2010

Prepared for DOD
Purchase Card Program
Management Office

July 2010

Department of Defense Purchase Card Data Study

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1.0 OVERVIEW

This document describes the flow, transmission, and storage of Department of Defense (DOD) Purchase Card data. It includes recommendations for optimizing data usage by streamlining data exchange and eliminating redundant or unused data.

The document is based on information collected in early 2009 and reflects the state of the program at that time.

In addition to recommending actions to increase Purchase Card data efficiency, the document is intended to provide an overview of the overall Purchase Card data ecosystem. The broad overview will enable stakeholders who work in one area to have visibility into other parts of the process. The end users of the document include people within the Purchase Card authorization and usage hierarchy (cardholders, supervisors, approving officials) as well as support organizations (translation, routing, storage, analysis, and data mining).

Actions anticipated from review of the document include concurrence or correction of documented processes by the responsible stakeholder community. As the Purchase Card system evolves, this document will be updated periodically.

1.1 Document Overview

This document follows the functional flow of Purchase Card event lifecycle from the request and issuance of the card through use to post-use analysis. In each functional section, the data flow is described. References to data element layout structures are frequently required. The referenced structures are included as appendices to this document.

Each functional area also includes discussion of the use and retention of data. In some areas, recommendations are included. The recommendations within the document are numbered. A synopsis table of recommendations and related rationale is included in the Conclusion (see Paragraph 3.0).

1.2 Document Scope

This document reviews the Purchase Card data that is accessible to and addressable by the DOD Purchase Card Program Management Office (PC PMO). The final management plan will address Purchase Card data that resides in the clearinghouse or card processing environments.

The document is focused on the processing and data flows of the Purchase Card SmartPay2 (SP2) providers, users, and data consumers. Although separate from SP2 with different requirements and processing approaches, the Air Force and Navy Non-Appropriated Funds (NAF) processing is addressed in the document where appropriate. Army NAF processing will follow SP2 rules.

2.0 PURCHASE CARD DATA FLOW

2.1 Card Request and Issue Process Overview

DOD Purchase Cards are requested, authorized, managed, and evaluated via the Purchase Card On-Line System (PCOLS) suite of tools. The Authorization, Issuance, and Maintenance (AIM) application is a workflow tool that draws from hierarchies recorded in the Enterprise Monitoring and Management of Accounts (EMMA). EMMA is a web application that allows users to be provisioned for other applications. As part of the provisioning process, users can create and manage organizations and roles as well as assign users to the roles.[1] EMMA will be used to authorize users in AIM and for the Purchase Card Data Mining and Risk Assessment access. AIM and EMMA are developed, hosted, and operated by the Defense Manpower Data Center (DMDC). Data Mining and Risk Assessment are third-party hosted applications that are part of the PCOLS suite of tools. Together, AIM, EMMA, Data Mining, and Risk Assessment comprise the PCOLS application suite.

AIM functions as the gateway to the banks systems. Together AIM and EMMA support a dual hierarchy, one that establishes "acquisition" authority, and one that establishes the funding/command authority hierarchy. The acquisition hierarchy for AOPCs is established in EMMA. The acquisition hierarchy may be created interactively within EMMA or via a bulk load process. For the bulk load process to be used, the acquisition and funding hierarchy must be the same. When the hierarchies are different, the interactive process must be used and the hierarchies are linked at the managing account level. The hierarchies, are augmented by additional information such as cardholder supervisor, and then recorded in AIM. A specific hierarchy is selected and a cardholder account request is transmitted to the bank. Card issuance or maintenance requests are processed through AIM and transmitted to the bank for implementation. Some of this data (e.g., card status and card life-cycle information) will flow back to DOD in the files that document card usage.

The hierarchy data is also transmitted daily by DMDC to the Data Mining/Risk Assessment third-party contractor for use in review of purchase transactions. Additional information such as card usage parameters and training records will be provided to the Data Mining application from AIM in the future. To enhance hierarchy management the Joint Organizational Query (JOQ) is under development. JOQ is a system that will support the business processes of the Department of Defense (DoD) with the capability to capture and store the history of multiple organizations within a hierarchy. Initially, the only hierarchy captured in the JOQ system will be the Procurement Hierarchy consisting of individual organizations in a tree structure with information describing operational dates, parent relationships, aliases, and authority indicators. Future enhancements will include the development of the financial hierarchy.

2.1.1 Request and Issue Data Flow

Data is shared among the DMDC applications and transmitted to the bank and to the Data Mining application after appropriate approvals have been recorded. The complete hierarchy is transmitted

[1] "EMMA Application for PCOLS Users v. 2.0 User Manual", EMMA Application v2.0 User Manual – for PCOLS users v1.6.pdf, January 2010.

daily to the Data Mining provider. Figure 1 illustrates the high-level data flow of initial and updated account, organizational, and hierarchy data.

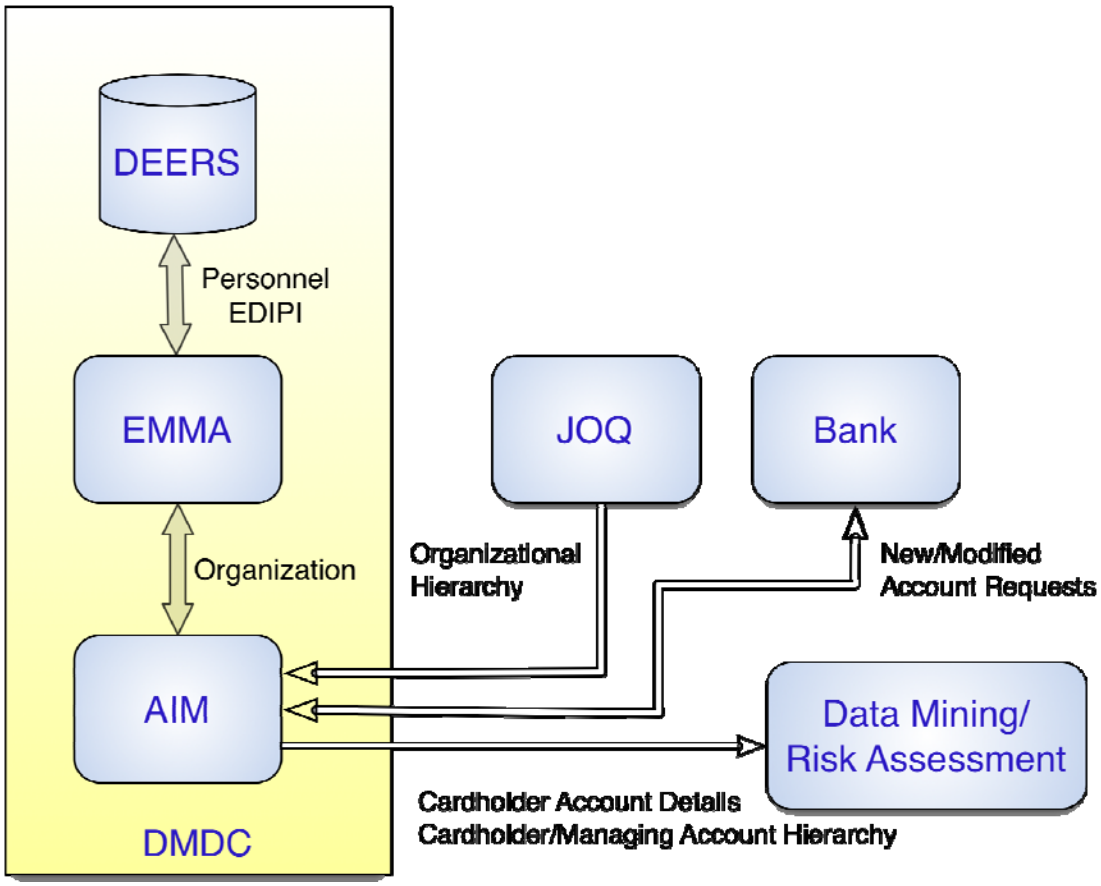


Figure 1: Card Request and Issue Data Flow

2.1.2 Request and Issue Data Capture and Retention

DMDC captures and tracks DOD personnel updates in DEERS, organizational relationships in EMMA, and manages workflow through AIM. The cardholder and managing account data is captured and retained within AIM. This data is forwarded to the banks which confirm receipt and account status. In parallel, this organizational hierarchy data is sent to and stored by the Data Mining application for use in assessment of appropriate checks and balances of card programs. The account hierarchy data that is provided to the Data Mining application is maintained in real time in the DMDC system; historical hierarchy information is not retained at DMDC, the Banks, or DM/RA provider. The collection of PCOLS applications retains current organizational state.

Account detail and hierarchy activation and maintenance can be performed in both the bank online system (Access Online for USBank and CitiDirect for CitiBank) and through AIM. According to the 19 November 2008 DOD Acquisition, Technology, and Logistics (AT&L) memo regarding PCOLS capability, no Purchase Cards will be issued except through the request generated by the AIM system. This single process thread will enable increased oversight and traceability of account

specifics and hierarchy and remove the potential for conflicting data to be received by the Data Mining application.

According to the SmartPay 2 Request for Proposal, the banks have the following data storage and retention requirements for hierarchy data:

- Upon request of the General Services Administration (GSA) Contracting Officer, the contractor shall provide a current, complete, and accurate master file of all program participants in a mutually agreeable format, within 30 calendar days of the request. Upon request of the Agency/Organization Program Coordinator (A/OPC), the contractor shall provide a current, complete, accurate master file of the requesting agency/organization level's participants in a mutually agreeable format, within 30 calendar days of the request.[2]

Recommendation :

As organizations deploy PCOLS, their ability to perform the same functionality directly through the bank should be disabled to preclude conflicting account information, omitted hierarchy data, and loose identity binding. Redundant manual entry of reporting hierarchy into the bank system and into AIM consumes time and inserts risk of errors. Functionality provided by the banks, such as Line of Accounting modification and validation, should be migrated to DOD systems over time to ensure control within the Department and reduce reliance on external systems.

This solution is a long-term recommendation pending maturity of the PCOLS system in processing speed, accounting data integration, and input success rate.

Rationale:

Once PCOLS is deployed to an organization, account setup and modification through the bank's direct input capability causes the potential for conflicting data to exist in the system. Because PCOLS contains additional data and provides Department control of the data, PCOLS should be the authoritative source of hierarchy data. Transitioning to PCOLS provides a gating opportunity to reconfirm the hierarchy and account detail currently established within the bank system.

While standard operating procedures should migrate to increased control by DOD systems and reduced reliance on bank systems, interaction directly with the Bank systems should be available to support contingency or emergency situations where timing or lack of connectivity prevent standard process.

2.2 Card Use Process Overview

After Purchase Card issue and activation, a cardholder may use the Purchase Card for Government-authorized purchases. At the point of sale, data is captured regarding the sale and transmitted among fiduciary stakeholders.

