GISFACES
Bringing Enterprise GIS To JavaServer Faces

Java Enterprise Solutions Using ArcGIS API For Javascript

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Overview

- Java developers have had issues with how to effectively integrate GIS maps and data into their web applications for may years.
- In addition, most Java developers are not as attuned to graphic and user interface (UI) design as graphic artists and UI specialists.
- To solve this problem on the user presentation side, Java Server Faces (JSF) was developed and several third-party component libraries, such as PrimeFaces, OpenFaces, ICEFaces, were developed to help solve this problem.
- The same is true for map integration into Java web applications and that is why GISFaces was created.
- This discussion explains how these tools are combined to provide incredible enterprise applications for clients.

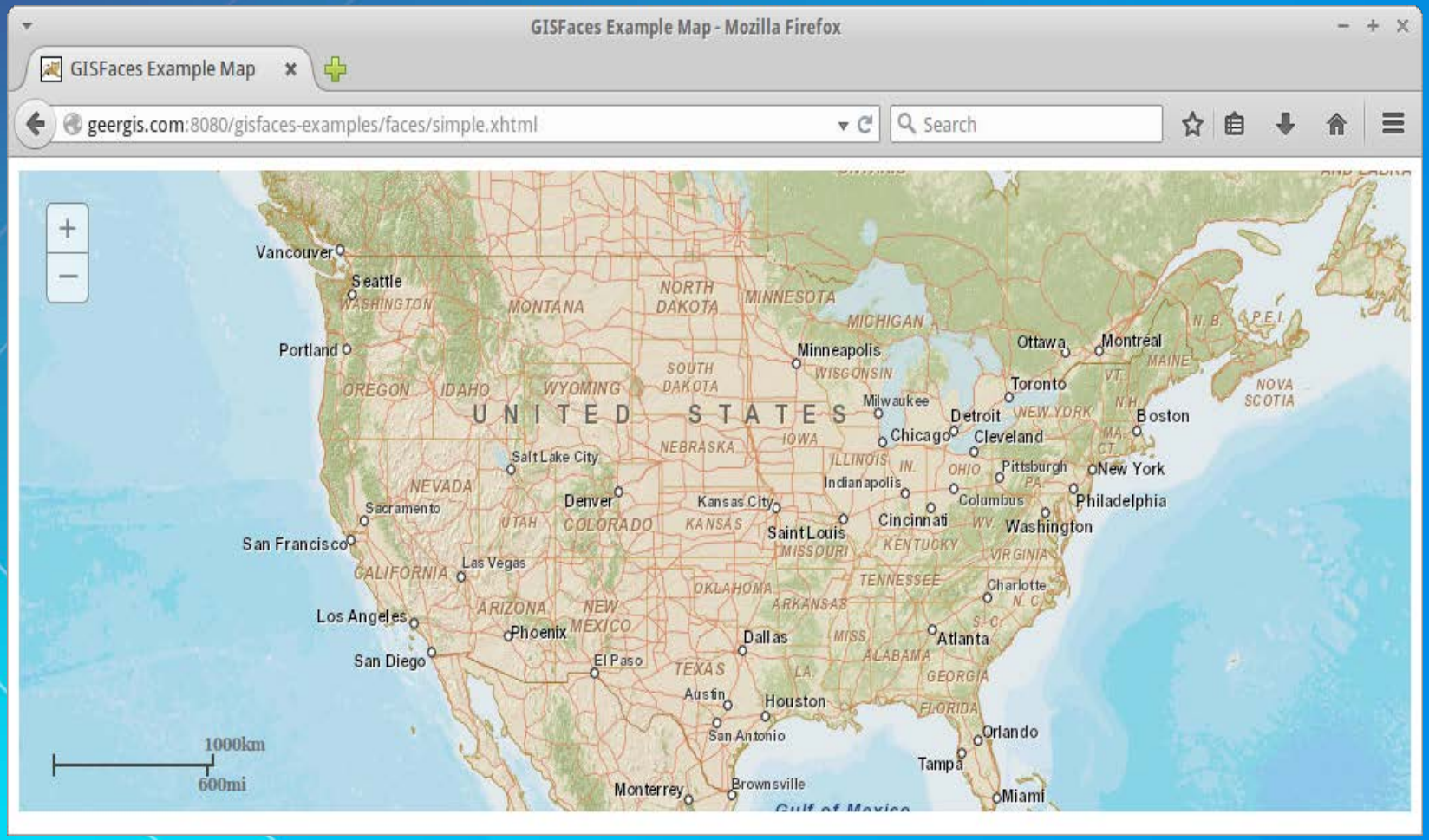
Topics for Discussion

- What is GISFaces?
- Simple Example
- Why the need?
- What are the features?
- Why use the ESRI ArcGIS API for JavaScript?
- Why use JavaServer Faces?
- Advanced Example
- What are the requirements?
- What is next?
- How to get more information about GISFaces?
- Questions

