

Customizable Scientific Web-Portal for DIII-D Nuclear Fusion Experiment*

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Increasing utilization of the Internet and convenient web technologies has made the web-portal a major application interface for remote participation and control of scientific instruments. While web-portals have provided a centralized gateway for multiple computational services, the amount of visual output often is overwhelming due to the high volume of data generated by complex scientific instruments and experiments. Since each scientist may have different priorities and areas of interest in the experiment, filtering and organizing information based on the individual user's need can increase the usability and efficiency of a web-portal.

DIII-D is the largest magnetic nuclear fusion device in the US. A web-portal has been designed to support the experimental activities of DIII-D researchers worldwide. It offers a customizable interface with personalized page layouts and list of services for users to select. Each individual user can create a unique working environment to fit their own needs and interests. Customizable services are: real-time experiment status monitoring, diagnostic data access, interactive data analysis and visualization. The web-portal also supports interactive collaborations by providing collaborative logbook, shared visualization and online instant messaging services.

The DIII-D web-portal development utilizes multi-tier software architecture, and web2.0 technologies, such as AJAX and Django, to develop a highly-interactive and customizable user interface. A set of client libraries was also created to provide a solution for conveniently plugging in new services to the portal. A live demonstration of the system will be presented.

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