



# May Interface Meeting

May 12, 2015



# Welcome & Introductions

- Cardinal Presenters
  - Lance Kaeberle
  - Kim White
  - Sudhindra Satya
  - Maggie Rice
  - Joe McGrath
  
- Introduce Application Lead Replacement
  - Nathalie Baroux



# Agenda

- Update / Current Status
- Timeline and Agency Tasks
- Cardinal Test Phase
- Interface Test Prep
  - Test Conditions
  - Task #41 – Review Test Scenarios/Conditions for Interface Testing
- Connectivity Testing
  - Interface Architecture
  - Task #47 – Submit Interface Account Request
  - Task #88 – Perform Connectivity Test
- Interface Testing
  - Interface Test Execution Process
  - Task #55 – Send/Receive Test Interface Files and Validate Data
- Sensitive Data



# Update/Current Status

- Complete: Updated the following interfaces since the February Monthly Interface Meeting (2/25). New documentation has been posted to the Cardinal Website, and a detailed list of the updates was communicated to agencies by email on 3/4, 3/16, and 4/20 with the subject line “Updates to Cardinal Interface Documentation”
  - GL.600 – Journal Upload
  - GL.595 – Journal Extract
  - AP.705 – Payment Recon Extract
  - AP.964 – Voucher Upload
  - AP.965 – Voucher Extract
  - AP.967 – Cash Advance Upload
  - AP.969 – Cash Advance Extract
  - AP.968 – Expense Report Upload
  - AP.970 – Expense Report Extract
  - AR.730 – Funds Receipt Extract
- Complete: Posted AP.1048 Employee Profile Upload Functional Design and File Layout to the Cardinal Website



# Update/Current Status

- In Progress: Discussing the capture of additional SWAM related data in Cardinal from the Department of Small Business and Supplier Diversity (DSBSD) for Disabled Veteran and Microbusiness designations
- In Progress: Update to upload interface error reports:
  - Error reports produced nightly in Cardinal batch will be available to agencies in the Report Manager (accessible online in Cardinal) and the Cardinal Application File Server
  - Error reports run ad hoc online will only be available to agencies in the Report Manager (accessible online in Cardinal)
  - Error reports that contain errors will have the word “ERRORS” appended to the filename (e.g., 13600\_AP966\_042120150907\_001\_ERRORS.pdf)
  - Error reports without errors will follow the standard naming convention previously defined (e.g., 13600\_AP966\_042120150907\_001.pdf)



# Interface Timeline & Agency Tasks

Task	May				June					July				August				September				October				November			
	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16
Cardinal Build Phase	[Dark Blue Bar]																												
Cardinal Builds Interfaces	[Light Green Bar]																												
Agencies attend Monthly Interface Meetings	[Orange Dotted Bar]																												
Agencies design, build and unit test interfaces (Task #28C-F)	[Light Green Bar]																												
Task #89 Employee Profile Upload Selection and Data Mapping	[Light Green Bar]																												
Task #47 Submit Interface Account Request	[Light Green Bar]																												
Task #41 Review Test Scenarios/Conditions for Interface Testing	[Light Green Bar]																												
Cardinal Test Phase	[Dark Blue Bar]																												
Cardinal System Test	[Light Green Bar]																												
Task #88 Perform Connectivity Test	[Light Green Bar]																												
Task #55 Send/Receive Test Interface Files	[Light Green Bar]																												
Task #55 Validate Data in Cardinal	[Orange Dotted Bar]																												

**We are here** ↑

[Dark Blue Box]	Cardinal Phase
[Light Green Box]	Cardinal/Agency Tasks
[Orange Dotted Box]	Agency On Site

- Task #28A-E – Agency Design/Build/Unit Test/Update System
  - Checkpoint C: 5/13/15 – 5/20/15
  - Checkpoint D: 6/17/15 – 6/24/15
  - Checkpoint E: 7/31/15 – 8/07/15
- Task #89 – Employee Profile Upload Selection and Data Mapping: 5/6/15 – 5/20/15
- Task #47 – Submit Interface Account Request: 5/13/15 – 6/12/15
- Task #41 – Review Test Scenarios/Conditions for Interface Testing: 5/25/15 – 6/26/15
- Task #88 – Perform Connectivity Test: 6/22/15 – 7/24/15
- Task #55 – Send/Receive Test Interface Files and Validate Data: 8/17/15 – 11/20/15



