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Accounting and Information  
Management Division

B-277096

June 16, 1997

The Honorable John J. Hamre  
The Under Secretary of Defense (Comptroller)

Subject: Financial Management: Comments on DFAS' Draft Federal  
Accounting Standards and Requirements

Dear Dr. Hamre:

This letter is in response to your April 9, 1997, request for comments on the Defense Finance and Accounting Service's (DFAS) draft Federal Accounting Standards and Requirements, dated February 24, 1997. Based on this document and discussions we had with DFAS officials, we understand that these standards and requirements will be used by Department of Defense (DOD) system managers to (1) help validate existing accounting and feeder systems<sup>1</sup> compliance with federal and DOD accounting standards and requirements and identify system changes that are needed to bring them into compliance with these standards and requirements and (2) plan and develop new systems.

Your draft document is well-organized and represents a substantial effort for which DFAS compiled a great deal of worthwhile information. Our comments are intended to help DFAS complete this effort by (1) specifying additional needed requirements not presently included in the draft, (2) suggesting changes to information now in the draft, and (3) discussing where we believe the draft document should fit into DOD's overall strategic planning and financial management systems architecture processes.

The first part of this letter details our comments on each section of the DFAS document as well as certain overall observations. The second part discusses the importance of a concept of operations to defining how the Department plans to conduct its financial management operations. Ultimately, development

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<sup>1</sup>According to DOD's Financial Management Regulation (DOD 7000.14-R, Volume 1), feeder systems are the initial record of financial data processed by accounting systems.

of a concept of operations is central to DFAS completing a review of its requirements.

COMMENTS ON THE DRAFT FEDERAL ACCOUNTING STANDARDS AND REQUIREMENTS DOCUMENT

The following comments reflect our assessment of the draft Federal Accounting Standards and Requirements. We performed our assessment by comparing the draft document to applicable federal and DOD criteria<sup>2</sup> such as the standards developed by the Federal Accounting Standards Advisory Board (FASAB) and the Joint Financial Management Improvement Program (JFMIP). We also compared the draft document to GAO's Title 2, "Accounting," Title 6, "Pay, Leave, and Allowances," and Title 7, "Fiscal Procedures." The Federal Financial Management Improvement Act of 1996 requires that each federal agency implement and maintain financial management systems that comply substantially with federal financial management systems requirements, applicable federal accounting standards, and the U.S. Government Standard General Ledger. Enclosure I lists the criteria used to assess the draft document

Tables 1 through 10 contain specific financial management requirements that we did not find in the draft document, which DFAS should consider adding. However, this letter does not include all of the requirements contained in the criteria that we reviewed. We included those requirements that are (1) essential to ensuring an integrated financial management system, (2) critical to ensuring an effective internal control system, or (3) misstated in the draft document. We did not include many of the requirements because they were more detailed than those high-level requirements or standards contained in the draft document. For example, we did not include many requirements relating to specific reports such as what would be contained in the report and how it would be prepared and transmitted.

In addition to our comments on specific sections of the draft document that are in the tables and related narrative, the following are general comments relating to the entire document.

- The draft document does not include travel, loans, acquisition, military retirees and related retirement fund investments, and budget formulation functional areas. Travel requirements and standards are found in the JFMIP Federal Financial Management System Requirements (FFMSR) no. 3, Travel System Requirements, and DOD's Financial Management Regulation (FMR), volume 9, "Travel Policy and Procedures." Loan requirements and standards are found in JFMIP's Direct Loans System Requirements (FFMSR-5) and

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<sup>2</sup>Where DOD criteria differed from federal criteria, we used the federal criteria.

Guaranteed Loans System Requirements (FFMSR-6). Acquisition requirements can be found in the Federal Acquisition Regulation, the Defense Federal Acquisition Regulation Supplement, and applicable DOD directives. Military retirement requirements can be found in DOD FMR, volume 7B, "Military Pay Policy and Procedures for Retired Pay." Investment requirements can be found in the Treasury Financial Manual (TFM), volume I. Budget formulation requirements can be found in the Office of Management and Budget (OMB) Circular A-11 and DOD FMR volume 2A, "Budget Presentation and Formulation," chapters 1-3, and 2B, "Budget Presentation and Formulation," chapters 4-19.

- Not all information flows among the document's major financial management functions are identified. For example, GAO's Policy and Procedures Manual for Guidance of Federal Agencies, Title 6, "Pay, Leave, and Allowances," calls for payroll systems to interface with personnel, general ledger, cost accounting, budget, and accounts receivable functions or systems. However, in the payroll section, the draft document only contains a draft standard that calls for the system to interface with the general ledger and cost accounting systems regarding the collection of items such as health and insurance premiums from employees on unpaid leave. DFAS could choose to develop these information flows in a separate document. Such a document should be completed prior to evaluating DOD's financial management systems to enable an assessment of whether the appropriate information exchanges among DOD's financial management systems are taking place.
- DFAS did not include GAO's Title 7, "Fiscal Procedures," in the reference section. Title 7 provides guidance on the development, installation, and operation of an agency's fiscal processes in its financial management system. (Tables 5, 8, and 9 list the missing requirements related to Title 7.)
- DFAS should clarify that the requirements in the document would apply to DOD's financial management systems, using the definitions of financial management systems contained in the Federal Financial Management Improvement Act of 1996.<sup>3</sup>

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<sup>3</sup>The Federal Financial Management Improvement Act of 1996 (P.L. 104-208, Title VIII) defines a financial management system as the financial systems and the financial portions of mixed systems necessary to support financial management. The Act defines a financial system as an information system comprised of one or more applications that is used for (1) collecting, processing, maintaining, transmitting, or reporting data about financial events, (2) supporting financial planning or budgeting activities, (3) accumulating and reporting costs information, or (4) supporting the preparation of financial

- DFAS should include definitions of each of the functional areas, and the processes within each area, to clarify the scope of each of the sections. In addition, the distinction between the funds control and budgetary accounting sections is unclear. For example, both sections contain related and redundant requirements regarding recording, tracking, or controlling appropriations, apportionments, and allotments. We combined our comments on these two sections in table 8, which addresses funds control.
- The draft document places the establishment of an account classification code structure standard in the accounts receivable and advances section. The account classification code structure is used by many other functions, such as funds control. We would suggest including it in the general ledger and financial reporting section. In addition, it is our understanding that the DFAS initiative to implement a Budget and Accounting Classification Code (BACC) is an attempt to design a DOD-wide account classification code structure. Therefore, the draft document should specify that (1) any military service or component agency classification structure should be consistent with, and roll up to, the BACC and (2) budget, expense, and revenue items should be recorded using both the BACC and any related service or component agency classification structure.
- The draft document does not contain high-level requirements necessary to support other DOD initiatives such as the standard data elements initiative. For example, we suggest adding a requirement that DOD's financial management systems comply with applicable approved standard data elements.
- The draft document misstates which parts of GAO's Title 2, "Accounting," are still in effect. Our March 1997 guidance to federal agencies on accounting standards states that the following sections of appendix I of Title 2 may still be used as authoritative guidance.
  - Standard C30, "Compensated Absences"
  - Standard E10, "Entitlements"
  - Standard E20, "Equity of the US Government," related to reversionary interest in property and trust funds
  - Standard F30, "Foreign Currency"

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statements. A mixed system is defined as an information system that supports both financial and nonfinancial functions of the federal government or components thereof.

- Standard F40, "Fund Accounting," related to deposit, trust, and fiduciary funds
- Standard G10, "Grants and Cooperative Agreements"
- Standard I10, "Imputed Interest," related to the cost of capital
- Standard I40, "Investments"
- Standard L10, "Leases," where the agency is the lessor
- Standard L40, "Long-term Contracts," related to cost and expense recognition
- Standard P40, "Property, Plant, and Equipment," related to reversionary interest in property
- Standard R20, "Regulatory Accounting"
- Standard R40, "Research and Development"

In addition, Title 2, appendices II and III, relating to internal controls and accounting system standards, respectively, are still in effect.

The following sections address, by functional area, the requirements that we believe need to be added or clarified.

#### General Ledger and Financial Reporting

The following are our comments on the draft document's "General Ledger and Financial Reporting" section. In addition, table 1 lists specific standards or requirements that were not included in the draft document.

- In many places, the draft document discusses maintaining and recording transactions in accordance with the DOD Standard General Ledger (SGL). The Federal Financial Management Improvement Act of 1996 requires that federal agencies comply with the U.S. Government SGL. As long as the DOD SGL complies with the U.S. Government SGL, we do not object to requiring that the DOD SGL be used. However, we suggest that you add a footnote regarding the U.S. Government SGL.
- This section of the draft document does not include all of the standards or requirements on the preparation, transmission, and reconciliation of financial or financial-related reports to Treasury, OMB, and other agencies.

For example, the draft document does not reference the DOD FMR volume 6, "Reporting Policy and Procedures." This volume contains requirements regarding external reporting, that we believe should be included.

- The DFAS draft document does not have all of the requirements in OMB's guidance on the Form and Content of Agency Financial Statements.<sup>4</sup>

Table 1: Listing of Missing Federal Accounting Requirements and Standards- General Ledger and Financial Reporting

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-1, p. 21	Achieve, to the extent possible, consistency in budget and accounting classifications and synchronization between those classifications and the agency's organizational structure.
FFMSR-1, p. 21	Provide a fund structure that provides for the identification of appropriation or fund accounts established by OMB and Treasury through the budget process, receipt accounts, credit program and financing accounts, deposit funds, clearing accounts, and other accounts deemed necessary. The fund structure must provide for additional detail below the appropriation level to support fiscal year accounting, appropriation subaccounts used for reporting to Treasury, and financial statement preparation.
FFMSR-1, p. 21	Relate Federal Account Symbols and Titles structures established by Treasury to the system's fund structure for reporting purposes.
FFMSR-1, p. 21	Provide a program structure with sufficient levels of detail to allow reporting for all categories on which budgetary decisions are made, whether legally binding, policy guidance, or internal agency decisions.
FFMSR-1, p. 22 Title 2, app. III, p. 2-1	Provide an organization structure based on responsibility assignments, such as offices, divisions, and branches.