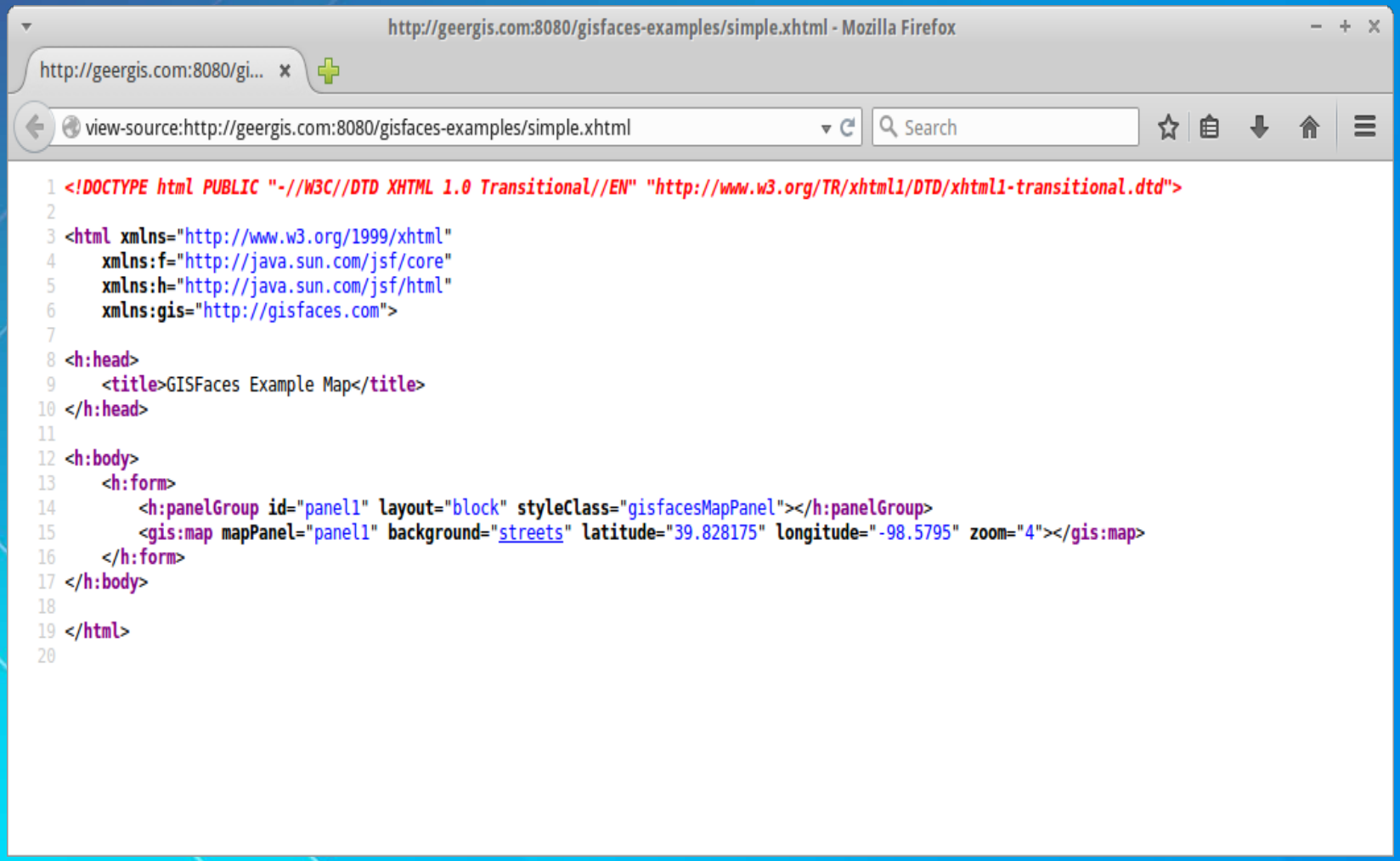
What is GISFaces?

- Java Enterprise Edition (EE) component library for GIS mapping.
- Core technologies used are the ESRI ArcGIS API for JavaScript and JavaServer Faces.
- Library includes reusable components which hide low level details of web mapping.
- Provides tight coupling between Java and GIS in a web environment.
- JSF web pages are created using a declarative xhtml markup.

