

Department of Veterans Affairs

Pharmacy Product System

System Design Document

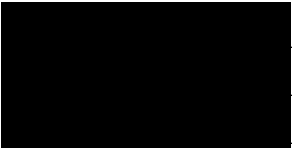


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Revision History

Note: The revision history cycle begins once changes or enhancements are requested after the System Design Document has been baselined.

Date	Version	Description	Author
12/2013	2.0	Tech Writer Review	
12/2013	0.2	Technical Updates to the document	
11/2013	0.1	Document created	

PMAS Template Version 1.2

Artifact Rationale

The System Design Document (SDD) is a dual-use document that provides the conceptual design as well as the as-built design. This document will be updated as the product is built, to reflect the as-built product. Per the Project Management Accountability System (PMAS) Guide, the SDD with conceptual design is required prior to the Milestone 1 Review. The as-built for each delivery must be incorporated prior to the Milestone 2 Review.

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1 Introduction

Pharmacy applications and systems are some of the oldest technologies in the Veterans Health Information Systems and Technology Architecture (VistA) system. The Veterans Health Administration (VHA) has identified system limitations and cumbersome, inconsistent pharmacy processes as a weakness in its ability to provide efficient pharmaceutical services across the VHA continuum. The United States Department of Veterans Affairs (VA) approved the Pharmacy Re-engineering (PRE) project to address several fundamental problems with the current system. The objective of the overall PRE project was to facilitate the improvement of pharmacy operations, customer service, and patient safety for the VHA. More recently, the overall PRE project's systems are now referred to as Pharmacy Enterprise Product Services (PEPS), hence replacing the term 'PRE'.

The current contract focuses on continuing work on a specific component of the PEPS suite of services, called the Pharmacy Product System (PPS). As a historical note, the PPS system was formerly known as the Pharmacy Enterprise Product System (PEPS), but the term 'PEPS' is now replaced with 'PPS'.

PPS is intended to improve the VA's current formulary processes. The current VA National Formulary consists of items (such as medications and supplies) that have been determined by VA organizations to be included in the formulary. There is a process in place that governs the status change of all items with regard to the VA National Formulary. Upon approval, the item status is changed in the VA National Formulary, and updates are issued to the local drug files via software patches.

PPS is envisioned as two distinct processes. The first process covers PPS at the national level (called PPS-N). The PPS-N environment provides for the ability to manage pharmacy-specific data across the enterprise, ensuring that all facilities are using the same base data for their operations. The second process encompasses PPS processes at the local level (called PPS-L). The PPS-L environment provides services that enact business logic for the daily operations of pharmacy users at the VA's medical centers and clinics.

The focus of the current contract is on further development of the PPS system. This effort is divided between retirement of the National Drug File Maintenance System (NDF MS) Legacy application and further enhancements to the PPS-N application.

This document focuses on the design of the PPS-N application and VistA NDF and PDM modules.

1.1 Purpose of this Document

The purpose of this document is to describe in sufficient detail how the PPS-N application and VistA NDF and PDM modules are to be modified to support PPS. This System Design Document translates the Requirement Specifications into a document from which the developers can create the actual system. It identifies the top-level system architecture, and identifies hardware, software, communication, and interface components relevant to the affected application and modules.

1.2 Identification

This design document applies to the PPS-N v2.0 UFT Increment release. The design document is based on the system design document template standardized by the VA.

1.3 Scope

The scope of this design document is the PPS-N application and VistA NDF and PDM development.

Table 1: Scope Inclusions

Includes
PPS-N
All functionality needed to retire the Legacy National Drug File Management System (NDF MS) so that no more monthly NDF MS patches or other NDF MS patches are needed to be sent because PPS-N will be able to replace the patching process and functionality provided by those patches.
Ability to monitor both local and national level sites to ensure they have been updated.
Added functionality to PPS-N to handle Patient Medication Information (PMI)/Warning label files (since NDFMS already does this).
Interface with Standards and Terminology Services (STS) to support real-time VA Unique Identifier (VUID) assignments.
Report for support of RxNorm-NDFRT update. (RxNorm, a standardized nomenclature for clinical drugs, is produced by the National Library of Medicine. In this context, a clinical drug is a pharmaceutical product given to (or taken by) a patient with a therapeutic or diagnostic intent. In RxNorm, the name of a clinical drug combines its ingredients, strengths, and form).
The contractor shall ensure that PPS-N 2.0 shall include in the database and display allowing add/view, edit, the following RxNorm Fields (RXCUI, TTY, STR and SUPPRESS).
The contractor shall ensure that PPS-N 2.0 shall be built to utilize a method to update the data for the RxNorm fields either using STS web service (if available) or using a direct API to RxNorm itself.
The contractor shall ensure that PPS include in the database and GUI fields with add/view/edit as required allowing NCPDP messages that will be used in future increments.
Support for known anomalies, defects, or user interface issues found during use of the system.
Support for Consolidated Mail Outpatient Pharmacy (CMOP) updates. CMOP is updated using NDF patches.
Update of local site NDF files.
National monitoring of local NDF updates.
Provide support for the addition of: <ul style="list-style-type: none"> o Investigational items. o Compounded items. o Partials, i.e. half tablets. o Support for known anomalies, defects, or user interface issues found during use of the system. o Addition hazardous waste fields, expired order checks. o Update to VA Product Identifier numbering sequence. o Addition of expired alert date fields.
VistA NDF/PDM
Notification of site personnel of the PPS-N updates. (This is likely to require Mumps (M) Changes to the local sites (M routines for the local sites) so that VistA will notify site personnel of need to update).

Includes
PPS-N
Ability to send messaging to coordinate to ensure that local VistA systems are paused until the updates are processed.
Ability to assign an alternate VA product for automatic rematch at the local level.
Ability to assign alternate(s) VA product as a suggested rematch.
Local Vista Edits.
Local Vista Edit: Option that allows the Pharmacy Automated Data Processing Applications Coordinator (ADPAC) the ability to update the local NDF files. Including the ability to schedule the update on a weekly or daily basis at a specific time.
Local Vista Edit: Validate that all background jobs are firing correctly after an update occurs. For example allergy update, class update, unmark items form CMOP, Clinical Reminder update.
Local Vista Edit: Create e-mail messages for updates consisting of the following:
Local Vista Edit: Informational messages that consist of at a minimum: New products added since last update. Formulary changes (excludes new entries). Exclude from drug-drug interaction (excludes new entries). Exclude from dosing edits (excludes new entries). VA Class changes (excludes new entries).
Local Vista Edit: Site specific messages: Items unmatched due to update. Including when possible the suggested edit. Suggested edit will be the comment when the change is made by PPSN manager. Items automatically rematched due to national change. Allergies updated. Inactivation report. On a weekly basis a VistA routine will look at PPSN for items with a future proposed inactivation date. The system will check to see if the site has active file #50 entries matched to the VA product that is going to be inactivated. VistA will create a message listing these active file #50 entries and the number of active Rx's associated with them.

Table 2: Scope Exclusion

Excludes
Identity and Access Management

1.4 Relationship to Other Plans

This design document is related to the Project Management Plan and the Functional Requirements Document for PPS. The Project Management Plan includes both the configuration management and software quality assurance plans. The Functional Requirements Document details the requirements elicitation and requirements management plan.

1.5 Methodology, Tools, and Techniques

Microsoft Word was used to create this document, with Rational Software Architect/Modeler used to create figures. Change requests are managed via processes detailed in the Project Management Plan, utilizing the VA's Rational Team Concert repository.

1.6 Constraining Policies, Directives and Procedures

This design document is based on the system design document template standardized by the VA.

1.7 Constraints

This design document was developed under the schedule and cost defined in the contract for PPS. The design is constrained to features available in the tools, technologies and frameworks defined by the VA Technical Reference Model (TRM) tools list. Previous VA architectural reviews have shaped the current design as well.

1.8 Design Trade-offs

PPS-N must keep its database (EPL) synchronized with the legacy VistA system's data store. Ensuring this data synchronization is accomplished accurately is the highest priority of the design and implementation of this system.

Only a limited number of users will use the PPS-N application concurrently, so the web application server does not need to support a large user load. However, these users will use PPS-N to manage the entire VHA formulary and, to perform this data intensive task, the PPS-N user interfaces must be able to display large amounts of data via web pages while at the same time remaining 508 compliant. Hence, usability will be a key aspect to web page design. The large data sets will also be more demanding of memory resources and the performance in retrieving this data will be of high priority. Another performance priority for PPS-N is performing the complex queries required for the advanced search and reporting functions in a timely fashion.

1.9 User Characteristics

The PPS-N application will be used mainly by VA NDF managers who are experts in the data being managed by the PPS-N application, as well as the key subject matter experts for its requirements. No additional training or education is necessary.

1.10 User Problem Statement

A significant problem with the current legacy NDFMS system is the difficulty in adding new features, due to the specialized technology it uses. To alleviate this, PPS is intended to replace the NDFMS system with a modern enterprise system, for which developers are more readily available to make required changes.

Another issue is the difficulty in sending and applying updates (called 'patches') to the many local VA drug file systems once the NDFMS system is updated. This patching process is a labor intensive one, both to create and to apply at all the local VHA installations. Once again, the modern PPS system is expected to address this issue by automating these updates.

2 Background

PPS allows national VA personnel to more easily, quickly and safely manage the VA National Formulary which directs which products (such as medications and supplies) are to be purchased and used by the VA hospital system. This in turn fulfills the overall PEPS objectives of facilitating the improvement of pharmacy operations and patient safety for the VHA.

PPS-N performs the following major business functions: add/edit/approve medication and supply information, synchronize the EPL data with the legacy VistA system's data, output reports, and process FDB additions/updates, and search FDB. The National PEPS application supports a platform-independent browser based interface that allows PPS-N users to keep the PPS-N application's database (known as the Enterprise Product List or EPL) up to date. In addition to synchronizing the EPL with the NDFMS system, the PPS-N application also interfaces with the VA's VETS system (for Standard Med Route information) and with the VA's FSS system (for pricing data).

The design approach is to identify and analyze the source code within the PPS-N application and VistA NDF/PDM that implement one or more of the high level functional requirements defined in the Functional Requirements Document. The design for these modules is then presented.

2.1 Overview of the System

From a system perspective, the advantages of PPS over the legacy system are numerous. The new PPS will reduce the redundancy of information stored within pharmacy components by making use of enterprise services that provide access to authoritative sources of data, such as a Commercial-Off-The-Shelf (COTS) drug information database. These system objectives are integrated into this document's design.

- PPS-N users may fill a number of roles within the PPS-N system. A PPS-N user may have one or more of the following three roles:
- PPS National Manager (PNM) – This roll allows a PPS user to approve and reject item addition and modification requests.
- PPS Second Reviewer (PSR) – This roll allows a PPS user to review item addition and modification requests that were previously initiated by a PPS user with a PNM role.
- PPS National Supervisor (PNS) – This roll allows a PPS user to configure system level settings in the PPS-N application.
- PPS User – This roll allows read only access to PPS-N.

No parties external to Office of Information & Technology (OI&T) are expected for the PPS-N application.

2.2 Overview of the Business Process

PPS supports the Business Process defined in Section 5.7, Manage Enterprise Product List documented in the Pharmacy Future Business Process Model Document. This document can be found at [REDACTED] Pharmacy_Re-Engineering_PhaseI/Pharmacy_FBPM_FINAL%20v5.doc.

2.3 Assumptions

The following assumptions impact the design of the PPS-N system:

- A software development methodology will be chosen that aligns with the Program Management Accountability System (PMAS) initiative but also accommodates the complexity of the PPS project.

- VA will not have reorganization of OI& T staff and development processes.
- Support groups (Enterprise Infrastructure Engineering (EIE], OED Testing Services, Contracting, etc.) will continue involvement with PPS and have adequate staffing and resources available to support PPS.
- Stakeholders will be involved in system definition activities.
- Stakeholders will support agreed upon decisions.
- COTS Drug Information Vendor(s) – updates to the COTS database and Programming Interfaces.
- The design is constrained to features available in the tools, technologies and frameworks defined by the TRM group.

2.4 Legacy System Retirement

This version of PPS will include all necessary functionality so that the NDF MS legacy system can be retired.

Table 3: Proposed Legacy Retirements

Legacy System or Legacy System Component	System Retired or Workload Reduced	Quantify the Workload Reduction
NDF MS	System Retired	

3 Conceptual Design

This section of the SDD provides details about the following topics:

- Conceptual Application Design
- Conceptual Data Design
- Conceptual Infrastructure Design

3.1 Conceptual Application Design

This section provides the conceptual design of the application that is being produced by this project.

3.1.1 Application Context

The following figure depicts the PPS-N application and the external systems that it interacts with.

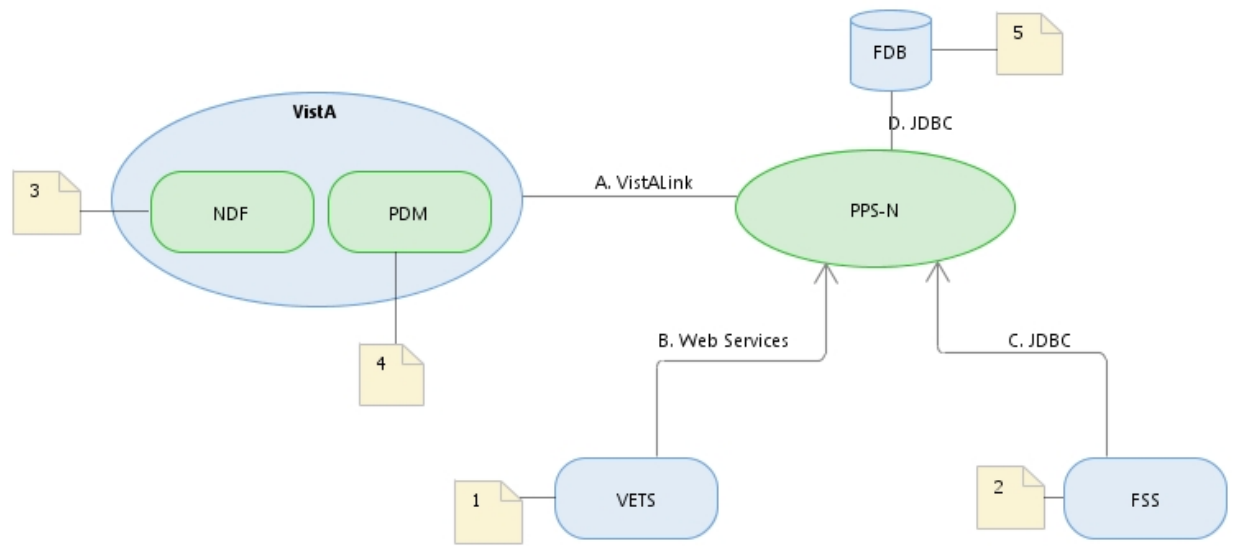


Figure 1: PPS-N Application Context Diagram

Table 4: Application Context Description

3.1.1.1 Object

ID	Name	Description	Interface Name	Interface System
1	VETS	Allows a system external to VETS (such as PPS-N) to request data on Standard Med Routes.	Web Services	PPS-N
2	FSS	Allows a system external to FSS (such as PPS-N) to request pricing data.	JDBC	PPS-N
3	VistA – NDF	Allows VistA to send/receive Drug Information for update Files #50 and related files.	VistALink (TBD)	PPS-N
4	VistA – PDM	Allows VistA to send/receive Drug Information for update Files #50 and related.	VistALink (TBD)	PPS-N

3.1.1.2 Interfaces External to OIT

ID	Name	Related Object	Input Messages	Output Messages	External Party
N/A					

3.1.1.3 Interfaces Internal to OIT

ID	Name	Related Object	Input Messages	Output Messages	External Party
A	VistA Link	PPS-N	Messages from VistA for updating Drug Information.	Messages to VistA containing Drug Information modifications.	N/A
B	Web Services	PPS-N	Request for Standard Med Route data.	Standard Med Route data.	N/A
C	JDBC	PPS-N	Query for pricing data.	Result set with pricing data.	N/A
D	JDBC	PPS-N	Query for new products/drugs/ingredients.	Result set with new/updated Products/Drugs/Ingredients.	N/A

3.1.1.4 Externally Shared Data Stores

ID	Name	Data Stored	Owner	Access
5	FDB	FDB Drug Information Framework	PBM	Read

3.1.2 High-Level Application Design

The figure below provides a high level dataflow diagram for the PPS-N system. The circles within the PPS-N oval represent the business services that comprise the PPS-N application. The Drug Reference service encapsulates access to the COTS drug database, located on the same server as the PPS-N application and EPL database.

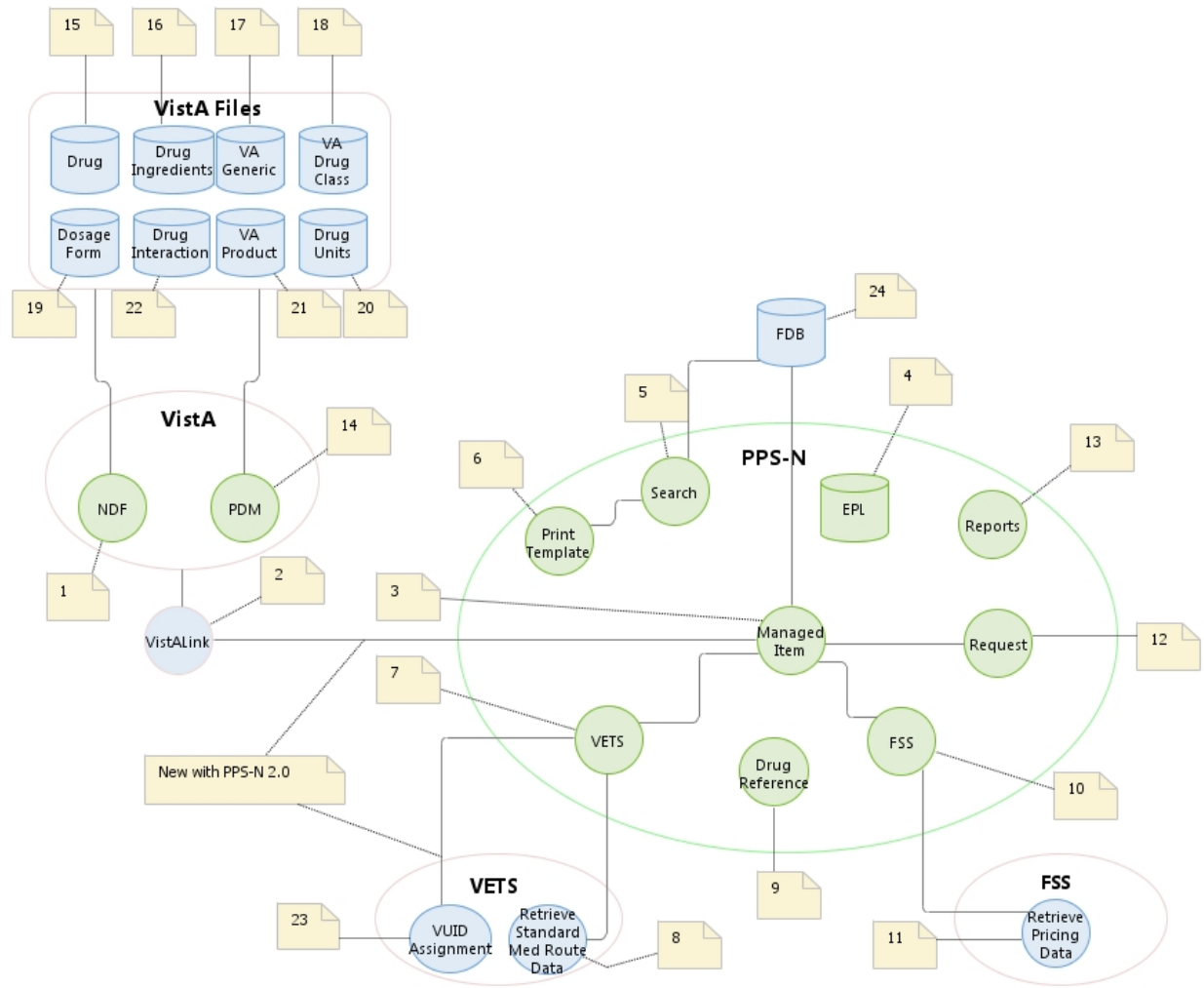


Figure 3: PPS-N High Level Application Design

Table 5: Objects in the High Level Application Design

3.1.2.1 Objects

ID	Name	Description	Service or Legacy Code	External Interface Name	External Interface ID	Internal Interface Name	Internal Interface ID	SDP Sections 1&2
2	VistALink	The service may be utilized to send messages between PPS-N and VistA. VistALink is utilized for KAAJEE login purposes.	Service	VistA Link, the interface mechanism between VistA and PPS-N.	A	Internal calls to this service are performed via direct Java method calls.	N/A	N/A
3	Managed Item	This service handles validation and create, read, update and delete (CRUD) operations with the PPS-N data entities.	Service	N/A	N/A	Internal calls to this service are performed via direct Java method calls.	N/A	N/A
4	PPS-N EPL Database	This database is used to persist all entities and information needed by the PPS-N application.	Service	N/A	N/A	Hibernate is the interface between the Java service class methods and the PPS-N EPL database.	N/A	N/A
5	Search	This service handles all simple and advanced search functionality for the PPS-N application.	Service	N/A	N/A	Internal calls to this service are performed via direct Java method calls.	N/A	N/A

ID	Name	Description	Service or Legacy Code	External Interface Name	External Interface ID	Internal Interface Name	Internal Interface ID	SDP Sections 1&2
6	Print Template	This service handles CRUD operations for the 'print template' entity, used to persist advanced search criteria and result columns.	Service	N/A	N/A	Internal calls to this service are performed via direct Java method calls.	N/A	N/A
7	VETS	This service is used to send web service requests to the VETS system, for the Standard Med Route data that it contains.	Service	Web services, the interface mechanism between VETS and PPS-N.	B	Internal calls to this service are performed via direct Java method calls.	N/A	N/A
8	Retrieve Standard Med Route Data	This process (not developed as part of PPS-N) is invoked by the PPS-N application's VETS service to request Standard Med Route data.	Service	Web services, which allows external systems (such as PPS-N) to request data contained in the VETS data store.	B	N/A	N/A	N/A

ID	Name	Description	Service or Legacy Code	External Interface Name	External Interface ID	Internal Interface Name	Internal Interface ID	SDP Sections 1&2
9	Drug Reference	This service interfaces with the COTS drug information database (also located within PPS-N).	Service	N/A	N/A	This interface depends on the COTS interface (for example via API calls, direct database calls, etc.)	N/A	N/A
10	FSS	This service is used to send JDBC queries to the FSS system, for the pricing data contained in its database tables.	Service	JDBC, the interface mechanism between FSS and PPS-N.	C	Internal calls to this service are performed via direct Java method calls.	N/A	N/A
11	Retrieve Pricing Data	This process (not developed as part of PPS-N) is invoked by the PPS-N application's FSS service to request pricing data.	Service	JDBC, which allows external systems (such as PPS-N) to query for data contained in the FSS database.	C	N/A	N/A	N/A
12	Request	This service implements the item request management functionality for the PPS-N application.	Service	N/A	N/A	Internal calls to this service are performed via direct Java method calls.	N/A	N/A

ID	Name	Description	Service or Legacy Code	External Interface Name	External Interface ID	Internal Interface Name	Internal Interface ID	SDP Sections 1&2
13	Reports	This service is used to manage reports.	Service	N/A	N/A	Internal calls to this service are performed via direct Java method calls.	N/A	N/A
1	NDF	The VistA National Drug File Module.	Legacy	TBD	TBD	N/A	N/A	N/A
14	PDM	The VistA Pharmacy Data Management Module.	Legacy	TBD	TBD	N/A	N/A	N/A
23	VUID Assignment	Interface to VETS for the assignment of VUIDs.	Service	TBD	TBD	N/A	N/A	N/A
24	FDB	FDB is the COTS Drug Information database being utilized.	Service	JDBC (via FDB DIF APIs)	D	N/A	N/A	N/A

3.1.2.2 Internal Data Stores

ID	Name	Data Stored	Steward	Access
4	PPS-N Database	The PPS-N EPL database persists all information (entities, configuration settings, etc.) required by the PPS-N application.	The Managed Item service handles all item-related CRUD operations for PPS-N. The Request service handles all request-related CRU"D operations. The Print Template service handles all print template-related CRUD operations. The Search service handles all search-related queries.	The PPS-N application performs entity create, read, update and delete operations on the PPS-N EPL database.
15	Drug (File #50)	Drug Information	PPS-N	VistA NDF/PDM will perform basic CRUD operations based on data feeds from PPS-N.
16	Drug Ingredients (File #50.416)	Drug Ingredients	PPS-N	VistA NDF/PDM will perform basic CRUD operations based on data feeds from PPS-N.
17	VA Generic (File #50.6)	VA Generic	PPS-N	VistA NDF/PDM will perform basic CRUD operations based on data feeds from PPS-N.
18	VA Drug Class (File #50.605)	VA Drug Class Information	PPS-N	VistA NDF/PDM will perform basic CRUD operations based on data feeds from PPS-N.
19	Dosage Form (File #50.606)	Dosage Form Information	PPS-N	VistA NDF/PDM will perform basic CRUD operations based on data feeds from PPS-N.
20	Drug Units (File #50.607)	Drug Unit Information	PPS-N	VistA NDF/PDM will perform basic CRUD operations based on data feeds from PPS-N.
21	VA Product File (File #50.68)	VA Drug Product Information	PPS-N	VistA NDF/PDM will perform basic CRUD operations based on data feeds from PPS-N.

