



Federal
Financial
Management
System
Requirements

System Requirements for Managerial Cost Accounting

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The *JFMIP System Requirements for Managerial Cost Accounting* document is one of a series of JFMIP publications on federal financial management system requirements. All of these documents should be considered together when determining how best to use information technology and supporting services to meet a federal agency's financial management needs. The *Framework for Federal Financial Management Systems* describes the basic elements of a model for integrated financial management systems, the relationships between the model elements, and specific considerations in developing and implementing integrated financial management systems. Each of the other documents in the series, beginning with *Core Financial System Requirements*, describes the functional requirements for a particular type of system. This particular document is called *System Requirements for Managerial Cost Accounting*, rather than *Managerial Cost Accounting System Requirements*, because cost accounting functions may be supported by many types of systems, such as the core financial system, inventory and fixed asset systems, programmatic systems, and others, in addition to systems dedicated to cost accounting.

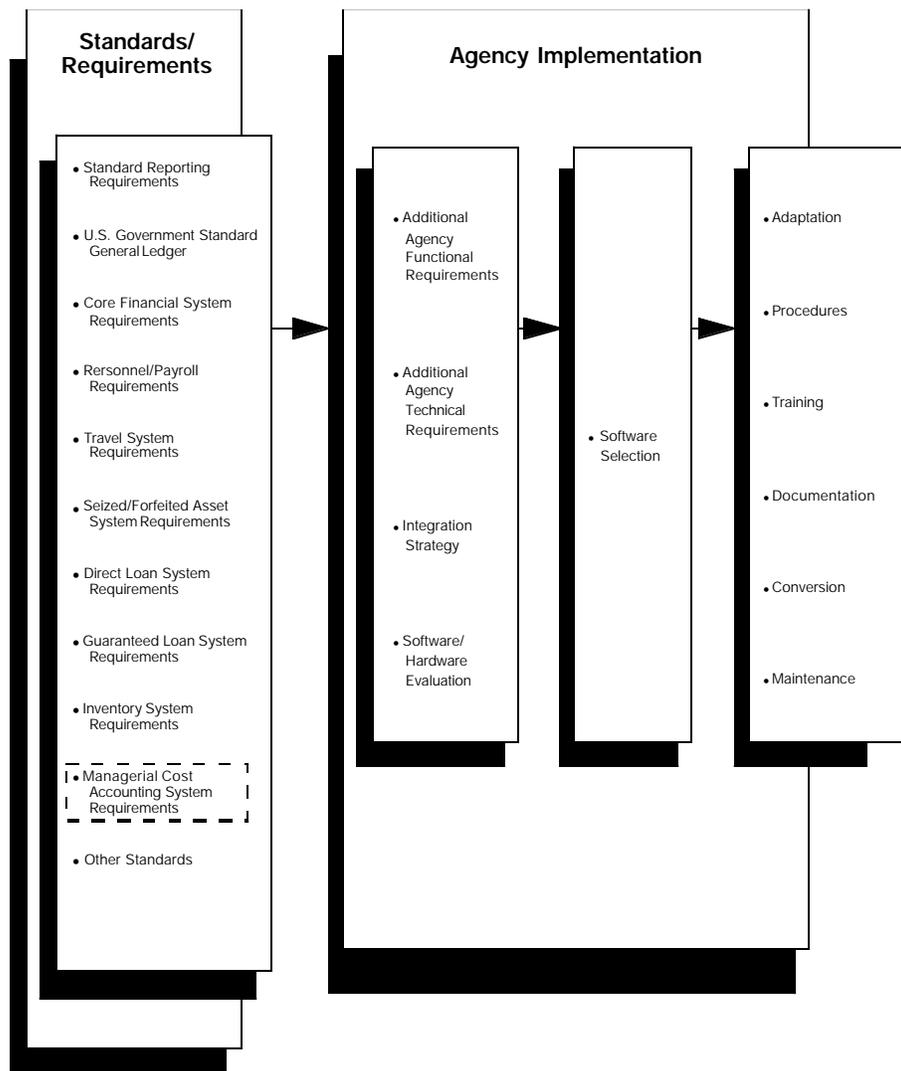
This *System Requirements for Managerial Cost Accounting* document is intended for systems analysts, systems accountants, and systems developers as well as program managers and other users who are defining requirements that software supporting managerial cost accounting functions in their organizations must meet. This document builds upon, and provides a means to implement, requirements related to cost accounting set forth in the Chief Financial Officers Act (CFO Act), Government Performance and Results Act (GPRA), Statements of Federal Financial Accounting Standards (SFFAS), Office of Management and Budget (OMB) circulars, and other sources. It accomplishes this by specifying information and functional processing requirements for accumulating and analyzing cost data consistent with governmentwide guidance. Laws and policies affecting systems for managerial cost accounting are identified in Appendix A. Glossaries of terms relating to managerial cost accounting may be found in SFFAS Number 4, *Managerial Cost Accounting Concepts and Standards for the Federal Government*, and the *Managerial Cost Accounting Implementation Guide* prepared by the Governmentwide Cost Accounting Committee of the Chief Financial Officers Council.

As shown in Illustration 1, standards and system requirements assist agencies in selecting effective and efficient systems. The requirements in this document are intended to facilitate the acquisition, development, and enhancement of systems that provide information useful in managing and controlling the cost of government. The document establishes the standard, governmentwide system requirements that an agency should consider for systems supporting managerial cost accounting functions, but also allows flexibility to address agency-specific requirements, such as those associated with the choice of costing methodology (e.g., activity-based costing).

JFMIP does not expect the requirements provided herein to be sufficient by themselves to enable an agency to make an informed decision regarding a system's ability to meet the agency's needs for managerial cost accounting, but rather to provide a starting point for such an analysis by identifying applicable governmentwide policies and standards. Each agency should integrate its unique information, functional, and technical requirements with the requirements provided in this document to determine the complete set of system requirements for managerial cost accounting in its particular environment.

Illustration 1

Financial System Improvement Projects



--- | Subject of
| --- | this report

Although some agencies, particularly those with manufacturing or other commercial-like operations, have some experience with managerial cost accounting, many agencies are just now dealing with it for the first time. Agencies for whom cost accounting is a new discipline may have some difficulty at first in complying with the federal accounting standards for managerial cost accounting. However, combining cost accounting, performance measurement, financial reporting, and budgetary control in an agency's single, integrated financial management system can be expected to provide significant benefits by facilitating more informed allocations of limited federal resources and other management decisions. Furthermore, agencies can develop and improve their managerial cost accounting capabilities over time.