<sup>4</sup>OMB Bulletin 97-01, Form and Content of Agency Financial Statements, October 16, 1996.

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-1, p. 22	Use Agency Location Codes assigned by Treasury for all transactions and reports involving Treasury disbursing centers.
FFMSR-1, p. 22	Provide an object class structure consistent with the standard object class codes in OMB Circular A-11. This structure must also accommodate additional levels (higher and/or lower) needed to support agency management reporting and control needs.
FFMSR-1, p. 23	Any expansion of the chart of accounts numbering system must roll up to the accounts provided in the Standard General Ledger.
FFMSR-1, p. 24	Use standardized transactions identified by reference codes to update other information maintained in the system, such as document balances and available funding.
FFMSR-1, p. 25	Provide the ability to select items for review based on user-defined criteria by type of transaction.
FFMSR-1, p. 27	All transactions to record financial events must post, either individually or in summary, to the general ledger, regardless of the origin of the transaction.
SFFAS 1, par. 26	Distinguish between entity assets and nonentity assets.
SFFAS 1, par. 28-30	Distinguish and allow for the proper reporting of entity cash, nonentity cash, and restricted cash.
SFFAS 1, par. 62-73	Recognize and record investments by federal entities in Treasury securities in accordance with SFFAS 1.
SFFAS 7, par. 33-69	Recognize, measure, and report the appropriate information for disclosures for exchange revenue and nonexchange revenue as required by SFFAS 7.
FFMSR-1, p. 51	Provide summarized data electronically to systems used by the agency for decision support and financial statement preparation.
FFMSR-1, p. 51	Provide data in the format required, including electronic formats, to central agency systems used for summary financial reporting.

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-1, p. 51	Report events and transactions according to the accounting classification structure and within a given accounting period.
Title 2, app. III, p. 2-4  DOD FMR vol. 1, chap. 2, addendum 1, sec. D	Programming, budgeting, accounting, and reporting classifications should be consistent with each other and synchronized with the organizational structure so that actual activity can be compared with enacted budgets and support future budget formulation for each management function.
Title 2, app. III, p. 3-3	Reports should be designed to highlight major problems, exceptions, or trends and to facilitate the monitoring and evaluation of operations.
Title 2, app. III, p. 3-4	Reports should be designed so they can (1) provide management with feedback when established controls have been violated, (2) alert managers when operations are deviating from financial plans, and (3) provide the financial data needed to analyze and predict the financial consequences of alternative courses of action.
TFM, vol. 1, part 2, sec. 4030.30	NOTES report(s) should correspond to department code.

<sup>a</sup>The abbreviations for the references can be found in enclosure I.

### Property

The following are our comments on the draft document's "Property" section. In addition, table 2 lists specific standards or requirements that were not included in the draft document.

- The draft document does not include a property management function. This function would include processes related to (1) maintaining property information, (2) determining property needs, (3) receiving and inspecting property, (4) servicing property, and (5) retiring, transferring, and disposing of property.
- Draft standard 2.02.14 is misstated. Statement of Federal Financial Accounting Standards (SFFAS) no. 3, Accounting for Inventory and Related Property, requires that forfeited assets not held for sale shall be reclassified



as forfeited assets held for donation or use. The draft standard states that forfeited assets held for sale would be reclassified as held for donation or use. In addition, the draft document does not include the requirements contained in JFMIP's Seized/Forfeited Asset System Requirements (FFMSR-4).

- SFFAS 3 and DOD FMR volume 4, "Accounting Policy and Procedures," requires that the valuation of pre-1992 and post-1991 foreclosed property be treated differently. The draft document does not include this distinction.
- Draft standard 2.06.25 misstates the reporting requirements categories set by FASAB's Statement of Recommended Accounting Standards no. 8, Supplementary Stewardship Reporting, which are (1) heritage assets, (2) federal mission property, plant, and equipment, (3) stewardship land, (4) nonfederal physical property, (5) human capital, and (6) research and development.
- The draft document does not address standard R40 of GAO's Title 2, which calls for property, plant, and equipment acquired or constructed for a particular research and development project with no alternative future use to be depreciated or amortized over the life of the project, where it is reasonable and estimable. In addition, during our assessment we noted that DOD FMR volume 4, "Accounting Policy and Procedures," is inconsistent with GAO's Title 2 in that it states that property, plant, and equipment for research and development testing activities with no alternative uses should normally be expensed.

Table 2: Listing of Missing Federal Accounting Requirements and Standards-Property

Reference <sup>a</sup>	Missing requirement/standard
DOD FMR vol. 4, sec. 010505E and 060210	The estimated useful life of an asset for depreciation purposes shall be based on DOD experience. However, in no case shall the initially estimated useful life exceed 40 years.
DOD FMR vol. 4, sec. 010504L	Property is transferred within DOD at the transferor's recorded acquisition cost and accumulated depreciation. The property is capitalized by the recipient at these transferred amounts.
DOD FMR vol. 4, sec. 010507B and 060213	Physical inventories and inspections of real property shall be conducted to ensure that only property under DOD control is recorded in the general ledger. These inventories and inspections shall be taken periodically but no less frequently than every 3 years for personal property and 5 years for real property. The accounting records shall be adjusted to agree with the physical counts when any identified differences cannot be resolved. The Military Departments shall maintain inventory property records of all real property under their control and submit an annual summary.
DOD FMR vol. 4, sec. 070307F	For property awaiting disposal, DOD policy is to record the difference between the value of an asset before identification as excess, obsolete, and unserviceable and its net realizable value after such identification as a loss in current period operations within the DOD Component activity from which the asset is to be disposed. The loss shall be recognized in general ledger account 7293 "Other Miscellaneous Losses" at the time the determination is made even though the disposition of the asset may not occur until a later period. Any subsequent adjustments to its net realizable value shall also be recognized as a loss in the period in which such adjustments occur.

Reference <sup>a</sup>	Missing requirement/standard
DOD FMR vol. 4, sec. 060212E	Entries recording transactions in accounting system general ledger accounts and the supporting subsidiary property records must be based on the same source documents, so that the property records are integrated and subsidiary to the accounting system or can be reconciled with the accounting system.
DOD FMR vol. 4, sec. 060212H	Entries recording transactions in accounting system general ledger accounts and the supporting subsidiary property records must provide information to identify and account for leased property (even if not capitalized).
Title 2, App. I, p. 76	The following must be disclosed for operating leases: (1) a schedule of property held for lease, less accumulated depreciation, broken down by major categories as of each balance sheet date, (2) a schedule of minimum future rentals on noncancelable operating leases, in total and for the next 5 years, and (3) the amount of contingent rentals included in each operating statement presented.

<sup>a</sup>The abbreviations for the references can be found in enclosure I.

### Inventory Accounting

The following are our comments on the draft document's "Inventory Accounting" section. In addition, table 3 lists specific standards or requirements that were not included in the draft document.

- In March 1997, the DOD Comptroller's Office issued DOD FMR volume 11A, "Reimbursable Operations, Policy, and Procedures." The requirements document should include this new policy. In addition, the references to DOD FMR volume 11 in the draft document should be changed to reflect that there are two volumes. The second volume, volume 11B, is entitled "Reimbursable Operations, Policy and Procedures--Defense Business Operations Fund."
- Draft standard 3.05.13 calls for inventory to be reported at the lower of cost or market value. This is not consistent with SFFAS 3, Accounting for Inventory and Related Property, which states that inventory shall be valued at either historical cost or latest acquisition cost (with an adjustment for holding gains or losses).

Table 3: Listing of Missing Federal Accounting Requirements and Standards-  
Inventory Accounting

Reference <sup>a</sup>	Missing requirement/standard
SFFAS 3, par. 28	The criteria considered by management in identifying inventory held in reserve for future sale shall be disclosed. The criteria for disclosure should include pilferage and the likelihood that a supply of the items will be available in the future.
SFFAS 3, par. 30	Excess, obsolete, or unserviceable inventory shall be valued at its expected net realizable value.
SFFAS 3, par. 32 and 33	Inventory held for repair may be treated by using the direct method. Under the direct method, inventory held for repair shall be valued at the same value as a serviceable item less the estimated repair costs. When the repair is actually made, the cost of the repair shall be capitalized in the inventory account up to the value of a serviceable item.
DOD FMR vol. 11B, sec. 57-A3	Work In Process—Government Furnished Material shall be valued at the issued items' standard price and quantity. The Government Furnished Material account shall be supported by records that identify quantities of items and dollar amounts by contract number.
SFFAS 3, par. 35  DOD FMR, vol. 11B, sec. 56F	The system should track and record the data necessary for required disclosures under SFFAS 3. Such disclosures should include the (1) general composition inventory, (2) basis for determining values, (3) changes from prior year's accounting methods, (4) balances for each category of inventory (i.e., inventory held for current sale, inventory held in reserve for future sale, excess, obsolete, and unserviceable inventory, and inventory held for repair, (5) restrictions on sale of material, (6) decision criteria for identifying categories which inventory is assigned, and (7) changes in the criteria.
FFMSR-7, p. 45	Provide methods to support pricings by groupings or commodities of items.

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-7, p. 45	Identify separate methods of pricing needed based on statutory authority or other agency policy, such as for foreign military sales.
FFMSR-7, 48	Performance measures for an inventory system should typically include, but not be limited to, the following types of financial measures: 1. price ratio of the cost of sample buys to published prices in catalogs, etc. and 2. turnover ratios.

<sup>a</sup>The abbreviations for the references can be found in enclosure I.

### Supply Operations

The following are our comments on the draft document's "Supply Operations" section. In addition, table 4 lists specific standards or requirements that were not included in the draft document.

- The draft document does not address the standards regarding issues without reimbursement and loans and leases that are contained in DOD FMR volume 11B, "Reimbursable Operations, Policy, and Procedures--Defense Business Operations Fund," sections 55J and 55M and the JFMIP Inventory System Requirements (FFMSR-7).
- The draft document does not address the disposition and disposal of excess material requirements contained in DOD FMR volume 11B, "Reimbursable Operations, Policy, and Procedures--Defense Business Operations Fund," sections 55Q and 56D.