ID	Name	Data Stored	Steward	Access
22	Drug Interaction (File #56)	Drug Interaction Information	PPS-N (?)	VistA NDF/PDM will perform basic CRUD operations based on data feeds from PPS-N.

3.1.3 Application Locations

The following table denotes the location of the components in the PPS-N system.

Table 6: Application Locations

Application Component	Description	Location at Which Component is Run	Type
Managed Item, Search, Print Template, Request Services	Supports presentation logic, business logic and data CRUD services for information in the PPS-N application.	AITC – PPS-N server	Presentation Logic/ Business Logic/Data Logic (via Hibernate)
Drug Reference Service	Supports the interface to the COTS system within the PPS-N application.	AITC – PPS-N server	Data Logic (via COTS specific means, such as API or database queries)
VistA Link Service	Supports the PPS-N application interface to NDFMS.	AITC – PPS-N server	Interface Code
VETS Service	Supports the PPS-N application interface to VETS.	AITC – PPS-N server	Interface Code
Retrieve Standard Med Route Data Process	VETS process (not part of the PPS-N application effort) to retrieve data as requested by external entities.	AITC – VETS server	Interface Code/Data Logic
FSS Service	Supports the PPS-N application interface to FSS.	AITC – PPS-N server	Interface Code
Retrieve Pricing Data Process	FSS process (not part of the PPS-N application effort) to retrieve data as requested by external entities.	AITC – FSS server	Interface Code/Data Logic
PPS-N EPL database	Stores item information for the PPS-N application.	AITC – PPS-N server	Data Logic (via Oracle)
NDF	Supports the management of the National Drug Files in VistA.	VistA	?
PDM	Supports the management of the National Drug Files in VistA.	VistA	?

3.1.4 Application Users

The table below specifies the users of the PPS-N application.

Table 7: Application Users

Application Component	Location	User
-----------------------	----------	------

Managed Item, Search, Print Template, Request and Notification Services.	AITC – PPS-N server	PPS National Managers will be allowed to access these PPS-N application's services. PPS National Supervisors can add national print templates; PPS Second Reviewers can review pending 2 nd review requests. PPS Users can operate PPS-N in a read-only mode.
--	---------------------	--

3.2 Conceptual Data Design

The conceptual data design presented in this section continues the work from previous project work on the PPS system, which included both PPS-N and PPS-L concepts and functionality. Though the current focus is on the PPS-N system and this system only populates some of the files in the PPS-N EPL database, this section discusses all PPS-N EPL database concepts, including PPS-L concepts.

3.2.1 Project Conceptual Data Model

Near the beginning of the PRE Project, the initial and conceptual data models for the project were defined and documented in the baselined PEPS High Level Design Document, Volume II – Overall Database High Level Design, which was delivered during FY06. Shortly thereafter, in early FY07, the physical data model was documented in the Baselined PEPS Detailed Design Document, Volume II – Overall Database Detailed Design. Note that these documents predate the move away from the term 'PRE' to the current term 'PEPS', and from 'PEPS' to the current term 'PPS'. At a conceptual level, the database for the original 'PRE' project remains an amalgamation of three database systems:

- A COTS product, namely the Drug Information Framework (DIF), supplied by First DataBank (FDB).
- The NDF and PDM packages in the VistA system.
- An integration database to support products not covered in the FDB DIF product and to support synchronization with VistA.

Note that the database referred to as the PPS Enterprise Product List (EPL) (and now referred to as 'PPS-N EPL database') consists of two distinct database schemas: the schema for the database underlying the FDB DIF and the schema for the integration database. It is this integration database schema whose data model is the primary subject of this document.

As the PRE project (now PPS) has commenced, requirements and business rules have evolved, and the initially documented physical data model consisting of fifteen (15) tables has morphed into a highly complex schema of over eighty (80) tables.

This current Software Design Document (SDD) continues the development of the PPS system and, as such, the logical and conceptual data models for the project have been documented and delivered. Hence, this SDD will only address the physical data model which will be used to support the PPS-N application. Details for this physical data model can be found in Section 5.0 Data Design.

3.2.2 Database Information

The following table identifies all databases that will be created, replaced, interfaced with or modified as part of the PPS-N effort.

Table 8: Database Inventory

Database Name	Description	Type	Steward
MIG_EPLN	The database instance used to support development of the National Data Migration Tool.	Create/Modify	PPS
TST_MIG_EPLN	The database instance used to support testing of the National Data Migration Tool, which is a duplication of the MIG_EPLN instance.	Create/Modify	PPS
NAT_EPLN	The database instance used to support development of the National PEPS Component.	Create/Modify	PPS
TST_NAT_EPLN	The database instance used to support testing of the National PEPS Component, which is a duplication of the MIG_EPLN instance.	Create/Modify	PPS
FDB-DIF	This database stores the COTS drug information, and is accessed by PPS-N via a COTS-provided API. This database is located on the PPS-N application server.	Interface	PPS/COTS vendor
FSS database	This system houses a database for pricing information retrieved by PPS-N.	Interface	PPS/VA
VETS database	This system houses a database for Standard Med Route information retrieved by PPS-N.	Interface	PPS/VA

3.2.3 User Interface Data Mapping

This section describes and defines the information that will be available for users of the product to be able to enter data into the database or to retrieve information from the database, if applicable.

3.2.3.1 Application Screen Interface

Below are subsections for each screen of the Graphical User Interface (GUI) that users will have access to, in order to enter or update information.

3.2.3.1.1 Add New Orderable Item

The Add new Orderable Item screen allows user to add/edit the fields of the National Orderable Item during the add wizard process.

Table 9: Add New Orderable Item Database Details

UI	Database (Developer Schema)		
Label	Table	Row	Type
Generic Name	EPL_VA_GEN_NAMES	GENERIC_NAME	VARCHAR2(2000)
Dosage Form	EPL_DOSAGE_FORMS	DF_NAME	VARCHAR2(50)
Vista Orderable Item Name	EPL_ORDERABLE_ITEM	VISTA_OI_NAME	VARCHAR2(2000)
PPS OI Name	EPL_ORDERABLE_ITEM	OI_NAME	VARCHAR2(256)
National Formulary Indicator	EPL_ORDERABLE_ITEM	NATIONAL_FORMULARY_INDICATOR	VARCHAR2(1)
Standard Medication Route	EPL_STANDARD_MED_ROUTES	STANDARD_MED_ROUTE_NAME	VARCHAR2(256)
Compound	EPL_ORDERABLE_ITEM	CAT_COMPOUND_FLAG	VARCHAR2(1)
Investigational	EPL_ORDERABLE_ITEM	CAT_INVEST_FLAG	VARCHAR2(1)
Medication	EPL_ORDERABLE_ITEM	CAT_MEDIC_FLAG	VARCHAR2(1)
Supply	EPL_ORDERABLE_ITEM	CAT_SUPPLY_FLAG	VARCHAR2(1)
Chemotherapy	EPL_ORDERABLE_ITEM	SUBCAT_CHEMO_FLAG	VARCHAR2(1)
Herbal	EPL_ORDERABLE_ITEM	SUBCAT_HERBAL_FLAG	VARCHAR2(1)
OTC	EPL_ORDERABLE_ITEM	SUBCAT_OTC_FLAG	VARCHAR2(1)
Veterinary	EPL_ORDERABLE_ITEM	SUBCAT_VETER_FLAG	VARCHAR2(1)

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Add New Orderable Item

PPS OI Name :
New Item Request : Pending

*Fields marked with * are required*

OI Uniqueness Fields

OI Type : National

Generic Name :

Dosage Form :

Vista Orderable Item Name * :

PPS OI Name * :

National Formulary Indicator : ☐

Standard Medication Route :

Category *

- ☐ Compound
- ☐ Investigational
- ☒ Medication
- ☐ Supply

Sub-Category

- ☐ Chemotherapy
- ☐ Herbal
- ☐ OTC
- ☐ Veterinary

Figure 2: Add Orderable Item

3.2.3.1.2 Add New Product Item

The Add new Product Item screen allows user to add/edit the fields of the Product Item during the add wizard process.

Table 10: Add New Product Item Database Details

UI	Database (Developer Schema)		
Label	Table	Row	Type
Active Ingredient : Ingredient Name	EPL_PROD_INGREDIENT_ASS OCS	INGREDIENT_ID_FK	NUMBER(30)
Active Ingredient: Ingredient Strength	EPL_PROD_INGREDIENT_ASS OCS	STRENGTH	VARCHAR2(256)
Active Ingredient: Ingredient Unit	EPL_PROD_INGREDIENT_ASS OCS	DRUG_UNIT_ID_FK	NUMBER(30)
Generic	EPL_PRODUCTS	VA_GEN_NAME_ID_FK	NUMBER(30)

UI	Database (Developer Schema)		
Label	Table	Row	Type
Active Ingredient : Ingredient Name	EPL_PROD_INGREDIENT_ASS OCS	INGREDIENT_ID_FK	NUMBER(30)
Active Ingredient: Ingredient Strength	EPL_PROD_INGREDIENT_ASS OCS	STRENGTH	VARCHAR2(256)
Active Ingredient: Ingredient Unit	EPL_PROD_INGREDIENT_ASS OCS	DRUG_UNIT_ID_FK	NUMBER(30)
Name			
VA Product Name	EPL_PRODUCTS	VA_PRODUCT_NAME	VARCHAR2(100)
VA Print Name	EPL_PRODUCTS	VA_PRINT_NAME	VARCHAR2(2000)
National Formulary Name	EPL_PRODUCTS	NATIONAL_FORMULARY_NAME	VARCHAR2(256)
Product Strength	EPL_PRODUCTS	STRENGTH	VARCHAR2(256)
Product Unit	EPL_PRODUCTS	DRUG_UNIT_ID_FK	NUMBER(30)
VA Dispense Unit	EPL_PRODUCTS	DISPENSE_UNIT_ID_FK	NUMBER(30)
VA Drug Class: VA Drug Class	EPL_PROD_DRUG_CLASS_AS SOCS	DRUG_CLASS_ID_FK	NUMBER(30)
VA Drug Class: Primary	EPL_PROD_DRUG_CLASS_AS SOCS	PRIMARY_YN	VARCHAR2(1)
CS Federal Schedule	EPL_PRODUCTS	CS_FED_SCHED_ID_FK	NUMBER(30)
Single/Multi Source	EPL_PRODUCTS	SINGLE_MULTI_SOURCE_PRODUCT	VARCHAR2(50)
GCNSEQNO	EPL_PRODUCTS	GCN_SEQNO	NUMBER(10)
Chemotherapy	EPL_PRODUCTS	SUBCAT_CHEMO_FLAG	VARCHAR2(1)
Herbal	EPL_PRODUCTS	SUBCAT_HERBAL_FLAG	VARCHAR2(1)
OTC	EPL_PRODUCTS	SUBCAT_OTC_FLAG	VARCHAR2(1)

UI	Database (Developer Schema)		
Label	Table	Row	Type
Active Ingredient : Ingredient Name	EPL_PROD_INGREDIENT_ASS OCS	INGREDIENT_ID_FK	NUMBER(30)
Active Ingredient: Ingredient Strength	EPL_PROD_INGREDIENT_ASS OCS	STRENGTH	VARCHAR2(256)
Active Ingredient: Ingredient Unit	EPL_PROD_INGREDIENT_ASS OCS	DRUG_UNIT_ID_FK	NUMBER(30)
Veterinary	EPL_PRODUCTS	SUBCAT_VETER_FLAG	VARCHAR2(1)
DEA Schedule	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
NCPDP Dispense Unit	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
NCPDP Quantity Multiplier	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Special Handling : Code	EPL_MULTI_TEXT	TEXT	VARCHAR2(2000)
National Formulary Indicator	EPL_PRODUCTS	NATIONAL_FORMULARY_INDICATOR	VARCHAR2(1)
CMOP Dispense (National)	EPL_PRODUCTS	CMOP_DISPENSE_YN	VARCHAR2(1)
Override DF Dose Check Exclusion	EPL_PRODUCTS	OVERRIDE_DF_DOSE_CHK_EXCLUSN	VARCHAR2(5)
Exclude DDI Check	EPL_PRODUCTS	EXCLUDE_INTERACTION_CHECK	VARCHAR2(1)
Auto-Create Possible Dosage	EPL_PRODUCTS	CREATE_POSSIBLE_DOSAGE	VARCHAR2(1)
Possible Dosages To Create	EPL_PRODUCTS	POSSIBLE_DOSAGE_TO_CREATE	VARCHAR2(30)
Product Package	EPL_PRODUCTS	PRODUCT_PACKAGE	VARCHAR2(25)

UI	Database (Developer Schema)		
Label	Table	Row	Type
Active Ingredient : Ingredient Name	EPL_PROD_INGREDIENT_ASS OCS	INGREDIENT_ID_FK	NUMBER(30)
Active Ingredient: Ingredient Strength	EPL_PROD_INGREDIENT_ASS OCS	STRENGTH	VARCHAR2(256)
Active Ingredient: Ingredient Unit	EPL_PROD_INGREDIENT_ASS OCS	DRUG_UNIT_ID_FK	NUMBER(30)
FDA Med Guide	EPL_PRODUCTS	FDB_MED_GUIDE	VARCHAR2(100)

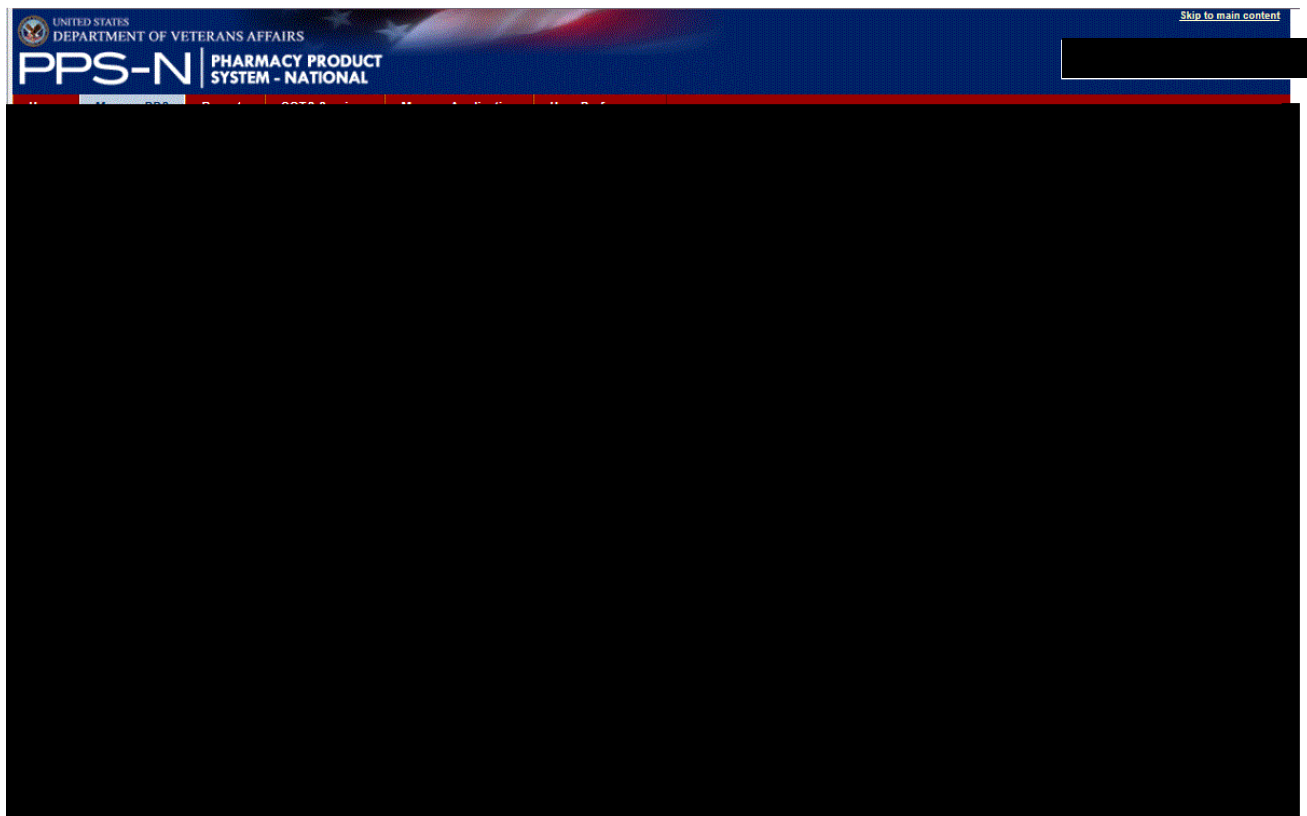


Figure 3: Add New Product Item Top Half of Screen

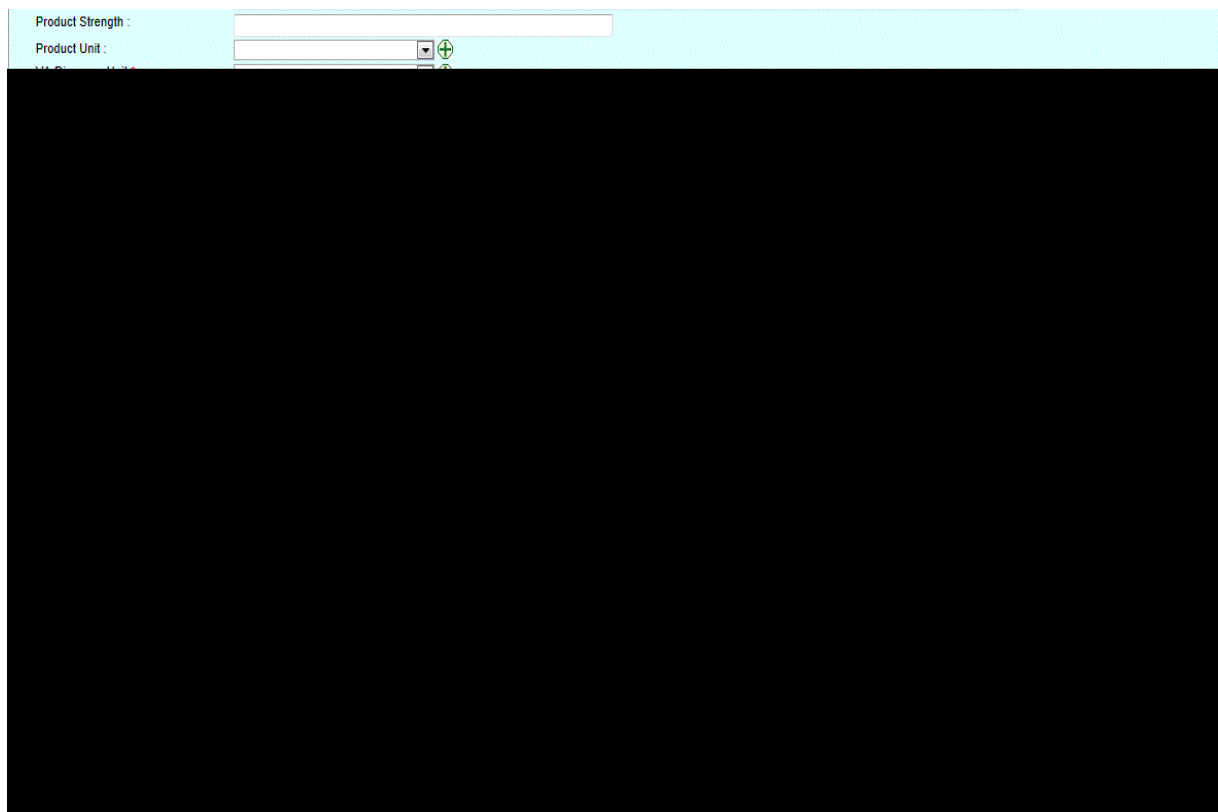


Figure 4: Add New Product Item Screen Bottom Half of Screen

3.2.3.1.3 Add New NDC Item

The Add new NDC Item screen allows user to add/edit the fields of the NDC Item during the add wizard process.

Table 11: Drug-Drug Interaction Database Details

UI	Database (Developer Schema)		
Label	Table	Row	Type
NDC	EPL_NDCS	NDC_NUMBER	VARCHAR2(13)
UPC/UPN	EPL_NDCS	UPC_UPN	VARCHAR2(100)
Trade Name	EPL_NDCS	TRADE_NAME	VARCHAR2(256)
Order Unit	EPL_NDCS	ORDER_UNIT_ID_FK	NUMBER(30)
Package Type	EPL_NDCS	PACKAGE_TYPE_ID_FK	NUMBER(30)
Package Size	EPL_NDCS	PACKAGE_SIZE	NUMBER(12,4)
Manufacturer	EPL_NDCS	MANUFACTUER_ID_FK	NUMBER(30)
OTC/RX Indicator	EPL_NDCS	OTC_RX	VARCHAR2(50)
Single/Multi Source4	EPL_NDCS	SINGLE_MULTI_SOURCE	VARCHAR2(100)

UI	Database (Developer Schema)		
Label	Table	Row	Type
Chemotherapy	EPL_NDCS	SUBCAT_CHEMO_FLAG	VARCHAR2(1)
Herbal	EPL_NDCS	SUBCAT_HERBAL_FLAG	VARCHAR2(1)
OTC	EPL_NDCS	SUBCAT_OTC_FLAG	VARCHAR2(1)
Veterinary	EPL_NDCS	SUBCAT_VETER_FLAG	VARCHAR2(1)
Product Number	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Scored	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
Color	EPL_NDCS	COLOR	VARCHAR2(100)
Shape	EPL_NDCS	SHAPE	VARCHAR2(100)
Imprint	EPL_NDCS	IMPRINT	VARCHAR2(100)
Imprint2	EPL_NDCS	IMPRINT_2	VARCHAR2(100)
NDC Item Inactivation Date	EPL_NDCS	INACTIVATION_DATE	TIMESTAMP(6)
Protect From Light	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Refrigeration	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)

Figure 5: Add New NDC Item Screen

3.2.3.1.4 Orderable Item A-Z Tab

The Orderable Item A-Z tab contains all values associated with an Orderable item. The ones marked with a * are local only and are placeholders on the screen until PPS-L is released.


