

U.S. DEPARTMENT OF AGRICULTURE  
WASHINGTON, D.C. 20250

<b>DEPARTMENTAL REGULATION</b>		<b>NUMBER.</b> 3120-001
<b>SUBJECT:</b> IRM STANDARDS	<b>DATE:</b> November 20, 1989	
	OPI: OIRM, Planning, Review, and Standards Division	

1 PURPOSE

This regulation describes the Departmental program for the development, application and maintenance of information resources management standards, including the areas of automated information processing, telecommunications, data administration and office automation. The Departmental standards program has as its goals reduced cost; improved productivity and compatibility through better management; better utilization and more competitive procurement of information resources.

2 CANCELLATIONS

This regulation replaces OR 3120-1, "IRM Standards", dated January 28, 1985.

3 POLICY

Section 111(d) of the Federal Property and Administrative Services Act of 1949, 40 U.S.C. 759(d), as amended by the Computer Security Act of 1987, Pub.L. No. 100-235, 101 Stat. 1724, authorizes the Secretary of Commerce to promulgate standards and guidelines pertaining to Federal computer systems and to determine the extent to which they are binding on all agencies. These standards are called Federal Information

Processing Standards (FIPS). In addition, the General Services Administration issues Federal Telecommunications Standards (FED-STOS) under the provisions of 40 U.S.C. 487. FED-STDS include those categories in the Federal Supply Class of Telecommunications of the Federal standards program not redefined as automated data processing equipment (ADPE) by the Paperwork Reduction Reauthorization Act of 1986, Pub.L. No. 99-500.

USDA shall maintain a comprehensive standards program which supports the Federal Standards Program and also provides for additional Departmental standards as required for the Departmental Information Resources Management (IRM) Program. The Departmental standards program maintained by OIRM will be based in large measure on OIRM's active cooperation with the National Institute for Standards and Technology (NIST, formerly the National Bureau of Standards [NBSJ]) in the development of IRM standards and the establishment of methods and guidelines for interoperability and conformance testing of products. In addition to broader policy guidance, OIRM will develop strategies for the agencies to implement or transition to new technologies based on all components of the NIST Applications Portability Profile (APP) and other appropriate standards as they are developed. Initial implementations of the APP will include the Government Open Systems Interconnection Profile (GOSIP) and the Portable Operating System Interface (POSIX). Agencies, in turn, may have their own standards program and supplement Departmental standards as long as they are consistent with Departmental standards.

a Federal Standards. The Department's acquisition, use and maintenance of the technology covered by this regulation will conform to all applicable Federal Standards unless an acceptable justification exists for granting a waiver. Federal standards consist of mandatory FIPS issued by the National Institute of Standards and Technology (NIST, formerly the National Bureau of Standards [NBS]) and FED-STDS

issued by the General Services Administration (GSA). Specific procedures for obtaining waivers to Federal standards are given in paragraph 8 of this directive. A list of all mandatory and non-mandatory FIPS is given in appendix A. A list of all Federal Telecommunication Standards is given in appendix B. Any change in the status of FIPS or FED-STD's will be posted on the USDA "Standards" bulletin board on the Department's electronic mail system. Currently, this may be accessed by signing on to Telemail and then typing CHECK STANDARDS.

b Federal Guidelines. The National Institute of Standards and Technology (NIST), in its mission of providing assistance to agencies in designing information systems publishes nonmandatory Federal Information Processing Standards that are guidelines or program information documents. Use of all NIST guidelines is encouraged where applicable unless a substitute guideline is implemented by an agency or the Department.

c Departmental Standards. Departmental Standards are established wherever the Department determines the need for a standard and there is no applicable Federal standard or there is a need for guidance on how to implement a Federal standard or group of Federal standards. Departmental Regulations are the vehicle for the issuance of Departmental Standards. Departmental Regulations are issued as part of the Departmental Directives System, which is described in Departmental Regulation DR 0100.1, dated August 24, 1983.

