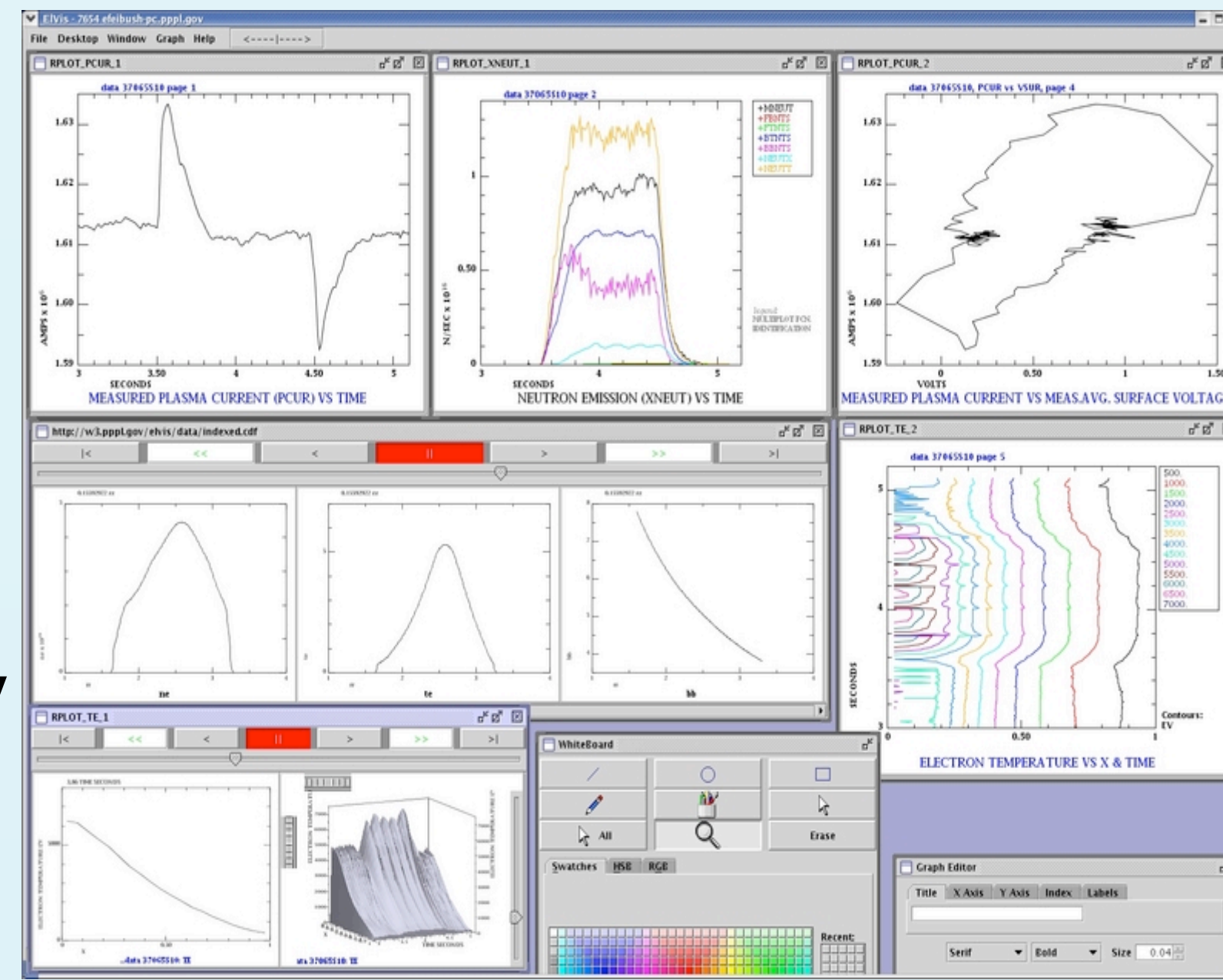