# Cardinal Test Phase

Cardinal  
Testing

System Testing

Agency  
Testing

Interface  
Test Prep

Connectivity  
Testing

Interface  
Testing

Interface  
Validation

- **System Testing** – Cardinal team tests full system functionality using agency specified configuration, converted data, and mock interface files
- **Interface Test Prep** – Agencies prepare for Interface Testing by completing their interface design/build (Task #28) and defining test scenarios (Task #41)
- **Connectivity Testing** – Agencies perform connectivity test to verify connection to the Cardinal Test file server (Task #47 and Task #88)
- **Interface Testing** – Agencies/Cardinal test end-to-end functionality for all selected interfaces by exchanging files between Cardinal and the agency system (Task #55). Tests are performed based on the scenarios established in Task #41
- **Interface Validation** – Agencies attend facilitated on-site validation of upload agency interface data and sign off on results to certify test completion (Task #55)



# Interface Test Prep



# Test Conditions

- Test conditions define the scenarios to be tested during the execution of a business process within Cardinal
- Test conditions are specific to produce a single explicit expected result
- Input values are defined for each test condition to control the validation of the expected result
- A test condition may address multiple requirements



# Interface Test Condition Guidelines

- Interface Testing is not the same as Unit Testing. Unit Testing must be completed prior to 8/15 and tests every logic branch of an interface (e.g., required fields are populated, filename is in the correct format)
- Interface test conditions should test your agency's business processes from end to end
  - Revisit the Impacts discussed during Business Process Workshops for inspiration
  - Keep in mind that Cardinal does not know your business processes like you do
- Test conditions should not be written to test performance. Send as few transactions as possible to help facilitate validation.
- Consider error processing. Cardinal assumes you will be coding to prevent errors. However, think through error scenarios that may still occur.
- Test conditions will be tracked throughout Interface Testing to report progress and confirm completeness



# Task #41 – Condition Example

Task #41: Review Test Conditions / Scenarios					
#	Interface	Test Condition #	Cardinal Test Condition Description	Input Values	Expected Results
1	AP.964 - Voucher Upload	AP.2.B.197	The agency sends Cardinal a Voucher Upload file with vendor and voucher data.	<ul style="list-style-type: none"> <li>* A voucher that will be paid by EDI and includes a Customer Account Number</li> <li>* A voucher that will be paid by CHK and includes a Customer Account Number</li> <li>* Capital Outlay voucher OR Legal Services voucher</li> <li>* A voucher that contains One Time Vendor data</li> <li>* A voucher that has a vendor that has a debt and will be effected by CDS</li> <li>* Vouchers from multiple BU's for which you have authority to process AP transactions (i.e., petty cash BU, Treasury BU, Wire BU, multiple agencies, 01 BU)</li> <li>* A voucher that contains a NET30 Pay Term</li> <li>* A voucher that contains 00 Pay Term</li> <li>* A voucher that contains 00PP Pay Term</li> </ul>	Agency vouchers are processed and posted in Cardinal and are available for viewing in Cardinal using the online voucher pages.
2	AP.964 - Voucher Upload	AP.2.B.270 AP.2.B.222	Cardinal sends the agency a voucher upload error report displaying errors that occurred during the upload process.	* During Testing Cardinal team will create a duplicate file error by processing an agency file that has already been processed. The duplicate file will be rejected by Cardinal.	The agency will receive the error report. Any intentional errors, any accidental errors, and a duplicate file error will be included in the report along with accurate summary counts.



# Task #41 – Review Test Scenarios/ Conditions for Interface Testing

- **What:** Test conditions for each upload and extract will be drafted by the Cardinal team and sent to the agencies for review
- **Who:** This task should be submitted by the Primary Contact for each Wave 2 assembled interfacing agency
- **How:** Agencies will review the conditions, remove any that are not applicable, and add any that are missing
- The agreed upon test conditions will determine the scenarios to test during Cardinal interface testing, as well as drive the data provided to Cardinal in the upload files
- Cardinal cannot guarantee the testing of any conditions not included in the submitted task
- Completed spreadsheets will be emailed to the Cardinal Interfaces mailbox
- **When:** May 25 to June 26