[2] SmartPay2 Request for Proposal, 28September 2006, Paragraph C.3.2.1.3 Master File

2.2.1 Card Use Data Flow

Figure 2 illustrates the flow of transaction data during a purchase using the Purchase Card. Data is transmitted, captured, and stored by each of these participants. The DOD's contractual and data visibility relationship is with the Purchase Card issuing banks: USBank (Air Force, Army, Defense Agencies), CitiBank (Department of Navy), and JPMorgan Chase (Air Force and Navy non-appropriated funds). Data retained by the credit card network (which includes processors such as Total Systems Service, Inc. [TSYS]) is available to DOD only via request to the issuing bank.

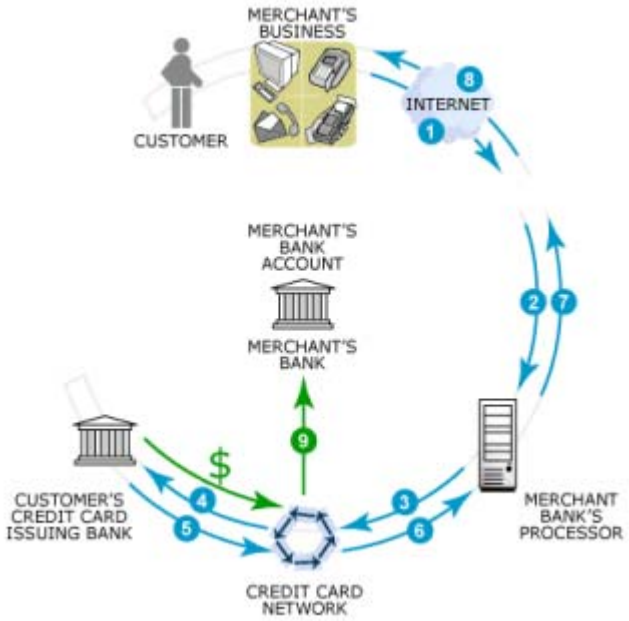


Figure 2. Purchase Card Use Data Flow

In Figure 2, the Acquirer is also called the "merchant bank." The issuing bank in the diagram is USBank, CitiBank, or JPMorgan Chase depending on the service affiliation of the cardholder.

2.2.2 Card Use Data Capture and Retention

USBank and CitiBank provide Purchase Card capability to DOD through Task Orders under the SmartPay2 contract awarded in June 2007 with transition to the new contract occurring in November of 2008. (Note: JPMorgan Chase is not under a DOD SmartPay2 Task Order and therefore does not have the following requirements.) The SmartPay 2 contract requires the issuing bank to retain data as follows.

Record Retention and Retrieval

- In addition to the record retention requirements of Federal Acquisition Regulation (FAR) 4.703, the Contractor shall be the Government's agent for document repository as it relates to all transactions under the card program(s). The Contractor shall maintain electronic records of all transactions that exceed $25,000 for a period of 6 years and 3 months after final payment, and for all transactions of less than $25,000, for a period of 3 years after final payment. Final payment is defined as the final payment for the particular charge under each agency's/organization's task order. The Contractor shall segregate this transaction information

(i.e., transactions exceeding $25,000 and less than $25,000). Upon written request of the GSA Contracting Officer, the ordering Contracting Officer, the A/OPC, or the Internal Revenue Service with A/OPC knowledge and approval, the Contractor shall provide the requested information in an electronic format within 30 calendar days, unless otherwise specified at no additional cost to the Government.
In addition, Contractors/banks shall provide online access to data for a minimum of 18 months after the transaction occurs.

It is not currently possible to identify from the Purchase Card data those transactions less than $25,000 that are applied as partial payments against contracts that exceed that threshold and require retention of the payment records for the longer 6-year, 3-month period. Similarly, a purchase exceeding $25,000 may have multiple shipments each resulting in a Purchase Card payment transaction which individually does not exceed the threshold, but which needs to be retained for 6 years, 3 months to comply with regulation.

2.2.2.1 Physical Records

Cardholders and billing (certifying) officials have responsibility to capture and maintain card use records and receipts. Record retention requirements vary between cardholders and billing (certifying) officials. Generally for purchases at or below the micro-purchase threshold, retention of cardholder records is 3 years. If transaction(s) are above the micro-purchase threshold then, to support disbursement record requirements, the retention period is 6 years, 3 months. A quick reference table of detailed requirements for retention of files may be found in the FAR part 4.805. The general record retention requirement for billing (certifying) officials is 6 years, 3 months. However, if transaction is funded by "foreign military sales funds," retention is 10 years; if transaction is in support of a contract payment, retention is 6 years, 3 months after final payment. Further guidance may be found in DOD Financial Management Regulation (FMR) Volume 5, Chapter 21 ¶2101.

Original disbursing office records (Billing/Certifying Officer) along with cardholder supporting documents in electronic format (i.e., PDF format) negate the need to store duplicate hardcopy documents. Electronic record storage requires adequate controls to ensure that integrity of the digital images accurately represent the corresponding paper documentation and detect changes to an original digital image. In addition, electronic storage must be in a centrally managed location (i.e., not cardholder's desktop) that has an established Continuity of Operations (COOP)/Backup process.

2.2.2.2 Convenience Checks

When a convenience check is written against the Purchase Card account for a payment for services, rent, medical or health care services, or other IRS-required services, the check payment event must be entered in the 1099 Tax Reporting Program (TRP) application operated by Defense Finance and Accounting Service (DFAS). Access to the 1099 TRP is requested through Form DD 2869. Data required by the 1099 TRP includes check number, check amount, date check is written, Tax Identification Number, mailing address, and check recipient. Entry of this data by the check issuer into the 1099 TRP allows DFAS to accurately create and submit the IRS 1099 forms. Check events must be entered into the 1099 TRP no later than 31 December of the year the check is written. Note that this entry requirement does not apply to purchases made with the Purchase Card

itself; the manual 1099 TRP entry requirement exists only when a service is acquired via a convenience check.

Recommendation:

An aggregated data store of all transactions that can be used for usage and trend analysis should be established, managed by, and accessible to DOD. Retention of all transactions for 6 years, 3 months is necessary to achieve visibility of purchases exceeding $25,000 that are applied in multiple sub-$25,000 increments.

Rationale:

Purchase Card is the preferred method to order and pay for micro-purchases, according to FAR 13.2. As use of Purchase Card increases for purchases and for use as a payment mechanism, complete visibility of acquisition across the Department requires on-demand insight into aggregate Purchase Card volume. The proper retention time cannot be determined based on transaction content, so all transactions need to be retained for the maximum 6-year, 3-month period.

An in-house capability to access the data is needed to ensure timely responsiveness to queries. The banks only retain data for 18 months online; data beyond that time is retained by the processors and accessed by request from the bank. A 30-day reaction time is unresponsive to the needs of DOD.

2.3 Usage Visibility and Oversight

Data related to the Purchase Card ecosystem is provided to the Department from the banks each business day and at the conclusion of the monthly billing cycle. This data is transmitted in several formats to multiple recipients.

The following paragraphs describe the data received from the banks that is used by the DOD for processing, visibility, and oversight of Purchase Card use. Table 1 identifies the data provided in parallel to DOD, the functional areas and uses supported, and the paragraph that further describes each data flow.

Table 1. Parallel Data Flows of Purchase Card Usage Visibility and Oversight Data

Paragraph	Functional Use	Data Description	Periodicity	Data Recipient
2.3.1	Billing Data	Obligations/Invoices	Daily/Monthly	Financial Systems
2.3.2	Retention Data	Standard Format DEF/VCF Files	Daily/Monthly	Storage
2.3.3	Reconciled Data	Statement Billing File Extract of Transaction, Account, Merchant	Monthly	Inspector General, IRS Form Creation
2.3.4	Risk Assessment	Custom Extract—Posting and Cycle Data	Daily/Monthly	Data Mining/Risk Assessment Provider

2.3.1 Billing Data

Each weekday, data is transmitted from the issuing banks to the Department after processing by the transaction processing and authentication service providers such as TSYS. Similarly, after monthly billing cycle processing, invoice data is transmitted. The issuing banks, currently USBank

and CitiBank, expose the data on their systems. The DOD data routing and transformation hubs at either Defense Automated Addressing System Center (DAASC) or the Defense Information Systems Agency (DISA) Global Exchange (GEX) pull the data and process it according to Table 2.

Table 2. Purchase Card Billing Data Processing

Bank	Format	Hub	Translation	Recipient System	User Community
Citibank	X12 821	DAASC	Yes	SABRS	Marine Corps
Citibank	X12 810	DAASC	Yes	CAPS-W	Marine Corps Entitlement
Citibank	X12 821; X12 810	DAASC	Yes	CABRILLO	SPAWAR
Citibank	X12 821; X12 810	DAASC	Yes	ERP	NAVAIR and NAVSUP
Citibank	X12 821; X12 810	DAASC	Yes	ILSMIS	Corona, Crane, Dahlgren, EODT, Indianhead, Port Hueneme, NUWC Newport
Citibank	X12 821; X12 810	DAASC	Yes	IMPS	Naval Research Lab
Citibank	X12 821; X12 810	DAASC	Yes	STARS	Navy
Citibank	X12 821; X12 810	DAASC	No	FASTDATA	Local Financial Management; SPAWAR
Citibank	X12 821; X12 810	DAASC	Yes	Maximo/DWAS	NAVFAC Information Technology Center (NITC)
Citibank	X12 810	DAASC	Yes	MSC	Receives both xlated file and raw X12
Citibank	X12 810	None	Yes; by Citi	SALTS	Supports afloat certification/tracking
U.S. Bank	X12 810	GEX	Yes	CAPS-W	Army
U.S. Bank	X12 821	GEX	Yes	GAFS	Air Force
U.S. Bank	X12 821; X12 810	GEX	No	GFEBS	Army Financial ERP
U.S. Bank	X12 821; X12 810	GEX	Yes	IAPS	Air Force
U.S. Bank	X12 821	GEX	Yes	SIFS	Army
U.S. Bank	X12 821	GEX	Yes	SOMARDS	Army
U.S. Bank	X12 821	GEX	Yes	STANFINS	Army
U.S. Bank	X12 821; X12 810	GEX	Yes	DBMS	Agencies
U.S. Bank	X12 810	GEX	Yes	DAI	Future capability; BTA first followed by DTIC, MDA in Oct 09; then other agencies

2.3.1.1 Card Billing Data Flow

In general, American National Standards Institute (ANSI) X.12 formatted Obligations (X12 821) are created daily and X.12 formatted Invoices (X12 810) are transmitted monthly by the banks. The DOD GEX and DAASC Hubs are configured to pull data from the bank sites periodically throughout the day. When data is present, it is processed and routed according to the internal Hub routing criteria to the appropriate accounting or entitlement system at the DFAS or Component financial systems. Routing is based on a combination of factors including file name and file content. Accountable Station and Obligation Processing Type Indicator (OPTI) are used to route CitiBank files to Navy financial systems. As noted in Table 2, some recipient financial systems accept the X12 format and others receive a User Defined File (UDF) format after translation by the Hub.

