

Federal Aviation Administration

FAA Portal Requirements Document



Revision History

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1.0 Executive summary

"The most important contribution management needs to make in the 21st century is to increase the productivity of knowledge work and knowledge workers. It is on their productivity, above all, that the future prosperity – and indeed the future survival – of the developed economies will increasingly depend."¹

The Federal Aviation Administration (FAA) has a need to display business information to executives, managers, and staff to assist them to "improve the timeliness and quality of data-driven decisions by providing FAA with access to key business information centrally and securely."²

We are currently in the transformational government era and the agency intends to harness the FAA portal to this end.

See Figure 1-1 for a general schema for the portal architecture.

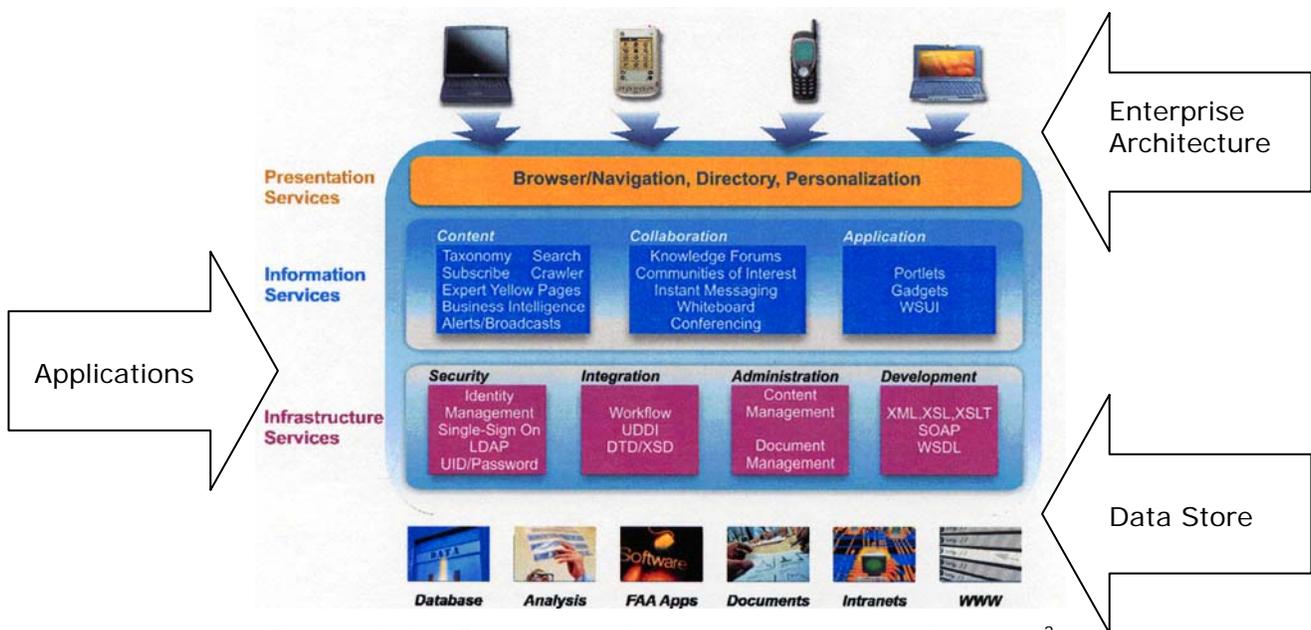


Figure 1-1 – Proposed high-level portal architecture³

Alternatively, the information could be delivered through a collaborative space to reduce duplication of efforts, increasing employees' efficiency and effectiveness. A single sign-on (SSO) would enable sharing of data and information from multiple data sources through the browser. This new environment would house all agency business resources: tools, processes, productivity enhancers, knowledge, learning, and collaboration.

The FAA portal would give management and staff virtually all the resources they need in real-time, based on their jobs, interests, and projects. It would also serve as an online exchange where employees and hiring managers could easily find one another to ensure jobs and staff members are well matched and employees can better manage their careers. This FAA portal would enable thousands of agency employees working in geographically

¹ Peter Drucker, *Knowledge Worker Productivity: The Biggest Challenge*, California Management Review, pps.79-94, V41 N2, Winter 1999.

² Eve Viera-Ford, FAA

³ IBM – modified

diverse locations, who have diverse skills and knowledge, to function as if they were co-located.

2.0 Background

2.1 Portal definition

- A concept that provides a framework to incorporate tools necessary for employees to perform their jobs.
- Web enabled, interactive interface that provides access to user information and services.

2.2 Problem description

The agency conducted an inventory of existing information technology applications in the organization. The latest version of this document, dated May 2005, lists approximately 570 separate applications. Most are home grown to fill local needs. There is a need to consolidate where possible, eliminate duplication, and sunset where needed.

The FAA continues to look for ways to improve internal efficiencies while improving service to their customers. With the advent of the Internet, the agency needs to transform how it will work, collaborate, and serve its constituents. At the same time, the Web has placed increased demands on the organization to comply with the growing expectations of staff, customers, and visitors.

Federal agencies and private firms are meeting these challenges through improved technologies and automation. Portals can provide a ubiquitous, single point of entry to all sources of information and services that managers and staff need to do their jobs. This enables portals to improve decision-making, productivity, efficiency, and effectiveness while enhancing the agencies' response to a changing work force, work environment, and services.

Portals will likely become mission-critical in the coming years by providing a framework to incorporate tools necessary for employees to perform their jobs in a secure and role-based fashion. Our proposed FAA portal will have a Web enabled, interactive interface that gives access to user information and services from any device or location. A dynamic portal lets users interact with the changing business world in a personalized way. It allows users to automatically get the dynamic information they need to do their jobs faster and more efficiently. The portal approach is under consideration or implementation by partner agencies such as the other modals within the department and outside stakeholders.

Portal technology is increasingly winning favor as a way to minimize custom coding, integrate disparate applications and data sources, and even develop small-scale service-oriented architectures. Fifty-three percent of companies have intranet or internal portals on their IT project lists this year, according to *Information-Week* Research's Outlook 2006 survey of 300 business-technology professionals.⁴

Within the proposed FAA portal, users will quickly be able to execute business processes across critical applications and lines of business. They will also be

⁴ <http://informationweek.soa-pipeline.com/news/175801004.jsessionid=CL2HOREG3VDW4QSNDBCSKH0CJUMKJVN>

able to collaborate with other agency users and external users in real time. Examples of how portals improve efficiencies:

- Improved time to completion due to real-time communication and virtual team rooms.
- Reduced travel and communication expenses via instant messaging and virtual meeting rooms.
- Reduced training and education costs via web delivered e-Learning and subscription.
- Improved human resource management deliverables and reduced administrative costs via Web delivered material and online self services.
- Improved communication and the sharing of knowledge, via role-based, Web-delivered, secure, real-time, single point of communication access.

As the agency strives to empower their managers and staff, the organization will allow them to customize and personalize all the portal pages except the corporate opening ones. The FAA portal will include all resources needed to perform one's job:

- Email.
- Documents.
- People.
- Shared calendar and schedules.
- Collaborative work space.
- Instant messaging, online awareness, Web meetings, application sharing, and whiteboard.
- Reference material.
- Business applications.
- The ability to reserve resources, e.g., conference rooms

The expected return on investment will enable agency employees to become more responsive to customers' needs. A transformed relationship may evolve between the agencies and their staff:

- Employees will be enabled.
- Retention may increase.
- The agencies will build trust, honesty, credibility, integrity.
- Complexity will become irrelevant.
- The agency will provide core processes across the enterprise.
- The organization will unlock its collective knowledge and accelerate culture change.
- To achieve all of this, the agency intends to incorporate into the FAA portal content from old agency internal sites for communications,⁵ knowledge sharing (KS),⁶ and online collaboration.⁷
- Employees will become content authors.

⁵ <http://voice.faa.gov>

⁶ <http://ksharing.faa.gov>

⁷ <http://watercooler.faa.gov>

- Employees will be able to raise issues and obtain answers to those issues.

