



U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF INSPECTOR GENERAL

Catalyst for Improving the Environment

Audit Report

Improved Data Integrity Needed for the Integrated Contracts Management System

Report No. 10-P-0144

June 14, 2010

Abbreviations

COTS	Commercial Off-the-Shelf
EAS	EPA Acquisition System
EPA	U.S. Environmental Protection Agency
FAR	Federal Acquisition Regulation
FARA	Federal Acquisition Reform Act
FASA	Federal Acquisition Streamlining Act
FPDS-NG	Federal Procurement Data System – Next Generation
GAO	U.S. Government Accountability Office
GSA	General Services Administration
ICMS	Integrated Contracts Management System
NIST	National Institute of Standards and Technology
OAM	Office of Acquisition Management
OAM-ITSC	Office of Acquisition Management – Information Technology Service Center
OIG	Office of Inspector General
OMB	Office of Management and Budget



At a Glance

Catalyst for Improving the Environment

Why We Did This Review

The Office of Inspector General contracted with Williams, Adley & Company, LLP, to conduct a data integrity audit of the Integrated Contracts Management System (ICMS). We sought to determine whether data within the ICMS complied with the system edit and validation checks designed to control data entry and quality.

Background

The U.S. Environmental Protection Agency's (EPA's) Office of Acquisition Management (OAM) supports the procurement needs of program offices throughout EPA and utilizes the ICMS to facilitate that process. The ICMS generates documents critical to the procurement process and recorded contract values totaling approximately \$15 billion for Fiscal Year 2007 and \$17.5 billion for Fiscal Year 2008.

For further information, contact our Office of Congressional, Public Affairs and Management at (202) 566-2391.

To view the full report, click on the following link:
www.epa.gov/oig/reports/2010/20100614-10-P-0144.pdf

Improved Data Integrity Needed for the Integrated Contracts Management System

What Williams, Adley & Company, LLP, Found

EPA needs to strengthen ICMS data integrity controls to increase the reliability of the data for management reporting. In particular, ICMS data contain exceptions to data quality rules defined in the ICMS data dictionary and OAM-defined system checks. ICMS data also contain anomalies that cast suspicion over the validity of processed transactions. These anomalies include transactions processed on nonstandard workdays and dollar values that are unusually high. Furthermore, discrepancies noted between OAM-defined system edit and validation checks and the ICMS data dictionary call into question what actual information should be entered into the ICMS for certain fields. The above conditions are caused by a breakdown in controlling data entry or in maintaining data and associated system documentation.

As noted during our field work, EPA is replacing the ICMS with a new acquisition system called the EPA Acquisition System (EAS). While it may not be practical for EPA to address these weaknesses within the ICMS, EPA should take proactive steps to strengthen its data integrity processes so these similar weaknesses do not exist in the EAS.

What Williams, Adley & Company, LLP, Recommends

Williams, Adley & Company, LLP, recommends that the Director, OAM:

- Take immediate action to implement recommendations to strengthen plans for migrating data from the ICMS to the EAS as outlined in OIG Report No. 10-P-0071, *Plans to Migrate Data to the New EPA Acquisition System Need Improvement*.
- Conduct and document a review of the EAS data quality controls to ensure all required edit checks are identified and recorded in the EAS system documentation and implemented in the system.
- Conduct and document a review of the EAS system development and program change control procedures to ensure that the EAS data dictionary is updated as database fields, and corresponding edit and validation checks are added or modified within the system. Implement all needed changes to the procedures.

The Agency generally agreed with the findings and recommendations.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
INSPECTOR GENERAL

June 14, 2010

MEMORANDUM

SUBJECT: Improved Data Integrity Needed for the Integrated Contracts Management System
Report No. 10-P-0144

FROM: Rudolph M. Brevard
Director, Information Resources Management Assessments
Office of Inspector General

Rudolph M. Brevard

TO: John Gherardini, Deputy Director
Office of Acquisition Management
Office of Administration and Resources Management

This is the report on the subject audit conducted by Williams, Adley & Company, LLP (Williams Adley), on behalf of the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). This report contains findings that describe the problems Williams Adley identified and corrective actions recommended. This report represents the conclusions of Williams Adley and does not necessarily represent the final EPA position. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The estimated cost of this report, which includes contract costs and OIG contract management oversight, is \$424,969.

Action Required

In accordance with EPA Manual 2750, you are required to provide a written response to this report within 90 calendar days. You should include a corrective actions plan for agreed-upon actions, including milestone dates. We have no objections to the further release of this report to the public. This report will be available at <http://www.epa.gov/oig>.

