



SFA Portal V1.0

Requirements Document

Version 1.4

9 February 2001

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1.0 Overview

1.1 Summary

As part of the overall Modernization program, the office of Student Financial Assistance seeks to provide its School Channel customers (financial aid counselors and school administrators) with integrated, timely and user-friendly access to existing information databases and resources. These individuals and institutions currently work from multiple sources of data utilizing outdated technology. To better serve its customers, SFA has begun an effort to build an external School's Channel portal that will provide it's customers with one place to access all relevant information and to conduct their business using web technology.

SFA will build and deploy the portal in multiple phases. Functionality for version 1 is summarized here along with possible functionality for versions 2 and 3.

- *Version 1.0: A "plain Vanilla" portal which will include a searchable, integrated IFAP*
 - Links to 15 SFA websites along with capability for users to customize which sites they see and to add external sites (rudimentary customized "personal page")
 - Ability to search all sites from the portal itself
 - Personalization for the purpose of tailoring content to the user
 - "Single Logon" allowing pass-through of authentication information to websites (*pending*)
 - Target deployment date: 9/30/2000

- *Version 2.0: A customizable portal with re-engineered IFAP content*
 - IFAP content organized and upgraded to provide users with just the information they need, when they need it, in the way they need it – driven by process reengineering
 - Personalization for the purpose of tailoring content to the user
 - "Single Logon" allowing pass-through of authentication information to websites (*if not done in Version 1.0*)
 - Increased levels of personalization for automatically tailoring content to the user, leveraging the Autonomy product suite

- *Version 3.0: A "state of the art" portal with fully integrated access to content, community, tools and training*
 - Integrated access to all transaction data as well as relevant content (e.g., IFAP) in the context of the work the user is doing
 - Full "single logon" capability enabling ease of use and administration, rapid implementation of customer driven process changes, and increased levels of security

1.2 Scope of Work

The development team will build Version 1.0 of the portal focusing exclusively on portal technology. The scope of work has three objectives:

1. Develop the Version 1.0 business requirements functionality as directed by the School Channel team.
2. Design and build Version 1.0 on a scalable architecture and infrastructure that can support desired functionality for Versions 2.0 and 3.0 and a potential population of 26000 users executing roughly 100 million transactions a year
3. Complete this work in time for a 9/30/2000 rollout to approximately 26000 users, number of concurrent users yet to be determined

1.3 Approach

Given the scope of work, our approach will be to rigorously execute against the business requirements for Version 1.0 while also bringing our expertise in “state of the art” portals to assist SFA in achieving its goals in Versions 2.0 and 3.0 as rapidly as possible.

Version 1.0 Functionality and High Level Analysis of Technical Requirements

The business requirements for Version 1.0 functionality are listed in Section 2.0. From our analysis to date, we can specify the following technical requirements and key elements of our approach:

- **Portal/website navigation:** We will “float” the linked SFA websites in the Portal to accommodate the functionality of minimal Y2K compliant IE and Netscape browsers. The Pell Grants site requires a minimal code change to accommodate the requirement to access websites within the Portal window. The code change involves removing this line of code:
`if (parent.frames.length > 0){parent.location.href = location.href; }`
- **Integrated Search:** We will adopt a parallel or cascading search approach through which Autonomy will leverage the capabilities of website search engines. Integrated search will be limited to content that can be accessed without a logon or password.
- **Customization:** We will provide two versions of a Portal home page; a standard Home Page which requires no logon and a customized Personal Page which will require a Portal level logon in order to store preferences unique to the user regarding which links they wish to see on their Personal Page
- **HW/SW requirements:** See Section 5.0
- **Content Management:** Interwoven is the primary tool for content management. The SFA portal admin pages will provide a backup option for managing Headlines and Calendar events.

“Single logon” is no longer a requirement for Version 1.0. Some investigation of single logon feasibility and technical approach is expected to continue.

2.0 Business/Functional Requirements

This section contains Business and Functional Requirements as delivered by SFA, along with additional Technical Requirements that have been identified as needed to support the Business Requirements. Business Requirement 9 will be addressed through user design sessions during the development process.