Simple Example - Map



Simple Example - Code




```
1  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
2
3  <html xmlns="http://www.w3.org/1999/xhtml"
4      xmlns:f="http://java.sun.com/jsf/core"
5      xmlns:h="http://java.sun.com/jsf/html"
6      xmlns:gis="http://gisfaces.com">
7
8  <h:head>
9      <title>GISFaces Example Map</title>
10 </h:head>
11
12 <h:body>
13     <h:form>
14         <h:panelGroup id="panel1" layout="block" styleClass="gisfacesMapPanel"></h:panelGroup>
15         <gis:map mapPanel="panel1" background="streets" latitude="39.828175" longitude="-98.5795" zoom="4"></gis:map>
16     </h:form>
17 </h:body>
18
19 </html>
20
```

Why the need for GISFaces?

- No product currently exists that leverages these technologies.
- The ESRI Java Web ADF is deprecated.
- Reusable library that hides the complexity of the interaction between JSF and the ESRI ArcGIS API for JavaScript.
- Allows any page author or developer to easily create a GIS map in a web page.
- No need to be a Java, JavaScript, ESRI JSAPI, or GIS expert.

What are the features of GISFaces?

- Uses the ESRI ArcGIS API For JavaScript mapping engine.
- Supports ESRI tiled, image, and dynamic map services.
- Supports KML, feature, and graphics layers.
- Supports the 10 standard ESRI tiled backgrounds.
- Graphics layers support marker, polyline, polygon, circle, and text graphics.
- Graphics layer markers support drag and drop functionality.
- Ability to add multiple services and set opacity, refresh interval, and min/max scales per service.
- Dynamic map services support layer visibility and definition expressions for filtering.

What are the features of GISFaces? (Continued)

- Support for legend, overview, navigation, and geocoder widgets in separate panels.
- Options to show a scalebar, logo, attribution, latitude/longitude coordinates, and a progress bar in separate panels.
- Supports <f:ajax> events “click”, “extent”, “view”, “select”, “drag”, and “geolocation”.
- Supports feature identification, highlight, and attribute table via <f:ajax> listener.
- Supports custom map LOD (level of detail) levels and layer min/max scale ranges.
- Supports automatic map layer refreshes at specified intervals.
- Ability to use a locally hosted ESRI JSAPI for environments behind a firewall or without Internet access.

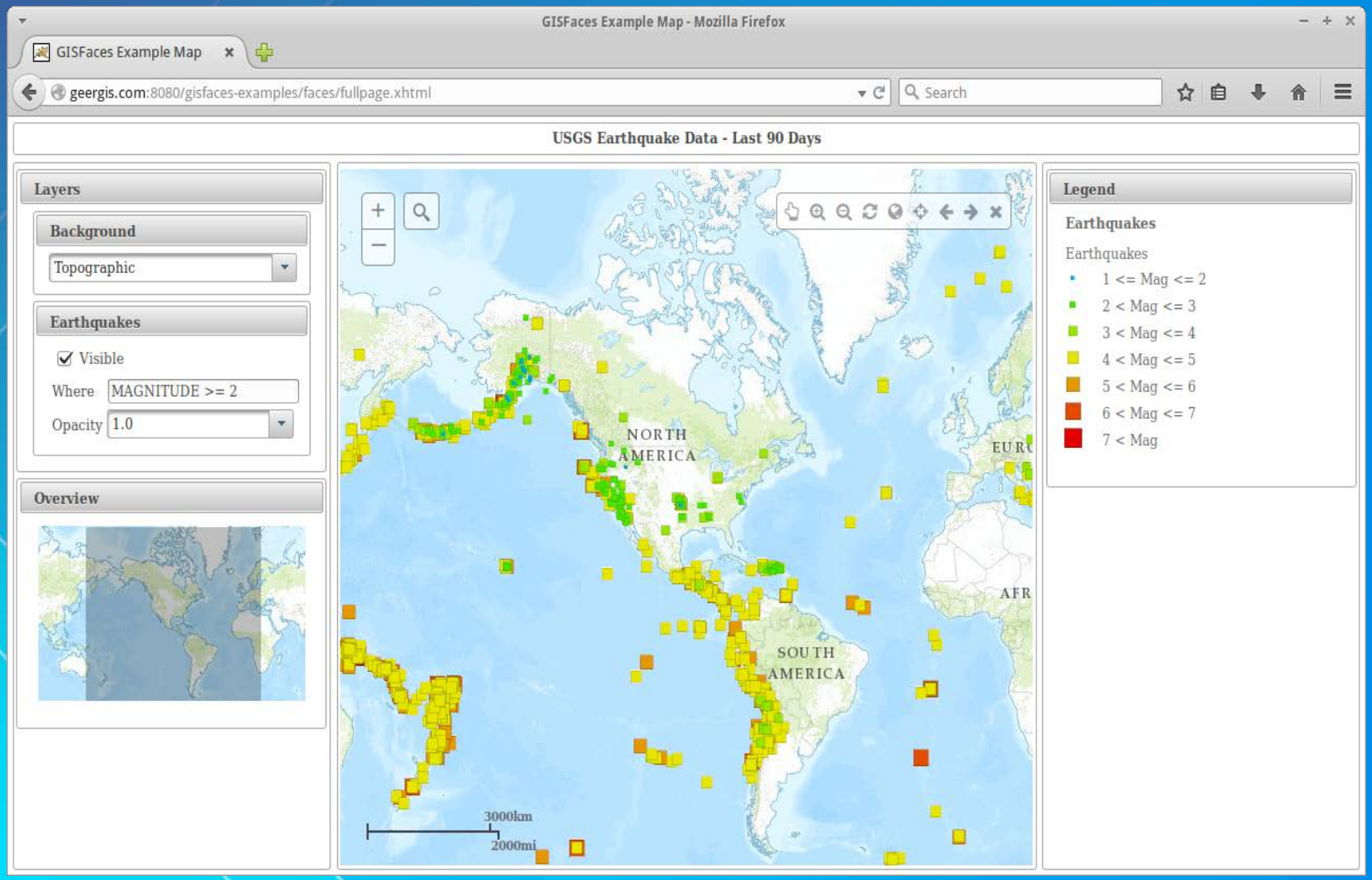
Why use the ESRI ArcGIS API for JavaScript?