If you or your staff have any questions regarding this report, please contact me at (202) 566-0893 or brevard.rudy@epa.gov; or Harry Kaplan, Project Manager, at (202) 566-0898 or kaplan.harry@epa.gov.



June 14, 2010

MEMORANDUM

SUBJECT: Improved Data Integrity Needed for the Integrated Contracts Management System

FROM: Robert J. Fulkerson
Senior IT Audit Manager
Williams, Adley & Company, LLP

THRU: Rudolph M. Brevard
Director, Information Resources Management Assessments
Office of Inspector General

TO: John Gherardini, Deputy Director
Office of Acquisition Management
Office of Administration and Resources Management

This memorandum is to inform the U.S. Environmental Protection Agency (EPA) of critical findings of Williams, Adley, & Company, LLP, that require management action regarding the improved data integrity needed for the Integrated Contracts Management System.

If you or your staff have any questions regarding this report, please contact Rudolph Brevard at (202) 566-0893 or brevard.rudy@epa.gov; or Harry Kaplan, Project Manager, at (202) 566-0898 or kaplan.harry@epa.gov.

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Purpose

We sought to determine whether data within the Integrated Contracts Management System (ICMS) complied with the system edit and validation checks designed to control data entry and quality.

Background

The U.S. Environmental Protection Agency's (EPA's) Office of Inspector General (OIG) contracted with Williams, Adley & Company, LLP (Williams Adley), to conduct this audit. EPA's Office of Acquisition Management (OAM) supports the procurement needs of program offices throughout EPA and utilizes the ICMS to facilitate that process. The ICMS generates documents critical to the procurement process and recorded contract values totaling approximately \$15 billion for fiscal year 2007 and \$17.5 billion for fiscal year 2008. The system also provides data to the General Services Administration's Federal Procurement Data System – Next Generation (FPDS-NG) to support congressional reporting and public access to acquisition data. The ICMS populates the OAM Data Mart which provides reporting acquisition activities, and can assist in managing procurement operations, and assists Program Offices in complying with set-aside requirements. Data edit and validation checks have been built into the ICMS to help ensure the accuracy of data that users enter into the system.

Federal guidance, including the National Institute of Standards and Technology (NIST) and the Office of Management and Budget (OMB), requires EPA to consistently apply data entry controls to ensure the integrity of their information technology systems and data, and to accurately report contractual actions to the FPDS. Specifically, OMB Circular A-127, *Financial Management Systems*, states that internal controls over data entry and transaction processing shall be applied consistently throughout the system to ensure the validity of information. NIST Special Publication 800-30, *Risk Management Guide for Information Technology Systems*, states that system and information owners are responsible for ensuring that proper controls are in place to address integrity of data they own. OMB M-06-28, *Reporting Small Business Contracting Information*, states that each agency and department is responsible for submitting accurate data to FPDS and verifying the accuracy of such data. Lastly, Federal Acquisition Regulation (FAR) 4.604(a) holds the Senior Procurement Executive and head of the contracting activity responsible for monitoring a process that ensures accurate reporting of contractual actions to FPDS.

The EPA Office of Acquisition Management, Information Technology Service Center (ITSC) is responsible for supporting the ICMS application, associated edit and validation checks, and system documentation. OAM-ITSC is based in Washington, DC, with a smaller number of staff residing in Research Triangle Park, North Carolina, and is in the process of replacing ICMS with the EPA Acquisition System (EAS), a commercial off-the-shelf (COTS) acquisition system. As part of the implementation process, data residing in ICMS will be migrated to the EAS.

Scope and Methodology

We conducted our review in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient and appropriate

evidence to provide a reasonable basis for our findings and conclusions based on the audit objectives. Additionally, we used the guidance contained in Government Accountability Office (GAO) *Guidance for Assessing the Reliability of Computer-Processed Data* for evaluating the database processes. The evidence obtained from our audit tests and processes provides a reasonable basis for our findings and conclusions.

From the 1,552 ICMS database fields, we identified 207 fields that are considered critical high-risk fields within the ICMS database. The fields were chosen due to their Financial, Compliance or Operational significance. This listing was further refined to identify 79 Financial and Compliance fields, for purposes of testing. Williams Adley defined critical high-risk fields utilizing the following criteria:

- Financial - Data that are critical to the accurate recording of monetary amounts for contract solicitations, awards, contract documents, contract modifications, and task orders/delivery orders.
- Compliance - Data that are critical to program office compliance with federal laws and regulations, Federal Acquisition Regulations (FAR), the Federal Acquisition Streamlining Act (FASA), the Federal Acquisition Reform Act (FARA), and the Office of Federal Procurement Policy Act as amended Competition in Contracting Act of 1984 (41 USC); and EPA procurement and acquisition policies and procedures, including set-asides for small business and socio-economic classes.

