NASA Contractor Report 166675

Survey of Federal, National, and International Standards Applicable to the NASA Applications Data Service

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ABSTRACT

The Applications Data Service (ADS), being developed by the NASA Office of Space and Terrestrial Applications, is a computer-based network linking investigators from multiple scientific disciplines. ADS will provide efficient and effective locating, processing, and transfer of data both within and across these disciplines. In support of the ADS program, MITRE is developing standards, guidelines, methodologies, and recommended practices in the areas of data processing and data communications. This is the first ADS standards report. It provides a functional definition of ADS, surveys standards issued by Federal, national, and international organizations (including NASA), and maps these standards into an ADS functional definition. A resulting set of standards is recommended for further consideration by the ADS Program.

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1. INTRODUCTION

Applications of NASA space programs are evolving in the 1980's from exploration and inventory to exploitation. Earth and atmospheric scientists are collecting data to develop models to help understand natural phenomena. These models will be applied in research addressing nationwide problems such as pollution monitoring and control, water resources management, energy resources exploration and allocation, and natural disaster warning and alleviation. This means that scientists in agriculture, oceans, atmospheres, and other areas are addressing applications which require the timely access to and integration of data from many sources.

To meet these challenges in data access and integration, the NASA Office of Space and Terrestrial Applications (OSTA) is developing an Applications Data Service (ADS). OSTA/ADS will provide a common service to locate and access applications data electronically and to integrate the cross-correlative data sets required by multiple users. Its catalog and network services will increase data visibility as well as provide the data in a more rapid manner and a more useable form. The resulting data exchange standards, when applied to future NASA programs, will enable compatible data systems to evolve in a natural way.

The Applications Data Service (ADS) is a major effort which includes utilization of the technology developed under the NASA End-to-End Data System (NEEDS) Program. The NEEDS Program has as objectives the definition of system configurations and development of enabling techniques and technology to enable orders of magnitude improvement in the effectiveness and efficiency of the NASA-wide Information System for the 1980's. This effort has been underway since 1977 with broad participation from the NASA centers. The NEEDS work done on data base management systems, for example, is being utilized in the Pilot Atmospheric Data System of ADS.

The following introductory sections provide more information on ADS, and the role standardization should play in the ADS program.

1.1 Background: The Applications Data Service (ADS)

Research and development programs sponsored by OSTA require timely access to a wide variety of remote sensing data and related information. At present, OSTA investigators and data users face serious problems when attempting to access data and

information. Little information is available describing the content, quality, and availability of OSTA data sets. Even when a desired data set is located, access to the data is often severely limited by data system deficiencies, incompatible and undocumented data formats, non-uniform data quality, data gaps, and insufficient capabilities for disseminating desired portions of data. ADS is a key factor in OSTA's response to these problems. The primary ADS objective is to provide efficient access to OSTA data and related information.

Goddard Space Flight Center (GSFC), in association with the Jet Propulsion Laboratory (JPL), Johnson Space Center (JSC), Langley Research Center (LaRC), and the Earth Resources Laboratory (ERL), performed a study of the ADS system concept in 1979.

This study showed the concept of quality data sets as interfaces between programmatic activities to be promising and feasible. ADS has the potential to solve some of the principal problems faced by applications researchers. Nevertheless, considerable and careful effort is required to carry the ADS concept into operation while avoiding the many pitfalls which could occur in such a highly innovative and pervasive system. The concept calls for:

- Cost-accountable, project-oriented data systems to produce raw and calibrated data sets and specified higher-level data sets needed by most scientific users.
- Discipline-oriented information extraction and processing systems to validate parameter algorithms and prepare parameter data sets, operate research and development models, develop user-oriented products and displays, and perform scientific analyses.
- Active archives to retain usable data sets and make them readily available.
- A common data cataloging and dissemination network service to allow users to locate, order, access, exchange, and integrate data quickly and at low cost.

The above features will enable ADS to provide to applications researchers and user government agencies timely and affordable access to readily usable data products, from a large number of data producers of diverse disciplines.