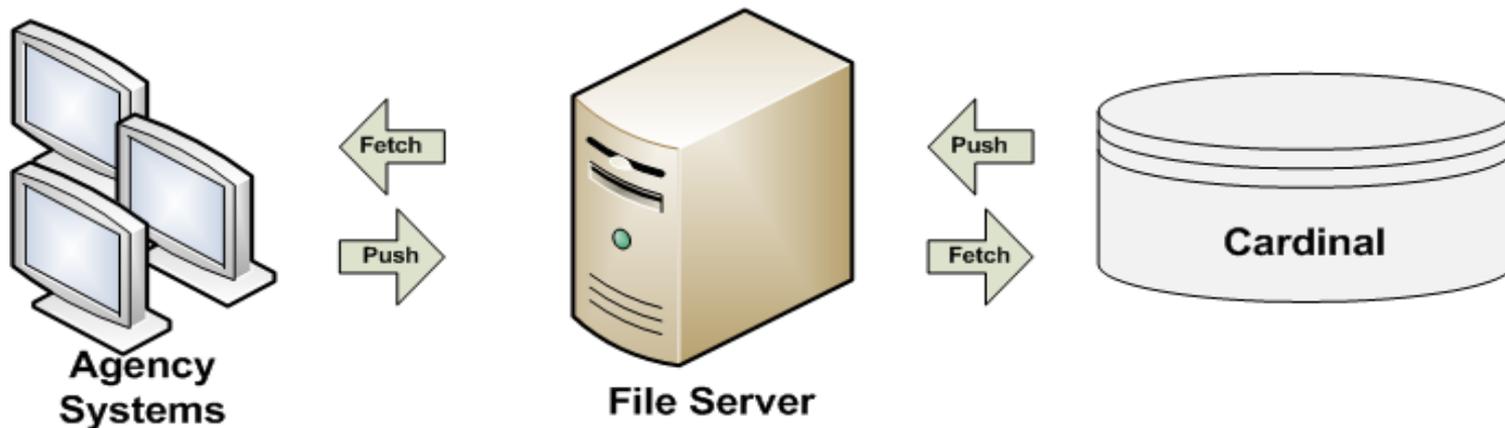


# Connectivity Testing



# Connectivity Testing: Interface Architecture

- A file server has been established for the transfer of files between agencies and Cardinal
- File server access will be given to the agencies residing on and outside of the State-provided network
- Secured file transfer protocols, **FTPS or SFTP**, must be used to exchange the interface files with Cardinal
- Agencies using SFTP protocol will have the ability to use SSH keys instead of a password in order to be authenticated by the Cardinal file server
- Agencies opting for FTPS connectivity should use **implicit mode** to communicate with Cardinal file server

