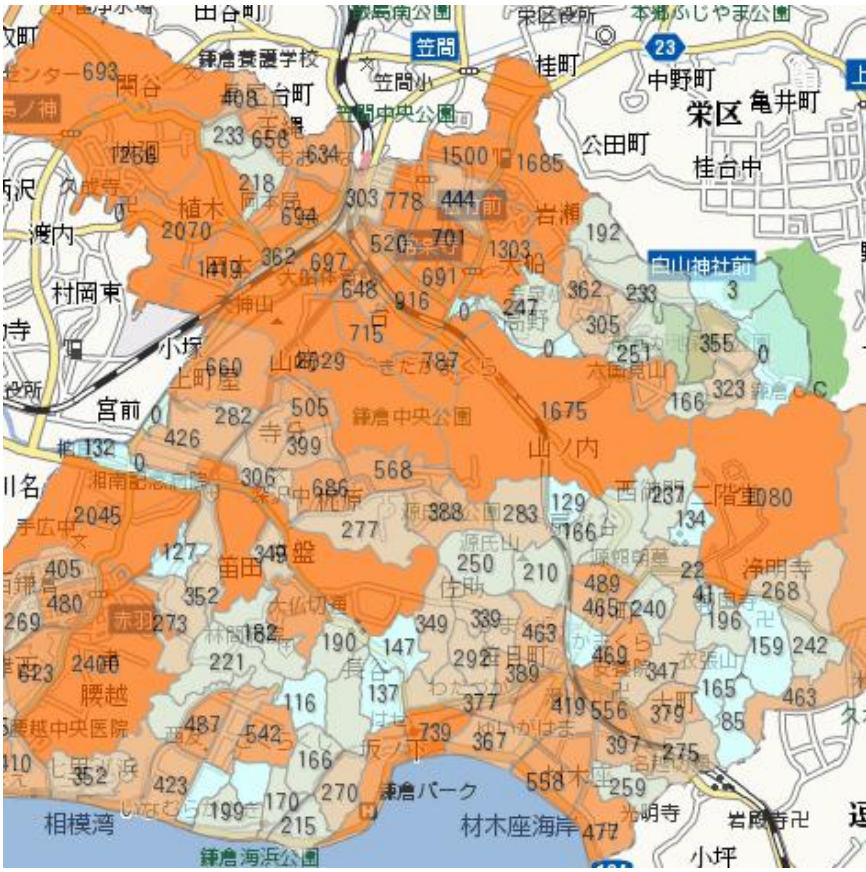
- Web API Platform for Geospatial Visualization.

