

ArcGIS JavaScript API
application
made easy for non-programmers

Automated Creation of Web Application

GOAL

The goal is to provide users with an easy web based interface through which they can enter the basic information needed to get their web mapping application running.

This software package has been developed using the following programming languages.

- a) PHP (It should be pre-installed on the server)
- b) ArcGIS API for JavaScript
- c) HTML
- d) CSS

Pre- installation Requirements

1. PHP (It should be pre-installed on the server)
 2. The complete package needs to be uploaded to the web server
 3. The server should have php installed
 4. Certain folders need to have write permissions that will store the generated configuration files.
-

Template GIS Viewer

- This application has been developed using ArcGIS API for JavaScript
 - We started with version 2.4 and now recently updated to version 3.9
- The original template was downloaded from ESRI website
http://developers.arcgis.com/javascript/samples/ags_mapcontainersplitinthree/

The template contains

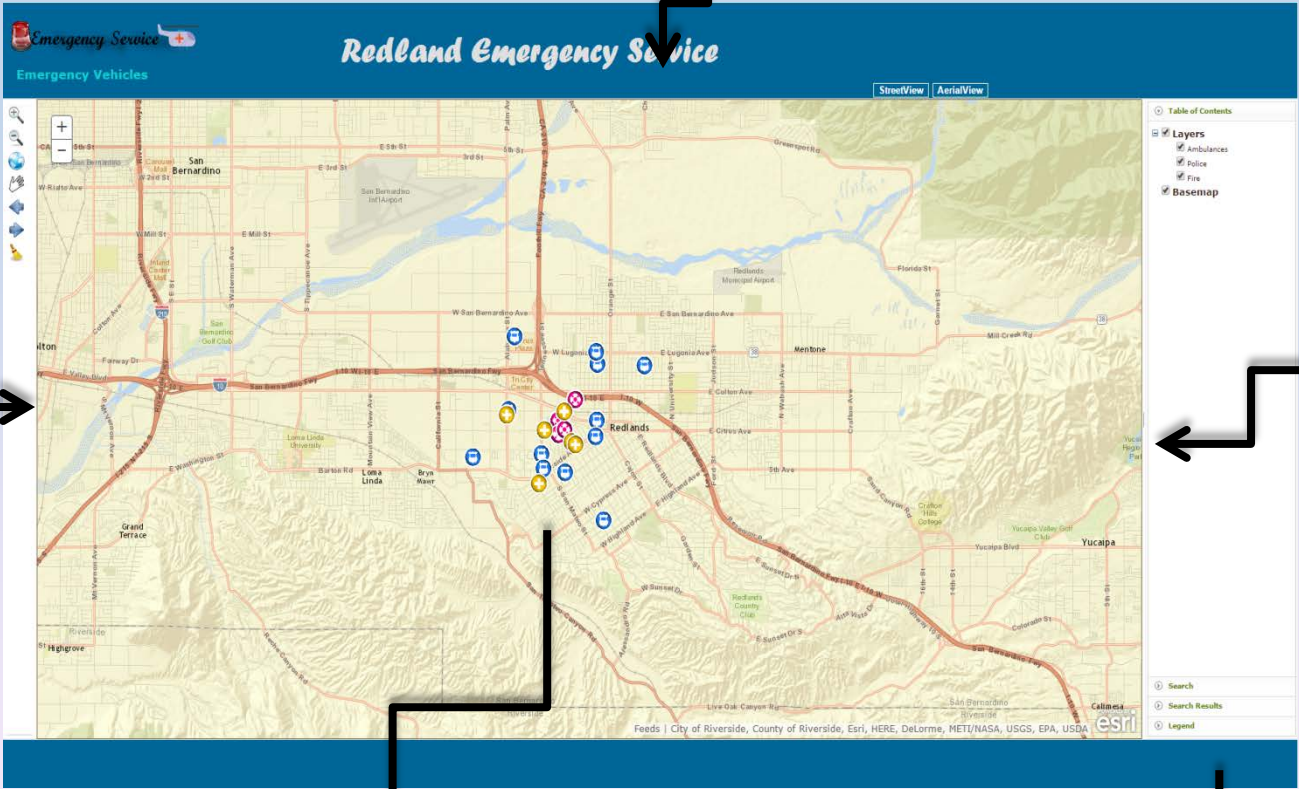
- Header
- LeftPanel
- Right Panel
- Central Map Panel
- Footer