Table 12: Orderable Item A-Z Tab Database Details

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Application Package Use			
Category	EPL_ORDERABLE_ITEM	CAT_COMPOUND_FLAG, CAT_INVEST_FLAG CAT_MEDIC_FLAG CAT_SUPPLY_FLAG	VARCHAR2(1), VARCHAR2(1), VARCHAR2(1), VARCHAR2(1)
Day (ND) or Dose (NL) Limit	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Dosage Form	EPL_DOSAGE_FORMS	DF_NAME	VARCHAR2(50)
High Alert	EPL_ORDERABLE_ITEM	HIGH_ALERT	VARCHAR2(120)

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Application Package Use			
Item Status	EPL_ORDERABLE_ITEM	ITEM_STATUS	VARCHAR2(30)
* Labs during Administration			
* Labs during Finishing an Order			
* Labs during Order Entry			
Lifetime Cumulative Dosage	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
* Local Medication Route (L)			
* Local OI-Drug Text Entry			
* Local Use			
National Formulary Indicator	EPL_ORDERABLE_ITEM	NATIONAL_FORMULARY_INDICATOR	VARCHAR2(1)
National OI-Drug Text Entry	EPL_OI_DRUG_TEXT_N ASSOCS	DRUG_TEXT_ID_FK	NUMBER(30)
New Item Request	EPL_ORDERABLE_ITEM	REQUEST_STATUS	VARCHAR2(30)
Non-VA Med	EPL_ORDERABLE_ITEM	NON_VA_MED	VARCHAR2(1)
OI Inactivation Date	EPL_ORDERABLE_ITEM	INACTIVATION_DATE	TIMESTAMP(6)
OI IV Flag	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
OI Synonym	EPL_MULTI_TEXT	TEXT	VARCHAR2(2000)
OI Type	EPL_ORDERABLE_ITEM	OI_TYPE	VARCHAR2(1)

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Application Package Use			
Other Language Instructions	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Patient Instructions	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
PPS OI Name	EPL_ORDERABLE_ITEM	OI_NAME	VARCHAR2(1)
* Previously Marked for Local Use			
Proposed Inactivation Date	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Rejection Reason Comment	EPL_ORDERABLE_ITEM	REJECT_REASON_TEXT	VARCHAR2(2000)
Request Rejection Reason	EPL_ORDERABLE_ITEM	REQUEST_REJECT_REASON	VARCHAR2(100)
* Schedule			
* Schedule Type			
Special Instructions	EPL_ORDERABLE_ITEM	SPECIAL_INSTRUCTIONS	VARCHAR2(120)
Standard Medication Route	EPL_STANDARD_MED_ROUTES	STANDARD_MED_ROUTE_NAME	VARCHAR2(256)
Sub-Category	EPL_ORDERABLE_ITEM	SUBCAT_CHEMO_FLAG, SUBCAT_HERBAL_FLAG, SUBCAT_OTC_FLAG, SUBCAT_VETER_FLAG	VARCHAR2(1), VARCHAR2(1), VARCHAR2(1), VARCHAR2(1)
Vista Orderable Item Name	EPL_ORDERABLE_ITEM	VISTA_OI_NAME	VARCHAR2(2000)
* Vitals during Administration			

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Application Package Use			
* Vitals during Finishing an Order			
* Vitals during Order Entry			


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PPS OI Name : ACARBOSE TAB

Item Status : Active
 Dosage Form : TAB

OI Safety Indicator : NO

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* = required fields

Field Name	Current Value
Application Package Use (L)	Click link for details
Category	Click link for details
Day (ND) or Dose (NL) Limit	
Dosage Form	TAB
High Alert	
Item Status	Active
Labs during Administration (L)	Click link for details
Labs during Finishing an Order (L)	Click link for details
Labs during Order Entry (L)	Click link for details
Lifetime Cumulative Dosage	No
Local Medication Route (L)	Click link for details
Local OI-Drug Text Entry (L)	Click link for details
Local Use (L)	No

Field Name	Current Value
National Formulary Indicator	Yes
National OI-Drug Text Entry	Click link for details
New Item Request	Approved
Non-VA Med	No
OI Inactivation Date	
OI IV Flag	No
OI Synonym	Click link for details
OI Type	National
Other Language Instructions	
Patient Instructions	
PPS OI Name	ACARBOSE TAB
Previously Marked for Local Use (L)	No

Field Name	Current Value
Proposed Inactivation Date	
Rejection Reason Comment	
Request Rejection Reason	
Schedule (L)	Click link for details
Schedule Type (L)	
Special Instructions	
Standard Medication Route	
Sub-Category	Click link for details
VistA Orderable Item Name	ACARBOSE
Vitals during Administration (L)	Click link for details
Vitals during Finishing an Order (L)	Click link for details
Vitals during Order Entry (L)	Click link for details

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Figure 6: Orderable Item A-Z Screen

3.2.3.1.5 Product Item A-Z Tab

The Product Item A-Z tab contains all values associated with a Product item. The ones marked with a * are local only and are placeholders on the screen until PPS-L is released).

Table 13: Drug-Drug Pairs Customization Database Details

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Action Profile Message (OP)			
Active Ingredient	EPL_PROD_INGREDIENT_A SSOCS	INGREDIENT_ID_FK, STRENGTH, DRUG_UNIT_ID_FK	NUMBER(30), VARCHAR(256), NUMBER(30)
* Application Package Use			
Approved For Splitting	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
AR/WS Amis Category	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
AR/WS Amis Conversion Number	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
* ATC Canister			
* ATC Canisters			
* ATC Choice			
* ATC Mnemonic			
Auto-Create Possible Dosage	EPL_PRODUCTS	CREATE_POSSIBLE_DOSAGE	VARCHAR2(1)
Category	EPL_PRODUCTS	CAT_COMPOUND_FLAG, CAT_INVEST_FLAG CAT_MEDIC_FLAG CAT_SUPPLY_FLAG	VARCHAR2(1), VARCHAR2(1), VARCHAR2(1), VARCHAR2(1)
CMOP Dispense (National)	EPL_PRODUCTS	CMOP_DISPENSE_YN	VARCHAR2(1)
* Corresponding Inpatient Drug			
* Corresponding Outpatient Drug			
CS Federal Schedule	EPL_PRODUCTS	CS_FED_SCHED_ID_FK	NUMBER(30)
* Current Inventory			
DAW Code	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Action Profile Message (OP)			
Active Ingredient	EPL_PROD_INGREDIENT ASSOCS	INGREDIENT_ID_FK, STRENGTH, DRUG_UNIT_ID_FK	NUMBER(30), VARCHAR(256), NUMBER(30)
Day (ND) or Dose (NL) Limit	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
DEA Schedule	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
Default Mail Service	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Dispense Days Supply Limit	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Dispense Limit for Order	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Dispense Limit Schedule	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Dispense Override	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Dispense Override Reason	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Dispense Override Reason Entered By			
Dispense Quantity Limit	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Dispense Quantity Override	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Dispense Quantity Override Reason	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Do Not Handle if Pregnant	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Do Not Mail	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Effective Dates	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Exclude Drug-Drug Interaction Check	EPL_PRODUCTS	EXCLUDE_INTERACTION_CHECK	VARCHAR2(1)
FDA Med Guide	EPL_PRODUCTS	FDB_MED_GUIDE	VARCHAR2(100)

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Action Profile Message (OP)			
Active Ingredient	EPL_PROD_INGREDIENT ASSOCS	INGREDIENT_ID_FK, STRENGTH, DRUG_UNIT_ID_FK	NUMBER(30), VARCHAR(256), NUMBER(30)
Follow Up Time	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
* Formulary			
Formulary Alternative	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
FSN/NSN	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
GCNSEQNO	EPL_PRODUCTS	GCN_SEQNO	NUMBER(10)
Generic Name	EPL_PRODUCTS	VA_GEN_NAME_ID_FK	NUMBER(30)
Hazardous to Dispose	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Hazardous to Handle	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Hazardous to Patient	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
High-Risk Follow Up	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
High-Risk Follow up Time Period	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
High Risk Med	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
* IEN			
* IFCAP Item Number			
Inpatient Medication Expired Orders Max Time	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Inpatient Medication Expired Orders Min Time	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
* Inpatient Pharmacy Location			
Item Status	EPL_PRODUCTS	ITEM_STATUS	VARCHAR2(30)

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Action Profile Message (OP)			
Active Ingredient	EPL_PROD_INGREDIENT_A SSOCS	INGREDIENT_ID_FK, STRENGTH, DRUG_UNIT_ID_FK	NUMBER(30), VARCHAR(256), NUMBER(30)
Lab Monitor Mark	EPL_VADF_NONLIST_VALU ES	VA_DF_VALUE	VARCHAR2(2000)
* Lab Value			
* Labs during Administration			
* Labs during Finishing an Order			
* Labs during Order Entry			
* Local Drug Text Entry			
* Local Non-Formulary			
* Local Possible Dosages			
* Local Print Name			
* Local Special Handling			
* Local Use			
Long Term Out of Stock	EPL_VADF_NONLIST_VALU ES	VA_DF_VALUE	VARCHAR2(2000)
Low Safety Margin	EPL_VADF_NONLIST_VALU ES	VA_DF_VALUE	VARCHAR2(2000)
Master Entry For VUID	EPL_PRODUCTS	MASTER_ENTRY_FOR_V UID	VARCHAR2(1)
Max Dispense Limit	EPL_VADF_NONLIST_VALU ES	VA_DF_VALUE	VARCHAR2(2000)
Maximum Dose Per Day	EPL_PRODUCTS	MAX_DOSE_PER_DAY	NUMBER(3)
Monitor Max Days	EPL_VADF_NONLIST_VALU ES	VA_DF_VALUE	VARCHAR2(2000)
Monitor Routine	EPL_VADF_NONLIST_VALU ES	VA_DF_VALUE	VARCHAR2(2000)

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Action Profile Message (OP)			
Active Ingredient	EPL_PROD_INGREDIENT ASSOCS	INGREDIENT_ID_FK, STRENGTH, DRUG_UNIT_ID_FK	NUMBER(30), VARCHAR(256), NUMBER(30)
National Drug Text Entry	EPL_PROD_DRUG_TEXT_N ASSOCS	DRUG_TEXT_ID_FK	NUMBER(30)
National Formulary Indicator	EPL_PRODUCTS	NATIONAL_FORMULARY_INDICATOR	VARCHAR2(1)
National Formulary Name	EPL_PRODUCTS	NATIONAL_FORMULARY_NAME	VARCHAR2(256)
NCPDP Dispense Unit	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
NCPDP Quantity Multiplier	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
* NDC by Outpatient Site			
NDF Product IEN	EPL_PRODUCTS	NDF_PRODUCT_IEN	NUMBER(30)
New Item Request	EPL_PRODUCTS	REQUEST_STATUS	VARCHAR2(30)
Non-Renewable	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
* Normal Amount To Order			
* Number of Associated Labs			
Number of Doses	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
* Number of Lab Instances Displayed			
* OP External Dispense			
Order Unit	EPL_PRODUCTS	ORDER_UNIT_IF_FK	NUMBER(30)
Override DF Dose Check Exclusion	EPL_PRODUCTS	OVERRIDE_DF_DOSE_CHK_EXCLUSN	VARCHAR2(5)

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Action Profile Message (OP)			
Active Ingredient	EPL_PROD_INGREDIENT_ASSOCS	INGREDIENT_ID_FK, STRENGTH, DRUG_UNIT_ID_FK	NUMBER(30), VARCHAR(256), NUMBER(30)
Patient Specific label	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
* Possible Dosages			
Possible Dosages To Create	EPL_PRODUCTS	POSSIBLE_DOSAGE_TO_CREATE	VARCHAR2(30)
* Previously Marked for Local Use			
* Price per Dispense Unit			
* Price per Order Unit			
Product Dispense Units per Order Unit	EPL_PRODUCTS	PRODUCT_DISPENSE_UNITS_PER_ORD	Number(10,4)
Product Inactivation Date	EPL_PRODUCTS	INACTIVATION_DATE	TIMESTAMP(6)
Product Package	EPL_PRODUCTS	PRODUCT_PACKAGE	VARCHAR2(25)
Product Strength	EPL_PRODUCTS	STRENGTH	VARCHAR2(256)
Product Unit	EPL_PRODUCTS	DRUG_UNIT_ID_FK	NUMBER(30)
Proposed Inactivation Date	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Protect from Light	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Quantity Dispense Message	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Recall Level	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
Reduced Copay	EPL_REDUCED_COPAY	START_DATE, STOP_DATE	TIMESTAMP(6), TIMESTAMP(6)
Refrigeration	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Action Profile Message (OP)			
Active Ingredient	EPL_PROD_INGREDIENT ASSOCS	INGREDIENT_ID_FK, STRENGTH, DRUG_UNIT_ID_FK	NUMBER(30), VARCHAR(256), NUMBER(30)
Rejection Reason Comment	EPL_PRODUCTS	REJECT_REASON_TEXT	VARCHAR2(2000)
* Reorder Level			
Request Rejection Reason	EPL_PRODUCTS	REQUEST_REJECT_REASON	VARCHAR2(100)
Rx Message	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Service Code	EPL_PRODUCTS	SERVICE_CODE	NUMBER(6)
Single/Multi Source	EPL_PRODUCTS	SINGLE_MULTI_SOURCE_PRODUCT	VARCHAR2(50)
Special Handling	EPL_MULTI_TEXT	TEXT	VARCHAR2(2000)
* Specimen Type			
Sub-Category	EPL_PRODUCTS	SUBCAT_CHEMO_FLAG, SUBCAT_HERBAL_FLAG, SUBCAT_OTC_FLAG, SUBCAT_VETER_FLAG	VARCHAR2(1), VARCHAR2(1), VARCHAR2(1), VARCHAR2(1)
Synonyms	EPL_SYNONYMS	SYNONYM_NAME, INTENDED_USE_ID_FK, NDC_CODE, VSN, ORDER_UNIT_ID_FK, PRICE_PER_ORDER_UNIT, DISPENSE_UNITS_PER_ORDER_UNIT, PRICE_PER_DISPENSE_UNIT, VENDOR	VARCHAR2(256), NUMBER(30), VARCHAR2(256), VARCHAR2(256), NUMBER(30), NUMBER(8,2), NUMBER(10,2), NUMBER(8,2), VARCHAR2(256)
Tallman Lettering	EPL_PRODUCTS	TALLMAN_LETTERING	VARCHAR2(256)
Total Dispense Quantity	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
* Transmit to CMOP (Local)			

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Action Profile Message (OP)			
Active Ingredient	EPL_PROD_INGREDIENT ASSOCS	INGREDIENT_ID_FK, STRENGTH, DRUG_UNIT_ID_FK	NUMBER(30), VARCHAR(256), NUMBER(30)
Unit Dose Schedule	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Unit Dose Schedule Type	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
VA Dispense Unit	EPL_PRODUCTS	DISPENSE_UNIT_ID_FK	NUMBER(30)
VA Drug Classes	EPL_PROD_DRUG_CLASS ASSOCS	DRUG_CLASS_ID_FK, PRIMARY_YN	NUMBER(30), VARCHAR2(1)
VA Print Name	EPL_PRODUCTS	VA_PRINT_NAME	VARCHAR2(2000)
VA Product ID	EPL_PRODUCTS	CMOP_ID	VARCHAR2(256)
VA Product Name	EPL_PRODUCTS	VA_PRODUCT_NAME	VARCHAR2(100)
* Vitals during Administration			
* Vitals during Finishing an Order			
* Vitals during Order Entry			
VUID	EPL_PRODUCTS	VUID	VARCHAR2(100)
Witness Required	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)

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Product : ACARBOSE 100MG TAB
 Primary Class : HS502 - ORAL HYPOLYCEMIC AGENTS,ORAL
 Category : Medication

PPS OI Name : [ACARBOSE TAB](#)
 Application Package Use : X
 Item Status : Active
 New Item Request : Approved

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 * = required fields

Field Name	Current Value	Field Name	Current Value	Field Name	Current Value
Action Profile Message (OP) (L)		High Risk Follow-Up	No	Override Dose Form Dose Check Exclusion	No
Active Ingredient	Click link for details	High Risk Follow-Up Time Period		Patient Specific Label	No
Application Package Use (L)	Click link for details	High Risk Med	No	Possible Dosages (L)	Click link for details
Approved for Splitting		IEN (L)		Possible Dosages To Create	
AR/WS Amis Category		IFCAP Item Number (L)	Click link for details	Previously Marked for Local Use (L)	No
AR/WS Amis Conversion Number		Inpatient Medication Expired Orders Max Time		Price per Dispense Unit (L)	
ATC Canister (L)		Inpatient Medication Expired Orders Min Time		Price per Order Unit (L)	
ATC Canisters (L)	Click link for details	Inpatient Pharmacy Location (L)		Product Dispense Units per Order Unit	
ATC Choice (L)		Item Status	Active	Product Inactivation Date	
ATC Mnemonic (L)		Lab Monitor Mark		Product Package	
Auto-Create Possible Dosage	Yes	Lab Test Monitor (L)		Product Strength	100
Category	Click link for details	Lab Value (L)		Product Unit	MG
CMOP Dispense (National)	Yes	Labs during Administration (L)	Click link for details	Proposed Inactivation Date	
Corresponding Inpatient Drug (L)		Labs during Finishing an Order (L)	Click link for details	Protect from Light	No
Corresponding Outpatient Drug (L)		Labs during Order Entry (L)	Click link for details	Quantity Dispense Message	
CS Federal Schedule	0 - UNSCHEDULED	Local Drug Text Entry (L)	Click link for details	Recall Level	
Current Inventory (L)	0	Local Non-Formulary (L)	No	Reduced Copay	Click link for details
DAW Code	0-NO PRODUCT SELECTION INDICATED	Local Possible Dosages (L)	Click link for details	Refrigeration	
Day (ND) or Dose (NL) Limit		Local Print Name (L)		Rejection Reason Comment	
DEA Schedule	0-Unscheduled	Local Special Handling (L)		Reorder Level (L)	
Default Mail Service		Local Use (L)	No	Request Rejection Reason	
Dispense Days Supply Limit		Long Term Out of Stock	No	RX Message	
Dispense Limit for Order		Low Safety Margin	No	Service Code	
Dispense Limit Schedule		Master Entry For VUID	Yes	Single/Multi Source	S- Single Source
Dispense Override		Max Dispense Limit		Special Handling	Click link for details
Dispense Override Reason		Maximum Dose per Day		Specimen Type (L)	
Dispense Override Reason Entered By		Monitor Max Days		Sub-Category	Click link for details
Dispense Quantity Limit	0, 0	Monitor Routine		Synonyms	Click link for details
Dispense Quantity Override		National Drug Text Entry	Click link for details	Tallman Lettering	

Figure 7: Product Item A-Z Tab Screen 1

ATC Canisters (L)	Click link for details	Inpatient Pharmacy Location (L)		Product Dispense Units per Order Unit	
ATC Choice (L)		Item Status	Active	Product Inactivation Date	
ATC Mnemonic (L)		Lab Monitor Mark		Product Package	
Auto-Create Possible Dosage	Yes	Lab Test Monitor (L)		Product Strength	100
Category	Click link for details	Lab Value (L)		Product Unit	MG
CMOP Dispense (National)	Yes	Labs during Administration (L)	Click link for details	Proposed Inactivation Date	
Corresponding Inpatient Drug (L)		Labs during Finishing an Order (L)	Click link for details	Protect from Light	No
Corresponding Outpatient Drug (L)		Labs during Order Entry (L)	Click link for details	Quantity Dispense Message	
CS Federal Schedule	0 - UNSCHEDULED	Local Drug Text Entry (L)	Click link for details	Recall Level	
Current Inventory (L)	0	Local Non-Formulary (L)	No	Reduced Copay	Click link for details
DAW Code	0-NO PRODUCT SELECTION INDICATED	Local Possible Dosages (L)	Click link for details	Refrigeration	
Day (ND) or Dose (NL) Limit		Local Print Name (L)		Rejection Reason Comment	
DEA Schedule	0-Unscheduled	Local Special Handling (L)		Reorder Level (L)	
Default Mail Service		Local Use (L)	No	Request Rejection Reason	
Dispense Days Supply Limit		Long Term Out of Stock	No	RX Message	
Dispense Limit for Order		Low Safety Margin	No	Service Code	
Dispense Limit Schedule		Master Entry For VUID	Yes	Single/Multi Source	S- Single Source
Dispense Override		Max Dispense Limit		Special Handling	Click link for details
Dispense Override Reason		Maximum Dose per Day		Specimen Type (L)	
Dispense Override Reason Entered By		Monitor Max Days		Sub-Category	Click link for details
Dispense Quantity Limit	0, 0	Monitor Routine		Synonyms	Click link for details
Dispense Quantity Override		National Drug Text Entry	Click link for details	Tallman Lettering	
Dispense Quantity Override Reason		National Formulary Indicator	Yes	Total Dispense Quantity	
Do Not Handle if Pregnant	No	National Formulary Name	ACARBOSE TAB	Transmit to CMOP (Local) (L)	No
Do Not Mail	No	NCPDP Dispense Unit	EA-EACH	Unit Dose Schedule	
Effective Dates	Click link for details	NCPDP Quantity Multiplier	1	Unit Dose Schedule Type	
Exclude Drug-Drug Interaction Check	No	NDC by Outpatient Site (L)	Click link for details	VA Dispense Unit	TAB
FDA Med Guide		NDF Product IEN	11	VA Drug Classes	Click link for details
Follow-Up Time	No	New Item Request	Approved	VA Print Name	ACARBOSE 100MG TAB
Formulary (L)	F	Non-Renewable	No	VA Product ID	A0600
Formulary Alternative		Normal Amount To Order (L)	0	VA Product Name	ACARBOSE 100MG TAB
FSN/NSN		Number of Associated Labs (L)		Vitals during Administration (L)	Click link for details
GCNSEQNO	020241	Number of Doses		Vitals during Finishing an Order (L)	Click link for details
Generic Name	ACARBOSE	Number of Lab Instances Displayed (L)		Vitals during Order Entry (L)	Click link for details
Hazardous to Dispose	No	OP External Dispense (L)	No	VUID	4012835
Hazardous to Handle	No	Order Unit		Witness Required	No
Hazardous to Patient	No				

[Create New Product \(from existing\)](#)

Figure 8: Product Item A-Z Tab Screen 2

3.2.3.1.6 NDC Item A-Z Tab

The Product Item A-Z tab contains all values associated with a Product item. The ones marked with a * are local only and are placeholders on the screen until PPS-L is released).


