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REGION AND DATABASE MANAGEMENT FOR HANDI 2000 BUSINESS MANAGEMENT SYSTEM

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Abstract: The Data Integration 2000 Project will result in an integrated and comprehensive set of functional applications containing core information necessary to support the Project Hanford Management Contract. It is based on the Commercial-Off-The-Shelf product solution with commercially proven business processes. The COTS product solution set, of PassPort and PeopleSoft software, supports finance, supply and chemical management/Material Safety Data Sheet, human resources...

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REGION AND DATABASE MANAGEMENT PLAN

FOR

HANDI 2000

BUSINESS MANAGEMENT SYSTEM

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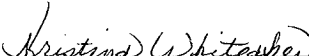
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1 INTRODUCTION

1.1 OVERVIEW

The Hanford Data Integration 2000 (HANDI 2000) Project will result in an integrated and comprehensive set of functional applications containing core information necessary to support the Project Hanford Management Contract (PHMC). It is based on the Commercial-Off-The-Shelf (COTS) product solution with commercially proven business processes. The COTS product solution set, of PassPort (PP) and PeopleSoft (PS) software, supports finance, supply and chemical management/Material Safety Data Sheet (MSDS), human resources, and payroll activities under the current PHMC direction. This set of software constitutes the Business Management System (BMS) and MSDS, a subset of the HANDI 2000 suite of systems. Managing HANDI 2000 software changes requires the structured approach of regions and databases to ensure production stability.

1.2 PURPOSE

The Region and Database Management Plan (RDMP) provides guidelines for establishing a working environment for the development and installation of the COTS PassPort and PeopleSoft software systems at Fluor Daniel Hanford (FDH). In addition, it provides guidelines to establish a standard set of regions and databases, and delineates how each is used. The intent is to facilitate the migration of software modifications, software releases, maintenance releases, and emergency product fixes into the production environment. This RDMP becomes effective as of this document's acceptance and will provide guidance through implementation efforts and, as a "living document", supports the operations and maintenance of the HANDI 2000 systems.

1.3 SCOPE

This document will address the regions, databases, and system objects for the system environment. PassPort Supply and Chemical Management/MSDS and PeopleSoft Financials are related to ORACLE regions and PeopleSoft Human Resources/Training and Payroll/Benefits relate to Microsoft SQL databases. Each type of system object is defined and migration guidelines are provided. In addition, the RDMP will provide guidance for establishing and controlling software development, testing, and production environments. This document also contains migration procedures for standard maintenance, emergency maintenance, and general releases.

1.4 ACRONYM DEFINITIONS

Acronym	Definition
BMS	Business Management System
BPI/BSI	Business Process Information/Business System Information
COTS	Commercial Off The Shelf
DDL	Data Definition Language
DBRM	Database Request Module
DTS	Deficiency Tracking System
FDH	Fluor Daniel Hanford
HANDI 2000	Hanford Data Integration (Year 2000 compliant)
LMSI	Lockheed Martin Services, Incorporated
MSDS	Material Safety Data Sheet
PHMC	Project Hanford Management Contract
PP	PassPort software
PS	PeopleSoft software
RDBMS	Relational Database Management System
RDMP	Region and Database Management Plan

Acronym	Definition
SQR	Structured Query Report

1.5 REFERENCES

APPENDIX A	Region Management Plan Checklist
APPENDIX B	Database Management Plan Checklist
APPENDIX C	PassPort Maintenance Release and Product Fix Migration Path
APPENDIX D	PassPort Server Configuration Diagram
APPENDIX E	PeopleSoft Financial Region Management
HNF-2639	Release and Upgrade Procedure

2 REGIONS AND DATABASES

The system environment for configuration control of the implementation process consists of separate regions or databases. PassPort and PeopleSoft regions are separate and may have different versions of HP-UX, Micro Focus COBOL, and ORACLE RDBMS. These regions apply to both PassPort Supply and Chemical Management/MSDS, and PeopleSoft Financials unless otherwise stated. The PeopleSoft Human Resources/Training and Payroll/Benefits databases reside on the same version of Microsoft SQL Server, Micro Focus COBOL, and Microsoft Windows NT. The term Region relates to ORACLE and Database relates to Microsoft SQL. Reference *APPENDIX A, Region Management Plan Checklist* and *APPENDIX B, Database Management Plan Checklist*.