The FAA is well poised to implement this project by taking advantage of current tools and small technology investments. The organization will need to consolidate and integrate applications and platforms to reduce maintenance and support costs. Our philosophy is to build a little, add a little, while adopting and providing a workable solution and adapt.

The FAA portal PM, in conjunction with management, will identify a “killer application” that will draw managers and staff to the portal environment.

2.3 Framework

The purpose of this document is to establish a framework for future development of the portal. The FAA portal must:

- Follow industry standards to open architectures.
- Comply with service-oriented architecture (SOA),⁸ requirements as industry dictates.
- Comply with the FAA enterprise architecture.

Through the use of SOA, the technology can change over time without disrupting the framework of the portal environment.

2.4 Policy

Management will have to issue policy in several areas introduced by this FAA portal:

- Blogs⁹ – can any employee start one?
- Blogs – should they be limited to business related issues?
- Metadata¹⁰ – who should develop and maintain the taxonomies¹¹ necessary for the document repositories?
- Documents – who could issue an “official” document or policy?
- Wiki¹² – what are the rules of conduct?
- Encourage the automatic storage of documents on the local area network in the author’s personal folder. Documents created while on travel in disconnected mode should be uploaded to the personal folder when connecting to the intranet.
- Create an enterprise-wide area network to facilitate knowledge sharing and expertise locating.
- Connecting personal (back door) devices to the network.
- Making remote personal devices, such as home computers, healthy before allowing them to connect to the agency portal. Further, require

⁸ Collection of services that are self-contained, do not depend on the context or state of the other services, communicate with each other, and work within a distributed systems architecture

⁹ Web site that allows users to add content while allowing anyone to edit the content or a collaborative software used to create an editable Web site

¹⁰ Data about the data itself, including its origin, size, formatting, or other characteristics, which is essential to understanding the contents of a data warehouse

¹¹ Structured set of names and descriptions used to organize documents, enabling retrieval and sharing of data, information, and knowledge

¹² Small, regularly updated on-line journal, usually kept by an individual, in which the writer comments on any range of topics and provides links to related resources

complex password protection on personal devices before allowing them to connect to the agency portal.

- When the agency embraces the smart card technology, we need to address how or if we issue readers to employees who have the business need to connect them to the portal.

3.0 Introduction

This document lists the requirements for the FAA portal. It must address the needs of the users and the enterprise as a whole. It should be led by a cross-functional team that solicits user input at every step of development and implementation.

Participating users will have a chance to look at the FAA portal from an operational view, i.e., how can the FAA answer the needs of the people in the field as well as a big-picture, strategic view.

We will develop the project emphasizing ease of use and navigation. Users will be asked to provide feedback on what is missing, what is superfluous, and what needs improvement throughout the site. Users will be encouraged to provide input on how easy they find it to locate resources needed to do their jobs.

The final outcome will incorporate user comments and the following:

- Knowledge program for organizational learning.
- Replication of applied learning model.

4.0 Goals

The agency intends to harness industry's capabilities to our advantage.

The FAA portal seeks to transform FAA managers and staff into an information-age, networked workforce. It will allow the organization to leverage its intellectual capital to better organize, train, and equip its managers and staff.

The proposed FAA portal will introduce a new business behavior by improving the efficiency and effectiveness of FAA managers and staff.

By introducing the FAA portal environment, FAA will expect its managers and staff to conduct their work exclusively through this FAA portal.

A major goal for the FAA portal is to achieve 2.5 percent increase in efficiency gains per year. We intend to use the roll out date as the baseline for this goal.

5.0 Current environment

To save scarce resources, the FAA portal will leverage the existing enterprise architecture. We currently envision the environment for the FAA portal to be as follows:

- Adobe Acrobat eForms
- Adobe/Macromedia ColdFusion.¹³
- IBM Lotus Domino Web Access.¹⁴
- IBM Lotus Domino.¹⁴
- IBM Lotus Sametime.¹⁴
- Microsoft Office.
- Microsoft SQL.

¹³ <http://employees.faa.gov/index.cfm>

¹⁴ From the NexGen environment

- Microsoft SharePoint.¹⁵
- NASE¹⁶ **REVISED**
- Oracle databases.
- Oracle Files
- Oracle Financial
- Pervasive computing add-on.¹⁷

The FAA portal will provide the top layer for the Oracle applications as well as the front end to the other data sources. See Section 18 for the installation requirements. Authentication will be provided through the NexGen lightweight directory addressing protocol (LDAP). Authorization will be provided at the application level. For users not authorized to access an application, the portal will present the user a “*Not Authorized*” error. This document addresses the transition and integration of the following environments within the FAA portal:

- NexGen.¹⁸
- KSN.
- FAA employees’ site.
- The FAA public site.
- Adobe Acrobat eForms.
- Oracle Files.
- Oracle Financial applications.
- Other applications.

6.0 General requirements¹⁹

To best take advantage of the environment, the development team should possess the necessary Java (J2EE), XML²⁰, and AJAX²¹ skills. Additionally, the FAA needs to employ the services of a graphics artist to ensure the site will be pleasing to the eyes of end users. The development team will comply with all federal regulations when developing the new FAA portal.

Note: The database names mentioned in this document are mostly referring to the exiting FAA databases. When designing the new FAA portal, the developers will integrate these databases as well as the existing Oracle business applications into one environment.

The FAA Web manager will provide the appropriate templates to the development team. Use of these templates is mandatory to ensure similar “look and feel” as the agency’s public sites. Initially, the site will only be available internally. The designers will develop the ability to access this site in the future using a user ID and password. There are no plans at this juncture to make this site available to the public. Authentication will be through the NexGen LDAP.

When selecting a portal environment for the FAA, the portal PM will use the same technology for the Internet, intranet, and extranet. The agency will strive to use two data

¹⁵ Knowledge Service Network (KSN) <https://ksn.faa.gov/>

¹⁶ NAS Adaptation Services Environment <https://www.nase.faa.gov/naseLogin/login.html>

¹⁷ Future capability

¹⁸ In this document NexGen is defined as Lotus Notes, Calendar and Scheduling, Address Book, Team Room, Sametime, and Domino Web applications

¹⁹ Apply to all databases

²⁰ Extensible markup language

²¹ Asynchronous JavaScript and XML

centers for the portal: the William J. Hughes Technical Center and the Mike Monroney Aeronautical Center. The developers should use the Aeronautical Center as the main site and the mainframe at the Technical Center clustering, redundancy, and continuation of operations.

Figure 5-1 shows that we intend to use open standards for the development of the FAA portal.

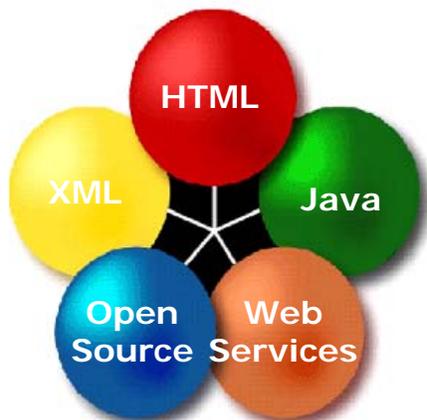


Figure 6-1 – Leverage the industry standards²²

However, standards should not exclude innovation or new entrants to the portal development environment. **NEW**

The development team will provide an FAA portal that is:

- Information rich environment.
- Responsive.
- Focused.
- Variable.
- Resilient.
- Integrated at the glass.

Further, the development team should strive for fulfillment user experience.

The development team shall provide dynamic personalization – time-sensitive portlets that appear during certain timeframes during the year, such as the Combined Federal Campaign.

The FAA portal should deploy a real simple syndication (RSS)²³ feed to allow for individualized subscription to news and site updates, Wiki²⁴ technology to enable *all* users to modify the site, and blog²⁵ to allow participation by all FAA managers and staff in online discussions.

Note: Should FAA management choose to use the blog within the FAA portal, resources will be necessary to moderate the site.

