



Wildland Fire Software Application Inventory

Concept Paper

**Program
Management
Office**

**National Wildfire
Coordinating Group**

**Information Resource
Management**

September 7, 2001

This document is a publication of the NWCG IRM Program Management Office.
Questions or comments regarding this document should be directed to:

IRM Program Management Office

National Wildfire Coordinating Group

3833 S. Development Avenue

Boise, ID 83705

Barry Mathias, Program Manager

(208) 373-4075

barry_mathias@blm.gov

Allen Deitz, Repository Manager

(208) 373-4076

allen_deitz@blm.gov

Judy Crosby, Data Architect

(208) 373-4077

judy_crosby@blm.gov

Al Borup, Applications Architect

(208) 373-4074

al_borup@blm.gov

Contents

I.	Introduction.....	4
II.	Abstract	4
III.	Why Create an Application Inventory?	4
IV.	Proposed Solution	5
V.	Questions to Be Answered	5
VI.	Long-Term Focus	6
VII.	Conclusion.....	6
VIII.	Appendix A – Proposed Inventory Data Elements	7
IX.	Appendix B – Preliminary Application List.....	9

I. Introduction

- a. This paper introduces concepts for compilation of a national, interagency inventory of all wildland fire software initiatives - past and present. One of the major duties and responsibilities of the NWCG Program Management Office's Application Architect is to "gather and maintain a library of all wildland fire related software applications used within the interagency wildland fire community."

II. Abstract

- a. This paper will discuss issues that demonstrate the immediate and potential benefits that can be realized by the creation and use of an application inventory.
- b. Proposed inventory concepts will be presented.
- c. Information collection challenges and questions will be introduced.
- d. Listings of proposed inventory data elements and of known applications will follow as Appendices.

III. Why Create an Application Inventory?

- a. Identification of redundant application efforts across agencies or disciplines will be easy to accomplish. Benefits would include:
 - i. Introduction of the potential for reusability of common application modules, concepts, and interfaces between distinct initiatives.
 - ii. Knowledge that could foster partnering or sharing of efforts between agencies or across disciplines.
 - iii. Opportunity to save resources by elimination of duplicate efforts.
- b. Knowledge of past efforts could provide a starting point for enhanced or updated versions of similar initiatives.
- c. Knowledge of past or current efforts may enhance creativity and innovation for related application development efforts.
- d. The inventory could serve as a mechanism to keep NWCG's IRM Working Team abreast of enterprise-wide initiatives that might otherwise remain undiscovered.
- e. Applications of interest to the functional business areas of concern represented by other NWCG working teams or groups will be easy to identify.
- f. The inventory will provide the basis for an application overlap or gap analysis that could demonstrate opportunities for application interoperability or define new areas of need.

IV. Proposed Solution

- a. The inventory will be a list of all existing computerized applications that were built or are being built for use by the various members of the entire wildland fire community. The list will span all federal, state, county, and local agencies that have jurisdictional responsibilities for incident management, and may include applications developed in-house or by contracted vendors.
- b. The list will be as inclusive as practical for any and all applications, whether they are in use today or not. (An application that is no longer in use may still provide valuable design considerations, logic, reusable code, or lessons learned.)
- c. Ideally, the inventory will include cutting-edge applications, which are constantly being developed. The inventory's completeness, accuracy, and currency will depend on the willingness of users to provide information about fire-related applications and systems, and will only be as comprehensive as this shared, collective knowledge.
- d. The inventory, once compiled, will be made available via web pages on the Internet. Inventory listings will be displayed on PMO web pages, linked from the NWCG home page.
- e. The inventory will exist in a relational database.
- f. Although dated, the catalog compiled by Susan Goodman, BLM National Technology & Science Center in Denver will be used as a starting point (See Appendix B). Additionally, the listing in the 1996 IRM Strategy Project "Yellow Book" will be consulted.
- g. The PMO Application Architect will be the steward of the inventory, and will have the responsibility for any and all additions, updates, or deletions from the inventory. Updates will be performed as soon as practical when new information is received.
- h. Formal methodologies will be introduced to facilitate periodic polling of the wildland fire community for additions to the inventory.
- i. Once an application's information is consolidated into the inventory a contact point will have been established. Gathering update information about an application can then be automated or semi-automated.
- j. Requests for updates to the information about applications in the inventory will be distributed to all contacts annually, along with a questionnaire for feedback on usability, benefit, and suggestions for improvement of the inventory.