During system development, each region and database has a specific purpose. Information is copied from region/database to region/database at defined block points. System customizing and tailoring will occur in the Development Region/Development Database. The customized and tailored programs from the Development Region/Development Database will be copied to the Acceptance Region/Test Database.

Configuration and table data will be entered into the Acceptance Region/Test Database and copied to the Development Region/Development Database. The Acceptance Region/Test Database will provide a stable environment to the users for prototyping and testing while changes are being made to the system programs in the Development Region/Development Database. Modifications identified during prototyping and testing will be applied to the Development Region/Development Database and then copied to Acceptance Region/Test Database.

The Dataload Region will be loaded with programs and table data from the Acceptance Region. Data loading and interfaces will be tested in the Dataload Region then applied to the Acceptance Region.

Once in production, a similar path will be followed. Product fixes and new releases will be applied to the Demo Region/Demo Database first to determine their impact on the system as a whole. The regions and databases are described as follows:

2.1 REGIONS (PassPort/PeopleSoft Financials)

2.1.1 DEMO REGION

- Initial implementation of COTS product fixes and releases to determine impacts before applying in Development Region
- Demonstration of product capabilities
- All modules accessible

2.1.2 DEVELOPMENT REGION

- Program and panel tailoring
- Development unit testing performed here
- Loaded with a subset of data adequate for testing
- Only licensed modules accessible
- Staging for migration to Acceptance Region

2.1.3 ACCEPTANCE REGION

- Prototyping, including configuration and code table information based on BPI/BSI results
- Code and security configuration
- Unit, interface, systems and user acceptance testing
- No software modifications made here
- Loaded with a full set of data

- Only licensed modules accessible
- Staging for migration to Development and Production Region

2.1.4 PRODUCTION REGION

- Official day-to-day use of the software in production
- Only licensed modules accessible

2.1.5 TRAINING REGION

- PS Finance and PP Supply and Chemical Management/MSDS related training
- Populated with data from Production, Acceptance or Development Region depending on project status
- Only licensed modules accessible
- Refreshable with static training data when formal training starts

2.1.6 PRACTICE REGION

- Available to users after training or just to review software
- Data is subject to change by users, experimentation encouraged
- Populated with data from Training Region
- Only licensed modules accessible

2.1.7 DATALOAD REGION

(Temporary – used during implementation)

- Data conversion and interface testing
- Contains same configuration and code tables as Acceptance Region
- Only licensed modules accessible

2.1.8 AUDIT REGION (PeopleSoft specific)

- Used for applying upgrades and product fixes
- Staging for migration to Demo Region

2.1.9 DTS MIGRATION REGION (PassPort specific)

(Temporary – will be removed when DTS is installed on HP platform)

- Used to support the migration of the Deficiency Tracking System (DTS) application to the HP9000 platform and the newer version of the Passport Action Tracking and Document Management modules

2.1.10 INTEGRATION REGION

(Temporary)

- Used for initial load and certification of PassPort Integration Product.

2.2 DATABASES (PeopleSoft Human Resources and Payroll)

2.2.1 DEMO DATABASE (H3DMO700)

- Demonstration of product capabilities
- All modules accessible

2.2.2 DEVELOPMENT DATABASE (H3SYS700)

- Program and panel tailoring
- Development unit testing performed here
- Loaded with a full set of data refreshed from Production Database
- Only licensed modules accessible
- Staging for migration to the Test Database

2.2.3 TEST DATABASE (H3TST700)

- Code and security configuration
- Unit, interface, systems and user acceptance testing
- No software modifications made here
- Loaded with a full set of data
- Only licensed modules accessible
- Staging for migration to Production Database

2.2.4 PRODUCTION DATABASE (A6SYS700)

- Official day-to-day use of the software in production
- Only licensed modules accessible

2.2.5 UPGRADE DATABASE (AUDB)

- Used for applying upgrades and product fixes
- Staging for migration to Demo Database

3 SYSTEM OBJECTS

As discussed, the Development Region/Development Database will contain the latest stage of code without regard to its status as a work in progress item (not yet touched, currently being worked on, or modifications completed).