# Examples of Geospatial Visualization



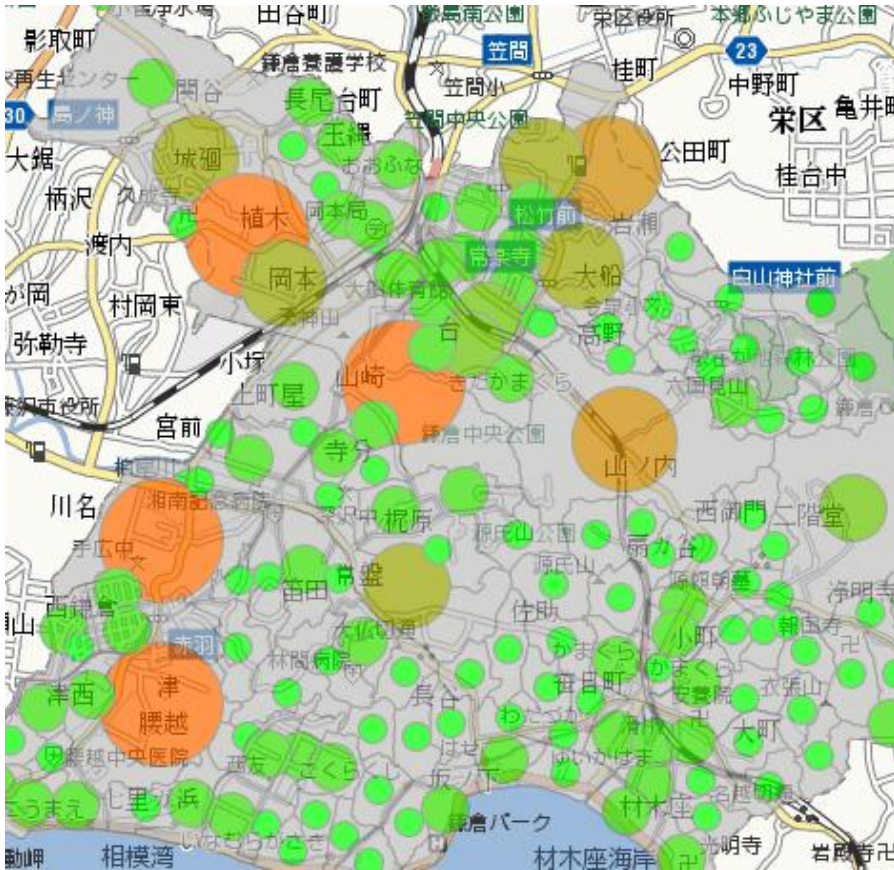
Filtering

## Categorization





# Examples of Geospatial