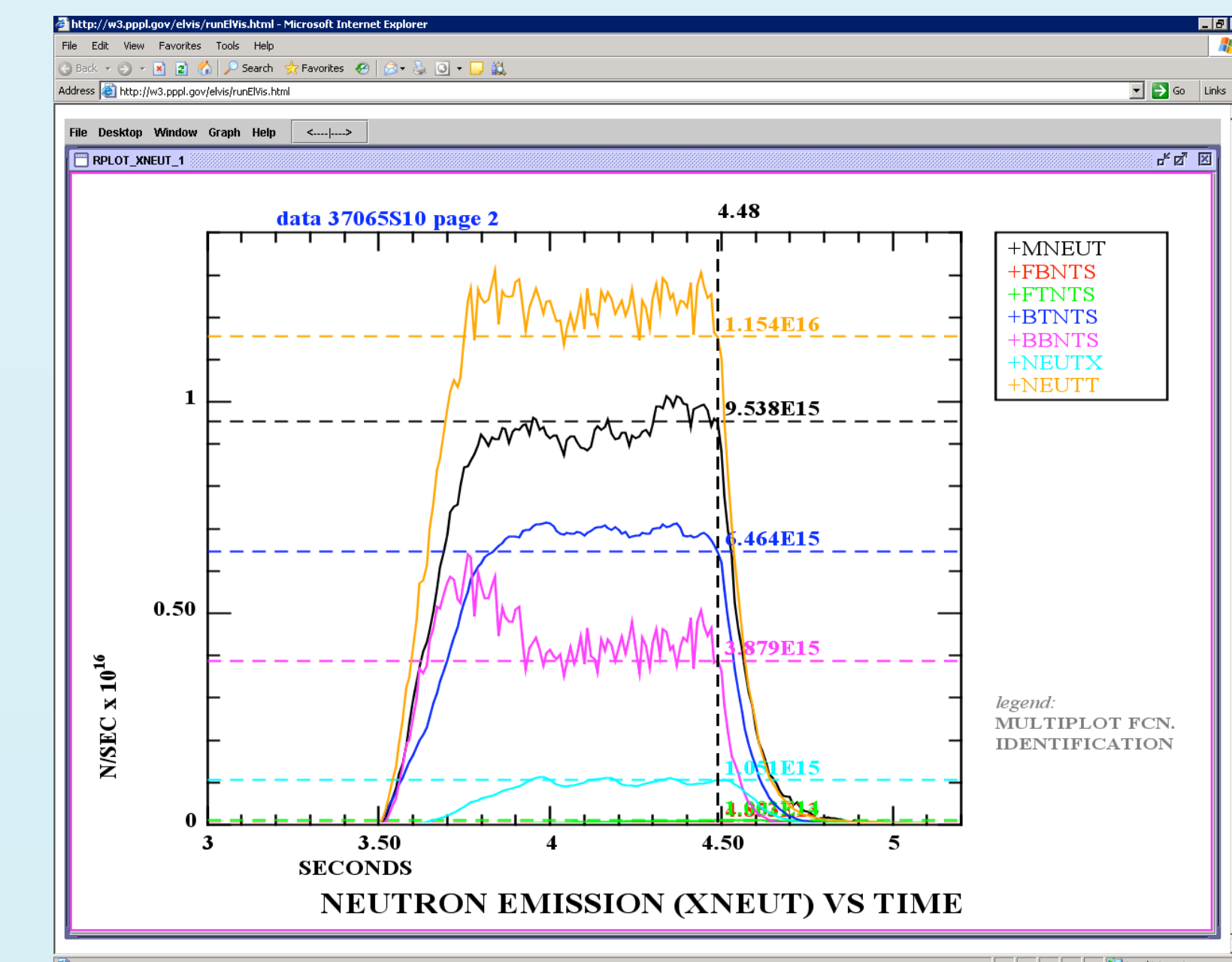