Table 4: Listing of Missing Federal Accounting Requirements and Standards-  
Supply Operations

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-7, p. 27	Provide for performing quantity and price conversions between different units of measure.
FFMSR-7, p. 27	Identify transportation discrepancies and initiate transportation discrepancy reports.
FFMSR-7, p. 27	Identify shipping discrepancies (e.g., SF 364) and product quality deficiencies (e.g., SF 368) between the items received and the information provided on shipping documents and purchase orders. Support the follow-up of discrepancies.
FFMSR-7, p. 32	The inventory system should provide at least the following types of management information: unfilled orders, discrepancies, acceptance and rejection summary, days supply, item expiration/shelf life, cycle count, and inventory accuracy.
FFMSR-7, p. 34	To support the repair process, an inventory system must (1) identify the cost of repair activities, (2) account for repair costs as a charge to the allowance account, a capitalization in the inventory account up to the value of the serviceable item, or a repair expense, and (3) when transitioning to a new repair accounting method, separately identify prior period amounts for repair expense and record the appropriate adjustments.
FFMSR-7, p. 34	To support the return to inventory function, an inventory system must (1) record the transfer of an inventory item from the status of "in repair" to its proper status and location and (2) if the item is determined to be unserviceable, transfer it to the disposal process.
FFMSR-7, p. 36	The inventory system should provide at least the following types of management information: repair status, production order, and work-in-process tracking.
FFMSR-7, p. 39	To support the customer order process, the system must if the customer is a federal agency, record the fund citation provided.

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-7, p. 39	To support the customer order process, the system must, when insufficient stock is available to fulfill the total requirement, issue stock and backorder the balance as policy permits.
FFMSR-7, p. 39	To support the customer order process, the system must send special orders, orders for services or goods to be manufactured to specification, and other similar orders to the needs determination function.
FFMSR-7, p. 39	To support the customer order process, the system must, if checks or cash are received with the customer order, record it against the customer order and send the information to receivables.
FFMSR-7, p. 40	To support the distribution process, the system must provide advice to customers on shipments of material so that the customers may establish financial controls, as applicable, over shipments in transit from suppliers, and to establish the point of transfer of title. Title to inventory may be passed to the customer at the point of sale or the point of destination, depending upon the sales agreement with the customer.
FFMSR-7, pp. 42-43	The inventory system should provide at least the following types of management information: loaned items, stock availability, customer order, inventory turnover, stock usage, losses, and disposals.

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-7, pp. 47-48	<p>Performance measures for an inventory system should typically include, but not be limited to, the following types of program performance trends:</p> <ol style="list-style-type: none"> <li>1. The percentage of reports of item discrepancies filed with suppliers and the types of discrepancies being incurred to the total number of buys by contractor.</li> <li>2. The percentage accuracy of the quantities and values of inventory records versus quantities physically on hand.</li> <li>3. The percentage of shipments-on-time accuracy. This percentage should include warehouse denials and location accuracy.</li> <li>4. The percentage of items disposed of as opposed to the total dollar value of inventory.</li> <li>5. The percentage of losses or damage in storage, such as exceeding shelf life, damage, or loss while storing or restoring an item.</li> <li>6. The fill rate or percentage of demands met at the time of initial processing of the customer order.</li> </ol>
FFMSR-7, p. 48	<p>Performance measures for an inventory system should typically include, but not be limited to, the following types of efficiency measures:</p> <ol style="list-style-type: none"> <li>1. The ratio of the administrative acquisition or order lead times to industry norms.</li> <li>2. Cost per receipt and issue.</li> <li>3. Response time</li> <li>4. Report of discrepancy processing time.</li> </ol>
FFMSR-7, p. 49	<p>The inventory system should provide at least the following types of management information: cost per dollars of sales and operations cost.</p>
DOD FMR vol. 11B, sec. 55E2	<p>At least quarterly, line item accountability records shall be reconciled to balances recorded in the general ledger inventory accounts. Differences between line item accountability records and general ledger balances shall be investigated to determine the cause(s) of the differences. Errors found during the investigation shall be corrected.</p>
DOD FMR vol. 11B, sec. 55E3	<p>The general ledger shall be adjusted for differences between the general ledger and physical counts.</p>



Reference <sup>a</sup>	Missing requirement/standard
DOD FMR vol. 11B sec. 5503	The cost of war reserve items shall be separately maintained and reported from inventory costs.
FFMS 14.1.3	Provide capabilities to classify inventory items held by the agency and contractors by major classes to facilitate financial statement preparation
FFMS 14.2.2	Provide capabilities to establish relationships between customer order and items to be provided to customer.
FFMS 14.4.1.2	Provide features to record receipt of items ordered from suppliers.
FFMS 14.4.1.12	Provide features to record discrepancies in delivered items (e.g., incorrect item received, incorrect quantity, damaged material, material sent to incorrect receiving location, etc.)
FFMS 14.4.2.13	Provide features to age receipts that have not been accepted
FFMS 14.4.2.14	Provide features to record the acceptance of inspected items.
FFMS 14.6.2.23	Provide capabilities to record the disposal of inventory items through scrap or salvage

<sup>a</sup>The abbreviations for the references can be found in enclosure I.

#### Accounts Receivable Including Advances

The following are our comments on the draft document's "Accounts Receivable Including Advances" section. In addition, table 5 lists specific standards or requirements that were not included in the draft document.

- Draft standard 5.06.26 states that the system should account for the midmonth payroll as an advance. This is a misstatement of the source of the requirement, 37 U.S.C. 1006, which states that a member of the uniformed service may be paid in advance in certain circumstances.
- Draft standard 5.06.33 states that advances should not be made for project orders to other DOD activities and cites 41 U.S.C. 23 as the source of this constraint. However, 41 U.S.C. 23 does not address advances.

**Table 5: Listing of Missing Federal Accounting Requirements and Standards-  
Accounts Receivable including Advances**

Reference <sup>a</sup>	Missing requirement/standard
DOD FMR vol. 4, sec. 030208	When management determines that resources should be recovered from a defense contractor and the contracting officer issues a demand for payment, a receivable shall be recorded and collection action initiated. The accounting and finance officer shall record the receivable upon receipt of a copy of the demand for payment. The date of demand for payment shall establish the point in time when the receivable must be recorded.
DOD FMR vol. 4, sec. 0307	DOD components must submit the TFS report 220.9, Report on Accounts and Loans Receivable Due From The Public.
DOD FMR vol. 4, sec. 050303	DOD Component financial management systems shall incorporate sufficient internal controls and information gathering techniques to monitor the use of advances made. Unneeded and unused balances shall be recovered as soon as information indicates they are excess to the purposes for which originally made.
FFMSR-1, p. 45	Apply receipts to more than one receivable.
SFFAS 1, par. 54	Payments received from debtors should be applied first to penalties and administrative charges, second to interest receivable, and thirdly to principal.
SFFAS 1, par. 55	Interest accrued on uncollectible accounts receivable should be disclosed.
Title 7, sec. 5.2A	Control records which disclose collections that have not been deposited, deposits in transit, and deposits that have been confirmed by the depositary should be maintained.
DOD FMR, vol. 5, sec.050205 TFM vol. 1, part 5, sec. 4020	Disbursing Officers depositing a single check totaling \$50 million or more, or several checks of a similar nature excluding all Treasury checks, shall notify the Treasury on the same day the deposit is made.

Reference <sup>a</sup>	Missing requirement/standard
FFMS 4.2.2.5	Provide capability to maintain account and loan receivable relationships between agency program (feeder) and financial functions
FFMS 4.5.5.3	Provide features to determine that loans selected for write-off exceeding \$100,000 have been approved by the Department of Justice.
FFMS 4.5.5.4	Provide features to produce and remit the Claims Collection Litigation Report for each loan account referred to agency counsel or the Department of Justice.

<sup>a</sup>The abbreviations for the references can be found in enclosure I.

Cost Accounting

The following are our comments on the draft document's "Cost Accounting" section. In addition, table 6 lists specific standards or requirements that were not included in the draft document.

- To ensure that the requirements of the draft JFMIP Managerial Cost Accounting System Requirements (FFMSR-8) are fully addressed, we suggest that DFAS use the same organization of the JFMIP document in this section. The draft JFMIP document has five cost accounting functional requirements sections: (1) system administration, (2) data capture, (3) indirect cost distribution, (4) cost and revenue calculations, and (5) cost monitoring. In addition, we suggest that DFAS incorporate the requirements in the draft Managerial Cost Accounting System Requirements into its standards and requirements document.
- Several of the DFAS draft standards refer to section 1902 in DOD FMR volume 4, "Accounting Policy and Procedures," which relates to the Cost Accounting Standards Board standards. We note that SFFAS 4, Managerial Cost Accounting Concepts and Standards for the Federal Government, has superseded Title 2 and the Cost Accounting Standards Board's standards to the extent cost accounting subjects are covered in SFFAS 4.
- The draft document does not address using the cost accounting function to support performance measures. The JFMIP Core Financial System Requirements (FFMSR-1) standard states that the Core financial system must maintain the financial information required for program performance, financial performance, and financial management performance measures and

needed for budgeting, program management, and financial statement presentation.

Table 6: Listing of Missing Federal Accounting Requirements and Standards-Cost Accounting

Reference <sup>a</sup>	Missing requirement/standard
DOD FMR vol. 4, sec. 210305	The number of units still within a process cost center are expressed in terms of equivalent production units. The calculation of equivalent production inventory is based upon a physical inventory to determine the production status.
FFMSR-1, p. 47-48	Provide for a variety of information to support the decision making process, the management of the agency and external reporting. This will include: (1) ability to provide cost information directly to other systems in the agency requiring this data, (2) ability to receive cost information directly from the managerial cost accounting system for reporting and analysis, (3) cost information for comparison to other program data to determine compliance with planned budgeted activities and effective utilization of available budgetary resources, and (4) support of the billing process by providing cost information to the receivable function for producing bills.
OMB A-25, sec. 8a	Agencies are to identify the services and activities covered under A-25 for user charges.
OMB A-25, sec. 8b	Agencies are to determine the extent of the special benefits provided.
OMB A-25 , sec. 8e	Agencies are to review the user charges for agency programs biennially.
OMB A-25, sec. 8g	Maintain record of the services or activities covered under A-25, the extent of special benefits provided, the exceptions to the general policy of A-25, the information used to establish charges and the specific methods used to determine them, and the collections from each user charge imposed.