Template modification

Header
Logo, Graphic Tool icon, Base Maps, Global Search, Print, Links, help, Contact

Left Panel
Tools-
zoomin,
zoomout,
pan etc



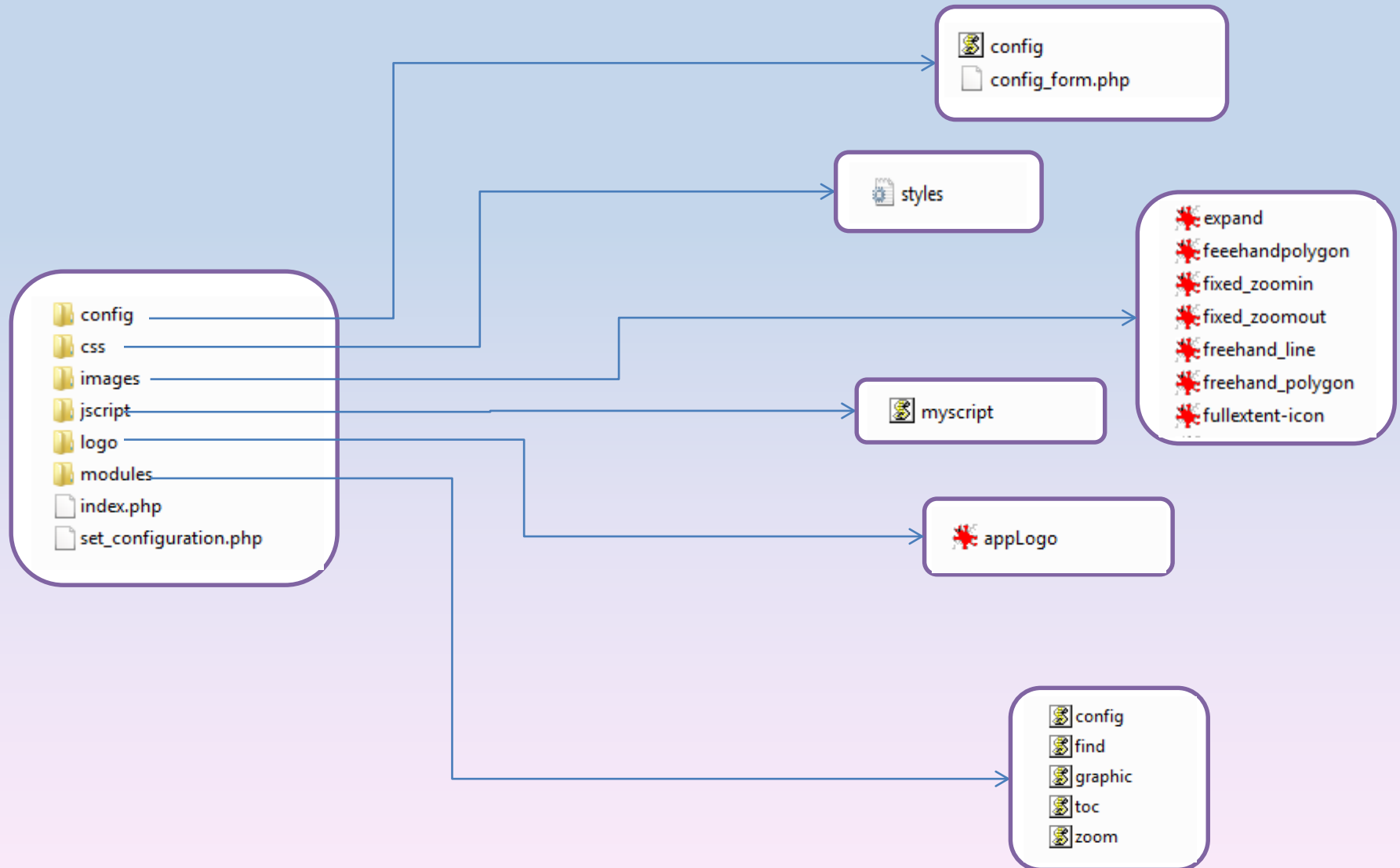
Right Panel
(includes 5 content pans)