Users will have the ability to customize and personalize the look and feel of their interface with the site through the use of portlets. Users will provide feedback on the type of portlets

²² IBM

²³ For example: <http://www.rssbandit.org/>

²⁴ For example: <http://www.twiki.org/>

²⁵ For example: <http://sourceforge.net/projects/personalblog>

they need. Also, users will be given the ability to subscribe to various services and to conduct a customized, search (through a “crawler” technology) that will search the World Wide Web²⁶ overnight and bring the results of the search to their personalized portal categorized by their criteria and preferences.

RSS client standards and XML schema standards will be defined later.

All links to pages outside the FAA portal should be opened in a new window.

The FAA portal will be designed to take advantage of the following:

- Content will be written once and, through the use of filters, be either viewed by or blocked from users based on their roles.
- Content will be written once in XML to be viewed by whatever device the user chooses, such as desktop computer, personal digital assistant, notebook computer, smart phone, and the like.
- The FAA portal will be designed so that users can log onto it after they log onto their PC at the beginning of their workday and “live” within it for the rest of their shift. The development team will incorporate the ability to get into all of the standard FAA applications within the FAA portal through the browser. *The browser should be set to time out after 30 minutes if the user is connected from outside the FAA intranet.*
- To ensure that content is kept current, each posted article will be marked for its owner with the posting date. When the owner logs into her or his personalized portal, he or she will see a traffic light indicating if the article is current (within 60 days of posting) – green; up to 90 days of posting – yellow; or over 90 days – red. The owner of the article will have to respond within 14 days to indicate if the article is still current, should be archived, or should be deleted. If the owner does not respond within the specified time, the article will automatically be archived.²⁷
 - Another alternative is to create an email agent that will alert the owner when her or his content is about to go into the next time zone as described above. The content owner will be able to respond to the email by indicating that the content is still current, thereby automating the process.
 - Standards will be developed to allow content owners to upload content to the FAA portal site. Using these email standards, the process to post the content could be automated when the content owner could be authenticated.
- Each application will be developed to run within a separate portlet.

The FAA portal program manager (PM) will work with all application owners to ensure their applications will properly display within the portal. The PM will coordinate with the Oracle application owners to develop a schedule showing when their applications will migrate to the portal.

7.0 Approach

Figure 7-1 shows that you can only have *two* of the three items listed when developing the FAA portal.

²⁶ In this document the World Wide Web is defined as sites external to the FAA

²⁷ <http://homepages.cwi.nl/~dik/english/traffic/signals/h/hor-1.gif>

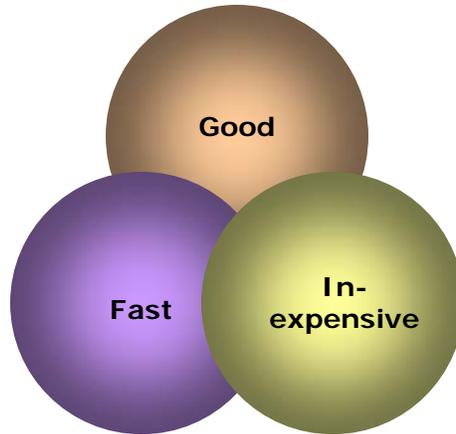


Figure 7-1 – The development choices

Given the fact that funding is scarce, we have to take the approach that we must select “good” and “cheap” to stay within the current budget. That means that time is unlimited. We therefore recommend the selection of the “end state” version of the FAA portal. This will enable us to devise an incremental approach to the planning, development, deployment, and operations of the portal.

7.1 Development assumptions

- Senior leadership supports the business changes required throughout the FAA.
- Managing the cultural issues associated with this initiative is the greatest challenge facing the organization. Organizational change, from a purely academic standpoint, takes 20 years to integrate into the organization. The FAA portal effort will represent a major change within the organization once implemented. A change management plan is essential to successful implementation.
- Business processes can be adjusted to capitalize on commercial practices. This project focuses on using COTS products. To maximize potential savings, the FAA must adapt internal business practices to fit the tools unless a compelling reason can be justified and approved by senior management.
- Incremental funding stream will remain intact. FAA portal implementation is predicated on an incremental funding approach given the tight budget environment. Taking an incremental funding approach for this project will allow us to leverage the technology anomaly that software and IT hardware becomes cheaper over time while providing better performance and functionality. In addition to the reduced cost over the life of the project, a phased approach also limits financial losses if FAA portal performance is shown to not be consistent with projected goals for return on investment (ROI), performance, and benefits.
- As this project evolves over time, there is really not going to be an “end state” per se. Rather, the PM will deploy spiral life cycle development and implementation to achieve results. Applications will be migrated into the FAA portal as priorities are defined and new funding sources are identified.

- The size and scope of FAA portal dictates a dedicated PM will be selected with not only direct control over the funding required, but also experience in both the functional business processes being reengineered as well as software implementation. With the cultural issues key, a direct line to senior management is required to quickly coordinate issues and determine next steps in the process.
- Policy and process decisions will be made in an expeditious and decisive manner.
- Incentives for compliance are put in place.
- The business oversight process will remain intact.
- Custom software development will be minimized.
- Due to funding constrains, multiple repositories will be not be integrated across the enterprise.
- As the current funding environment is bleak, management, in collaboration with the FAA portal PM, will set the priorities for migrating applications into the portal environment.
- Some applications will run within the FAA portal using Web Services Description Language (WSDL).²⁸

7.2 Design considerations

Designing a portal involves the end users even before the pilot is developed. The approach will entails the creation of an agency portal team that will comprise of representatives of each line of business and staff office, the FAA Web Manager, and the FAA portal PM. This group, chartered by the FAA Administrator, will review the draft requirements documents and update them as necessary. The FAA portal PM and the development team will interview members of the agency portal team. A major goal is to ensure that portal-related decisions are based on facts about the usefulness of various technologies in meeting the business needs of their organizations.

"It's this attitude that instead of sitting around having debates about what will work and what won't, let's run some experiments and learn."²⁹

7.3 Portlets

Portlets will be developed for displaying applications within FAA portal the environment. Initially, support will be provided for the following environments:

- NexGen.
- KSN.
- FAA employees' site.
- Oracle Files.
- Oracle Financial.
- eForms.
- Additional portlets will be developed as necessary to display other applications within the FAA portal.

²⁸ An XML based protocol for information exchange in decentralized and distributed environments

²⁹ Pfeffer, Jeffrey, *et al. Hard Facts, Dangerous Half-Truths and Total Nonsense: Profiting from Evidence-Based Management*. Harvard Business School Publishing, 2006

Further, the SSO schema will be developed for all the above listed applications and environments.

In parallel, management must identify high priority applications that should be incorporated into the portal. The portal developers will migrate these applications into the portal on an agreed to schedule. If new applications or new versions of existing applications are developed, they should use the portal interface for ease of use and integration in FAA portal.

All along, current applications will continue to be used in their existing environment until they are migrated into the portal.

7.4 Project phases

Due to the complexity of this project, it will be divided into five phases:

- Phase I Investigate current findings, develop a needs assessment, and develop a vision document.
- Phase II Develop requirements analysis, business case, and OMB Exhibit 300.
- Phase III Pilots, focus groups, and development.
- Phase IV Development, migration, and integration.
- Phase V Operations.

7.5 Cost estimate

Rough cost can be estimated only for the first two phases. Estimates for the remainder of the project will be finalized during phase II.

Category	Rate	HRS/Month	# of Months	Total
Phase 1				
Program Manager	\$ 155.00	40	3	\$ 18,600.00
Sr. Analyst	\$ 109.00	165	3	\$ 53,955.00
Consultant 1	\$ 129.00	165	3	\$ 63,855.00
\$				136,410.00
Phase 2				
Program Manager	\$ 160.00	40	12	\$ 76,800.00
Sr. Analyst	\$ 112.00	165	12	\$ 221,760.00
Consultant 1	\$ 133.00	165	9	\$ 197,505.00
\$				496,065.00

7.6 Time line

- Phase I Three months
- Phase II 12 months
- Phase III 14 months
- Phase IV 24 months
- Phase V Ongoing.