The Acceptance Region/Test Database contains a copy of the production objects. To this production copy are added only those objects that have been modified and passed unit testing in Development Region/Development Database (the latest versions), with the rest being in their original state. Thus the Acceptance Region/Test Database is a copy of the next release of Production.

3.1 PASSPORT OBJECTS

PassPort objects being migrated are usually copied or moved. Generally copying an object is preferred. Copying allows testing in the new region with a backup copy in the source region. Once the copy has been proven successful, the object in the source region can be deleted. Moving an object eliminates the need to go back and delete the source object, but moving also removes the security of having a backup object until it is no longer needed. It is necessary to delete copied objects to maintain version control. There are exceptions to this rule where multiple copies of an object are required due to ongoing development not yet ready for use in production.

PassPort object types, which could be part of a specific migration, is described below. Included with each description is the designation as to whether the object should be copied or moved when migrated from Development to Acceptance and Acceptance to Production regions.

3.1.1 COBOL SOURCE MODULES

COBOL source modules will be copied from the source region to the target region. COBOL source modules include the following types:

- Panel and Report Modules
- Cursor Modules
- Batch programs
- COBOL Copybooks
- Batch run Scripts

3.1.2 EXECUTABLE MODULES

Executable modules will be copied from the source region to the target region. The executables source in the staging directory will be recompiled and the source objects linked to the target region's executable directory. Executable modules include the following types:

- Panel modules
- Database Request Modules (DBRM)

3.1.3 MAP OBJECTS

There are several types of map objects stored on the server and one type which is stored on workstations and/or network servers. These are as follows:

- **SYM FILES**

The INDUS PassPort Analyst Workbench tool creates SYM files (files with a .SYM extension) located on a PC or network server disk drive. As part of the development/customization process, these members are manually uploaded to the /passport/source/objects directory on the server. The members in this directory are used by MAPGEN (the 'dfmn' procedure) to generate SYM and MDT records in ORACLE tables (see below). When migrating SYM files, they should be copied from one region's /passport/source/objects directory to the next, replacing the prior versions. *Reference APPENDIX D, PassPort Server Configuration Diagram*

- **SYM ROWS**

The MAPGEN process creates SYM rows in a table under ORACLE located on the UNIX host. This file is used by PORTAL to detect that a specific PC SYM file (see below) is down level and to update the PC SYM file. Therefore, SYM rows relevant to a migration should be loaded via the dfmn procedure into the target region's TIDSYM table. The SYM files are stored on either a network server or the local hard drive (C:) of a workstation.

- **MDT ROWS**

The MAPGEN process creates MDT rows in an ORACLE table located on the UNIX host. This file is used by the PassPort run-time architecture. Therefore, MDT rows relevant to a migration should be loaded via the dfmn procedure into the target region's TIDMDT table. The MAPGEN process also generates a copybook member describing the panel layout for the COBOL program that uses it.

- **PC/NETWORK SYM FILES**

Both Analyst Workbench and PORTAL use PC or network SYM files. Therefore, these files must be copied from the source region's network directory to the target region's network directory but should not share directories.

3.1.4 DATABASE OBJECTS

Database objects need to be maintained in each of the regions. Database objects are not copied or moved, they must be created. The Data Definition Language (DDL), used to create objects in the source region, can be used for creating the same or modified objects in the target region. Review the DDL to validate any necessary modifications for the new region prior to executing. Below is a list of database objects, which need to be created or modified during a migration:

- Database table definitions (tid*.ddl members in the ./source/ddl directory) and (tid*.ora members in the ./source/oraddl directory)
- Database view definitions (tiv*.ddl members in the same directory) and (tiv*.ora members in the ./source/oraddl directory)
- Database index definitions (tii*.ddl members in the same directory) and (tii*.ora members in the ./source/oraddl directory)
- Database stored procedures/trigger definitions

3.1.5 PASSPORT OBJECTS

In addition to the program code, PassPort systems utilize many other files at run-time. Up-to-date versions of these files should be copied to the destination region. The SLIB members and batch job scripts will probably need to be modified to point to appropriate directories in the new region. Review each SLIB file and make the necessary changes. These PassPort objects include:

- Extended Help files
- SLIB members
- Batch routines
- Data Dictionary

3.1.6 DATABASE TABLES

Some of the data created in the source region may need to be copied into the target region's tables. This is especially true of validation and error message tables. This can be accomplished in a variety of ways, the most common being the use of the export/import utilities. Below is a list of objects, which may need to be moved. The Lockheed Martin Services, Incorporated (LMSI) technical support team will determine which data tables should be moved to the target region.