1. Visualization Client

Compare experiments to simulation data.
Java applet.
Runs in browser.
Requests data from server running legacy Fortran application.

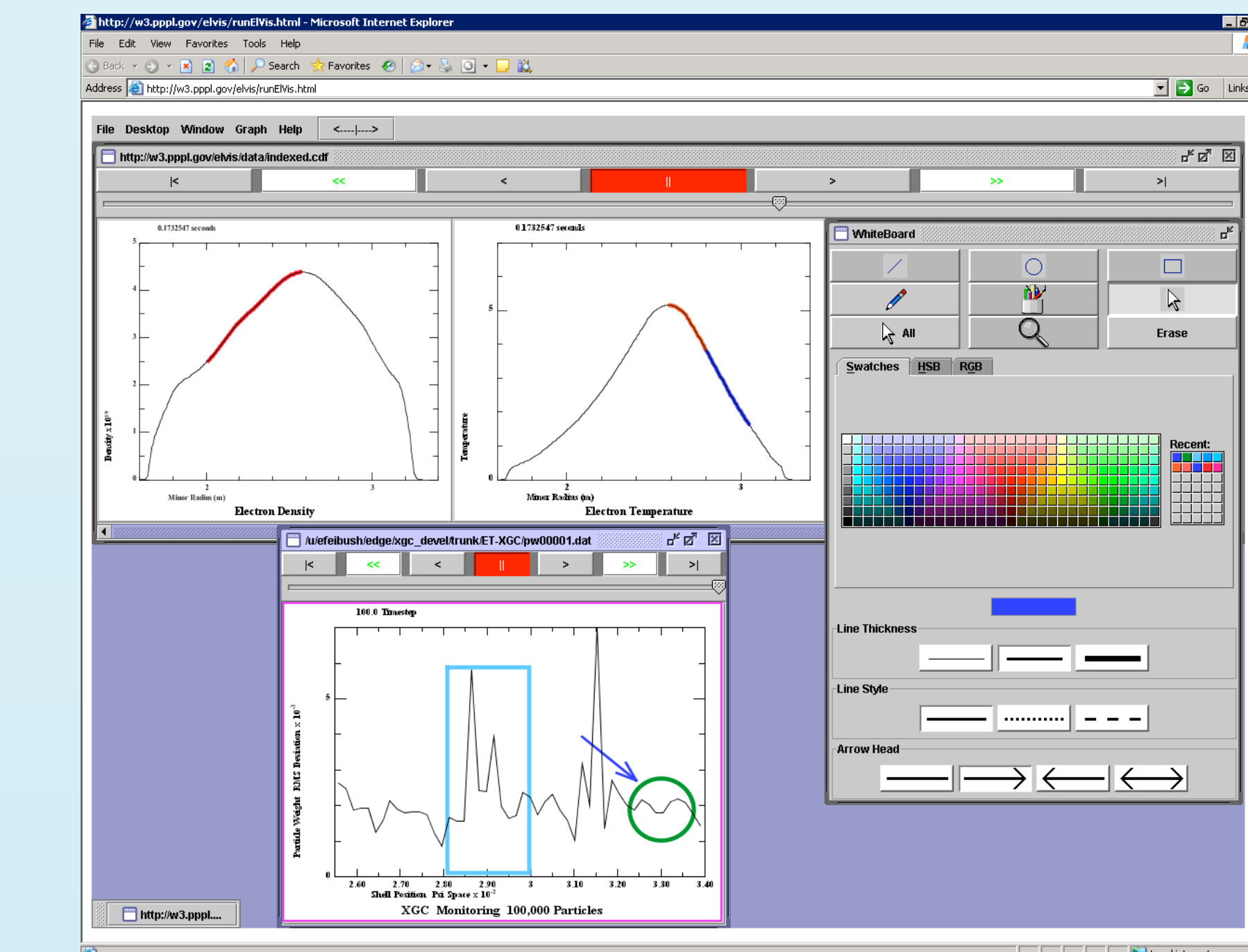


Multiple Graph Windows



Animation & Whiteboard

Explore Data Interactively