V. Questions to Be Answered

- a. What additional (if any) information should be collected? (See Appendix A for the proposed data elements)

- b. Who are the contact points for application information and how will they be established?
 - i. By agency?
 - ii. By geographic area?
 - iii. By functional business area (NWCG Working Teams)?
 - iv. All of the above?
- c. What methods can be employed to assure that the inventory stays current?
- d. How can the usefulness of the inventory be measured?

VI. Long-Term Focus

- a. Expand the inventory's scope to include tracking of fire-related customized macros, templates, tables, spreadsheets, and scripts created for use in COTS products.
- b. After initial implementation, the amount of use, maintenance requirements, and benefit of the inventory will be evaluated. If business need and cost/benefit ratio warrants, the inventory may be enhanced to allow user interaction to create dynamic pages based on user-entered selection criteria.
- c. It may also be desirable to have the polling frequency for inventory updates occur on a more frequent basis.
- d. If standards can be developed, it may be possible to attempt collection of costing information for each application. Valuable reports could be generated showing which business areas are receiving the most resources.

VII. Conclusion

- a. After initial creation, maintaining the inventory of wildland fire-related computer applications should prove to be a relatively low impact task.
- b. The most challenging issue of creating and maintaining the inventory will be developing and documenting a mechanism by which emerging applications can be discovered.
- c. The benefit of the inventory will be directly proportional to the amount of its use. Managers with oversight responsibility for emerging projects should strongly encourage project managers to consult this inventory before detailed work begins on a project.

VIII. Appendix A – Proposed Inventory Data Elements

Data Element	Description	Example
Title	Official name of application	Automated Sorting, Conversion, and Distribution system
Acronym	Official acronym	ASCADS
Version	Version number	1.0
Description	Brief description of the functionality, purpose, and use of the application	Downlinks and distributes real-time weather information from remote automated weather stations (RAWS)
Price	Cost to purchase, license, or use (if applicable)	N/A
Comments	Supporting information	Serves as the official repository for RAWS meta-data
Category	Wildland fire supported business area	Fire Weather, Fire Behavior, Prescribed Fire, Fire Danger Rating, Smoke Management
Creating Office	Agency, Office, or Vendor who built the application	BLM, NIFC, National Software Development Unit
Supporting Office	Agency, Office, or Vendor who supports the application	BLM, NIFC, National Software Development Unit
Status	Current status	Active
Year Developed	Year of development	1994
Year Revised	Year of most recent revision	1998
Source Code Available	Yes/No	Yes
Source Code Notes	Supporting information	Code is very modular, highly commented
Documentation Notes	Supporting information	In-line source code documentation, printed user

		documentation available
Contact	Name, agency, address, phone #, email address, etc.	Ken Reninger, BLM, 3833 South Development Ave, Boise ID 83705, (208) 387-5704, Ken_Reninger@blm.gov
Platform Client	Platform requirements for the client workstation	Windows 95, 98, 2000, NT, or XP and a copy of the NetTerm client (www.netterm.com)
Platform Server	Platform requirements for the server	Pentium Pro PC or better SCO UNIX ACCELL/SQL
Platform - Development	Platform requirements development/maintenance	Same
Development language(s)	Language used to develop application	ACCELL 4GL C Unix Bourne and Korn shell scripting
Used By	List of Agencies or groups that are currently using this application	National BLM, Alaska Fire Service, all regions of USFS, BIA, NPS, FWS, many state agencies, National Weather Service, Western Regional Climate Center, Weather Information Management System (WIMS), Department of Defense
Interoperability Notes	Supporting Information	Provides an automated feed of weather station observations and metadata to several interagency systems

IX. Appendix B – Preliminary Application List

The Bureau of Land Management's National Applied Resource Sciences Center - NARSC (now known as the National Science & Technology Center – NSTC) compiled information about the following alphabetized listing of wildland fire related computer applications. Additional information about each application was compiled (but not included here) and may include data for the following fields:

- Title
- Acronym
- Application
- Description
- Platform
- Software Needed
- Price
- Contact
- Comments

- A -

- Administrative and Forest Fire Information Retrieval and Management System (AFFIRMS)
- Aircraft Data Manager System (ADAM)
- Aircraft Incident Reporting System (AIRS)
- Aircraft Use Database (ACUSE)
- Aircraft Utilization (AUS)
- ALLOCATE
- Approved Aircraft and Pilot Database (APPROVE)
- Atlas GIS
- Automated Fire Situation Report (AUTO209)
- Automated Incident Status Summary (ISR-209)
- Automated Lightning Detection System (ALDS)
- Automated Real-Time Mapping System (ARMS)

- Automated Resource Order System (AROS)
- Automated Storage Conversion and Distribution System (ASCADS)
- Aviation Management Information System (AMIS)

- B -

- BAR-CODE Program (BAR-CODE)
- BEHAVE
- BIOPAK
- Burn Data Base (BDB)

- C -

- C & R
- Cache Inventory System (CIS)
- California Fire Economics Simulator (CFES)
- California Prescribed Fire Incident Reporting System (CALPFIRS)
- CALPUFF
- Canadian Forest Fire Behavior Prediction System (CFFBP), (CFBP), (FBP)
- Canadian Forest Fire Danger Rating System (CFFDRS)
- Canadian Forest Fire Weather Index System (CFFWI), (FWI)
- Climate Analysis Using NFMID (CLIMATOLOGY)
- Climate Data Access Facility (CDAF)
- Computer-Aided Aviation Hazard Information System (CAHIS)
- Computer-Aided Dispatch (CAD)
- Computer-Aided Dispatch – California Version (CALCAD)
- Computer-Aided Navigation (CAN)
- CONSUME
- Crew Needs Analysis (CREW NEEDS)
- CS-BEHAVE for PC Windows (CS_BEHAVE)

- D -

- Data and Reports Technology System (DARTS)
- Dead and Down Fuels Inventory (DDWOODY)

- Debris Prediction Model (DEBMOD6)
- Debris Prediction Program (DEBMOD)
- Defense Logistics Management System (DLMS)

- E -

- Ecosystem Management Model (EMM)
- EFF PAY
- Emergency Equipment Rental Agreement (EERA)
- Emissions Projection Model (EPM)
- Emissions Reporting System (EMISS-OR)
- Emissions Reporting System for Washington Forests (EMISS-WA)
- ERPLAN
- Escaped Fire Situation Analysis: Decision View (EFSA)
- EX-FIRE

- F -

- FIRDAT
- FIRE!
- Fire and Pest Protection Forest Modeling Program (FPM)
- Fire Area Simulator (FARSITE)
- Fire Budget Analysis (FIREBUDGET)
- Fire Effects Information System (FEIS)
- Fire Emissions Trade-off Model (FETM)
- FHX2: Fire History Software
- Fire Information and Resource Management System (FIRES)
- Fire Information Retrieval and Evaluation System (FIRES)
- Fire Management Information System – Canada (FMIS)
- Fire Management Information System – Greece (FMIS)
- Fire Occurrence – Shared Applications Computer System (SACS)
- Fire Planning/GIS Project (FIREPLAN)
- Fire Prevention Workload Analysis (PWA)
- Fire Program Budget Analysis System (FIREPRO)

- Fire Qualifications/Fire Quals Listing (QUALS)
- Fire Statistics – Fire Report 5100-29 (FIRESTAT)
- Fire Succession Model (FIRESUM)
- Fire Training Retrieval and Certification System (FIRE TRAC)
- Fire Weather Plus
- Fire Zone Drawing Software
- FIREFAMILY
- FIREFLY – Airborne Infrared Mapping (FIREFLY)
- FIRESCAPE
- FIREMAP
- FIRESCAN
- First Order Fire Effects Model (FOFEM)
- Fuels Appraisal Process (FAP)
- Fuels Appraisal (FA)
- Fuels Appraisal Support System (FASS)
- Fuels Data Base (FUELS-DB)