Williams Adley obtained a data extract from the ICMS database in September 2008 and imported all records for the 79 Financial and Compliance fields into a computer-assisted auditing tool to prepare for testing. Edit and validation checks for each of the 79 fields were identified from the current ICMS data dictionary dated February 28, 2005, and an Oracle field attributes document OAM provided. Williams Adley performed testing to evaluate record compliance with the data dictionary and database defined edit and validation checks for each of the 79 fields. Testing included, but was not limited to, evaluation of the following:

- Maximum number of characters
- Null values (mandatory vs. nonmandatory fields)
- Data Type (alpha numeric, character, numeric, date)
- Evaluation of positive, negative, and zero entries
- Evaluation of Max values, variance, and standard deviation

Williams Adley inquired with OAM-ITSC to obtain clarification and assurance to our understanding of the edit and validation checks contained in the data dictionary. This resulted in requesting OAM-ITSC to provide updated edit and validation checks for the 79 subject fields. We performed tests of the data contained in each field to evaluate record compliance with the OAM-ITSC defined checks for each of the 79 fields. Williams Adley then performed a comparison between OAM-ITSC provided checks and the data dictionary to identify variances between the data dictionary and current checks. Lastly, we reviewed the data statistics to identify anomalous records.

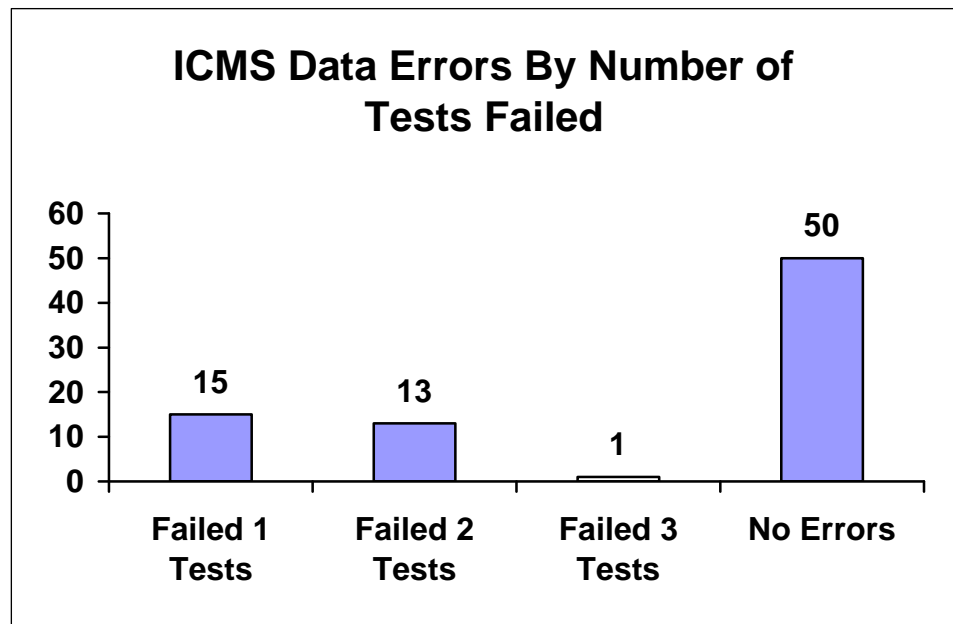
Findings

The ICMS data contains exceptions to data quality rules defined in the ICMS data dictionary or OAM-defined system checks. ICMS data also contain anomalies that cast suspicion over the validity of processed transactions. These anomalies include transactions processed on nonstandard workdays and dollar values with unusually high values. Furthermore, discrepancies noted between ITSC-defined system edit and validation checks and the ICMS data dictionary call into question what actual information should be entered into ICMS for certain fields. Data integrity within the ICMS needs strengthening to increase its (1) reliability for management reporting and (2) accuracy before suspected errors are transferred into EPA's new acquisition system.

These weaknesses exist in part due to:

- A breakdown in the process for controlling data entry, which are necessary to control data input;
- Lack of identifying and implementing edit and validation checks during system implementation; and
- Inconsistent documenting of edit and validation checks in the ICMS data dictionary as data requirements change.