Reference <sup>a</sup>	Missing requirement/standard
DOD FMR vol. 4, sec. 010504A1a	The acquisition cost criteria in the case of computer and other systems is applied on the basis of the unit cost of a complete system rather than on the individual items which, when aggregated, becomes a system. A system shall be considered to exist if a number of components are part of, and function within, the context of a whole to satisfy a requirement.
DOD FMR vol. 4, sec. 010504P	For purchased computer software, acquisition costs shall include the salaries and benefits for DOD staff and compensation to others for development and modification of the software, computer operating costs for testing, developing and parallel processing, and other direct and indirect costs incurred during acquisition and development. Off-the-shelf software shall be recorded at acquisition cost. Software obtained by other means shall be recorded at its estimated fair market value. Computer software that is integrated into hardware and is necessary to operate the hardware rather than perform an application is considered and capitalized as part of the hardware (if applicable) and is depreciated, when required, as hardware.
FFMSR-7, p. 46	The process used to validate work-in-process costs for repair or manufacturing performed by an independent third party such as contractors or other government agencies, should be based, to the maximum extent possible, on reporting mechanisms used for contract management, project management, or other similar purposes.
FFMSR-1, p. 47	Use the agency's accounting classification structure to identify information such as fund, program organization, project, and object class to support the cost accumulation and distribution processes.

Reference <sup>a</sup>	Missing requirement/standard
DOD FMR vol. 11B, sec. 57A4	The direct costs and allocated indirect costs and general and administrative expenses recorded in work in process accounts shall be transferred upon completion or termination of the job to cost of goods sold or, if the completed work is to be retained for use by the producing activity, to an applicable asset or, if it does not meet the DOD capitalization criteria, an expense account. The amount relieved shall be the costs incurred that are associated with the revenue earned.
FFMSR-1, p. 47	Provide support for the fees, royalties, rents, and other charges imposed by the agency for services and things of value that it provides. Sufficient information must be accumulated to support CFO recommendations made during biennial reviews on revising the charges to reflect costs incurred by the agency in providing those services and things of value.

<sup>a</sup>The abbreviations for the references can be found in enclosure I.

### Payroll

The following are our comments on the draft document's "Payroll" section. In addition, table 7 lists specific standards or requirements that were not included in the draft document.

- The draft document does not adequately cover the Federal Employees Retirement System or the Thrift Savings Plan. For example, while there are draft standards that address employee withholdings and agency matching of contributions for Civil Service Retirement, there are no equivalent standards for the Federal Employees Retirement System. In addition, the draft document does not address Thrift Savings Plan requirements such as ceilings on the percentage of pay that employees can contribute to the savings plan.
- The draft document does not include the DOD FMR volume 7A "Military Pay Policy and Procedures-Active Duty and Reserve Pay." This regulation sets out, among other requirements, basic, special, and incentive pay provisions for active duty and reserve personnel.

- The draft document does not include requirements in DOD FMR volume 8, "Civilian Pay Policy and Procedures," relating to miscellaneous actions, special category employees, and underpayments and indebtedness. In addition, the draft document does not include requirements in DOD FMR volume 8 relating to recruitment and relocation bonuses, severance pay, continuation of pay for federal employees, backpay, and emergency evacuation pay.
- Draft standard 7.04.15 is misleading. It states that the system should prevent premium pay on a holiday. We suggest that DFAS clarify this draft standard by using the language in DOD FMR volume 8 which states an employee who performs work on a holiday designated by federal statute is entitled to pay at the rate of basic pay plus premium pay at the rate equal to the rate of the basic pay, for that holiday work that is not in excess of the scheduled tour of duty or overtime work.
- Draft standards 7.05.22, 7.05.23, 7.06.10, and 7.05.26 relate to an older version of GAO's Title 6 which specified the order of precedence in deductions when gross pay was not enough to cover all deductions. In March 1996, Title 6 was revised to eliminate this order of precedence in response to the requirements of the Hatch Act Reform Amendments of 1993.
- Draft standard 7.02.15 should be clarified. It states that the system can receive electronic approvals of time and attendance data from supervisory personnel. This should be clarified to conform to GAO's Title 6 which requires, in automated systems, that electronic signatures be used for time and attendance approvals. Further information on electronic signatures can be found in our comments on systems controls.

Table 7: Listing of Missing Federal Accounting Requirements and Standards-Payroll

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-2, p. 11	Store lump sum leave hours to be paid to separating employees. Reduce annual leave balances to zero after lump sum payments are made.
FFMSR-2, p. 21 FFMS, sec. 6.4.2.3	Compute earnings amounts for partial pay periods when entitlement dates do not coincide with pay period beginning and ending dates. Process earnings adjustments on a begin-date/end-date basis.
FFMSR-2, p. 11	Calculate projected annual leave balances.
FFMSR-2, p. 12	Allow the authorized user to add a new pay line manually or to change or delete an erroneous pay line, prior to calculation and disbursement of payroll.
FFMSR-2, p. 14	Maintain current organizational component identifiers for reporting to the Office of Personnel Management's Central Personnel Data File.
FFMSR-2, p. 22	Determine when a bond may be issued given its denomination per pay deduction. The process for setting bond issuance dates and issuing bonds may be accomplished by systems outside the pay system.
FFMSR-2, p. 24	Information should be made available to other functions to generate internal and external payroll reports not created directly in the pay processing function.
FFMSR-2, p. 25	Generate required reports—SF 1150, Record of Leave Data; SF 2806, Individual Retirement Record; and SF 2807, Register of Separations and Transfers—for separating or transferring employees with the next regular payroll.
FFMSR-2, p. 26	Generate Monthly Employee Report (SF 113A) and the Monthly Full-Time Equivalent Report (SF 113G) to the Office of Personnel Management.
FFMSR-2, p. 26	Notify agency payroll and personnel office staff of incorrect or missing data.



Reference <sup>a</sup>	Missing requirement/standard
FFMSR-2, p. 27	Generate retention records for Reduction in Force based on competitive position, tenure, and retention requirements.
DOD FMR, vol. 8, sec. 010406A1  Title 6, sec. 2.2E	Corrections and other adjustments to data in official records must be approved in writing or through electronic signature (made by entering designated codes into an automated system under safeguards to prevent unauthorized use) by an authorized official.
DOD FMR, vol. 8, sec. 010406B4  Title 6, sec. 2.2E2c	<p>Controls which would help ensure that computerized payroll operations process transactions and produce reports accurately by including the following techniques in the programmed instructions:</p> <ol style="list-style-type: none"> <li>1. Verification of social security numbers or other identifying information for employees authorized to be paid against a master list or file of such information for valid current employees.</li> <li>2. Use of proper authorization codes by authorized payroll employees.</li> <li>3. Acceptance of data entry from authorized terminals only.</li> <li>4. Use of master control totals for data elements by computing such totals before payroll transactions are entered, adding totals computed from transactions, and computing a grand total at the completion of the processing cycle. The software in use must ensure that beginning totals plus transaction totals equal ending totals.</li> </ol> <p>Title 6 also requires (1) verification of data entry using batch control totals, where applicable, and (2) proper backup of data.</p>
Title 6, sec. 2.2C.2	Reports must be based on, supported by, and periodically validated against, appropriate detailed information in the payroll system.

Reference <sup>a</sup>	Missing requirement/standard
Title 6, sec. 2.2E1b	<p>There must be separation of duties for the following:</p> <ol style="list-style-type: none"> <li>1. Authorization of pay and entitlements.</li> <li>2. Certification of payments.</li> <li>3. Payroll computation.</li> <li>4. Recording of payroll data in the accounts.</li> <li>5. Distribution of pay.</li> <li>6. Review of payroll transactions.</li> <li>7. Automated system development.</li> <li>8. System testing.</li> <li>9. System implementation.</li> <li>10. System maintenance.</li> </ol>
Title 6, sec. 2.2E1c	<p>Access to personnel, payroll, and disbursement records or data files must be restricted to authorized personnel.</p>
Title 6, sec. 2.2E1e	<p>To the extent practical, data entered into automated payroll systems must be subjected to computerized edits when entered. Data elements not susceptible to such edits must be edited at the earliest practical time. Inappropriate data detected must be promptly investigated, corrected, and, if appropriate, reprocessed. A record of such data, its originator, and its disposition must be generated and maintained.</p>
Title 6, sec. 3.5A	<p>Time and attendance reports should generally cover no more than one biweekly pay period and include the following information:</p> <ol style="list-style-type: none"> <li>1. Employee name and identifying number.</li> <li>2. Pay period number or dates.</li> <li>3. Aggregate number of hours of premium pay, by type of premium pay, to which the employee is entitled.</li> <li>4. Evidence of approval by an authorized official.</li> <li>5. Any required supporting documentation or records of absences.</li> <li>6. Such other information as agencies believe necessary in support of operations.</li> </ol>
Title 6, sec. 3.5B	<p>The time and attendance system must be able to identify the individual responsible for recording the data.</p>

Reference <sup>a</sup>	Missing requirement/standard
Title 6, sec. 3.5C and sec. 3.6B	Overtime must be distinguished between regular overtime, irregular overtime, or occasional overtime (or compensatory time in lieu of overtime, where allowed) in order to properly calculate an employees overtime pay entitlements.
Title 6, sec. 3.7	The system used to transmit time and attendance data to payroll must protect time and attendance data from unauthorized change or alteration and must generate a record of any change made.
Title 6, sec. 3.11	When reservists perform duties suited to the application of civilian time and attendance requirements, those requirements should be imposed and met. However, when reservists perform duties where the application of these requirements are impractical or infeasible, the military service member time and attendance requirements must be imposed and met. When placed on active duty status, reservists will be subject to the time and attendance criteria for military personnel.
Title 6, sec. 5.2C	Agencies must ensure timely payment of deductions that are made from employee/service member salaries and wages to those authorized to receive the payments.
Title 6, sec. 7.2A	A voucher must be prepared for each disbursement or group of disbursements, and each voucher must be certified by a duly authorized certifying officer before payment. No employee/service member may certify her or his own individual disbursements, but may certify a voucher for the agency payroll which includes her or his own pay.