Processing by the financial systems establishes the obligations in the accounting systems and posts the monthly invoice to the entitlement systems. Based on internal processing rules, DFAS (or the disbursing system) pays the bank for the charges incurred by the cardholder. Rebates are calculated based on the net purchase volume and the latency between the date of purchase and the posting of payment.

The invoice files reflect charges incurred by the cardholder and approved by the Approving Official in the bank's online system. In the case of Navy afloat situations, CitiBank creates a spreadsheet of posted cardholder transactions that is transmitted through DAASC to the Standard Automated Logistics Tool Set (SALTS). Approving Officials download the spreadsheet from SALTS, certify transactions, and transmit the certified transactions through SALTS back to CitiBank. CitiBank then creates invoices that reflect the SALTS-certified transactions. This approach enables afloat units or those operating in low communication environments to interact with the CitiBank Purchase Card system. The OPTI code of "S" indicates transactions that are routed to and certified through the SALTS process.

The non-appropriated funds Purchase Card billing process does not follow the general flow described above. For purchases made with this type of card, a direct connection is established between the Air Force and the JPMorgan Chase system. Each day, transactions that were certified on the PaymentNet online system 4 days prior are pulled. The transaction data is processed and paid the following day. This approach enables these types of accounts to maximize rebate amount.

Figure 3 illustrates the data flow from the banks to DFAS for obligation and invoice data.

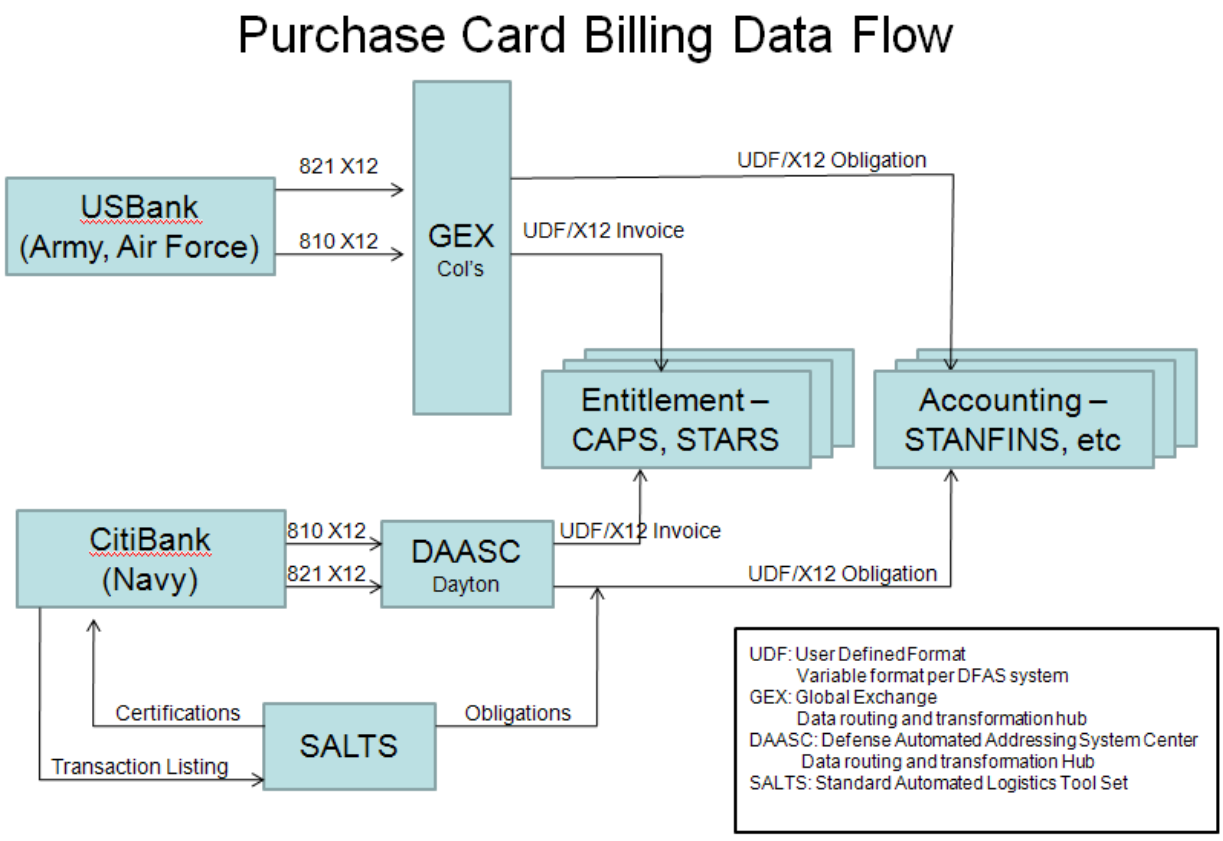


Figure 3. Purchase Card Billing Data Flow

2.3.1.2 Purchase Card Billing Data—Use and Retention

The Purchase Card billing data is used to establish obligations and set the entitlement for payment of the Purchase Card invoices. It is expected that the obligation and invoice data provided by the banks supports disbursement and is therefore retained by DFAS for at least a 6-year, 3-month period in compliance with the DOD Financial Management Regulation Volume 5, Chapter 21; however, confirmation with each financial system was not attempted. The data is retained in the DAASC and GEX online archives for approximately 6 months and is then moved to offline storage. Access to offline storage is possible but is costly and time consuming.

2.3.2 Retention Data—Standard Format

Each bank transmits daily posting data to DMDC via the DOD Hubs in bank standard fixed record length formats called Data Exchange File (DEF) or VISA Commercial File (VCF). The files are transformed to an XML structure that enumerates the fixed record format fields. The XML structure is intended to facilitate future consumption of daily postings. Currently, DMDC stores the XML files as they are received without parsing into a database. There are no downstream users of this data, and DMDC does not use the data for analysis. These files were originally expected to be used in support of data mining and risk assessment. Due to the complexity and volume of the data contained in these files, it was determined that this data was not optimal and a format specific to the data mining mission was implemented by the government.

The DEF represents Purchase Card transaction information that has been processed and stored by the TSYS. The DEF file is created at the request of the Bank and reflects the account hierarchy as defined in Total Business Reporting (TBR). DEF files can contain daily or at-cycle monthly data. Record 3 is populated with monthly cycle data when the account cycles.

The VCF contains data representing daily transactions and monthly cycle totals similar in nature to the DEF file. Record 1 of the VCF reflects monthly cycle data.

Both the DEF and the VCF reflect the Bank/Agent/Company (DOD)/Installation/Approving/ Billing Official hierarchy and can include line item detail generally referred to as Level III data if it is provided by the merchant.

2.3.2.1 Standard Format Data Flow

As illustrated in Figure 4, the Standard Data is provided on a daily and at-cycle periodicity and transmitted in an industry standard format. This data is transformed by the GEX to create XML, transmitted to DMDC and stored intact.

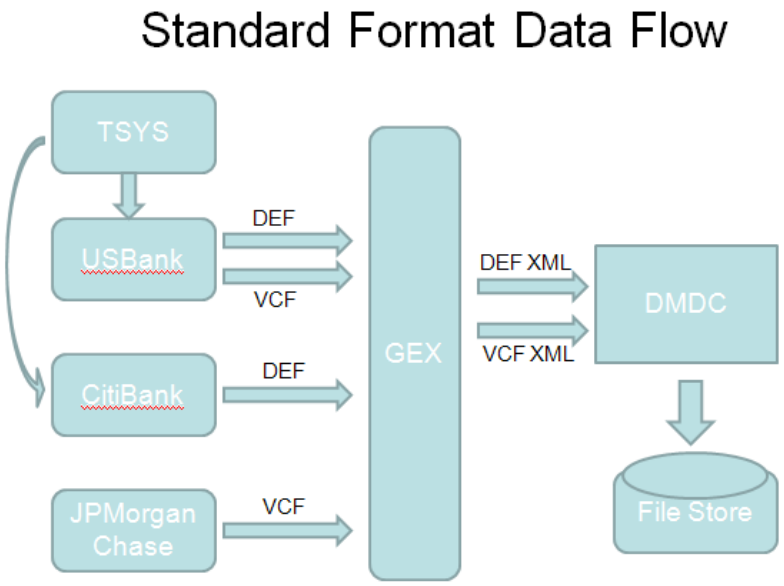


Figure 4. Purchase Card Industry Standard Format Data Flow

2.3.2.2 Standard Format Use and Retention

The DEF and VCF data files are stored intact at DMDC. The files are not opened and the data is not used. The files are retained for 2 years.

Table 3 defines the data formats received from each bank. The file names received from USBank reflect the Defense agencies that have acquisition authority. Appendix A includes a summary of the structure and contents of the standard DEF and VCF files.

Table 3. Purchase Card Standard Format File Transfer Overview

Bank	*Format*	*Inbound From Bank to GEX file name*	*Map*	*Outbound from GEX to DMDC file name*	*Comment*
USBank to GEX to DMDC	VCF (4.0; Rel 1.2 8/14/06);	"h000.vcf4xxxx.x320" Where xxxx = (afis), cifa,(dcco),dcma,(dea1),(dea2),deca,army ,dfas,dia1,(dig1),(disa),dla1,dmea,dsca, (dtma), dtra,(dtsa),sfao,pcom,fnct, mpo1,nga1,nro1,soco,usaf, usuh,whs1 Parens = no activity since 3/09	DMDC-VCF	US_VCF_yymmdd -ccc.xml	Between 12–20 files received each day
	DEF (2005.1)	Cps0.doddef21.x320 Cps0.doddef57.x320 Cps0.doddef97.x320	DMDC-DEF	US_DEF_yymmdd -ccc.xml	Daily
CitiBank to DAASC to GEX to DMDC	DEF 1006_1	GEX-DMDC-daily*	DMDC-DEF	CT_DEF_yymmdd -ccc.xml	Daily DEF files; CCF format not implemented
JPMorgan to GEX to DMDC	VCF 4.0 (3/31/06)	*CC19/VCF*	DMDC-VCF	JP_VCF_yymmdd -ccc.xml	No files received from 24 Sept 08 until 1 April 09

2.3.2.3 Retention Data—Standard Format Recommendation 3

Recommendation:

The DEF and VCF files are large and complex. The data is currently not used. Recommendation is to discontinue the transmission from GEX to DMDC for a year to ensure that there are no undiscovered users of the data. If there are no queries regarding the absence of the data, discontinue transmission from the Banks.

Rationale:

The intent of the DEF and VCF formatted data was to support the Data Mining effort. Redundant data in a more readily consumable structure is provided in parallel and more efficiently supports the Data Mining process. This reduces government cost by eliminating transmission and storage of large amounts of data that is not used.