- Data tables
- Validation tables
- Error Message tables

3.1.7 SYSTEM TABLES (PassPort)

PassPort utilizes database tables for menu navigation, search filter combinations, batch job submission and security. The data in these tables must be copied into the destination region, as appropriate. All of these tables must be populated with some data before PassPort will work. The list of these mandatory system tables for the 6.0.1 Release is as follows. This will be different for future releases.

tadzel	tidddele	tidmdt	tidprefd	tidsrxpk
tadzlt	tiddlrx	tidmdtx	tidprefi	tidsrxqc
tadzmag	tiddmst	tidmsset	tidprefn	tidsrxqd
tadzob	tidellab	tidmdtx	tidprefs	tidsrxqe
tadzobob			tidrlatt	tidsrxqs
	tidfext	tidoptnc	tidrlmst	tidsrxrd
tidaltyp		tidoptnc		tidsrxrs
tidapamg	tidhelpt		tidsecev	tidstiky
		tidpkeys	tidsecpx	tidsym
tidcvval	tidjcl	tidppapp	tidfilt	tidsymx
tidcvval	tidjeamp	tidppkey	tidsrxob	
		tidppmnu	tidsrxoc	tidtngif

3.2 PEOPLESOFT OBJECTS

PeopleSoft provides the use of projects to migrate modified objects from one region/database to another. Objects are modified in the Development Region/Development Database and migrated to the Acceptance Region/Test Database for acceptance testing. The objects that can be included in the project are records, panels, panel groups, menus, and fields.

3.2.1 STRUCTURED QUERY REPORTS (SQR)

SQR reports will be created/modified in a development directory. Once the development is complete and the reports have been tested, they will be copied from the development directory into the acceptance-testing directory. When successful testing is complete, the reports will be copied into a production directory.

4 MIGRATION PROCESS

As a general rule, in a baseline environment, there will only be one copy of any object in the Development Region/Development Database at a time. Further, the object will be the same as the one in the Production Region/Production Database. When standard maintenance or emergency maintenance corrections are being introduced the development copy will not be the same as the production copy. This could also be true if tailoring has been applied in the Development Region/Development Database. Thus it is important to understand all objects in the Development Region/Development Database and to clearly identify which will be migrated to the Acceptance Region/Test Database. The best way to manage this migration process is to develop migration lists for PP and through the use of projects for PS. *Reference APPENDIX C, PassPort Maintenance Release and Product Fix Migration Path, APPENDIX E PeopleSoft Financials Region Management, and HNF-2639, Release and Upgrade Procedure.*

A migration list/project is the package of objects that will be included in the next production release. Migrating from the Development Region/Development Database to Acceptance Region/Test Database 'tests' the migration list/project. End user testing in the Acceptance Region/Test Database will discover whether all objects have been migrated and that the correct version has been migrated. If errors are discovered, the migration list/project can be updated. This becomes especially important when there are multiple copies of a single object in Development (as in custom development in conjunction with maintenance releases) and when production release schedules are staggered (different versions of applications not all in the same release). Another thing to keep in mind is to manage the size of migration lists (production releases). The more objects being migrated the more planning is required with tighter control over the migration process.

4.1 DEVELOPMENT TO ACCEPTANCE REGION/TEST DATABASE

The migration and configuration of the previously mentioned system objects to implement software release in the Acceptance Region/Test Database will require the following:

- Definition of Scope - The scope of each software milestone will be determined based on the project plan, maintenance release schedule, or emergency correction requirements. Details of the milestone (i.e. migration inventory) are to be worked out just prior to migration.
- Establish Migration Timeframe – LMSI technical support team will establish the date and time on which each migration will be started. The migration inventory is typically developed just prior to the start of a migration. This is to prevent contamination of the migration inventory when migration objects are being modified in the Development Region/Development Database. Careful timing and management is essential. Careless management of migration lists from Development can result in broken or obsolete releases.
- Develop Migration List/Project List - When system changes are migrated from the Development Region/Development Database to the Acceptance Region/Test Database, the migration team needs to develop a complete migration/project list of all components that are included in the software milestone. The list will be developed using the following methodology.