<sup>a</sup>The abbreviations for the references can be found in enclosure I.

### Funds Control

The following are our comments on the draft document's "Funds Control" section. In addition, table 8 lists specific standards or requirements that were not included in the draft document.

- Draft standard 8.01.17 does not meet JFMIP standards. The draft standard calls for placing a transaction in an error or suspense file when funds are

not available for orders which have been delivered. JFMIP's Core Financial System Requirements (FFMSR-1) calls for this type of transaction to be recorded.

- Draft standard 8.07.29 is misstated. The draft standard precludes recording obligations when there is no related commitment. However, JFMIP's Core Financial System Requirements (FFMSR-1) states that the system must record obligations when there is no related commitment.
- While the draft document contains standards regarding the modification of records to reflect transfers or reprogramming actions, the draft document does not contain the restrictions and reporting requirements for these actions that are contained in DOD FMR volume 3, "Budget Execution-Availability and Use of Budgetary Resources," chapters 3 and 6.

Table 8: Listing of Missing Federal Accounting Requirements and Standards-Funds Control

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-1, p. 32	In cases where a transaction fails the funds availability test and the request for goods and services is not filled yet, the appropriate action is to place the transaction in an error file and/or suspense account for corrective action.
FFMSR-1, p. 31	Modify budgetary limitations in accordance with rescissions.
DOD FMR, vol. 3, sec. 020702A	Amounts proposed for rescission will be withheld during the time the proposals are being considered by the Congress.
FFMSR-1, p. 34	Maintain an on-line history file of closed out documents for a user-defined period of time.
FFMSR-1, p. 34	Close obligating documents either by the (1) system automatically, upon complete performance/delivery or (2) user, with appropriate authorization.
FFMSR-1, p. 30	Establish limitations and control the use of funds against them consistent with authorization language.

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-1, p. 30	Establish limitations in accordance with credit reform objectives for loan programs, including program lending limits and available subsidy amounts.
FFMSR-1, p. 33	Provide for modifications to commitment documents, including ones which change the dollar amounts or the accounting classification structure cited. Invoke funds availability editing for the changed amounts.
Title 7, sec. 3.5G	Each agency shall establish a reasonable cutoff date for (1) recording obligations which are applicable to the fiscal year but received after the close of the fiscal year and (2) making any necessary adjustments in amounts of recorded obligations.
DOD FMR, vol. 3, sec. 100201G	<p>In order to prevent overpayments and ensure that applicable limitations are not exceeded, DOD components shall:</p> <ol style="list-style-type: none"> <li>1. Identify the unobligated balance and unpaid obligations of all expired appropriations at the time they expire.</li> <li>2. Identify the unobligated balance and unpaid obligations of all cancelled appropriations at the time they are cancelled.</li> <li>3. Maintain identification of the amount for which it is permissible to charge current appropriations for obligations and payments which otherwise would have been properly chargeable to a cancelled appropriation.</li> <li>4. Maintain proper general ledger controls for valid unpaid obligations and receivables pertaining to cancelled accounts.</li> </ol>
Title 7, sec. 3.3B	Any obligation increases for contract changes must be approved before being incurred for increases related to contract changes for expired fixed period appropriations that total over \$4 million during a fiscal year within a program, project, or activity of an appropriation.
Title 7, sec. 3.3B	Proper authorization must be received before an obligation is incurred when anticipated obligations related to contract changes for expired fixed period appropriations will exceed \$25 million within a program, project, or activity of an appropriation.

Reference <sup>a</sup>	Missing requirement/standard
Title 7, sec. 4.2B  DOD FMR vol. 3, sec. 100201C,	No-year appropriations expire if no disbursements have been made for 2 consecutive fiscal years, and the President, the Secretary of Defense or his designee determines the purposes for which the appropriation was made have been carried out.
Title 7, sec. 4.2C	Obligation authority equal to the amount needed for obligating the contract will remain available for 90 working days after the date on which a final ruling is made with regard to a contract protest.
31 U.S.C. 1553(b)  Title 7, sec. 4.4  DOD FMR vol. 3, sec. 100201F  OMB A-34, sec. 30.3	When a currently available appropriation is used to pay an obligation that would have been properly chargeable to a cancelled appropriation, the total of such payments may not exceed the lesser of (1) the unexpended balance of the cancelled appropriation, (2) the unexpired unobligated balance of the currently available obligation, or (3) one percent of the total amount appropriated to the current appropriation being charged.
Title 2, app. III, p. 2-2  Title 7, sec. 3.4	Records maintained as part of the accounting system must show the status of each appropriation or limitation-amounts available, obligated, expended, and disbursed, and the balance remaining.
FFMS, sec. 1.8.5.1	Provide the capability to determine whether prior year authority has expired or is currently available.
FFMS, sec. 1.8.5.2	Provide the capability to process appropriate journal entry for prior year authority whether expired or currently available.
FFMS, sec. 1.8.6.1	Provide the capability to identify by document which expenditures are paid.
FFMS, sec. 1.8.6.2	Provide the capability to summarize all unpaid obligations and expenditures monthly and year to date.

<sup>a</sup>The abbreviations for the references can be found in enclosure I.

Systems Controls

The following are our comments on the draft document's "Systems Control" section. In addition, table 9 lists specific standards or requirements that were not included in the draft document.

- The DFAS document includes separate sections on audit trails and system controls. We believe that audit trails are a subset of system controls. Therefore, we included our detailed comments on the draft document's audit trail section in table 9 on systems controls.
  
- DFAS did not include internal control references from GAO's Standards For Internal Controls In The Federal Government. (Table 9 lists missing internal control requirements related to this document.) We are revising the Standards For Internal Controls In The Federal Government. The revised document, which will be released as an exposure draft shortly, will contain additional standards, including those contained in the Committee of Sponsoring Organizations of the Treadway Commission (COSO), Internal Control - Integrated Framework, that should be incorporated in the final DFAS document. In addition, since the DFAS draft only included one process in this section, data integrity, we suggest that DFAS organize this section to better meet the following three control objectives set out by COSO, (1) effective and efficient use of an entity's resources (operations), (2) preparation of reliable published financial statements (financial reporting), and (3) compliance with laws and regulations. To meet these objectives, the COSO document contained five interrelated components: (1) control environment, (2) risk assessment, (3) control activities, (4) information and communication, and (5) monitoring.
  
- The draft DFAS document does not discuss electronic signatures. For transactions where individual accountability is required and electronic signatures are utilized, the generation process must ensure that the signature is (1) unique to the signer, (2) under the signer's sole control, (3) capable of being verified, and (4) linked to the data in such a manner that if the data are changed, the signature is invalidated upon the verification process. The necessary attributes of electronic signatures are contained in 71 Comp. Gen. 109 (1991).

**Table 9: Listing of Missing Federal Accounting Requirements and Standards-  
Systems Controls**

Reference <sup>a</sup>	Missing requirement/standard
GAO I.C. Std.	Features that ensure all transactions are properly authorized.
OMB A-130, p. 10	Features that ensure information is protected commensurate with the risk and magnitude of the harm that would result from loss, misuse, or unauthorized access to or modification of information.
OMB A-130, p. 44	Features that allow access to be restricted to the minimum necessary to perform job requirements.
OMB A-123, p. 7 and GAO I.C. Std.	Features to ensure that transactions and other significant events are accounted for, and that timely accounts and reliable financial and other reports are prepared.
Title 2, app. III, p. 2-8	Processing controls should provide reasonable assurance that all transactions have been processed and that the application processing was correct, using processing logic.
FFMSR-1, p. 25	The system should provide standard record formats for interface of transactions from other systems to the core financial system.
OMB A-123, p. 7, GAO I.C. Std., and OMB A-130, p. 44	The system should provide that key duties and responsibilities in authorizing, processing, recording, and reviewing system transactions are separated among individuals.
OMB A-123, p. 7 and GAO I.C. Std.	The system should provide that access to resources and records is limited to authorized individuals.
OMB A-127, p. 6	Internal controls over data entry, transaction processing and reporting (input, processing, and output) should be consistently applied throughout the system to ensure the validity of information and protection of Federal government resources.
OMB A-127, p. 8 and Title 2, app. III, sec. 5	The system should be designed and documented in a manner that will facilitate efficient and effective operation, and modification as the environment changes.



Reference <sup>a</sup>	Missing requirement/standard
OMB A-130, p. 13	The system should be developed in a manner that facilitates necessary interoperability, application portability, and scalability of computerized applications across networks of heterogeneous hardware, software, and communications platforms.
OMB A-130, p. 37	Management should establish a set of rules concerning use of and behavior within the application that includes clearly delineating responsibilities, expected behavior of all individuals with access to the application, and consequences of behavior not consistent with the rules.
OMB A-130, p. 37	All individuals should receive specialized training focused on their responsibilities and the application rules, before being granted access to the application.
OMB A-130, p. 38	Management should establish and periodically test the capability to perform the agency function supported by the application in the event of failure of the automated support.
OMB A-130, p. 38	Management should ensure that appropriate security (technical) controls are specified, designed into, tested, and accepted in the application in accordance with National Institute of Standards and Technology guidance.
OMB A-130, p. 38	For applications that permit public access, additional controls should be added to protect the integrity of the application and the confidence the public has in the application, including segregating information made directly accessible to the public from official agency records.
OMB A-130, p. 38	Controls should be established to protect information shared from the application that is comparable to the protection provided within the application.
FFMSR-1, p. 25	Provide control over the processing and reprocessing of all erroneous transactions through the use of error file(s) and/or suspense accounts. Erroneous transactions must be maintained and tracked until either corrected and posted or deleted at the request of an authorized user.