Some Departmental Regulations reference specific FIPS, FEDSTD's and other industry standard practices and procedures, while other Departmental Regulations specify the specific circumstances for implementing common procedures, standards or the particular options within standards that are most appropriate for the Department of Agriculture. When no Federal standard exists, very often national or international standards organizations such as the American National Standards Institute (ANSI), the

International Standards Organization (ISO), The Institute of Electrical and Electronic Engineers (IEEE), International Telegraphic and Telephone consultative Committee (CCITT), and the Electronic Industries Association (EIA) have issued standards which can be adopted as Departmental standards to meet specific needs. A list of Departmental Directives related to IRM activities is given in appendix C.

d Applications Portability Profile. The Applications Portability Profile (APP) that is being defined by the National Institute of Standards and Technology (NIST) is comprised of a group of functional components that constitute a "tool box" of standard elements that can be used to develop and maintain portable applications. The APP defines the standards to be followed in a range of areas, which in combination, greatly increase if not ensure the portability of applications developed in accordance with the profile. These areas are Programming Services, Data Management, Data Interchange, Network Services (GOSIP), Operating System (POSIX), and User Interface. It is the intent of the Department to implement all elements of the APP as soon as they become available and it is feasible to do so. The Department's major architectural thrust will be toward "portable" and "interoperable" applications operating in an "open" system environment. Appendix D contains a more detailed description of the APP.

e Portability. The development of "portable" applications should considered when any one of the following conditions exists:

- (1) It is known that the application being developed will be used on hardware or in an operating system environment different from the one on which it is developed;
- (2) The projected life of the data to be acquired, maintained, stored, or exchanged by the system will exceed the projected life of the hardware and

software on which the system is to be operated;

(3) Fifty percent of the data the application uses or sends is obtained from or sent to applications controlled by other agencies, even if the other agency is currently using the same hardware and operating system as that on which the application is to be operated by the USDA agency;

(4) Critical data (data without which the application could not function) is obtained from or sent to applications controlled by other agencies, even if the other agency is currently using the same hardware and operating system as that on which the application is to be operated by the USDA agency;

(5) The application will obtain data or send data to another application which was developed in accordance with the Applications Portability Profile;

(6) The agency's basic hardware and operating system architecture is to be replaced because it has reached the end of its life cycle or its capacity has been exceeded;

(7) Any one of the six major components within the Applications Portability Profile is going to be standardized throughout the agency. For example, an agency's standardized database management system should conform to the standard provided in the data management component of the APP;

(8) The application is expected to be used by organizations outside of the Federal government or will be expected to conform to standards of external organizations (State, local

governments, international organizations, etc.);

(9) The application is to be understood and maintained by programmers other than the ones who originally develop the application; and

(10) The application is being designed and programmed centrally for a decentralized environment that employs or may employ a different hardware/software environment.

f Open Systems. OIRM acting as the Department's manager of the Telecommunications program will ensure that the Department's backbone telecommunications network conforms to the Government Open Systems Interconnection Profile (GOSIP) FIPS. Agencies must ensure that network services and products they purchase conform to any applicable GOSIP FIPS.

g Implementation Strategies. OIRM will develop implementation strategies for implementing a standard or group of standards to ensure consistent, efficient, and effective development of portable and interoperable applications within the Department. Implementation strategies will be provided to agencies in draft form for comment and guidance. Once final, an implementation strategy will be adopted as a Departmental Regulation and will appear either stand-alone or as an appendix to this or a related regulation.

h Conformance Tests. When they are available, conformance tests will be used to determine a product or service's conformance to a Federal and Departmental Standards. In the absence of conformance tests provided by NIST or their designated representative, tests may be developed, when necessary, by OIRM or the agencies. OIRM will provide guidance to the agencies on the applicability of conformance tests to particular products or services.

i Interoperability Tests. When they are available, interoperability tests will be used to determine that a particular product or service will interoperate with existing or planned products or services. In the absence of interoperability tests provided by NIST or their designated representative, tests may be developed, when necessary, by OIRM or the agencies. OIRM will provide guidance to the agencies on the applicability of interoperability tests to particular products or services.

