

# WebCA

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**RAD Physics Application Programming**

**Presenting for the WebCA Team**

**RAD Controls Brown Bag Seminar**

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# WebCA Team

- **Matej Sekoranja (Cosylab) - Developer**
- **Tom Pelaia**
- **David Purcell**
- **Ernest Williams**

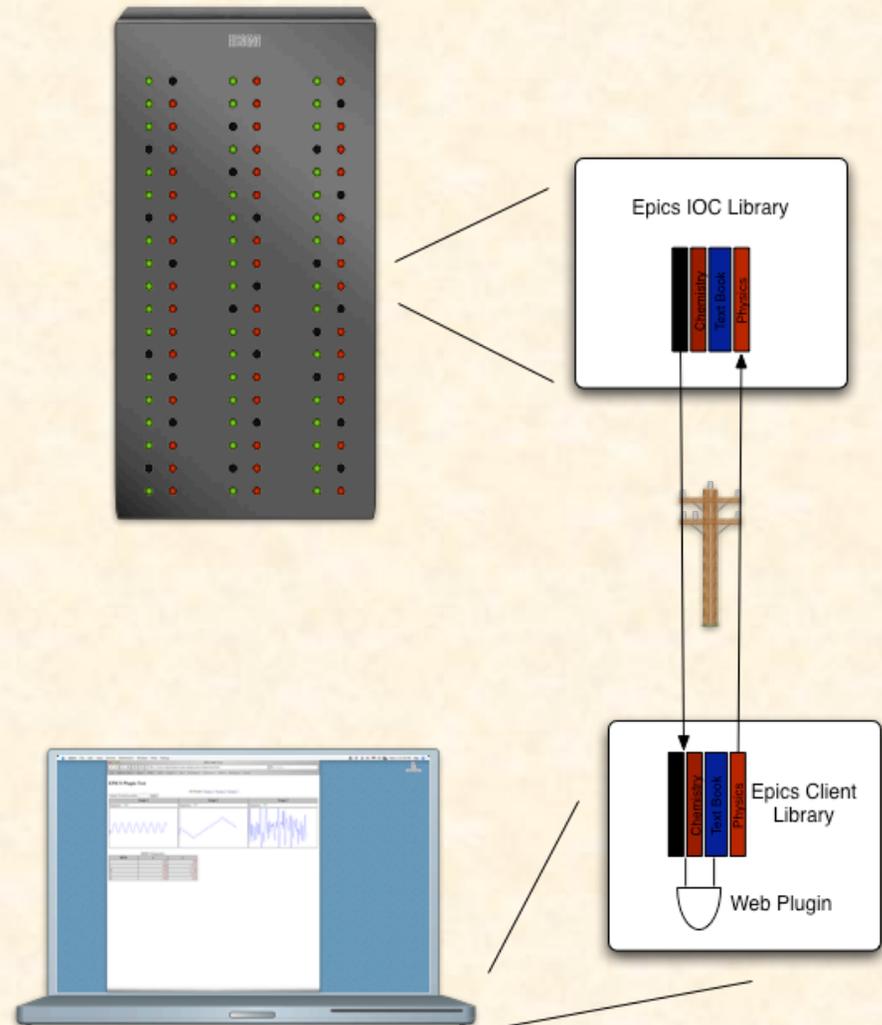


# What is WebCA?

- **WebCA is an internet plugin that empowers your web browser as an EPICS channel access client**
- **Initially based on a limited prototype Web Kit plugin for Mac OS X by Tom Pelaia**
- **Matej Sekoranja of Cosylab developed a multi-platform Netscape plugin with a more complete and expanded API**
- **Supports Netscape plugin compatible Browsers:**
  - Mozilla (e.g. Firefox) - Linux, Mac OS X, Windows
  - Safari - Mac OS X

# WebCA Architecture

- JavaScript API interface to EPICS Channel Access client functions
- Write pages in HTML, JavaScript and CSS
- Web browser is a Channel Access client
- Requires EPICS Channel Access client libraries on the user's computer



# Channel Access Support

- Supports waveform and scalar PVs
- Monitor with value, status, severity and timestamp
- Get Value with Callback
- Put Value with Callback
- Connection monitoring



# Sample Code Snippets

```
function putValue( pv, value, elementID ) {
    var epicsPlugin = document.getElementById( "EPICSPlugin" );
    var theElement = document.getElementById( elementID );
    epicsPlugin.putPV( pv, "handlePut", theElement, value );
}

function handlePut( element, pvName, values, completionStatus ) {
    element.value = values.toFixed( 3 );
}

function monitorPV( pv, elementID ) {
    var epicsPlugin = document.getElementById( "EPICSPlugin" );
    epicsPlugin.monitorPV( pv, "handleScalarMonitor", document.getElementById( elementID ) );
}

function handleScalarMonitor( userInfo, pv, values, status, severity, timestamp ) {
    if ( values.length ) {
        userInfo.innerHTML = values[0].toFixed(3);
    }
    else {
        userInfo.innerHTML = values.toFixed(3);
    }
}
```

# Motivation

- **Web browsers provide content display using native graphics**
  - No need for X-Windows, Motif, libpng, etc.
- **Graphical interfaces use standard web protocols: HTML, JavaScript and CSS**
  - Web pages may be generated manually or automatically by application servers tied to databases
- **Leverage the power of web browsers**
  - Page management (open in new window/tab or same window/tab)
  - Bookmarking
  - Page and bookmark Search
  - Media support (GIF, PNG, PDF, MPEG 4)

# Use Cases

- **Complement EDM in the Control Room**
  - WebCA uses JavaScript which makes it suitable only for pages with a relatively low load
  - Use WebCA where it makes sense to do so
- **Allow users to view control pages on their personal computer through the CA Gateway**

# WebCA Future Effort

- **Generate some useful web pages and evaluate the reliability in the field**
- **Create an installer for easy installation**
- **Develop controls, meters and graphs**
- **Develop an EPICS display language in XML along with XSLT stylesheet transforms to generate the web page content**
  - Provides a consistent look and feel
  - Should yield quicker page development
- **Create an application server to generate pages based on database content**