Sixty-four percent (50 of 79) of the ICMS fields passed all four data integrity tests. The remaining data fields failed at least one or more tests. The noted graph depicts the breakdown of ICMS data field errors by the number of tests failed. Appendices A through D provide the details for each test performed and the listing of fields which failed the particular test.



These conditions have the potential of reducing EPA management's ability to rely on ICMS data for decision making purposes, due to possible inaccuracies in reporting and output data. As a critical application used to support acquisition activities for all program offices of EPA, as well for reporting to the General Service Administration's (GSA's) FPDS-NG management emphasis is needed to address these data integrity issues in a comprehensive manner.

As noted during our fieldwork, EPA is replacing ICMS with a new acquisition system called the EPA Acquisition System (EAS). While it may not be practical for EPA to address these weaknesses within ICMS, EPA management should take proactive steps to strengthen its data integrity processes so these similar weaknesses do not exist in the EAS.

Recommendations

Williams, Adley & Company, LLP, recommends that the Director, Office of Acquisition Management, within the Office of Administration and Resources Management:

1. Take immediate action to implement recommendations to strengthen plans for migrating data from the ICMS to the EAS as outlined in Office of Inspector General Quick Reaction Report No. 10-P-0071, *Plans to Migrate Data to the New EPA Acquisition System Need Improvement*.
2. Conduct and document a review of the EAS application's data quality controls to ensure all required edit checks are identified and recorded in the EAS system documentation and implemented in the system.
3. Conduct and document a review of EAS system development and program change control procedures to ensure the EAS data dictionary is updated as database fields, and corresponding edit and validation checks are added or modified within the system. Implement all needed changes to the procedures.

Agency Comments and OIG Evaluation

In general, EPA agreed with our findings and recommendations. However, EPA felt that the report did not accurately reflect the Agency's responsibilities for maintaining the system documentation, since the new acquisition is built from a commercial-off-the-shelf product. While we agree that EPA has limited responsibility for maintaining the manufacturer's portion of the system software, EPA has taken significant steps to either configure the software to meet its needs or build interfaces so the software could work with existing EPA applications. Therefore, to the extent that EPA engages in these activities, it is incumbent upon management to ensure it has effective control processes in place to capture and document these changes in the EAS system documentation.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS						POTENTIAL MONETARY BENEFITS (in \$000s)	
Rec. No.	Page No.	Subject	Status ¹	Action Official	Planned Completion Date	Claimed Amount	Agreed To Amount
1	4	Take immediate action to implement recommendations to strengthen plans for migrating data from the ICMS to the EAS as outlined in Office of Inspector General Quick Reaction Report No. 10-P-0071, <i>Plans to Migrate Data to the New EPA Acquisition System Need Improvement.</i>	O	Director, Office of Acquisition Management, within the Office of Administration and Resources Management	11/15/2010		
2	4	Conduct and document a review of the EAS data quality controls to ensure all required edit checks are identified and recorded in the EAS system documentation and implemented in the system.	O	Director, Office of Acquisition Management, within the Office of Administration and Resources Management			
3	4	Conduct and document a review of EAS system development and program change control procedures to ensure the EAS data dictionary is updated as database fields, and corresponding edit and validation checks are added or modified within the system. Implement all needed changes to the procedures.	O	Director, Office of Acquisition Management, within the Office of Administration and Resources Management	10/01/2010		

¹ O = recommendation is open with agreed-to corrective actions pending
 C = recommendation is closed with all agreed-to actions completed
 U = recommendation is undecided with resolution efforts in progress

Appendix A

Exceptions to Data Dictionary Defined Edit & Validation Checks

Our testing of the 79 sampled critical fields, which contain varying total records, revealed a total of 9 data fields with records in non-compliance with data dictionary-defined edit and validation checks. Both Financial and Compliance related fields were included in these exceptions. These errors as presented below indicate that exceptions exist throughout the ICMS database. However, the listing of the discrepancies does not indicate potential or actual risk. The total number of records is also not an indicator of risk or importance of the field. Testing was performed only to identify the discrepancy existence. These exceptions are listed as noted exceptions from the sample selected. Testing did not measure the level of impact caused by these exceptions and thus each field must be weighted equally in impact to overall operations of the system. As noted in the table, these failures were due to one or more of the following conditions:

- Duplicate records
- Non-existent reference table
- Zero values
- Non-text character
- Gaps in sequential values
- Non-permissible numerical values

Field error rates were calculated based on the total exceptions and total record count per field tested. The error rates ranged from 0.002 percent to 100 percent.