- Content Pan for TOC – (Layers)
- Content Pan for Identify – (Drop down list for feature identification)
- Content Pan for Search Features (Drop down list for feature layers)
- Content Pan for Search Results – Pan to hold the returned search results
- Content Pan for Legend – Layers – Pan to show the legend of displayed features.

Map

Bottom Panel
Bottom area to show the coordinates on mouse hover.

Directory Structure



Index.php

- Index.php is the **default page**
- Checks if config.js in the config folder exists
- **If Yes** : it reads the index.php to open the application
- **If No**: It exits from index.php and navigates to set_configuration.php
- When the application starts at first, no configuration file (config.js) exists

```
1 <?php
2 $filename = 'config/config.js';
3 if (!file_exists($filename)) {
4     header("Location: set_configuration.php");
5     exit;
6 }
7 ?>
```

Information required

Basemap - ESRI Street Map

http://server.arcgisonline.com/ArcGIS/rest/services/World_Street_Map/MapServer

Aerial service- World Imagery

http://server.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer

Dynamic Layer Service

http://tmservices1.esri.com/arcgis/rest/services/LiveFeeds/Wildfire_Activity/MapServer

Map Title: **Demo Application**

Map SubTitle: **Demo**

X-coordinate: **-84.5642** y-coordinate: **34.0942**

Zoom Level: **4** (1 is zoom out and 13 is zoomin)

Enter the layer number to Query: **10**

Enter Unique ID Field Name: **OBJECTID**

Enter Search ID Field Name:: **FacilityID**

Enter Default Value:: **SMBC0654**

Enter Example Value: **SMBC065410**

SUBMIT INFORMATION

Application Architecture

Configuration Setup

[set_configuration.php](#) opens the configuration input form on [config_form.php](#)

Section 1:

Enter ArcGIS Service information below	
Enter ArcGIS Service for Base Layer	<input type="text"/> Example: http://gisapps/arcgis/rest/services/MapServices/FultonStreetBaseMap/MapServer
Enter Image Raster layer ArcGIS Service	<input type="text"/> Example: http://vmwp-gissvap02:6080/arcgis/rest/services/MapServices/Pictometry2015NAIP2010/MapServer
Enter Dynamic layer ArcGIS Service	<input type="text"/> Example: http://vmwp-gissvap02:6080/arcgis/rest/services/MapServices/CodeViolations/MapServer

Section 2:

Enter the Map Title Configuration Below	
Enter Map Title (Appears on top of Browser)	<input type="text"/> Example: Water Resources Spill map
Enter Map Sub Title (Appears under the logo)	<input type="text"/> Example: Spill Application

Section 3:

Please enter map center coordinates	
X-coordinate: <input type="text"/>	Y-coordinate: <input type="text"/>
These coordinate are based on basemap layer projection	

Section 4:

Please enter the Zoom extent	
Please enter Map Zoom Level	Zoom Level: <input type="text" value="8"/> 1 is full zoomout and 13 full zoomin

Application Architecture

Configuration Setup

Section 5:

Enter Query information below	
Enter Layer number to Query	<input type="text"/>
Enter Unique ID field Name	<input type="text"/>
Enter Search ID field Name	<input type="text"/>
Enter Default value	<input type="text"/>
Enter Example Value	<input type="text"/>

Search

Enter Manhole FacilityID

Submit

Example: SMBC5314480

Search

Enter Manhole FacilityID

Submit

Example: SMBC5314480

Submit

Generation of Configuration file

```
1 <?php
2 if(isset($_POST['Action']))
3 {
4     //echo "The file $filename does not exist";
5     $my_file = 'config/config.js';
6     $handle = fopen($my_file, 'w') or die('Cannot open file: '.$my_file);
7     $header = "define(['", "\n";
8     $header .= "    \\"esri/map\\", "\n";
9     $header .= "    \\"dojo/_base/declare\\", "\n";
10    $header .= "    \\"dojo/_base/lang\\", "\n";
11    $header .= "    \\"esri/request\\", "\n";
12    $header .= "    ], function(Map, declare, lang, esriRequest) (" . "\n";
13    $header .= "        return declare([], (" . "\n";
14
15        fwrite($handle, $header);
16    }
17    $filename = 'config/config.js';
18    if (file_exists($filename)) {
19        if(isset($_POST['Action']))
20        {
21            $mapTitle = $_POST['mapTitle'];
22            $mapSubTitle = $_POST['mapSubTitle'];
23
24            $baselayer = $_POST['baselayer'];
25            $imagelayer = $_POST['imagelayer'];
26            $dynamiclayer = $_POST['dynamiclayer'];
27
28            $xcoord = $_POST['xcoord'];
29            $ycoord = $_POST['ycoord'];
30            $zoomlev = $_POST['zoomlev'];
31            $lyrNo = $_POST['lyrNo'];
32            $uniqueID = $_POST['uniqueID'];
33            $srcFieldID = $_POST['srcFieldID'];
34            $srcDefaultValue = $_POST['srcDefaultValue'];
35            $srcExampleValue = $_POST['srcExampleValue'];
36
37
38
```

```
//MapTitle Generation
$getmapTitle = "    mapTitle: function (response) (" . "\n";
$getmapTitle .= "        mapTitle = \"\".$mapTitle.\"\"; . "\n";
$getmapTitle .= "        return mapTitle; . "\n";
$getmapTitle .= "    ),\" . "\n";
//MapTitle Generation
$getmapSubTitle = "    mapSubTitle: function (response) (" . "\n";
$getmapSubTitle .= "        mapSubTitle = \"\".$mapSubTitle.\"\"; . "\n";
$getmapSubTitle .= "        return mapSubTitle; . "\n";
$getmapSubTitle .= "    ),\" . "\n";
//Baselayer Generation
$baselayer = "    basemap: function (response) (" . "\n";
$baselayer .= "        basemaplayer = \"\".$baselayer.\"\"; . "\n";
$baselayer .= "        return basemaplayer; . "\n";
$baselayer .= "    ),\" . "\n";
//Imagelayer Generation
$imagelayer = "    imageLayer: function (response) (" . "\n";
$imagelayer .= "        imageLayer = \"\".$imagelayer.\"\"; . "\n";
$imagelayer .= "        return imageLayer; . "\n";
$imagelayer .= "    ),\" . "\n";
//Dynamic layer Generation
$dynlyr = "    dynamicLayer: function (response) (" . "\n";
$dynlyr .= "        dynamiclayer = \"\".$dynamiclayer.\"\"; . "\n";
$dynlyr .= "        return dynamiclayer; . "\n";
$dynlyr .= "    ),\" . "\n";
//Coordinates Generation
$coord = "    coordinates: function (response) (" . "\n";
$coord .= "        coordinates = \"\".$xcoord.\"\".$ycoord.\"\"; . "\n";
$coord .= "        return coordinates; . "\n";
$coord .= "    ),\" . "\n";
//Zoomlevel Generation
$zoomlevel = "    zoomLevel: function (response) (" . "\n";
$zoomlevel .= "        zoomlev = \"\".$zoomlev.\"\"; . "\n";
$zoomlevel .= "        return zoomlev; . "\n";
$zoomlevel .= "    ),\" . "\n";
//Query Params Generation
$query = "    queryParams: function (response) (" . "\n";
$query .= "        QueryserviceID = \"\".$lyrNo.\"\"; . "\n";
$query .= "        paramArray = ();\" . "\n";
$query .= "        paramArray.SearchType = \"EnterID\"; . "\n";
$query .= "        paramArray.UniqueID = \"\".$uniqueID.\"\"; . "\n";
$query .= "        paramArray.searchField = \"\".$srcFieldID.\"\"; . "\n";
$query .= "        paramArray.QueryWhereString = \"\".$uniqueID.\" < > \"\"; . "\n";
$query .= "        paramArray.SearchDefaultValue = \"\".$srcDefaultValue.\"\"; . "\n";
$query .= "        paramArray.SearchExample = \"\".$srcExampleValue.\"\"; . "\n";
$query .= "        return paramArray; . "\n";
```

```
108     $handle = fopen($filename, 'a') or die('Cannot open file: '.$filename);
109
110     fwrite($handle, $baselayer);
111     fwrite($handle, $imagelayer);
112     fwrite($handle, $dynlyr);
113     fwrite($handle, $coord);
114     fwrite($handle, $zoomlevel);
115     fwrite($handle, $getmapTitle);
116     fwrite($handle, $getmapSubTitle);
117     fwrite($handle, $query);
118
119
120     $footer = "        err: function(err) (" . "\n";
121     $footer .= "            console.log(\"Failed to get results from Seat Ge"); . "\n";
122     $footer .= "        });\" . "\n";
123     $footer .= "    });\" . "\n";
124     $footer .= "    );\" . "\n";
125     $footer .= "    );\" . "\n";
126
127     fwrite($handle, $footer);
128
```