#### 4 ABBREVIATIONS

ADP Automatic Data Processing

ANSI American National Standards Institute APP  
Applications Portability Profile

CCITT International Telegraphic and Telephone  
Consultative Committee

CGM Computer Graphics Metafile

EIA Electronic Industries of America

FED-STO Federal Telecommunications Standard

FIPS Federal Information Processing Standard

FIPS PUB Federal Information Processing Standard  
Publication

FIRMR Federal Information Resources  
Management Regulations

FSC Federal Supply Schedule

GOSIP Government Opens Systems  
Interconnection Profile

GSA General Services Administration

IEEE Institute of Electrical and Electronic  
Engineers

IRM Information Resources Management

ISO International Standards Organization

NBS National Bureau of Standards (now the  
National Institute for Standards and Technology)

NCSL National Computer Systems Laboratory

NIST National Institute for Standards and  
Technology (formerly NBS)

OIRM Office of Information Resources Management

POSIX Portable Operating System Interface

RFP Request for Proposal

SQL Standard Query Language

TELEMAIL The Department's Electronic Mail System

USDA The United States Department of Agriculture

## 5. DEFINITIONS

a Applications Portability Profile. A profile composed of six major components: Programming Services, Network Services (GOSIP), Data Management (SQL), Data Interchange (CGM), Operating System (POSIX), and User Interface (X-Windows). The functional components of the APP constitute a "tool box" of standard elements that can be used to develop and maintain portable applications aspects of the APP: first, it is an open systems architecture based upon nonproprietary standards; second, it is a "tool box". Applications need not use or There are two key conform to the same elements of each component of the profile to be portable. As standards and products mature, there may be specific applications portability profiles for different types of processing, such as supercomputing, realtime, batch, and on-line transaction.

b Departmental Standards. Those standards adopted by the Department in addition to or to complement Federal Standards and guidelines. Departmental standards are contained in Departmental Regulations related to IRM and are listed in appendix B.

c Federal Standards. Federal standards are comprised of Federal Information Processing Standards (FIPS) developed by the National Institute of Standards and Technology (NIST) and Federal Telecommunication standards (FED-STD) issued by the General Services Administration (GSA). There are seven types of FIPS, which may be one of four categories as described below:

TYPE

- (1) General Publication
- (2) Hardware Standards/Guidelines
- (3) Software Standards/Guidelines
- (4) Data Standards/Guidelines
- (5) ADP Operations Standards/Guidelines
- (6) Related Telecommunications Standards
- (7) Conformance Tests

CATEGORY

- S - Standard
- G - Guideline
- P - Program Information Document
- T - Conformance Test

GSA has delegated the development of FED-STDs to the National Communications System in the Office of the Secretary of Defense, with the exception of "computer-related" telecommunication standards, which are developed by NIST as part of the FIPS process. GSA also provides required standard language to be used in solicitation documents for all Federal standards. The Federal standards program-is described in the document "ADP and Telecommunications Standards Index" issued yearly by GSA. This document lists all of the FIPS and FED-STDs and contains the standard language to be used in solicitation documents. It also gives the background of the Federal standards program. All Federal standards are Departmental standards.

d Interoperability. The ability of one application to exchange, modify, add, or delete data controlled by another application regardless of either the application's hardware and/or software environment.

e Conformance Tests. Tests developed by the standards community, vendors or the Department which are designed to demonstrate whether or not a particular product "conforms" to a Federal or Departmental standard. Conformance tests are not interoperability tests. They DO NOT demonstrate whether or not one product can interoperate with another single product or group of products.

f Portability. Portable applications are ones that can be developed and run on one hardware and operating system environment and then ported (moved) to another hardware and operating system environment with a minimum of modification. In fact, the ideal portable application would require no modification to move from one environment to another.

g Implementation Strategy. Where a standard or group of standards is sufficiently broad or covers a set of similar circumstances in several agencies, OIRM will develop implementation strategies as guidance to be used by the agencies. OIRM will also develop strategies,

where appropriate, to provide guidance to the agencies on implementation and integration of different components of the Applications Portability Profile (APP). These strategies will include but not be limited to the following elements:

- (1) A report on the current and projected status of the standards related to the appropriate component of the APP;
- (2) Specific conformance/validation requirements for products covered by the standards;
- (3) Identification of related standards; and
- (4) Procurement wording unique to the standard, group of standards or component of the Applications Portability Profile.