SFFAS Number 4, *Managerial Cost Accounting Concepts and Standards for the Federal Government*, requires reporting entities to perform at least a certain minimum level of cost accounting and provide a basic amount of cost accounting information necessary to accomplish the many objectives associated with planning, decision making, and reporting. This minimum level includes collecting cost information by responsibility segments, measuring the full cost of outputs, providing information for performance measurement, integrating cost accounting and general financial accounting with both using the Standard General Ledger, providing the appropriate precision of information (it should be useful but not unnecessarily precise or refined), and accommodating any of management's special cost information needs that may arise due to unusual or special situations or circumstances. While each entity's managerial cost accounting should meet these basic requirements, the standard does not specify the degree of complexity or sophistication of any managerial cost accounting process. As long as the entity complies with the managerial cost accounting standards, it may use a cost accounting system or use cost finding techniques and other cost studies and analyses. Some entities may use a combination of a system supplemented by cost studies.

SFFAS Number 4 defines a cost accounting system as a continuous and systematic cost accounting process which may be designed to accumulate and assign costs to a variety of objects routinely or as desired by the management. It also states that such a system may be best for some, though not all, reporting entities. "Off-the-shelf" software is commercially available that can meet many of an agency's needs related to managerial cost accounting. However, even if the agency is using such software, agency management still needs to make decisions regarding the cost objects to be defined, the costing methodology to be used, the types of costs to be included for each reporting or decision making purpose (e.g., full cost), and other items of a similar nature. Agencies should also carefully consider the need and opportunity for streamlining or reengineering their processes to take maximum advantage of a new system. For example, processes that might be examined include those that would be used to provide input more reliably and efficiently to cost accounting calculations, those that might use information resulting from cost accounting to make better decisions, and the cost assignment processes themselves. Use of managerial cost accounting has the potential for making

major changes, both good and bad, in the behaviors of managers and other workers.

Some agencies may find they have existing software, such as core financial system software and reporting and data analysis tools, that can support many of their needs for cost accounting capabilities, especially when cost accounting is being first introduced. Not until an agency has some experience with cost accounting and has determined they truly have a need for more sophisticated capabilities and what those specific capabilities are, should an agency pursue additional software. Since agencies may use cost finding techniques and cost studies as long as they comply with the cost accounting standards and have latitude in developing cost accounting systems, implementation of a cost accounting “system” is not necessarily a prerequisite for compliance with SFFAS Number 4; however, some agencies may find it much more difficult to comply with the managerial cost accounting standards without a formal system.

This document presents requirements for software designed to support managerial cost accounting in a federal agency. It does not attempt to discuss in any detail other methods, such as cost finding techniques or cost studies and analyses, that an agency might use to comply with the managerial cost accounting standard and meet other agency needs. This chapter provides an overview consisting of the following sections:

- Summary of Information Requirements, which describes the types of data systems need to maintain to support managerial cost accounting. Additional detail on information requirements is provided in the chapter titled “Information Requirements.”

- Summary of Functional Requirements, which presents a brief description of the functional requirements pertaining to systems supporting managerial cost accounting. Additional detail on functional requirements is provided in the chapter titled “Functional Requirements.”

- Summary of Integration Requirements, which provides the basis for required data interchanges between systems that support managerial cost accounting directly with other systems that provide or receive cost data or related information.

SFFAS Number 4 is a hybrid statement that contains both concepts and standards. Statements of concepts are more general than statements of standards. Unlike standards, concepts are not considered to be authoritative requirements for agencies, but concepts are intended to help preparers and users of financial information better understand federal accounting and financial reporting. The concepts section of SFFAS Number 4 states:

Managerial cost accounting should be a fundamental part of the financial management system and, to the extent practicable, should be integrated with other parts of the system. Managerial costing should use a basis of accounting, recognition, and measurement appropriate for the intended purpose. Cost information developed for different purposes should be drawn from a common data source, and output reports should be reconcilable to each other.

In describing the purposes of using cost information, SFFAS Number 4 says, “In managing federal government programs, cost information is essential in the following five areas: (1) budgeting and cost control, (2) performance measurement, (3) determining reimbursements and setting fees and prices, (4) program evaluations, and (5) making economic choice decisions.” An agency’s managerial cost accounting system(s), whether manual or automated, should be able to provide cost information with sufficient supporting detail to allow sound decision-making in each of these five areas.

To meet the various needs in these five areas, costs may be measured, analyzed, and reported in many ways. The concepts section of SFFAS Number 4 states that cost information should be presented using the appropriate basis of accounting (e.g., accrual) and recognition/measurement standards for the

intended use of the information. Using different bases of accounting and cost accounting methods can produce different costs for the same item, activity, or entity, which can confuse users of the information. Therefore, a key concept is that reports using different accounting bases or different methods for recognition and measurement should be reconcilable, and should fully explain those bases and methods. These concepts are also consistent with concepts in the JFMIP *Framework for Federal Financial Management Systems* on process integration and financial data integrity control.

Summary of Information Requirements

The summary information classification structure consists of three separate but related information classification structures: financial, operations, and program. The managerial cost accounting system shares the summary information classification structure defined in the JFMIP *Framework for Federal Financial Management Systems* with other financial management systems.

Financial Information Classification Structure

The financial information classification structure is the primary structure for capturing accounting information, including costs, revenues, and units of input, such as labor, inventory, etc.

Operations Information Classification Structure

The operations information classification structure is used to measure the efficiency of an operation and associate costs to outputs. The operations unit is the organization unit and/or program contained in the financial information classification structure for which the costs of outputs are needed. In addition, this structure includes standards, which represent planned results, that provide a basis for evaluating how efficiently the agency is producing outputs.

Program Information Classification Structure

The program information classification structure is used to measure program effectiveness and associate costs to outcomes where feasible. The program unit should correspond with the program in the financial information classification structure. In addition, this structure includes goals and objectives that provide a basis for evaluating the effectiveness of a particular program.

Summary of Functional Requirements

A managerial cost accounting system should perform the following functions:

- System administration to maintain the relatively static information that controls other system functions, manage application-level security, and manage data storage for the entire system.
- Data capture to obtain data that is more dynamic than the data maintained by the system administration function. This includes capturing data on costs, units (e.g., of inputs, of outputs), exchange revenues, and gains and losses.
- Cost assignment to assign costs to intermediate and final cost objects (e.g., outputs) either using direct tracing, on a cause-and-effect basis, or on a prorated basis using a cost allocation methodology.
- Cost classification to determine values of inventory, property, plant, and equipment; stewardship investment amounts; and performance measures.
- Cost monitoring to manage costs, operations, programs, and outputs according to management needs and external reporting requirements.