Table	Field	Full Field Name	Edit / Validation Check	Nature of Exceptions	Number of Exceptions	Total Record Count	Error Rate Percentage
TGPF	GPF_EST_CST	Government Property Facilities Estimated Cost	Reference table	No existing reference	116	116	100%
TC	SDB_PREF_PRG RM_CD	Contract Small Disadvantaged Business Program Code	Unique key and sequential	Multiple gaps in sequence and duplicates	4,324	4,324	100%
TCLST	CLST_ID_CD	Close-Out Identification Code	Unique sequential key	Multiple gaps in sequence and duplicates	3,487	3,601	96.83%

Table	Field	Full Field Name	Edit / Validation Check	Nature of Exceptions	Number of Exceptions	Total Record Count	Error Rate Percentage
TASG	FULL_INCR_CD	Full/ Incrementally-Funded Assignment Type	No zero values permissible, nulls (blanks) are allowed.	Zero values found.	16,334	46,964	34.78%
TCEA	CEA_ID_NBR	Cost Element Account Identification Number	Unique key and sequential.	Multiple gaps in sequence and duplicates.	16,440	60,757	27.06%
TOBL	OBL_ID_NBR	Obligation Identification Number	Unique sequential key.	Multiple gaps in sequence and duplicates.	35,674	196,718	18.13%
TCAB	CAB_ID_NBR	Cost Aggregate Budget Identification Number	Unique key and sequential.	Multiple gaps in sequence and duplicates.	4,000	58,149	6.88%
TASG	FAIR_OPTNTY_CD	Multiple Award Contract Fair Opportunity Code	Range values between 1 to 5.	Values of 6 and 7 found.	468	46,964	1.00%
TCEA	CEA_NAME	Cost Element Account Name	All text characters.	Nontext character.	1	60,757	0.002%

Appendix B

**Exceptions to OAM Information Technology
Service Center Defined Edit & Validation Checks**

Our testing of the 79 sampled critical fields revealed 5 fields in noncompliance with current edit and validation checks provided by OAM-ITSC during audit fieldwork. Current edit and validation checks were requested of OAM-ITSC during fieldwork, since the data dictionary had not been updated since February 28, 2005. As noted in the below table, these failures were due to one or more of the following conditions:

- Null values (i.e., blanks)
- State codes in a ZIP Code-defined field
- Incorrect OAM-defined resource values

Actual error rates for these exceptions, most close to one hundred percent, were less definable due to the nature of their causes, and thus were replaced with a description of the condition. It was noted that both Financial and Compliance related fields were included in the listing of exceptions.

Table	Field	Full Field Name	Edit / Validation Check	Nature of Exceptions	Description of Rule Violation Conditions
TSF_1442	SF_1442_SBA_STATE	Standard Form 1442 Small Business Administration State	Valid State code.	All values are null.	OAM provided the edit check rule that the set is based on ZIP Codes. Testing showed that no ZIP Codes exist in the data field; therefore the edit check rule does not appropriately define the field. Testing for ZIP Code provides a 100% error rate for all entries in all tables.
TPA_ORG_A DDR_ASS	ADDR_ST	Procurement Activity Organization Address Association State	Valid ZIP Code.	All data entries are State codes and one zero value entry.	OAM provided the edit check rule that the set is based on ZIP Codes. Testing showed that no ZIP Codes exist in the data field; therefore the edit check rule does not appropriately define the field. Testing for ZIP Code provides a 100% error rate for all entries in all tables.
TASG	ASG_LOE	Assignment Level of Effort	Reference to other fields.	OAM-defined field resource values did not match ASG_LOE field values.	OAM provided the edit check rule that if this is a deliver order or task order, then value must be ≤ to 99,999,999,999.99, and value must be ≤ the sum of all.

Table	Field	Full Field Name	Edit / Validation Check	Nature of Exceptions	Description of Rule Violation Conditions
					<p>Allocated Delivery Order (DO)/Task Order (TO) totals (CAB_AMT) for this order. Testing found inconsistencies in multiple table entries for CAB_AMT sums. OAM explained these sums are user-entered. Error rates differed depending on the table tested for entry. All table fields contained errors.</p>
TCAB	CAB_AMT	Cost Aggregate Budget Amount	Reference to other fields.	OAM-defined field resource values did not match CAB_AMT field values.	<p>OAM provided the edit check that the field must be \leq to the parent cost category's amount (CAD_CST_AMT). In testing, many records were found exceeding these defined values (the number of entries differed depending on the table tested; multiple tables exist for this field). All tables with the parent field showed multiple values exceeding the edit check rule. All table fields contained errors.</p>
TCEB	CEB_AMT	Cost Element Budget Amount	Reference to other fields.	OAM-defined field resource values did not match CEB_AMT field values.	<p>OAM provided the edit check rule that the field must be \leq to the parent line item's amount (CEA_AMT). The parent exists in multiple tables and some errors were found in tests. All table fields contained errors.</p>

Appendix C

Data Anomalies

Our testing of the 79 fields included identifying data outside the expected value range. For numerical fields, that included evaluating maximum values noted in the record set. Date fields were analyzed for the feasibility of the day of the week the dates were entered. In follow-up interviews on these anomalies, OAM program management could not explain these inconsistencies.