The initial general requirements set out for ADS [1], [2], [3], [4] include the following:

- Local autonomy
- Timely access to data
- Modular service
- Ease of use
- Support of a heterogeneous and geographically dispersed community of members (data producers and users)
- Economical service

Requirements for interfacing with ADS are as follows:

- ADS must be capable of interfacing with a distributed set of members (a term defined in Section 2.1).
- ADS must provide access to data bases which contain both space and non-space data in multiple formats. ADS must provide substantial uniformity of user access to these data bases.
- It must be possible to add to or remove members from ADS in a modular fashion to minimize cost, time, and operational impacts.
- ADS must interface with members to minimize the imposition of operational protocols upon the equipment and software of a supplier of data to ADS. The impact of ADS upon a facility of a producer of data must be controllable by that producer.
- ADS should allow concurrent access by multiple users at one site.
- ADS may perform services (such as data extraction) and provide interfaces to existing producer software (e.g., DBMSs) where necessary. These services would exist to minimize undesirable additional producer processing of data prior to its transfer to ADS.

In order to meet these requirements the OSTA/ADS program office has initiated an active program of standardization. The OSTA/ADS standards program is managed by the Information Extraction Division (IED) of the Goddard Space Flight Center.

1.2 The Place of Standardization in ADS

The OSTA Data Systems Planning Workshop [5] recommended an ADS Standards Program in these terms:

> "OSTA should initiate a data system standards program to foster common and compatible data formats for multisource investigations and to reduce the need for custom software development by users. The program should be based on requirements of the OSTA pilot systems, the OSTA programs and projects of the early to mid-1980s, and the expressed needs of the Workshop, i.e., data descriptions to support cataloging, data exchange formats to facilitate data integration, systems interconnection to allow low cost data links between producers and users of data, software systems engineering to lower user software cost. The standards program should aim to be fully supportive of a major OSTA data system thrust in the mid-1980s to support flight missions and discipline programs."

Meeting these goals involves reducing the number of different protocols, formats, and structural organizations by which data and software are represented and accessed. This reduction is accomplished by defining standards and guidelines for OSTA data and data systems. These standards and guidelines are applied by each project developer to his specifications for systems interfaces, data handling protocols, data formats, and software. The result is greatly increased compatibility among all future OSTA systems, data, and software developments.

The overall objective of the standards program is to provide effective standards and guidelines for data and data systems in the form of a handbook series addressed to OSTA system developers and others. The handbook series defines criteria to which OSTA systems, data sets, and catalogs should conform in order for others to interface to the system, access and assimilate data, and use sharable software.

The scope of the handbook series includes all major common aspects of OSTA systems that typically affect another system or user. Specifically, the following aspects [6], [7] are identified:

- Catalogs (how to describe data sets and related system resources such as directories which are accessible by other systems and users)

- Data structure and coding (data set organization and attributes, georeferencing and other ancillary information, data coding, and data exchange formats)

- Data quality (how the data are prepared, the levels of accuracy in the data, what processing steps and algorithms are applied to the data, and standard levels of data)

- Systems interconnection protocols (formalized procedures to be followed to facilitate transfer of data to other systems and users)

- Software documentation, including how software is developed and validated, what the software does (or does not do), and how it is used.

Other aspects may be identified during the ADS pilot phase activities.

The handbook series is to provide in one place the minimum amount of information which has to be mutually established by OSTA data systems to allow them and their users to exchange information easily, share software, and in general cooperate effectively to accomplish OSTA programmatic objectives. This maximizes compatibility in both data and software sharing among OSTA data systems, particularly ADS pilots and near-term OSTA programs. In areas such as systems interconnection where OSTA requirements largely coincide with the requirements of others, the standards and guidelines will minimize OSTA-uniqueness. In those cases, empha will be placed on adopting the specifications and practices of operational agencies, of service providers (such as public data networks), or of standards authorities such as the National Bureau of Standards and the American National Standards Institute. In other areas such as georeferenced data formats for satellite imagery or ADS user interface languages, OSTA-unique standards and guidelines may be necessary.

The objective of the present study is to examine existing and proposed federal, national, and international standards for applicability to OSTA/ADS.

1.3 Scope and Purpose of this Report

This report provides a survey, documentation, and preliminary evaluation of Federal, national, and international data processing and data communications standards in terms of their potential utility to OSTA's Applications Data Service Program. The ADS Standards Program includes not only standards, but also guidelines and methodologies, as defined in Section 1.4.

While focusing primarily on standards issued by the National Bureau of Standards (NBS), the American National Standards Institute (ANSI), and the International Organization for Standardization (ISO), this phase of the ADS standards effort also surveyed a large number of other standards issuing organizations. Standards issued by NASA were also included in this phase of ADS standards development.

1.4 Basic Concepts

Basic concepts related to ADS and to standardization are presented in this section. Glossary, acronyms, and abbreviations are listed in Appendix D.