- The ESRI ArcGIS API for JavaScript is a feature-rich, browser-based mapping engine.
- Based on JavaScript, not third-party plugins, which are issues within some organizations and governments.
- It is a fast, lightweight, and simple library.
- Uses Open Standards such as JavaScript, REST, and JSON.
- Has a broad target audience in terms of device and browser support.
- The website is https://developers.arcgis.com/javascript/.

Why use JavaServer Faces?

- JSF technology greatly simplifies building web pages.
- Is the de facto standard in Java web development.
- Component-based framework.
- Event driven programming model with AJAX built in.
- Contains a feature rich, reusable set of high and low level components.
- Component model which allows third party development of custom components, like GISFaces.
- Many third party libraries are freely available and include PrimeFaces, RichFaces, IceFaces, OpenFaces, MyFaces.
- The website is https://javaserverfaces.java.net/.

Advanced Example - Map



Advanced Example - Code

http://geergis.com:8080/gisfaces-examples/fullpage.xhtml - Mozilla Firefox

http://geergis.com:8080/gi...

view-source:http://geergis.com:8080/gisfaces-examples/fullpage.xhtml

Search

```
                </h:panelGroup>
            </p:panel>
        </p:layoutUnit>

        <p:layoutUnit position="east" size="300">
            <p:panel header="Legend">
                <h:panelGroup styleClass="gisfacesLegendPanel" layout="block">
                    <h:panelGroup id="legend" layout="block"></h:panelGroup>
                </h:panelGroup>
            </p:panel>
        </p:layoutUnit>

        <p:layoutUnit position="center">
            <h:panelGroup id="mymapdiv" styleClass="gisfacesMapPanel" layout="block">
                <h:panelGroup id="navbar" layout="block" styleClass="gisfacesNavbarPanel"></h:panelGroup>
                <h:panelGroup id="loading" styleClass="gisfacesLoadingPanel" layout="block">
                    <h:panelGroup styleClass="fa fa-refresh fa-spin"></h:panelGroup>
                </h:panelGroup>
                <h:panelGroup styleClass="gisfacesGeocoderPanel" layout="block">
                    <h:panelGroup id="geocoder" layout="block"></h:panelGroup>
                </h:panelGroup>
                <h:panelGroup id="coordinates" styleClass="gisfacesCoordinatesPanel" layout="block"></h:panelGroup>
            </h:panelGroup>
        </p:layoutUnit>

    </p:layout>

    <gis:map id="mymap" mapPanel="mymapdiv" overviewPanel="overview" geocoderPanel="geocoder" legendPanel="legend" coordinatesPanel="coordinates" loadingPanel="loading" nav
        <gis:service type="dynamic" url="http://tmservices1.esri.com/arcgis/rest/services/LiveFeeds/Earthquakes/MapServer" opacity="#{mapBean.opacity}">
            <gis:layer number="0" visible="#{mapBean.visible}" where="#{mapBean.where}"></gis:layer>
        </gis:service>
        <f:ajax event="click" render="growl1" listener="#{mapBean.doMapClickListener}"></f:ajax>
        <f:ajax event="extent" render="growl1" listener="#{mapBean.doMapExtentListener}"></f:ajax>
        <f:ajax event="view" render="growl1" listener="#{mapBean.doMapGraphicViewListener}"></f:ajax>
        <f:ajax event="select" render="growl1" listener="#{mapBean.doMapGraphicSelectListener}"></f:ajax>
        <f:ajax event="geolocation" render="growl1" listener="#{mapBean.doMapGeoLocationListener}"></f:ajax>
    </gis:map>

  </h:form>
</h:body>

</html>
```