Visualization



**Bubble Chart**

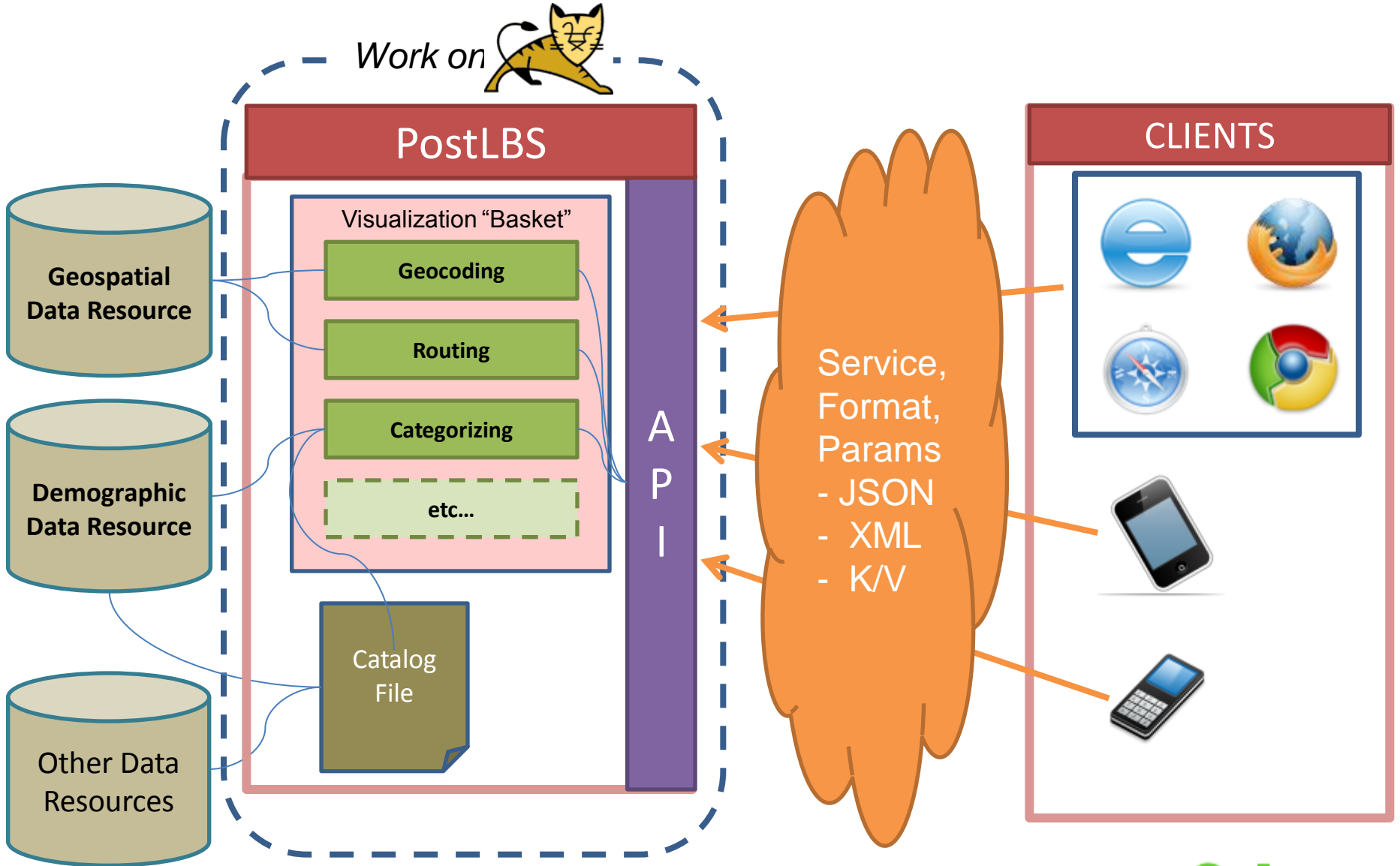
## POI within a Polygon



ARCHITECTURE



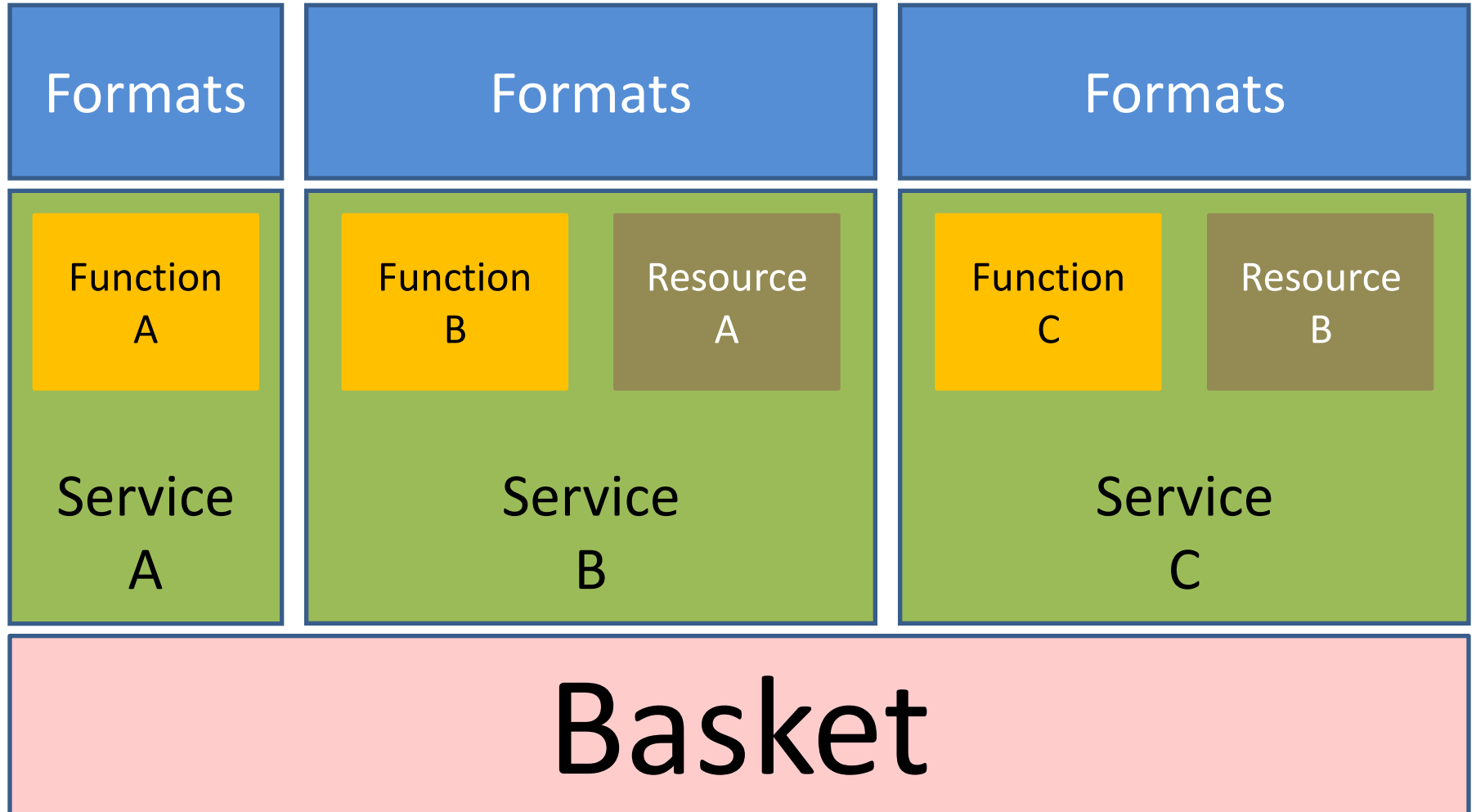