American National Standards Institute (ANSI). This organization was formerly known as the United States of America Standards Institute (USASI), and as the American Standards Association (ASA) [8]. It is a non-governmental organization which serves as the national coordinating center for the development of programs of nation voluntary standards and for the approval and promulgation of such standards. ANSI is a federation of American trade and professional associations, commercial corporations, and governmental departments and agencies. ANSI serves as the USA member body of the International Organization for Standardization (ISO).

ANSI X3*. The ANSI Sectional Committee responsible for standardization in the following areas: computers, systems, equipment, devices, and media for information processing and data communications. This Committee has merged (10/80) with ANSI X4 (see ANSI X4).

*Although the full title of an ANSI committee is "American National Standards Committee ____," which would render the correct abbreviation of "X3" as "ANSC X3," we have chosen to use the terminology "ANSI X3," etc., which is less ambiguous to the non-standards community.

ANSI X4. The ANSI Sectional Committee responsible for standardization of office machines and supplies. This committee has merged into ANSI X3 (see ANSI X3).

ANSI Z39. The ANSI Sectional Committee responsible for standardization of concepts, definition, terminology, letters and signs, practices, and methods in library and information science.

Board of Standards Review (BSR). This Board is an ANSI body or bodies which retains a proposed or draft standard during the period of open public comment. Also, the abbreviation BSR denotes that draft standard.

CODASYL (COnference on DAta SYstems Languages). An organization dedicated to the development of data systems languages independent of any single computer model type [8]. Its membership is drawn from interested parties, both from the private sector and from government. CODASYL provides an independent forum for exchange of ideas relative to these languages. Standardization is the responsibility of appropriate ANSI X3 groups.

Computer and Business Equipment Manufacturers' Association (CBEMA). A voluntary industry-wide association of manufacturers of computer and business equipment of the United States[8]. Formerly known as the Business Equipment Manufacturers Association (BEMA) and before that, as the Office Equipment Manufacturers Institute (OEMI) [8]. Secretariat for ANSI X3 and ANSI X4.

Discipline. An area of investigation of interest to specific groups of OSTA-affiliated scientists. The following 13 disciplines were identified for OSTA/ADS purposes by the OSTA Data Systems Planning Workshop [5], and are listed here as examples of disciplines which may be served by ADS, or an initial set of users (to be expanded as ADS develops):

Agriculture, forestry, rangeland

Air quality*

Climate*

Coastal zone

Cryosphere

Global Weather*

Ocean processes

Severe storms*

Water quality

Geology and geodynamics

Land use

Non-renewable resources

Water resources and hydrology

Draft International Standard (DIS). The ISO designation of a proposed or draft standard during the period of open (public) comment.

European Computer Manufacturers Association (ECMA). A voluntary European body charged with developing methods and procedures of standardization of the use of electronic/automatic data processing systems on a Europe-wide basis.

Federal Information Processing Standards (FIPS). FIPS Publications are results of the work of the Institute of Computer Science and Technology (ICST) of the National Bureau of Standards (NBS). These guidelines are enforced for or applicable to Federal information processing procurements and internal system development.

Federal Telecommunications Standards Committee (FTSC). A joint committee with representation from those Federal departments and agencies which are heavy users of data communications. Example departments and agencies are the Department of State, Department of Defense, General Services Administration, and NASA. FTSC is in charge of coordinating Federal Telecommunications Standards.

*These four meteorologically-oriented disciplines comprise the atmospheres area.

International Advisory Committee (IAC) for ANSI X3. This body is responsible for coordinating ANSI X3 work with respect to international affairs, that is, with the corresponding committees, in ISO, IEC, and other national, regional, and multinational standards bodies.

International Frequency Registration Board (IFRB). This division of the International Telecommunications Union (ITU - see below) is responsible for registration and conformance testing of frequencies for electromagnetic communication.

International Organization for Standardization (ISO). An international organization, formed, from the earlier United Nations Standards Coordinating Committee (UNSCC) and the International Federation of the National Standardizing Associations (ISA). The aim of ISO is to promote the development of world standards for more effective international exchange of goods and services and to coordinate these activities.

International Radio Consultative Committee (CCIR). This division of the International Telecommunications Union (ITU - see below) is responsible for development of standards and operations rules for international radio communications.

International Telecommunications Union (ITU). An agency of the United Nations; it has three major divisions: CCITT, CCIR, and IFRB, which deal respectively with telegraphy and telephone, radio, and frequency allocation.