Table 14: Dose Range Check Database Details

UI	Database (Developer Schema)		
Label	Table	Row	Type
* Application Package Use			
Category	EPL_NDCS	CAT_COMPOUND_FLAG, CAT_INVEST_FLAG CAT_MEDIC_FLAG CAT_SUPPLY_FLAG	VARCHAR2(1), VARCHAR2(1), VARCHAR2(1), VARCHAR2(1)
Color	EPL_NDCS	COLOR	VARCHAR2(100)
FSS BIG4 Price	EPL_NDCS	FSS_BIG4_PRICE	NUMBER(8,2)

UI	Database (Developer Schema)		
FSS BPA Price	EPL_NDCS	FSS_BPA_PRICE	NUMBER(8,2)
FSS Contract Number	EPL_NDCS	FSS_CNT_NO	VARCHAR2(50)
FSS Covered Items	EPL_NDCS	FSS_I	VARCHAR2(1)
FSS Incentive BPA Available	EPL_NDCS	FSS_BPA_AVAIL	VARCHAR2(1)
FSS National Contract Price	EPL_NDCS	FSS_NC_PRICE	NUMBER(8,2)
FSS Price	EPL_NDCS	FSS_PRICE	NUMBER(8,2)
FSS Price End Date	EPL_NDCS	FSS_END_DATE	TIMESTAMP(6)
FSS Prime Vendor	EPL_NDCS	FSS_PV	VARCHAR2(1)
FSS VA Price	EPL_NDCS	FSS_VA_PRICE	NUMBER(8,2)
Imprint	EPL_NDCS	IMPRINT	VARCHAR2(100)
Imprint2	EPL_NDCS	IMPRINT_2	VARCHAR2(100)
Item Status	EPL_NDCS	ITEM_STATUS	VARCHAR2(30)
Manufacturer	EPL_NDCS	MANUFACTUER_ID_FK	NUMBER(30)
NDC	EPL_NDCS	NDC_NUMBER	VARCHAR2(13)
* NDC by Outpatient Site			
NDC Dispense Unit Per Order Unit	EPL_NDCS	NDC_DISP_UNITS_PER_ORD_UNITS	NUMBER(10,4)
NDC Item Inactivation Date	EPL_NDCS	INACTIVATION_DATE	TIMESTAMP(6)
NDC Price Per Dispense Unit	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)

UI	Database (Developer Schema)		
* NDC Price Per Order Unit			
NDF NDC IEN	EPL_NDCS	NDF_NDC_IEN	NUMBER(30)
New Item Request	EPL_NDCS	REQUEST_STATUS	VARCHAR2(30)
Order Unit	EPL_NDCS	ORDER_UNIT_ID_FK	NUMBER(30)
OTC/RX Indicator	EPL_NDCS	OTC_RX	VARCHAR2(50)
Package Size	EPL_NDCS	PACKAGE_SIZE	NUMBER(12,4)
Package Type	EPL_NDCS	PACKAGE_TYPE_ID_FK	NUMBER(30)
Previous NDC	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Previous UPC/UPN	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Product Number	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Proposed Inactivation Date	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Protect From Light	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	VARCHAR2(2000)
Refrigeration	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
Scored	EPL_VADF_ASSOC_VALUES	LIST_VALUE	VARCHAR2(2000)
Shape	EPL_NDCS	SHAPE	VARCHAR2(100)
Single/Multi Source ⁴	EPL_NDCS	SINGLE_MULTI_SOURCE	VARCHAR2(100)
Source	EPL_NDCS	SOURCE	VARCHAR2(256)
Sub-Category	EPL_NDCS	SUBCAT_CHEMO_FLAG, SUBCAT_HERBAL_FLAG, SUBCAT_OTC_FLAG, SUBCAT_VETER_FLAG	VARCHAR2(1), VARCHAR2(1), VARCHAR2(1), VARCHAR2(1)
Ten-Digit NDC	EPL_NDCS	TEN_DIGIT_NDC	VARCHAR2(25)

UI	Database (Developer Schema)		
Ten-Digit NDC Format Indication	EPL_NDCS	TEN_DIGIT_FORMAT_INDICATION	VARCHAR2(25)
Trade Name	EPL_NDCS	TRADE_NAME	VARCHAR2(256)
* Unit Price			
UPC/UPN	EPL_NDCS	UPC_UPN	VARCHAR2(100)
Vendor	EPL_NDCS	VENDOR	VARCHAR2(256)
VSN	EPL_NDCS	VSN	VARCHAR2(256)


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NDC : 00087-6060-05

VA Product Name : [METFORMIN HCL 500MG TAB](#)


VA Print Name : METFORMIN HCL 500MG TAB

VA Dispense Unit : TAB

Trade Name : GLUCOPHAGE

Manufacturer : BMS PRIMARYCARE

Item Status : Active



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* required fields

Field Name	Current Value	Field Name	Current Value	Field Name	Current Value
Application Package Use (L)	Click link for details	Item Status	Active	Product Number	
Category	Click link for details	Manufacturer	BMS PRIMARYCARE	Proposed Inactivation Date	
Color	WHITE	NDC	00087-6060-05	Protect from Light	No
FSS BIG4 Price	0.0	NDC by Outpatient Site (L)	Click link for details	Refrigeration	
FSS BPA Price	0.0	NDC Dispense Units per Order Unit	100.0	Scored	
FSS Contract Number		NDC Item Inactivation Date		Shape	ROUND
FSS Covered Items		NDC Price per Dispense Unit	0	Single/Multi Source	M - Multi Source
FSS Incentive BPA Available	No	NDC Price per Order Unit (L)	0	Source	COTS
FSS National Contract Price	0.0	NDF NDC IEN	88278	Sub-Category	Click link for details
FSS Price	0.0	New Item Request	Approved	Ten-Digit NDC	0087-6060-05
FSS Price End Date		Order Unit	BT	Ten-Digit NDC Format Indication	04-4-2 NDC
FSS Prime Vendor	No	OTC/RX Indicator	Prescription	Trade Name	GLUCOPHAGE
FSS VA Price	0.0	Package Size	100.0	Unit Price (L)	0
Image	/FDB_Images/BMS60600.JPG	Package Type	BOTTLE	UPC/UPN	
Imprint	500	Previous NDC		Vendor	
Imprint2	BMS 6060	Previous UPC/UPN		VSN	

Figure 9: NDC Item A-Z Screen

3.2.3.2 Application Report Interface

This section describes and defines the reports that will be available in the user interface, if applicable.

3.2.3.2.1 Reports

- Capture NDF Data – a list of all Active NDCS along with a bunch of associated attributes.

- Ingredients List – a list of products with their ingredients.
- Product and Warning Labels - a list of Products and their warning label codes.
- VA Drug Classifications – a list of VA Drug Classifications.
- Products with Exclusions from Drug-Drug Interactions – a list of Products and the Exclusion from DDI Interaction values for products where that were added to the system during the time period.
- Active Products with No Active NDCS – a list of Active Products with No Active NDCS.
- Active Products with Proposed Inactivation Date – a list of Active Products that have a Proposed Inactivation Date.
- VOID Approvals – a list of drug concepts with VUIDS that have been approved inactivated or reactivated.

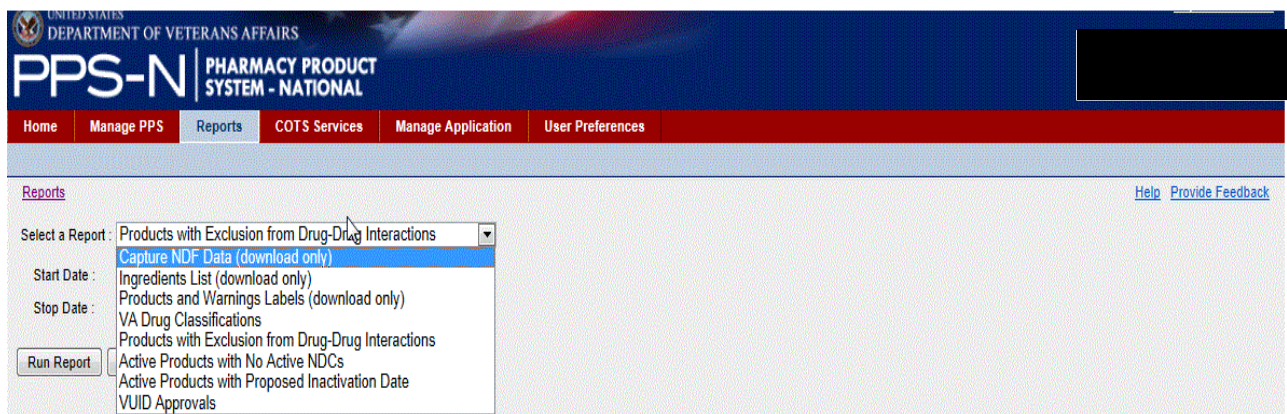


Figure 10: Reports Tab

3.2.3.2.1.1 Capture NDF Data

Table 15: Capture NDF Report Database Details

Report Column	Table	Column	Notes
NDC_1	FDB_CUSTOM_DOSING_VA	MAXSINGLEDOSE	
NDC_2	FDB_CUSTOM_DOSING_VA	MAXSINGLEDOSEUNITS	
NDC_3	FDB_CUSTOM_DOSING_VA	MAXSINGLEDOSEFORM	
NDF_NDC	FDB_CUSTOM_DOSING_VA	MAXSINGLEDOSEFORMUNITS	
I_DATE_NDC	FDB_CUSTOM_DOSING_VA	MAXDAILYDOSE	
TRADE	FDB_CUSTOM_DOSING_VA	MAXDAILYDOSEUNITS	
VA_PRODUCT	FDB_CUSTOM_DOSING_VA	CONCEPTTYPE	
I_DATE_VAP	FDB_CUSTOM_DOSING_VA	CONCEPTID	
PRODUCT_NU	FDB_CUSTOM_DOSING_VA	AGELOWINDAYS	
FEEDER	FDB_CUSTOM_DOSING_VA	AGEHIGHINDAYS	
GENERIC	FDB_CUSTOM_DOSING_VA	DOSEROUTEID	

Report Column	Table	Column	Notes
PKG_SZ	FDB_CUSTOM_DOSING_VA	DOSETYPEID	
PKG_TYPE	FDB_CUSTOM_DOSING_VA	FDBDX	
VA_CLASS	FDB_DOSING	HITTYPE	
MANUFAC	FDB_DOSING	DOSELOW	
STANDARD_MED_ROUTE	FDB_DOSING	DOSELOWUNITS	
STRENGTH	FDB_DOSING	DOSEHIGH	
DOSEHIGHUNITS	FDB_DOSING	DOSEHIGHUNITS	
DOSEFORMLOW	FDB_DOSING	DOSEFORMLOW	
DOSEFORMLOWUNITS	FDB_DOSING	DOSEFORMLOWUNITS	
DOSEFORMHIGH	FDB_DOSING	DOSEFORMHIGH	
DOSEFORMHIGHUNITS	FDB_DOSING	DOSEFORMHIGHUNITS	
MAXSINGLEDOSE	FDB_DOSING	MAXSINGLEDOSE	
MAXSINGLEDOSEUNITS	FDB_DOSING	MAXSINGLEDOSEUNITS	
MAXSINGLEDOSEFORM	FDB_DOSING	MAXSINGLEDOSEFORM	
MAXSINGLEDOSEFORMUNITS	FDB_DOSING	MAXSINGLEDOSEFORMUNITS	
MAXDAILYDOSE	FDB_DOSING	MAXDAILYDOSE	
MAXDAILYDOSEUNITS	FDB_DOSING	MAXDAILYDOSEUNITS	
MAXDAILYDOSEFORM	FDB_DOSING	MAXDAILYDOSEFORM	
MAXDAILYDOSEFORMUNITS	FDB_DOSING	MAXDAILYDOSEFORMUNITS	
MAXLIFETIMEDOSE	FDB_DOSING	MAXLIFETIMEDOSE	
MAXLIFETIMEDOSEUNITS	FDB_DOSING	MAXLIFETIMEDOSEUNITS	
MAXLIFETIMEDOSEFORM	FDB_DOSING	MAXLIFETIMEDOSEFORM	
MAXLIFETIMEDOSEFORMUNITS	FDB_DOSING	MAXLIFETIMEDOSEFORMUNITS	
LOWELIMINATIONHALFLIFE	FDB_DOSING	LOWELIMINATIONHALFLIFE	
HIGHELIMINATIONHALFLIFE	FDB_DOSING	HIGHELIMINATIONHALFLIFE	

Report Column	Table	Column	Notes
HALFLIFEUNITS	FDB_DOSING	HALFLIFEUNITS	
FREQUENCYLOW	FDB_DOSING	FREQUENCYLOW	
FREQUENCYHIGH	FDB_DOSING	FREQUENCYHIGH	
DURATIONLOW	FDB_DOSING	DURATIONLOW	
DURATIONHIGH	FDB_DOSING	DURATIONHIGH	
MAXDURATION	FDB_DOSING	MAXDURATION	
HEPATICIMPAIRMENTIND	FDB_DOSING	HEPATICIMPAIRMENTIND	
RENALIMPAIRMENTIND	FDB_DOSING	RENALIMPAIRMENTIND	
CRCLTHRESHHOLD	FDB_DOSING	CRCLTHRESHHOLD	
CRCLTHRESHHOLDUNITS	FDB_DOSING	CRCLTHRESHHOLDUNITS	
WEIGHTREQUIREDIND	FDB_DOSING	WEIGHTREQUIREDIND	
BSAREQUIREDIND	FDB_DOSING	BSAREQUIREDIND	
WARNINGCODE	FDB_DOSING	WARNINGCODE	
DOSERATELOW	FDB_DOSING	DOSERATELOW	
DOSERATELOWUNITS	FDB_DOSING	DOSERATELOWUNITS	
DOSERATEHIGH	FDB_DOSING	DOSERATEHIGH	
DOSERATEHIGHUNITS	FDB_DOSING	DOSERATEHIGHUNITS	
DOSEFORMRATELOW	FDB_DOSING	DOSEFORMRATELOW	
DOSEFORMRATELOWUNITS	FDB_DOSING	DOSEFORMRATELOWUNITS	
DOSEFORMRATEHIGH	FDB_DOSING	DOSEFORMRATEHIGH	
DOSEFORMRATEHIGHUNITS	FDB_DOSING	DOSEFORMRATEHIGHUNITS	
MAXSINGLEDOSERATE	FDB_DOSING	MAXSINGLEDOSERATE	
MAXSINGLEDOSERATEUNITS	FDB_DOSING	MAXSINGLEDOSERATEUNITS	
MAXSINGLEDOSEFORMRATE	FDB_DOSING	MAXSINGLEDOSEFORMRATE	
MAXSINGLEDOSEFORMRATEUNITS	FDB_DOSING	MAXSINGLEDOSEFORMRATEUNITS	

Report Column	Table	Column	Notes
MAXDAILYDOSERATE	FDB_DOSING	MAXDAILYDOSERATE	
MAXDAILYDOSERATEUNITS	FDB_DOSING	MAXDAILYDOSERATEUNITS	
MAXDAILYDOSEFORMRATE	FDB_DOSING	MAXDAILYDOSEFORMRATE	
MAXDAILYDOSEFORMRATEUNITS	FDB_DOSING	MAXDAILYDOSEFORMRATEUNITS	
DXID	FDB_DOSING	DXID	
A D asdfg			

A	B	C	D	E	F	G	H	I	J	K	L	M	
NDC 1	NDC 2	NDC 3	NDF NDC	UPN	I DATE NDC	TRADE	VA PRODUCT	I DATE VAP	PRODUCT_NU	FEEDER	GENERIC	PKG SZ	PKG
00186	0863	57	00186086357			NAROPIN	ROPIVACAINE HCL 0.5% INJ, STERILE-PAK, 20ML			20646000186086357	ROPIVACAINE	20.0	AMF
00186	0867	57	00186086757			NAROPIN	ROPIVACAINE HCL 0.75% INJ, VIL, 20ML			12649000186086757	ROPIVACAINE	20.0	AMF
00186	1165	02	00186116502			CALCIUM CHLORIDE	CALCIUM CHLORIDE 100MG/ML INJ			02905000186116502	CALCIUM CHLORIDE	10.0	AMF
00186	1171	02	00186117102			CALCIUM GLUCONATE	CALCIUM GLUCONATE 100MG/ML INJ			02911000186117102	CALCIUM GLUCONATE	10.0	AMF
00273	0104	10	00273010410			AMMONIA AROMATIC	AMMONIA, AROMATIC 0.33ML AMP, INHL			07926000273010410	AMMONIA	1.0	AMF
00409	1161	01	00409116101			BUPIVACAINE (PF)	BUPIVACAINE HCL 0.5% INJ			03712000409116101	BUPIVACAINE	30.0	AMF

Figure 11: NDF Capture Report Screen 1

M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
PKG SZ	PKG TYPE	VA CLASS	MANUFAC	STANDARD MED ROUTE	STRENGTH	UNITS	DOSE FORM	NF NAME	CSFS	RX QTC	NF INDICAT	VA PEN	DISP UNID	MARK	
20.0	AMPUL	LOCAL ANESTHETICS, INJECTION	APP PHARMACEUTI		0.5	%	INJ	ROPIVACAINE INJ	0 - UNSCHEDULED	Prescription	N	ROPIVACAINE VI	R0258	N	
20.0	AMPUL	LOCAL ANESTHETICS, INJECTION	APP PHARMACEUTI		0.75	%	INJ	ROPIVACAINE INJ	0 - UNSCHEDULED	Prescription	Y	ROPIVACAINE VI	R0060	N	
10.0	AMPUL	CALCIUM	ASTRAZENECA		100	MG/ML INJ, SOLN		CALCIUM CHLORIDE INJ, SOLN	0 - UNSCHEDULED	Prescription	Y			N	
10.0	AMPUL	CALCIUM	ASTRAZENECA		100	MG/ML INJ, SOLN		CALCIUM GLUCONATE INJ, SOLN	0 - UNSCHEDULED	Prescription	Y			N	
1.0	AMPUL	RESPIRATORY AGENTS, OTHER	YOUNG DENTAL		0.33	ML	INHL, NASAL	AMMONIA INHALANT	0 - UNSCHEDULED	Over the Counter	Y	AMMONIA, A AMP	A0662	N	
30.0	AMPUL	LOCAL ANESTHETICS, INJECTION	HOSPIRA		0.5	%	INJ, SOLN	BUPIVACAINE INJ, SOLN	0 - UNSCHEDULED	Prescription	Y	BUPIVACAINE VI	B0679	N	
30.0	AMPUL	LOCAL ANESTHETICS, INJECTION	HOSPIRA		0.75	%	INJ, SOLN	BUPIVACAINE INJ, SOLN	0 - UNSCHEDULED	Prescription	Y			N	
2.0	AMPUL	ANESTHETIC ADJUNCTS	HOSPIRA		2.5	MG/ML INJ, SOLN		DROPERIDOL INJ, SOLN	0 - UNSCHEDULED	Prescription	Y	DROPERIDOL VI	D0893	N	

Figure 12: NDF Capture Report Screen 2

3.2.3.2.1.2 Ingredient List Report

Table 16: Ingredient List Report Database Details

Report Column	Table	Column	Notes
PRODUCT_NAME	EPL_PRODUCTS	VA_PRODUCT_NAME	
INGREDIENT_NAME	EPL_INGREDIENTS	NAME	
STRENGTH	EPL_PROD_INGREDIENT_AS SOCS	STRENGTH	
STRENGTH_UNIT	EPL_DRUG_UNITS	NAME	
DOSAGE FORM	EPL_DOSAGE_FORMS	DF_NAME	

Listingredients.csv - Microsoft Excel

A	B	C	D	E	F
1 PRODUCT NAME	INGREDIENT NAME	STRENGTH	STRENGTH UNIT	DOSAGE FORM	
2 POTASSIUM CHLORIDE 40MEQ/15ML LIQUID	POTASSIUM CHLORIDE	40 MEQ/15ML		LIQUID,ORAL	
3 POTASSIUM CHLORIDE 10MEQ TAB,SA	POTASSIUM CHLORIDE	10 MEQ		TAB,SA	
4 POTASSIUM CHLORIDE 8MEQ CAP,SA	POTASSIUM CHLORIDE	8 MEQ		CAP,SA	
5 POTASSIUM CHLORIDE 10MEQ CAP,SA	POTASSIUM CHLORIDE	10 MEQ		CAP,SA	
6 POTASSIUM CHLORIDE 20MEQ/PKT PWDR	POTASSIUM CHLORIDE	20 MEQ/PKT		PWDR,RENT-ORAL	
7 POTASSIUM CHLORIDE 8MEQ TAB,SA	POTASSIUM CHLORIDE	8 MEQ		TAB,SA	
8 POTASSIUM CHLORIDE 25MEQ/PKT PWDR	POTASSIUM CHLORIDE	25 MEQ/PKT		PWDR,RENT-ORAL	
9 POTASSIUM CHLORIDE 10MEQ TAB,EC,SA	POTASSIUM CHLORIDE	10 MEQ		TAB,SA	
10 POTASSIUM CHLORIDE 20MEQ/15ML (SF) LIQUID	POTASSIUM CHLORIDE	20 MEQ		LIQUID,ORAL	
11 POTASSIUM CHLORIDE 40MEQ/15ML (SF) LIQUID	POTASSIUM CHLORIDE	40 MEQ/15ML		LIQUID,ORAL	
12 POTASSIUM CHLORIDE 20MEQ TAB,SA	POTASSIUM CHLORIDE	20 MEQ		TAB,SA	
13 POTASSIUM CHLORIDE 10MEQ TAB,SA (K-DUR)	POTASSIUM CHLORIDE	10 MEQ		TAB,SA	
14 POTASSIUM CHLORIDE 20MEQ TAB,SA (K-DUR)	POTASSIUM CHLORIDE	20 MEQ		TAB,SA	
15 POTASSIUM CHLORIDE 10MEQ/50ML INJ,BAG	POTASSIUM CHLORIDE	10 MEQ/50ML		INJ,SOLN	
16 POTASSIUM CHLORIDE 10MEQ/100ML INJ,BAG	POTASSIUM CHLORIDE	10 MEQ/100ML		INJ,SOLN	
17 POTASSIUM CHLORIDE 20MEQ/100ML INJ,BAG	POTASSIUM CHLORIDE	20 MEQ/100ML		INJ,SOLN	
18 POTASSIUM CHLORIDE 40MEQ/100ML INJ,BAG	POTASSIUM CHLORIDE	40 MEQ/100ML		INJ,SOLN	

Figure 13: Ingredient List Report

3.2.3.2.1.3 Warning Labels Report

Table 17: Warning Label Report Database Details

Report Column	Table	Column	Notes
VA PRODUCT NAME	EPL_PRODUCTS	VA_PRODUCT_NAME	
WARNING LABEL 1			The warning labels are pulled from the FDB Application Program Interface and are not pulled directly from the database. The order of the warning labels is determined by the API.
WARNING LABEL 2			
WARNING LABEL ...			
WARNING LABEL 10			

A	B	C	D	E	F	G	H	I	J	K
PRODUCT NAME	WARNING LABEL 1	WARNING LABEL 2	WARNING LABEL 3	WARNING LABEL 4	WARNING LABEL 5	WARNING LABEL 6	WARNING LABEL 7	WARNING LABEL 8	WARNING LABEL 9	WARNING LABEL 10
1 VA PRODUCT NAME										
2 POTASSIUM CHLORIDE 40MEQ/15ML LIQUID (1266)	5	33	10	13						
3 POTASSIUM CHLORIDE 10MEQ TAB,SA (1279)	44	5	307	10	13					
4 POTASSIUM CHLORIDE 8MEQ CAP,SA (1249)	36	5	307	10	311	13				
5 POTASSIUM CHLORIDE 10MEQ CAP,SA (1248)	36	5	307	10	311	13				
6 POTASSIUM CHLORIDE 20MEQ/PKT PWDR (1262)	5	33	307	10	13					
7 POTASSIUM CHLORIDE 8MEQ TAB,SA (1278)	44	5	307	10	13					
8 POTASSIUM CHLORIDE 25MEQ/PKT PWDR (1263)	5	33	307	10	13					
9 POTASSIUM CHLORIDE 10MEQ TAB,EC,SA (1275)	44	5	307	10	13					
10 POTASSIUM CHLORIDE 20MEQ/15ML (SF) LIQUID (1264)	5	33	10	13						
11 POTASSIUM CHLORIDE 40MEQ/15ML (SF) LIQUID (1266)	5	33	10	13						
12 POTASSIUM CHLORIDE 20MEQ TAB,SA (22346)	44	5	307	10	89	13				
13 POTASSIUM CHLORIDE 20MEQ TAB,SA (K-DUR) (22346)	44	5	307	10	89	13				
14 SECOBARBITAL NA 100MG CAP (3630)	1	62	31	171	45	8	94	101	230	
15 PROGESTERONE 50MG/ML (IN OIL) INJ,SOLN (3262)	31									
16 PROGESTERONE 50MG/ML INJ,SUSP (3262)	31									
17 PROGESTERONE 50MG/ML INJ (IN OIL) (3262)	31									
18 PROGESTERONE 8% (90MG) GEL,VAG,APPLICATOR (31769)	24	1	123	62						
19 PROGESTERONE 100MG CAP (43801)	57	43	62	1	123	298				
20 VANCOCYCIN HCL 500MG/VIL INJ (9331)	275	276								
21 VANCOCYCIN HCL 125MG CAP (9326)	2									
22 VANCOCYCIN HCL 250MG CAP (9327)	2									
23 VANCOCYCIN HCL 16M/VIL INJ (9328)	275	276								
24 VANCOCYCIN HCL 56M/VIL INJ (9330)	275	276								
25 VANCOCYCIN HCL 5MG/ML INJ,BAG,100ML (20611)	275	276	176	247						
26 METHOHEXITAL NA 500MG/VIL INJ (3561)	298									
27 METHOHEXITAL NA 2.5MG/VIL INJ (3559)	298									
28 VINBLASTINE SO4 10MG/VIL INJ (8809)	82	142	174	30	298					
29 VINBLASTINE SO4 1MG/VIL INJ (8810)	82	142	174	30	298					