## 6 RESPONSIBILITIES

a The Office of Information Resources Management will:

- (1) Maintain oversight of the Departmental Standards Program;
- (2) Establish Departmental standards;
- (3) Establish strategies for implementing standards or groups of standards to create portable and interoperable applications in an open system environment;
- (4) Coordinate USDA representation in dealing with international standards organizations, the National Institute for Standards and Technology (NIST, formerly the National Bureau of Standards [NBS]), the General Services Administration, and other standards

organizations such as the American National Standards Institute (ANSI);

(5) Coordinate any waiver requests to Federal Information Processing Standards that must be sent to the Assistant Secretary for Administration or GSA for approval;

(6) Issue waivers to Departmental standards and regulations when approved by the Director, OIRM;

(7) Coordinate the review of proposed Federal and Departmental standards, and procedures; and

(8) Work with agency standards contact persons to provide guidance, keep them informed of all standards activities, and, when necessary, provide specific procurement language related to standards required to be included in requests for proposals, and contracts, such as conformance criteria.

b Agencies and staff offices will:

(1) Administer the Departmental standards program within their organizations, including the assignment of responsibilities;

(2) Promote compliance with standards, guidelines and procedures;

(3) Assign a standards coordinator to represent the agency with OIRM on standards issues;

(4) Prepare requests for waivers;

(5) Develop supplements to Departmental standards for use within the agency when appropriate;

(6) Propose Departmental IRM standards to OIRM;

(7) Review proposed standards, guidelines, procedures, and implementation strategies and participate in standards activities; and

(8) Acquire and distribute throughout their organization, publications of approved standards and guidelines, adoption announcements, and change notices.

## 7 SPECIFIC PROCEDURES

### a Adoption of Federal Standards

(1) When proposed standards are released, OIRM will coordinate Departmental review and provide comments to the issuing standards organization.

(2) When Federal standards are issued, OIRM will provide agency standards contact persons with ordering instructions for the standards and inform them when the standard becomes effective.

(3) All Federal standards will be automatically adopted into the Departmental program.

(4) OIRM will review existing implementation strategies to determine if they should be modified to accommodate new standards or if a new strategy needs to be developed.

(5) Where appropriate, OIRM will establish conformance criteria for new standards. This may involve the identification of applicable conformance criteria developed by the

National Institute for Standards and Technology or it may entail the development of conformance criteria unique to USDA and its agencies.

b Procurements

(1) FIRMR Subpart 201-39.10 requires contracting officers to include terminology in solicitations to incorporate each standard that is applicable to the information processing resource being acquired. The terminology is published yearly in the ADP & Telecommunications Standards Index by the GSA. Updates to the standard solicitation language will be made available by OIRM on the Standards bulletin board on Telemail. In cases where appropriate Federal standards do not exist, OIRM will develop solicitation language in cooperation with the Office of Operations (00) for particular standards and make this available to the agencies, either through the standards bulletin board on the Department's electronic mail system or as part of an implementation strategy.

(2) Pursuant to FIRMR Subpart 201-39.10, the standard terminology found in the ADP & Telecommunications Standards Index may be incorporated into A solicitation by reference to the index. When standard terminology is incorporated by reference, the solicitation must include the provision of FIRMR 201-39.5262-1, Availability of Standards Index. Solicitation language found in implementation strategies may also be included by the use of reference to the specific strategy document(s). Agencies should have a copy of the document(s) available for vendors to review. Note however, that OGC and 00 may determine that

incorporation of standards by reference is inappropriate for a particular procurement and that the full solicitation language should be used.

## 8 WAIVERS FROM ADOPTED STANDARDS

USDA organizations may use the waiver procedure for gaining exceptions to standards. Exceptions may be needed for equipment, applications systems, operating systems, etc. Those individuals developing specifications, which cannot reasonably comply with Departmental or Federal standards should use the alternatives established by a waiver.

a Waiver Requests. All requests for waivers should be submitted to the Director, OIRM, through the agency's Senior IRM Official.

(1) FIPS waiver requests will be reviewed within OIRM. OIRM will make recommendations concerning the waiver request and submit the waiver request and recommendation to the Assistant Secretary for Administration, who has been delegated the authority to approve waivers by the Secretary. The format and specific procedures for submitting FIPS waiver requests is given in appendix E.