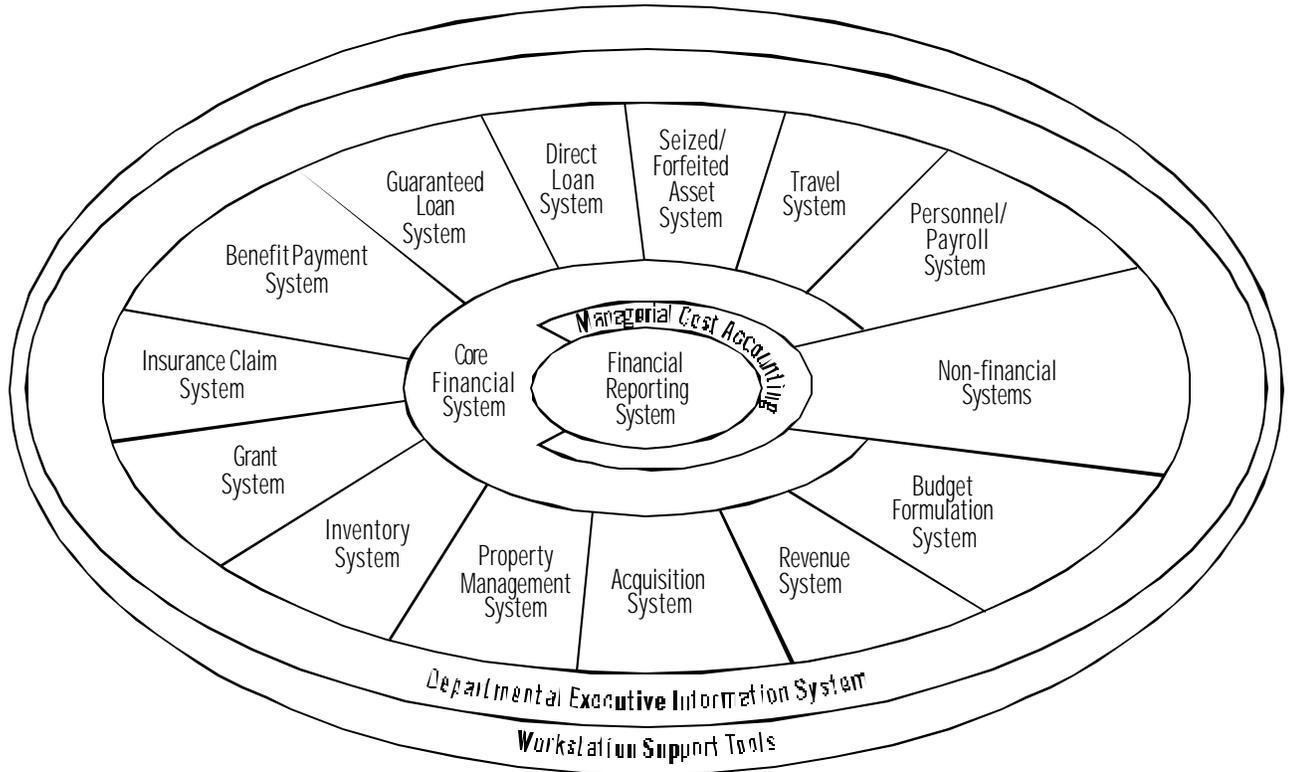
Summary of Integration Requirements

The sources of the following integration requirements are OMB Circular A-127, *Financial Management Systems*, and the JFMIP *Framework for Federal Financial Management Systems*, especially the Systems Architecture chapter of that document.

The agency systems architecture shown below provides a logical perspective identifying the relationships of various agency systems. Although this architecture does not necessarily dictate the physical design of the system, it does identify the system types needed to support program delivery/financing and financial event processing for effective and efficient program execution.

Illustration 2

Agency Systems Architecture



To be integrated, financial management systems need to have the following characteristics as described in OMB Circular A-127:

- Common data elements
- Common transaction processing
- Consistent internal controls
- Efficient transaction entry

Managerial cost accounting systems should be fully integrated with other agency systems, that is, designed to eliminate unnecessary duplication of transaction entry and share data elements without rekeying or reformatting. In fact, managerial cost accounting functions may be so integrated into one or more of an agency's financial management systems that there is not a readily identifiable managerial cost accounting system per se. Other agencies may find it more practical or beneficial to implement software specifically designed for managerial cost accounting that draws data needed from other parts of an agency's single, integrated financial management system. When this document uses the term "managerial cost accounting system," it should be interpreted as meaning any of several possibilities: a separately identifiable software module with interfaces or integration points with other systems; a part of a system labeled as something else (e.g., core financial system); parts of

several systems that together make up an agency's single, integrated financial management system as defined in OMB Circular A-127; or other similar configurations.

Managerial cost accounting system functions need to draw financial and non-financial (e.g., units) data from the core financial system, inventory system, payroll or labor distribution system, property management system, and others. This data may include but is not limited to labor costs, material costs, depreciation expense, labor hours, and number of items produced. Managerial cost accounting also needs to provide data to the core financial system, inventory system, property management system, financial reporting system, and possibly others. Examples of data provided include work-in-process values, finished goods values, and data for the Statement of Net Cost.

In most cases, the managerial cost accounting system itself is not a point of original entry for financial transactions, but instead uses data originally entered into or generated by other systems, such as labor costs and hours from a payroll system, depreciation expense from a property management system, travel costs from a travel system, material and other costs from procurement and inventory systems, and other information maintained by the core financial system. There may be some situations in which financial transactions might be entered directly into the managerial cost accounting system, but this is not considered to be a standard, governmentwide requirement, and extreme care should be taken to maintain proper internal control and avoid double-counting or missing costs.

Chapter II — Information Requirements

This chapter provides the information requirements for managerial cost accounting systems. The managerial cost accounting system shares summary data with the core financial system and other transaction processing systems. It manipulates this data to support management's analysis and reporting of cost information.