# Architecture - Whole Image



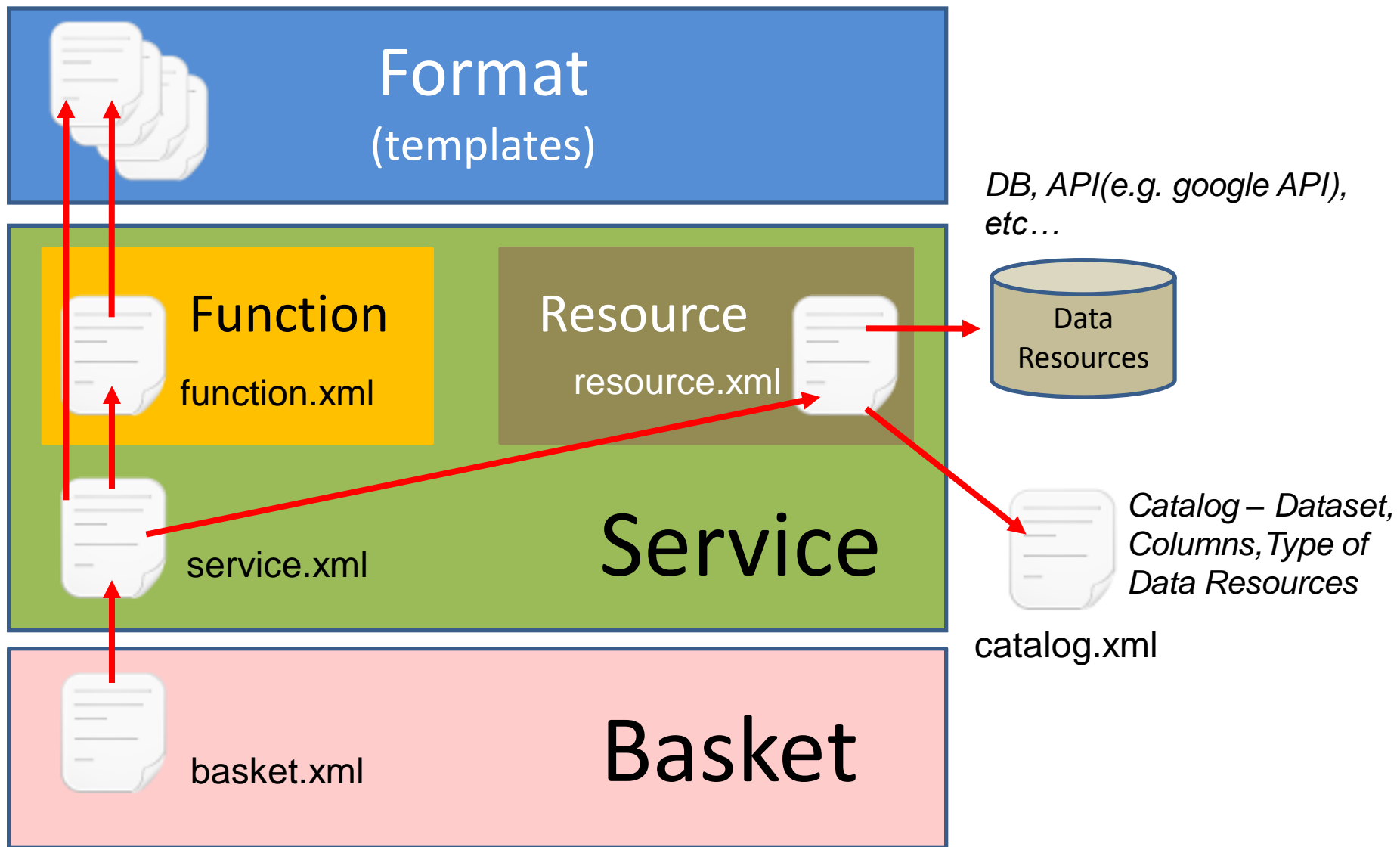
- Simple URL Structure
  - Using 3 Keys for URL