These time segments overlap, as the applications are operational and will be migrated or integrated into the portal or be shut down.

7.7 Project elements

The high-level time line in Section 7.4 includes all the elements necessary to complete the implementation of the FAA portal:

- Project management plan.
- Vision document.
- Interviews and requirements analysis.
- Requirements analysis report.
- System requirements specifications.
- Certification and authentication.
- Training for users and support personnel.
- Development of context-sensitive, just-in-time learning tools.
- Communications plan.
- Metrics.
- Change management plan.
- Any remaining analysis effort, including delivery of analysis products.
- COTS product pilots and demonstrations.
- OMB Exhibit 300.
- Acquisition of required tools, platforms, and licenses.
- Testing of components and integrated system testing.
- Loading and manipulation of an initial data set (if required).
- Transition to operations.
- Proposed plan for second tier support.
- Reviews and audits.

8.0 Specific requirements

To ensure success of this portal project, the agency telecommunications infrastructure must be upgraded to provide increase bandwidth to accommodate a minimum of 256Kbps connection from an FAA field facility. [NEW](#)

8.1 User's projects

As each manager and staff member typically has multiple projects to track or execute, users will have the ability to create separate tabs [containers] to carry out this function. To enable the FAA staff to properly perform their jobs, include all the resources related to each job:

- Email.
- Documents.
- People.
- Shared calendar and schedules.
- Collaborative work space.
- Instant messaging, online awareness, application sharing, and whiteboard.
- Reference material.
- Business applications.

The developers should give the end user the ability to aggregate tasks, calendars, and the like across all their projects into one view.

8.2 Federated search

There is a need to deploy federated search.³⁰ This will “fool” the users to think that all agency repositories have been consolidated without having to lay out the necessary funding to actually do so. There is, however, the need to create a database to store the users saved searches. Search results will exclude databases that the end user is not authorized to enter and therefore would not see.

8.3 Future capabilities³¹

As users will have all the resources to do their jobs within their customized and personalized portal, the developers shall:

- Provide a way to track the time users spend on each project to automate their entries in the labor distribution system (LDR).
- Provide the users to communicate with their supervisor project-related accomplishments for input into their annual performance management plan (PMP).

9.0 Information assurance

The FAA portal will rely on input from various data sources. There is a continuing need for ensuring that information assurance is respected. Particular attention should be given to:

- Availability.
- Integrity.
- Authentication.
- Confidentiality.
- Non-repudiation.

In addition, the developers should take into account the difference between data and governing roles.

10.0 Security

10.1 Requirements

As the agency develops the FAA portal, there is a need to provide a central authentication and distributed authorization for FAA users. As collaboration is added to the new portal, there will be additional need to give access to other FAA users and even external users to the FAA portal. Figure 10-1 shows that you can only have *two* of the three items listed when addressing security for the FAA portal.

The developers should add the following statement on the portal home page:

****Warning**Warning**Warning****

This is a Federal Aviation Administration (FAA) computer system. FAA systems, including all related equipment, networks, and network devices (specifically including Internet access) are provided for the processing of official U.S. Government information. Unauthorized access or use of this computer system may subject violators to criminal, civil, and/or administrative action.

³⁰ Utility that provides the ability to perform a single search across multiple back end repositories

³¹ Not included in the proof of concept

All information on this computer system may be intercepted, recorded, read, copied, and disclosed by and to authorized personnel for official purposes, including criminal investigations. Access or use of this computer system by any person, whether authorized or unauthorized, constitutes consent to these terms.

****Warning**Warning**Warning****

Notice: Due to security requirements, you will be automatically disconnected after 30 minutes of inactivity if you are a remote user.

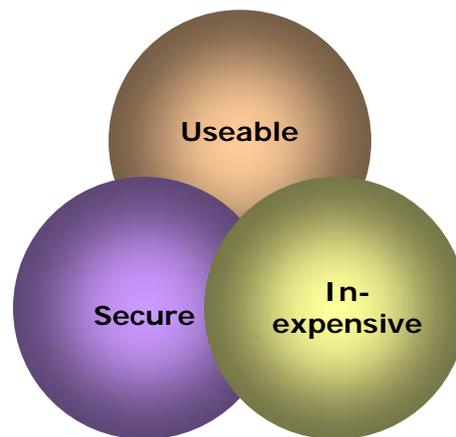


Figure 10-1 – The security choices

10.2 Assumptions

- Authentication will be based on the FAA NexGen LDAP.
- The NexGen program office will manage the authentication at the national level.
- Identity management and single sign-on will be integrated into the portal design.
- The NexGen program office will delegate authorization and management of the access control lists (ACL) to the application owners to issue access based on user roles.
 - This will require the NexGen program office to allow the application owners to create and modify user groups for their applications, create, edit, and modify “user roles” within their groups, and having the authority to edit their groups in the NexGen LDAP.
- The NexGen program office will delegate authorization to participate in chat or collaboration sessions to online discussion database managers.
- The FAA portal program office will work with all appropriate offices within agency to ensure that all FAA cyber security regulations are complied with to prevent malicious attacks against the proposed system.

10.3 Air traffic controllers

The NexGen program office, in concert with the Office of the CIO, is creating email accounts for Air Traffic Controllers. This effort will allow the approximately 15,000 air traffic controllers to have access to mail, as well as other collaborative services provided by NexGen. To identify all the users who need to have accounts created, several steps are being taken.

- A memo from FAA management will be sent to the facility managers, reminding them that the effort to create these accounts is underway. The memo will identify the NexGen Regional Mail Administrator Teams (RMAT) as points of contact for submitting the names and various data elements required to create the accounts.
- Once the memo has been sent, the RMATs will work with local support to gather the data.
- After the data are gathered, the RMATs will create email accounts and an initial Internet password for that user. The Internet password will be based on the last four digits of the user's social security number, the user's last name in lower case, and again the last four digits of the user's social security number. By doing this, the local support will only need to communicate out to the users their proper login name.
- When users log into their mail file they will receive an email with details about how to use the mail system, and how to change their password.

The controllers will be able to log into the FAA portal using their NexGen user ID and password generated when their account is created.

10.4 Outside users

Outside users without FAA NexGen accounts will have to apply for an account online. The NexGen program office will issue these applicants user names and temporary passwords as well as instructions on how to construct new passwords based on FAA regulations. Outside users will use their own ISP or office email address, which will become available within the NexGen LDAP. Once they have these accounts, outside users can ask discussion database managers for access to relevant collaboration zone (see Appendix A).

10.5 Internet access

- The general public will most likely not be able to access the FAA portal.
- FAA users will require the ability to access the FAA portal, using their own home computers (subject to verification by network scanning that they are in a "healthy" state) or from FAA-issued notebook computers. *Access from cyber cafés will not be permitted.*
- Outside users permitted to access the FAA Collaboration Zone will also need to access it from the Internet using their home or office computers (subject to verification by network scanning that they are in a "healthy" state). *Access from cyber cafés will not be permitted.*

10.6 Browsers

There are two reasons for expanding the list of browsers supported by the FAA portal:

- There are public concerns about security issues associated with Microsoft Internet Explorer and the tendency of hackers to develop

malicious code to take advantage of certain vulnerabilities in this browser. To alleviate these concerns, the developers will make this application browser neutral by making it possible for FAA managers and staff to use other browsers.

- Since the portal will be on deployed within an extranet, it must be accessible by whatever browsers are standards in partner agencies, business partners locations, and whatever users have on their home computers.

At a minimum, the portal will support the following browser versions:

- Full functionality:
 - Internet Explorer v5.0³²
 - Netscape v6.0³³
- Partial functionality:
 - Firefox v1.0.0³⁴
 - Safari 1.0³⁵
 - Opera 9.0³⁶

10.7 Authentication

The developers should comply with the provisions of the Homeland Security Presidential Directive 12 (HSPD-12) that was signed by President Bush August 27, 2004. This policy calls for a common identification standard for federal employees and contractors. It mandates all heads of executive departments and agencies to issue identification credentials that can be authenticated electronically to gain access to federal facilities and information systems. Implementation will provide enhanced security, increase government efficiency, reduce identity fraud, and protect personal privacy. In January 2005, the Department of Transportation (DOT) implemented HSPD-12 policy within the department.