2.3.3 Reconciliation File Data

DMDC receives data from the banks that it used to provide the DOD Inspector General (IG) for analysis and still provides to DFAS for inclusion in creation of IRS Form 1099. The files contain three categories of data: Transaction Data, Account Data, and Merchant Data. This data is extracted from the Statement Billing File by the Banks into a specific format for DMDC processing. This data is called the "reconciliation file" because it is received after and reflects the monthly billing cycle processing.

2.3.3.1 Reconciliation File Data Flow

Each month DMDC receives an email notification from USBank and CitiBank that the monthly Reconciliation File is ready. The files contain a subset of the standard Statement Billing File. The Air Force is currently in discussions with JPMorgan Chase to provide a similar file structure, but currently no Reconciliation File data is received from JPMorgan Chase.

Note: During the original SmartPay contract, the data pulled from CitiBank had been processed by MasterCard and formatted according to the DMDC specification. Under Smart Pay 2, Navy is now supported by CitiBank and Visa. Until re-established, CitiBank SmartPay 2 data is not being provided in the Reconciliation File format. Navy and CitiBank have made a commitment to reestablish this feed when deemed necessary. DFAS has worked a separate data feed to fulfill the 1099 reporting requirement.

After receipt of the notification that the files have been posted, DMDC executes a direct pull from the CitiBank Electronic Reporting System (CERS) and the USBank Access Online secure websites. DMDC decrypts, validates for data quality, and loads the files into Oracle database tables.

The Merchant Data populates Oracle views, which are accessed by DFAS to aggregate data that supports creation of IRS Form 1099 submissions. The SmartPay 2 contract requires the banks to report quarterly and calendar year cumulative data used to assist organizations in creation of IRS Form 1099[3] data. DFAS is currently working with the banks to establish a process to directly pull the 1099 Report Information. The 1099 Report information received from the bank will be

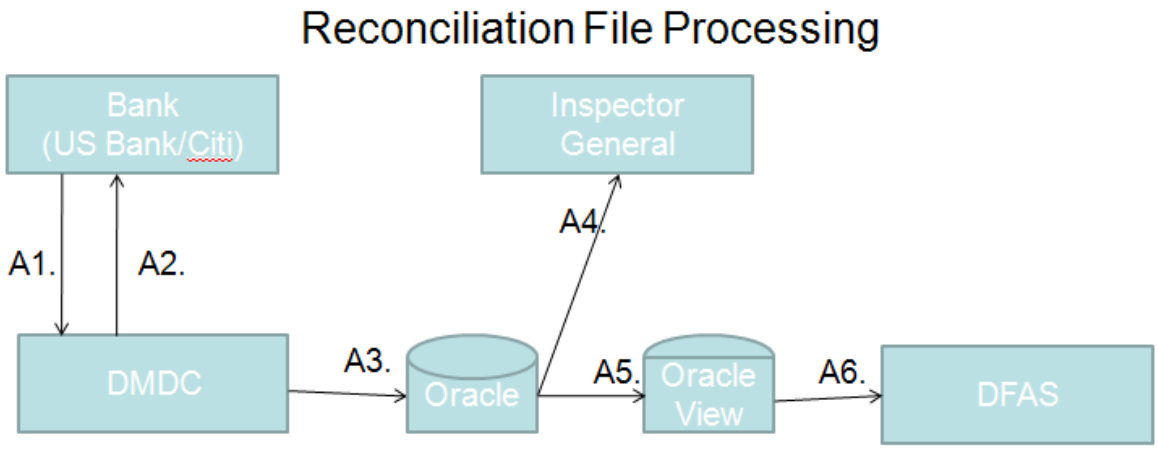
[3] SmartPay 2 RPF, 28 September 2006, Paragraph C3.3.1.2(f) Other Agency Reports: 1099 Report Information

aggregated with the 1099 data manually submitted by writers of convenience checks and other data to create the complete 1099 report. Starting in calendar year 2011, the banks will be responsible for IRS SF 1099 reporting. The IRS is in the process of publishing implementing regulations, that transfers this reporting responsibility from the government to the banks.

Like the Merchant data, the Transaction and Account data is loaded into Oracle tables at DMDC. The transaction and account data was encrypted and written to a compact disk and forwarded to the DOD IG in essentially the same format as received. The IG used the Reconciliation data to perform analysis and investigation using a commercial product from ACL (www.acl.com). The organization responsible for this function was reorganized in January 2009 under the Quantitative Methods and Analyses Division (QMAD). Discussions are ongoing to determine whether this organization will provide investigation and audit support. Over time, the Data Mining/Risk Assessment (DM/RA) function will fill a part of this role. Until the DM/RA capability is fully deployed, an interim solution may be necessary. Even after the DM/RA capability is in full production, there are likely to be other data calls and analyses that are beyond the scope of the DM/RA provider.

The extract format being coordinated with JPMorgan Chase is included as Appendix B. Appendix C provides a comparison among the USBank, historic CitiBank, and proposed JPMorgan Chase reconciliation file data elements. The data elements are aligned to illustrate the similarities and differences between each source file. The SmartPay 2 format currently in discussion with CitiBank is not yet available but is assumed to be similar to the previous format.

The Reconciliation File data are stored at DMDC and are subsequently exposed to DFAS and forwarded to the IG. DMDC provides the data but performs no independent analysis or evaluation of the data. Figure 5 illustrates the flow of the data in support of these services.



A1. Email from Bank alerts DMDC that Monthly Reconciliation file is ready
A2. DMDC downloads Reconciliation file from Banks' secure web site
1. Download consists of account, transaction, and merchant file
2. DMDC decrypts files and performs data quality (semantic) checks
A3. DMDC parses Reconciliation files into Oracle database
A4. DMDC extracts account and transaction data, removes unnecessary data, writes encrypted data to a CD and forwards to IG for fraud detection
A5. DMDC creates an Oracle View of Merchant data
A6. DFAS views data monthly and pulls data at year end to create IRS Form 1099 for Services Merchant Codes (MCCs)

Figure 5. DMDC Reconciliation File Extract Processing

2.3.3.2 Reconciliation File—Use and Retention

The Reconciliation File data, received monthly by DMDC, was parsed into Oracle tables associated with the transaction, the account, or the merchant data. The Oracle tables containing the Merchant data provide IRS Form 1099 relevant information to DFAS during the calendar year. This data was combined with the data manually submitted by convenience check writers. At the completion of the calendar year, after DFAS created the IRS Forms 1099, the Merchant data is no longer actively used. DFAS retains the 1099 data for 3 years plus current year.

The Transaction and Account data is no longer used by the IG. DMDC no longer performs the processing indicated in figure 5 above. Section 2.3.3 is included for recent historical purposes and shall be removed if the recommendation in section 2.3.3.3 is adopted.

The data is retained at DMDC for 10 years.

2.3.3.3 Reconciliation File :

The reconciliation file provides data to support two functions: Purchase Card usage to the IG and 1099 creation support to DFAS. The IG Data Mining Directorate has indicated that it will no longer perform the Purchase Card analysis function obviating the current use of the Transaction and Account data contained in the Reconciliation file. DFAS is in the process of retrieving the 1099 data directly from the banks so the Merchant portion of the file will no longer be needed. The users of the Reconciliation file no longer require the data.

Currently only USBank is generating the file. CitiBank is working to re-establish the file, and JPMorgan Chase is working to generate the file. Before resources are applied to create, capture, process, and store this file, the continuing need for it needs to be evaluated.

However, the need for Purchase Card usage analysis remains. As described in Paragraph 2.3.4, the data captured to support the Risk Predictive Model may be applicable for general usage analysis as well.

2.3.4 Risk Assessment Data—Data Mining/Risk Assessment Format

Fraud detection is critical to efficient execution of the DOD Purchase Card Program as detailed in the March 2008 Government Accountability Office (GAO) Report "Actions Needed to Strengthen Internal Controls to Reduce Fraudulent, Improper, and Abusive Purchases." The DOD IG had been performing some of that function as described in Paragraph 2.3.3.1 using a product called ACL. In parallel, the Navy performs fraud detection using Rina Systems, a third-party vendor that executes the Program Audit Tool (PAT). The PAT receives data in the CitiBank Commercial File (CCF) format (similar to DEF and VCF formats). Transactions are flagged for review based on business rules. The tool uses the hierarchy within the CCF file to escalate review and action via email notifications. The entire Navy is expected to be using PAT by the end of fiscal year 2009. The Navy is currently participating in the DM/RA implementation team and has established two Cardholder Accounts and related Approving Official using the PCOLS capabilities. With the continued DOD-level DM/RA capability and reporting improvements, the Navy committed to deploying eight pilot sites in 2010.

To address the GAO findings in a DOD-wide manner, the Purchase Card Program Management Office established a contract to perform Data Mining and Risk Assessment on DOD Purchase Card activity. The DM/RA contract was awarded to HNC, a component of Fair Isaac. DM/RA is a part of the PCOLS tool suite.

The DM/RA function is different from previous misuse analysis capabilities because it has a learning component that discerns acceptable usage behavior over time and therefore minimizes "false positive" findings that distract program officials from true misuse findings.

The DM/RA contractor defined file formats that contain data specific to their mission. A bank-agnostic, common daily transaction file and monthly cycle file have been defined. These files are called the Risk Predictive Model (RPM) files. USBank and CitiBank each create the RPM format (in addition to the DEF and VCF and Extract file) and expose it for retrieval by the DOD data transformation and routing Hubs similar to the process for retrieval of the Standard Format data (DEF-/VCF-structured files). The Hub pulls the files in the same manner and using the same channels as the DEF/VCF standard format files. JPMorgan Chase is not currently generating the RPM files. JPMorgan Chase services non-appropriated funds and does not hold a Smart Pay 2 contract Task Order for DOD. The intent is to acquire RPM data from JPMorgan Chase at a later time. Business rules specific to non-appropriated funds will be applied at HNC once the data is provided by JPMorgan Chase.

The daily RPM files received from USBank have a latency of 2 days. In order to provide the Merchant Identification element, USBank holds the daily transactional data for 2 days before transmitting it to DOD. CitiBank data does not experience this latency.

Unlike the DEF/VCF processing, no data transformation is performed on the RPM files. The data is routed directly to DMDC without modification. Once the data arrives at DMDC, the files are passed without modification to HNC.

DMDC provides value add of monitoring the receipt of the file by setting a cron job that checks for the file every hour for 5 hours after it is expected (USBank 7am CT; Citi 1pm CT, Tues–Sat). If the file is not received, email alerts are generated and escalation process initiated to identify and resolve issue.

The files are transmitted to HNC, and a trigger file is placed at HNC to let them know that the file has been completely transmitted (to avoid HNC file retrieval during transmission by DMDC).