Data Monitoring

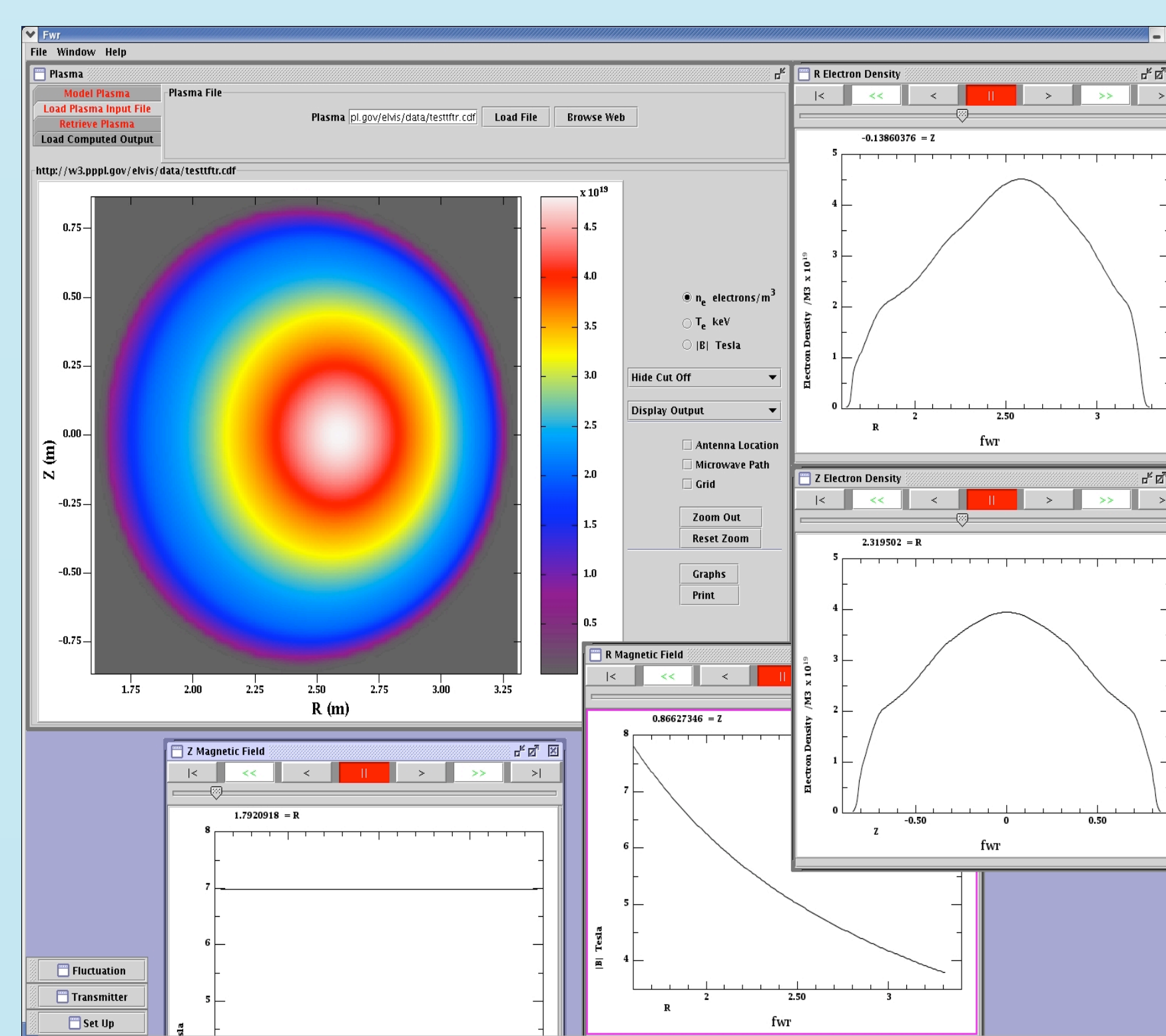
Animate multiple variables
Data highlighter tool displays colored traces in data space for each time step in animation. Zoom & scroll with view.

Subset of total output is stored as URL.

Client polls the URL, appends new data to graphs.