Locator. Any technology, process, or collection which assists in the identification of, search for, and retrieval of data and information of any kind. This general term encompasses such more precise terms as "catalog," directory," and "inventory."

National Bureau of Standards (NBS). This organization, located within the Department of Commerce, bears principal governmental responsibility for standardization. It is a government member of ANSI, as of October 1980* and works closely with all major federal, professional, trade, voluntary, and international standards research, development, testing, evaluation, and maintenance bodies.

National Communications System (NCS). The proposed communications system covering all Federal agencies and installations to which Federal Telecommunications Standards apply.

*ANSI Reporter, Vol. 14, No. 21, 10/17/80, p. 3.

SC6. ISO/TC97 Subcommittee on Data Communications.

SC16. ISO/TC97 Subcommittee for Open Systems Interconnection Architecture.

Secretariat. ANSI definition: "An organization or group authorized to assume the responsibility for a standards committee [8]. A secretariat is always associated with a standards committee; a sponsor is not. Examples: CBEMA is the secretariat for ANSI X3 and ANSI X4. ANSI holds several ISO secretariats, among which is one for ISO/TC97.

Sponsor. ANSI definition: "An organization or group which assumes responsibility of its own standards where no standards committee exists [8]. Example: ASTM acts as a sponsor of ASTM standards when these standards are proposed to be adopted as ANSI standards.

Standards, guidelines, methodologies. These three terms mean criteria for judgment embodied in one or more documents. However, this definition is too general for practical use. Table 1-1 defines these terms by listing the general characteristics of each. To the extent that the characteristics listed in Table 1-1 are approached, the more appropriately the term 'standard', 'guideline', or 'methodology' can be applied. Figure 1-1 presents the evolution of methodologies, guidelines, and standards in terms of the development of technologies from new, to developing, to proven.

Standards Planning and Requirements Committee (SPARC) for ANSI X3. SPARC reviews the need for standards and makes recommendations to the full X3 committee. SPARC also is the body that determines the responsiveness of the technical committee work to the original standardization objectives.

Standards Steering Committee (SSC) for ANSI X3. This committee holds line or administrative responsibilities for standardization work in ANSI X3. The International Advisory Committee (IAC) and the Standards Planning and Requirements Committee (SPARC) hold staff or advisory responsibilities. The SCC monitors and coordinates the standardization projects being developed by the project groups. There are project groups for

TABLE 1-1

GENERAL CHARACTERISTICS OF STANDARDS, GUIDELINES, AND METHODOLOGIES

Standard	Guideline	Methodology
Administratively compelling (required at some administrative level)	Advisory	Informational
Technically compelling (competently done)	Technically compelling	Technically interesting
Exhaustive (complete within its scope)	Exhaustive or selective, as required	Selective
Detailed	Not necessarily detailed; may be used to set boundaries within which standards may be defined.	Detailed; based on actual implementation
Adopted formally by key organizations	Agreeable to key organizations, not necessarily adopted formally	May be unique to one or a few organizations
Broad scope of application to many systems and organizations	Broad scope of application	Limited scope of application
Product-oriented	Activity-oriented	Product-oriented or outcome-oriented
Compatible with other standards and guidelines	Compatible with other standards and guidelines	Not necessarily compatible with any standard, guideline, or other methodology
Fully developed and stable, subject to evolution	Less fully developed	Not necessarily fully developed
Addressed to technical staff or to technical project management or to both	Addressed to technical project management or to program management or to both	Addressed to working-level technical staff