`http://foo.bar/BASKET/SERVICE.FORMAT?query={...}`

# Architecture - Hierarchy



# Architecture - Configuration Files



# How to Develop Your Service

- Step 1
  - Install PostLBS
- Step 2
  - Create a “Service”
    - Code a Function as a Service class
    - Choose Resource and Format
- Step 3
  - Configure
    - Put in the Basket

# Example 1

- Geocoding
  - Code a “Geocoding service class”
  - Configure Function, Resource, Service and Basket

```
http://foo.bar/basic/geocode_g.json?
```

```
query={"address":"横浜市西区みなとみらい3-6-3"}
```



# Example 1

```
{ "status": "OK", "results": [ { "types": [ "sublocality_level_4", "sublocality", "political" ],  
"formatted_address": "Japan, Kanagawa Prefecture Yokohama City Nishi Wardみなとみらい3丁目6",  
"address_components": [ { "long_name": "3", "short_name": "3", "types": [ "sublocality_level_4",  
"sublocality", "political" ] }, { "long_name": "6", "short_name": "6", "types":  
[ "sublocality_level_3", "sublocality", "political" ] }, { "long_name": "3丁目", "short_name": "3丁目",  
"types": [ "sublocality_level_2", "sublocality", "political" ] }, { "long_name": "みなとみらい",  
"short_name": "みなとみらい", "types": [ "sublocality_level_1", "sublocality", "political" ] },  
{ "long_name": "Nishi Ward", "short_name": "Nishi Ward", "types": [ "locality", "political" ] },  
{ "long_name": "Yokohama City", "short_name": "Yokohama City", "types": [ "locality",  
"political" ] }, { "long_name": "Kanagawa Prefecture", "short_name": "Kanagawa Prefecture",  
"types": [ "administrative_area_level_1", "political" ] }, { "long_name": "Japan", "short_name": "JP",  
"types": [ "country", "political" ] } ], "geometry": { "location": { "lat": 35.4585782, "lng":  
139.6323670 }, "location_type": "APPROXIMATE", "viewport": { "southwest": { "lat":  
35.4554306, "lng": 139.6292194 }, "northeast": { "lat": 35.4617258, "lng":  
139.6355146 } } } ] }
```

# Example 2

- Routing
  - Code a “Routing service class”
  - Configure Function, Resource, Service and Basket

```
http://foo.bar/basic/route_hcc_walk.kml?  
query={"start":"139.63276,35.458281",  
"end":"139.622549,35.464727",  
"crs": "EPSG:4326, EPSG:4326"}
```