Application Architecture

Writing of config/config.js configuration file

```
1 <?php
2 if ($_POST) {
3
4     $mystring = "";
5     foreach ($_POST as $param_name => $param_val) {
6         $mystring .= "variable: $param_name = $param_val<br />\n";
7     }
8     echo $mystring;
9     //exit;
10 }
11 if(isset($_POST['Action']))
12 {
13     $my_file = 'config/config.js';
14     $handle = fopen($my_file, 'w') or die('Cannot open file: ' . $my_file);
15     $header = "define([" . "\n";
16     $header .= "    \"esri/map\", \" . "\n";
17     $header .= "    \"dojo/_base/declare\", \" . "\n";
18     $header .= "    \"dojo/_base/lang\", \" . "\n";
19     $header .= "    \"esri/request\" \" . "\n";
20     $header .= "    ], function(Map, declare, lang, esriRequest) {" . "\n";
21     $header .= "        return declare([], {" . "\n";
22
23     fwrite($handle, $header);
24 }
25 $filename = 'config/config.js';
26 if (file_exists($filename)) {
27     if(isset($_POST['Action']))
28     {
29         $mapTitle = $_POST['mapTitle'];
30         $mapSubTitle = $_POST['mapSubTitle'];
31
32         $baselayer = $_POST['baselayer'];
33         $imagelayer = $_POST['imagelayer'];
34         $dynamiclayer = $_POST['dynamiclayer'];
35
36         $xcoord = $_POST['xcoord'];
37         $ycoord = $_POST['ycoord'];
38         $zoomlev = $_POST['zoomlev'];
39         $lyrNo = $_POST['lyrNo'];
40         $uniqueID = $_POST['uniqueID'];
41         $srcFieldID = $_POST['srcFieldID'];
42         $srcDefaultValue = $_POST['srcDefaultValue'];
43         $srcExampleValue = $_POST['srcExampleValue'];
44 }
```

Application Architecture (Tools)