These rationality tests identified 13 fields with anomalous records, which fell into one of the following categories:

- Date entered as a Sunday
- Unusually large monetary amount

It was noted that both Financial and Compliance related fields were included in this listing of exceptions.

Table	Field	Full Field Name	Nature of Exceptions	OAM-Summarized Response
TASG	ASG_FNL_PYM_DT	Assignment Final Payment Date	22 Sunday dates	The user enters dates and would need to verify them.
TASG	ASG_LOE	Assignment Level Of Effort	The maximum value for one of the entries was 1,129,905,413.44.	The user enters values and would need to verify them.
TCAD	CAD_OPTL_AMT	Contract Aggregate Data Optional Amount	The maximum value for one of the entries was 9,000,000,000.00.	This is expressing an essentially infinite cost ceiling on a GSA Schedule contract (GS-02F-0211R). The contracting officer that entered this was probably trying to make sure there was no cap on the ceiling that could be used on orders against this schedule contract.
TCEA	CEA_AMT	Cost Element Account Amount	The maximum value for one of the entries was 999,999,999.	The user enters values and would need to verify them.
TC	C_EST_AMT	Contract Estimated Amount	The maximum value for one of the entries was 50,000,000,000.00.	The user enters values and would need to verify them.

Table	Field	Full Field Name	Nature of Exceptions	OAM-Summarized Response
TEFWA	EFWA_CNTRCR_CST	EPA Work Assignment Form Proposed Contractor Cost	The maximum value for one of the entries was 3,385,794,743.00.	The user enters values and would need to verify them.
TMDFCN	MDFCN_MAX_PTNTL_VAL_CHNG	Modification Maximum Potential Value Change	The maximum value for one of the entries was 400,000,000.00.	This is the sum of user-entered values, and would need to be verified by the user who entered them.
TPOP	POP_MAX_AMT	Period of Performance Maximum Amount	The maximum value for one of the entries was 999999999.00.	The user enters values and would need to verify them.
TPOP	POP_MIN_AMT	Period of Performance Minimum Amount	The maximum value for one of the entries was 50676590.00.	The user enters values and would need to verify them.
TSYNPS	SYNPS_CST_AMT	Synopsis Cost Amount	The maximum value for one of the entries was 699337192.00.	This is the sum of user-entered values, and would need to be verified by the user who entered them.
TVPR	VPR_EST_AMT	Vendor Procurement Role Estimated Amount	The maximum value for one of the entries was 18263072.00.	The user enters values and would need to verify them.
TVPR	VPR_MAX_AMT	Vendor Procurement Role Maximum Amount	The maximum value for one of the entries was 51443860.00.	The user enters values and would need to verify them.
TCEA	CEA_MAX	Cost Element Account Maximum	The maximum value for one of the entries was 999999999.00.	The user enters values and would need to verify them.

Appendix D

Edit & Validation Checks that Require Updating in Data Dictionary

Gap analysis performed between data dictionary-defined edit and validation checks and OAM-provided edit and validation checks revealed 17 fields with discrepancies, representing a divide between edit and validation checks verified by OAM to be in place versus what is actually documented in the data dictionary.

It was noted that both Financial and Compliance related fields were included in this listing of exceptions.

Table	Field	Full Field Name	OAM-defined Edit / Validation Check	Data Dictionary parameters	Description of Discrepancy
TC	SDB_PREF_PRGRM_CD	Contract Small Disadvantaged Business Program Code	Drop-down list selection; this field is no longer actively used by the application.	A system generated unique sequential number	Data dictionary has no statement about disabling the field, inactivity, or non-use
TVO	VO_CIS_SML_SFX	Vendor Office CIS Small Business Suffix	No longer used by ICMS. It was part of an interface with an EPA information system that was retired in 2002.	Any valid CIS Code	Data dictionary has no statement about disabling the field, inactivity, or non-use
TVPR	SMLBS_SIZE_CD	Small Business Size Code	This is a nonmandatory field that has evidently never been used.	Positive integer.	Data dictionary has no statement about disabling the field, inactivity, or non-use
TCAB	CAB_ID_NBR	Cost Aggregate Budget Identification Number	This column alone is not a primary key, rather it is part of a composite key (C_ID_CD, ASG_ID_NBR, CAB_ID_NBR). Its value is system-generated by an Oracle sequence object (number generator). There should be gaps in the numbers. Duplicates are acceptable, and are caused because 13 original ICMS databases were merged into the current production database.	Sequential number that uniquely identifies a specific cost aggregate budget item within an assignment. Physically derived for performance enhancement purposes.	Duplication errors and differences on data source.