Data is captured by the managerial cost accounting system consistent with these information requirements and processed according to the functional requirements in the next chapter. It is shared with and returned to other systems and reported according to the reporting requirements. In order for all this to be done systematically, the data needs to be defined and classified. The information requirements here are consistent with the data and summary information classification structures outlined in the JFMIP *Framework for Federal Financial Management Systems*. The data elements listed below are for illustrative purposes, and individual agencies may add to or subtract from the list to meet their specific needs. The following diagram lists the information requirements for the three classification structures:

Summary Information Classification Structure Elements Used for Managerial Cost Accounting

Financial Information

Organization Unit	Funding Identification	Accounting Categorization	Program	Special Descriptors	Financial Accumulators
<ul style="list-style-type: none"> • Reporting entity • Responsibility Segment • Responsibility Center • ABC Activity (Optional) • Others as Needed 	<ul style="list-style-type: none"> • Fund year (optional) • Account Symbol (optional) 	<ul style="list-style-type: none"> • SGLAccount • Object Class/Cost Element • Entity/Nonentity Indicator • Federal/Non-federal indicator • Reporting Period 	<ul style="list-style-type: none"> • Program • Project 	<ul style="list-style-type: none"> • Management Special Information Needs 	<ul style="list-style-type: none"> • Dollars <ul style="list-style-type: none"> • Revenue (optional) • Costs • Planned Total Revenue (optional) • Units

Operations Information

Operations Unit	Activity Type	Efficiency Measures (outputs)	Standards	Operations Accumulators
-----------------	---------------	-------------------------------	-----------	-------------------------

- | | | | | |
|---|--|---|--|--|
| <ul style="list-style-type: none"> • Responsibility Segment • Responsibility Center • Program • Project | <ul style="list-style-type: none"> • Product/Service Type | <ul style="list-style-type: none"> • Efficiency Measure Type | <ul style="list-style-type: none"> • Planned Output Costs • Planned Output Units | <ul style="list-style-type: none"> • Output Units • Output Costs |
|---|--|---|--|--|

Program Information (Optional)

Program Unit	Effectiveness Measures (outcomes)	Goals and Objectives	Program Accumulators
--------------	-----------------------------------	----------------------	----------------------

- | | | | |
|---|--|---|---|
| <ul style="list-style-type: none"> • Program | <ul style="list-style-type: none"> • Planned Outcomes | <ul style="list-style-type: none"> • Quantitative Outcome Goals • Planned Program Costs | <ul style="list-style-type: none"> • Outcome Measures • Program Costs |
|---|--|---|---|

Financial Information Classification Structure

The financial information classification structure is used for collecting, categorizing, tracking, monitoring, and reporting information on the costs of a federal agency. The essential categories of the financial information classification structure for cost accounting are organization unit, funding identification, accounting categorization, program, special descriptors, and financial accumulators.

Organization Unit. Organization unit is the level at which financial information is consolidated and reported within an agency or externally to central agencies. An organization unit may also represent a level at which financial information is further consolidated by central agencies after it is reported by program agencies. Based on existing law and policies, agency managerial cost accounting systems need at least three levels:

- Reporting Entity, the level at which financial statements are produced
- Responsibility Segments, required for the statement of net costs for external reporting purposes

- Responsibility Centers, a level below responsibility segment
- ABC Activity, used in activity-based costing (Optional)

Funding Identification. Funding identification is used to control the formulation and execution of the budget. These elements are usually assigned during the budget formulation and execution processes:

- Account Symbol
- Fund Year

Although cost accounting at the budget account level is not a specific requirement of the managerial cost accounting standard, these elements have been included to enable an entity to correlate budget accounts with related responsibility centers.

Accounting Categorization. The accounting categorization contains the elements used to track assets, costs and revenues in the cost system. At a minimum, the cost system needs:

- Standard General Ledger Account
- Object Class/Cost Element
- Entity/Non-entity/Inter-entity Indicator
- Federal/Nonfederal Indicator
- Reporting Period
- Revenue Source Code (Optional)

Program. Program contains the elements to support aggregation of financial information related to specific activities or purposes. Each of these could have several levels (e.g., program, subprogram, sub-subprogram). At a minimum, the managerial cost accounting system needs:

- Program
- Project

Special Descriptors. Special descriptors are additional descriptive elements that can be used by management to capture costs according to special information needs, such as geographic location, commodity code, etc. Standards have not been defined because the specific elements needed depend on the information needed for particular purposes. The managerial cost accounting system should provide flexibility in its coding structures to meet a variety of needs.

Financial Accumulators. Financial accumulators are the dollar amounts of inputs and the related unit information (e.g., units, labor hours) aggregated from financial events in other systems reflecting time periods (e.g., daily, monthly, current year, inception to date). A managerial cost accounting system should be capable of accumulating the monthly, current year, four prior years and inception to date total for:

- Revenue dollars (Optional)
- Cost dollars
- Planned total revenue dollars (Optional)
- Planned total cost dollars
- Units

Operations Information Classification Structure

The operations information classification structure in the managerial cost accounting system captures information on the outputs of an operation. Since cost is only one part of a measure of efficiency, this structure is also used in other systems to collect non-financial information, such as number of payments made on time. The cost per output together with other measures of efficiency helps managers evaluate the efficiency of an operation. While data standards are less defined for this type of information than for financial information, consistency in the collection of this type of data is necessary to ensure that proper comparisons are made when benchmarking one operation to another. The essential categories of the operations information classification structure are operations unit, activity type, efficiency measures, operations accumulators.

Operations Unit Operations unit is the unit to which outputs will be associated. The managerial cost accounting system operations classification structure should include:

- Responsibility Segments
- Responsibility Centers
- Program
- Project

Activity Type. Activity type identifies the type of output to be measured within an operation to accurately diagnose problem areas or areas needing improvements in efficiency, such as case processing, publications printed, or tax returns processed. Therefore, the managerial cost accounting system should identify:

- Product/Service Type

Efficiency Measures. Efficiency measures are based on the relationship between inputs and the volume of output for this activity type, such as 20,000 cases processed. Therefore, the managerial cost accounting system should capture information on:

- Efficiency Measure Type

Standards Standards represent performance targets. These are normally established by agency management. Therefore, the managerial cost accounting system should capture information on:

- Planned Output Units
- Planned Output Costs

Operations Accumulators. Operations accumulators capture the actual number of output units and the actual output unit cost. These can then be compared to the established standards (targets). Therefore, the managerial cost accounting system should capture information on:

- Output Units
- Output Costs

Program Information Classification Structure

The program information classification structure categorizes cost information to be used in evaluating the effectiveness of program performance. Data standards for this information are among the least defined. Although not required, some agencies may find it very helpful for the managerial cost accounting system to be capable of associating program costs with the outcomes identified in an agency's strategic plan prepared in accordance with the Government Performance and Results Act (GPRA) of 1993. Under GPRA, the required strategic plans and performance goals would be a primary means of defining or identifying performance indicators to measure and assess outputs, service levels, and outcomes for each program activity. In discussing the use of cost information for performance measurement, SFFAS No. 4 states "While effectiveness in itself is measured by the outcome or the degree to which a predetermined objective is met, it is commonly combined with cost information to show 'cost-effectiveness.'" Therefore, there could be a role for the managerial cost accounting system in assessing part of the effectiveness of a program by reporting on the costs of the program and of those outcomes which are quantifiable in terms of cost. The categories of the program classification structure are program unit, effectiveness measures, goals and objectives, and program accumulators.