Figure 14: Warning Label Report

3.2.3.2.1.4 VA Drug Classifications Report

Table 18: Drug Classification Report

Report Column	Table	Column	Notes
DRUG CLASS CODE	EPL_VA_DRUG_CLASSES	CODE	
CLASSIFICATION	EPL_VA_DRUG_CLASSES	CLASSIFICATION_NAME	
DESCRIPTION	EPL_VA_DRUG_CLASSES	DESCRIPTION	

DRUG CLASS CODE	CLASSIFICATION	DESCRIPTION
AA000	INTRODUCTION	ABBREVIATION INTERPRETATION NDC NATIONAL DRUG CODE NEC NOT ELSEWHERE CLASSIFIED Descriptive comments e
AD000	ANTIDOTES, DETERRENTS AND POISON CONTROL	NOTE: Includes nicotine polacrilex and other deterrents (AD900). Excludes anticoagulant antagonists (B1200, VT700); antifolate antagonists (VT102); antivenoms
AD100	ALCOHOL DETERRENTS	
AD200	CYANIDE ANTIDOTES	
AD400	ANTIDOTES, DETERRENTS, AND POISON CONTROL EXCHANGE RESINS	
AD900	ANTIDOTES/DETERRENTS, OTHER	
AD300	HEAVY METAL ANTAGONISTS	
AH000	ANTIHISTAMINES	NOTE: Excludes H2-antagonists (GA301); combination cold products (RC500).
AH100	ANTIHISTAMINES, PHENOTHIAZINE	
AH109	ANTIHISTAMINES, OTHER	
AH102	ANTIHISTAMINES, ETHANOLAMINE	
AH103	ANTIHISTAMINES, ETHYLENEDIAMINE	
AH104	ANTIHISTAMINES, ALKYL AMINE	
AH105	ANTIHISTAMINES, PIPERAZINE	
AH106	ANTIHISTAMINES, BUTYROPHENONE	
AH107	ANTIHISTAMINES, PIPERIDINE	
AM000	ANTIMICROBIALS	NOTE: Combination products containing two or more active ingredients from the same subclassification are classified in that subclassification (e.g., triple sulf
AM114	PENICILLINS AND BETA-LACTAM ANTIMICROBIALS	
AM118	CEPHALOSPORIN 4TH GENERATION	
AM110	PENICILLIN-G RELATED PENICILLINS	
AM111	PENICILLINS, AMINO DERIVATIVES	
AM112	PENICILLINASE RESISTANT PENICILLINS	
AM113	EXTENDED SPECTRUM PENICILLINS	
AM119	BETA-LACTAMS ANTIMICROBIALS, OTHER	
AM115	CEPHALOSPORIN 1ST GENERATION	
AM116	CEPHALOSPORIN 2ND GENERATION	
AM117	CEPHALOSPORIN 3RD GENERATION	
AM150	CHLORAMPHENICOL	
AM200	ERYTHROMYCINS/MACROLIDES	
AM250	TETRACYCLINES	
AM300	AMINOGLYCOSIDES	
AM500	ANTITUBERCULARS	
AM550	METHENAMINE SALTS ANTIMICROBIALS	

Figure 15: Drug Classification Report

3.2.3.2.1.5 Exclusion from Drug-Drug Interaction Report

Table 19: Exclusion from Drug-Drug Interaction Report

Report Column	Table	Column	Notes
PRODUCT_NAME	EPL_PRODUCTS	VA_PRODUCT_NAME	
EXCLUDED	EPL_PRODUCTS	EXCLUDE_INTERACTION_CHECK	

	A	B	C	D
1	VA PRODUCT NAME	EXCLUDED		
2	HALOPERIDOL 20MG TAB	N		
3	HALOPERIDOL 2MG/ML SOLN,ORAL	N		
4	HALOPERIDOL DECANOATE 50MG/ML INJ	N		
5	HALOPERIDOL 5MG/ML INJ	N		
6	HALOPERIDOL 5MG/ML (PF) INJ	Y		
7	HALOPERIDOL DECANOATE 100MG/ML INJ	Y		
8	HALOPERIDOL DECANOATE 50MG/ML INJ,1ML AMP	N		
9	HALOPERIDOL DECANOATE 100MG/ML INJ,1ML AMP	N		
10	OXANDROLONE 2.5MG TAB	N		
11	VERAPAMIL HCL 80MG TAB	N		
12	VERAPAMIL HCL 120MG TAB	N		
13	VERAPAMIL HCL 240MG TAB,SA	N		
14	VERAPAMIL HCL 2.5MG/ML INJ	N		
15	VERAPAMIL HCL 40MG TAB	N		
16	VERAPAMIL HCL 180MG TAB,SA	N		
17	VERAPAMIL HCL 120MG CAP,SA	N		
18	VERAPAMIL HCL 240MG CAP,SA	N		

Figure 16: Exclusion from Drug-Drug Interaction Report

3.2.3.2.1.6 Active Products with No Active NDCS Report

Table 20: Active Products with No Active NDCS Report

Report Column	Table	Column	Notes
PRODUCT_NAME	EPL_PRODUCTS	VA_PRODUCT_NAME	

	A	B	C	D	E	F
1	PRODUCT NAME					
2	ADVANTAGE-H (GLUCOSE) TEST STRIP #787					
3	BENZOYL PEROXIDE 5% CREAM,TOP					
4	UNNA BOOT,WITHOUT CALAMINE 4IN X 10YDS					
5	GLOVE COTTON SMALL (PAIR)					
6	SODIUM BIPHOSPHATE 1%/SODIUM FLUORIDE 2.9% PASTE,DENT					
7	URISTIX (GLUCOSE,PROTEIN) TEST STRIP					
8	GEMFIBROZIL 600MG TAB,UD					
9	INTERFERON ALFA-3N 5 MILLION UNT/ML INJ					
10	STOMA CAP COLOPLAST #2501					
11	AVEENO POSITIVELY RADIANT BAR SOAP					
12	ADAPTSKIN 50 CREAM,TOP					
13	DILTIAZEM (TAZTIA XT) 300MG SA CAP					
14	FLUOXETINE HCL 10MG CAP,UD					
15	POUCH,DRAINABLE,PREMIER WITH FLAT BARRIERS H#8559					
16	SYRINGE 2.5-3ML/NDL 21G 1.5IN SAFETY					
17	DRESSING,COVADERM PLUS 2IN X 2IN DEROYAL #46-400					
18	BENZTROPINE MESYLATE 0.5MG TAB,UD					
19	RED CLOVER EXTRACT CAP/TAB					
20	NUX VOMICA/PANCREATIN/PAPAIN/PEPSIN/PHENOBARB 16MG/NA BICARB TAB					
21	CARBOXYMETHYLCELLULOSE NA 0.5% SOLN,OPH,0.4ML					

Figure 17: Active Products with No Active NDCS Report

3.2.3.2.1.7 Active Products with Proposed Inactivation Date

Table 21: Exclusion from Drug-Drug Interaction Report

Report Column	Table	Column	Notes
PRODUCT_NAME	EPL_PRODUCTS	VA_PRODUCT_NAME	
PROPOSED INACTIVATION DATE	EPL_VADF_NONLIST_VALUES	VA_DF_VALUE	

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D
1	PRODUCT NAME	PROPOSED INACTIVATION DATE		
2	ALBUMIN,HUMAN 25% INJ	Sat Mar 31 00:00:00 CDT 2012		
3	AMANTADINE HCL 100MG CAP	Thu Mar 15 00:00:00 CDT 2012		
4	AMANTADINE HCL 100MG TAB	Wed Dec 12 00:00:00 CST 2012		
5				
6				
7				
8				
9				
10				

Figure 18: Exclusion from Drug-Drug Interaction Report

3.2.3.2.1.8 VOID Approval Report

Table 22: VOID Approval Report

Report Column	Table	Column	Notes
NEW PRODUCTS			
IEN	EPL_PRODUCTS	NDF_PRODUCT_IEN	
VA PRODUCT NAME	EPL_PRODUCT	VA_PRODUCT_NAME	
VOID	EPL_PRODUCT	VOID	
PRODUCT INACTIVATED OR REACTIVATED			
IEN	EPL_PRODUCTS	NDF_PRODUCT_IEN	
VA PRODUCT NAME	EPL_PRODUCT	VA_PRODUCT_NAME	
VOID	EPL_PRODUCT	VOID	
INACTIVATION DATE	EPL_PRODUCTS	INACTIVATION_DATE	
NEW INGREDIENTS			
IEN	EPL_INGREDIENTS	NDF_INGREDIENT_IEN	
VA INGREDIENT NAME	EPL_INGREDIENTS	NAME	

Report Column	Table	Column	Notes
VUID	EPL_INGREDIENTS	VUID	
INGREDIENTS INACTIVATED or RE-ACTIVATED			
IEN	EPL_INGREDIENTS	NDF_INGREDIENT_IEN	
VA INGREDIENT NAME	EPL_INGREDIENTS	NAME	
VUID	EPL_INGREDIENTS	VUID	
INACTIVATION DATE	EPL_INGREDIENTS	INACTIVATION_DATE	
NEW GENERIC NAMES			
IEN	EPL_VA_GEN_NAMES	NDF_GENERIC_IEN	
VA GENERIC NAME	EPL_VA_GEN_NAMES	GENERIC_NAME	
VUID	EPL_VA_GEN_NAMES	VUID	
GENERIC NAMES INACTIVATED OR RE-ACTIVATED			
IEN	EPL_VA_GEN_NAMES	NDF_GENERIC_IEN	
VA GENERIC NAME	EPL_VA_GEN_NAMES	GENERIC_NAME	
VUID	EPL_VA_GEN_NAMES	VUID	
INACTIVATION DATE	EPL_VA_GEN_NAMES	INACTIVATION_DATE	
NEW VA DRUG CLASS			
IEN	EPL_VA_DRUG_CLASSES	NDF_CLASS_IEN	
VA DRUG CLASS NAME	EPL_VA_DRUG_CLASSES	CODE, CLASSIFICATION_NAME	Values are separated by a ,
VUID	EPL_VA_DRUG_CLASSES	VUID	

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D15					
	A	B	C	D	E
1	NEW PRODUCTS				
2	IEN	VA PRODUCT NAME	VOID		
3	1	ACETAMINOPHEN 325MG TAB	4007158		
4	2	DIGOXIN 0.25MG TAB	4003336		
5	90123	ATOMOXIDE 60MG CAP,ORAL	5000005		
6	90123	OXYMORPHONE HCL 11MG TAB	5000006		
7					
8	PRODUCTS INACTIVATED OR RE-ACTIVATED				
9	IEN	VA PRODUCT NAME	VOID	INACTIVATION DATE	
10	9	OXYMORPHONE HCL 10MG TAB	4025529	3/7/2012 17:55	
11					
12	NEW INGREDIENTS				
13	IEN	VA INGREDIENT NAME	VOID		
14	90123	ATOMOXIDER	5000000		
15	90123	ATOMOXIDE	5000001		
16					
17	INGREDIENTS INACTIVATED OR RE-ACTIVATED				
18	IEN	VA INGREDIENT NAME	VOID	INACTIVATION DATE	
19	90123	ATOMOXIDER	5000000	3/7/2012 18:27	
20					
21	NEW GENERIC NAMES				
22	IEN	VA GENERIC NAME	VOID		
23	90123	ATOMOXIDER	5000002		
24	90123	ATOMOXIDING	5000003		
25					
26	GENERIC NAMES INACTIVATED OR RE-ACTIVATED				
27	IEN	VA GENERIC NAME	VOID	INACTIVATION DATE	
28	90123	ATOMOXIDER	5000002	3/7/2012 18:27	
29					
30	NEW VA DRUG CLASS				
31	IEN	VA DRUG CLASS NAME	VOID		
32	90123	BN234:BENZONATE	5000004		
33					
34					

Figure 19: VOID Approval Report

3.2.3.3 Unmapped Data Element

Not Applicable.

3.3 Conceptual Infrastructure Design

The Conceptual Infrastructure Design is a high-level overview of the infrastructure that will be used to support the PPS-N application. Primary emphasis is on the environments that will be required and the locations at which they will be installed. The Conceptual Infrastructure Design

becomes more detailed at later stages as more information is collected regarding the system, and the infrastructure requirements (i.e., capacity requirements) are better known.

The Conceptual Infrastructure Design describes any unique technology that will be used, which are either part of this system, or will attach to this system.

Because the PPS-N system is at a preliminary design stage, it is expected that the information provided may need to be changed during later design stages or increments.

3.3.1 System Criticality and High Availability

The PPS-N project is part of the overall PEPS series of projects. It will not have separate system criticality and high availability requirements specific to PPS-N. The PPS-N application will follow all the same process and procedures that the other PEPS applications use.

As the PEPS program continues to move forward with enhancement to the applications (MOCHA and PECS and PPS) the changes will be documented and their effect on the system criticality and high availability requirements will be evaluate. The PPS-N system will follow the some evaluation process as the other application in the PEPS program. This is to ensure that PPS-N does not do anything that would cause the ATO to become null and void.

3.3.2 Special Technology

This section is intended to discuss any special technology that was identified in Section **Error! Reference source not found.** as part of the PPS-N system. PPS-N has no requirements for such special devices.

Table 23: Special Technology Requirements

Special Technology	Description	National Location	TRM Status
N/A			

3.3.3 Technology Locations

The table below describes the various technology components used in the PPS-N system. In production, the PPS-N application will be hosted at the AITC. For VA IV&V testing, testing servers will be utilized at the Bay Pines location.

Table 24: Technology Location Details

Technology Component Production 1	Location	Usage
Workstations	Any Node in the VA Network	PPS National Managers will log into the PPS-N application via browsers on these workstations.
Special Hardware	N/A	
Interface Processors	N/A	
Legacy Mainframe	N/A	

Technology Component Production 1	Location	Usage
Legacy Application Server	Birmingham	Some of the NDFMS system's VistA file data will be synchronized with the PPS-N application's database data. NDFMS will continue to be used for the patching process to the local VistA installations.
Legacy Databases	Birmingham	Databases used by the NDFMS system.
Other	AITC	The PPS-N web application server will be deployed on one server at this location, and the Oracle PPS-N EPL database will be deployed on another server at this location.

Technology Component Production 2	Location	Usage
N/A		

Technology Component Certification	Location	Usage
N/A		

Technology Component Education	Location	Usage
N/A		

Technology Component Test	Location	Usage
Workstations	TBD	VA QA personnel will log into the testing PPS-N application via browsers on these testing workstations.
Legacy Application Server	TBD	Same as above, but on testing hardware.
Legacy Databases	TBD	Same as above, but on testing hardware.
Other	TBD	The PPS-N web application server will be deployed on one test server at this location, and the Oracle PPS-N EPL database will be deployed on another test server at this location.

Technology Component Development	Location	Usage
Workstations	TBD	Development personnel will log into the development PPS-N application via browsers on these development workstations.
Legacy Application Server	TBD	TBD
Legacy Databases	TBD	TBD
Other	TBD	The PPS-N web application server will be deployed on one development server at this location, and the Oracle PPS-N EPL database will be deployed on another development server at this location.

3.3.4 Conceptual Infrastructure Diagram

3.3.4.1 Location of Environments and External Interfaces

The figure below illustrates the external interfaces and environment expected for the PPS-N application. A laptop or workstation with a browser will allow PPS National Managers to interact with the PPS-N server via the cloud. Note that 'cloud' in this figure and throughout the document refers to the various means for computer communication traffic to flow between systems, including internet protocol networks. Authentication and authorization will be supported via an external interface with the National VistA server. Once authentication\authorization has been verified the PPS-N application will use external interface to interact VETS, FSS and VistA as needed.

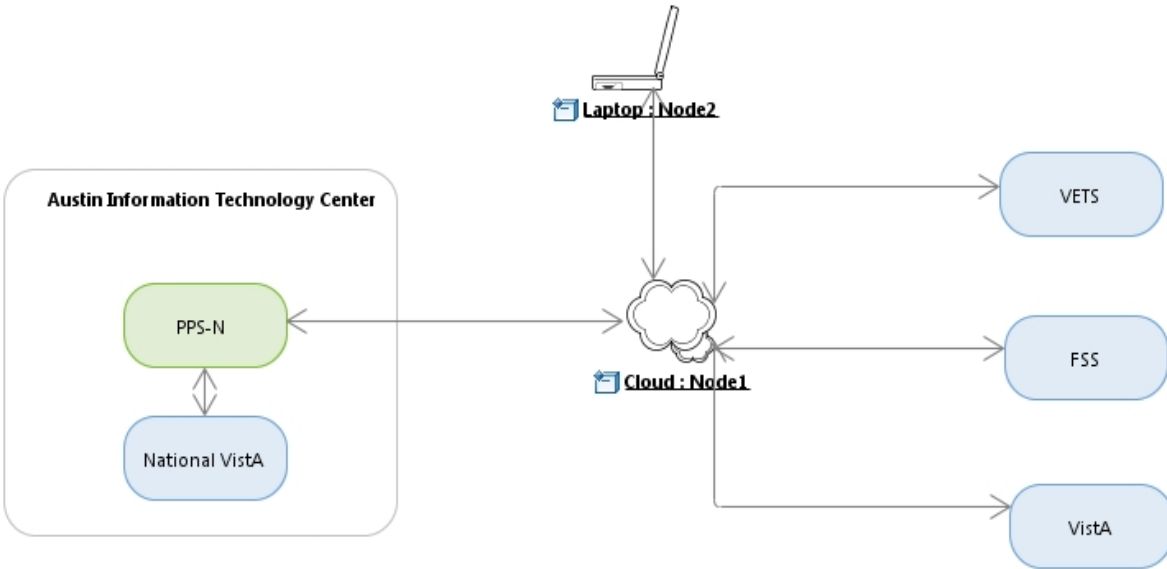


Figure 20: Conceptual Networks and Environments

3.3.4.2 Conceptual Production String Diagram

The diagram below focuses on the production configuration expected for the PPS-N application. The PPS-N application is supported on a WebLogic server, and handles all external requests. This server communicates with an Oracle database server for persistence.

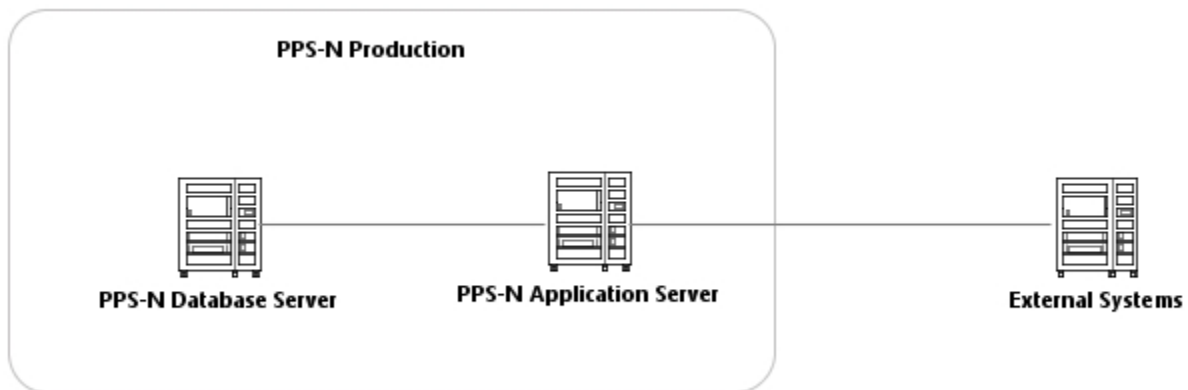


Figure 21: Conceptual Production String Diagram

4 System Architecture

The system architecture is comprised of the hardware, software and communication architectures. The hardware architecture describes the physical components needed in the system and their relationship to one another. The software architecture describes the software needed to support the system and what hardware component each software component will exist on. The communication architecture describes the connections needed between the hardware components.

4.1 Hardware Architecture

The figure below illustrates a number of laptops/workstations accessing the PPS-N application via the cloud. All requests external to the Austin Information Technology Center (AITC) are presented to the PPS-N server. Authentication and authorization are handled using the VistA-N server co-located at the AITC. Once the authentication\authorization had been verified the PPS-N application will update VistA file data and send it to NDFMS system via the cloud. When required the user will be able to update pricing and med routes by retrieving data from FSS and VETS respectively.

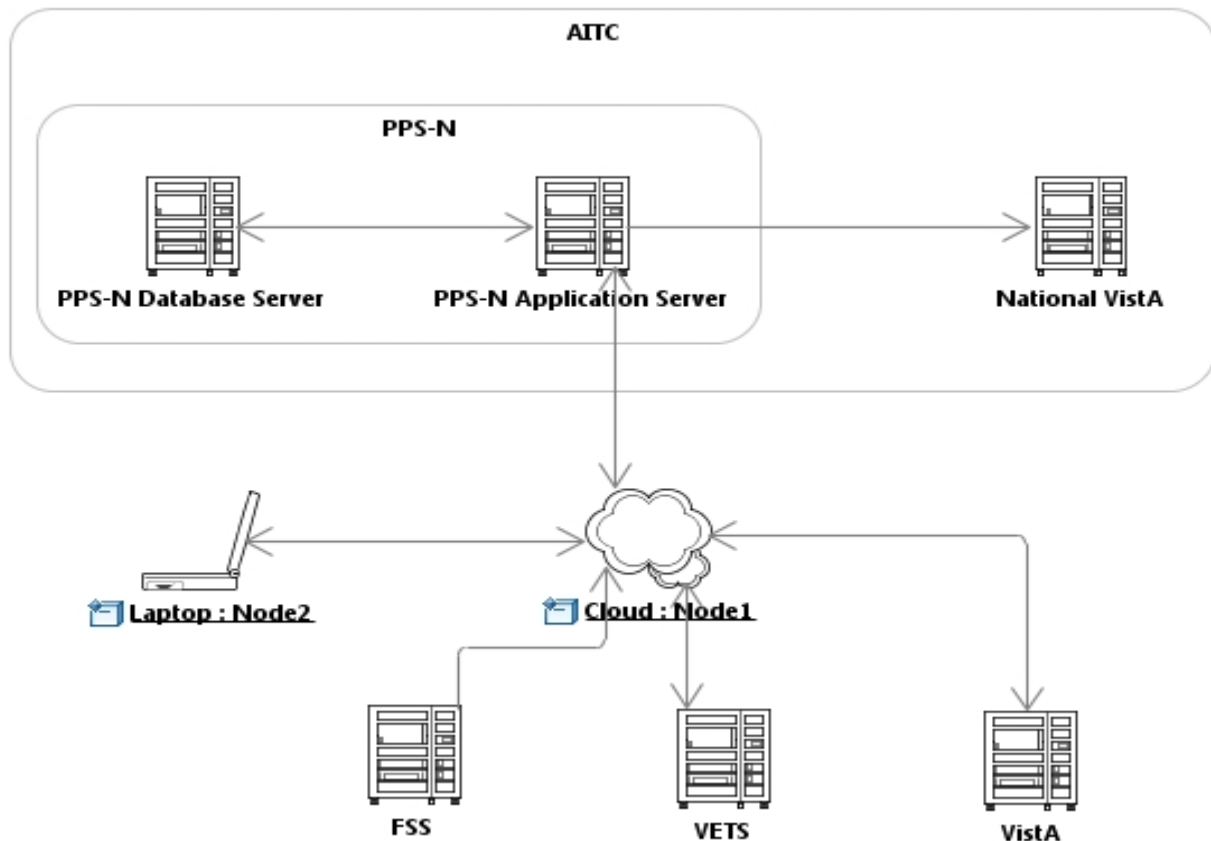


Figure 22: Hardware for Pharmacy Product System

4.2 Software Architecture

This section describes the overall system software and organization, building upon the High Level Application Design of Section 3.1.2. The architecture for PPS-N is defined as a multi-tiered system consisting of the following logical layers:

- Presentation Layer – Contains user interface components.
- Service Layer – Contains business logic components.
- Domain Layer – Contains data and database interfacing components.