- / -

- Idaho Panhandle National Forest Index System (IPNF Index System)
- Ignition Management Tutorial (IMT)
- Incident Command Accounting and Reporting System (ICARS)
- Incident Qualification System (IQS – SACS)
- Incident Resource Status System (IRSS)
- Incident Systems and Telecommunications (INSYST)
- Initial Attack Management System (IAMS)
- Initial Attack Pre-Planned Dispatch System (IASELECT)
- Initial Attack System (IAA)
- Intelligent Fire Management Information System (IFMIS)
- Interagency Cache Business System (ICBS)
- Interagency Incident Administrative Support System (InciNet)
- Interagency Initial Attack Assessment (IAAA)

- K -

- Kansas City Fire Access Software (KCFAST)
- Keetch-Byram Drought Index (KBDI)

- L -

- Lightning Detection System – GDS (GDS-LDS)

- M -

- METAFIRE: Large Fire Potential Prediction System
- Minnesota Initial Attack Assessment (MNIAA-PC)
- Morning Situation Report (SIT)
- Multi-Agency Incident Resource Processing System (MIRPS)

- N -

- National Automated Cache System (NACS)
- National Fire Danger Rating System (NFDRS-PC)
- National Fire Management Analysis System (NFMAS)
- National Fire Occurrence Data Library (NFODL)
- National Fire Weather Data Library (NFWDL)
- National Interagency Fire Management Integrated Database (NIFMID)
- National Interagency Fire Statistics Information Project (NIFSIP)
- National Interagency Situation Report (SIT)
- National Park Service Fire Weather (NPS FW)
- NFSPUFF: Prescribed Fire Smoke Dispersion Model
- Normalized Difference Vegetation Index (NDVI)

- O -

- Overhead Resource Status (OVERSTAT)

- P -

- PC Fire Danger Rating (PCDANGER)
- PC Firefamily (PCFIRDAT)
- Personal Computer Historical Analysis (PCHA)

- PLUMP
- PM2.5 Emission Factor (PM2.5)
- Pre-Attack
- Prescribed Fire Incident Reporting System (PFIRS)
- Prescription Design
- Prevention Fuels Data Reports Technology System (PF-DARTS)
- Prevention Workload Analysis (PWA)
- PUFF

- R -

- R-4 PUFF
- RamAir Simulator
- Rare Event Risk Assessment Process (RERAP)
- READY
- REDCARD/Fire Qualifications/Redcards (REDCARD)
- Remote Automatic Weather Station Program (RAWS-IAMS)
- Resource Order and Status System (ROSS)
- Resource Status – Region 1 (ReStat*)
- Resource Status Tracking and Reporting (RESTAT)
- RXBURN/RXWEATHER

- S -

- SEASON
- Season Severity System (SEVERE)
- Severity Maps
- Simple Approach Smoke Estimation Model (SASEM)
- SLASH/HAZARD
- -Smoke Management System (SMS)
- Smokey Bear CFFP Ordering System (SNOKEY)
- SNOTEL
- Soft Desk
- Spruce Beetle Management System (SBEXPERT)

- Station Manager
- Structure Ignition Assessment Model
- Support Costs

- T -

- THOR
- Tiered Smoke Air Resource System – Version 3 (TSARS3)
- Topographic Air Pollution Analysis System (TAPAS)
- Trade-off Evaluation Process (TEP)

- U -

- Unified Fire Report Database (UNI-BASE)

- V -

- Valley Box Model (ValBox)
- Vegetation to Fuel Model (VEG2FM)

- W -

- Weather Information Management System (WIMS)
- WeatherBrief
- Western Climate Information System (WestClim)
- Wildfire Automated Reporting System (WARS)
- Wildfire Hazard Identification and Mitigation System (WHIMS)
- Wildfire Prevention Analysis and Plan (WPAP)
- Wildland Computer-Aided Dispatch (WILDCAD)
- Wildland Fire Assessment Program (WFAS)
- Wildland Fire Management Computer System (WFMCS)
- Wildland Fire Simulator

- Z -

- ZONECAD