Program Unit. Program unit is the program level to which outcomes will be associated. This may be a large program involving a single agency or even several agencies, or a smaller program existing only within one agency bureau. Therefore, the managerial cost accounting system should categorize information by:

- Program

Effectiveness Measures. Effectiveness measures reflect the planned outcomes to be achieved by a program unit, such as number of students graduating and obtaining jobs. Therefore, the managerial cost accounting system should capture information on:

- Planned Outcomes

Goals and Objectives. Goals and objectives describe management's projected outcomes and results. These include the ones identified in the agencies' strategic plans. Therefore, the managerial cost accounting system should capture information on:

- Quantitative Outcome Goals
- Planned Program Costs

Program Accumulators. Program accumulators enable quantifiable measures used to determine the cost effectiveness of program activities. Therefore, the managerial cost accounting system should capture information on:

- Outcome Measures
- Program Costs

This chapter provides the functional requirements for systems supporting managerial cost accounting. The term “managerial cost accounting system” is used in a generic sense to indicate those portions of an agency’s integrated financial management system that together provide managerial cost accounting information for the agency or component parts. An agency’s managerial cost accounting system may be comprised of several system applications (or parts thereof), and in fact may not be separately identifiable in an agency’s inventory of financial management systems. The major requirements can be grouped into the following functional areas:

- System Administration
- Data Capture
- Cost Assignment
- Cost Classification
- Cost Monitoring

System Administration

System administration for the managerial cost accounting system is performed by a relatively small number of people, compared to the number of potential users of the system’s information. They maintain the relatively static information that controls other system functions, manage application-level security, and manage data storage for the entire system. In many situations, systems administration would be most effective and efficient if it is performed together for all applications in an agency’s integrated financial management system. Although integrated system administration is a highly desirable option, it is not a mandatory, governmentwide requirement. System administration is, however, required to be performed in some manner. Requirements associated with system administration of the managerial cost accounting system have been classified as data classification structure maintenance, cost assignment rules maintenance, security, and data management.

Data Classification Structure Maintenance. The data classification structure provides for the accumulation of required accounting information. Chapter II presents a data classification structure designed to collect, maintain, and associate financial, operational, and program information related to managerial cost accounting. Accordingly, the managerial cost accounting system must support the information requirements in Chapter II and use the data classification structure described there.

As described in the *JFMIP Framework for Federal Financial Management Systems*, many of the data elements contained within the data classification structure are shared with other financial management systems. The *JFMIP Core Financial System Requirements* identifies maintenance of the financial

information classification structure and parts of the operations and program information classification structures as a function of the core financial system. Other elements in these structures are likely to be maintained in other systems, such as inventory, property management, and systems that support programmatic activities.

Ideally, maintenance of the data classification structure is integrated across system applications such that there is no duplication of effort or data. Where possible and practical, the managerial cost accounting system should access the other systems' tables (or other data structures) that define codes in the data classification structure, rather than maintaining its own set of tables for these data elements. Although certainly not the preferred method, the managerial cost accounting system may maintain its own set of data (due to system architecture restrictions, for example), reconciliation and replication of the duplicated data between the other system and the managerial cost accounting system must be easy, frequent, and reliable to minimize data integrity problems.

The managerial cost accounting system may also use data classification elements that are unique to it, for example, activities in an activity-based costing system. The managerial cost accounting system must allow authorized users to maintain this data and use it for editing and reporting purposes. Different users may have different access and update capabilities.

Cost Assignment Rules Maintenance. Cost assignment rules provide the mechanism for attributing costs to cost objects. A cost object may be a particular output (good or service produced), a program, an organization, an activity performed, or other item whose cost is to be measured. Costs may be assigned to a cost object by direct tracing, cause-and-effect basis, or allocations.

The majority of an agency's costs would be assigned to outputs (as either direct costs or indirect costs) of its programs. Some costs may be considered to be non-production costs assigned to programs but not to outputs, because they are related more to the period in which they occurred than to the ongoing production of goods or services (e.g., costs of a reorganization, other post-employment benefits resulting from a reduction in force). A few costs, such as high-level general management and administrative support costs incurred by the Department Secretary's office, are attributable to the reporting entity or responsibility segment but cannot be assigned reasonably to programs or their outputs.

The cost assignment rules control the assignment of costs by the managerial cost accounting system. They specify which method (direct tracing, cause-and-effect basis, or cost allocation) of cost assignment will be used to assign a particular type of cost to a particular cost object, and how that method is to be applied. For example, the rules might identify the types of resources (e.g., labor, material, equipment), the measurements (e.g., person hours, computer time, square feet of lumber) to be used in assigning the costs of the resources to a cost object such as an activity or output, the amounts to

be assigned per unit of resource (e.g., rate per hour, percentage of total costs), and the order in which to apply the various rules (e.g., multiple step-down). The particular form the rules will take in any given managerial cost accounting system will depend on the costing methodology (or methodologies) chosen by the agency. A system that supports activity-based costing will have a different set of rules and capabilities than a system that uses an older, cost allocation approach to assigning costs. The cost assignment rules maintenance process must support the costing methodologies, cost objects, and resources chosen by the agency for its use. The managerial cost accounting system is not required to support all of the costing methodologies that might be possible. To attempt to do so would likely be impractical and wasteful.

The system administration function of the managerial cost accounting system enables authorized users to maintain the rules for cost assignment. The cost assignment function applies these rules to assign costs to cost objects, including outputs.

Security. System security must be established and maintained following the computer security policies set forth in Appendix III to OMB Circular A-130, *Security of Federal Automated Information Systems*. Unauthorized access to system functions and data must be prevented.

Data Management. Data management is the process of storing, retrieving, archiving, purging, and manipulating data. Archiving moves data from a medium used for current processing, for example, disk, to a long-term storage medium such as tape. Purging deletes data altogether. Data must be maintained for the periods needed for compliance with applicable standards, laws and regulations and to meet management's needs for historical information. For example, SFFAS Number 8, *Supplementary Stewardship Reporting*, requires five years worth of reporting on stewardship investments in human capital and research and development. Although keeping this data may not be strictly a requirement of the managerial cost accounting system, the agency will need to maintain it somehow, and the managerial cost accounting system may be the logical place to do so for many agencies. Historical data kept over a number of years would also be useful to managers desiring to examine cost trends over time.