- Interface Layer – Contains interface components, to systems external to the PPS-N application.

The figure below depicts how the PPS-N components are organized within the PPS-N tiers and the logical layers. Spring Model View Controller (MVC) Controller classes are invoked by PPS National Manager interaction with the browser, and these Controller classes in turn utilize Business Service classes to process the required business logic of the system. Note that Services (such as ‘Business Service A’) may communicate with other Services (such as ‘Business Service B’) to complete a task. These Services can interact with Domain Capability classes for CRUD operations with the PPS-N EPL database, or work with Interface Capability classes for interfacing to external systems such as NDFMS. The Common section depicts components that span layers, including Value Objects (VOs) and their Validators. VOs are business objects represent information relevant to the PPS-N application (such as a VA Product item), and are passed between layer components. Validators are used to enforce the numerous data field (DF) requirement rules identified for the PPS-N application ensuring the integrity of the critical VA Formulary data managed by PPS-N.

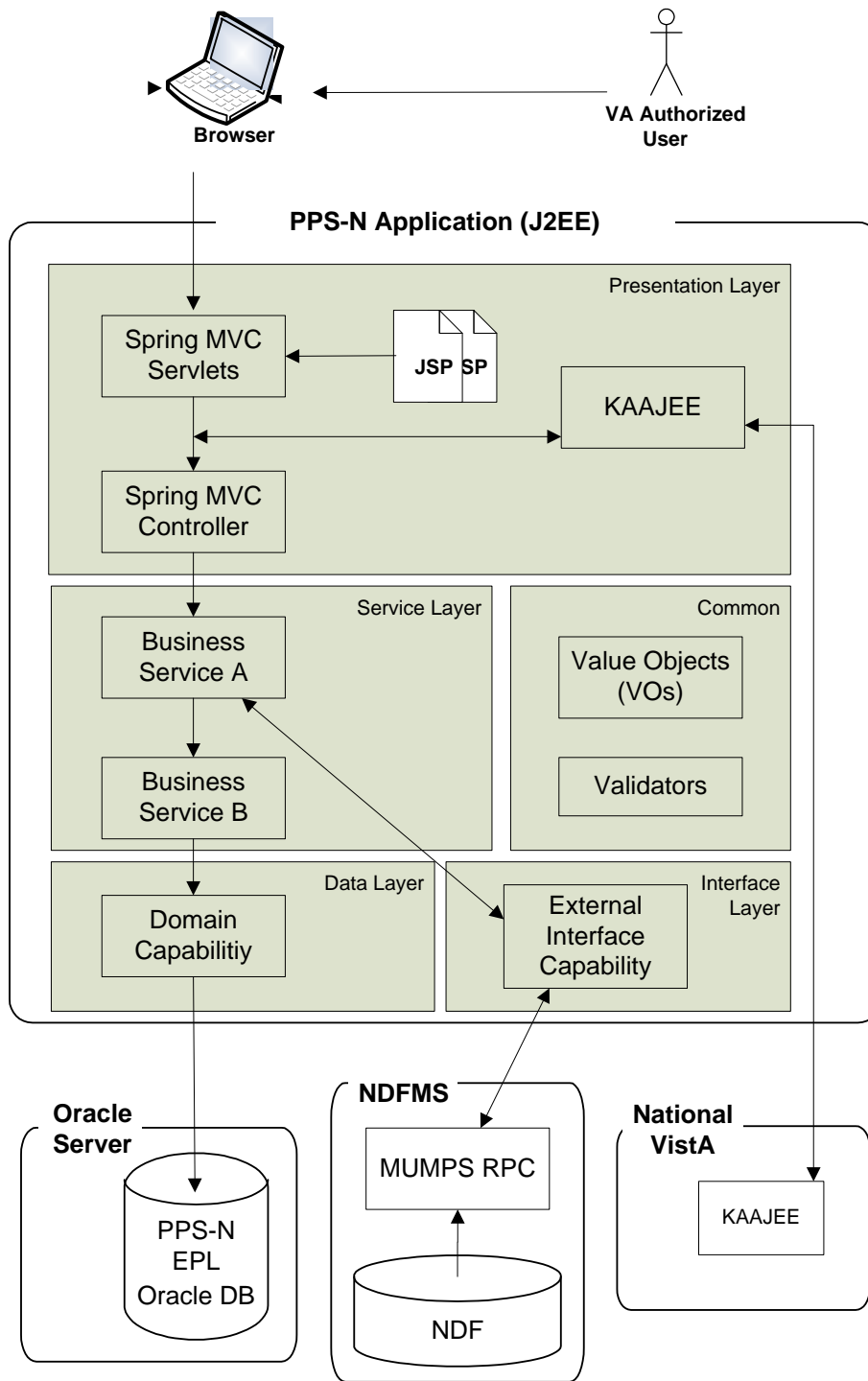


Figure 23: PPS-N Components and Layers

The PPS-N EPL database is hosted by an Oracle database server. The Software Detailed Design of Section 6.2 details how these components interact with each other for the PPS-N application.

The table below provides additional information for elements in the figure above.

Table 25: Component Details

Component	Technology	Details
Spring MVC Servlets	Spring MVC and J2EE's Java Servlet specification	Converts HTML request data into Java POJOs. Utilizes LoginInterceptor.java to ensure users are authenticated via calls to the VA's KAAJEE process (provided in the form of a .jar file).
JSPs	Java Server Pages (JSPs) are a J2EE technology	JSPs allow HTML content to be generated for pages served from the web application server.
KAAJEE	VA's authentication and authorization process	This VA-provided process integrates with the Spring MVC Servlets to ensure all users are authenticated prior to using the PPS-N application. This process makes remote calls to the National VistA system to authenticate usernames/passwords, and to return role keys associated with the user and used by PPS-N to determine what features the user is authorized to use.
Spring MVC Controller	Java classes involved by Spring MVC	Spring MVC invokes methods on Java 'controller' classes based on user browser activity that sends an HTTP request to the PPS-N application server.
Business Services	Java classes and J2EE EJBs	Business service class methods are invoked by Spring MVC Controller class methods, and perform required business logic. Service classes can interact with other service classes, as well as with Domain Capability classes and External Interface Capability classes. They typically delegate to helper Business Service Capability Java classes that provide fine-grained implementation.
Domain Capabilities	Java classes	Domain capability class methods are invoked by Business Service class methods, and via Hibernate interact with the database to perform CRUD operations.
External Interface Capability	Java classes	External Interface Capability class methods are invoked by Business Service class methods.
PPS-N EPL database	Oracle database	The database used by PPS-N.
NDFMS MUMPS RPC	MUMPS	MUMPS modules can be involved via RPCs, including invocations due to incoming VistA Link messages. These modules can perform processing on NDFMS VistA files.
NDF	Cache	NDFMS VistA file data is contained in the Cache database.

4.3 Communications Architecture

The communications architecture for PPS-N will use a combination of wide area networks (WAN) coupled with local area networks (LAN) as depicted in the figure below. The LANs will use a star topology with transportation communication protocol and internet protocol (TCP/IP). The LAN will use one gigabit or greater switches where required. All nodes within the confines of the AITC will be connected to the AITC LAN. All nodes within the confines of the Birmingham facility will be connected to the Birmingham LAN. A firewall is used to provide security and connect each LAN to the cloud. The requirements for each firewall are defined by the system administrator for the respective LANs. The cloud is used to connect the two LANs resulting in a WAN. Access to the PPS-N is accomplished via a standalone laptop or workstation connected to the cloud using the appropriate browser.

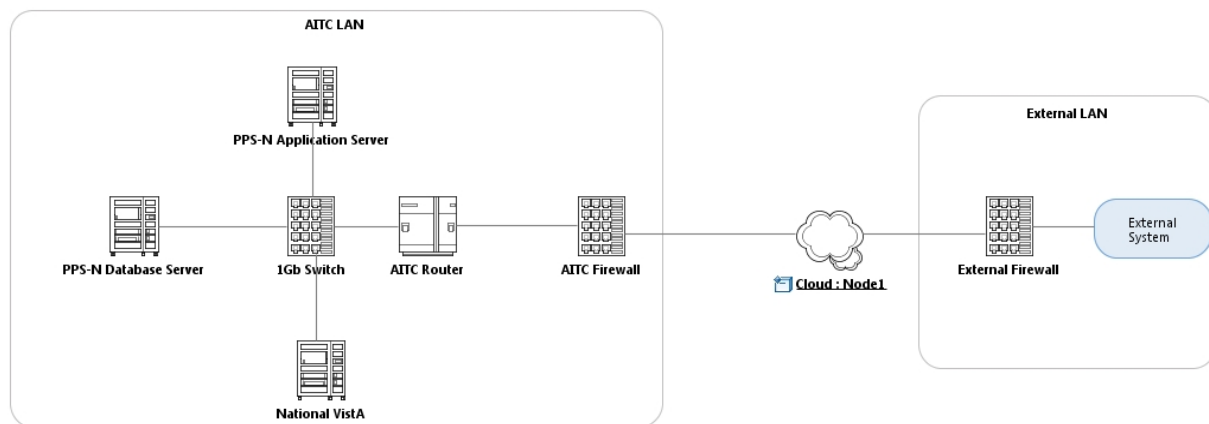


Figure 24: Communication Architecture

5 Data Design

The PPS-N EPL database is divided into eleven subject areas. Each subject area represents a piece of the PPS-N EPL that provides data persistence supporting some major functionality of the overall system. Each subject area includes tables and relationships pertinent to that subject area. The same table and relationships may appear in more than one subject area. Typically, each table is explicated only in the subject area in which it is a primary focus. When a table appears in a non-focal subject area, it appears only to make the model more comprehensible and hence is not re-explained.

The following figure presents a high-level diagram illustrating the eleven PPS-N subject areas. The arrows between some subject areas represent high-level relationships between those subject areas.

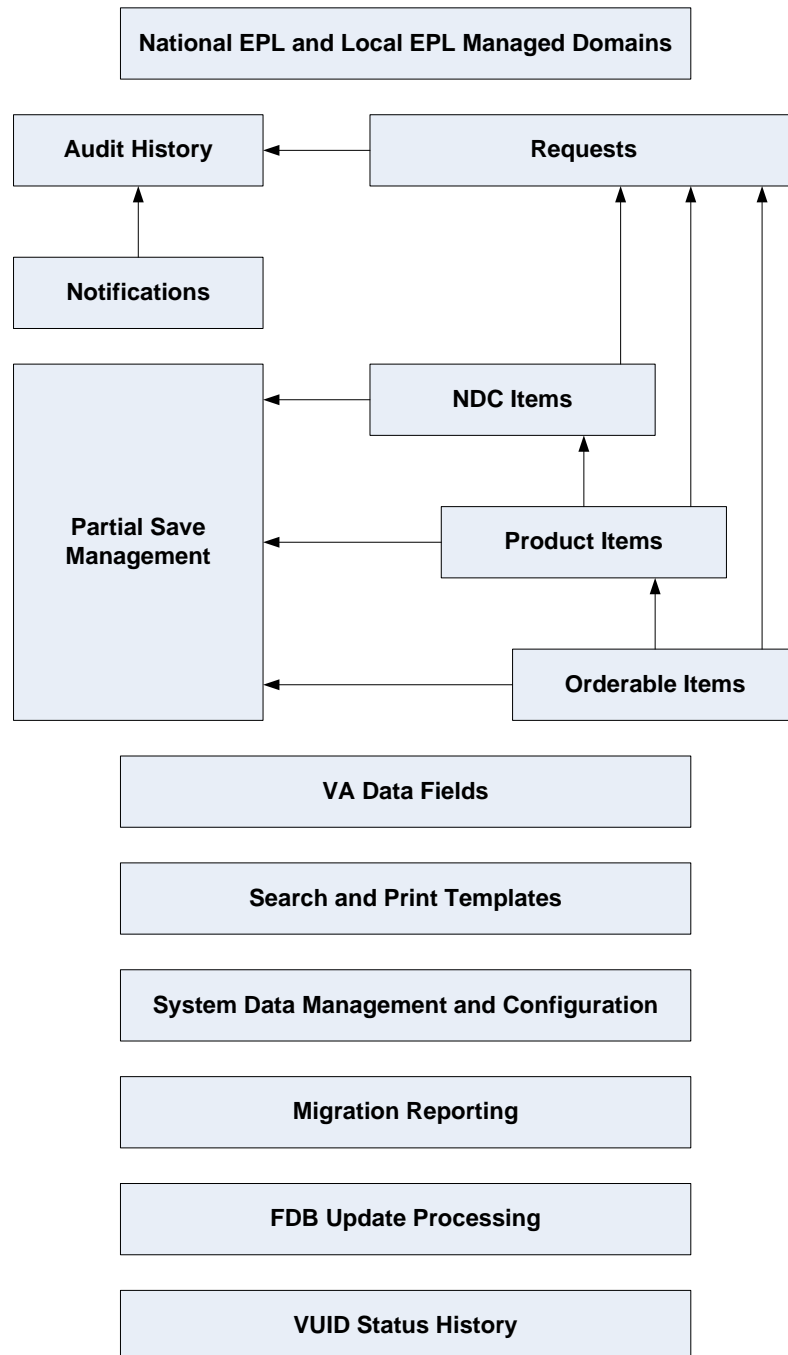


Figure 25: Subject Areas of the Physical Model

5.1 DBMS Files

This section addresses additional topics that are related to the database that is implemented in the Data Layer for PPS-N Migration and PPS-N. The following sections discuss the physical database organization, the physical data structures and files, the use of indexing as it relates to

performance of the database, the handling of exceptions from within the Data Layer, and the estimated database size, update frequency, and transactional activity.

5.1.1 Physical Database Organization

A database is conceptually a set of tables. Those tables, however, must ultimately be deployed on storage devices, which typically are based on some manner of disk and server technology consistent with the Relational Database Management System (RDBMS) chosen for deployment. One of the hallmarks of SQL-based RDBMS technology is the clear separation maintained between the database viewed as a set of tables and the actual physical structures that realize those tables. This section outlines some of the considerations that eventually drive the low-level physical design for deployment of the database portion of the PPS system, noting that these implementation considerations are properly placed in the purview of a DBA. The DBA also has the responsibility to tune the database to improve performance after actual transactional and data-volume metrics are analyzed.

5.1.2 Physical Data Structures and Files

While the set of physical tables, such as those presented in Section 4, represent a relational database design, those models do not constitute a complete physical design of the database. That is, the design presented in Section 4 can be used to generate the basic American National Standards Institute (ANSI) SQL Data Definition Language (DDL) that would create the tables, keys, and constraints. That basic DDL, however, would not include specific instructions about actual physical storage disks and servers. Depending on the RDBMS selected for deployment, detailed design work is needed in order for precise physical representations to be included in the DDL code base. That is, low-level physical representation is the one area of RDBMS technology that is not vendor neutral.

Using Oracle as an example, some of these low-level design decisions would include:

- Tablespace organization
- Physical file organization

Oracle allows a DBA to organize tables, as well as constructs such as indexes, rollback segments, and temporary work areas, into a set of tablespaces. A tablespace is a parameterized set of one or more physical files in which database tables and other database constructs are stored. One tablespace, called SYSTEM, always exists, but others are almost always needed.

From the viewpoint of database tables, design considerations that go into selecting the set of tablespaces to create and their parameters include, but are not limited to the following:

- The level or degree of stability or volatility of the data for the tables within the tablespace
- The transaction volume expected on the tables
- The projected growth rate of the data in the tables
- The degree of concurrency with which multiple users might access the tables

General design principles and heuristics suggest that it is desirable to keep like things together and different things apart to minimize contention in an Optimal Flexible Architecture (OFA), which is a standard for Oracle database instances. However, in order to make sound decisions with respect to OFA, detailed sizing analysis work must be accomplished. At this stage, such detailed analysis remains a task to be completed.

Continuing with Oracle as an example, because each tablespace is a collection of one or more files, design decisions must be made about how many files are needed and where they are to be located. Along with the files needed to support tablespaces, file space is needed to support redo logs, archive logs, and other database artifacts that allow the RDBMS to function as needed. In addition to these types of tablespace design considerations, the DBA must also consider the nature of the physical hardware with respect to the disk and server technology. Until the differing hardware configurations at different deployment levels are well understood, this also remains a physical database design task that cannot be completed at this time. It can be noted that the design decisions in this area are necessarily highly coupled to the physical hardware architecture.

5.1.3 Indexes and Database Tuning

One of the key topics in database design, especially with respect to SQL-based relational databases, is data integrity; however, database performance is an equally important topic especially for transactional systems such as PPS.

One of the most common techniques for increasing performance in RDBMS-based database systems is indexing. Again, this is an area where not every RDBMS supplies the same indexing techniques or where the indexes themselves perform in the same manner. This is also an area where physical design analysis and implementation are tightly coupled to the RDBMS and the capabilities it supplies.

In addition to the considerations of the types and capabilities of indexes the RDBMS supplies, physical design work (with respect to database tuning) must also take into consideration how the RDBMS itself works in terms of memory management and SQL processing. Most RDBMS products also supply their own performance optimization capabilities, which will also affect the physical design. While it is generally true that each SQL-based RDBMS processes SQL in a similar manner—proceeding through steps of parsing the SQL, developing an optimized execution plan, and then executing that plan—each RDBMS distinguishes itself by the proprietary techniques and capabilities it supplies to a DBA to effect and control the tuning in these areas.

The general principles are similar regarding how such performance tuning design analysis proceeds. Modules that may cause performance problems or problems related to SQL applied against the database, such as any modules with SELECT statements, are identified. Most RDBMS engines provide a means whereby an execution plan for the candidate problematic SQL can be exposed and analyzed. Then design decisions can be made about introducing indexes or otherwise tuning the system to allow the SQL to perform more efficiently. Note, however, that the specific techniques applied to improve the performance are RDBMS specific and rarely universal across multiple RDBMS engines. This point is especially significant since differing RDBMS engines suggest tuning SQL by restructuring SQL in completely different manners. SQL tuned to one database engine may not be tuned properly for another.

For PPS-N Migration and PPS-N, the physical design efforts relating to performance tuning have been restricted to implementing appropriate table structures and relationships. Full performance tuning remains a task to be completed when the system has been entirely developed.

5.1.4 Exception Processing

In executing transactional Data Manipulation Language insert, update, or delete operations against a database, the RDBMS provides an exception message if any violation of a primary key, unique key, or foreign key is detected for the given operation. Each RDBMS is proprietary with respect to the actual exception message that is thrown.

The Data Services in PPS will be that part of the application that must be able to receive and process these exceptions no matter which RDBMS is operational. The RDBMS will return exception messages to the Data Service, which will pass them to the Business Layer to be processed.

5.1.5 Database Size and Operational Estimates

The underlying data files used by the Oracle RDBMS are organized into logical entities referred to as tablespaces. Contained within these tablespaces are the various system tables, application specific tables (i.e. the EPL schema), and other support structures which provide generic functionality across the RDBMS (e.g. rollbacks). The data files are initially sized upon database creation, and are expanded as needed to accommodate additional data stored in the associated tables. This expansion is accomplished through the addition of tablespace extents, the size of which is also determined at the time of database creation. Currently, the PPS EPL schema is persisted in the USERS tablespace which has a file size of 2,069,626,880 bytes and an extent size of 65,526 bytes.

- For PPS-N Migration and PPS-N, the PPS system will be designed to support the needed update frequency and transactional quantities. It is estimated that, to support the Migration Tool, PPS will need to process approximately 200,000 records during the single data migration from VistA. For the PPS-N functionality, it is estimated that approximately 100 database transactions (e.g. insert, update) will occur on a daily basis.

5.2 Non-DBMS Files

The PPS-N application's partial save feature involves saving the partial work to files in the file system. Also, CSV files will be utilized to persist information (OIs, NDCs and possibly Products) not currently stored but that are intended to persist across EPL reset/reload processes. All other data within the PPS-N Migration and PPS-N applications is saved to the PPS-N EPL database.

6 Detailed Design

This section describes the proposed design of the PPS-N application. Provided is the necessary information for the development team to integrate the hardware components and write the software code, so that the hardware and software components will provide a functional product.

6.1 Hardware Detailed Design

This section provides information for developers to build and/or procure the hardware for the PPS-N system. The components are detailed next:

- Cable type(s) and length(s) :

- Cat6 network cable 10-15 feet
 - Power cables 1.5-3.0 meters
 - 4 each 12 plug PDU depending on the number of servers
- Details of hardware items, such as monitors, printers, servers, I/O devices, and the relationship to each other. Hard drive/floppy drive/CD-ROM requirements:
 - Development and Test Servers:
 - Minimum of 2 drives for mirroring 300 gigabyte (GB) each Serial Attached SCSI (SAS) 10k
 - 3.25 Floppy Drive
 - DVD Burner
 - Backup Servers for Imaging:
 - Minimum of 6 drives for Raid 5 300 GB each SAS 10k with one hot spare
 - Hard Drive Expansion Enclosure NAS
 - 28 each 300 GB hard drives SAS 10k used for storing images of servers
 - 3.25 Floppy Drive
 - DVD Burner
 - Database and Utility Servers:
 - Minimum of 6 drives for Raid 5 300 GB each SAS 10k
- Memory and/or storage space requirements:
 - Development and Test Servers:
 - Memory Minimum 4 GB
 - Dual Gigabit network connection
 - Backup Servers for Imaging:
 - Memory Minimum 4 GB
 - Dual Gigabit network connection
 - Database and Utility Servers:
 - Memory Minimum 4 GB
 - Dual Gigabit network connection
- Monitor resolution:
 - 1280 x 1024 min
 - KVM 16 port with dongles
- Power input requirements for each component:
 - Servers and Switches
 - 120VAC-208VAC
- Processor requirements:
 - Development and Test Servers:
 - 2 Dual Core Xeon CPU 2.33GHz

- Backup Servers for Imaging:
 - 2 Dual Xeon CPU 3.00 GHz
- Database and Utility Servers
 - 2 Dual Xeon CPU 3.00 GHz
- Network switches:
 - 2 each 24 port gigabit (may need more ports depending on test and development environment).
- UPS:
 - 2 each Smart UPS 5000 may need more depending on the environment.

6.2 Software Detailed Design

This section provides conceptual and final detailed information associated with the design of the software being delivered.

6.2.1 Conceptual Design

Please refer to Section 3 Conceptual Design.

6.2.1.1 Product Perspective

This subsection of the SDD puts the product into perspective with hardware/software Interfaces.

6.2.1.1.1 Hardware Interfaces

The figure below illustrates a number of laptops\workstations accessing the PPS-N application via the cloud. All requests external to the Austin Information Technology Center (AITC) are presented to the PPS-N server. Authentication and authorization are handled using the VistA-N server co-located at the AITC. Once the authentication\authorization had been verified the PPS-N application will update VistA file data and send it to NDFMS system via the cloud. When required the user will be able to update pricing and med routes by retrieving data from FSS and VETS respectively.