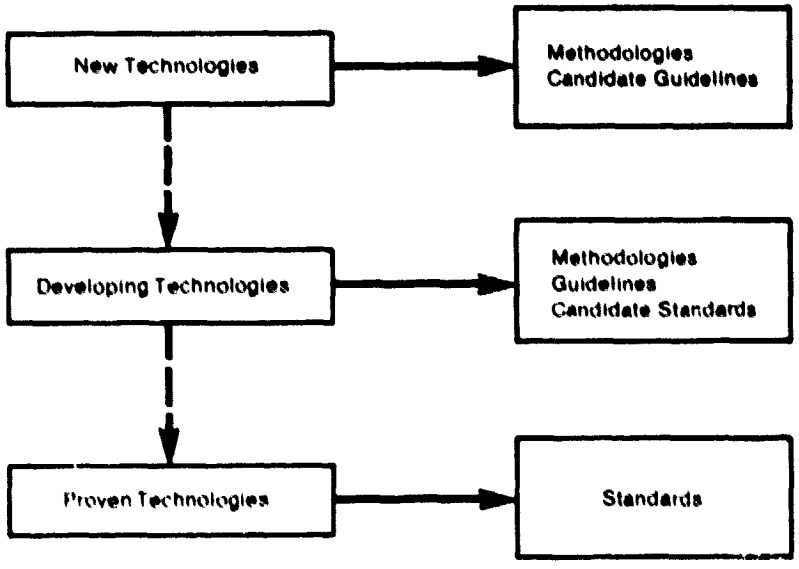


FIGURE 1-1
STANDARDS EVOLUTION

hardware, software, and systems. The eight Sections (A, B, S, etc.) are coordinated under the project groups and themselves coordinate Subcommittees which work on project areas (such as ANSI Subcommittee X3S3, Data Communications). The Subcommittees contain Task Groups which work on specific topics (such as Task Group X3S3.3, Messages).

TC95. ISO Technical Committee on Office Machines which is responsible for development of office machine standardization. The scope of this Committee is similar to that of ANSI X4. This committee is scheduled to merge into ISO/TC97 in 1981.

TC97. ISO Technical Committee on Computers and Information Processing, which is responsible for standardization of terminology, languages, data communication, I/O, and physical characteristics of electronic data processing devices, equipment, and systems. The scope of this Committee is similar to that of ANSI X3. This committee is scheduled to merge with ISO/TC95 in 1981.

X3, X4, Z39. See ANSI X3, ANSI X4, ANSI Z39.

2. APPROACH TO THE SELECTION OF FEDERAL, NATIONAL, AND INTERNATIONAL STANDARDS APPLICABLE TO ADS

The first step in selecting standards applicable to ADS is to examine the nature of ADS as a distributed system serving several OSTA disciplinary user communities. ADS is designed to facilitate interdisciplinary and intradisciplinary sharing of data and information among these communities. To focus this understanding an initial logical flow of ADS as it may evolve in the future is developed (Section 2.1). This tentative logical flow is to provide a framework for the identification of standardization requirements for this document.

The second step is to transform this logical flow into a hierarchical classification of the elements or features of ADS so that standards can be mapped into the nodes of this classification (Section 2.2).

The third step is to survey standards organizations both external to, and internal to, NASA. This involves identifying standards organizations, contacting them where necessary, and identifying the standards they have issued or plan to issue (Section 2.3).

The fourth step is to select standards which map into the classification developed in step 2 (Section 2.4). This is not a simple process, for these reasons:

- The ADS classification scheme (Step 2) is based on the nature and mission of ADS, not on the underlying technology required to accomplish the mission. Examination of a specific standard for "applicability" must involve a knowledge of how a technology might be used to implement a system feature.
- A given standard might apply to more than one node in the ADS classification (overlap).
- A given standard might apply only to a portion of a node (underlap).
- The examination of standards might affect the classification leading, in turn, to a modification of that classification.

The fifth step is to identify ADS features (nodes in the hierarchical classification) for which there are no applicable existing, developing, or proposed external standards. These

features may be unsuited to standardization, may be covered by NASA internal standards, or may be suited to the development of ADS-unique standards (Section 2.5). The present report does not distinguish among these three cases, but they are clearly important in the ADS standards program and should be addressed in the near future.

The five-step process detailed in Sections 2.2 through 2.5 is a first attempt at outline ADS for purposes of standardization. It is intended to promote discussion and not to be a final definition of the data service.

2.1 Step 1: Develop A Logical Flow of ADS

The first step in selecting external standards applicable to ADS is to develop a logical flow of the data service based upon the system elements of ADS. The flow model must be considered a first approximation subject to revision and evolution, and not a concrete definition.

2.1.1 System Elements

Figure 2-1 identifies the major elements of the ADS system as defined for standards development purposes. For clarity of presentation Figure 2-1 shows three members. The actual number of members, however, is unspecified because ADS is designed to be an open system.

Discipline users are individual scientists or groups of scientists who use an ADS network member facility to assist them in analyzing data relevant to their research. Each user is normally associated with an OSTA ADS discipline, of which thirteen have been defined at this time (see Section 1.4).

Discipline users employ the services of managerial professional, and technical staff associated with ADS members. Examples include applications programmers, operations managers, data base administrators, and others.

Members are facilities at one physical and organizational location which participate in ADS. Each member provides a service to the discipline users associated with it. A member facility may serve a dual role by operating independently of ADS as well as operating as part of ADS.

