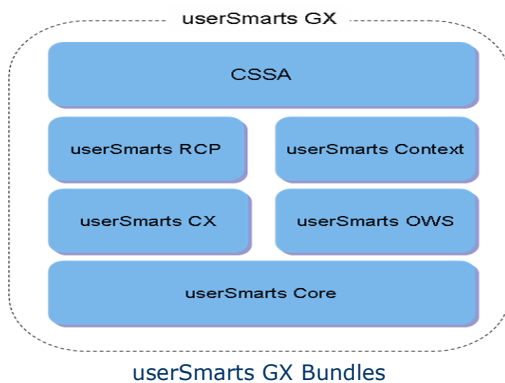


userSmarts® GX

A framework for building context-sensitive web applications

Overview

userSmarts GX is an open framework for building and deploying dynamic web-based decision support and portal systems. userSmarts GX simplifies the development of web applications by providing a multi-layered framework that hides the low-level interactions and details of Adaptive JavaScript and XML (AJAX) programming and preserves the traditional "separation-of-concerns" model used in building J2EE applications.



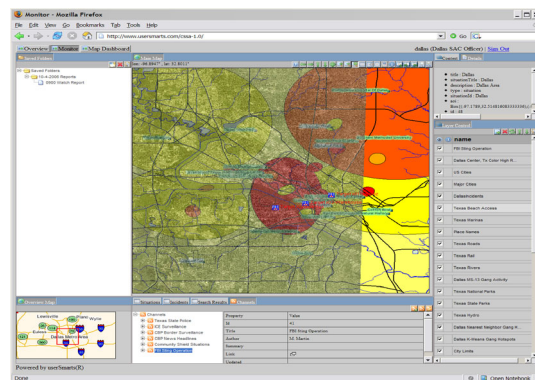
userSmarts GX provides a set of extensible framework bundles:

- ❖ **userSmarts Core** – Rich collection of foundation classes for building Java services and applications
- ❖ **userSmarts CX** – Connection framework for accessing web resources and services; includes connectors for common OGC services
- ❖ **userSmarts OWS** – Collection of extensible OGC web services; includes pre-built CSW (Catalog) and cascading WMS (Web Map Service)
- ❖ **userSmarts RCP** – AJAX application framework implemented in JavaScript; modeled after the Eclipse Rich Client Platform

- ❖ **userSmarts Context** – Extensible framework for managing projects, folders, and resources; includes support for GeoRSS feeds, maps, and reports
- ❖ **Context Sensitive Situation Awareness (CSSA) application** serves as a starting point for developing new applications

Context Sensitive Situation Awareness (CSSA)

- ❖ A unique Common Operating Picture (COP) capability supporting "Context-Sensitive Situation Awareness"
- ❖ System behaviors are driven by user and application context using *Context-Sensitive Service*®
- ❖ Features a *COP Interoperability Framework* for geospatial data and services, a standards-based framework for integrating distributed COP resources
- ❖ Tools for discovering, viewing, analyzing and reporting on multi-source geospatial data
- ❖ Supports a variety of geospatial data sources, including GeoRSS feeds
- ❖ Produces relevant, actionable information



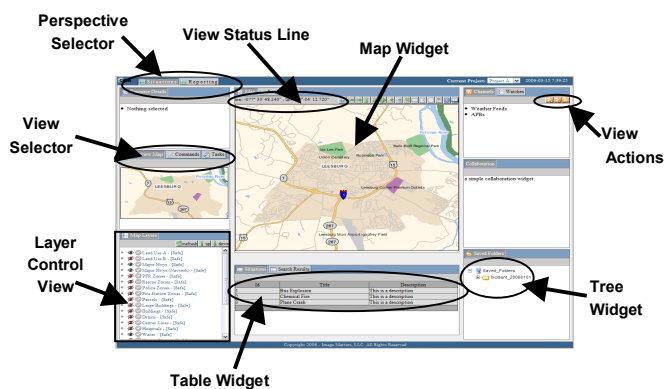
CSSA Monitor Perspective

Rich Client Platform (RCP) for AJAX applications

- ❖ Based on the AJAX programming model, using JavaScript and XML to build highly interactive Web-based applications that do not require frequent page reloads
- ❖ User interface and plug-in API simplify application development and support code reuse

GIS Integration

- ❖ User has control over visible layers and viewing areas through easy-to-use map controls
- ❖ Produces real-time map overlays with multiple layers from multiple servers
- ❖ Easy to embed into existing web pages and browser-based applications
- ❖ Client-side manipulation of geospatial data and views enables fast response and dynamic user interactions
- ❖ Connects to multiple types and instances of OGC Web Services as facades to "back office" GIS systems and data
- ❖ Integrates with the ESRI ArcIMS/ArcSDE WMS and WFS connectors



userSmarts RCP Workbench Page and Controls

Flexible Application Development Environment

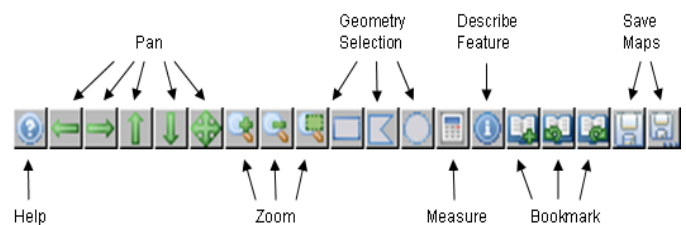
- ❖ *Runtime* provides an object-oriented AJAX component framework (similar to JavaBeans) with powerful plug-in system and utility classes for remote data access.
- ❖ *Pages* provides a fully-featured template engine patterned after Java Server Pages for dynamic generation of XHTML content in the

web browser with built-in support for JavaScript. Ideal for generating dynamic web pages, reports, and forms from templates.

- ❖ *Workbench* provides a user-interface framework based on runtime widgets that emulate Eclipse pages, perspectives, views and editors. Programming model looks like Eclipse but works at runtime in the web browser!
- ❖ *Geo-Processing Environment* (GPE) provides "plug-able" off-the-shelf application components, including extensible *Map Widget* and *BestMap* controls.

Map Widget

- ❖ Supports zoom and pan
- ❖ Dynamic layer control, including ability to set visibility, query-state, and refresh properties of individual layers
- ❖ Real-time cursor coordinates



userSmarts RCP Map Widget Toolbar

- ❖ Smart scale bar snaps to closest increment and supports multiple units and projections
- ❖ Smart layer management for high performance access to multiple remote Web Map Servers, GeoRSS feeds, and other sources
- ❖ Smart *Bookmarks* allow user-defined view contexts to be set and instantaneously restored
- ❖ Support for multiple coordinate projection systems
- ❖ Supports geometry primitives for drawing
- ❖ Smart measurement tools supporting multi-point, multi-segment distances and cumulative distances, configurable units, and multiple projection systems
- ❖ Robust *RenderManager* for smart layers and handling different display technologies (SVG, VML, etc) and protocol-specific behaviors (e.g., layer refresh events)
- ❖ Create your own tools and dynamically (at runtime) add and remove from the page