Verify Input - Monitor Results

Security Panel



Encapsulated Methods

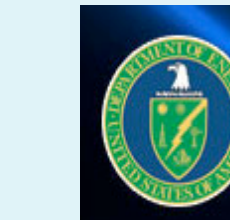
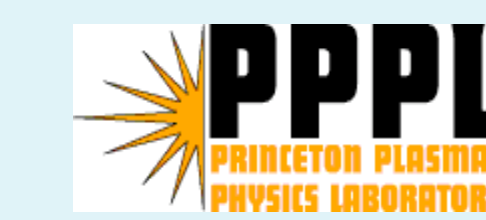
EIVis: A Portal for Scientific Graphics

Eliot Feibush

Douglas McCune

Scott Klasky

Princeton Plasma Physics Laboratory



Oak Ridge National Laboratory

2. HTTP Web Server

Access from anywhere on Internet.
Receives requests from visualization clients. Forwards servlet requests through PPL firewall. Returns graph objects.

Multi-Tier Architecture
Distributes Functionality

----- Firewall -----

3. Portal Server

Register sessions.
Manage credentials.
Create graphs.
Collaboration among clients.

Visualization Servlet

Credentials

Applications

Java & Jython programs import EIVis graph classes and gain all encapsulated methods for interaction & display.

5. Compute Services

Command Line I/O Controller

Buffering of standard I/O prevents trivial Linux pipe.

Master
Pseudo-Terminal
Slave

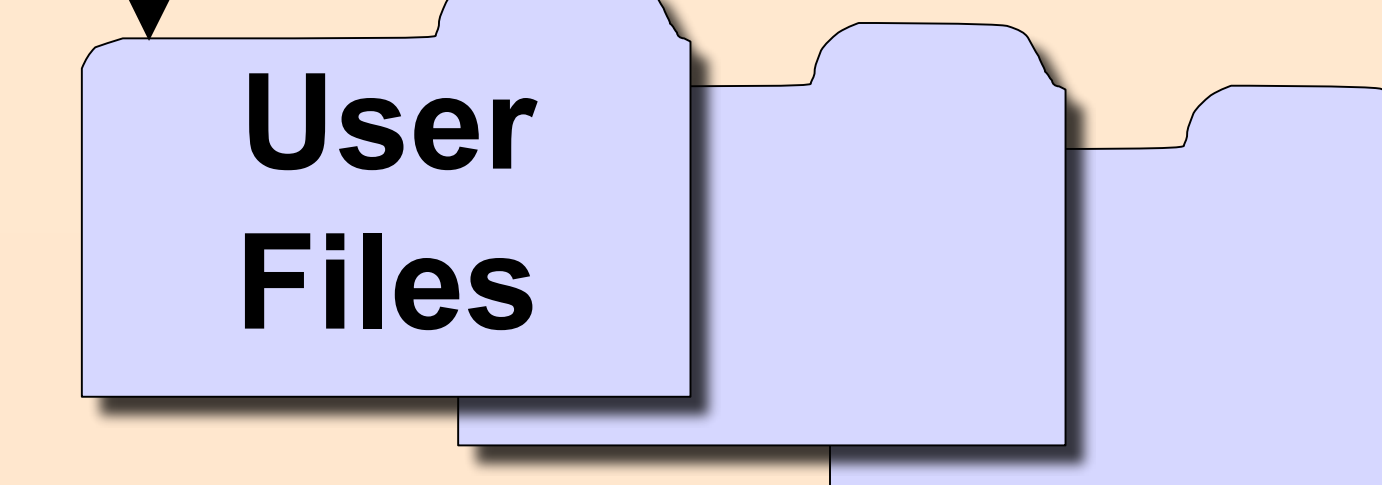
Special interprocess communication channel sends text between master & slave processes. Master forks slave which execs legacy plotting code.

Transport Analysis Legacy Code

Used at several institutes world-wide.
New physics models being added but still using legacy plotting code.
Access analysis runs stored in database.
Scripted to formulate graphs of fusion data.
EIVis API sends data to visualization client with minimal changes to Fortran code.

EIVis API

EIVis XML



6. Experiment Data Server

Acquired Data Analysis Runs

MDSplus Database

4. myProxy Server

X.509 Certificates

Certificates stored on remote myProxy server.

Convenient for user: enter name and password in security panel instead of managing files.

<http://w3.pppl.gov/elvis>