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-1, p. 26	Comply with management controls designed to ensure that transactions are processed in accordance with prescribed standards and procedures, the integrity of data in the system is maintained, and access is restricted to authorized users.
FFMSR-1, p. 52	Provide supporting information needed to monitor the overall operation of the system to determine if operations are on schedule, all necessary operating steps have been completed successfully, and alert the system manager to malfunctions on a timely basis.
FFMSR-1, p. 52	Provide system managers with sufficient information to determine the functions and operations performed by specific users, and reports generated or accessed.
FFMSR-1, p. 52	Perform and report the result of data integrity verifications such as reconciliations between reports produced and data sets within the system, and the results of validity, combination and balancing edits.
Title 2, app. III, p. 3-1	Reports must comply with restrictions on information classified for security purposes.
Title 2, app. III, p. 3-5	Systems should have backup and recovery provisions to help ensure timely report generation in cases of processing interruptions or emergency situations.
Title 2, app. III, p. 3-5	Agencies should develop and maintain reporting schedules and due dates.

Reference <sup>a</sup>	Missing requirement/standard
<p>FFMSR-1, p. 6</p> <p>FFMSR-0, p. 56</p>	<p>Integration means that the user is able to have one view into the systems such that, at whatever level the individual is using the system, he or she can get to the information needed efficiently and effectively through electronic means but does not mean that all information is physically located in the same database. Interfaces, where one system feeds data to another system following normal business/transaction cycles, such as salary payroll charges recorded in the general ledger control accounts at the time the payroll payments are made, may be acceptable if the supporting detail is maintained and accessible to managers. In such cases, interface linkages must be electronic unless the number of transactions is so small that is it not cost-beneficial. Easy reconciliations between systems, where interface linkages are appropriate, must be maintained to ensure accuracy of the data.</p>
<p>DOD FMR vol. 4, sec. 030205</p>	<p>The basic standards for internal control prescribed in DOD Directive 5010.38 must be adhered to in establishing and collecting receivables.</p>
<p>FFMSR-2, p. 31</p>	<p>Provide for well-defined organizational responsibilities to the data element level for the collection of, maintenance of, and access to these data-assigned elements.</p>
<p>Title 7, sec. 6.2B</p>	<p>Link related transactions to ensure that individual transactions are accurate and legitimate (e.g., purchase order, receiving report, vendor bill, and payment).</p>
<p>FFMSR-1, p. 25</p>	<p>Provide the ability to select items for review based on user-defined criteria by type of transaction. Examples of reasons to select items are payment certification and financial statement audits.</p>

Reference <sup>a</sup>	Missing requirement/standard
FFMSR-1, p. 26	<p>To support the archiving and purging process, the Core financial system must:</p> <ol style="list-style-type: none"> <li>1. Archive transactions and related information needed for audit trails in a format accessible by audit software.</li> <li>2. Provide the capability to archive or purge closed documents.</li> <li>3. Allow documents to be reopened.</li> <li>4. Purge (or archive) other core financial system data stores to limit data maintained to that appropriately needed for analysis and control.</li> <li>5. Retain system records in accordance with federal regulations established by the National Archives and Records Administration, GAO, and others.</li> <li>6. Archive data needed for comparative analysis and presentation of historical information.</li> </ol>
Title 2, app. III, p. 2-5	<p>All transactions, including those which are computer-generated, must be referenced to individual source records. Referencing must be done in a manner that enables tracing or replicating a transaction from its source to the resulting record or report, and from the resulting record or report to the source, or by tracing indirectly to source records through summaries and calculations contained in general and specific journals.</p>
Title 2, app. III, p. 2-5	<p>Items in source records necessary for audit trail purposes include transaction type, record or account involved, amount, processing references, and approver of the transaction.</p>
Title 2, app. III, p. 2-9	<p>Agency systems should provide a reference and control list of transactions processed during a processing cycle or a given period of time.</p>
Title 2, app. III, p. 2-10	<p>Systems must provide procedures for control over errors to ensure that, once errors are detected, (1) corrections are made in a timely manner and reentered into the appropriate processing cycle, (2) corrections are made only once, and (3) the correction itself is validated.</p>
Title 2, app. III, p. 2-10	<p>A system should be capable of providing management with reports that list errors by category and corrective action taken.</p>

Reference <sup>a</sup>	Missing requirement/standard
Title 2, app. III, p. 2-6	To facilitate tracing a transaction forward from the source or back from the result, a ledger account must include transaction references—that is, a record of all postings to the account.
Title 7, sec. 4.5	Any audit requirement, limitation on obligations, or reporting requirement that is applicable to an appropriation account, shall remain applicable to that account after the end of the period of availability for obligation of that account.
FFMSR-2, p. 31	Provide audit trail reports and error listings to support data transferred from external systems to the standard personnel/payroll system.
DOD FMR, vol. 6, sec. 020203B2	The numbers, types, and dollar amounts of transactions received from customers, as well as those generated by DFAS, are processed timely and entered accurately into the finance and accounting systems.
DOD FMR vol. 6, sec. 020203B4	Specific edits shall be applied by type of transaction in each finance or accounting system. Those transactions failing to pass edits, and/or otherwise not entered, are controlled and assigned for research and correction by DFAS and/or customer and, to the degree feasible, are recorded in suspense accounts in the accounting system.

<sup>a</sup>The abbreviations for the references can be found in enclosure I.

### Accounts Payable

The following are our comments on the draft document's "Accounts Payable" section. In addition, table 10 lists specific standards or requirements that were not included in the draft document.

- Draft standard 11.09.01, which addresses categorizing advances and prepayments to others, is included under the establishing liabilities process. Under SFFAS 1, Accounting for Selected Assets and Liabilities, advances and prepayments to others is an asset, not a liability.
- The draft document does not include the DOD FMR volume 10, "Contract Payment Policy and Procedures."

Table 10: Listing of Missing Federal Accounting Requirements and Standards-  
Accounts Payable

Reference <sup>a</sup>	Missing requirement/standard
DOD FMR, vol. 1, chap. 2, addendum 2, sec. D2c	Maintain an on-line history file of closed out documents for a user-defined period of time.
DOD FMR, vol. 1, chap. 2, addendum 2, sec. D3c	Communicate through the system those instances where a receiving report or acceptance is missing for an invoice, or where goods or services have been received and accepted, but an invoice has not been entered.
FFMSR-1, p. 38	Update the funds control and budget execution balances to reflect changes in the status of undelivered orders and expended appropriations as well as changes in amounts. Amounts may be different because of changes in prices or other authorized charges.
FFMSR-1, p. 39	Record obligations, expenses, assets, etc., associated with payments made through government credit cards. Establish payables to pay the financial institution handling the credit cards.
FFMSR-1, p. 40	Record payments made by another entity, such as a finance center, on behalf of the agency using agency funds.
DOD FMR, vol. 4, sec. 130201	DOD components shall record liabilities for advances or prepayments received from the public and other government agencies for goods and services to be provided. When the goods and services are provided, the liability shall be reduced and a revenue account posted.

Reference <sup>a</sup>	Missing requirement/standard
TFM, vol. 1, part 4, sec. 2025.30	<p>Payments for services of a continuing nature which are performed under agency-vendor agreements providing for payments of definite amounts at fixed periodic intervals may be made without submission of vouchers, invoices, or bills by the vendor. The basic voucher prepared by the agency to support payments of this nature should show as a minimum the contract number, the period covered by the payment, the name of the vendor, the amount of the payment, and the account to be charged.</p> <p>Administrative controls should be established for insuring that recurrent payments are: (1) on unexpired contracts or agreements, (2) for correct amounts, (3) for services actually prepared, and (4) not duplications.</p>
TFM, vol. 1, part 4, sec. 2030.40	It is required that each agency certifying officer be assigned a range of prenumbered voucher-schedules and that the range be transmitted to Treasury.
TFM vol. 1, part 4, sec. 2055.15	After comparing the paid copy with the pending copy of the voucher-schedule, any erroneous voucher-schedule or any alteration noted should be reported immediately to the Inspector General's office and the disbursing officer.
TFM vol. 1, part 4, sec. 2075.40b	Payments should be scheduled in the currency billed unless the payment is for a payee located in a restricted country or excess or near-excess currency country. OMB issues listings of excess or near-excess countries.
TFM vol. 1, part 4, sec. 2550.20f	Agency financial officers certifying payments of \$50 million or more in a single transaction or in multiple transactions of a common nature that will be disbursed via the Treasury Financial Communications System will report to Treasury at least 2 days prior to the date of payment the name of the agency, the intended date of issuance, the identification of the intended recipient, and the amount to be disbursed.

Reference <sup>a</sup>	Missing requirement/standard
TFM vol. 1, part 4, sec. 4535	The cardholder statement (for small purchase cards) must be submitted to the designated billing office within a timeframe that allows them to process and pay the consolidated invoice within the Prompt Payment deadline. The designated billing office will pay the consolidated invoice in a timely manner even if all cardholder statements are not received.
TFM vol. 1, part 4, sec. 4540	For small purchase cards, agencies may receive invoices electronically, make payments electronically, access and review account and master file data, and receive reports electronically.
FFMS, sec. 5.2.2.4	Provide features to enter and modify Treasury foreign currency rates.
OMB A-125, sec. 4e	The system should generate a payment due date of 30 days if a due date is not specified in the contract.
OMB A-125, sec. 7a(5)	The system should halt accrual of interest penalties after one year or after the filing of a claim for such penalties under the Contract Disputes Act of 1978.
OMB A-125, sec. 7a(9),	When an agency cannot complete transmission of payment to a contractor by electronic funds transfer because of incorrect or incomplete account information, the agency is exempted from payment of interest penalties for the period between the date of the attempted transmission and the date the contractor supplies the correct information.

<sup>a</sup>The abbreviations for the references can be found in enclosure I.

**REQUIREMENTS SHOULD BE  
BASED ON CONCEPT OF OPERATIONS**

A concept of operations defines how the Department plans to conduct its financial management operations now and in the future. It is the foundation upon which the rest of the systems planning process is built.<sup>5</sup> While we fully

<sup>5</sup>Strategic Information Planning: Framework for Designing and Developing System Architectures (GAO/IMTEC-92-51, June 1992) and Air Traffic Control:



support DOD's efforts to develop the draft Federal Accounting Standards and Requirements document as a means to help define DOD's financial management requirements, the Department will not know whether these requirements will meet the needs of the organization until and unless it defines its concept of operations.