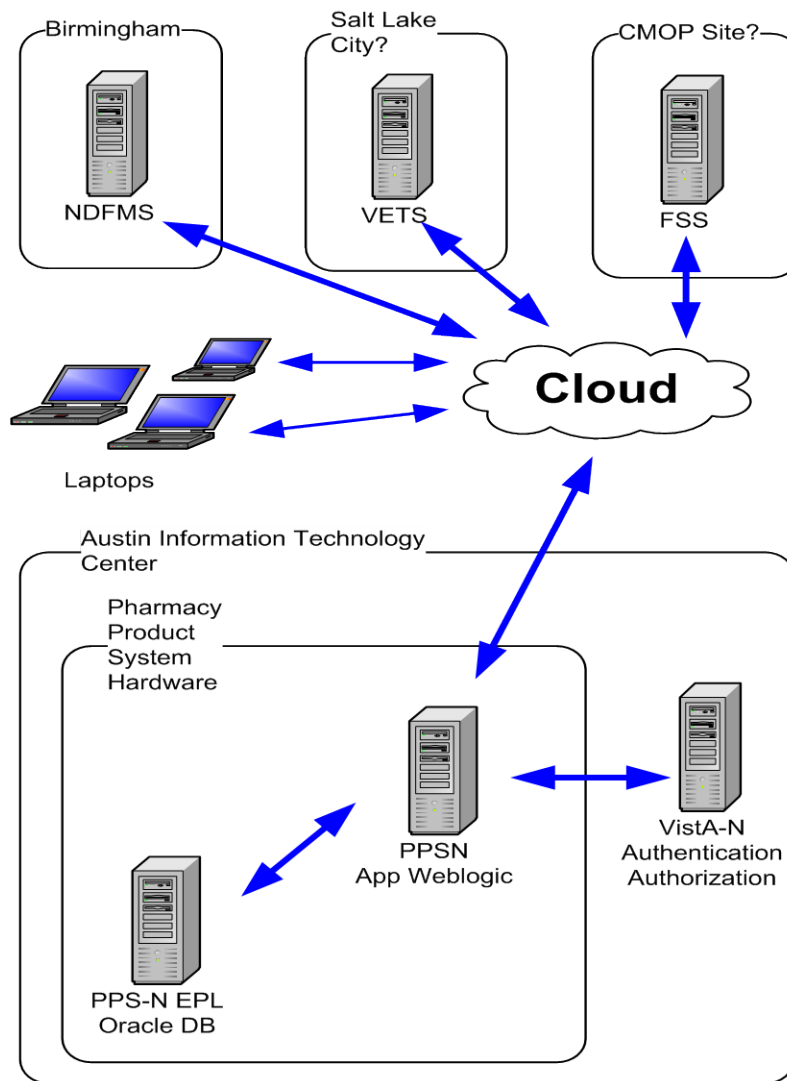


Figure 26: Hardware Interfaces

6.2.1.1.2 Software Interfaces

Please refer to Section 4.2. Software Architecture.

6.2.1.1.3 Communications Interfaces

Please refer to Section 4.3 Communication Architecture.

6.2.1.1.4 Memory Constraints

There is not any applicable characteristics and limits on memory or partition size.

6.2.1.1.5 Special Operations

There are no special operations required by the user for this application.

6.2.1.2 Product Features

The system shall include all functionality needed to retire the Legacy National Drug File Management System (NDF MS) so that no more monthly NDF MS patches or other NDF MS patches are needed to be sent because PPS-N will be able to replace the patching process and functionality provided by those patches.

Include functionality within PPS-N to handle Patient Medication Information (PMI)/Warning label files and include in local update process.

The system shall include all functionality required to support RxNorm fields within PPS-N.

The contractor shall ensure that PPS include in the database and GUI fields with add/view/edit as required allowing NCPDP messages that will be used in future increments.

Provide support within PPS-N for the future (PPS-N v3.0 or later) addition of the following record types:

- Investigational items
- Compounded items
- Partial, i.e. half tablets
- Additional hazardous waste fields
- Product specific thresholds for inclusion of expired orders in order checks.

6.2.1.3 User Characteristics

The PPS-N application will be used mainly by VA NDF managers who are experts in the data being managed by the PPS-N application, as well as the key subject matter experts for its requirements. No additional training or education is necessary.

6.2.1.4 Dependencies and Constraints

This design document was developed under the schedule and cost defined in the contract for PPS-N. The design is constrained to features available in the tools, technologies and frameworks defined by the VA Technical Reference Model (TRM) tools list. Previous VA architectural reviews have shaped the current design as well.

6.2.1.4.1 Design Trade-offs

PPS-N must keep its database (EPL) synchronized with the legacy NDFMS system's data store. Ensuring this data synchronization is accomplished accurately is the highest priority of the design and implementation of this system.

Only a limited number of users will use the PPS-N application concurrently, so the web application server does not need to support a large user load. However, these users will use PPS-N to manage the entire VHA formulary and, to perform this data intensive task, the PPS-N user interfaces must be able to display large amounts of data via web pages while at the same time remaining 508 compliant. Hence, usability will be a key aspect to web page design. The large data sets will also be more demanding of memory resources and the performance in retrieving

this data will be of high priority. Another performance priority for PPS-N is performing the complex queries required for the advanced search and reporting functions in a timely fashion.

6.2.2 Specific Requirements

As of now no Specific Requirements. The section 6.2.2 (and its sub-section) will be revisited and updated at the end of the increment.

6.3 Communications Detailed Design

Please refer to section 4.3.

7 External Interface Design

The external interface design describes the interfaces between pre-existing systems and the system being developed. The PPS-N application will need externally interface to interact with four legacy systems: NDFMS (from which data is to be sent to update files as needed), VistA-N (for authentication and authorization services), VETS (to retrieve med routes), and FSS (to retrieve updated drug prices). The external interfaces are further described in the following sections.

7.1 Interface Architecture

The PPS-N application must interface with the legacy VistA-N, NDFMS, VETS, and FSS systems. PPS-N accesses VistA-N through a LAN at AITC using VistA Link as shown in the figure below. VistA Link also provides the access between the PPS-N and the NDFMS and VETS systems located at Birmingham. However, a JDBC C connection is used to allow PPS-N to connect and retrieve data from FSS. VistA-N provides the Authorization and Authentication needed by the PPS-N; NDFMS hosts the VistA file data that will be updated by PPS-N; VETS provides PPS-N with updated med routes; and FSS provides PPS-N with updated drug prices.

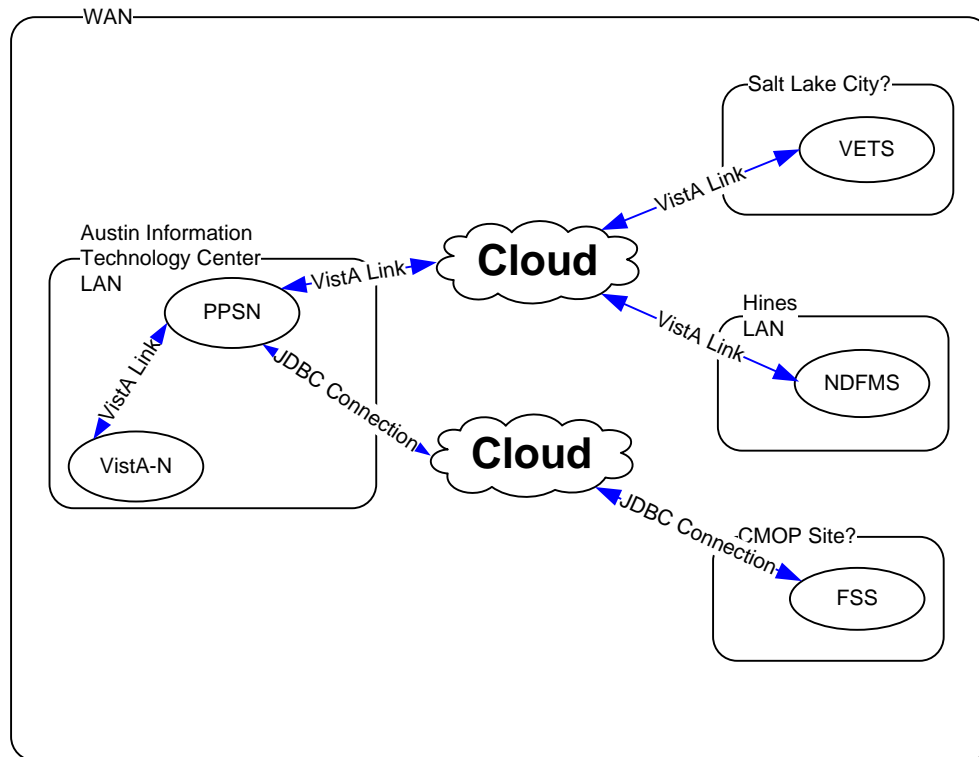


Figure 27: PPS-N Interfaces

7.2 Interface Detailed Design

As stated in Section 7.1, VistA Link provides the following data links:

- PPS-N to VistA-N (for retrieving authentication\authorization via KAAJEE)
- PPS-N to NDFMS (for sending updated data)
- PPS-N to VETS (for retrieving updated med routes)

Vista Link is a VA process and API supplied as a Java .jar file. It expects client processes to supply user information via this API interface. For more information concerning VistA Link, please review the Installation Guide and Release Notes (XOB_1_6_IG.doc and XOB_1_6_RN.doc respectively).

For more information regarding KAAJEE and its configuration, please see the KAAJEE Deploy, Install Guide, and Release Notes (KAAJEE_1_1_DEPLOYGUIDE.doc, KAAJEE_1_1_INSTALLGUIDE.doc, and KAAJEE_1_1_RELEASENOTES.doc).

JDBC provides the connection for the following data link(s):

- FFS (for retrieving update price data)

JDBC is a standard Java Database Connectivity tool developed by Oracle America, Inc. (formerly Sun Microsystems, Inc.). For more regarding JDBC see the related Oracle America, Inc. documentation.

For details on the specific messaging content and sequence needed for the PPS-N application, please see the ICD document.

8 Human-Machine Interface

The PPS-N application is hosted on a WebLogic application server and provides a web-based front end for user control. This section details the design of this web-based user interface.

8.1 Interface Design Rules

The layout of the PPS-N screens follows that of other VA web-based interfaces. All web pages in the PPS-N application must be 508 compliant. Two supplemental requirements are also defined for the GUI: SUP88 – The System shall be designed to work in a screen resolution of 1280 X 1024, and SUP89 – The System shall be designed to work with Internet Explorer 7 and Internet Explorer.

8.1.1 Inputs

All data input by the PPS National Manager is collected from the web pages served by the PPS-N application. All the functionality defined for PPS-N is controlled via the web screens presented by PPS-N. Only PPS National Managers authenticated with the VA's KAAJEE service with a role of PNM are allowed to access and perform these functions.

8.1.2 Outputs

All data output to the PPS National Manager is presented via web pages served by the PPS-N application. The pages output to the PPS National Managers are the same as described in the previous section.

8.2 Navigation Hierarchy

The following list describes the navigation hierarchy for the PPS-N user interface:

- Login
 - Home
 - Manage PEPS
 - Enter/Edit Items
 - Requests
 - Saved Work in Progress

- PEPS Data Elements
- PEPS Data Requests
- Move NDCs
- Move Products
- Reports
- COTS Services
 - PMI
 - Review NDC Information
 - Update COTS
- Manage Application
 - System Information
 - System Actions
 - Configure Application
 - About
- User Preferences

8.2.1 Login Screen

The figure below depicts the KAAJEE user authentication screen to the PPS-N Migration application.

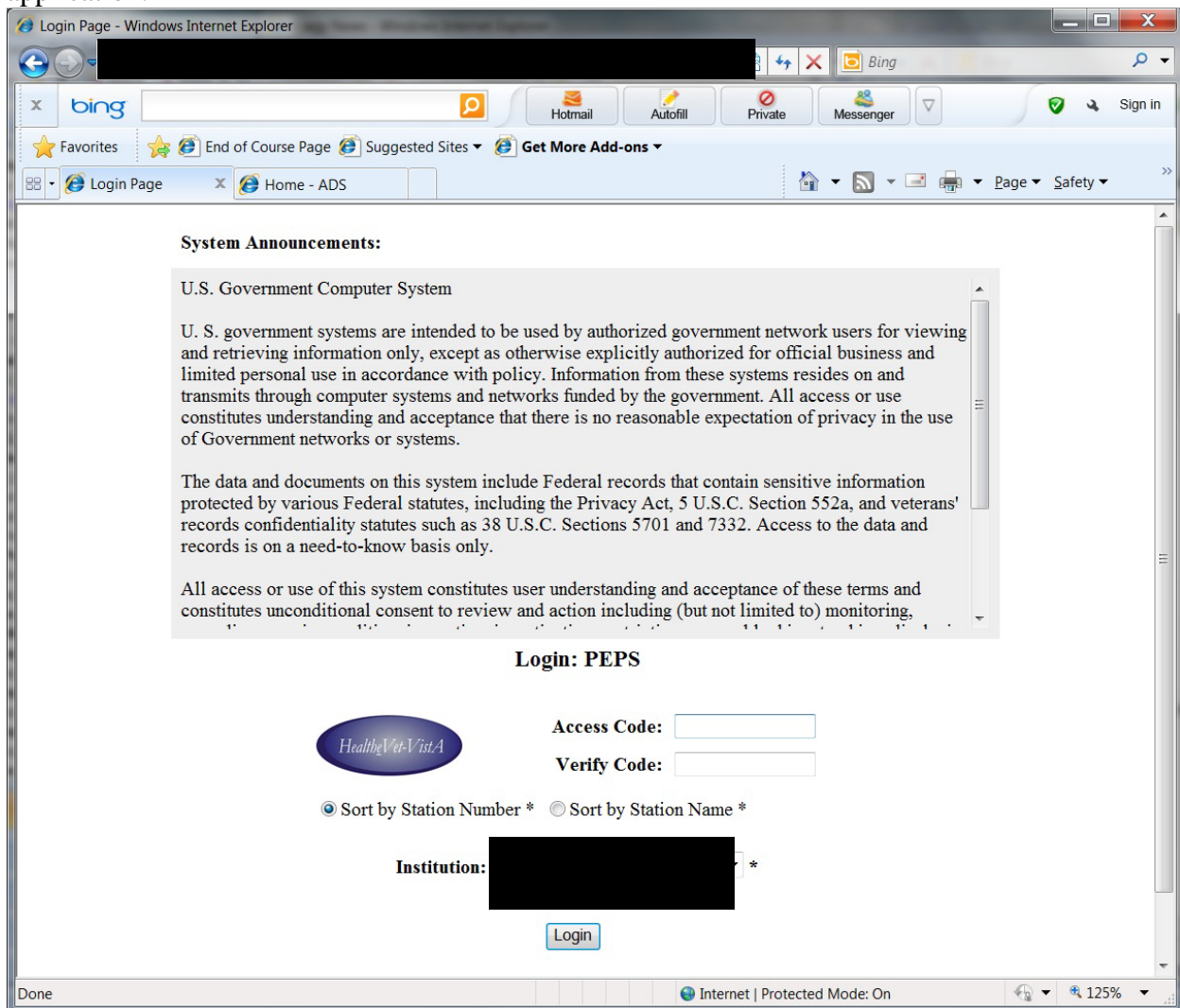


Figure 28: Login Screen

8.2.2 Home Screen

The figure below depicts the PPS-N application's home screen, shown after successful login. Possible messages and notices are depicted for illustrative purposes only. Notice the convenience links at the bottom of the page. Common traits shown in this image will all PPS-N screens are the Department of Veterans Affairs banner image at the top. Below that banner is a top-level menu bar, from which major functionality selections can be selected. Below that menu is a blue bar that can optionally be used for sub-menu functions.

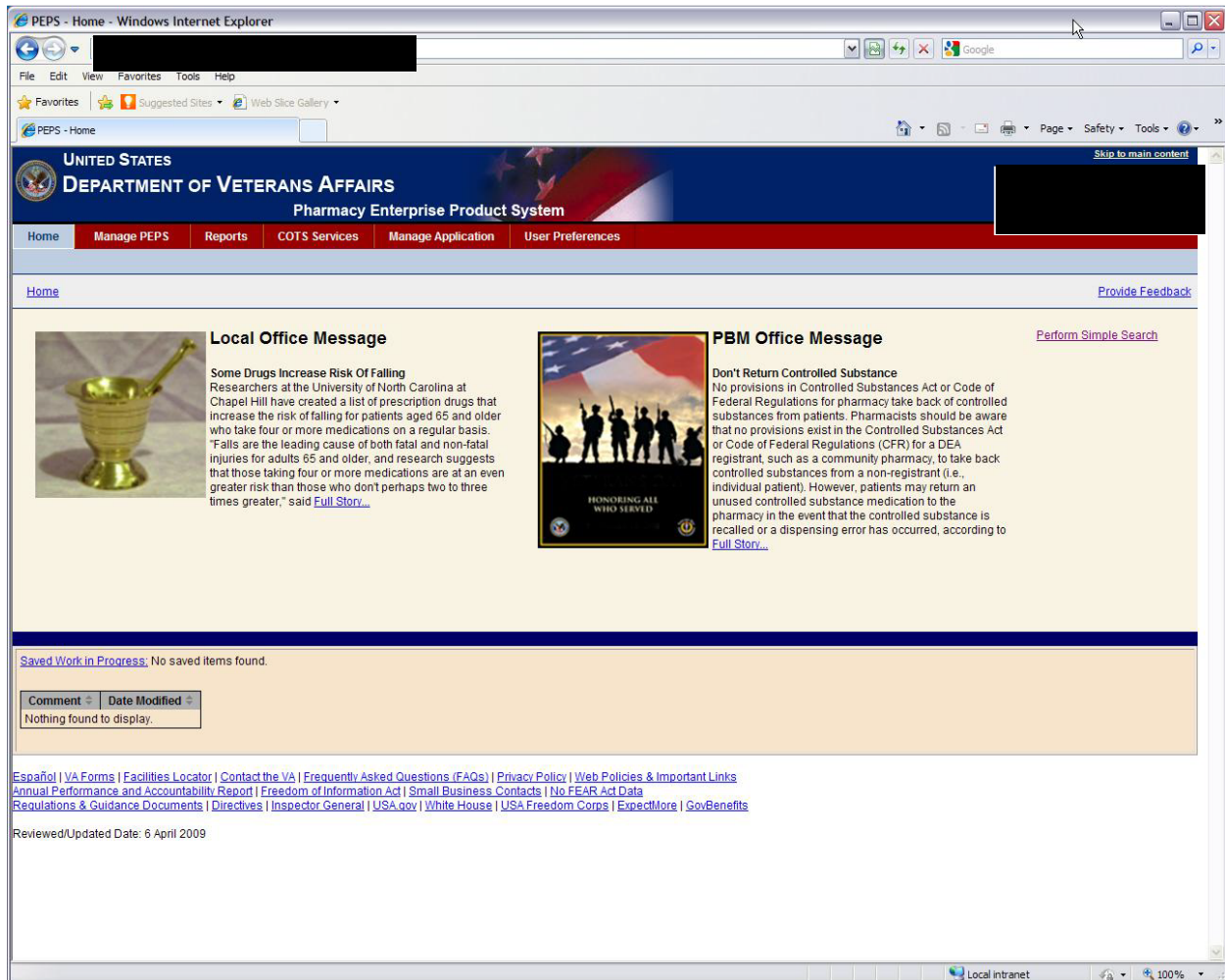


Figure 29: Home Screen

8.2.3 Perform Simple Search Screen

The figure below depicts the PPS-N application's simple search screen. The screen allows the user to conduct a search using Orderable Item, Product, or NDC.

The screenshot shows the 'PEPS - Simple Search' web application running in a Windows Internet Explorer browser. The page header includes the 'UNITED STATES DEPARTMENT OF VETERANS AFFAIRS' logo and the title 'Pharmacy Enterprise Product System'. A navigation bar contains links for Home, Manage PEPs, Reports, COTS Services, Manage Application, and User Preferences. Below this, a secondary navigation bar lists various actions: Enter / Edit Items, Requests, Saved Work in Progress, PEPs Data Elements, PEPs Data Requests, Move NDCs, and Move Products. The main content area is titled 'Manage PEPs > Simple Search'. It features a search form with the following elements: a 'Search For:' text input field; an 'Item Type:' dropdown menu currently set to 'Product'; a 'Search Field:' dropdown menu with a list of options including 'All Fields', 'VA Product Name', 'VA Print Name', 'Generic Name', 'VA Product ID', 'VA Drug Class', 'Active Ingredient', and 'Synonym Name'; a 'Strength:' text input field with a '(number only)' hint; a 'Category:' section with checkboxes for Medication (checked), Investigational, Compound, and Supply; an 'Item Status:' section with checkboxes for Active (checked) and Inactive; and a 'New Item Request' section with checkboxes for Approved (checked), Pending, and Rejected. A 'Search' button is located below the 'Item Type' dropdown. The browser's address bar shows the URL 'http://129.162.168.153:8080/EnterEditItems.jsp'. The taskbar at the bottom displays several open applications, including Rational ClearCase Explorer, Java - Eclipse, and the PPS-N Simple Search application.

Figure 30: Simple Search Screen

8.2.4 Perform Search Request Screen

The figure below depicts the PPS-N application's search request screen. The screen allows the user to conduct a search of requests that are pending.

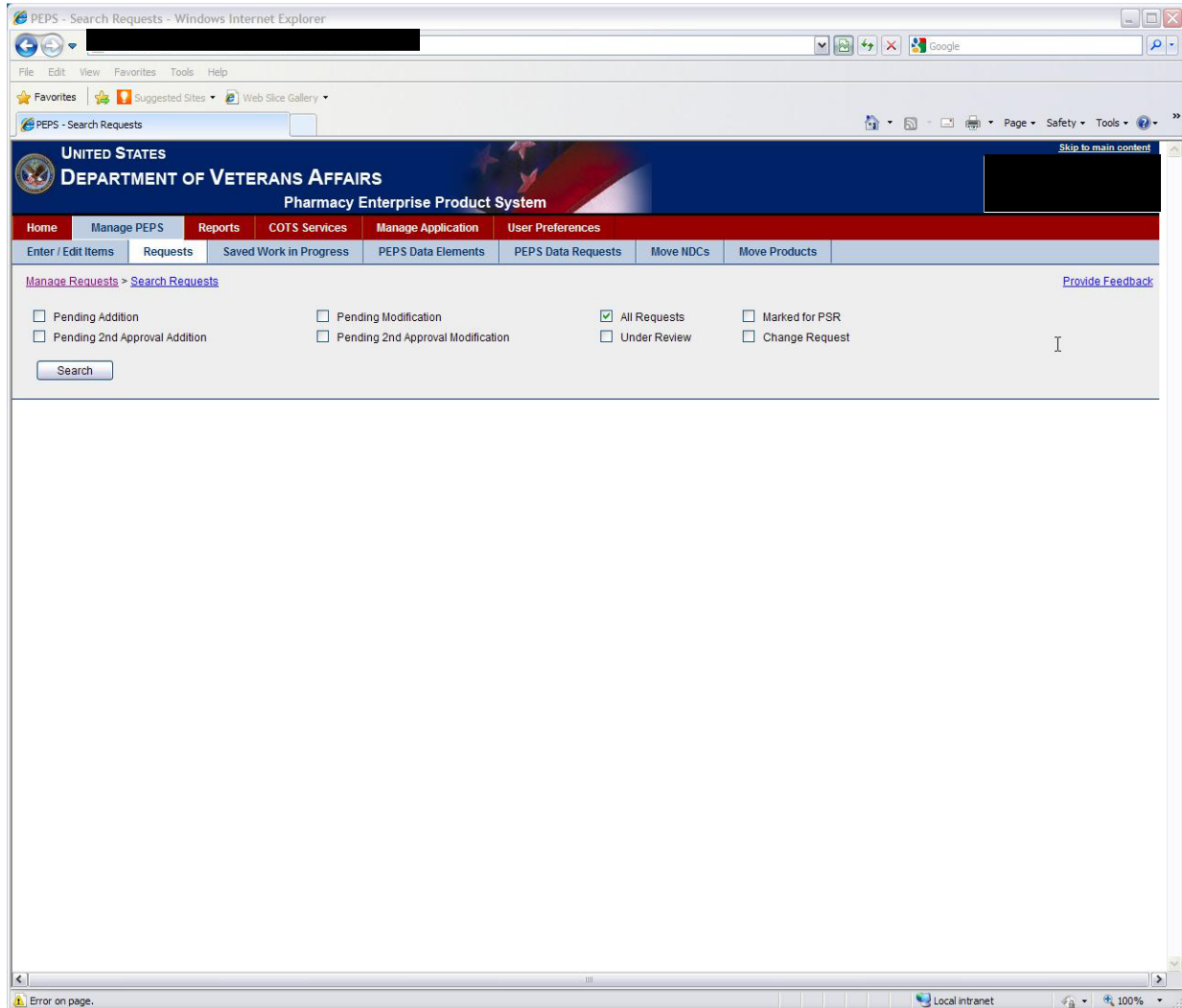


Figure 31: Request Search Screen

8.2.5 Perform Saved Work in Progress Search Screen

The figure below depicts the PPS-N application's saved work in progress search screen. The screen allows the user to conduct a search for work that has not been completed and as a result is not in the database yet.

