The Goals of the Interagency Fuels Treatment Decision Support System:
What are we hoping to achieve?

The interagency Joint Fire Science Program (JFSP), through both formal and informal interactions with its partners and clients, became convinced that one of the more pressing problems facing fire and fuels managers is the confusion and inefficiency associated with the many existing software systems intended to help fire and fuels managers. These systems have proliferated in the last decade in response to various funding initiatives without any central control or vision. Managers are left with an assortment of unconnected systems in various stages of development with little guidance concerning the strengths and weaknesses of the various systems, and no framework for integration and fusion of data and outputs from these systems.

One of the principal voices articulating this problem has been the National Interagency Fuels Coordination Group (NIFCG). Acting in concert with NIFCG, the JFSP initiated Phase I of the Software Tools and Systems Study in March 2007. The strategic analysis, Phase I, resulted in the recognition that a software framework architecture was needed to facilitate the integration of fuels treatment models and data. Phase II was initiated in March 2008 with the objective of developing a conceptual (functional) design as well as a software architecture architecture design. In 2009, JFSP is actively considering moving into Phase III, a prototype development stage for the IFT-DSS.

The IFT-DSS project has identified four major stakeholder communities that could benefit in the following ways:

Fuels Treatment Field Specialists

- Provides one user interface to all relevant participating models
- Allows customizable flow paths for users to mix-and-match applicable models at each step in the solution process
- All flow paths may be saved within the system so they can be run by the originators at some future time as well as shared with other users
- Supports stand or vegetation unit level analysis as well as landscape analysis
- Software handles most data conversion needs
- Allows users to customize and visualize data for quality control and other purposes
- Stores documentation of the analytical process, ie. the customizable flow paths, with references in a way that is useful for communication with stakeholders
- Information about the participating models will exist within the system to help users make smart choices in creating customized flow paths

Fuels Treatment Model Developers

- Provide a mechanism for “publishing” a software product as a service module for others to use
- Provide a framework for managing a library of software services available to all model developers for constructing new applications

- Provide a set of service coding standards for model developers that wish to deposit a new software service to the system
- Provide a framework that facilitates model validation
- Provide a framework that helps identify modeling gaps
- Separates role of model development, testing, and validation from software interface development and maintenance
- Simplifies version management

Vegetation, Fuels, and Geo-physical Data Set Managers

- Provide a pathway between the IFT-DSS and all applicable data sets to leverage the value of that data
- Provide feedback to the data set managers concerning strengths and weaknesses found in the data
- Provide another avenue for data set managers to communicate issues of appropriate use, scale, and function to users

Information Technology Administrators

- Provide a central framework that IT administrators can ensure is appropriately secure where needed and appropriately open for access where needed as well as being functionally effective and user friendly
- Organize a myriad of chaotic, ungovernable software systems into a framework that meets the needs of users, IT security specialists, and managers equally well
- Advance the application of web-based, Service Oriented Architecture systems that can efficiently and effectively be used in a broad range of application domains
- Provide a vehicle for the implementation and testing of a practical and useful Software Life Cycle Management Process
- Provide another vehicle for enhancing true Interagency functionality and a testing ground for finding and testing acceptable governance issues that best support Interagency operations