Table	Field	Full Field Name	OAM-defined Edit / Validation Check	Data Dictionary parameters	Description of Discrepancy
TCEA	CEA_ID_NBR	Cost Element Account Identification Number	This column alone is not a primary key, rather it is part of a composite key (C_ID_CD, POP_ID_NBR, CEA_ID_NBR). Its value is system generated by an Oracle sequence object (number generator). There should be gaps in the numbers. Duplicates are acceptable, and are caused because 13 original ICMS databases were merged into the current production database.	Sequential number that uniquely identifies a specific cost element account within a period of performance for a procurement.	Duplication errors and differences on data source.
TCLST	CLST_ID_CD	Close-Out Identification Code	This column alone is not a primary key, rather it is part of a composite key (C_ID_CD, POP_ID_NBR, CEA_ID_NBR). Its value is system generated by an Oracle sequence object (number generator). There should be gaps in the numbers. Duplicates are acceptable, and are caused because 13 original ICMS databases were merged into the current production database.	Unique number assigned to close out records.	Duplication errors and differences on data source.
TGPF	GPF_EST_CST	Government Property Facilities Estimated Cost	The text "Foreign key to Government Property Facilities Type reference table TGPF_TP_REF" in the data dictionary is incorrect and should be removed. The source of this information is a user-entered number with no edit checks.	Any valid dollar amount. Foreign key to Government Property Facilities Type reference table TGPF_TP_REF.	Field sources different.

Table	Field	Full Field Name	OAM defined Edit / Validation Check	Data Dictionary parameters	Description of Discrepancy
TASG	FAIR_OPTNTY_CD	Multiple Award Contract Fair Opportunity Code	Additional choices have been added to TFAIR_OPTNTY_REF. Valid values are null or 1-7.	The code representing the Multiple Award Contract Fair Opportunity Code. Corresponds to TFAIR_OPTNTY_REF.ID_CD. Valid codes are 1 through 5. The TFAIR_OPTNTY_REF.DSCR values that correspond to codes 1 through 5 are: Fair Opportunity Process, Urgency, One/Unique Source, Follow On Order, or Minimum Guarantee.	Additional codes 6 and 7 added and not documented.
TC	SDB_PREF_PRGRM_CD	Contract Small Disadvantaged Business Program Code	This is a foreign key to TSDB_PREF_PRGRM_REF.ID_CD. There should not be any zero values. Values should repeat. Some values should be null.	Foreign key to TSDB_PREF_PRGRM_REF.ID_CD. Unique sequential number.	Not allowing zero values is not documented in the data dictionary.
TASG	FULL_INCR_CD	Full/Incrementally Funded Assignment Type	There should not be any zero values.	Any permissible numeric code value contained in the ID_CD field of the TFULL_INCR_REF table.	Not allowing zero values is not documented in the data dictionary.
TMDFCN	MDFCN_MAX_PTNTL_VAL_CHNG	Modification Maximum Potential Value Change	This is the sum of user-entered values.	Any valid number.	Not specifically defined as user-entered or a sum in the data dictionary
TOBL	OBL_ID_NBR	Obligation Identification Number	The composite of C_ID_CD, ASG_ID_NBR, and MDFCN_ID_NBR make this field unique. The field is not a unique key.	Unique in combination with PR_CD and COM_ID_NBR.	Differences include no uniqueness and the wrong fields listed.
TSF_1442	SF_1442_SBA_STATE	Standard Form 1442 Small Business Administration State	Valid State code.	Any valid US state abbreviation.	No mention of entering ZIP Codes to receive the valid US state abbreviations