<i>Object Identifier</i>	<i>The business requirements as delivered by SFA</i>
BR1	The ability for schools to set up links to 5 websites on their home page (both SFA sites and non-ED sites).
BR2	Capacity for schools to select the links from SFA websites (as listed by the Schools Channel) to be shown on and accessible via their portal. Non-selected links would be hidden, with the capacity for the school to re-enter the set-up function at any time to re-select the status of links (shown versus hidden).
BR3	Home Page Layout and functions
BR4	Links to General Information Websites
BR5	Links to all Web-Based Operating Systems via multiple, required sign-ons.
BR6	Capacity to navigate sites by at least two, preferably three, means.
BR7	Ability to return to the portal from each of the linked sites
BR8	Flexibility in updating content grouping headers.
BR9	Alpha version of Portal for release to test Group of ten (10) schools by 7/30/00 to engage users in design sessions.
BR10	Capacity for users to input comments in two areas: one for comments on the portal and one for general SFA inquiries, with entered comments being automatically forwarded to a provided e-mail address.
BR11	Incorporation of authorized Federal Privacy Statement.
BR12	User conducted search for documents contained either in the portal or in a linked site directly from the portal; "key word" search within documents.
BR13	Minimum load time; optimally < 20 seconds by modem meeting the current SFA Configuration Standards.
BR14	Browser must be the lowest version that is Y2K compatible.
BR15	Capacity for users to access general information URLs without providing a log-on ID or password.

3.0 System Requirements

This table lists all of the requirements derived from the customer's Business and Functional Requirements. Definitions used in the requirements document are defined in the following table:

<i>Term</i>	<i>Definition</i>
SFA Portal	The complete set of pages that encompass the system, including: <ul style="list-style-type: none">• The Home Site pages• The Personal Site pages• The Integrated Search page• The Privacy Statement page
Home Site	The non-customizable, open site portion of the SFA Portal
Personal Site	The customizable, access controlled site portion of the SFA Portal
Access Controlled Site	Requires some form of user authentication for access
Open Site	Requires no user authentication for access

3.1 Sites

The SFA Portal shall provide access to the following set of web sites:

- LO-Direct Loan Origination System (https://lo-online.ed.gov/lo_online/index.shtml)
- NSLDS-National Student Loan Data System (<http://nslsdfap.ed.gov/secure/logon.asp>)
- Pell-RFMS (<http://www.pellgrantsonline.ed.gov/>)
- DLSS-Direct Loan Servicing System (<http://www.dlsvicer.ed.gov/>)
- FAFSA (<http://www.fafsa.ed.gov>)
- Loan Consolidation (<http://loanconsolidation.ed.gov>)
- Bulk Publication Ordering System (<http://webprod.aspensys.com/education/epos/newbpos/default.asp>)
- Technical Publications (<http://ed.gov./offices/OSFAP/sfatech/index.html>)
- SFA Download Site (<http://www.sfadownload.ed.gov/>)
- SFA Conferences (http://ifap.ed.gov/csb_html/confdate.htm)
- SFA Publications by Title (IFAP URL to be provided)
- SFA Publications by Topic (IFAP URL to be provided)
- Application to Participate and for Recertification (<http://www.eligcert.ed.gov/>)
- GAPS-Grants Administration and Payment System (<http://gapsweb.ed.gov/>)
- PEPS-Postsecondary Education Participants System (<http://ed.gov/offices/OSFAP/PEPS/index.html>)

3.2 Home Site

The Home Site encompasses the non-customizable pages that are open to all users without the need for authentication. The Home Site is the gateway to the SFA Portal.

- The SFA Portal shall provide a Home Site
- The Home Site shall be an Open Site
- The Home Site shall provide information on Personal Sites
- The Home Site shall provide information on navigating through the portal
- The Home Site shall provide information on obtaining Personal Site access
- The main page of the Home Site shall be directly accessible
- The main page of the Home Site shall provide access to the Login Page

- The main page of the Home Site shall provide access to the Integrated Search interface
- The main page of the Home Site shall provide info and links on downloading the best browsers for viewing the site (IE5.x, and the latest Netscape version available)
- The main page of the Home Site will provide a mechanism for portal feedback
- The main page of the Home Site shall provide access to the Privacy Statement page

3.3 Calendar Area

The Calendar Area is an area on the Home Site and Personal Site main pages that contains a graphical month-level calendar. Clicking on a day within this graphical calendar will cause the display of a Daily Events List for the selected day within the Calendar Area.

The Calendar Area will also allow the client to navigate between months, and to access a list of all Events for the displayed month (the Monthly Event List). The client can also choose to display a list of Events for the displayed month that fall within a given category using a set of Category Tabs.

The database of Events will be maintained by SFA. This area shall be easily maintainable by SFA staff on a frequent (possibly daily) basis.