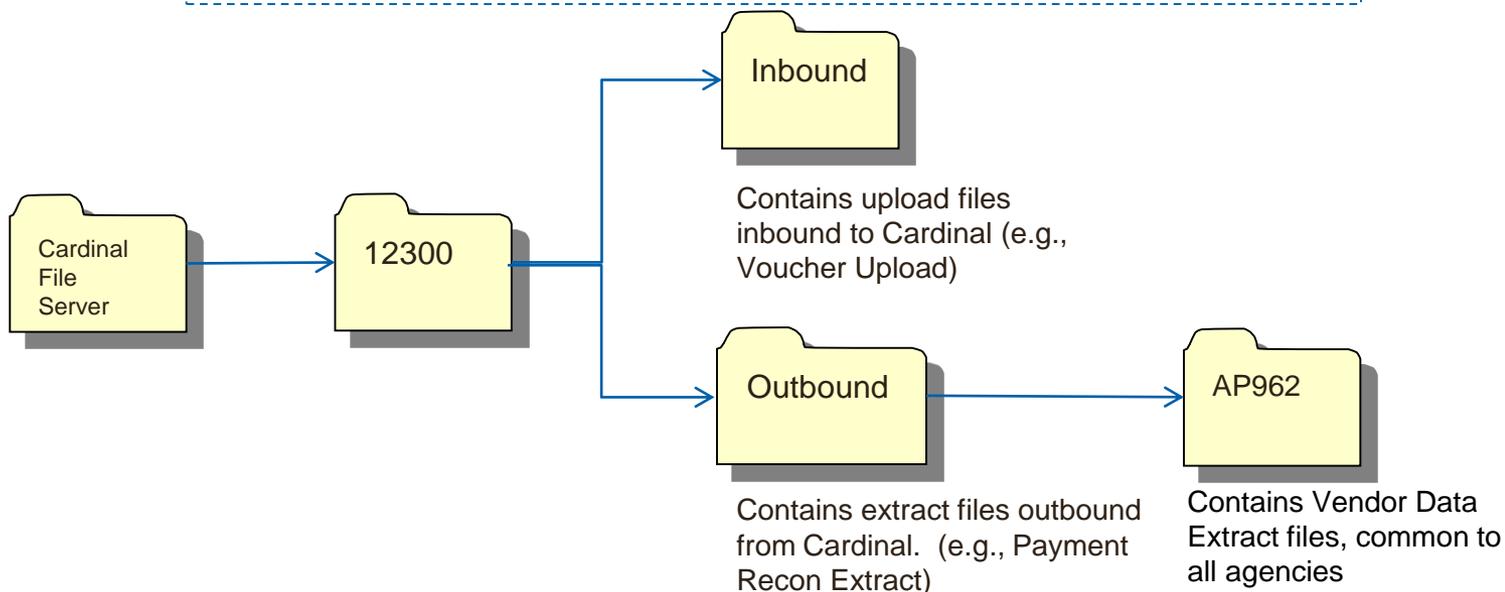




# Connectivity Testing: Directory Structure

- A folder will be created for each agency on the server, which will be set as the home/default directory for each agency
- Agencies will have appropriate permissions (read, write and delete) to the sub-directories under their home directory
  - Inbound Folder – read/write/delete
  - Outbound Folder – read/delete
- The Vendor Data Extract is not agency-specific. This directory is read only and will be available to each agency using the interface

Example for Sample Agency 123 where 12300 is the Agency Submitting Business Unit defined in Task #84





# Connectivity Testing: Interface File Delivery Standards

- Upload files should be in the agency inbound folder before the Cardinal batch processes begin at 6 p.m.
- Upload files will be removed from the file server once they are picked up by the batch process
- Extract files will be in the agency outbound folder after the Cardinal batch processes end, typically no later than 7 a.m.
- Extract files and Upload Error Reports will be available on the file server for 7 calendar days
- Cardinal archives all uploads and extracts in a compressed format
- Agencies needing to access archived files will submit a Cardinal help desk ticket to have the files retrieved



# Task #47 – Submit Interface Account Request

- **What:** Agencies will populate and submit the Interface Account Request Form to gain access to the Cardinal file server
- **Who:** The form requires a signature of approval from the agency's Fiscal Officer
- **How:** The information provided in the form will be used to create accounts on both Test and Production file servers
  - If the information changes prior to deployment on February 1, 2016, a new form will need to be submitted to the Cardinal team
- The Cardinal file server host name and port information will be provided in the Task #47 communication
  - Firewall rules may need to be updated for agencies connecting to the file server from a secured zone
  - Agencies are required to work with their network team to get the firewall rules updated
- **When:** May 13 to June 12



# Task #88 – Perform Connectivity Test

- **What:** Based on the Interface Account Request Form information, Cardinal will create user accounts and passwords
- **Who:** Cardinal team will communicate the credentials for the Test file server to the contact provided on the request form starting June 22
- **How:** Once connected, agencies will test the transmission of a mock “Upload” file and retrieval of a mock “Extract” file as defined in Task #88
- Connectivity test verifies the ability to connect to the server only, it does not include processing the test files in the Cardinal or agency system
- **When:** June 22 to July 24



# Interface Testing



# Interface Test Execution Process

1. The Cardinal Interface Team sends the Primary Contact, Technical/Interface Contact and appropriate SME an email when starting the testing of an upload interface
  - The email will reference the test conditions and input values agreed upon by the agency in Task #41
2. The agency transmits a **single** upload interface file to the Cardinal test server
  - The file should be created automatically from your system as it would be in Production
  - The Primary Contact replies to the email to let the Cardinal team know the file has been transferred
3. The file is processed in Cardinal, including the execution of any “downstream” processes (e.g., budget checking, posting, journal generation)
  - Actual results are verified against the expected results to identify issues by the Cardinal team



# Interface Test Execution Process – Continued

4. The results of the upload file processing are communicated by Cardinal to the agency via email tying back to scenarios established in Task #41
  - The related upload error report will be available in the agency's folder for retrieval following completion of Cardinal processing
  - If the error report contains unintentional errors, then the agency would need to transmit a new corrected file (repeat steps 2 – 4)
5. Cardinal will stage and process online transactions including the execution of any “downstream” processes (e.g., budget checking, posting, journal generation) to meet test scenarios that do not relate to data originating from the agency system
6. If selected, Cardinal will transmit the applicable extract files for agency testing tying back to the scenarios established in Task #41. For example, after processing a Voucher Upload file, the agency would receive a Voucher Extract and Payment Recon Extract, if applicable
  - The agency will be notified via email that the extract file(s) can be retrieved from the Cardinal test server