# Example 2

\*For the explanation, Some values and tags are omitted.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns=http://www.opengis.net/kml/2.2>
<Document>
  <name>route.kml</name>
  <description></description>
  <Style id="lineStyle">
  ...
</Style>
<Placemark>
  <name></name>
  <description></description>
  <styleUrl>#lineStyle</styleUrl>
  <MultiGeometry>
    <LineString id="5746010">
      <tessellate>1</tessellate>
      <altitudeMode>clampToGround</altitudeMode>
      <coordinates>
        139.63276,35.458281
        ...
        139.632403,35.458005
      </coordinates>
    </LineString id="5746007">...</LineString>
    ...
    <LineString id="5746008">...<LineString>
  </MultiGeometry>
</Placemark>
</Document>
</kml>
```

DEMONSTRATION

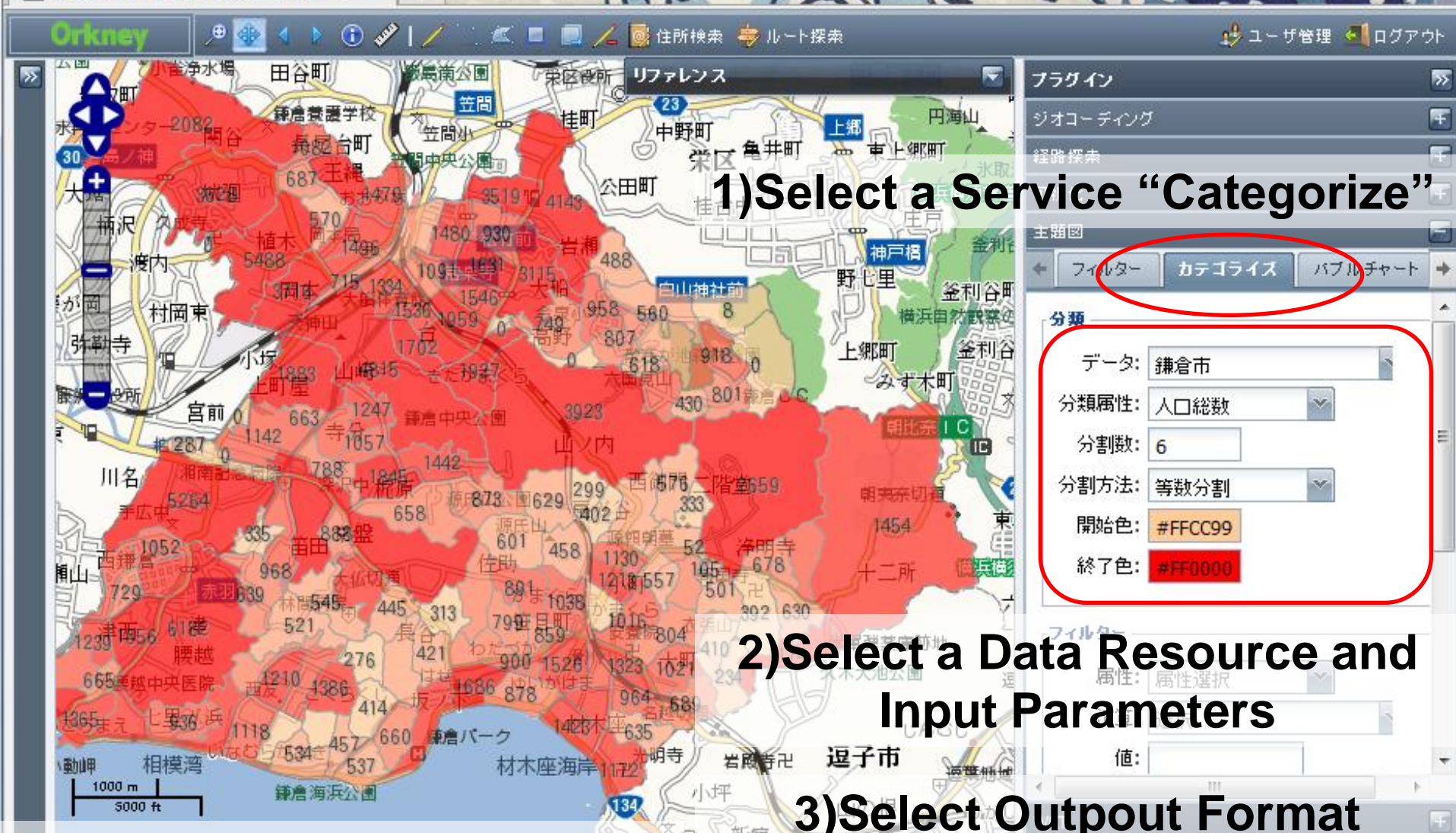
# Demonstration



- Population of Kamakura City
- Service “Categorize”







1) Select a Service “Categorize”

2) Select a Data Resource and Input Parameters

3) Select Output Format

4) Display a Thematic Map

(behind the scroll in this shot)



# Demonstration



- Finding Gas Stations along shortest-path.

- 1) Route Calculation
- 2) Buffer Creation
- 3) Finding Gas Stations

# 1. Route Calculation, Service "Route\_Vehicle"

ファイル(E) 編集(E) 表示(V) 履歴(S) ブックマーク(B) ツール(I) ヘルプ(H)

http://api.orkney.jp/demo/map.html

Orkney Web GIS フレームワーク

Orkney

住所検索 ルート探索

ユーザ管理 ログアウト

リファレンス

プラグイン

ジオコーディング

経路探索

経路探索

始点 139.550798823:

終点 139.522130315:

経路探索種類

経路探索

探索方法

北海道地図・自動車

1) Select a Service and Input Parameters

2) Display a Route

3) WKT Is Output Here for Next Step

WKT

座標: 139.56354;35.30837



# 2. Calculate a Buffer Polygon along the Route, "Buffer"

The screenshot shows the Orkney Web GIS interface. A map of a coastal area is displayed with a blue buffer polygon around a route. The interface includes a toolbar with navigation and search tools, a search bar, and a settings panel on the right. The settings panel is highlighted with a red box, showing options for 'バッファ' (Buffer) and '凸包' (Convex Hull). The 'データ選択' (Data Selection) section is also visible, showing a selected geometry collection. The 'バッファ' section shows a buffer distance of 100 meters and a color selection option. The 'WKT' output field is highlighted with a red box at the bottom right.

1) Select Service, Format and Parameters

2) Display a Buffer

3) WKT Is Output Here for Next Step →