Data Capture

The managerial cost accounting system must capture or be able to access several types of data. The data capture function obtains data that is more dynamic than the data maintained by the system administration function. This includes data on costs, units, exchange revenues, and gains and losses.

Cost Accumulation. According to SFFAS Number 4, *Managerial Cost Accounting Concepts and Standards for the Federal Government*, "cost" is the monetary value of resources used or sacrificed or liabilities incurred to achieve an objective, such as to acquire or produce a good or to perform an activity or

service. Cost accumulation is the process of collecting cost data in an organized way. The accumulation occurring in this function is for costs incurred within each responsibility segment, and does not involve the assignment or allocation of costs incurred by other supporting segments, which is covered by the cost assignment function.

The managerial cost accounting system must capture (or share with other systems) all data on costs needed to determine the costs of outputs and the total net cost of the entity's operations, with the appropriate disclosures of the components of net cost (e.g., operating costs, acquisition of mission assets, exchange revenue). Costs captured by the managerial cost accounting system are stored according to the data classification structure discussed above under "system administration" and in Chapter II. In addition, costs are categorized along many different dimensions for various analysis and reporting purposes. Some examples are exchange/nonexchange, production/non-production, direct/indirect, fixed/variable, controllable/uncontrollable, and actual/standard.

The managerial cost accounting system must capture summary information on all costs from the core financial system and other systems of original entry for cost transactions. These costs include, but are not limited to, operating expenses, costs of transfer payments, costs of goods sold, work-in-process costs, and mission asset costs. In addition, the managerial cost accounting system should allow for direct input of cost information by authorized users with an appropriate audit trail in order to capture costs that are not entered into any other system. If costs are entered directly into the managerial cost accounting system, it must summarize them and send them to the core financial system for posting to the general ledger. An example of this is recording the estimated cost of goods and services received from another entity without reimbursement and the corresponding financing source to cover it, where the cost needs to be recorded at a level of detail not supported by the core financial system.

Unit Data Capture. A unit is a determinate quantity (as of length, time, or value) adopted as a standard of measurement. Unit information is captured for two purposes: (1) to associate units, including units of inputs (e.g., labor hours used, materials used, activities performed), outputs (e.g., goods and services produced), and outcomes (e.g., program results), with a cost object, and (2) to provide a basis for distributing indirect costs.

The managerial cost accounting system must capture (or share with other systems) all data on units needed to determine the costs of outputs and the total net cost of the entity's operations, with the appropriate disclosures of the components of net cost. Units captured by the managerial cost accounting system are stored according to the data classification structure discussed above under "system administration" and in Chapter II. Examples of unit information to be captured include amounts and unit types (e.g., hours, items). These data elements are used to represent actual units of inputs and outputs, equivalent units (such as full-time equivalent employees), percentage of completion of a project, and measurements of outcomes.

The managerial cost accounting system captures (or shares) information on units from the core financial system and other systems of original entry. In addition, the managerial cost accounting system should allow for direct input of unit information by authorized users with an appropriate audit trail in order to capture unit information not entered into any other system.

Exchange Revenue, Gain, and Loss Data Capture. This is an optional process for the managerial cost accounting system. The agency is required to capture and report on exchange revenues, gains, and losses for purposes of preparing the Statement of Net Cost, but is not required to maintain that information at a detailed level that matches the managerial cost accounting system. Some agencies, particularly those performing commercial-type functions, may wish to maintain this information at a lower level of detail in the managerial cost accounting system so that it can be matched easily to cost information to determine the net cost of a particular cost object, such as a specific product or service, and improve management's control over their operations and pricing schemes.

Exchange revenues, gains, and losses are included in the calculation of net cost of operations of a reporting entity and the net cost of outputs, regardless of whether the entity keeps the revenue for its own use or transfers it to another entity. Exchange revenue that is immaterial or cannot be associated with particular outputs is deducted separately in calculating the net cost of the program, suborganization, or reporting entity as appropriate. Nonexchange revenues and other financing sources are not deducted from gross cost in determining the net cost of operations for the reporting entity and are shown on a different financial statement. The component parts of net cost should be shown separately to enhance analysis and understanding. More specific guidance and certain exceptions are found in SFFAS Number 7 and in FASAB's *Implementation Guide to SFFAS Number 7*. If this functionality is desired, the managerial cost accounting system would capture (or access) information on exchange revenues (net of revenue adjustments) and gains and losses resulting from exchange transactions (net of adjustments) from the core financial system and other systems of original entry.

Cost Assignment

The cost assignment function assigns (or attributes) accumulated costs to cost objects. The term "cost object" refers to an activity or item whose cost is to be measured. In a broad sense, a cost object can be an organizational division, program, activity, task, product, service, or customer. However, the purpose of cost accounting by a responsibility segment is to measure the costs of its outputs. Thus, the final cost objects of a responsibility segment are its outputs: the services or products that the segment produces and delivers, the missions or tasks that the segment performs, or the customers or markets that the responsibility segment serves. There may be intermediate cost objects that are used in the course of the cost assignment process.

Some responsibility segments of an entity may provide supporting services or deliver intermediate products to other segments within the same entity. The costs of the supporting services and intermediate products should be assigned to the segments that receive the services and products. This is referred to as the intra-entity cost assignments. In addition, an entity should recognize inter-entity costs for goods and services received from other federal entities. The inter-entity costs should also be assigned to the responsibility segments that use the inter-entity services and products.

Thus, with respect to each responsibility segment, the costs that are to be assigned to outputs include: (a) direct and indirect costs incurred within the responsibility segment, (b) costs of other responsibility segments that are assigned to the segment, and (c) inter-entity costs recognized by the receiving entity and assigned to the segment. If a responsibility segment produces one kind of output only, costs of resources used to produce the output are assigned to the output.

The costing methodology standard section in SFFAS Number 4 describes several costing methodologies that can be used but does not require the use of a particular type of costing system or costing methodology. It does, however, provide the following order of preference for cost methods in principle: (1) directly tracing costs wherever economically feasible, (2) assigning costs on a cause-and-effect basis, and (3) allocating costs on a reasonable and consistent basis. The choice of method depends on their relative costs and benefits. These principles apply to all levels of cost assignments including: (1) assigning inter-entity costs to segments, (2) assigning the costs of support services and intermediate products among segments of an entity (the intra-entity cost assignments), and (3) assigning direct and indirect costs to outputs. As a general rule, directly tracing costs and assigning costs on a cause-and-effect basis are more expensive than cost allocations, but produce more precise cost information.