Federal Information Processing Standards (FIPS) 201: Personal Identity Verification – The National Institute of Standards and Technology (NIST) developed the “standard” addressed in HSPD-12, the publication FIPS 201 (FIPS 201) established “personal identity verification” (PIV) for federal employees and contractors. FIPS 201 specifies the technical details of the credential, which will be a smart card.

Further, the developers should build all necessary security features into the application and whenever possible, move security controls into the information itself using the access control list, roles, rights controls, and the like.

The FAA portal will use multi-factor authentication to ensure only authorized users can get beyond the public portion of the portal. Further, authorization will be based on roles, so users will only see what they are authorized to see.

³² <http://www.microsoft.com/windows/ie/default.msp>

³³ <http://www.netscape.com/>

³⁴ <http://www.mozilla.org>

³⁵ <http://docs.info.apple.com/article.html?artnum=120233>

³⁶ <http://www.opera.com>

10.8 Security Certification and Authorization Package (SCAP)

Presidential Decision Directive 63 (PDD-63), Protecting America's Critical Infrastructures, called upon the FAA to protect the National Airspace System (NAS) from cyber attack. In response to PDD-63, the FAA developed Order 1370.82, Information Systems Security Program, which requires that "all NAS, mission support and administrative systems [be] appropriately secured" before reaching operational status in the field. The SCAP is the collection of documents that show proof of appropriate security (physical, personnel, and computer security). Several documents make up the SCAP:

- Executive summary
- Risk assessment
- Risk mitigation plan
- Information systems security (ISS) plan
- Contingency and disaster recovery plan
- Security test plan
- Test results document.

The PM must develop an SCAP for the FAA portal and get it approved before the system can be approved for operation in the field. This SCAP will then cover all of its subcomponents and applications. Early in the SCAP process, the FAA portal PM should meet with the Information System Security Manager (ISSM) to discuss the system, the documentation development schedule, and the approval process. This meeting should also include information gathering to help the FAA portal PM develop the necessary SCAP documents and help the ISSM and the portal team prepare for reviewing the package. A follow-up meeting should be requested to discuss the direction the team is going with the SCAP and to resolve any issues that may have come up in the risk assessment.

10.9 Applications and portlets development

As there is a need to develop a risk-based approach to security, each line of business and staff office will have to name a representative to an agency-wide working group to identify their business needs. As the risk owner for the agency, the Office of Information of Systems Security (AIS) will mediate between the business needs and the e-Security needs of the agency.

- There will be a need to identify security risks and mitigate them. Security should be pragmatic and applied in a non-intrusive way to the portal design.
- AIS will tell us if there is a need to apply encryption. If so, which one and where: at the application or at the data level.
- The portal security design shall comply with the latest OMB directives.

11.0 Privacy

Policies and business rules to ensure privacy in sharing and collaboration must be included in the system design from the ground up. [NEW](#)

12.0 Testing

The development team should subject all new code to testing for threats, vulnerability assessment, and remediation, and mitigation. Particular attention should be given to the ability of hackers to insert “malware” in the code.

13.0 Help

The developers should provide just-in-time context sensitive help as part of the portal.

14.0 Training

Application developers should provide just-in-time, context-sensitive learning for each application.

15.0 Site statistics

Add the ability to track the following monthly statistics:

- Number of internal FAA visitors.
- Number of repeat internal FAA users.
- Number of external FAA users.
- Number of repeat external FAA users.
- Number of external visitors.
- Number of external repeat visitors.

16.0 Archive

This site will supplement the FAA portal and will be used to archive several categories of documents from the site. The search parameters will be modified to include items in the archive. The associated taxonomy will also need to be developed.

17.0 Survey

Develop the capability to create quick, online surveys “on the fly.” Surveys will be done by roles lists. Deposit the results in the back end database for compilation and analysis.

18.0 User support

Training and user-support will provide the cornerstones for a successful implementation of this site. Users of the tools implemented under this portal may require assistance with issues ranging from registration to tool functionality and maintenance. User support criticality can be better understood in the context of the growth plan for the FAA portal:

- By end of FY X = approximately 10,000 users.³⁷
- By end of FY Y = 40,000 – 48,000 users.³⁶

Because portions of this project are new, a user support network or help desk will be developed as a vital supplement to user training. The user support network or help desk can help fully realize the tools’ capabilities. This level of assistance requires the project to address several questions pertaining to funding and staffing, including:

- What types of user support will the project provide?
- How much support will be centralized to individual FAA organizations?
- How will user support be funded and staffed?
- How will the project ensure equal responsiveness to geographically dispersed staff?

³⁷ Yet to be determined

- How will the project provide seamless support to answer questions related to security, process, certification and registration, etc.?

The following sections discuss how the portal project team will plan for user support.

18.1 Establish user support objectives and audience

While training is effective in educating users on the capabilities of the FAA portal and supporting knowledge processes, training will not address all user needs. Ongoing user support is essential to ensure that users throughout the two agencies have adequate support. The first step in developing and implementing a user support network involves establishing clear objectives. Second, the project must clearly identify the target audience for planned support. For example, while a help desk can provide a wide range of support to new users of the tools of the FAA portal, it is not the appropriate resource for gaining knowledge about the process behind the development or the purpose of these tools.

18.2 Develop plan for user support

It is critical that a user support function be in place before implementing any applications. Once the objectives and audience have been determined, the next step will be to determine the level of support needed and how it will be provided, staffed, and funded. Assistance can be offered through a variety of means, ranging from toll-free to online support. At a minimum, the user support function should provide assistance in the following areas:

- User registration and certification.
- Connectivity.
- Functionality.
- Performance.

To supplement personal user support, the FAA portal project team will have to develop a quick reference guide that provides key information on how to use the tools of the FAA portal and how to obtain assistance. This quick reference guide needs to be developed in multiple versions, as appropriate, to address organization-specific information needs. Finally, the project team will develop a user manual that builds upon the basic orientation program to provide more comprehensive information on the FAA portal processes and tools. The user manual will be available online for all users. Both the quick reference guide and the user support manual will be used by FAA organizations users as the first line of defense in problem resolution.

18.3 User support execution plan

The project team will develop and implement support processes and procedures to assist in the implementation of the FAA portal. Depending upon final staffing arrangements, this support will be provided using a two-tier approach.

- **First tier support** – National Help Desk staff will focus on connectivity issues and other queries.
- **Second tier support** – Local Help Desk staff will forward questions to subject matter experts (SME). The staff will direct questions related to the FAA portal access, functionality, or performance to the FAA portal contractor support staff.³⁸

³⁸ Place marker; yet to be determined

18.3.1 Key user support success factors

The following are key success factors for the FAA portal user support:

- **Response time** – The time it takes to contact a knowledgeable person who can address the question must be reasonable.
- **Resolve time** – The time it takes to get the problem fixed must be reasonable.
- **Incidence of need** – Users typically should not require assistance to execute rudimentary tasks.

18.4 Evaluating success of user support

Due to the impact that appropriate user support activities have on the successful rollout of the FAA portal throughout the FAA, it is important that the effectiveness of these activities be measured. To this end, the FAA portal project team will develop measures based upon system statistics, user survey responses, and online user feedback. (Performance measures have not fully been defined for the user support function.) To the extent possible, measures will be objective and quantifiable. The data gathered through the defined measures will allow adjustments to be made to the support program as the situation changes.

19.0 Installation requirements

The implementation will be done in three phases:

- Proof of concept
- Phase I – internal
- Phase II – extranet and with pervasive computing.

Figure 19-1 shows the relationship between the various architectural components in the proof of concept phase of this project.