Navigational Tools

- Zoomin
- Zoomout
- Pan
- Previous Extent
- Next Extent
- Clear graphic tool



Base Map Views

- Street View
- Aerial View

StreetView

AerialView

Application Architecture (Table of Content Configuration)

```
<script>
```

```
var map;  
require([  
  "esri/map",  
  "esri/layers/ArcGISDynamicMapServiceLayer",  
  "dojo/parser",  
  "esri/geometry/webMercatorUtils",  
  "esri/toolbars/navigation",  
  "dojo/dom",  
  "dijit/registry",  
  "modules/zoom",  
  "modules/graphic",  
  "modules/toc",  
  "modules/find",  
  "config/config",  
]);
```

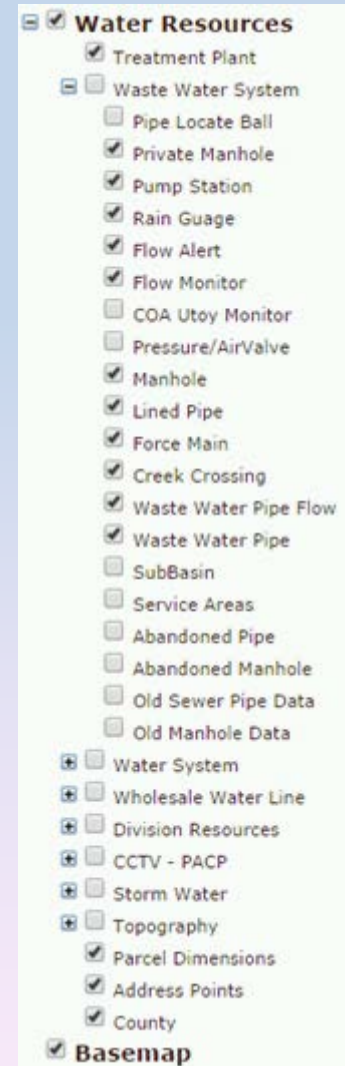
Referencing Module

```
var toc = new toc();  
toc.addToTOC(Basemap,false);  
toc.addToTOC(layer,true);
```

Activating the module

```
1  define([  
2    "dojo/_base/declare",  
3    "dojo/dom",  
4    "esri/map",  
5    "dojo/on",  
6    "esri/layers/ArcGISDynamicMapServiceLayer",  
7    "dijit/form/CheckBox",  
8    "dojo/domReady!"  
9  ], function(declare, dom, Map, on, ArcGISDynamicMapServiceLayer, CheckBox){  
10  
11    var tocHTML = "";  
12    visible = [];  
13    var mylyrlist = [];  
14    var tocCollapse = false;  
15  
16    return declare(null, {  
17      showTOC: function (map) {  
18        dom.byId("TOC").innerHTML = "HELLO";  
19      },  
20  
21      addToTOC: function(layer,sublayers)  
22      {  
23        //alert(sublayers);  
24        //alert(layer.id)  
25        if(sublayers) {  
26          layer.on("load", buildLayerList);  
27        }  
28        else {  
29          layer.on("load", buildLayerListRoot(layer));  
30        }  
31      }  
32    });  
33
```

Module code



Application Architecture (Query)

Search by Entering ID

Search

Enter ID

Example: PX

Search Results

Click on record below to view more info

- P124
- P125
- P247
- P124

Field	Value
objectid	95423
shape	undefined
unitname	P124
status	0
type	0
callnumber	A431234B54432
speed	0
lastreport	1357772058000

Water Resources
Emergency Vehicles

Redland Emergency Service

StreetView AerialView

Table of Contents
Search
Search Results

Click on record below to view more info

- P124
- P125
- P247
- P124

Field	Value
objectid	95423
shape	undefined
unitname	P247
status	2
type	0
callnumber	A4523856423
speed	0
lastreport	1385986404000

© Legend

Demo

QUESTIONS ?