The four costing methodologies described in SFFAS Number 4 are activity-based costing, job order costing, process costing, and standard costing. These costing methodologies are not mutually exclusive. Both activity-based costing and standard costing can be applied to job order or process costing systems. The managerial cost accounting system should support one or more of these methodologies, but is not limited to them as long as the methodology used complies with the principles in SFFAS Number 4.

If the cost assignment process affects the values of SGL accounts in the core financial system's general ledger, such as inventory or fixed asset accounts, the summarized impact of cost assignments should be sent to the core financial system for posting to the general ledger and external reporting. If, on the other hand, cost assignment merely moves costs between classification structure elements other than SGL accounts (e.g., organizations, programs), posting changes to the core financial system is optional. The posting of these amounts in the core financial system may enhance financial data integrity

control as described in JFMIP's *Framework for Federal Financial Management Systems*; however, the cost and complexity may not be worth the added benefit. If posting to the core financial system is not performed, alternate controls must be in place to ensure that all costs have been properly accounted for. The agency (either a cost accounting or the core financial system) should be able to report costs upon request both before distribution (i.e., as originally recorded) and after distribution of indirect costs.

Cost Classification

Assigning costs to time periods recognizes costs either as expenses or assets for each reporting period. This type of assignment, or "classification" as described here to avoid confusion with assignment of costs to cost objects, is governed by accounting standards on recognition of assets and expenses. Costs can be classified as operating expenses, assets, or stewardship resource costs.

In financial accounting and reporting, those costs that apply to an entity's operations for the current accounting period are recognized as expenses of that period. Assets benefit future periods and include inventory and related property (discussed in SFFAS Number 3), and property, plant, and equipment (PP&E) (discussed in SFFAS Number 6). Stewardship resources (discussed in SFFAS Number 8) consist of heritage assets; national defense property, plant, and equipment (e.g., weapons systems); stewardship land; nonfederal physical property; human capital investments; and research and development investments. The following types of calculations relating to cost classification are discussed below: inventory and related property calculations, PP&E calculations, and stewardship resource calculations.

Inventory and Related Property Calculations. Inventory is tangible personal property that is (1) held for sale, (2) in the process of production for sale, or (3) to be consumed in the production of goods for sale or in the provision of services for a fee. Operating materials and supplies are tangible assets to be consumed in normal operations. Stockpile materials are strategic and critical materials held due to statutory requirements for use in national defense, conservation, or national emergencies. Other property types are also described in SFFAS Number 3.

Items of inventory or supply that are merely acquired and held until used are likely to be handled by an inventory or supply system that records them as assets without involving the managerial cost accounting system. However, the managerial cost accounting system supports the inventory system (or other property system) by accumulating costs from multiple sources for inventory and related property that has been acquired, is undergoing repair, or is in production (work-in-process). Examples of costs that the managerial cost accounting system would accumulate include costs of production, transportation, and installation that must be added into acquisition costs; repair costs to be capitalized; and costs of direct labor, direct materials, and overhead for work-in-process. Costs may be assigned to jobs, processes,

activities, or other cost objects based on the costing methodology used by the agency. The managerial cost accounting system should provide accumulated costs, including applicable indirect costs, to the appropriate system for recording as the appropriate asset or expense type. In addition, the managerial cost accounting system needs to provide cost data to systems that need it to calculate revenue amounts for goods and services being produced.

Property, Plant, and Equipment Calculations. Property, plant, and equipment (PP&E) is classified by SFFAS Number 6 as general PP&E, federal mission PP&E, heritage assets, and stewardship land. General PP&E is defined as property, plant, and equipment used and consumed in providing goods or services. The cost of general PP&E items are carried as an asset on the agency's books. The other three categories are treated differently, as stewardship resources, as described in the next section and in SFFAS Number 8.

The managerial cost accounting system should accumulate and determine the full cost of general PP&E under construction. Costs for the current period and in total should be maintained for each construction project and item of property. When a project is completed, construction in progress is transferred to the appropriate asset account. This information should be passed to the core financial system and property management system(s) for asset valuation purposes.

The appropriate property management system should calculate depreciation expense for capitalized items. Depreciation is used to spread out the acquisition cost of a capital item as expenses over the item's useful life. The managerial cost accounting system should capture and handle these depreciation expenses in much the same way it captures expenses associated with labor, materials, and other items.

Stewardship Resource Calculations. Stewardship resources involve substantial investment by the federal government for the benefit of the nation. When made, these investments are treated as expenses in the financial statements. Stewardship resources as described in SFFAS Number 8 consist of stewardship PP&E and stewardship investments. Depending on the nature of the resources, stewardship reporting can include financial and non-financial data. The managerial cost accounting system would assist in the reporting of financial data related to stewardship resources.

Stewardship PP&E consist of the following subtypes:

- National Defense. Property, plant, and equipment acquired to meet the unique Federal government defense mission.
- Heritage Assets. Property, plant, and equipment held for the nation's general welfare possessing one of the following characteristics: (1) historical or natural significance, (2) cultural, educational or artistic value, or (3) significant architectural characteristics.

- Stewardship Land. Land owned by the Federal government not associated with general PP&E, e.g., land used as forests and parks and land used for wildlife and grazing.

To comply with SFFAS Number 8, the managerial cost accounting system must capture and classify costs of acquiring, constructing, improving, reconstructing, or renovating heritage assets, the costs of acquiring national defense PP&E, and the costs of acquiring stewardship land and preparing it for its intended use. It also must support the proper accounting for multi-use heritage assets, such as a building that both provides reminders of our heritage and is used for day-to-day government operations unrelated to the assets themselves.

Stewardship investments are items treated as expenses in calculating net cost but merit special treatment to highlight their substantial investment and long-term-benefit nature. They include investment in human capital, research and development, and non-federal physical property. These items generally have no other controlling system such as the inventory system or the property system discussed above. Therefore, these costs must be accumulated and maintained in the managerial cost accounting system on an annual basis for stewardship reporting for a period of five years.

Cost Monitoring

The cost monitoring function supports management's review of the costs of operations and allows management to hold individuals accountable for their performance. Financial reporting illustrates the performance of an agency in terms of the costs of programs and outputs to the taxpayer. In performance reporting, unit cost reports assist management in identifying areas that may need to be reengineered for more efficient and effective operation. In addition, there are times when management may wish to perform special cost analyses, such as determining the incremental cost of adding a program.

The managerial cost accounting system should be able to provide cost data needed to produce the Statement of Net Cost for the agency's financial statements. Optionally, it should also maintain the exchange revenue data needed to produce the Statement of Net Cost. Based on the conference report accompanying the Government Performance and Results Act, whenever possible, agencies should include performance indicators that correlate the level of program activity with program costs such as costs per unit of result, costs per unit of service, or costs per unit of output. The managerial cost accounting system should be capable of supporting cost management by performing such tasks as the following:

- Accumulate costs in agency defined cost centers that are associated with agency defined performance measures.
- Accumulate numerically valued agency defined output information.