Identify the functional panels that will be included in the migration. The scope of the software milestone controls the candidates for inclusion on the migration list. The migration list should be comprehensive and include foreign key, more detail, prompt, and search panels that are accessed by the functional panels.

Using the comprehensive panel list, the migration team can determine COBOL source modules, COBOL copybooks and database objects included in the software deliverable.

Using the comprehensive panel list, the migration team can determine the necessary HELP facilities, Script libraries, Data Dictionary, application and system data to support the software milestone.

- **Define Detailed Migration Plan**

Using the migration list, a detailed migration plan will be developed to identify critical path items. The detailed plan will include the following:

1. Specific steps for migration (table gens, program compiles, etc.).
2. Identification of COBOL source module and copybook code that was modified since the last milestone.
3. Identification of all existing table and data conversion to be completed.

The LMSI technical support team is responsible for conducting the migration.

4.2 ACCEPTANCE TO PRODUCTION OR TRAINING REGIONS (PassPort & PeopleSoft Financials)

Database Administrator is responsible for all steps of migration from Acceptance to Training and Acceptance to Production. The timing of the migration is a function of the overall project, maintenance release, or emergency release schedule. The migration list should have been 'tested' using it to move the production release from Development to Acceptance. Successful end user testing is a prerequisite to migration from Acceptance to either Training or Production. The Migration to Production must also be coordinated with the Business Owners to assure that the business impact of the changes have been evaluated and prepared for.

4.3 ACCEPTANCE TO TEST OR PRODUCTION DATABASES (PeopleSoft Human Resources)

The Database Administrator is responsible for migration from the development database to the test database and finally into production. The same implementation instructions will be used for migration from development to test and test to production. Successful development testing is a prerequisite for migration from the development database to the test database. Successful end user testing is a prerequisite for migration from the test database to the production database.

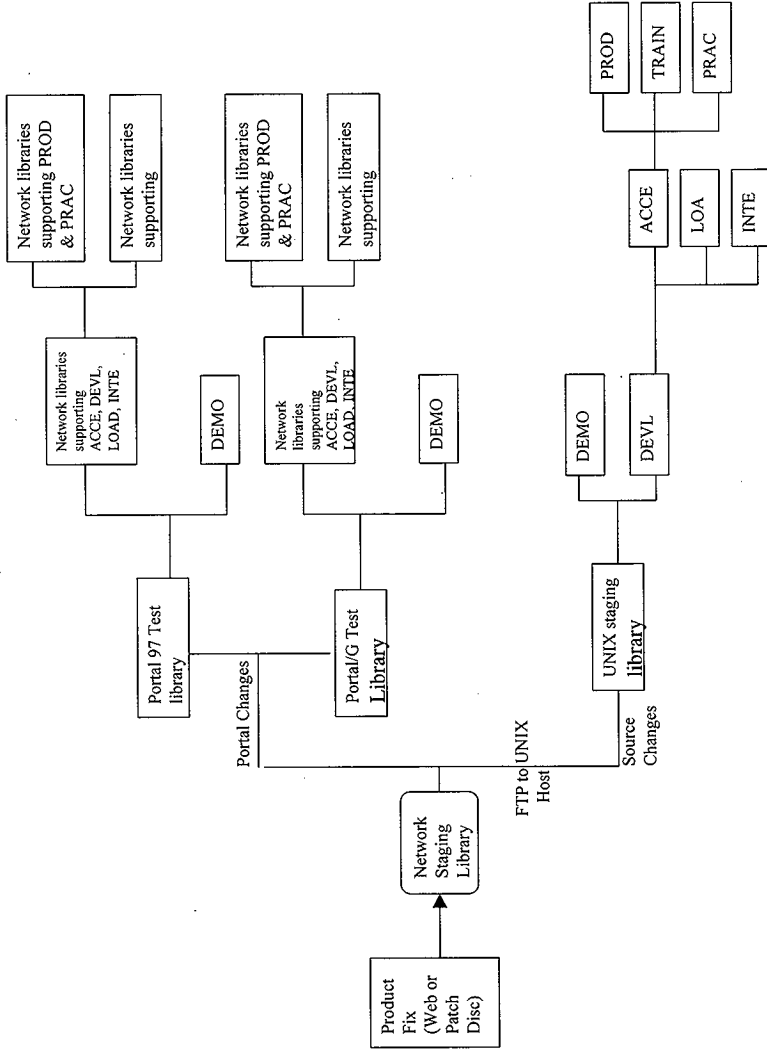
5 APPENDIX A REGION MANAGEMENT PLAN CHECKLIST