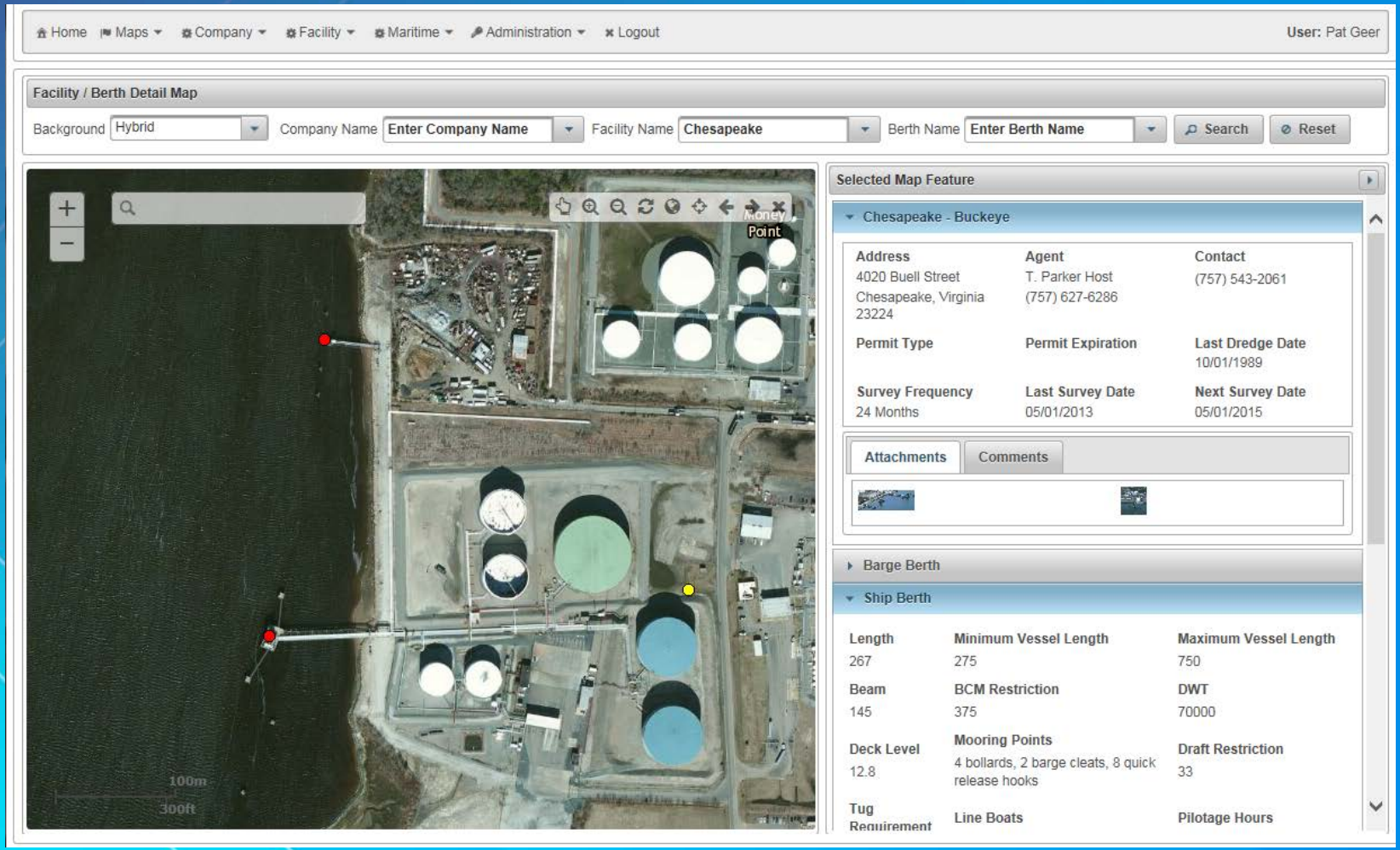
What are the requirements to use GISFaces?

- Java 8 or greater.
- JavaServer Faces 2 or greater.
- Java web container such as Glassfish, WildFly, Tomcat, or WebSphere.
- Access to the ESRI ArcGIS API For JavaScript API via Internet or local hosting.
- Some options may require map services hosted on ESRI ArcGIS Server 10 or greater.