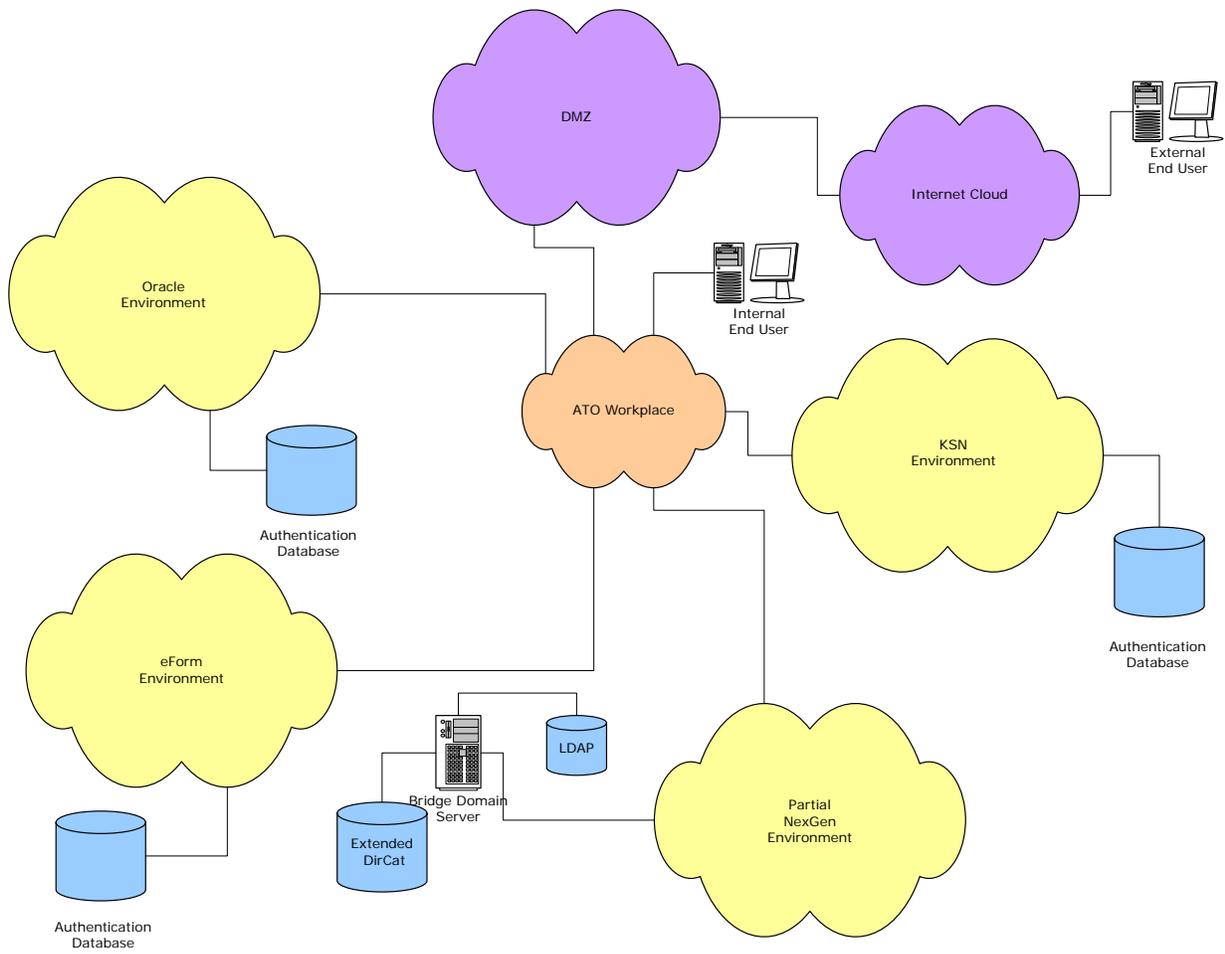


Figure 19-1 – Proof of concept architecture

Figure 19-2 shows the relationship between the various architectural components in the first phase of this project.

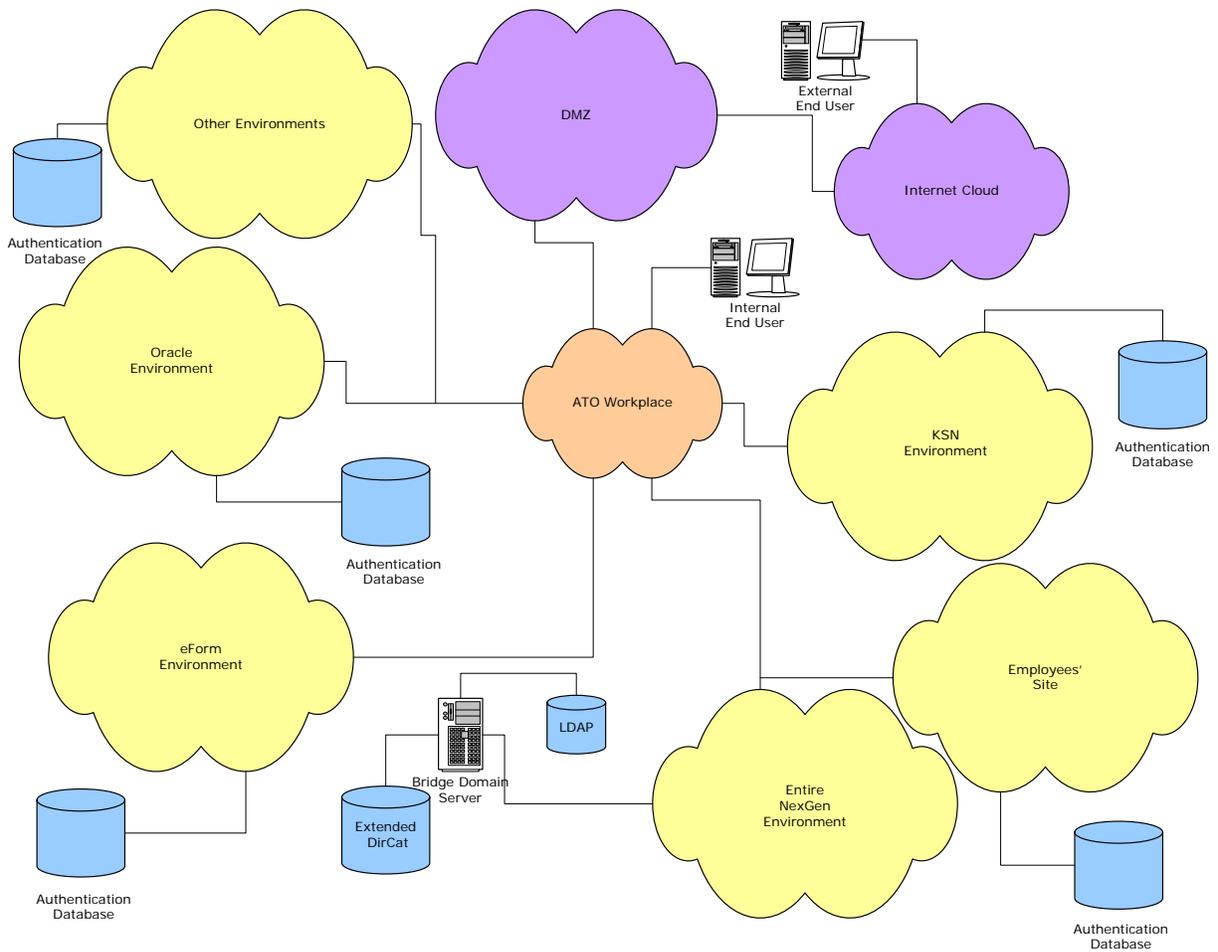


Figure 19-2 – Initial phase architecture

Figure 19-3 shows the addition of pervasive computing to allow access to the FAA enterprise from any device.