- The main page of the Home Site shall contain an area that displays a Calendar.
- The main page of the Personal Site shall contain an area that displays a Calendar.
- The Calendar Area shall display one month at a time
- The Calendar Area shall allow users to navigate to the next month
- The Calendar Area shall allow users to navigate to the previous month
- The Calendar Area shall allow users to navigate directly to a given month

3.3.1 Daily Events List

- The Calendar Area shall allow users to display a Daily Events List for a selected day within the currently displayed month
- The Daily Events List shall appear within the Calendar Area
- The Daily Events List shall prompt the user to select a day if no day has been selected for the currently displayed month
- The Calendar Area shall highlight the currently selected day within the calendar
- The Daily Events List shall provide SFA the ability to hyperlink from a listed Event to related documents or other sections of the Portal or other sites

3.3.2 Monthly Events List

- The Calendar Area shall allow users to display a Monthly Events List for the currently displayed month
- The Monthly Events List shall provide SFA the ability to hyperlink from a listed Event to related documents or other sections of the Portal or other sites
- The Monthly Events List shall replace the current contents of the Browser Window
- The Monthly Events List shall provide a means to return to the previous contents of the Browser Window
- The Monthly Events List shall be composed of a scrolling text area containing the Events in chronological order
- The Monthly Events List shall contain an area that displays the calendar for the selected month, with all days containing events highlighted
- An Event with an associated time span assigned by the SFA staff shall be displayed under each day within its time span in the Monthly Events List

3.3.3 Category Tabs

- The Calendar Area shall allow users to display a Monthly Events List that contains only Events from a single category:
 - Events
 - Training
 - Deadlines
 - NPRMs

3.3.4 NPRM Detail Page

- Clicking on an NPRM Event in any Monthly Events List shall display an NPRM Detail Page
- The NPRM Detail Page shall contain a link to the NPRM text
- The NPRM Detail Page shall contain links to all regulations affected by the NPRM
- The NPRM Detail Page shall provide a method to send an e-mail to the point of contact for the NPRM
- The NPRM Detail Page shall replace the current contents of the Browser Window
- The NPRM Detail Page shall provide a means to return to the previous contents of the Browser Window

3.4 Headlines Area

The Headlines area is an area on the Home Site main page that contains a list of important “What’s New” information and other important news briefs for the day or week. The text that appears in this area will be maintained by SFA. This area shall be easily maintainable by SFA staff on a frequent (possibly daily) basis.

- The main page of the Home Site shall contain an area that displays a set of Headlines
- The Headlines area shall be displayed as a bullet list of information organized by category:
 - SFA News
 - SFA Policy and Rule Changes
- A Headline with an associated time span assigned by the SFA staff shall be displayed in the Headlines Area until its time span has expired

3.5 Links Area

The Links area is an area on the Home Site main page that contains a list of links to the web sites, organized into a categorized list. These links shall be identified as the “SFA Links”

- The main page of the Home Site shall provide an organized list of links to all of the web sites
- The list of links shall contain a category titled "Student Data" which contains the following links:
 - A link to the LO - Direct Loan Origination System site
 - A link to the NSLDS – National Student Loan Data System site
 - A link to the Pell - RFMS site
 - A link to the DLSS – Direct Loan Servicing System site
 - A link to the FAFSA site
 - A link to the Loan Consolidation site
- The list of links shall contain a category titled "Book Store" which contains the following links:
 - A link to the Bulk Publication Ordering System site
 - A link to the Technical Publications site
 - A link to the SFA Download site

- The list of links shall contain a category titled "Training/Conferences" which contains the following links:
 - A link to the SFA Conferences site
- The list of links shall contain a category titled "Reference Library" which contains the following links:
 - A link to the SFA Publications By Title site
 - A link to the SFA Publications By Topic site
- The list of links shall contain a category titled "Participation and Funding" which contains the following links:
 - A link to the Application to Participate and for Recertification site
 - A link to the GAPS – Grants Administration and Payment site
 - A link to the PEPS – Postsecondary Education Participants System site

3.6 Login Page

The Login Page is the mechanism by which users gain access to their Personal Site and by which preferences are associated for the Personal Site.

- The SFA Portal shall provide a Login Page
- The Login Page shall be an Open Site
- The Login Page shall be directly accessible
- The Login Page shall require the user to enter their SFA Portal login name
- The Login Page shall require the user to enter their SFA Portal password which will be displayed as asterisks
- The Login Page shall provide access to the Personal Site associated with the login name and password
- The Login Page shall inform the user if the login name and password do not match and of the method needed to contact the system Help Desk
- The Login Page shall provide a mechanism to allow users to create their own SFA Portal Account by which they are able to gain access to their Personal Site.

3.7 Personal Site

The Personal Site is the set of customizable home pages that is open to authenticated users. Users have a large degree of control over the appearance of this page.

