INSTALLATION AND CONVERSION PLAN

Integrated Procurement System (Case Study)

U.S. Election Commission

INSTALLATION AND CONVERSION PLAN

TABLE OF CONTENTS

Page #

1.0 INSTALLATION OVERVIEW

The IPS development team and the Office of Information Technology's (OIT) Test Center (TC) and Computer Services Group (CSG) will jointly execute the system installation and conversion process. This process will comprise the migration of Cold Fusion and HTML files, stored procedures and utilities onto the production environment. This process is divided into web-server file installation, database server installation and database structure modification or data conversion. The production environment consists of Microsoft NT web and database servers located at both USEC headquarters and at OPC's 25 Field Office locations. CSG is responsible for installing all new or modified files onto the web server and is also tasked with performing all back-end modifications including database structure changes and data conversion.

Data Conversion:

IPS will convert data from the existing procurement processing system. Data conversion will be accomplished using the following approach:

?? A data conversion plan will be developed during the Design phase of the project

?? Data conversion code will be written during the project's Build phase

?? A data conversion test will be conducted during the project's Build phase using a copy of the existing database. The purpose of this test is to verify that data conversion process works and as well as assess the length of time needed to accomplish a full data conversion cycle.

?? The IPS development team will run full conversion of the entire dataset during the weekend prior to deployment.

Installation:

The IPS development team will conduct Integration Testing. At the conclusion of integration testing a code audit will be performed to verify that all required code for the release is in the promotion group titled 'Integration Test' and that this group is located in the appropriate folder of the Polytron Version Control System (PVCS) Version Manager software. The IPS team will then promote all of the code to the 'User Acceptance Test' promotion group and migrate the files to a designated Release Database in PVCS Version Manager. At that point, the TC will then be provided access to the files in the database in order to perform release tests of the software. Upon the successful completion of the test, the IPS development team will then promote the code to the 'Product' promotion group.

Subsequently, the Computer Systems Group (CSG) will begin the process of migrating code from the Release Database and installing the files on the production web server. At that point, CSG will retrieve all new and modified files from each subsystem's Web Server, Web Server/Help, and Web Server/Images folders in the Release Database and creates a copy in a local directory. The files will be migrated to the appropriate folders on the production web server using the FTP Workstation application. The IPS development team will perform all required database structure changes and data conversion activities after CSG has completed installing the web server files.

2.0 SECURITY CONSIDERATIONS

There are two types of users that have access to the production environment during the process of system installation and conversion. Each user has separate access rights to the environment, and these rights are assigned according to installation responsibilities. The following table details the role, role description, and access rights for the different users authorized to perform system installation and conversion procedures:

Role	Role Description	Access Rights
System Administrator	The System Administrator is a position within OIT responsible for migrating all Cold Fusion and HTML files from the Release Database in PVCS Version Manager to the production web server.	?? Access rights to the Release Database ?? Access rights to the production web server.
Database Administrator (DBA)	The DBA is a position within the IPS development team that is responsible for performing all database structure modifications, data conversion procedures, and executing all stored procedures on the production database.	?? Access rights to the Release Database ?? Create/Read/Update/Delete rights on the production database and database server.

The following is a brief description of the security considerations that are associated with executing the IPS installation and conversion procedures:

1. **Public Access via Internet.** The Procurement Administrator will use a desktop PC equipped with web browser software (Netscape or MS Internet Explorer) to access IPS through Secure Systems. Secure Systems is the front-end security system that allows access of USEC's trusted business partners to USEC's systems through the Internet.

2. **USEC Access via USEC's Intranet.** Headquarters and field office users will use their desktop PCs to access IPS via the USEC LAN/WAN environment mainly for requisition submission and reporting.

3. **Row Matrix.** Data Access will be controlled by the Secure Connect (Netscape Enterprise Web Server) security using roles. User roles are defined as a set of privileges associated with specific functions or tasks that an individual may perform. Roles will be assigned to each authorized person to permit that person to perform specific tasks.

4. **SQL Database Server.** The database server will require appropriate security controls to ensure adequate protection of the functions and associated data.

5. **Encryption/Digital Signature.** Encryption for the system includes the following user groups:
   USEC Users: USEC users are mainly HQ staff that are able to access the system using respective authorized login ID's. This requires encryption of passwords and user ID's. The passwords are alphanumeric, 6-character, and have a letter prefix (C-contractor, E-USEC Staff)
   Business Partners/Contractors: USEC business partners are external users who are to access the system through the Internet. This requires encryption of passwords and User ID's. User ID's and passwords for these users are controlled through Secure Systems security.

6. **Headquarters LAN/WAN/Firewall System**. A security plan for the LAN/WAN/Firewall System is to be prepared (by the infrastructure group) external to this plan and should address the Secure-Connect.

3.0 SYSTEM INSTALLATION STRATEGY

The IPS development team and OIT's CSG will work jointly to perform the installation tasks required to release the new software into production. IPS is a web-based application and as such will be installed on web-servers. The database structures will be pre-located on database servers prior to installation of the software application. The integration of IPS with the Department's central accounting system will be accomplished by synchronizing the IPS database with the accounting system's database. The IPS production files will be copied into the database servers. Prior to conducting the installation, the Project Sponsor will issue a notice to all users informing them of plans to switch systems, installation schedule and anticipated periods of availability.