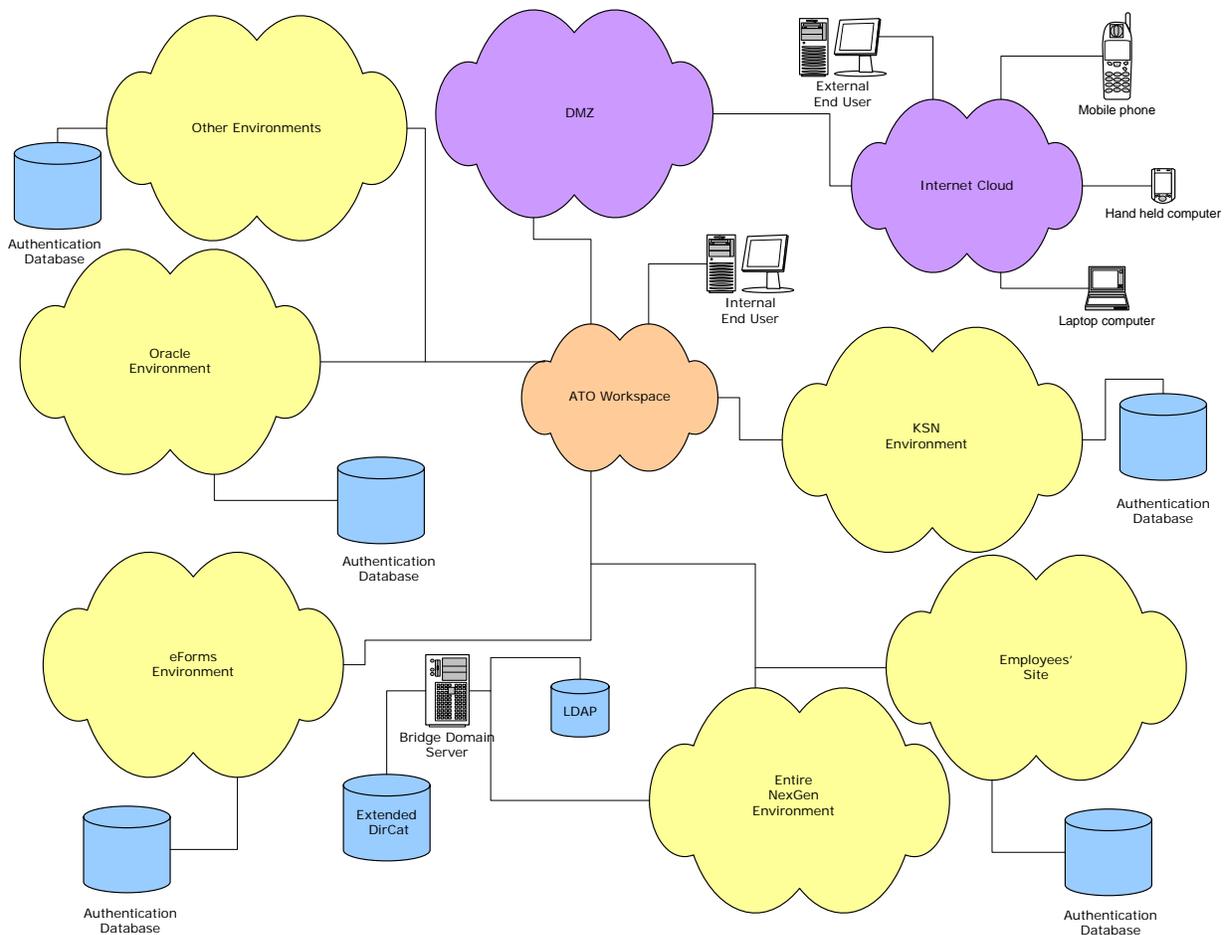


Figure 19-3 – End state architecture

As additional environments will be identified over the years, they will be plugged into the FAA portal architecture in a similar fashion to how the current environment is plugged in.

20.0 Measurements

Throughout the three phases of the portal implementation, FAA management will apply good practices using balanced scorecard and performance measurement techniques, according to Department of the Navy Metrics Guide for Knowledge Management Initiatives.³⁹

21.0 Wireless

Phase II will include the ability for pervasive computing. The use of XML to create content will provide the ability to present such content wirelessly to any smart device. As the majority of FAA managers and employees own various smart phones or personal digital assistants with wireless capabilities, they should be able to access the portal and conduct their jobs wherever and whenever they are.

22.0 Data standards

Management will have to develop policy to address the following, to name a few:

- Who owns the data?

³⁹ <http://susanhanley.com/metricsguide.pdf>

- How will the data be protected (privacy act)?
 - Should anonymous entries in blogs and other discussion databases be censured or be edited for exclusion of curse words?
 - Should threatening entries be referred to the Office of Security & Hazardous Materials (ASH)?
- How should we differentiate between “official” and “unofficial” entries?

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Appendix B – Current situation

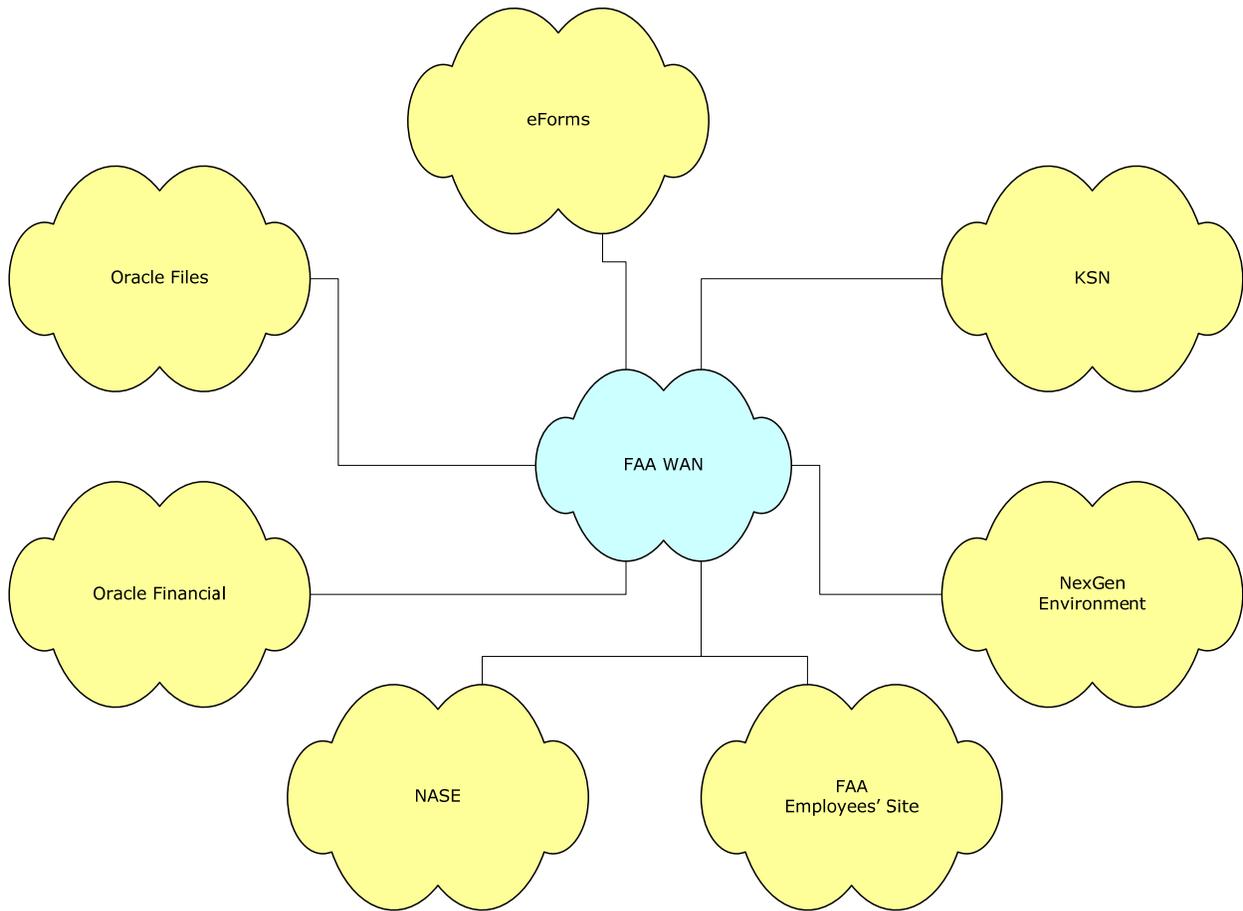


Figure B-1 – Current situation

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Appendix C – Interim solution