- The SFA Portal shall provide a Personal Site
- The Personal Site shall only be accessible once the user has been authenticated through the Login Page
- The Personal Site shall provide a mechanism for the user to change their SFA Portal password
- All Personal Site pages shall provide a Feedback mechanism
- All Personal Site pages shall provide access to the Integrated Search interface
- The main page of the Personal Site shall display the user's customized list of Personal Bookmarks
- The main page of the Personal Site shall display the user's customized Links Area.
- The Personal Site shall provide information on how to customize the Site list
- The main page of the Personal Site shall display a Calendar of Events
- The main page of the Personal Site shall display a Headlines section
- The Personal Site shall provide information on how to customize the list of Personal Bookmarks
- The Personal Site shall provide information on how to change your SFA Portal password.

3.8 Portal Feedback

The Home Site provides a mechanism for users to inquire about SFA or to send feedback regarding the SFA Portal to portal administrators

- The Home Site shall provide a mechanism for the users to send feedback regarding the SFA Portal to the Portal administrators
- The Home Site shall provide a mechanism for the users to send feedback containing general SFA inquiries to an SFA representative

3.9 Privacy Statement Page

In accordance with federal regulations, the SFA Portal needs to inform users of their privacy rights. This Privacy Statement page will be accessible from the Home page and other pages as specified during design.

- The SFA Portal shall provide a Privacy Statement Page
- The Privacy Statement Page shall display the current version of the Privacy Statement

4.0 Technical Requirements

4.1 Integrated Search

- The SFA Portal shall provide an integrated search interface

4.1.1 Search Submission

- The Integrated Search interface shall allow the user to submit searches against all available targets indexed/spidered by the search engine
- The Integrated Search interface shall support natural language queries
- The Integrated Search interface shall support boolean keyword queries
- The Integrated Search interface shall provide a link to a Search Help page, which will include
 - An explanation of the construction of natural language queries
 - An explanation of the construction of boolean keyword queries

4.1.2 Delivery of Search Results

- The SFA Portal shall provide a mechanism for the user to view a list containing the results of their searches
- The SFA Portal shall provide a mechanism for the user to retrieve the target of a link in their list of search results

4.1.3 Configuration of Search Indexing/Spidering

- The search engine shall be configurable to use a distributed/parallel search wherever a web site provides an Autonomy index
- The search engine shall be configurable to index/spider all non-access-controlled URL-accessible content of sites that do not provide an Autonomy index

4.2 Customization

- The SFA Portal shall allow the user to customize the content of the main page of their Personal Site

4.2.1 Personal Bookmarks

- The Personal Site shall provide a mechanism for the user to add a URL to their list of personal bookmarks
- The Personal Site shall provide a mechanism for users to remove a personal bookmark from their list

4.2.2 Customizable Site List

- The Personal Site shall provide a mechanism for the user to choose zero or more of the web sites to display on their customized page

4.3 Navigation

- All sites external to the SFA Portal accessed through links in the Portal shall be displayed in a new window
- All sites internal to the SFA Portal accessed through links in the Portal shall be displayed in the current window

4.4 Single Logon

Single logon is not a requirement for Version 1.0. However, the developers will investigate the items needed to implement Single Logon.

4.5 Administration

Certain parts of the system will require administration interfaces. These interfaces will not be accessible from the SFA Portal.

- The SFA Portal shall provide an interface allowing authorized users to create and maintain SFA Portal Administrator accounts
- The SFA Portal shall provide an interface allowing authorized users to define the content of the Headlines area
- The SFA Portal shall provide an interface allowing authorized users to define the content of the Calendar Area
- The SFA Portal shall provide an API, which allows Events information to be placed directly into the Calendar Events database by an authorized user or system.
 - Each Event shall be required to have data for the following attributes:
 - Title
 - Start Date
 - Category
 - Region
 - Each Event may have data for the following attributes:
 - End Date
 - URL
 - Mandatory Display
- The SFA Portal shall provide an interface allowing authorized users to define the content of the NPRM Detail Pages
- The SFA Portal shall provide an API that allows Events information to be placed directly into the NPRM Detail database by an authorized user or system.
 - Each NPRM shall be required to have data for the following attributes:
 - Title
 - Start Date
 - Category
 - Region
 - URL
 - URLs of Affected Regulations
 - Point Of Contact
 - Each NPRM may have data for the following attributes:
 - End Date
 - Mandatory Display
- The SFA Portal shall provide an API which Headlines information to be placed directly into the Headlines database by an authorized user or system.
 - Each Headline shall be required to have data for the following attributes:
 - Title
 - Start Date
 - Category
 - Region
 - Each Headline may have data for the following attributes:
 - End Date
 - URL
 - Mandatory Display