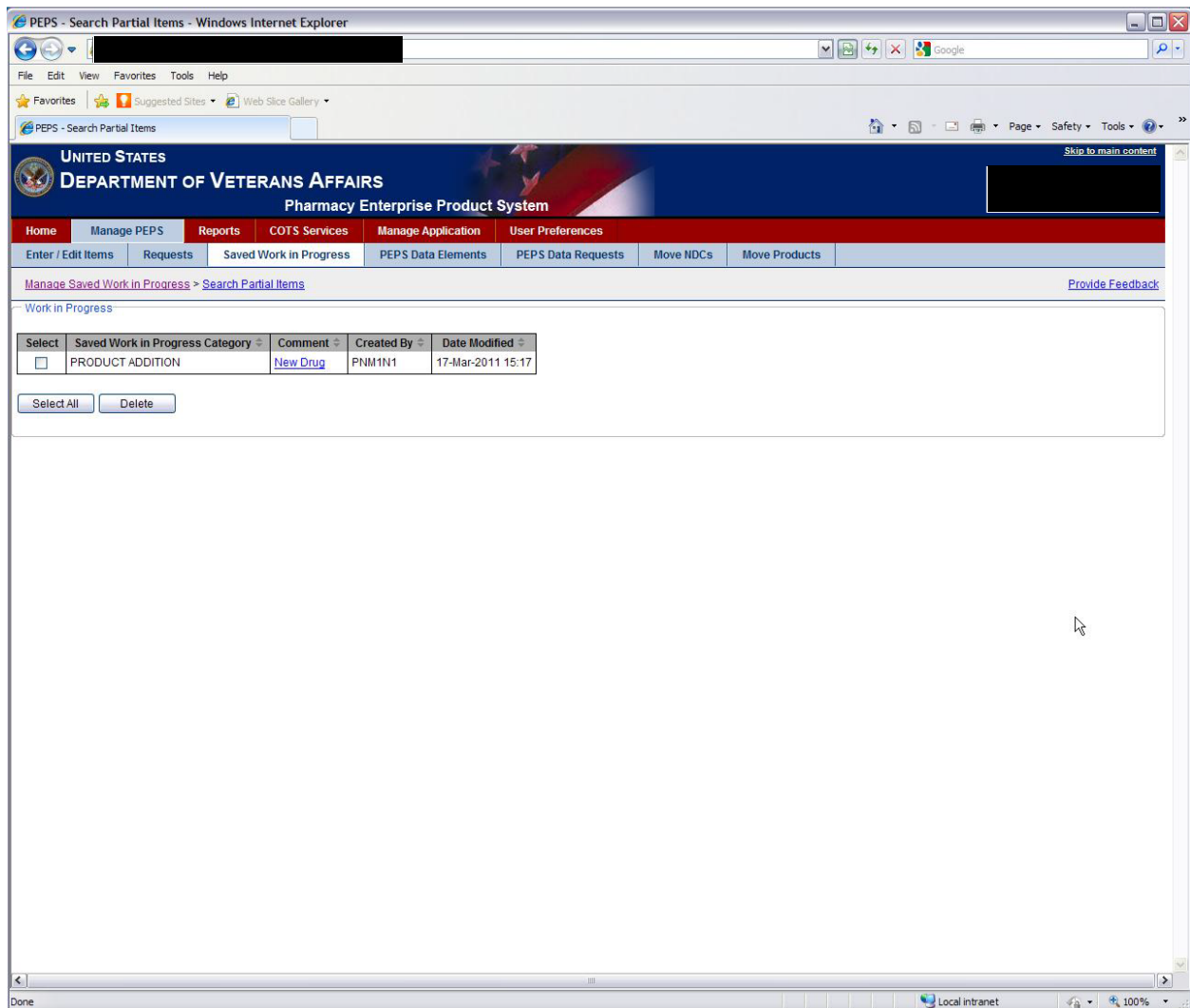


Figure 32: Work in Progress Search Screen

8.2.6 Perform PPS-N Data Element Search Screen

The figure below depicts the PPS-N application's data element search screen. The screen allows the user to conduct a search for domains such as Drug Class Classification and Drug Ingredient.

PEPS - Search Domains - Windows Internet Explorer

UNITED STATES
DEPARTMENT OF VETERANS AFFAIRS
Pharmacy Enterprise Product System

Home | Manage PEPs | Reports | COTS Services | Manage Application | User Preferences

Enter / Edit Items | Requests | Saved Work in Progress | PEPs Data Elements | PEPs Data Requests | Move NDCs | Move Products

Manage Data Items > Search Domains

Search Field: Drug Class Classification For: [] Item Status: ☒ Active ☐ Inactive New Item Request: ☒ Approved ☐ Pending ☐ Rejected [Search]

Search Results

542 items found, displaying 1 to 10.
[First/Prev] 1, 2, 3, 4, 5, 6, 7, 8 [Next/Last]

Drug Class Classification	New Item Request	Item Status	Inactivation Date
(INACTIVE) BETA-LACTAM ANTIMICROBIALS	Approved	Active	
(INACTIVE) PENICILLIN G-RELATED PENICILLINS	Approved	Active	
(INACTIVE) PENICILLINS	Approved	Active	
(INACTIVE) PENICILLINS, AMINO DERIVATIVES	Approved	Active	
ACE INHIBITORS	Approved	Active	
ADHESIVES, OSTOMY	Approved	Active	
ADRENAL CORTICOSTEROIDS	Approved	Active	
ADRENERGICS, TOPICAL OPHTHALMIC	Approved	Active	
ALUMINUM, CALCIUM, MAGNESIUM CONTAINING ANTACIDS	Approved	Active	
ALUMINUM CONTAINING ANTACIDS	Approved	Active	

[Open Blank Template](#)

Figure 33: Data Element Search Screen

8.2.7 Add National Drug Code (NDC) Screen

The illustration shown below depicts the screen that will be used to add new NDCs.

UNITED STATES
DEPARTMENT OF VETERANS AFFAIRS
Pharmacy Enterprise Product System

[Skip to main content](#)

[Home](#) [Manage PEPS](#) [Reports](#) [COTS Services](#) [Manage Application](#) [User Preferences](#)

[Enter / Edit Items](#) [Requests](#) [Saved Work in Progress](#) [PEPS Data Elements](#) [PEPS Data Requests](#) [Move NDCs](#) [Move Products](#)

[Add Item from Template > NDC Uniqueness Fields](#) [Provide Feedback](#)

Add New NDC

NDC: Request Status: Pending Product: ACEBUTOLOL 400MG TAB
Generic Name: ACARBOSE
[Change Product](#)

Fields marked with * are required

NDC Information

NDC*: 12345-1234-12
UPCUPN:
Trade Name*: DOXERCALCIFEROL
Package Type*: 100 X 15 ML
Package Size*: 100
Manufacturer*: MYLAN PHARM

Pill Information

Product Number:
OTC/RX Indicator:
Proposed Inactivation Date:
Protect from Light:
Refrigeration:
Color:
Shape:
Imprint:
Image:
No Image Found

Scored

[Scored](#) [Remove](#)
[Add New Row](#)

Local Dispense: ☐

[Cancel](#) [Create More Items](#)

Figure 34: Add NDC Screen

8.2.8 Add Product Screen

The illustration shown below depicts the screen that will be used to add a new Product.

UNITED STATES
DEPARTMENT OF VETERANS AFFAIRS
Pharmacy Enterprise Product System

Home Manage PEPS Reports COIS Services Manage Application User Preferences

Enter / Edit Items Requests Saved Work in Progress PEPS Data Elements PEPS Data Requests Move NDCs Move Products

[Add Item from Template > Unique ID Fields](#) [Provide Feedback](#)

Add New National Product

Product: ACEBUTOLOL 400MG TAB PEPS OI Name: AMOXICILLIN/CLAVULANATE TAB (National)
[Change OI](#)

Fields marked with * are required

Define the VA Product

Active Ingredient*

Ingredient Name	Strength	Drug Unit	Remove
ACEBUTOLOL	400	MG	Remove

[Add New Row](#)

Generate Product & Print Names

VA Product Name*: ACEBUTOLOL 400MG TAB

VA Print Name*: ACEBUTOLOL 400MG TAB

VA Dispense Unit*: TAB

Generic Name*: ACARBOSE

Define the Schedule and Handling

CS Federal Schedule*: 1 - SCHEDULE I

Single/Multi Source Product*: S- Single Source

GCNSEQNO:

DEA Schedule*: 1-Schedule 1 Item

NCPDP Dispense Unit*: EA-EACH

NCPDP Quantity Multiplier*: 1

Category*

Cat	Remove
MEDICATION	Remove

[Add New Row](#)

Special Handling

Special Handling	Remove
A - NARCOTICS AND ALCOHOLS	Remove

[Add New Row](#)

Define the Formulary

National Formulary Name*: ACARBOSE TAB

National Formulary Indicator: ☐

VA Drug Classes*

VA Drug Class	Primary	Remove
HS502 - ORAL HYPOLYCEMIC AGENTS,ORAL	<input checked="" type="checkbox"/>	Remove

[Add New Row](#)

[Cancel](#) [Save Work in Progress](#) [Create More Items](#) [Submit](#)

Figure 35: Add Product Screen

8.2.9 Add Orderable Item Screen

The illustration shown below depicts the screen that will be used to add a new Orderable Item.

The screenshot displays the 'Add New Orderable Item' interface within the 'Pharmacy Enterprise Product System' of the 'DEPARTMENT OF VETERANS AFFAIRS'. The header includes a navigation bar with links like 'Home', 'Manage PEPS', 'Reports', 'COTS Services', 'Manage Application', 'User Preferences', 'Enter / Edit Items', 'Requests', 'Saved Work in Progress', 'PEPS Data Elements', 'PEPS Data Requests', 'Move NDCs', and 'Move Products'. A 'Site to main content' link is also present.

The main content area is titled 'Add New Orderable Item' and includes a 'Provide Feedback' link. It shows the following details:

- PEPS OI Name: ABACAVIR TAB
- New Item Request: Pending
- Fields marked with * are required
- OI Uniqueness Fields: National
- Generic Name: ABACAVIR
- Dosage Form*: TAB
- Generate OI Names button
- Vista Orderable Item Name*: ABACAVIR
- National Formulary Indicator: ☒
- Category: MEDICATION (with a 'Remove' button)
- Orderable Item Med Route: Local Med Route (with 'Default' and 'Remove' buttons)
- Add New Row button

At the bottom right, there are 'Cancel' and 'Create More Items' buttons.

Figure 36: Add Orderable Item Screen

8.2.10 Add More Associations Screen

The illustration shown below depicts the screen that will be used to add a multiple new and associated items (NDC, Products, and OI).

UNITED STATES
DEPARTMENT OF VETERANS AFFAIRS
Pharmacy Enterprise Product System

Home Manage PEPS Reports COTS Services Manage Application User Preferences

Enter / Edit Items Requests Saved Work in Progress PEPS Data Elements PEPS Data Requests Move NDCs Move Products

[Add Item from Template](#) > [Unique ID Fields](#) > [Required Fields](#) [Provide Feedback](#)

Add New National Product

Product: ACEBUTOLOL 400MG TAB PEPS OI Name: AMOXICILIN/CLAVULANATE TAB (National)

OIs	Products	NDCs	
ABACAVIR TAB	ACEBUTOLOL 400MG TAB	12345-1234-12 12345-1234-13 12345-1234-14	<input type="button" value="Add Product"/> <input type="button" value="Add NDC"/>
ABACAVIR TAB	ACEBUTOLOL 200MG TAB	12345-1234-23	<input type="button" value="Add Product"/> <input type="button" value="Add NDC"/>

Figure 37: Add More Associations Screen

8.2.11 Perform Create Report Screen

The Create Report screen allows the user to create the following reports:

- Capture NDF Data Report
- VA Drug Classification Print Report
- List Ingredients Report
- Print Products and Warning Labels report
- List of Products with Exclusion From Drug Interactions Report

The user is allowed to enter specific report parameters prior to creating the report. Once the report has been run the system allows the report to be saved to a file or printed.

8.2.12 Perform FDB Search Screen

The FDB search screen allows the user to enter search parameter text into a text field. The text entered should satisfy one of the criteria that follow:

- Packaged Drug Name
- Dispensable Drug Name
- Dispensable Generic name
- Trade Name
- FDB Therapeutic Drug Class Name
- GCNSEQNO
- Full or Partial NDC
- Full or partial UPC
- Full or partial HRI

Provided there is a match the search will return one of the following:

- Packaged Drug
- Disposable Drug
- Dispensable Generic

The search results can also be filter to minimize unneeded information. Details for each item returned in the result are available by clicking on the item.

8.2.13 User Preferences Screen

The figure below depicts the PPS-N application's user preferences screen. The screen allows the user to set search filters and formats with regard to the results of the search.

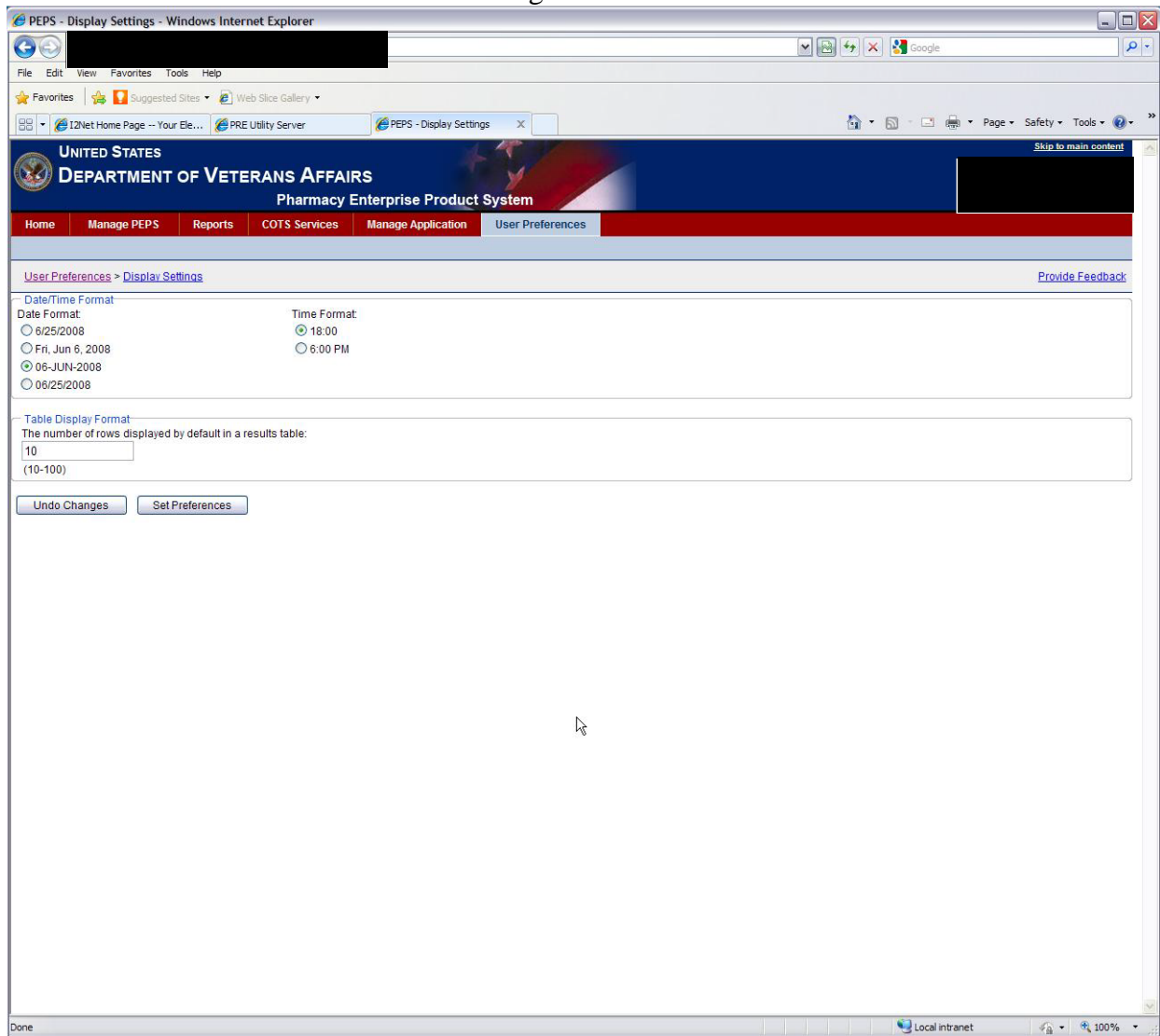


Figure 38: User Preferences Screen

9 System Integrity Controls

The PPS-N application utilizes the VA's KAAJEE authentication and authorization services to ensure only approved users have access to the PPS-N application's features.

10 Approval Signatures

This section is used to document the approval of the SDD during the Formal Review. The review should be ideally conducted face to face where signatures can be obtained 'live' during the review however the following forms of approval are acceptable:

- Physical signatures obtained face to face or via fax
- Digital signatures tied cryptographically to the signer
- /es/ in the signature block provided that a separate digitally signed e-mail indicating the signer's approval is provided and kept with the document

The signature below is an acknowledgement that the signatory understands the purpose and content of this document.

REVIEW DATE: *12/11/2013*

[REDACTED]

[REDACTED]	12/11/2013 3:10 PM
Signed:	Date:
[REDACTED] <i>Project Manager</i>	
Integrated Project Team Chair	

[REDACTED]	12/11/2013 7:10 PM
Signed:	Date:
[REDACTED] <i>OIT PD PRE, Program Manager</i>	
Integrated Project Team Chair	

[REDACTED]	01/08/2014 9:52 AM
Signed:	Date:
[REDACTED] <i>VHA PBM, Director</i>	
Business Sponsor	

[REDACTED]	12/19/2013 9:54 AM
Signed:	Date:
[REDACTED] <i>OIT SDE PAO, Project Manager</i>	
Service Delivery and Engineering	

A. Additional Information

A.1. RTM

The table below traces requirements (at the Use Case level) to artifacts in the SDD.

Table 26: Traceability Matrix.

Use Case ID	Use Case Name	SDD Artifact
PEPS_UC001, PEPS_UC34, PEPS_UC40, PEPS_UC43, PEPS_UC81	Search for Items	Section 6.2.1
PEPS_UC07, PEPS_UC24, PEPS_UC27, PEPS_UC28, PEPS_UC33, PEPS_UC36, PEPS_UC54, PEPS_UC61, PEPS_UC62, PEPS_UC65, PEPS_UC66, PEPS_UC74, PEPS_UC75, PEPS_UC76, PEPS_UC84, PEPS_UC85, PEPS_UC86, PEPS_UC87, PEPS_UC88, PEPS_UC89, PEPS_UC149	Add, Save New Items and Domains	Section 6.2.2
PEPS_UC18, PEPS_UC56, PEPS_UC57, PEPS_UC58, PEPS_UC84, PEPS_UC96	Review Items and Domains	Section 6.2.4
PEPS_UC04, PEPS_UC23, PEPS_UC31, PEPS_UC44, PEPS_UC53, PEPS_UC46, PEPS_UC60, PEPS_UC64, PEPS_UC67, PEPS_UC68, PEPS_UC69, PEPS_UC78, PEPS_UC90, PEPS_UC92, PEPS_UC91, PEPS_UC98	Modify Items and Domains	Section 6.2.3, Section 6.2.6
PEPS_UC35, PEPS_UC38, PEPS_UC39	Partial Work	Section 6.2.5
PEPS_UC102	Perform Optimistic Locking	Section 6.2.3
UC141	Synchronize File Data Module	Section 6.2.10
PEPS_UC116, PEPS_UC138, PEPS_UC139, PEPS_UC142, PEPS_UC143, PEPS_UC144, PEPS_UC145, PEPS_UC148	Interact with COTS database/API	Section 6.2.8, Section 6.2.9
PEPS_UC137	Support for Reports	Section 6.2.7

A.2. Packaging and Installation

Final software deployment deliverables are packaged with a Version Description Document (VDD) that details the software delivered, including version numbers. An installation guide is also delivered, detailing how the software should be installed on the VA hardware. HP personnel can work with the VA installation personnel.

A.3. Design Metrics

A formal peer review process for reviewing document deliverables that generates a list of minor and major defects, which authors can use to improve the documents.

A.4. Acronym List and Glossary

Table 27: Glossary of Terms

Term	Meaning
COTS	Commercial-Off-The-Shelf, used in reference to the 3rd party drug information database and API used by the PPS application.
CRUD	Refers to the database operations of create, read, update and delete.
CSV	Comma Separated Values
HIPAA	Health Insurance Portability and Accountability Act, a bill that has provisions to secure patient health data.
J2EE	Java 2 Enterprise Edition, the technology used in the PPS-N application.
KAAJEE	Kernel Authentication and Authorization for J2EE, the VA's authentication and authorization service used by the PPS-N Migration application.
NDFMS	National Vista National Drug File Management System
MUMPS	Massachusetts General Hospital Utility Multi-Programming System, the programming language used to code procedures within VistA systems.
OI&T	Office of Information & Technology, per the VA's OI&T home page : "As directed by the Chief Information Officer (CIO), the Office of Information & Technology (OI&T) delivers available adaptable, secure and cost effective technology services to the Department of Veterans Affairs (VA) and acts as a steward for all VA's IT assets and resources".
PECS	Pharmacy Enterprise Customization Service, a PEPS suite component used to customize information in the COTS drug information database for the VA's needs.
PEPS	Pharmacy Enterprise Product Services, a suite of services and components intended to revamp the VA's pharmacy operations. This term replaces the term 'PRE'. The term 'PEPS' formerly stood for Pharmacy Enterprise Product System (which is now referred to as 'PPS'), which was a component of the original PRE effort.
PPS	Pharmacy Product System, the system (a component of the PEPS suite) intended to eventually replace the NDFMS and Local VistA systems that manage item information within the VHA facilities.
PPS-L	Local component of the PPS system.
PPS-N	National component of the PPS system.

Term	Meaning
PPS-N EPL	PPS-N Enterprise Product List, the database of item information managed by the PPS-N system.
PPS-N Migration	System used to populate the replacement PPS-N system with data from the legacy NDFMS, allowing the new system to synchronize with the legacy one.
PRE	Pharmacy Re-engineering, the original project to revamp the VA's pharmacy operations. This term for this overall effort has been replaced by PEPS.
RDBMS	Relational Database Management System
RPC	Remote Procedure Call, referring to how MUMPS routines can be involved/executed within VistA systems via external message calls.
TRM	Technical Reference Model, from the VA's TRM website : "The Veterans Affairs (VA) Technical Reference Model (One-VA TRM) is one component within the overall [Enterprise Architecture] that establishes a common vocabulary and structure for describing the information technology used to develop, operate, and maintain enterprise applications".
VA	United States Department of Veterans Affairs
VHA	Veterans Health Administration
VistA	Veterans Health Information Systems and Technology Architecture

A.5. Required Technical Documents

This is PPS specific product architecture document, PPS-N Migration specific ICD in lieu of an interface data mapping document (since no template currently exists).