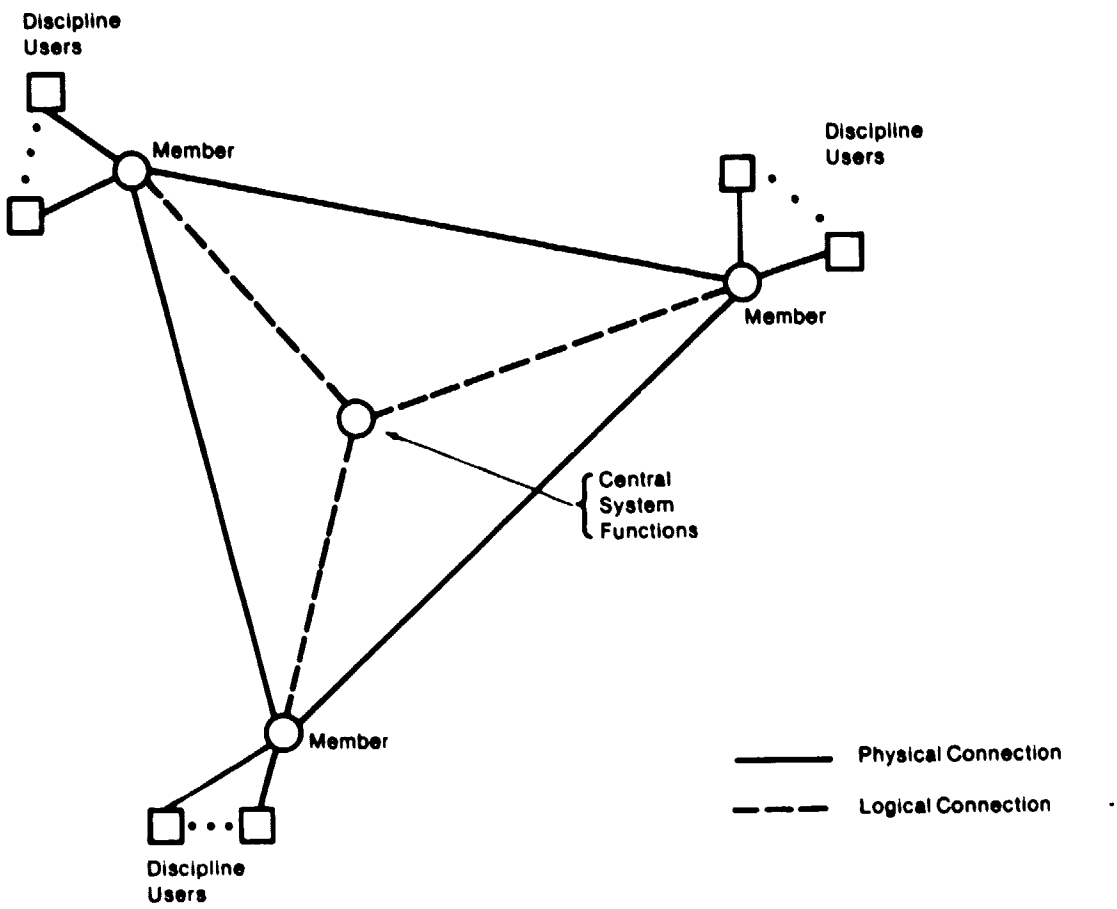


FIGURE 2-1
ADS SYSTEM ELEMENTS

ADS has central system functions encompassing technical services to members, including data communication, data integration, cataloging, and other value-added services. Also included are administrative services such as resource accounting and user assistance.

The central system functions may be performed by one or more members or may be wholly or in part distributed over the network. These functions are logically "central" whether or not they are embodied in a physically central facility.

Standards may be applied to each of these three system elements as follows:

- To ADS discipline users, who will need to observe ADS standards in their role as user of a network member facility.
- To ADS members, establishing conditions in which a member may participate in the ADS network or may participate most effectively.
- To the ADS central system functions, establishing the basic conditions of operation of the network.