```
GEOMETRYCOLLECTION(LINESTRING(139.55079899999578 35.318766034223,139.55120999 000025
```

WKT

座標: 139.51617:35.32328

# 3. Finding Gas Stations within a Buffer, "Within"

The screenshot shows a web browser window displaying the Orkney Web GIS application. The browser address bar shows the URL `http://api.orkney.jp/demo/map.html`. The application interface includes a toolbar with navigation and search tools, and a main map area showing a blue buffer around a route. The configuration panel on the right is highlighted with a red circle and contains the following settings:

Analysis Target	Filter
データ: 神奈川県:注釈	属性: 属性選択
属性: オブジェクト種別	演算: 選択
演算: =	
値: 502101	
バッファ(m): 0	
色: #ffff00	

At the bottom right, the coordinate system is set to WKT and the coordinates are 139.51471:35.29523.

1) Select Service, Format and Parameters

2) Display Gas Stations



# Statistical GIS Service of Yokohama City – GIStat

<http://www.city.yokohama.jp/me/keiei/seisaku/gistat/>

The screenshot displays the GIStat web application interface. The main map shows a heatmap overlay on a street map of Yokohama, with colors ranging from yellow to red, indicating population density or age distribution. The interface includes several panels and windows:

- 統計GIS** (Statistical GIS) header with navigation icons.
- 属性** (Attribute) panel on the left, containing a summary table and a list of attributes.
- 凡例画像** (Legend) panel on the right, showing color-coded categories for population and age groups.
- 属性で色分け** (Color by Attribute) panel at the bottom right, showing settings for the heatmap, including a polygon selection tool and a data source dropdown.
- 属性表示** (Attribute Display) panel at the bottom center, showing a detailed view of the selected area's attributes.