Table	Field	Full Field Name	OAM defined Edit / Validation Check	Data Dictionary parameters	Description of Discrepancy
TPA_ORG_ADDR_ASS	ADDR_ST	Standard Form 1449 Administered By Standard Address Indicator	Valid ZIP Code.	Any valid two character US State abbreviation.	Neither OAM nor the data dictionary mention the existence of zero values
TASG	ASG_LOE	Assignment Level Of Effort	If this is a DO or TO, then value must be less than or equal to 99,999,999,999.99, and value must be ≤1 to the sum of all allocated DO/TO totals (CAB_AMT) for this order.	Any valid number.	OAM provides more specificity than exists in the data dictionary.
TCAB	CAB_AMT	Cost Aggregate Budget Amount	Field must be ≤ to the parent cost category's amount (CAD_CST_AMT).	Any valid number.	OAM provides more specificity than exists in the data dictionary.
TCEB	CEB_AMT	Cost Element Budget Amount	Field must be ≤ to the parent line item's amount (CEA_AMT).	Any valid number.	OAM provides more specificity than exists in the data dictionary.

Appendix E

Agency Response

April 16, 2010

MEMORANDUM

SUBJECT: Response to Office of Inspector General (OIG) Draft Report: Improved Data Integrity Needed for the Integrated Contracts Management System (ICMS)

FROM: John C. Gherardini III, Acting Director
Office of Acquisition Management

TO: Rudolph M. Brevard, Director
Information Resources Management Assessments
Office of Inspector General

Thank you for the opportunity to comment on the draft report entitled “Improved Data Integrity Needed for the Integrated Contracts Management System (ICMS),” dated February 26, 2010. We are in general agreement with the findings and recommendations and will ensure all corrective actions are completed as required.

General Comments

The Office of Acquisition Management (OAM) agrees that ICMS has identified data integrity issues. The U.S. Environmental Protection Agency (EPA) Acquisition System (EAS) is being implemented to increase data integrity associated with Agency acquisitions and to ensure that similar weaknesses do not exist in the new system. Due to the implementation of EAS and the unavailability of the specific record details associated with the errors identified in Appendix A, B, C & D of the report, a review of all the data discrepancies to ensure full agreement of all the errors found would be very difficult.

Comments on Recommendations:

Recommendation 1: Take immediate actions to strengthen plans for migrating data from ICMS to EAS as in outlined Office of Inspector General Quick Reaction report, “Plans to Migrate Data to the New EPA Acquisition System Need Improvement.”

Response: In reference to the Quick Reaction reports recommendations to strengthen plans for migrating data from ICMS to EAS, OAM has taken active steps to ensure that data migration from ICMS to EAS is effective by:

- Ensuring the continuation of the two tier review for migrated data for active and inactive contracts.

- Ensuring that appropriate individuals participate in the EAS Migrated Data Review Orientations. Several meetings and training sessions have already taken place in headquarters and the regions.
- Developing a plan to ensure that closed contracts are reviewed for accuracy. OAM will use the existing verification and validation annual exercise to review and ensure closed contract dates are accurate in the system. This task will be completed by 11/15/2010.

Recommendation 2: Conduct and document a review of the EAS data quality controls to ensure all required edit checks are identified and recorded in the EAS system documentation and implemented in the system.

Response: This process was completed through EAS Requirements, Testing and Deployment Planning. Our concern with the report, as written, appears to reveal a lack of understanding associated with the Agency's ability to easily modify documentation and/or codes associated with a Commercial-Off-The-Shelf (COTS) package. The Office of Management and Budget has encouraged agencies to limit customization in an effort to minimize costs to the federal government. PRISM, which is the COTS package associated with EAS, is used in acquisition offices across the federal government. Modifications such as edit checks and controls have been designed into the system based on feedback not only from EPA but other federal agencies as well. Documentation associated with PRISM is the responsibility of the PRISM vendor. As changes are made to the system, the vendor is responsible and does provide updated documentation.

Recommendation 3: Conduct and document a review of EAS system development and program change control procedures to ensure the EAS data dictionary is updated as database fields, and corresponding edit and validation checks, are added or modified within the system. Implement all needed changes to the procedures.

Response: System development and program change control procedures as it relates to the PRISM software as well as PRISM data dictionary are out of EPA's control and are the responsibility of the vendor. OAM will conduct and document a review of the EAS system development and program change control procedures as it relates to any customizations applied for EPA. We will ensure that change control procedures clearly identify where EPA documentation should be updated and ensure those updates are completed. This would be done within the EAS functional configuration documentation. We have change control procedures in place but will review them by 10/01/2010 to ensure documentation updates are included.

Should you have any questions regarding this response, please contact me at (202) 564-4310 or Margaret Lynch, Service Center Manager, Information Technology Service Center at (202) 564-4605.

Appendix F

Distribution

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