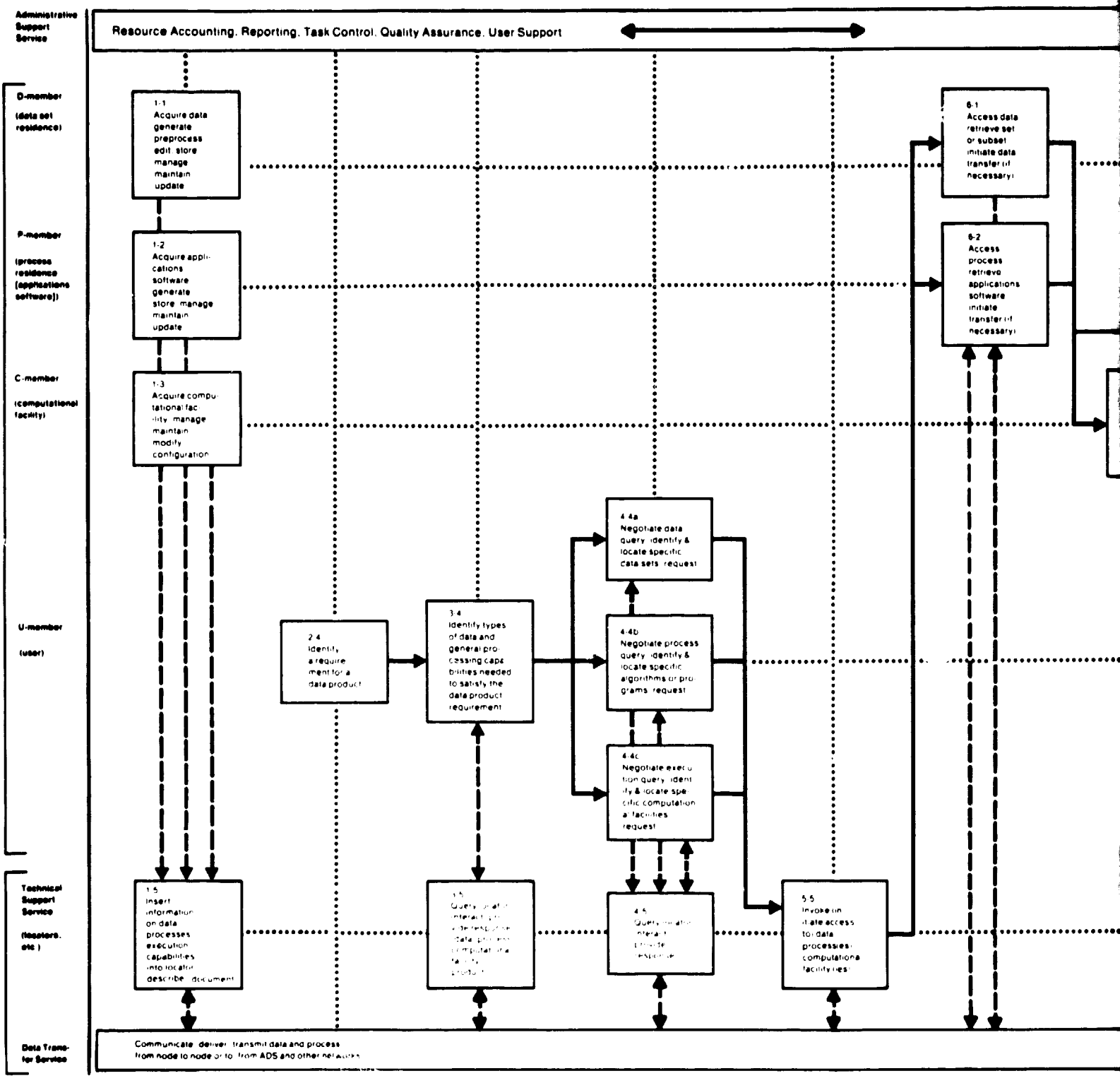
2.1.2 Logical Flow

Figure 2-2 portrays the conceptual logical flow of data in a fully distributed ADS system. This figure illustrates a possible eventual organization of an ADS-like system. It is not necessary that the evolution of ADS will follow this direction. In addition, it should be noted that only the major logical flows are shown in the figure. An actual operational ADS would offer a greater variety of options and exceptions that are not illustrated in Figure 2-2.