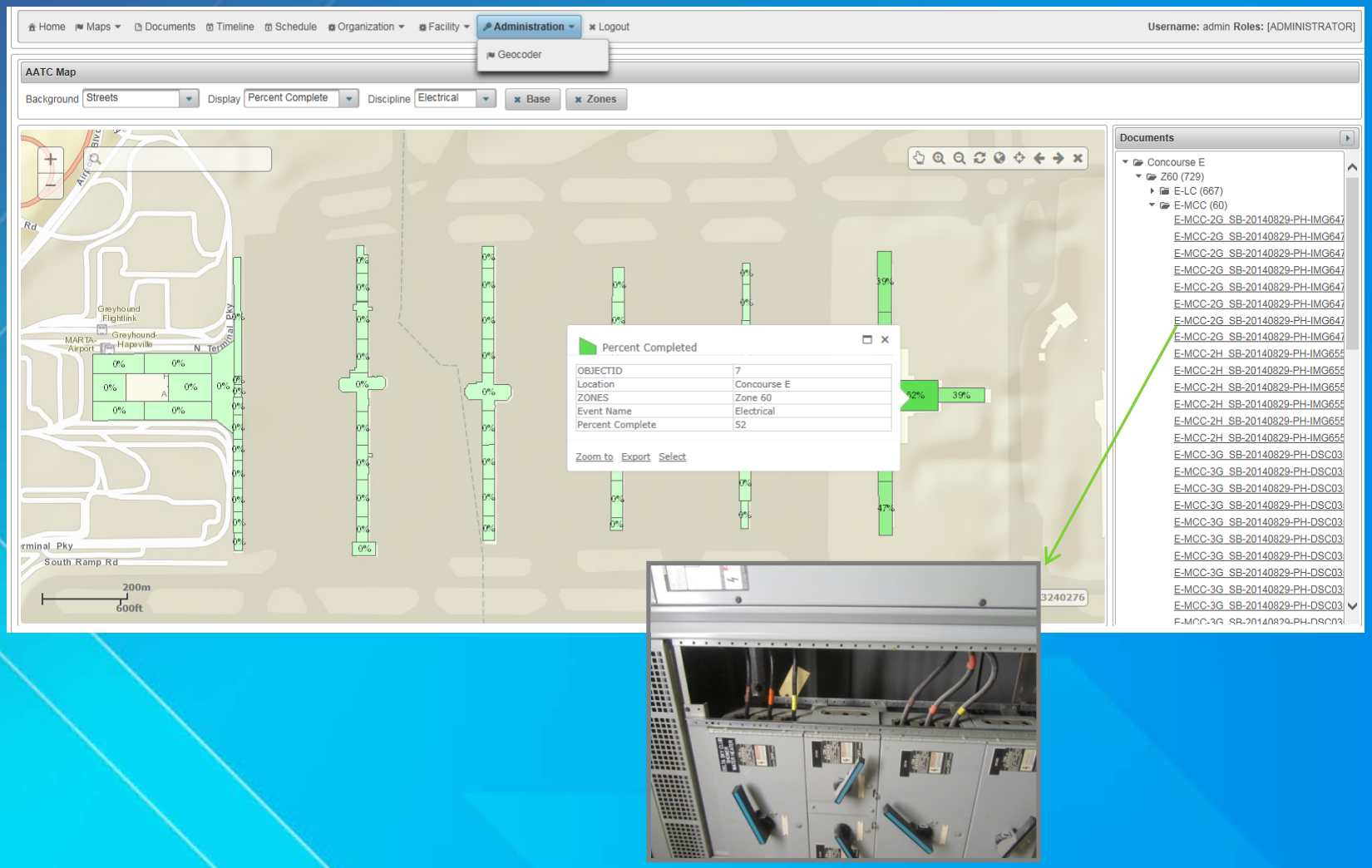
What is next for GISFaces?

- Support graphics layer geometry edits including drag, scale, rotate, and vertices editing for polygons.
- Convert to a dynamic map model defining services and layers instead of declarative XHTML markup.
- Allow custom popup content using a template or JavaScript callback function.
- Considering support for the ESRI/Leaflet mapping engine.