The RPM files destined for HNC are stored at DMDC as-is (not parsed into a database). The retention period will be determined by a Memorandum of Understanding (MOU) that has not yet been established.

2.3.4.1 Data Mining/Risk Analysis Data Flow

The RPM files are not used by DMDC. The daily and monthly RPM files are currently stored intact. Appendix D contains the file structure defined by HNC for the RPM data Daily files. Appendix E contains the file structure defined by HNC for the RPM data Monthly files.

Figure 6 illustrates the current data flow of the RPM files for both daily and monthly files.

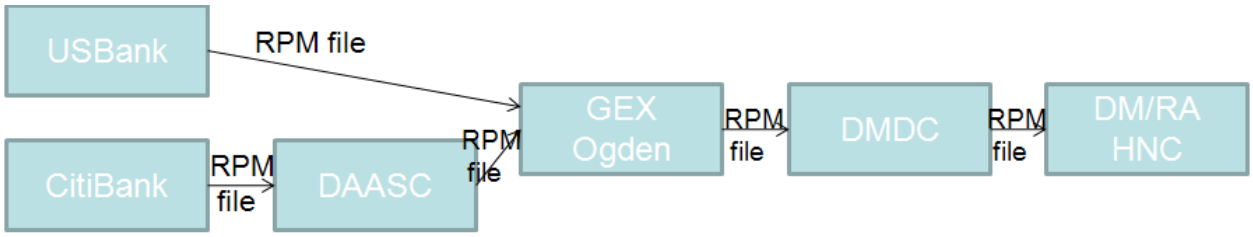


Figure 6. Data Flow of Risk Predictive Model Data

Table 4 identifies the file names of the data files that are transmitted from the banks through the DOD infrastructure to HNC.

Table 4. Processing of RPM Daily and Monthly Files

Bank	*Format*	*Inbound from Bank to GEX file name*	*Map*	*Outbound from GEX to DMDC and from DMDC to HNC file name*	*Comment*
U.S. Bank to Ogden GEX to DMDC	DOD_RPM_Layout_v1.2_External.20081013.xls	P200.P20DHNCD.X320	None	US_HNC_Dailyfileyymmddhhmmss	Daily
	DOD PCARD Account Cycle Data Layout v1 13_FINAL.xls	P200.P20DHNCM.X320	None	US_HNC_accountcycleyymmddhhmmss	Monthly
Citbank to DAASC to Ogden to DMDC	DOD_RPM_Layout_v1.2_External.20081013.xls	CITI-DOD-RPM*	None	CITI-HNC-CITI-DOD-RPM-DAILY	Daily
	DOD PCARD Account Cycle Data Layout v1 13_FINAL.xls		None		Monthly

2.3.4.2 Data Mining/Risk Assessment Use and Retention

DMDC is awaiting an MOU to define storage and retention requirements of the RPM data. A 6-year, 3-month retention period is anticipated by the PC PMO. The data used to monitor and enhance the risk predictive model will be needed for between 3–6 years. Destruction instructions and timing will need to be defined.

As discussed in Paragraph 2.3.4, daily and monthly data are provided by the banks to support the Data Mining initiative. The monthly Reconciliation data contains a subset of the daily RPM data elements that are transmitted daily. The reconciliation file received by DMDC monthly is dissimilar in nature to the DM/RA monthly cycle data. Appendix C defines the data elements provided by each bank for Account, Transaction, and Merchant data. For each element provided in the Bank Extract data, the related RPM Daily File element is identified. Note that the JPMorgan data elements are prospective based on design documents; this data is not yet in production. Further, the CitiBank data is based on the previous SmartPay agreement; the assumption is made that similar data will be provided under SmartPay2. Appendix C illustrates that there are some differences in the data provided by the banks. The common DM/RA data format provided by all the banks includes 92% of Transaction data, 76% of the Account data, and 23% of the Merchant data provided by the banks in the reconciliation files. Much of this data between transaction, account, and merchant files is redundant and the government chose not to have it repeated. In addition for PII purposes, the government determined that cardholder name and phone number should not be included.

2.3.4.3 Data Mining/Risk Assessment Data Recommendation

Recommendation:

Consider use of the risk predictive model data structures captured to support the data mining effort for broader application to general usage and trend analysis. Discontinue creation of the Reconciliation File by the banks and subsequent storage of the file by DMDC and instead use the Risk Predictive Model data as the foundation for usage analysis. The RPM data should be evaluated for its ability to be queried to provide the required analysis and anticipated questions.

Rationale:

Currently, only USBank is creating the reconciliation file format. Additional work is required to receive this format of data from CitiBank and JPMorgan Chase. The Risk Predictive Model formatted data is created in a common format by USBank and CitiBank. JPMorgan Chase will prefer to generate one custom extract instead of both the format to support data mining and the reconciliation file format.

The reconciliation format is used for the IG and 1099 creation. The IG has indicated that future Purchase Card use analysis will not be provided. The IG historically has provided two functions: fraud detection and general analysis. The Data Mining application will fulfill the fraud detection function by identifying fraud, waste, abuse, and suboptimal card management and approval organizational structures.

The Usage analysis function needs to be provided. The Usage (and Fraud detection) function provided by the IG was based on the Transaction and Account sections of the Extract data. Those

sections have a high degree of redundancy with the RPM file structure (92% and 76% respectively).

The Merchant section of the Extract data supports 1099 creation. If DFAS receives the 1099 data from the Banks (as required in the SmartPay 2 contract), there is no need to separately extract and transmit that data to DMDC.

2.3.5 Purchase Acceptance via Wide Area Workflow

The Government Accountability Office has stated that property acquired by the Purchase Card needs to be accounted for in property systems and that goods acquired using the Purchase Card account must have independent receipt and acceptance. Wide Area Workflow (WAWF) is being enhanced to support this functionality in a multi-phased approach.

The initial implementation, scheduled for August 2009, accommodates the situation when goods are acquired through a contract vehicle where the Purchase Card is used as the method of payment. When those conditions exist, the vendor will submit an Advance Shipment Notification (also called the DD Form 250 or Material Inspection and Receiving Report) via WAWF at the time of shipment. In addition to the standard data elements, four Purchase Card specific elements are captured. The vendor can submit the data electronically or input the data via the WAWF web input screens.

After Government acceptance of the goods in WAWF, the data will flow to the DMDC based on the "pay DODAAC" of "CRCARD." Entry of this pay DODAAC will prevent the data from entering the payment process and will ensure that the data is transmitted to DMDC. DMDC will capture and store the data. In the future, the data received from WAWF will be compared to the Purchase Card transaction data transmitted by the banks to identify potential misuse. The goods purchased using the Purchase Card and accepted in WAWF can be transmitted to property accountability systems of record based on routing criteria established at the GEX, or provided by the designated government accepting official.

In subsequent phases of WAWF/Purchase Card implementation, Government Purchase Card holders will enter into WAWF information describing goods purchased using the Purchase Card. Government acceptors will independently accept the items and the data will flow to DMDC for storage and future analysis.

2.3.5.1 Purchase Acceptance via WAWF Data Flow

Figure 7 illustrates the data flow for acceptance data related to goods acquired via Purchase Card. When the Purchase Card is used as method of payment for goods acquired via a contract, the vendor submits the data to WAWF, and the Government acceptor performs the acceptance action in WAWF. The diagram also illustrates that the acceptance may be performed externally to WAWF, but the vendor interaction and post-acceptance data flow will be via the WAWF application.

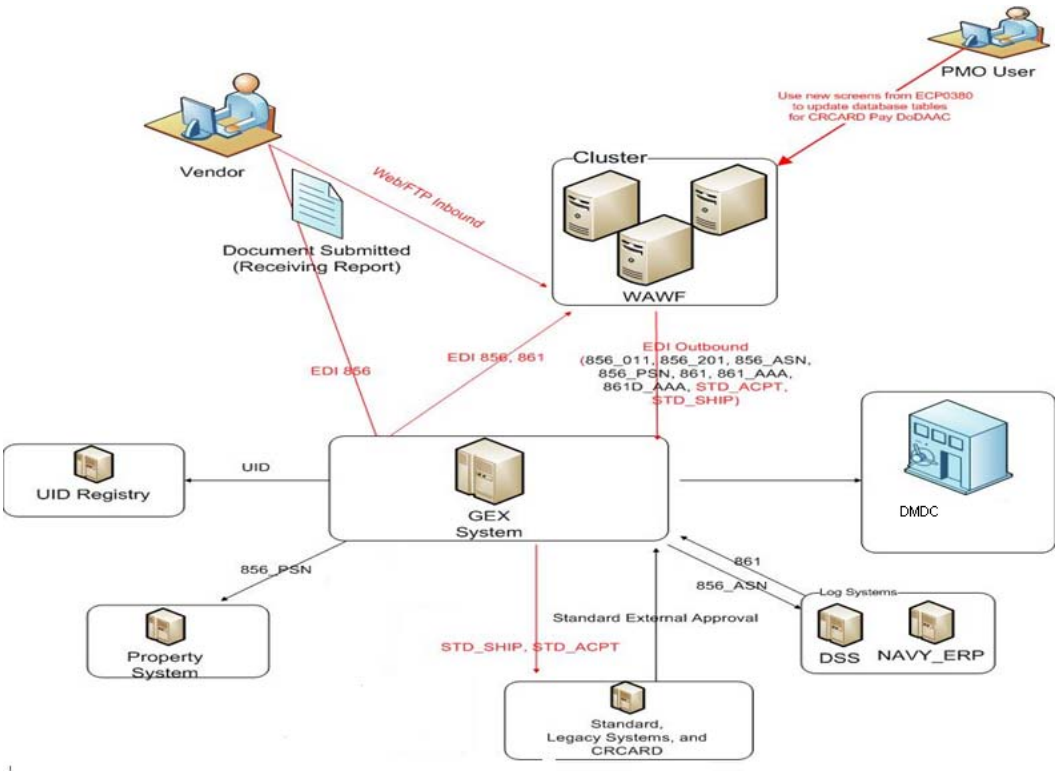


Figure 7. Purchase Acceptance via WAWF Data Flow

After Government acceptance of the goods, the acceptance data including the Purchase Card specific elements will flow to DMDC. The data elements entered by the vendor when submitting data about goods acquired by a contract where Purchase Card is the payment vehicle are: Vendor Identifier, Vendor Transaction Number, Issuing Bank, and Amount Billed. Based on the vendor entry of the Pay DODAAC CRCARD, the data will flow to DMDC.

2.3.5.2 Purchase Acceptance via WAWF Use and Retention

The WAWF Standard transaction, including the Purchase Card specific data elements, will be transmitted to DMDC. The Purchase Card specific data elements will enable association of the acceptance data entered in WAWF with the Purchase Card transaction data received from the banks. Conditions or attributes of the relationship between these data sources will identify purchases that may require review.