3.1 Conduct System Release Testing

Prior to installation, IPS will undergo release testing procedures conducted by TC. The TC testing specialist (TS) will conduct release testing using the following process:

- Verify that all requirements listed in the USEC Release Test Checklist are met.
- Review and evaluation of the installation instructions and batch files for errors.
- The TS must verify that the application file changes will not conflict with other programs or files that are already installed and using these files.
- Check the directory structure of files being installed in the USECWare environments. Make sure all file structures are USECWare Standard.
- Verify connectivity to production and/or test server.
- Set up the test environment.
- Enter release data and comments into the TC Release Form.
- Install the release in accordance with the installation instructions.
- Record all problems in the TC Release Form. Contact and work with the IPS development team to resolve all problems in the software and the installation instructions.
- Retest the release completely after the developing organization makes corrections.
- Determine the release status as 'completed', 'pending' or 'returned-to-developer'. If the TC is not equipped to test a release, the TS will make a recommendation to the TC Manager to waive the release.
- Concur on the Application Release Request Form.. Enter all release comments in the TC Release Form.

?? Place all installation files in a directory on the TCARCHIVE server in the directory path \\TCARCHIVE\USERS1\pbd*appname**. *

3.2 Conduct Web-based Release Testing

IPS will undergo Internet and intranet testing procedures conducted by TC with internet tests conducted outside of the USEC firewall using an Internet Service Provider. The TC testing specialist (TS) will conduct release testing using the following process:

?? No application or HTML document will crash browsers with predominant market share (e.g., Netscape or MS Explorer) or any USEC server.

?? No broken or dead-end links – every link must work and there must be a return, cancel or exit from each link. If a link is included on the page but not currently active, there must be a pop-up message notifying the user that the link is unavailable or under construction.

?? Links to external sites must include the standard Internet or USECweb disclaimer as appropriate.

?? All file names should be lowercase (special characters, punctuation, or symbols should be avoided).

?? Clean directories – no duplicate files, no *.old files, etc. in the production directories.

?? Internet applications will have no unsupported plug-ins. A list of the supported plug-ins can be obtained from the Internet Group.

?? Directory structure for applications should mimic the current program office directory or local office directory structure.

?? All Internet applications must be moved to an approved Internet test server in the USEC environment before testing can begin. Upon successful completion of a test, the release is then moved to USEC's production server and the Test Center confirms that the application now points to the proper production Uniform Resource Locator (URL).

?? Verify the function of radio buttons, pop-up menus, pull-down menus, etc.

3.2.1 System Release Criteria

Upon completion of release testing, the TS will assign one of the following determinations:

?? IPS Application Release Request Form will be marked as "Completed", "Waived" or

?? TC Release Form will be marked "Returned-To-Developer".

3.3 Install System on Production Servers

The new system will be installed over one weekend. The following list describes the key installation tasks that will be performed.

- ?? Take current IPS offline
- ?? Run conversion routine
- ?? Perform preliminary test of new system
- ?? Execute production tests
- ?? Execute installation programs

3.4 Administer IPS Training

IPS training will be administered in two phases. First, training will be provided to designated IPS subject matter experts one month prior to system deployment. A second phase of 1-day user training will be provided in conjunction with the deployment of the system over the course of 2 weeks to users both at HQ and at OPC's 25 Field Locations. An IPS User Guide will be distributed and Customer Support hotline instituted to augment training efforts.

4.0 CONVERSION STRATEGY

The IPS development team is responsible for all procedures associated with converting existing automated and manual files and ensuring the correctness of OPC's data after conversion for the release. The following sections detail the tasks the team performs in the data conversion process.

4.1 Database backup (pre-deployment)

Before initiating any database modifications or data conversion procedures, the IPS team will create a backup of the production database. This backup will be reinserted into the production environment in the event of failure due to database corruption, or the inability to complete all required conversion procedures.

4.2 Database Modifications

After the database backup is created, the IPS development team will initiate the process of modifying the database. In this process, the team performs all required database structure modifications as specified in each subsystem's release documentation.

4.3 Data Conversion

Upon the completion of the database structure changes, the IPS development team will begin the data conversion process. During this process, the team retrieves the files located in each subsystem's Utilities folder in the Release Database and executes the utility as specified in the release documentation. The IPS development team also retrieves the files in each subsystem's Server folder in the Release Database and loads the designated stored procedures onto the production database. A validation is then performed to ensure that the data conversion process was successful and met expected results.

4.4 Database back-up (post-deployment)

Upon the successful completion and validation of all conversion procedures, IPS development team will create a back-up of the modified production database. This copy ensures that the changes made to the database will be maintained in the event of failure.