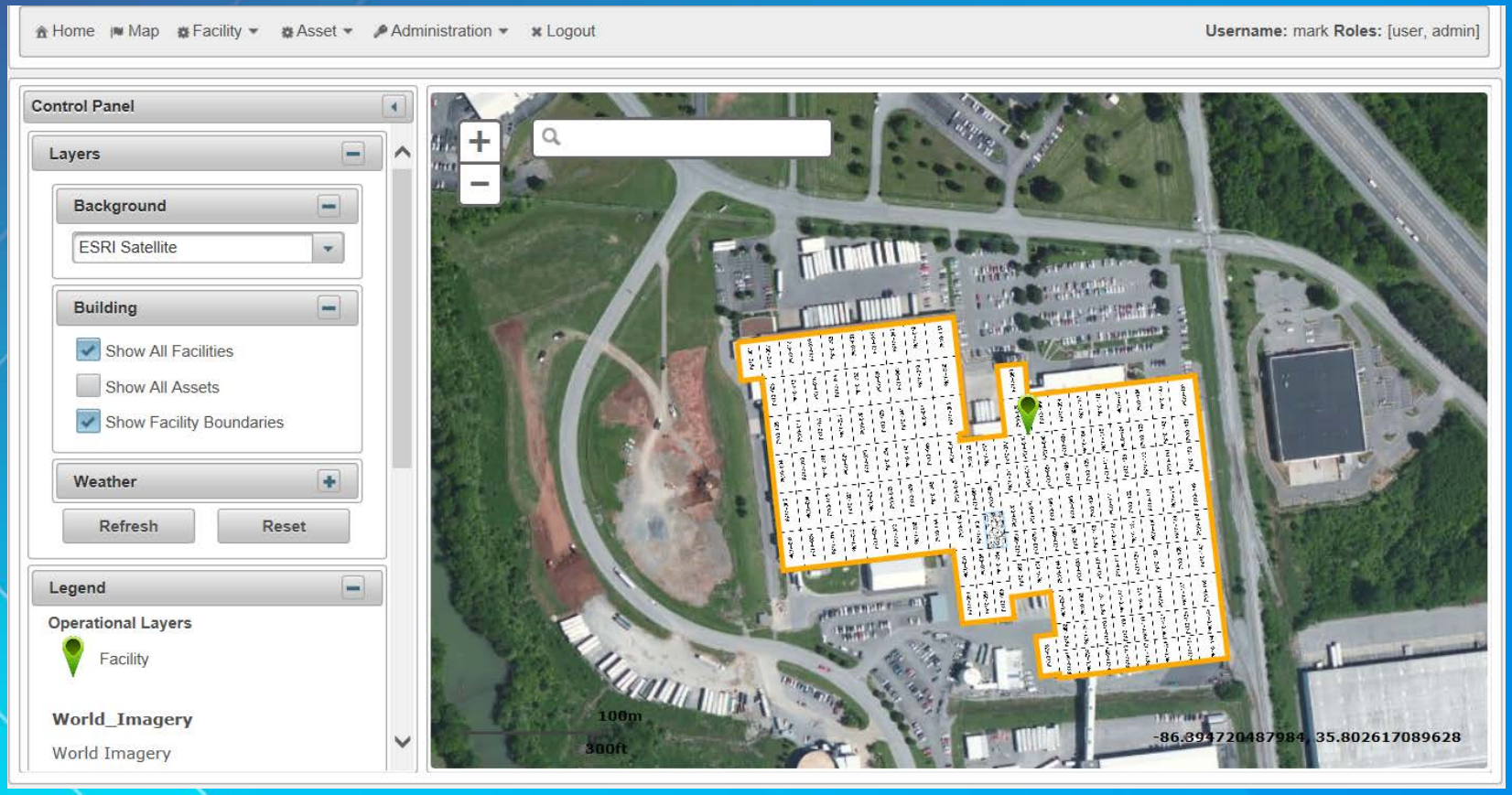
Example Applications



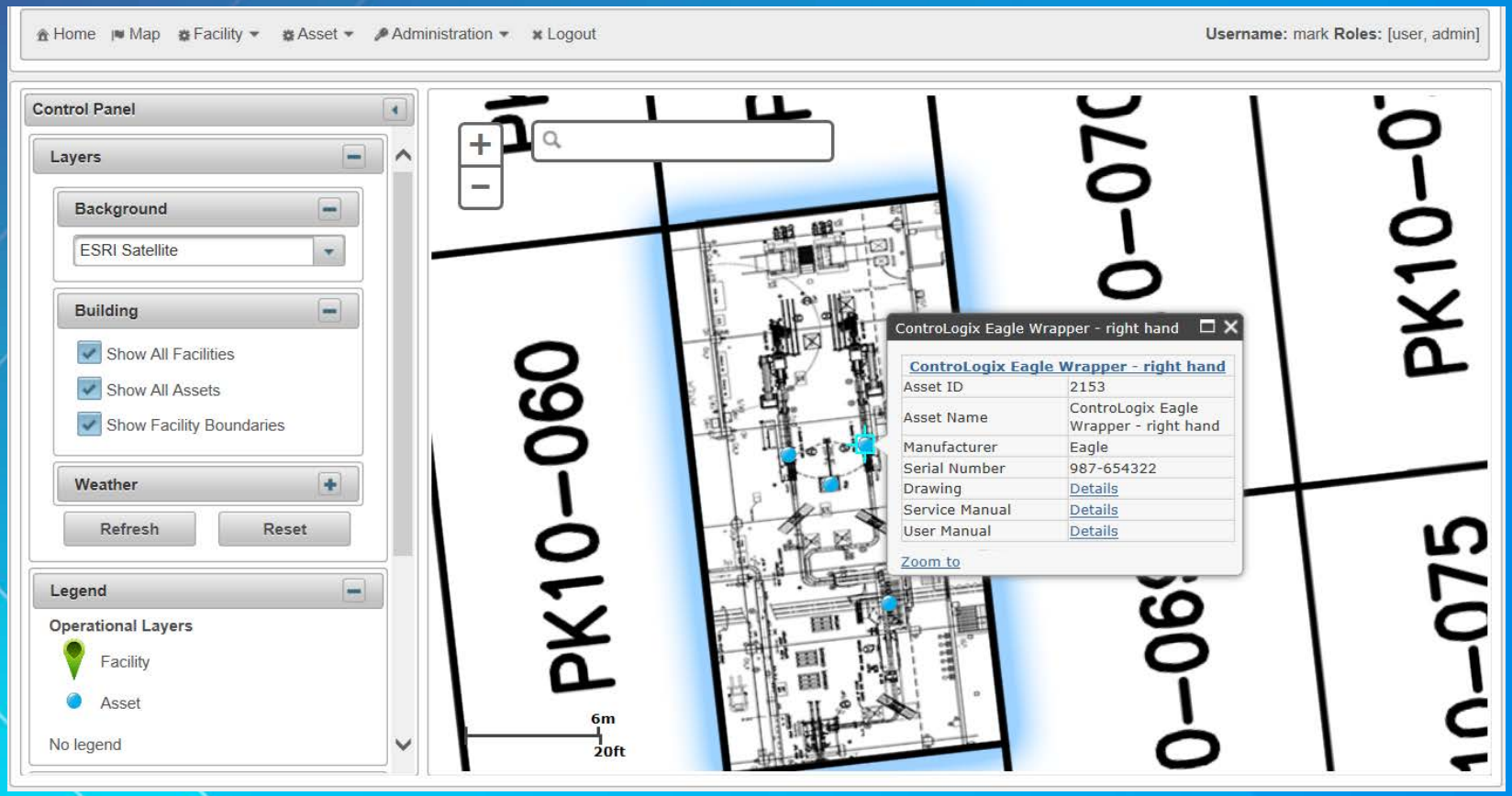
Example Applications



Example Applications

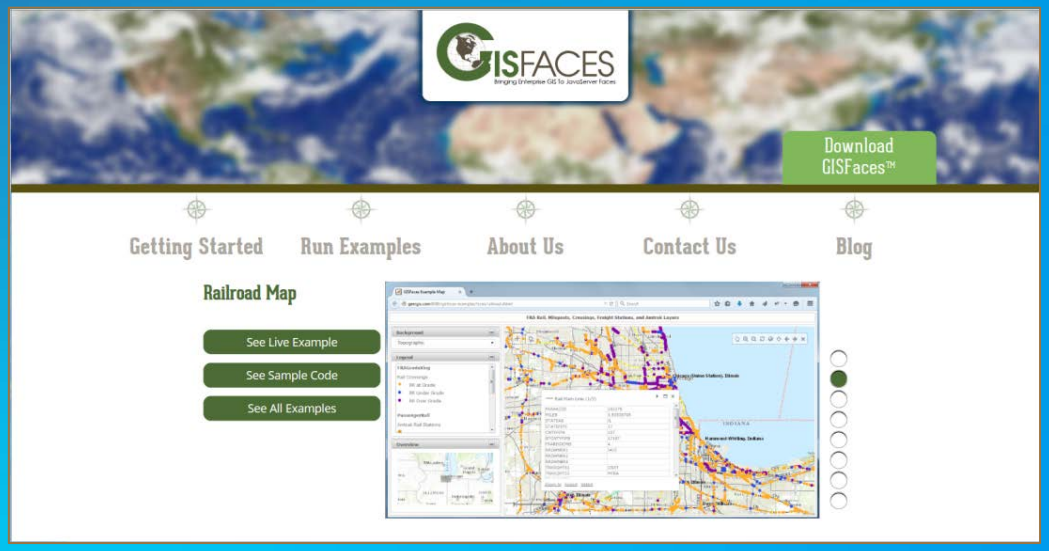


Example Applications



How to get more information about GISFaces?

- Visit us at http://www.gisfaces.com.



- Download the .zip file which contains the binary .jar, javadoc .jar, and example .war files.
- Run live examples.
- Please give us your feedback!

Questions

and

Thanks for your Attention!

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