5.0 Hardware and Software Requirements

5.1 Development

5.1.1 Hardware

5.1.1.1 Development Server

The Development Server shall have the following minimum configuration:

- Sun Enterprise 3500 (Preconfigured Option)
- 4 CPUs at 400 MHz
- 30 GB of Internal Disk Space
- 4GB of Main Memory
- All other options are preconfigured

5.1.1.2 Development Desktops

The Development Client desktops shall meet the following minimum requirements:

- Intel Pentium III processor 667MHz or greater
- 256MB 133MHz SDRAM-2 DIMMs or greater
- 30GB ATA-66 (7200 RPM) hard drive or greater
- Ultra ATA-66 32 bit local bus integrated controller
- 40X var. speed IDE CD-ROM drive or greater
- 1.44MB 3.5in floppy drive
- 32MB Nvidia TNT2 Pro AGP
- 17" Micron 700Dx display 16" viewable
- 128-Voice PCI Wavetable onboard sound (Millennia)
- ALTEC LANSING.ACS33.3 PIECE.SPEAKER
- 3COM 3C905C 10/100 PCI Network Card (Rev 5.2)
- 104 Key Enhanced Keyboard
- Wheel Mouse

5.1.2 Software

All software present on the production machines should be present on the development machines

- Viador version 6.1 or higher shall be installed on the development server
- Autonomy Knowledge Server Update 2.0 or higher shall be installed on the development server
- IBM WebSphere version 3.0.1 or higher shall be installed on the development server
- Oracle version 8 or higher shall be installed on the development server
- JDK version 1.1.8 or higher shall be installed on the development desktops and server
- All of these Y2K-compliant Web browsers shall be installed on the development desktops:
 - Netscape Communicator Version 4.7
 - Microsoft Internet Explorer Version 4.01 Service Pack 2

5.2 Production

5.2.1 Hardware

The production hardware cannot be finalized until information is obtained on VDC infrastructure, scalability of the software, and number of concurrent users is determined. The following represents our estimate of the hardware, based on a user base of 26000:

400 concurrent users, steady state (>1min)

1000 concurrent users, peak (<1min)

8% search – making direct use of the Autonomy engine

20% Portal Functions – making use of login, personalization, and any other non-search portal applications.

72% Click-through – accessing SFA sites via windows floated through the Portal

With these estimates, the following production capacity is required, at a minimum:

- Sun Enterprise 3500 (Preconfigured Option)
- 4 CPUs at 400 MHz (Ultrasparc II or better)
- 30 GB of Internal Disk Space, RAID 5
- 2GB of Main Memory
- tape backup
- All other options are preconfigured

5.2.2 Software

- Viador version 6.1 or higher shall be installed on the production system
- Autonomy Knowledge Server Update 2.0 or higher shall be installed on the production system
- IBM WebSphere version 3.0.1 or higher shall be installed on the production system
- Oracle version 8 or later higher be installed on the production system
- JDK version 1.1.8 or higher shall be installed on the production system
- The Portal software will be delivered via a configuration management application that is yet to be determined. Exolve will define this environment before 6/30.
- It is expected that the VDC will be responsible for the operation of all maintenance required by the products on this list. For example, the Oracle database will need to be backed up on a regular basis, using native Oracle utilities. The specification for when and how this will be accomplished is beyond the scope of this document.

5.3 Client

5.3.1 Hardware

- The only requirement for the client is that it adhere to the minimum required standards for the compliant browser that is intended to be used. The list of compliant browsers is presented in 5.3.2.

5.3.2 Software

- The client platform shall use at least one of these Y2K-compliant Web browsers:
 - Netscape Communicator Version 4.7 or higher
 - Microsoft Internet Explorer Version 4.01 Service Pack 2 or higher

6.0 User Interface Requirements

6.1 Usability

- The SFA Portal shall conform to the SFA Intranet Content Management Usability Guidelines Draft, dated 4/18/2000

6.2 Performance/Reliability

The SFA Portal is expected to be available 24 hours per day, seven days a week.

6.3 Accessibility

- The SFA Portal shall conform to Level A of the W3C Accessibility Guidelines, dated 5/5/1999 with the exception that the Personal Site will not render correctly if the client browser does not support Applets. This is due to the fact that the authentication mechanism for gaining access to the Personal Site is handled by Viador. Viador requires an Applet to be running in the background of the client's browser in order to function properly. If the client system does not support applets then Viador will not be able to run correctly and the user will not be able to access their Personal Site.
- The SFA Portal shall be compliant with section 508 guidelines
- If the client system does not support applets, the user's access to the Home Site will not be affected nor will the user's ability to access any of the Sites be affected