The acceptance data will be processed by WAWF and retained by DMDC in accordance with an MOU to be established between the Purchase Card PMO and DMDC. It is expected that the MOU will indicate a retention period of 6 years, 3 months for acceptance of goods acquired via a contract where Purchase Card was the payment vehicle.

2.4 Post Use Review

Data Mining and Risk Assessment of Purchase Card transactions and management organizations are provided by a third-party provider, HNC, which has expertise in neural networks and data mining capability. HNC is generally the name referred to as the data mining provider that is a component organization of Fair Isaac Corporation (now called FICO).

As the Data Mining/Risk Assessment contractor, HNC merges the daily and monthly Risk Predictive Model data provided by the banks and described in Paragraph 2.3.4 with the user/account hierarchy data provided by DMDC PCOLS/AIM as described in Paragraph 2.1.1 of this document. The card use activity contained in the data provided by USBank and CitiBank and the hierarchy of users provided by DMDC is evaluated against risk predictive models.

Appendix D defines the aggregation of the daily RPM data format required by HNC from the banks and the data anticipated from PCOLs related to accounts and account holders. HNC receives the bank data and the PCOLS data separately and subsequently aggregates it. The yellow cells in Appendix D indicate the PCOLS elements that are anticipated by HNC, but which are not provided by DMDC according to analysis of the file definition from DMDC and confirmed with DMDC personnel. The gap elements are listed in Table 5.

Table 5. PCOLS Data Elements Identified in Data Mining Input File That Are Not Transmitted by DMDC

AIM_CA_JUST_TEXT	Text entered in the Justification box by the AO when the creation of this cardholder account was requested in AIM
AIM_MA_JUST_TEXT	Text entered in the Justification box by the AO Supervisor when the creation of this managing account was requested in AIM
AIM_CA_CONV_CHECK_FLAG	Card/Convenience Checks issuance option selected in AIM: • 1 = Issue card • 2 = Issue convenience check • 3 = None of the above
AIM_CA_CONTRACT_FLAG	Cardholder account Special Designation as "Contracting Officer" selected in AIM: • 1 = is Contracting Officer • 0 = is not Contracting Officer
AIM_CA_PAY_METHOD_FLAG	Cardholder account Special Designation as "Exclusively method of payment" selected in AIM: • 1 = Card is exclusively method of payment • 0 = Card is not exclusively method of payment
AIM_CA_TRAN_LIM	Cardholder single purchase limit as defined in AIM
AIM_CA_CYCLE_LIM	Cardholder cycle purchase limit as defined in AIM
AIM_MA_CYCLE_LIM	Managing account cycle purchase limit as defined in AIM
AIM_CA_MCC_INC_SETTINGS	Sequence of letters checked in AIM to define the MCC categories where items/services will be purchasable
AIM_CA_MCC_EXC_SETTINGS	Sequence of letters checked in AIM to define the MCC categories where items/services will not be purchasable
AIM_NAF_IND	Card funding type: • A = Appropriated funds • N = Non-appropriated funds
EMMA_CIV_MIL_FLAG	Cardholder enrollment category: • C = Civilian • M = Military
EMMA_CH_DEPT_SERV_DT	Date the cardholder departed the Service if applicable
NUM_CA_UNDER_CH	Number of different cards accounts opened to the person that is the cardholder of this one
NUM_CA_UNDER_AO	Total number of cardholder accounts under the AO person of this card
NUM_MA_UNDER_AOPC4	Total number of managing accounts under the A/OPC Level 4 person of this card
NUM_CA_UNDER_AOPC4	Total number of cardholder accounts under the A/OPC Level 4 person of this card

Recommendation :

Evaluate the criticality of the Data Mining Input File data elements that are not currently transmitted to the Data Mining application and define an approach to capture this data.

Transactions or activities are identified by HNC that require further human evaluation. These transactions are flagged as "referrals."

A referral file is transmitted daily from the Data Mining service to DMDC identifying the at-risk transactions and current status of the review process. Table 6 lists the referral file data received by DMDC. Based on this data, an email is transmitted to the appropriate recipient in the chain of command based on the account hierarchy retained in PCOLS and related business rules. The email contains basic information about the suspect transaction including the account, merchant, and date of transaction. A link to PCOLS that is used to access the HNC case management tool is also

included in the email. If action is not taken on a case within predefined time periods, the email notifications will escalate up the hierarchy.

The email recipient uses the link to log into PCOLS to access the HNC Case Management tool and to track and input the resolution of the referral transaction through that tool.

HNC transmits to DMDC daily the Post Analysis file containing closed cases including the case disposition of the referred transaction. DMDC stores the Post Analysis file intact indefinitely. The Referral file is currently stored intact by DMDC. The retention period for the Referral file will be defined in the MOU between DMDC and the PC PMO.

Table 6. Referral Notification Data from HNC

Data Element	Data Definition
caseNumber	Case Number for the Cardholder Account
transactionId	Unique ID to identify transaction
caseStatus	Status of Transaction—Following Values: • New • Pending • Closed
Edipi	User EDIPI who last acted on the case
caAccountNumber	Cardholder Account Number
maAccountNumber	Managing Account Number
caseDisposition	Must be one of the following: • P – Under AO Review (Pending) • V – Valid Transaction • I – Valid with Administrative Discrepancy • F – Suspected Fraud/Misuse
notificationType	Must be one of the following: • T – Flagged Transactions • Q – Quarterly Report Completion
transDateTime	Transaction Date Timestamp
tranAmount	Transaction Amount
merchantName	Merchant Name
mccCode	Merchant Category Code
firstTransmissionDate	First Transmission Date
score	Score assigned to case by Data Mining Modeler

Monthly files are also provided by USBank and CitiBank to Data Mining via DMDC. The structure of the monthly file is included as Appendix E. There is no PCOLS monthly data transmission to Data Mining.

2.4.1 Post Use Data Flow

The Data Mining and Risk Assessment data flow and steps are illustrated in Figure 8. The DMDC identifies the email recipients of referral notifications and transmits the email messages; the analysis, documentation, and case management is performed by DOD personnel on the HNC site.

Not depicted in the diagram is the robust authentication that exists between HNC and DMDC to ensure that appropriate Common Access Card (CAC) credentialed personnel are performing the case management.

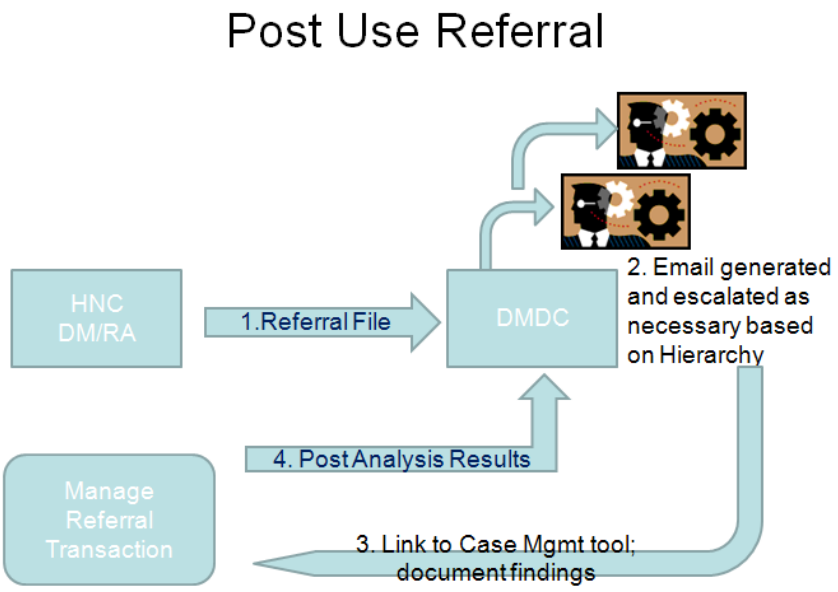


Figure 8. Post Use Referral Data Flow

2.4.2 Post Use Retention

The account hierarchy data is maintained in real time at DMDC, the hierarchy as it existed on a given day is not retained. The Post Analysis results files are retained at DMDC intact indefinitely.

Because the DM/RA contract is a services contract, specific data retention requirements are not defined. Purchase Card data is retained in two environments by HNC at an EDS data center facility. The data is received, processed, and archived on a production server. The anticipated retention period for the production server archival has not been identified by HNC. The data used to enhance the risk predictive model is captured and processed in the modeling server environment. Common practice is to retain this data for approximately 3–6 years depending on the misuse rate and the amount of data necessary for analysis.

2.5 Office of Management and Budget (OMB) Reporting

Currently the PCPMO is provided consolidated data by the banks and the components to meet the reporting requirements of OMB Circular A123. Once consolidated this data is posted on the OMB reporting web site. In addition, the banks are providing an electronic data feed to the General Services Administration (GSA) for the posting of additional detail at USAspeending.GOV. The details of how GSA will provide this additional data have yet to be determined.

3.0 CONCLUSION

DOD Purchase Card data is a complex and evolving ecosystem of people, DOD-owned and -controlled information systems, and commercial card industry systems. The PC PMO must be able to respond to data calls and queries from the DOD corporate level in a timeframe that provides sufficient transparency to acquisition metrics. The PC PMO also implements internal controls and oversight of card usage. Increased data access and control will support investigation and audit support requests made by the Services.

As described in this document, there are four parallel data streams received by DOD from the Banks reflecting much of the same data (see Table 7).

Table 7. Current Purchase Card Data

Source	Content	Format	Final Recipient	Functional Use
USBank, CitiBank, JPMorgan	Obligations/Invoices	ANSI X12	DFAS	Payment Rationale
USBank, CitiBank, JPMorgan	Daily Card Transactions; Monthly Cycle Data	Flat File; DEF/VCF	DMDC	Not Used
USBank; CitiBank, JPMorgan (future)	Transactions, Accounts, and Merchant Data (SBF Extract)	Flat File; Custom	IG; DFAS	Fraud Detection and Usage Analysis; 1099 Creation
USBank; CitiBank	Risk Predictive Model	Flat File; Custom	Data Mining/Risk Analysis Vendor	Fraud Detection

These data streams need rationalized based on emerging requirements and capabilities. Initial recommendations include:

- Discontinue, in a methodical manner, the DEF/VCF file submissions. These files are not being used but are consuming storage resources and processing (data translation) resources.
- Facilitate the transition of 1099 data to a direct pull by DFAS of the 1099 Report data required by the SmartPay 2 contract (this does not obviate the requirement for convenience check writers to manually enter the 1099 relevant data).
- If the IG will no longer provide a detection/analysis service, then
  - The practice of writing the transaction and account data to CD should be discontinued.
  - An analysis and reporting capability needs to be established outside of the IG. As documented in Appendix C, the reconciliation file data is generally a subset of the RPM data. The data requirements of the analysis capability should define whether the RPM data is sufficient to respond to anticipated queries. If so, then the capability to parse, mine, and analyze the data needs to be established.
  - Initial data evaluation indicates that the RPM data would provide robust enterprise analysis raw data. If this is proven, then the Reconciliation File data feed can be discontinued.