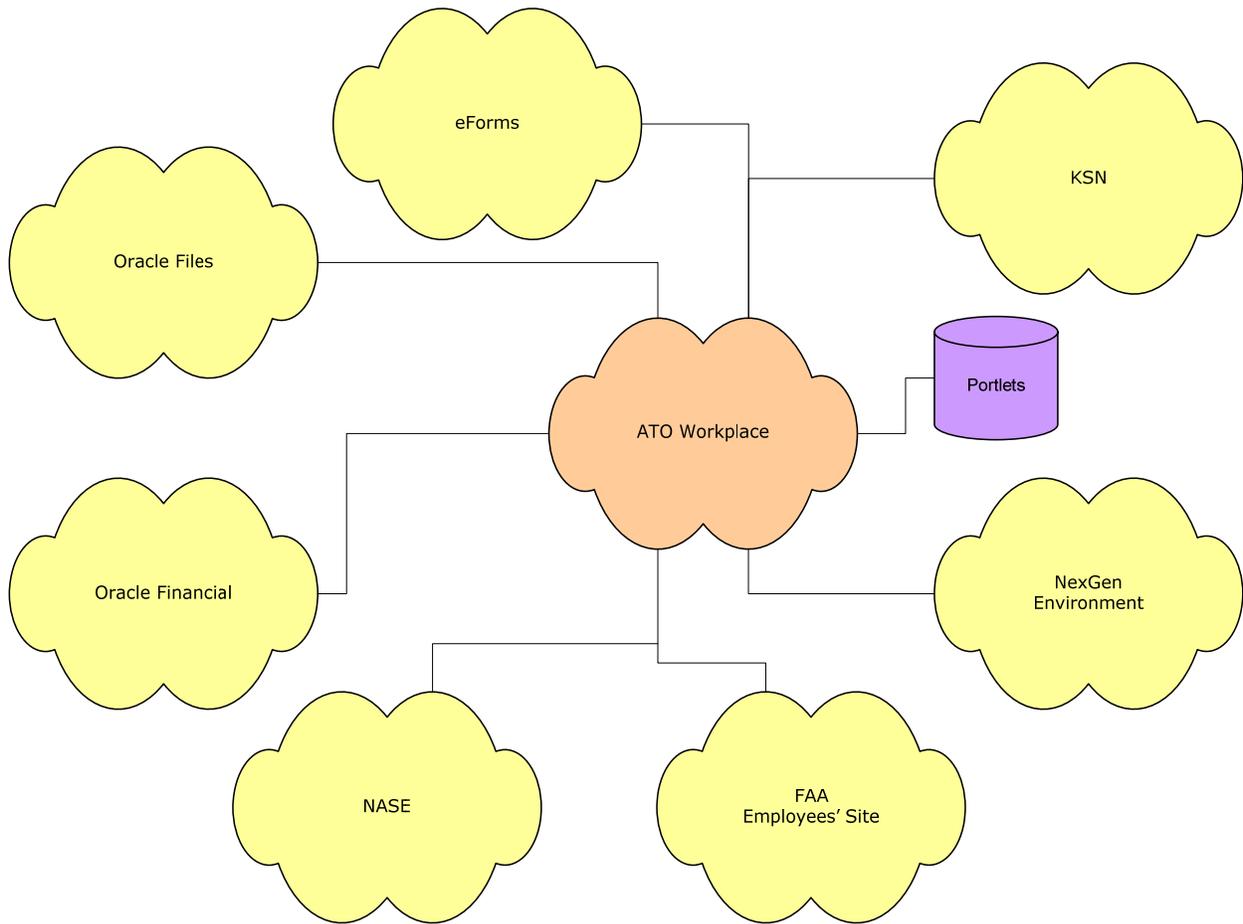


Figure C-1 – Interim solution

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Appendix D – End state solution

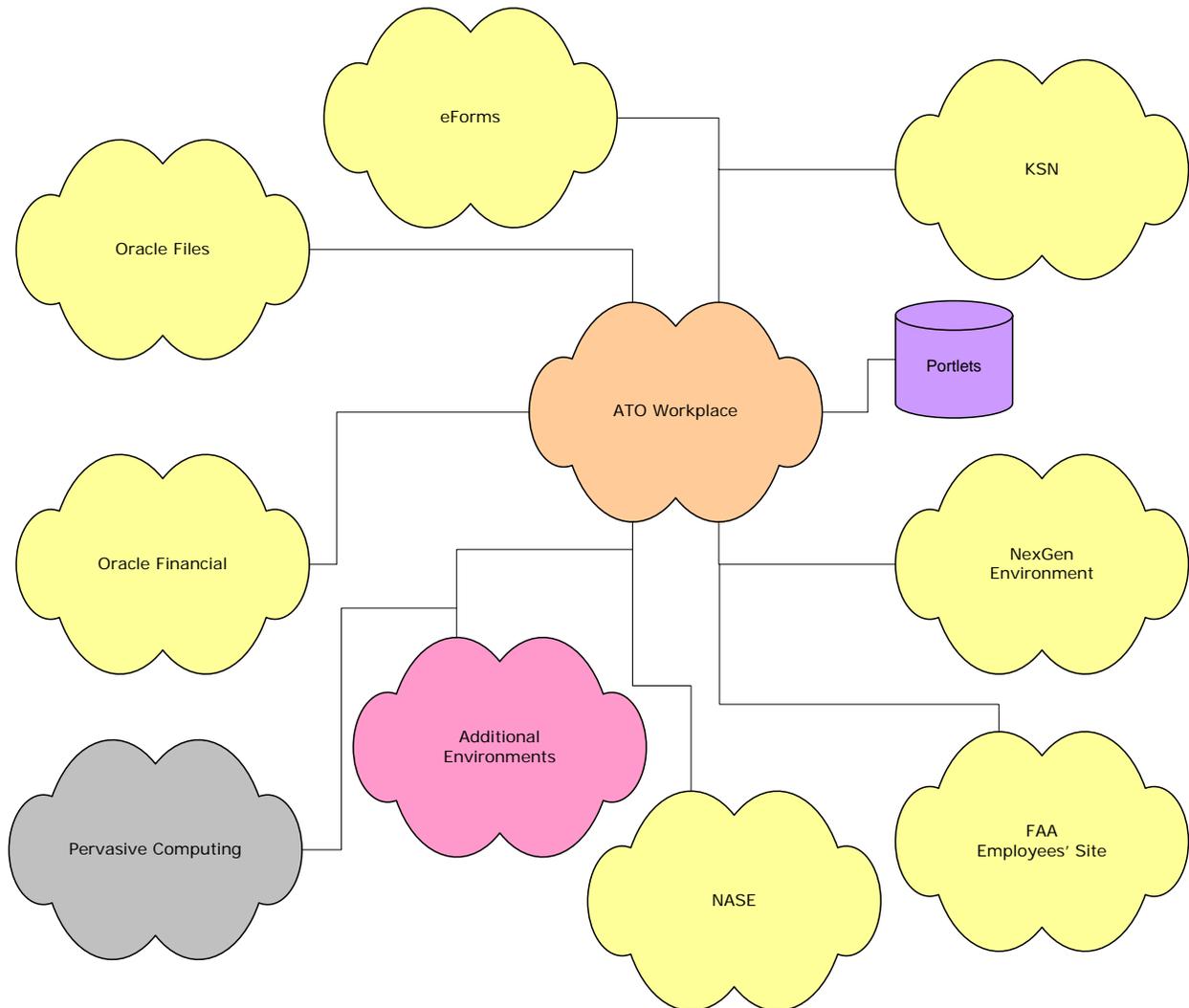


Figure D-1 – End state