(2) FED-STD waiver requests will be reviewed within OIRM. If OIRM concurs with the request, OIRM will request that GSA grant an exception to the mandatory use of the FED-STD. Waivers for Non-Federal standards will be processed by OIRM. The format for the justification and benefit/cost analysis of a FED-STD waiver request is the same as a FIPS waiver request. FED-STD waiver requests do not however, have to be accompanied by the waiver notifications required for a FIPS waiver. OIRM will notify the agency

that GSA has approved or rejected the FED-STD waiver request.

(3) Requests for waivers to Departmental standards should take the same form as FED-STD waiver requests. These requests will be reviewed and approved by the Director, Office of Information Resources Management.

b Justification. Agencies will submit a written statement of the requested waiver's proposed duration, the specific relief requested, and an explanation of the specific circumstances that justify the request for a waiver. In preparing requests to waive FIPS, agencies should bear in mind that Congress must be notified of each waiver granted and that such waivers can only be granted when:

(1) Compliance with a standard would adversely affect the accomplishment of the mission of an operator of a Federal computer system; or

(2) Cause a major adverse financial impact on the operator which is not offset by Government-wide savings.

c Benefit/Cost Analysis. Whenever an adopted standard is foreseen as likely to create a significant and adverse impact on a major Departmental program, as not being technically feasible, or as being impractical in terms of cost, manpower, time, budget, or prior contractual obligations, the agency must prepare a benefit/cost analysis to accompany its waiver request and justification. Again, agencies are reminded when requesting waivers to FIPS that the cost/benefit analysis will receive intense scrutiny by the Department and Congress.

d FIPS Waiver Notifications. In accordance with section 111(d)(3) of the Federal Property and Administrative Services Act of 1949 as amended (40 U.S.C. 759(d)(3)) (The Act), and the procedures established by the Secretary of

Commerce, when a waiver is granted to a FIPS, notification of a waiver must be sent to or placed in the following:

- (1) The Federal Register, figure E-1;
- (2) The Chairman of the Senate Committee on Governmental Affairs, figure E-2;
- (3) The Ranking Minority Member of the Senate Committee on Governmental Affairs, figure E-3;
- (4) The Chairman of the House of Representatives Committee on Government Operations, figure E-4;
- (5) The Ranking Minority Member of the House of Representatives Committee on Government Operations, figure E-5;
- (6) The Commerce Business Daily as a part of the notice of solicitation for offers of an acquisition or, if the waiver determination is made after that notice is published, by amendment to such notice; and
- (7) The National Institute of Standards and Technology (NIST, formerly NBS), figure E-6.

## 9 MAJOR STANDARDS ORGANIZATIONS

a American National Standards Institute (ANSI) - A nongovernmental organization, the principal standards-forming body in the United States. ANSI standards are frequently adopted by the National Institute of Standards and Technology (NIST) as Federal Information Processing Standards (FIPS).

b Electrical Industries Association (EIA). A trade organization representing a large number of

U.S. electronics manufacturers involved in the definition of telecommunications standards.

c Institute of Electrical and Electronic Engineers (IEEE). A trade organization representing a large number of U.S. electronics manufacturers involved in the definition of standards for electrical equipment.

d International Standards Organization (ISO). The principal worldwide standards organization with nearly 90 member nations. ANSI in coordination with the U.S. State Department represents the United States in ISO. ISO standards are often adopted by ANSI as ANSI standards.

e International Telegraphic and Telephone Consultative Committee (CCITT). The standards body of the International Telecommunications Union (ITU) that develops telephone and telegraph standards called "Recommendations." Unlike other standards organizations, CCITT follows a very strict four year cycle for the publication of "recommendations" or standards.

f National Institute of Standards and Technology. The National Institute of Standards and Technology (NIST), which was formerly the National Bureau of Standards (NBS) is the government organization responsible for developing and maintaining Federal Information Processing Standards (FIPS).

-END-

Copies of Appendix A through E may be obtained by contacting Sharon Curtis, OCIO, at 202-720-9270, or by e-mail at [sharon.curtis@usda.gov](mailto:sharon.curtis@usda.gov)