Implementing the approach outlined above, the streamlined approach is outlined in Table 8.

Table 8. Streamlined Approach

Source	Content	Format	Final Recipient	Functional Use
USBank, CitiBank, JPMorgan	Obligations/Invoices	ANSI X12	DFAS; Component Systems	Payment/Disbursement Rationale
USBank CitiBank JPMorgan	Risk Predictive Model	Flat File; Custom	Data Mining/ Risk Analysis Vendor; TBD Analysis Org (DMDC)	Fraud detection; Enterprise Usage Metrics
USBank; CitiBank JPMorgan	1099 Report Information	Custom	DFAS	Create IRS Forms 1099

By streamlining the data, DOD reduces the complexity and the storage/maintenance burden of retaining unused or little used data. The streamlined data is more readily exposed and aggregated with other procurement and acquisition data to provide coordinated enterprise-level business intelligence and acquisition dashboard information. Further, the RPM data includes the line item detail data when it is available. Item level (Level III) data is currently not received in the Reconciliation file.

3.1 Summary of Recommendations

Table 9 provides a synopsis of the recommendations and rationale made throughout the document. The number in the left-most column corresponds to that recommendation number in the document.

Table 9. Synopsis of Recommendations and Rationale

#	Recommendation	Rationale	Page
1	Manage Purchase Card Account data in PCOLS.	• Eliminate duplicate manual entry. • Ensure data synchronization between Bank and DOD system. • Reduce reliance on external systems.	
2	Retain all electronic purchase transactions for 6 years, 3 months.	• Achieve compliance with FAR/FMR of purchases exceeding $25,000 that are applied in multiple sub-$25,000 increments. • Provide data visibility and transparency more quickly than the Bank response time of 30 days for data older than 18 months.	
3	Discontinue creation and transmission of the DEF and VCF files.	• These files are not used. • Retention of unused files uses storage and financial resources. • Data is available in the Risk Predictive Model file if needed.	
4	Discontinue creation of Reconciliation File.	• Original users no longer use the data. • Not all banks are creating/transmitting the file. • Risk Predictive Model data provides same data. • NOTE: this recommendation is based on establishment of DFAS direct connect to Banks for 1099/merchant data.	
5	Use the Risk Predictive Model data for Usage and Trend analysis and investigation and audit support.	• Data commonality is found with other unused formats. • Single version of data received from Banks. • Daily receipt of data and real-time storage enables independent analysis and obviates need to rely on Bank 30-day response time.	
6	Evaluate the criticality of the Data Mining elements that are not currently provided.	• The missing elements may be necessary for optimization of the risk predictive model.	

3.2 Potential Future Enhancements

Several enhancements are under discussion to further enhance the Purchase Card data environment. While still in the nascent exploration phase, those enhancements include:

- Explore potential for direct connection between the Bank system and WAWF to preposition property accountability data
- Explore potential for inclusion of EMall:
  - Purchase data from EMall to the Bank system for preposition of item data
  - Purchase data from EMall to WAWF for preposition of data
  - Transmission of Level III data from to DOD to support analysis
  - Receipt acknowledgement data to EMall based on Receipt/Acceptance in WAWF
- Explore a central location for storing electronic copies of records and supporting documents (e.g., receipts)

Contributors

The individuals listed in Table 10 provided background and insight into the information contained in this paper. They contributed documentation and tirelessly answered questions. Their contributions are deeply appreciated.

Table 10. Contributors

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APPENDIX A: OVERVIEW OF DEF/VCF FILE STRUCTURE

Appendix A - Synopsis of Daily transaction file contents			
DEF	Data Exchange File - Version 2008.1 dated 4/11/2008		
Transmitted by USBank and CitiBank			
	Record	**Contains**	**Purpose**
	0	00, 99	Header and Trailer
	1	31, 32, 03	Account Header, Extension
	2	30, 50, 7	Account transactions data - account summary, transactions. "Addendum" data - the industry-specific details and Level 3 data
	3	33	Account statement totals at monthly cycle
	4	19-22, 26	Hierarchy summaries - Company information = Approving/Billing Official
	5	37, 38,	Account information including authorization levels, MCC authorization parameters, and address information
	6	48, 49	Decline and Dispute transactions
	7	null	Used to hold addendum data which is now carried at level 2
	8	01, 05	Bank only - bank header and totals
	9		Reporting options
VCF	Visa Commercial Format 4.0 - Version 1.2 dated 3/6/2006		
Transmitted by USBank and JPMorganChase			
	Record		**Purpose**
		Header/Trailer	
	Type 1	Account Balance	Monthly at cycle; not on daily files
	Type 3	Card Account	Card Limits, status, balance due, past due,
	Type 4	Card Holder	Name, address, etc
	Type 5	Card Tx	Amount, MCC
	Type 6	Company info	Access Online Approving/Billing Officials hierarchy
	Type 7	Line Item Detail	Item Product Code, Commodity Code, Descrciption, Qty, Unit cost
	Type 8	Line Item Sumary	Discount, freight cost, source/destination
	Type 9	Lodging	Summary
	Type 10	Organization	Access Online ID and Node
	Type 11	Period	Billing period
	Type 14	Travel	Passenger Itinerary
	Type 15	Travel	Leg specific information
	Type 16	Supplier	DUNS, Location , TIN, SIC, Small Biz Class
	Type 26	Lodging	
	Type 28	Allocation	
	Type 29	Allocation Description	

APPENDIX B: AF NAF RECONCILED DATA FORMAT

The data structure included in this Appendix is extracted from the Air Force Non-Appropriated Funds document that describes the requested interface for reconciled Purchase Card data from JPMorgan Chase.

Mapper Requirements

Table B-1. One Transaction Detail Record per Transaction

Field	Description	Start	Max Length	Format	Notes
A1	Record Type	1	1	VARCHAR	Constant "5"
A2	Account Number	2	16	VARCHAR	
A3	Post Date	18	10	VARCHAR	MMDDYYYY
A4	Transaction Date	28	10	VARCHAR	MMDDYYYY
A5	Merchant Name	38	25	VARCHAR	
A6	Source Currency	63	3	VARCHAR	Currency Code of Original Country - Example, USD or CAD
A7	Billing Currency	66	3	VARCHAR	Currency Code for Settlement Country - Example, USD
A8	Foreign Currency	69	15	VARCHAR	Original Currency Amount - no decimal, two places, right justified – zero fill, no sign indicator
A9	Foreign Currency Rate	84	5	VARCHAR	
A10	Reference Number	89	23	VARCHAR	
A11	MCC Code	112	4	VARCHAR	
A12	Transaction Amount	116	15	VARCHAR	Settlement Amount - no decimal, two places, right justified, zero filled, no sign indicator
A13	Transaction Code – DB/CR Indicator	131	2	VARCHAR	10 = Debit Amount 11 = Credit Amount
A14	Merchant City	133	26	VARCHAR	
A15	Merchant State	159	3	VARCHAR	
A16	Memo Flag	162	1	VARCHAR	The Memo Flag should indicate a Corporate or Individual Bill Account – If the transaction is a memo to the corporate bill statement then this is a C else I
A17	Merchant Country	163	3	VARCHAR	
A18	Merchant Zip	166	6	VARCHAR	
A19	Merchant Acquirer ID	172	8	VARCHAR	MMC_AcquiringMerchantID
A21	Processor Transaction Code	180	4	VARCHAR	TCO_Code
A25	Tax Included Code	184	1	VARCHAR	If the tax amount is not null, blank or zero then "Y" else "N"
A26	Tax Amount	185	11	VARCHAR	Tax Amount - no decimal, two places, right justified, zero filled, no sign indicator
A27	Transaction Authorization Number	196	6	VARCHAR	
	Record Length:		202		

Table B-2. One Account Detail Record per Unique Account

Field	Description	Start	Max Length	Format	Notes
B1	Record Type	1	1	VARCHAR	Constant "2"
B2	Account Number	2	16	VARCHAR	
B3	Name	18	25	VARCHAR	Embossed Line1 on Card
B4	Address Line 1	43	36	VARCHAR	
B5	Address Line 2	79	36	VARCHAR	
B6	City	115	25	VARCHAR	
B7	State	140	2	VARCHAR	
B8	Zip	142	10	VARCHAR	
B9	Work Phone	152	10	VARCHAR	
B10	Company	162	5	VARCHAR	
B11	Level (TBR Hierarchy)	167	35	VARCHAR	
B12	Single Trans Limit	202	14	VARCHAR	
B13	Name Line 2	216	25	VARCHAR	
	Record Length:		241		

Table B-3. One Merchant Record per Unique Merchant

Field	Description	Start	Max Length	Format	Notes
C1	Record Type	1	1	VARCHAR	Constant "7"
C2	Merchant Name	2	30	VARCHAR	
C3	Street	32	30	VARCHAR	
C4	City	62	20	VARCHAR	
C5	State	82	3	VARCHAR	
C6	Zip	85	9	VARCHAR	
C7	TIN	94	9	VARCHAR	Tax Payer Id Number
C8	Phone	103	15	VARCHAR	
C9	MasterCard 1099 Indicator	118	1	VARCHAR	
C10	MasterCard SBA Registered	119	1	VARCHAR	
C11	MasterCard SBA Disabled	120	1	VARCHAR	
C12	MasterCard Hub Zone	121	1	VARCHAR	
C13	MasterCard Veteran Indicator	122	1	VARCHAR	
C14	MasterCard Disabled Veteran Indicator	123	1	VARCHAR	
C15	MasterCard Vietnam Veteran Indicator	124	1	VARCHAR	
C16	MasterCard Information Refusal Indicator	125	1	VARCHAR	
C17	MasterCard Historically Black College Indicator	126	1	VARCHAR	
C18	MasterCard SBA Certified Business Indicator	127	1	VARCHAR	
C19	MasterCard Ethnicity of Business Owner	128	27	VARCHAR	
C20	MasterCard Gender Of Business Owner	155	1	VARCHAR	
C21	MasterCard Merchant Incorporation Status Code	156	16	VARCHAR	
C22	MasterCard EMR ID	172	50	VARCHAR	

APPENDIX C: BANK EXTRACT FILE COMPARISON TO RPM

This Appendix documents the data elements captured from the Statement Billing File, or Reconciled Files, and populated into Oracle tables at DMDC. The Transaction and Account data provided Purchase Card use information used by the DOD IG for investigation and audit. The Merchant data was the basis for DFAS to create IRS Forms 1099.

The data elements provided by each bank are listed and compared to each other. The Risk Predictive Model daily file is provided by banks in a common, single format. The data elements of the Risk Predictive Model that are equivalent to each Extract file data element are identified. Elements in a row are the same element provided by the source identified in the column heading. The number at the end of each message type (Transaction, Account, Merchant) indicates the number of data elements provided by that source file. The number in the "%" column indicates the percentage of Reconciled File elements that are resident in the Risk Predictive Model file using the worst case (lowest percentage) bank source file.