# Interface Test Execution Process – Continued

7. The agency replies to the email confirming the successful testing of the extract file(s) or communicating issues identified
  - The agency notifies Cardinal once the issue is resolved and ready to be re-tested (repeat steps 2 – 7)
8. If a defect is identified during Cardinal processing, the Cardinal team logs the issue
  - Once the issue is resolved and re-tested, Cardinal notifies the agency (repeat steps 2 – 7)
9. Agencies come on-site once to the Cardinal project to review and validate interfaced data in the Cardinal test environment
  - Agencies sign off on testing results. Additional details are included as part of Validation & Testing Process (Slide 24)
10. Execute steps 5 – 7 for any extracts not tied to a Cardinal upload (e.g., Actuals Extract, Vendor Data Extract, Journal Extract where Journal Upload was not selected)



# Interface Testing Sequence

- **Agencies must be ready to begin testing all selected interfaces with Cardinal by August 15, 2015**
- Cardinal plans to test the agency interfaces in the following order. It is recommended that agencies prioritize their interface design/build in a similar order in preparation for Cardinal Interface Testing (Agency Task #55)
  - Vendor Data Extract
  - Voucher Upload/Extract
  - Funds Receipt Upload/Extract
  - Employee Profile Upload
  - Expense Report Upload/Extract
  - Journal Upload/Extract
  - Cash Advance Upload/Extract
  - Payment Recon Extract
  - Chart of Accounts Extract
  - Actuals Ledger Extract
  - Budget Ledger Extract
  - 1099 Extract



# Validation & Testing Sign-off

- Uploads
  - Agencies come on-site to the Cardinal Project one time between 9/21 and 11/20 at a scheduled time to review interfaced data online in the Cardinal test environment
  - Primary Contact, Technical/Interface Contact, and applicable SMEs will attend the session
  - Sessions will be facilitated by the Cardinal Interface Team. A Cardinal team member will assist the agency user in navigating the system to view their transactions
  - After reviewing the data online, the Primary Contact signs-off on the testing to confirm that their agency data is represented correctly in Cardinal
- Extracts
  - Primary Contacts will sign-off on extracts, which can be completed off-site and does not require on-site validation



# Task #55 – Send / Receive Test Interface Files and Validate Data

- **What:** This task will be completed in order to test the agency interfaces with Cardinal. The task includes the transmission and processing of the Cardinal interface files, as well as the validation of interfaced data
- **Who:** This task should be submitted by the Primary Contact for each Wave 2 assembled interfacing agency
- **How:** Agencies will follow the steps outlined on the Test Execution Process and Validation slides
- **When:** The task begins on August 17 and must be completed by November 20



# Sensitive Data

- Cardinal defines the following data elements as “sensitive data”: bank account numbers and vendor TIN (EIN/SSN)
- Vendor TIN will be actual values and should NOT be included in any email correspondence, screenshots, or execution results
- Vendor Data Extracts and Voucher Uploads with one time vendors and any Voucher Upload Error Reports with a One Time Vendor error will contain TIN and are only exchanged using the file server
- Bank account numbers will be scrambled in the test environment
- **Each agency is responsible for following the Commonwealth’s Information Security Standard (ITRM Standard SEC501) regarding the handling of sensitive data**



# Future Interface Meetings

- There will not be a June or July Interface Meeting
  - Please reach out to the Cardinal Interface Team if you have questions during your design/build or test condition writing
  - For more complex topics or to address multiple questions, Cardinal recommends a phone call or an on-site meeting rather than e-mail
  - Cardinal encourages agencies to sign up for office hours. Office hours will be optional, either in person or via teleconference, and an open forum to discuss any questions or concerns an agency may have
- The next Interface Meeting will be in August where Interface Testing will be covered in greater detail



# Contact Information

Your agency is encouraged to visit the Cardinal website for additional information about the project. The website can be found at: <http://www.cardinalproject.virginia.gov>

Please e-mail any general Cardinal project questions you have to the following e-mail address:  
[ProjectCardinal@doa.virginia.gov](mailto:ProjectCardinal@doa.virginia.gov)

Please e-mail any Interface questions you have to the following e-mail address:  
[Cardinal.Interfaces@doa.virginia.gov](mailto:Cardinal.Interfaces@doa.virginia.gov)