- 主題図** (Thematic Map) panel at the bottom left, showing a list of themes and a legend.

**属性 (Attribute) Summary Table:**

NO	区名	町丁目名	総人口(H22.3登録人口)	0-14歳人口(H22.3)	15-64
合計			54,479	4,470	
平均			490.80	40.27	

**属性一覧 (Attribute List):**

NO	区名	町丁目名	総人口(H22.3登録人口)	0-14歳人口(H22.3)	15-64
1	中区	中区扇町3丁目	112	0	
2	中区	中区松影町3丁目	1,939	8	
3	中区	中区寺町3丁目	2,375	37	
4	中区	中区松影町4丁目	690	7	
5	中区	中区扇町4丁目	685	16	
6	南区	南区新川町3丁目	71	4	
7	中区	中区寺町4丁目	250	9	
8	南区	南区南吉田町3丁目	116	9	

**凡例画像 (Legend) Categories:**

- 14.22未満 (0を除く)
- 14.22以上 26.51未満
- 26.51以上 38.8未満
- 38.8以上 51.1未満
- 51.1以上
- 0

**統計表 (Statistics Table) Legend:**

- 0-14歳人口(H22.3)
- 15-64歳人口(H22.3)
- 65歳以上人口(H22.3)

**属性表示 (Attribute Display) Settings:**

- 範囲: 任意範囲
- 任入力で設定
- パツファ(メートル): 500
- 指定距離(メートル): 6727.1
- 指定面積(平方メートル): 2019143.13
- データ: H22.3:町丁目

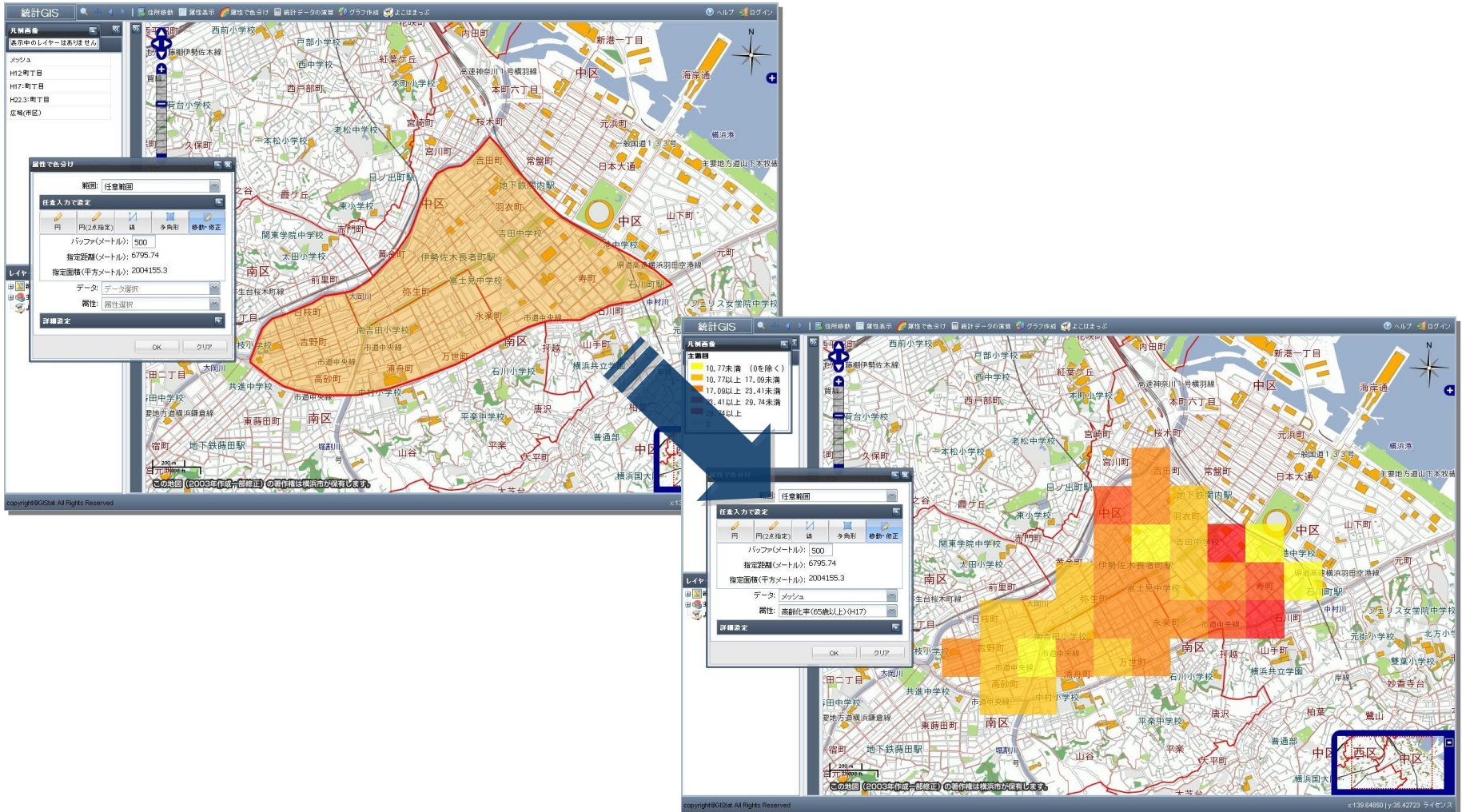
**属性で色分け (Color by Attribute) Settings:**

- 範囲: 任意範囲
- 任入力で設定
- パツファ(メートル): 500
- 指定距離(メートル): 6727.1
- 指定面積(平方メートル): 2019143.13
- データ: H22.3:町丁目
- 属性: 高齢化率(65歳以上)(H22.3)



# Statistical GIS Service of Yokohama City – GIStat

## Example - Distribution of the Elderly within a freehand Polygon





# MILESTONES

# Milestones

- As for Opensource Project
  - BSD style License
  - Pre-Release Version
    - <http://platform.postlbs.org/>
- Release Plan
  - Ver1.0 Release -> October 2010

- PostLBS Platform
  - WebAPI Platform for Geospatial Visualization
  - Simple URL Structure
  - Code and Configure
- FAQ
  - Just Platform, No Providing Default Services?
  - Different from WPS?
  - Other Questions?

# THANK YOU!

- Orkney, Inc.
  - [japan.sales@orkney.co.jp](mailto:japan.sales@orkney.co.jp)
- Jun Koike
  - koike@orkney.co.jp
  - twitter: juninho725