5.0 INSTALLATION AND CONVERSION SCHEDULE

The following table provides a high-level schedule for the installation and conversion procedures performed by OIT as part of the IPS release:

RELEASE DEPLOYMENT SCHEDULE		
RELEASE ACTIVITIES	**SCHEDULED DATE**	**SITES**
Deploy pilot to selected HQ and Field Offices	02/08/02 – 02/08/02	HQ, Georgia State Office, Florida State Office, North Carolina State Office
Convert data at pilot sites	02/08/02 – 02/15/02	HQ, Georgia State Office, Florida State Office, North Carolina State Office
Configure/install at production sites	02/22/02 – 02/28/02	HQ and all remote locations
Lock database IDs	02/22/02 – 02/28/02	HQ and all remote locations
Back-up database before deployment	02/22/02 – 02/28/02	HQ and all remote locations
Migrate Software	02/22/02 – 02/28/02	HQ and all remote locations
Perform subsystem deployment	02/22/02 – 02/28/02	HQ and all remote locations
Database updates	02/22/02 – 02/28/02	HQ and all remote locations
Back-up database after deployment	02/22/02 – 02/28/02	HQ and all remote locations
Unlock database IDs	02/22/02 – 02/28/02	HQ and all remote locations
Convert data at production sites	02/22/02 – 02/28/02	HQ and all remote locations
Document and Deploy System	02/22/02 – 02/28/02	HQ and all remote locations
Distribute IPS User's Guide	02/22/02 – 02/28/02	HQ and all remote locations
Distribute IPS Training Manual	02/01/02 – 02/15/02	HQ and all remote locations
Administer Training	02/15/02 – 02/28/02	HQ and all remote locations

6.0 ROLES AND RESPONSIBILITIES

6.1 Organizations and Roles

The IPS Development Team, the Computer Services Group, and the Internet Service Group are responsible for performing all web server installation and database conversion for the release. The USEC Test Center will conduct integration/release testing activities. Their respective organization roles and responsibilities are as follows:

The IPS Development Team and CSG: The IPS Development team and CSG are jointly responsible for ensuring that all required code is located in the Release Database in the PVCS Version Manager. In addition, the team is tasked with performing all database structure changes, executing all required data conversion procedures, and loading all stored procedures from the Release Database onto the production database.

CSG: CSG is responsible for migrating all Cold Fusion and HTML files from the Release Database to the appropriate directories on the production web server.

USEC Test Center (TC): Interfaces with the IPS Development team to conduct integrating or release tests on the pre-production IPS software. The TC will provide feedback to the IPS development staff with regard to the outcome of these tests. This feedback will determine the IPS deployment schedule.

6.2 Personnel Requirements

The following table details the personnel required from each organization in order to support the installation and conversion procedures for the release:

Organization	Skill Category Required	Staff Hours
IPS Development Team	?? Project Leader (1) ?? Sr. Systems Analyst (1) ?? Sr. Programmer Analysts (2) ?? Configuration Manager (1) ?? Technical Writer (1)	100
CSG	?? DBA (1) ?? DBA support (2)	40
Internet Service Group	?? Web Master (1) ?? System Administrator (1)	40

6.3 Training

The training requirements associated with the IPS installation and conversion will focus on orienting the team members from each organization on IPS internal and external installation conversion procedures as well as the appropriate USEC standards. This training will comprise primarily "hands on" training covering each team member's role and responsibilities as they pertain to the execution of the installation and conversion procedures. In addition each team member will be provided with access to the relevant standards and procedures documentation.

7.0 MASTER INVENTORY REQUIRED FOR INSTALLATION AND CONVERSION

7.1 Software

The following table provides a list all items (including software, support software, hardware, and other tools) that will be required for IPS system installation.

Required Computing Resources	Basis
MS Office for Windows 95	Each team member
MS Project 2000	Task Leader
ColdFusion	Team Leader, developers (4 Licenses)
Lotus Notes client	Each team member
PowerDesign	Team Leader, developers
PVCS v. 6.0.00 Build 10b	Configuration Manager
RoboHelp 7.0	Technical Writers
Rational Test w/ Robot	Developers
Access to SQL Server 6.5 (web and database servers at HQ)	System Administrator, Web Master

7.2 Support Software

The following table details the software required to support the installation and conversion of the release:

Application	Description
PVCS Version Manager	Software version control application
SQL-Programmer	Interface to the Sybase database
SQL-Advantage	Interface to the Sybase database
WS-FTP	Program to upload new software to environment

7.3 Site Support Facilities

The IPS Development team, CSG and ISG Data will perform all conversion and production installation procedures at the USEC Computer Center located at 451 7th Street, NW, Washington, DC. This facility supports all of the physical security, access control, climate control, and power conditioning requirements needed to execute the conversion procedures. All production support for the release will be maintained at the main USEC building located at 1072 L Street, NW, Washington, DC.

7.4 Site Training

Because IPS is web-based application, the Systems Engineering Group (SEG) will be responsible for conducting the special training required to install and convert the system at the installation site and as such will define the site training requirements.

7.5 Site Implementation Team

SEG will be responsible for managing the installation site implementation team and as such will define the composition and skill requirements of this team. The IPS development team will complement and support the SEG implementation team during installation activities. The IPS site implementation DBA and DBA support personnel will perform all database structure changes, execute all required conversion procedures and load all stored data onto the production database.