A concept of operations is a particularly critical step at DOD because of the organizational complexity of its financial management activities. According to the DFAS September 1996 Chief Financial Officer Financial Management 5-Year Plan, it is estimated that the financial community is reliant on data captured in other communities, such as logistics and acquisition, for about 80 percent of the data used in its processes. The Department has recognized, and we have reported,<sup>6</sup> that these organizations have developed their own processes and business practices which has led to non-standard, non-integrated systems. Therefore, the Comptroller's office must secure the cooperation and commitment of organizations outside of its control to implement its financial management requirements. Without such a collaborative effort, which may be difficult to secure if DFAS' requirements do not reflect how these organizations operate, the Department's current systems environment may be perpetuated.

The Chief Financial Officers Act of 1990 requires that agency CFOs develop and maintain an integrated agency accounting and financial management system. In addition, implementing an integrated financial management system is key to complying with the Federal Financial Management Improvement Act of 1996, which requires that each federal agency implement and maintain financial management systems that comply substantially with federal financial management systems requirements, applicable federal accounting standards, and the U.S. Government Standard General Ledger. While DOD has issued several plans<sup>7</sup> that are intended to help DOD achieve an integrated financial management system, none of these plans call for developing a concept of operations for DOD's financial activities, a crucial omission. In addition, these plans do not fully define how the Comptroller's office and DFAS will achieve

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Complete and Enforced Architecture Needed for FAA Systems Modernization (GAO/AIMD-97-30, February 3, 1997).

<sup>6</sup>Defense Financial Management (GAO/HR-97-3, February 1997).

<sup>7</sup>The Chief Financial Officer's Financial Management Status Report and Five Year Plan 1996-2000, DFAS' Chief Financial Officer Financial Management 5-Year Plan, September 1996 Annual Report, and DFAS' Accounting Systems Strategic Plan For The Department of Defense.

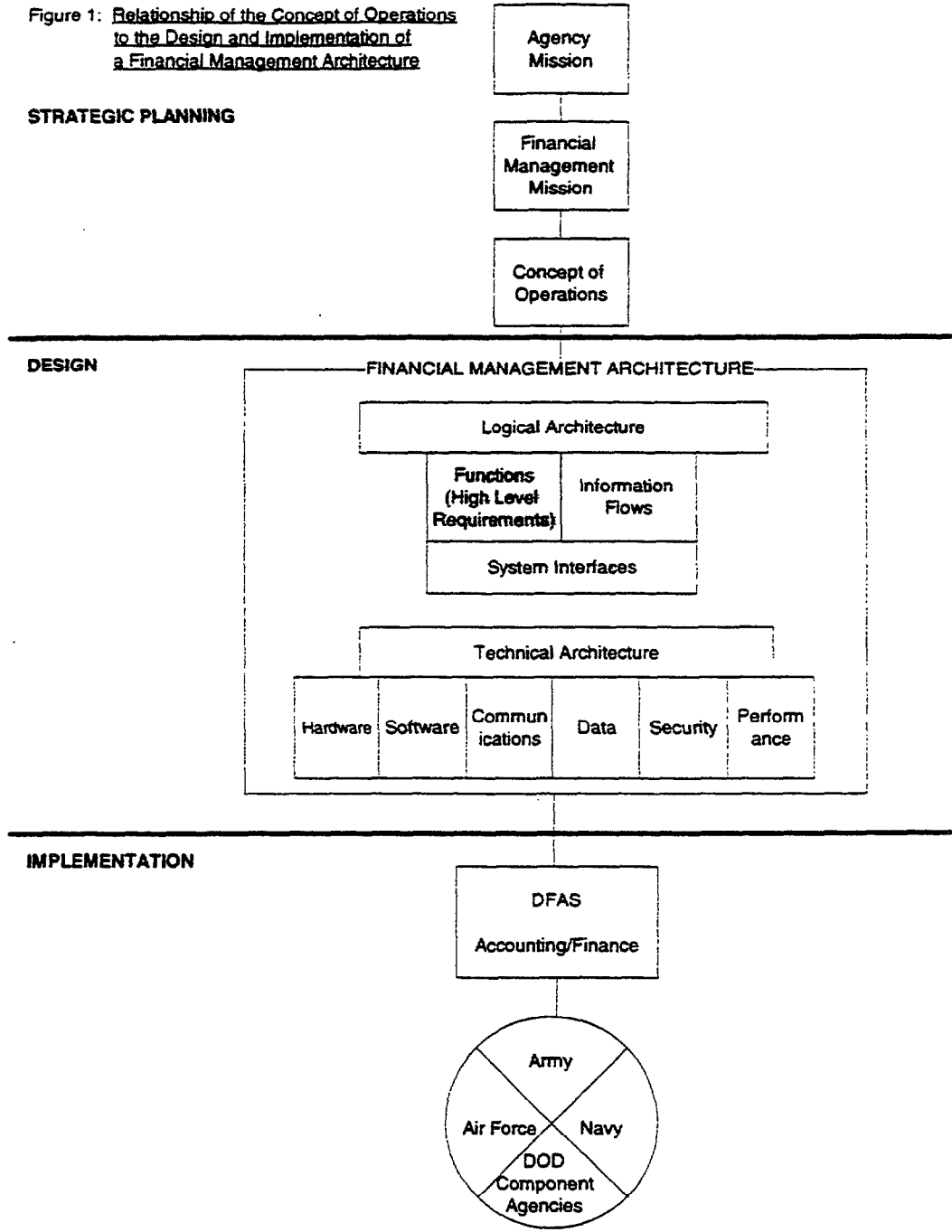
this integration with processes performed and systems owned by other organizations.

Concept of Operations

Responsibilities and Approaches

Figure 1 shows the relationship of a concept of operations to the design and implementation of a financial management architecture. The draft DFAS Federal Accounting Standards and Requirements document could be viewed as a start towards developing the high-level functional requirements part of a logical architecture. (Enclosure II provides additional information on architectures.) However, DOD has not developed a concept of operations for its financial activities, which is a prerequisite to finalizing the definition of requirements.

Figure 1: Relationship of the Concept of Operations to the Design and Implementation of a Financial Management Architecture



A concept of operations defines how the entity's operations are (or will be) carried out. It includes a high-level description of the operations that must be performed and who must perform them. It also defines where and how the operations would be carried out and the relationships between the mission(s) and operations. For example, a DOD financial management concept of operations would include a discussion of how DOD would manage and account for its over \$900 billion in property and inventory. This discussion would delineate, at a high level, how this function is accomplished and define the roles, responsibilities, and relationships among the various DOD entities involved, such as the Comptroller's office, DFAS, DOD component agencies, and the military services' financial management, materiel, and warfighter operations.

The Clinger-Cohen Act of 1996 requires agency heads, in consultation with the Chief Information Officer (CIO) and the Chief Financial Officer (CFO), to establish policies and procedures, consistent with the CFO Act of 1990, that ensure that (1) accounting, financial, and asset management systems and other information systems of the executive agency are designed, developed, maintained, and used effectively to provide financial or program performance data for financial statements and (2) financial and related program performance data are provided on a reliable, consistent, and timely basis to executive agency financial management systems. In addition, the Clinger-Cohen Act of 1996, among other provisions, requires that department-level Chief Information Officers develop, maintain, and facilitate integrated system architectures.

A concept of operations is part of a strategic information system planning process that would help achieve these requirements. The concept of operations, in turn, would be the driver for designing DOD's financial management architecture. We would expect that DOD's financial management concept of operations and financial management architecture would be developed under the direction and oversight of the Comptroller's office (DOD's CFO) and DOD's CIO (the Assistant Secretary of Defense, Command, Control, Communications, and Intelligence) because of their joint responsibilities. In addition, as figure 1 illustrates, the strategy outlined by the concept of operations and the financial management architecture would be implemented by DFAS, the military services, and DOD's component agencies.

There are many approaches that DOD could take in developing and documenting a concept of operations. For example, DOD could develop

- a single DOD financial management concept of operations,

- military service and DOD agency specific financial management concepts of operations under the umbrella of an overall DOD-wide financial management concept of operations, or
- concepts of operations by major functional area such as logistics, under the umbrella of a DOD-wide financial management concept of operations that would address, at a high level, the basic information flow of the function—from beginning to end. Under this approach, DOD could rank its functional areas according to risk and concentrate its resources on the most problematic areas.

Regardless of which approach is taken, for the concept of operations to be useful, it should encompass (1) all of DOD financial management, not just the finance and accounting functions performed by DFAS and (2) both current and future financial management operations to document how the Department is working today and obtain mutual agreement from all of the parties on how DOD will conduct its financial management operations in the future. In addition, the financial management concept of operation needs to be developed through a collaborative approach among the DOD Comptroller's office, the CIO, DFAS, and the financial offices and applicable program offices (such as logistics and acquisition) within each service or DOD component agency. Moreover, the concept of operations should result in a formal agreement among the applicable parties that establishes each party's responsibility for implementing the concept of operations. It is critical that the military services and Defense component agencies be an integral part of this endeavor because the vast majority of the data used by the DOD financial community is captured by other DOD communities.

#### Concept of Operations Needed to Validate Requirements

Once a DOD financial management concept of operations is developed, DOD would validate the standards and requirements and high-level information flows among financial management functions to the concept of operations. This is necessary to ensure that the requirements document supports how DOD plans to conduct its financial management operations. The following example illustrates why it is important that the requirements document accurately reflect how DOD plans to operate. DOD's financial management concept of operations could discuss in what situations, such as in the payroll and travel functions, electronic signatures would be its preferred approach to ensuring transaction-level data integrity. Next, in its high-level requirements, DOD would define the specific types of processes, such as approving time and attendance data, that would need electronic signature capabilities and the internal control structure

surrounding such a process. Without electronic signatures identified and defined in both of these documents, DOD would run the risk of not identifying the (1) situations where electronic signatures are the preferred technique to provide transaction-level data integrity or (2) internal control environment in which the electronic signature is expected to operate.

Once the validation process is completed, DOD would be in a position to evaluate the financial management systems of DFAS, the military services, and the Defense component agencies to determine not only whether these systems comply with federal and DOD functional requirements, but also whether each system is appropriately interfaced/integrated with other systems to meet the financial management needs of the Department. During this evaluation process, the information collected would include information on each system, such as software, communications, and security. This information would then be used to develop DOD's financial management systems architecture. Moreover, the information obtained during the evaluation process would provide DOD, for the first time, a comprehensive inventory of its financial management systems and would be essential to ensuring that all financial management systems are identified. As discussed in our January 1997 report,<sup>8</sup> such an inventory does not currently exist.