Region	Preliminary Need Date	Refined Need Date	Duration (if not permanent)	Apply Security (y/n)	Data Load Volume	Responsible	Comments
Demo							
Development							
Acceptance							
Production							
Training							
Practice							
Migration							
Dataload							
Audit							

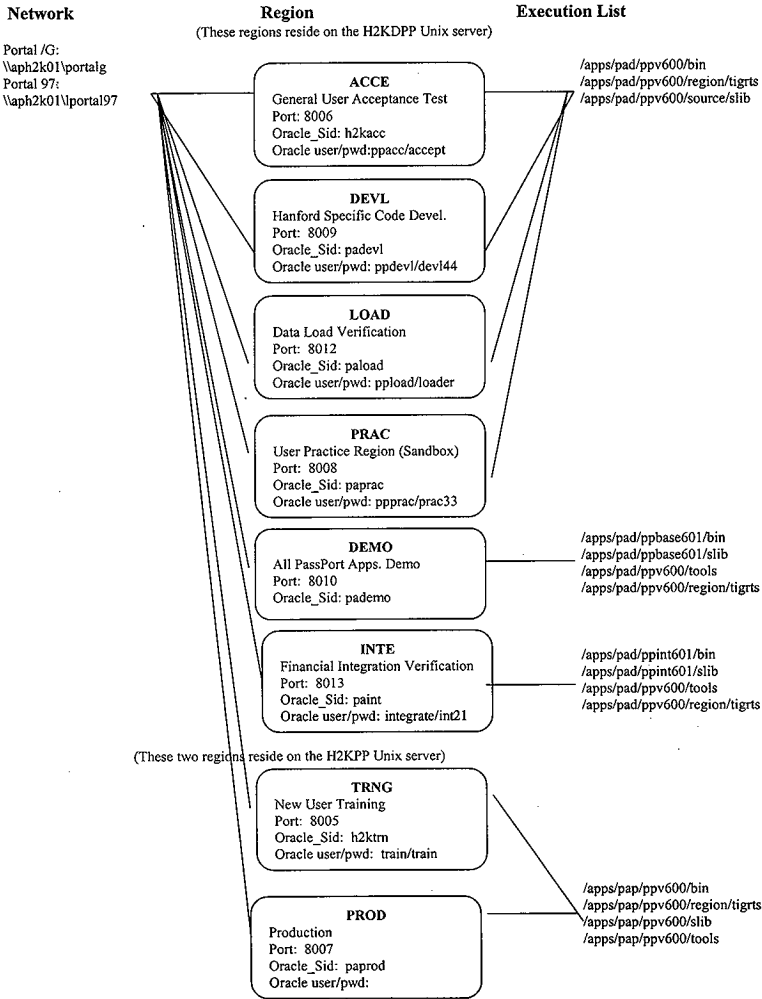
6 APPENDIX B DATABASE MANAGEMENT PLAN CHECKLIST

Database	Preliminary Need Date	Refined Need Date	Duration (if not permanent)	Apply Security (y/n)	Data Load Volume	Responsible	Comments
Demo							
Development							
Test							
Production							
AUDB							

7 APPENDIX C PASSPORT MAINTENANCE & PRODUCT FIX MIGRATION



8 APPENDIX D PASSPORT SERVER CONFIGURATION DIAGRAM



9 APPENDIX E PEOPLESOFT FINANCE REGION MANAGEMENT