- Calculate the unit cost of outputs.
- Produce unit cost reports by output.
- Produce project, job order, and work order reports showing costs from inception to date.
- Produce contract reports showing revenue and costs.

Special cost analysis includes such things as trend analysis; what-if analysis including the ability for the cost analyst to tag information in different ways, such as fixed and variable; and multi-dimensional analysis, such as program by organization by object class/cost element.

Appendix A — Laws and Policies

<u>Requirement</u>	<u>Policy</u>
Chief Financial Officers Act of 1990 (CFO Act)	Among the many requirements of the CFO Act, it supports integration and modernization of the government's financial systems and provides for development of, and reporting of, cost information.
Government Performance and Results Act (GPRA) of 1993	The GPRA requires agencies to develop strategic plans and performance goals, and to measure and report on performance compared to goals by 1999. Unit costs and other types of cost information are indicators of performance. Managerial cost systems will be needed to enable comparisons of actual costs with cost goals and to compare costs with outputs and outcomes.
Government Management Reform Act (GMRA) of 1994	The GMRA expanded the financial statement reporting requirements of the CFO Act. It requires agencywide financial statements for each CFO Act agency as well as audited financial statements for the entire U.S. Government.
Clinger-Cohen Act of 1996, formerly known as the Information Technology Management Reform (ITMRA) Act	This Act requires agencies to establish a planning process for capital investments in information technology, encourages interagency and governmentwide acquisitions of systems and, when advantageous, the use of commercial off the shelf software. It also authorizes Chief Information Officers at the agencies and stresses integrated information systems.

<u>Requirement</u>	<u>Policy</u>
Federal Financial Management Improvement Act (FFMIA) of 1996	FFMIA mandates that agencies implement and maintain financial management systems that comply substantially with federal financial management system requirements and applicable federal accounting standards, and fully implement the U.S. Government Standard General Ledger at the transaction level. It directs auditors performing financial statement audits to report on agency compliance. Agencies not in compliance are required to develop a remediation plan in consultation with OMB.
Federal Managers' Financial Integrity Act (FMFIA) of 1982	FMFIA requires agency heads to establish systems and controls that provide reasonable assurance that (i) obligations and costs comply with applicable laws; (ii) funds, property, and other assets are safeguarded against waste, loss, unauthorized use, or misappropriation; and (iii) revenues and expenditures are properly recorded and accounted for.
JFMIP Framework for Federal Financial Management Systems	The document describes the framework for establishing and maintaining federal financial management systems, and explains what is meant by a single, integrated agency financial management system. A managerial cost accounting system is an essential part of the integrated management system.

Requirement	Policy
OMB Bulletin No. 97-01, "Form and Content of Agency Financial Statements" (updated periodically)	The bulletin provides specific guidance for the preparation of financial statements, including minimum disclosure requirements. The Statement of Net Costs, for example, is a required basic statement whose completion is facilitated by a managerial cost accounting system.
OMB Circular A-11, "Preparation and Submission of Budget Estimates" (updated annually)	The circular establishes the policies and procedures for preparation and submission of agency budget estimates to the Office of Management and Budget. This circular also describes object classifications that are used to report obligations for past year/budget year for each account according to the nature of the services or articles procured. If the cost element classifications used by the managerial cost accounting system are similar to or the same as the object classes used in the budget processes, comparisons of cost data and budget data will be easier.
OMB Circular A-25, "User Charges"	The circular establishes guidelines for federal agencies to determine fees assessed for government services and prices for the sale or use of government property or resources. Full cost is one of the bases for these determinations. Managerial cost accounting systems can provide this data and determine the extent to which full costs are being recovered through fees and prices.

Requirement	Policy
OMB Circular A-34, "Instructions on Budget Execution" (updated periodically)	The circular sets forth the requirement for apportionments and reports on budget execution. It also addresses applied costs for business-type activities.
OMB Circular A-76, "Performance of Commercial Activities" and Revised Supplemental Handbook	The circular establishes federal policy regarding the operation of commercial activities. The supplemental handbook sets forth procedures for determining whether commercial activities should be performed in-house using government facilities and personnel or under contract with commercial sources. These procedures require reliable cost information, which can be provided by managerial cost accounting systems.
OMB Circular A-123, "Management Accountability and Control"	The circular provides guidance to federal managers on improving the accountability and effectiveness of federal programs and operations by establishing, assessing, correcting, and reporting on management controls. Managerial cost accounting systems generate cost information and related reports necessary for cost control.
OMB Circular A-127, "Financial Management Systems"	The circular prescribes policies and standards for executive departments and agencies to follow in developing, operating, evaluating, and reporting on financial management systems. These requirements must be satisfied in setting requirements for managerial cost accounting systems.

Requirement	Policy
OMB Circular A-130, "Management of Federal Information Resources"	The circular establishes policies and procedures to be followed by executive departments and agencies in managing information, information systems, and information technology. These policies and procedures affect the development and implementation of new cost systems. Managerial cost systems can provide data useful to agencies in making benefit-cost analysis of proposals to use new systems and technology to improve operational efficiency.
Standard General Ledger (SGL)/Treasury Financial Manual Bulletin No. S2-93-01, "U.S. Government Standard General Ledger" (updated periodically)	The SGL, published as a supplement to the Treasury Financial Manual, provides a uniform chart of accounts to standardize federal agency accounting and to support the preparation of standard external reports. Bulletin No. S2-93-01 informed federal agencies of changes to the U.S. Government Standard General Ledger (SGL). Managerial cost accounting systems will need to use the SGL and will need additional SGL accounts to support new cost related reports.
Statement of Federal Financial Accounting Standards (SFFAS) No. 4, "Managerial Cost Accounting Concepts and Standards for the Federal Government"	The statement sets forth one broad accounting concept and five broad accounting standards for managerial cost accounting, which should be incorporated in the design of managerial cost accounting systems.

Requirement	Policy
Other Statements of Federal Financial Accounting Standards	Each of the other seven SFFAS also impact the requirements for the managerial cost accounting system. Also see FASAB's <i>Implementation Guide to SFFAS No. 7</i> .
Treasury Financial Manual, Chapter 4100, "Federal Agencies' Financial Reports" (updated as needed)	Chapter 4100 describes the Department of the Treasury's requirements for federal agency financial reports to Treasury. Information in some statements submitted to the Treasury may be obtained from the managerial cost accounting system.

Appendix B — Contributors

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