Table C-1. Bank Extract File Comparison to RPM

	USBank Extract for DMDC	CitiBank Extract for DMDC	JP Morgan Chase Extract for DMDC	Risk Predictive Model	%
TRANSACTIONS:				In "Transaction" Section unless notes in paren	
	TYPE_CD position(1-1),	TYPE_CD position(1-1),	Record Type (5=transaction)		
	ACCT position(2-17),	ACCT position(2-17),	Account Number	CA_ACCT_NUM (Main)	
	PDATE position(18-25),	PDATE position(18-25),	Post Date	TX_POST_DATE	
	TDATE position(26-33),	TDATE position(26-33),	Transaction Date	TX_AUTH_DATE	
	MERDS position(34-58),	MERDS position(34-58),	Merchant Name	TX_MRCH_NAME	
	SCURC position(59-61),	SCURC position(59-61),	Source Currency	TX_SRC_CURR_CD	
	BCURC position(62-64),	BCURC position(62-64),	Billing Currency	TX_BILL_CURR_CD	
	FCURA position(65-77),	FCURA position(66-79),	Foreign Currency	TX_SRC_AMT	
	REFN position(78-100),	REFN position(80-102),	Reference Number	TX_REFERENCE_NBR	
	SIC position(101-104),	SIC position(103-106),	MCC Code	TX_MCC	
	TAMT position(105-117),	TAMT position(108-121),	Transaction Amount	TX_BILL_AMT	
	VTCOD position(118-119),	VTCOD position(122-123),	DR/CR indicator	TX_DB_CR_IND	
	MCITY position(120-145),	MCITY position(124-149),	Merchant City	TX_MRCH_CITY	
	MSTAT position(146-148),	MSTAT position(150-152),	Merchant State	TX_MRCH_STATE	
	TMEMO position(149-149),	TMEMO position(240-240),	Corp or Individual Account	CA_ISSUE_TYPE (Card-Set up)	
	MCTRY position(153-155),	MCTRY position(157-159),	Merchant Country	TX_MRCH_CNTRY	
		TICK position(178-190),			
	MZIP position(156-161),	MZIP position(191-195),	Merchant Zip	TX_MRCH_POSTAL_CD	
	MACQN position(162-169),	MACQN position(160-165),	Merchant Aquirer ID	TX_ACQ_ID	
		MACCT position(241-255),			
	MSP_ID position(170-185),	MSP_ID position(241-255),		TX_MRCH_ID	
	MIDF position(186-210),	MIDF position(215-239),			
	TRCOD position(211-214),		Processor Transaction Code	TX_TRAN_CD	
	PCOD position(215-215),				
	PID position(216-240),	PID position(215-239),		TX_PURCHASE_ID	
	TXCOD position(241-241),		Tax Included Code	TX_US_TAX_FLAG	
	TAX position(242-250),	TAX position(204-214),	Tax Amount	TX_US_TAX_AMT	
	AUTH position(251-256)	AUTH position(261-266)	Transaction Authorization Number	TX_AUTH_CODE	
			Foreign Currency Rate		
	25	24	22	23	92%

	USBank Extract for DMDC	CitiBank Extract for DMDC	JP Morgan Chase Extract for DMDC	Risk Predictive Model	%
ACCOUNTS:			Record Type (Account = 2)		
	ACCT position(2-17),	ACCT position(40-55),	Account Number	CA_ACCT_NUM (Main)	
	NAME position(18-42),	NAME position(82-106),	Name	Not transmitted from bank with RPM data	
	ALIN2 position(67-101),	ALIN2 position(158-193),	Address Line 2	CA_ADDR_LNE2	
	UACCT3 position(145-158),				
	COMPANY position(145-149),	COMPANY position(354-358),	Company	HL_PROC_COMPANY (Processing Hier)	
	CRATE position(173-174),			CA_CR_RATING_CD	
	ALIN1 position(175-210),	ALIN1 position(122-157),	Address Line 1	CA_ADDR_LINE1	
	CITY position(211-235),	CITY position(194-218),	City	CA_CITY	
	STATE position(236-237),	STATE position(219-220),	State	CA_STATE	
	ZIP position(238-246),	ZIP position(221-229),	Zip	CA_POSTAL_CD	
	WPHONE position(247-256),	WPHONE position(344-353)	Work Phone	Not transmitted from bank with RPM data	
	LEVL position(258-292),	LEVL position(5-39),	Level (TBR Hierarchy)	HL_TBR_ORG, SERVICE, MCOM, REGION, INSTALL, MA, CH (main)	
	SVC position(266-267),			SERVICE	
	CARD_TYPE position(317-317),	CARD_TYPE position(56-56),		CA_ISSUE_TYPE (?)	
	NAME2 position(397-421),	NAME2 position(107-121),	Name Line 2	Not transmitted from bank with RPM data	
	STRANS_LMT position(422-436),	STRANS_LMT position(380-394),	Single Trans Limit	CA_TRAN_LIM and AIM_CA_TRAN_LIM (from AIM)	
	MTRANS_LMT position(437-451)	MTRANS_LMT position(231-239),		CA_CYCLE_LIM	
		ID_VER position(315-316),			
	17	15	12	13	76%

	USBank Extract for DMDC	CitiBank Extract for DMDC	JP Morgan Chase Extract for DMDC	Risk Predictive Model	%
MERCHANTS:				In Transaction section	
			Record Type (7=Merchant)		
	M_LEGAL_NAME position(1-30),	M_LEGAL_NAME position(69-138	Merchant Name	TX_MRCH_NAME	
	M_LOC_NAME position(31-60),			TX_MRCH_ID	
	M_ALT_NAME position(61-90),	M_DBA_NAME position(140-161),			
	M_STREET position(91-120),	STREET position(163-222),	Street		
	M_CITY position(121-140),	CITY position(224-253),	City	TX_MRCH_CITY	
	M_STATE position(141-143),	STATE position(255-256),	State	TX_MRCH_STATE	
	M_ZIP position(144-152),	ZIP position(262-271),	Zip	TX_MRCH_POSTAL_CODE	
	DUNS position(153-161),				
	M_INC position(162-163),	INC position(290-339),	Mastercard Merchant Incorporation Status		
	M_MINORITY_CD position(164-16	MINORITY position(341-341),	Mastercard Ethnicity of Business Owner		
	TIN position(166-174),	TIN position(345-359),	TIN		
	M_PHON position(175-189),	PHONE position(273-288),	Phone		
	PROP_FIRST_NAME position(190-2	PROP_FIRST_NAME position(485-495),			
	PROP_M_INITIAL position(215-215),				
	PROP_LAST_NAME position(216-2	PROP_LAST_NAME position(497-510),			
	M_WOMAN_OWNED position(24	WOMAN_OWNED position(343-	Mastercard Gender of Business Owner		
	MCC position(243-246),	MCC position(13-16),		TX_MCC	
	MSP_ID position(247-261),	MERCH_ID position(1-11),			
	ALT_CITY position(273-292),				
	ALT_STATE position(293-295),				
	ALT_ZIP position(296-304),				
	TIN_TYPE position(320-320),				
	M_SALES position(321-330),	SALES position(463-471),			
	M_NBR_EMPL position(331-336)	NBR_EMPL position(474-482),			
	M8A_CLASS position(337-337),	M8A_CLASS position(512-512),			
	M8A_EXP position(338-347),				
	SBA_PART position(348-348),	SBA_PART position(514-514),	Mastercard SBA Registered		
	DIS_VET position(349-349),	DIS_VET position(516-516),	Mastercard Disabled Veteran Indicator		
	VET position(350-350),	VET position(518-518)	Matercard Veteran Indicator		
	VIET_VET position(351-351),		Mastercard Vietnam Veteran Indicator		
	REFUSAL position(352-352)		Mastercard Information Refusal Indicator		
		M_COUNTRY position(258-260),		MRCH_CNTRY	
		MCC_DESCR position(18-67),			
			Mastercard 1099 Indicator		
			Mastercard SBA Disabled		
			Mastercard HUB Zone		
			Mastercard Historically Black College Ind		
			Mastercard SBA Certified Business Ind		
			Mastercard EMR ID		
	31	23	21	7	22%

APPENDIX D: RISK PREDICTIVE MODEL DAILY FILE

This Appendix is the specification of the data expected by HNC daily from the banks aggregated with the data from PCOLS. Cells highlighted in red reflect elements that are anticipated by HNC but that are not transmitted (and have no placeholder in current file structure) from PCOLS.

This Appendix has been redacted, and is considered sensitive.

APPENDIX E: RISK PREDICTIVE MODEL MONTHLY FILE

This Appendix is the specification of the monthly data used by the DM/RA contractor. These files are to be provided by the Banks.

This Appendix has been redacted.

APPENDIX F: ACRONYMS AND ABBREVIATIONS

Table F-1. Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
A/OPC	Agency/Organization Program Coordinator
AF	Air Force
AIM	Authorization Issuance and Maintenance
ANSI	American National Standards Institute
AO	Approving Official
CAC	Common Access Card
CCF	CitiBank Commercial File
CERS	Citibank Electronic Reporting System
COOP	Continuity of Operations
CRCARD	Pseudo Pay DODAAC for routing purchase acceptance transactions
DAASC	Defense Automated Addressing System Center
DEERS	Defense Enrollment and Eligibility System
DEF	Data Exchange File
DFAS	Defense Finance and Accounting Service
DISA	Defense Information Systems Agency
DM/RA	Data Mining/Risk Assessment
DMDC	Defense Manpower Data Center
DOD	Department of Defense
DODAAC	Department of Defense Activity Address Code
EMMA	Enterprise Monitoring and Management of Accounts
FAR	Federal Acquisition Regulation
FICO	Fair Isaac Corporation
FMR	Financial Management Regulation
GAO	Government Accountability Office
GEX	Global Exchange
GSA	General Services Administration
IG	Inspector General
JOQ	Joint Organizational Query
NAF	Non-Appropriated Funds
NITC	NAVFAC Information Technology Center
OPTI	Obligation Processing Type Indicator
PAT	Program Audit Tool
PCOLS	Purchase Card Online System
PC PMO	Purchase Card Program Management Office
PDF	Portable Document Format
RPM	Risk Predictive Model
SALTS	Standard Automated Logistics Tool Set

Acronym/ Abbreviation	Definition
SBF	Statement Billing File
SIC	Standard Industrial Classification
TBD	To Be Determined
TBR	Total Business Reporting
TIN	Taxpayer's Identification Number
TRP	Tax Reporting Program
TSYS	Total Systems Service, Inc.
UDF	User Defined File
USD	United States Dollar
VCF	VISA Commercial File
WAWF	Wide Area Workflow
XML	Extensible Markup Language