We recognize that DOD is working to improve its financial operations. For instance, in April 1996, DFAS established the Defense Accounting System Program Management Office, which was chartered, among other tasks, with establishing and managing actions to achieve a defense accounting system architecture. In addition, in February 1997, the CFO and the DFAS Director issued the Defense Finance and Accounting Service Accounting Systems Strategic Plan for the Department of Defense. We believe these efforts should be closely coordinated with the concept of operations, and reevaluated after the concept of operations is completed and formally agreed upon in order to ensure that they are consistent with the approved DOD financial management concept of operations.

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A concept of operations is a critical first step towards defining DOD's financial management needs. Once DOD has taken the initial step of developing and documenting a concept of operations and validating its functional requirements and information flows against this document, it will be positioned to begin

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<sup>8</sup>Financial Management: DOD Inventory of Financial Management Systems is Incomplete (GAO/AIMD-97-29, January 31, 1997).

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evaluating its current and planned financial management systems. This evaluation could then be used to help build DOD's logical financial management systems architecture which should form the basis, in conjunction with a technical architecture, for DOD to develop an integrated financial management system.

We appreciate the opportunity to provide our input to the draft document. On May 30, 1997, we provided an advance copy of our observations to the DFAS Defense Accounting System Program Manager. The Program Manager did not have any comments on the advance copy. Copies will also be made available to others upon request. If we can provide any further assistance or if you have questions regarding this letter, please contact me at (202) 512-2600 or Janett P. Smith, Assistant Director, Defense Financial Audits, at (202) 512-8646.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Gene L. Dodaro". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Gene L. Dodaro  
Assistant Comptroller General

CRITERIA USED TO ASSESS THE DRAFT  
FEDERAL ACCOUNTING STANDARDS AND REQUIREMENTS DOCUMENT

1. Statement of Federal Financial Accounting Standards, Accounting for Selected Assets and Liabilities, (SFFAS 1)
2. Accounting for Direct Loans and Loan Guarantees, (SFFAS 2)
3. Accounting for Inventory and Related Property, (SFFAS 3)
4. Managerial Cost Accounting Concepts and Standards for the Federal Government, (SFFAS 4)
5. Accounting for Liabilities of the Federal Government (SFFAS 5)
6. Accounting for Property, Plant, and Equipment, (SFFAS 6),
7. Accounting for Revenue and Other Financing Sources and Concepts for Reconciling Budgetary and Financial Accounting, (SFFAS 7)
8. Statement of Recommended Accounting Standards no. 8, Supplementary Stewardship Reporting, FASAB
9. Statement of Federal Financial Accounting Concepts, Objectives of Federal Financial Reporting, (SFFAC 1)
10. Statement of Federal Financial Accounting Concepts, Entity and Display, (SFFAC 2)
11. Office of Management and Budget (OMB) Bulletin 97-01, Form and Content of Agency Financial Statements
12. OMB Circular A-25, User Charges
13. OMB Circular A-34, Instructions on Budget Execution
14. OMB Circular A-123, Management Accountability and Control
15. OMB Circular A-125, Prompt Payment
16. OMB Circular A-127, Financial Management Systems



17. OMB Circular A-130, Management of Federal Information Resources
18. Treasury Financial Manual (TFM), volume 1
19. Federal Financial Management System Requirements (FFMSR), Framework for Federal Financial Management Systems, (FFMSR-0), Joint Financial Management Improvement Program (JFMIP)
20. Core Financial System Requirements, (FFMSR-1), JFMIP
21. Personnel-Payroll System Requirements, (FFMSR-2), JFMIP
22. Travel System Requirements, (FFMSR-3), JFMIP
23. Seized/Forfeited Asset System Requirements, (FFMSR-4), JFMIP
24. Direct Loans System Requirements, (FFMSR-5), JFMIP
25. Guaranteed Loans System Requirements, (FFMSR-6), JFMIP
26. Inventory System Requirements, (FFMSR-7), JFMIP
27. Draft Managerial Cost Accounting System Requirements, (FFMSR-8)
28. Standards For Internal Controls In The Federal Government, GAO
29. GAO Policy and Procedures Manual for Guidance of Federal Agencies, Title 2, "Accounting"
30. GAO Policy and Procedures Manual for Guidance of Federal Agencies, Title 6, "Pay, Leave, and Allowances"
31. GAO Policy and Procedures Manual for Guidance of Federal Agencies, Title 7, "Fiscal Procedures"
32. DOD Financial Management Regulation (FMR) DOD 7000.14-R, Volume 1, "General Financial Management Information, Systems, and Requirements" (DOD FMR 1)
33. DOD FMR, Volume 2A, "Budget Presentation and Formulation" (Chapters 1-3), (DOD FMR 2A)

34. DOD FMR, Volume 2B, "Budget Presentation and Formulation" (Chapters 4-19), (DOD FMR 2B)
35. DOD FMR, Volume 3, "Budget Execution--Availability and Use of Budgetary Resources," (DOD FMR 3)
36. DOD FMR, Volume 4, "Accounting Policy and Procedures," (DOD FMR 4)
37. DOD FMR, Volume 5, "Disbursing Policy and Procedures," (DOD FMR 5)
38. DOD FMR, Volume 6, "Reporting Policy and Procedures," (DOD FMR 6)
39. DOD FMR, Volume 7A, "Military Pay Policy and Procedures--Active Duty and Reserve Pay," (DOD FMR 7A)
40. DOD FMR, Volume 7B, "Military Pay Policy and Procedures for Retired Pay," (DOD FMR 7B)
41. DOD FMR, Volume 8, "Civilian Pay Policy and Procedures," (DOD FMR 8)
42. DOD FMR, Volume 9, "Travel Policy and Procedures," (DOD FMR 9)
43. DOD FMR, Volume 10, "Contract Payment Policy and Procedures," (DOD FMR 10)
44. DOD FMR, Volume 11A, "Reimbursable Operations, Policy and Procedures," (DOD FMR 11A)
45. DOD FMR, Volume 11B, "Reimbursable Operations, Policy and Procedures--Defense Business Operations Funds," (DOD FMR 11B)
46. DOD FMR, Volume 12, "Special Accounts Funds and Programs," (DOD FMR 12)
47. DOD FMR, Volume 13, "Nonappropriated Funds Policy and Procedures," (DOD FMR 13)
48. DOD FMR, Volume 14, "Administrative Control of Funds and Antideficiency Act Violations," (DOD FMR 14)
49. DOD FMR, Volume 15, "Security Assistance Policy and Procedures," (DOD FMR 15)
50. GAO draft Federal Financial Management System methodology (FFMS)

### BASIC FRAMEWORK OF A SYSTEMS ARCHITECTURE

A systems architecture is the centerpiece of sound systems development and maintenance. Leading public and private sector organizations, such as the Software Engineering Institute at Carnegie Mellon University, strongly endorse defining and enforcing systems architectures as an integral and vital aspect of modernizing information systems.<sup>1</sup> The Congress and OMB have also recognized the importance of a systems architecture. The Congress passed the Clinger-Cohen Act of 1996 which, among other provisions, requires that department-level Chief Information Officers develop, maintain, and facilitate integrated system architectures. Also, in the OMB October 25, 1996, memorandum "Funding Information Systems Investments," the Director of OMB stated "investments in major information systems proposed for funding in the President's budget should be consistent with Federal, agency, and bureau information architectures which: integrate agency work processes and information flows with technology to achieve the agency's strategic goals..." OMB has also drafted a conceptual overview of information technology architecture concepts and elements which addresses key issues in implementing an architecture in an agency. This overview document is currently out for comment.

As we have described in other reports,<sup>2</sup> the purpose of the logical architecture is to ensure that the systems meet the business needs of the organization. Therefore, the logical architecture is derived from a strategic information systems planning process that clearly defines the organization's current and future missions and concepts of operations. It then defines the business functions required to carry out the mission and the information needed to perform the functions. Finally, it describes the systems that produce the information. In addition, an essential element of the logical architecture is the definition of component interdependencies (i.e., information flows). Once the logical architecture is defined, an organization knows its portfolio of desired systems and has a clear understanding of how these systems will collectively carry out the organization's objectives.

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<sup>1</sup>Executive Guide: Improving Mission Performance Through Strategic Information Management and Technology (GAO/AIMD-94-115, May 1994) and A Systems Engineering Capability Maturity Model<sup>SM</sup>, Version 1.1, Carnegie Mellon University, Software Engineering Institute, (SECMM-95-01, CMU/SEI-95-MM-003, November 1995).

<sup>2</sup>Strategic Information Planning: Framework for Designing and Developing System Architectures (GAO/IMTEC-92-51, June 1992) and Air Traffic Control: Complete and Enforced Architecture Needed for FAA Systems Modernization (GAO/AIMD-97-30, February 3, 1997).

The technical level details specific information technology and communications standards and approaches that will be used to build systems, including those that address critical hardware, software, communications, data management, security, and performance characteristics. The purpose of the technical architecture is to ensure that systems are interoperable, function together efficiently, and are cost-effective over their life-cycles.

The DOD C4ISR Integration Task Force has also recognized the importance of developing an architecture. This group has written guidance for DOD organizations on developing and presenting architectures.<sup>3</sup> This guidance, which is directed at warfighter systems but could also be applicable to other functions, defines and provides illustrative examples of the products associated with a suggested 3-tiered architecture. This 3-tiered architecture includes (1) an operational architecture which contains a description of the tasks, operational elements, and information flows required to accomplish or support a warfighting function, (2) a systems architecture which describes the systems and interconnections which support the warfighter functions, and (3) a technical architecture which is a minimal set of rules governing the arrangement, interaction, and interdependence of the parts or elements whose purpose is to ensure that a conformant system satisfies a specified set of requirements. While not identical to the GAO definitions, the first two architectural tiers are consistent with the logical architecture described above while the third tier is consistent with the technical architecture.

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<sup>3</sup>Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Architecture Framework, Version 1.0.

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