Figure 2-2, which is preliminary and will be refined, is organized to show seven parallel activities:

Support Services

1. Administrative services
2. Technical services



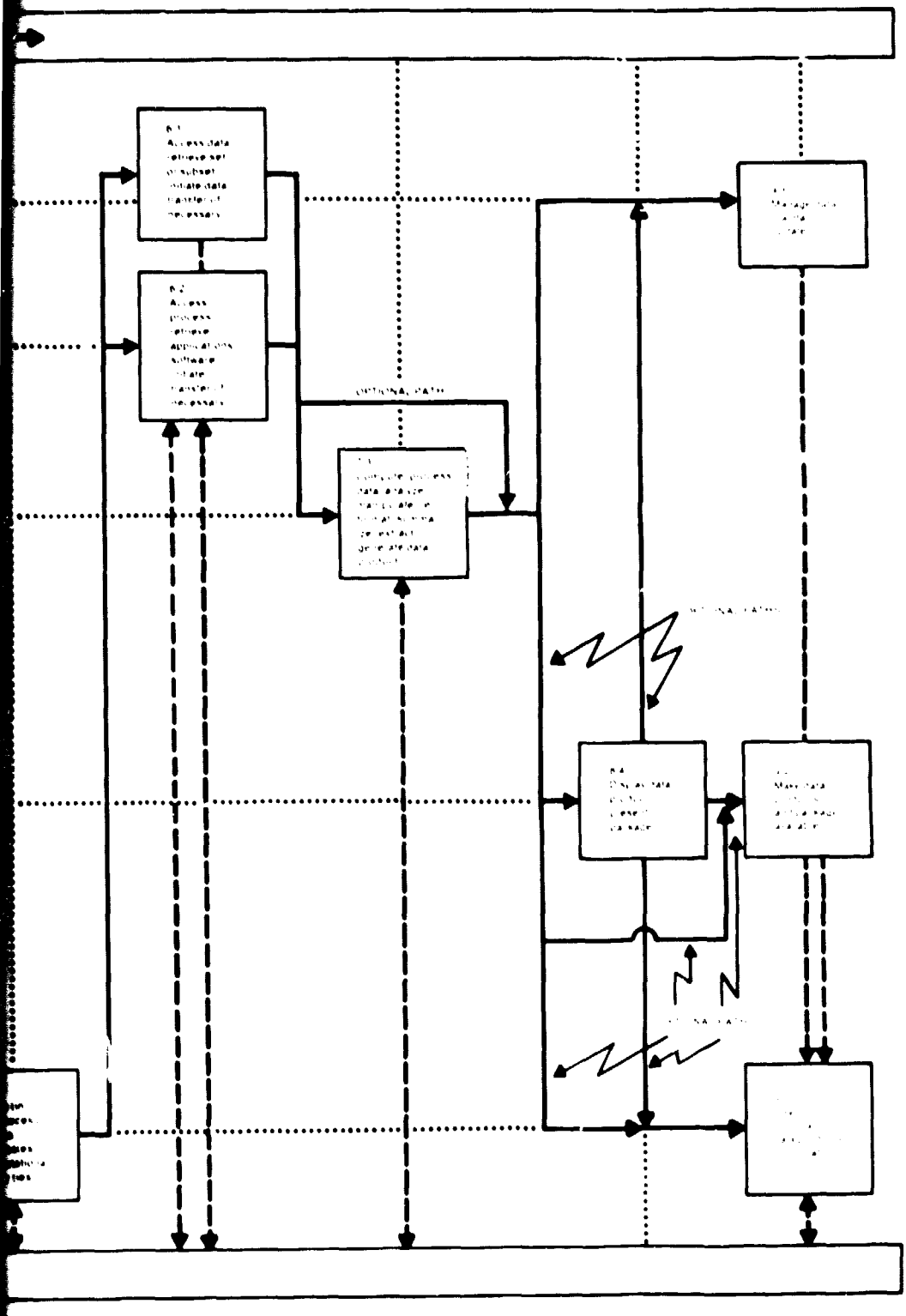


FIGURE 2-2
ADS LOGICAL FLOW

3. Data Transfer

Members*

4. D-members (applications data residence)

5. P-members (applications software process residence)

6. C-members (computational facilities)

7. U-members (user-system interface)

It is important to note that in ADS, as in some other distributed systems, the location of data, process, and computational facilities are, in principle, transparent to the user. In any given instance, any or all of these elements may reside at his own physical location or may be widely scattered.

*Each ADS member may perform one or more of the following functions at the same time or at different time:

- It may serve as a place of residence of applications data sets.
- It may serve as a place of residence of processes, applications software, or computer programs which are designed to operate upon data to produce some desired data product.
- It may serve as a place of residence of a computational facility, computers and associated peripheral devices and data communications equipment.
- In addition, it is through ADS member facilities that an ADS user communicates his requirements for data products. This initiation of system activities is the fourth function that may be performed by a member.

The following paragraphs describe a typical scenario or example of each of the activities identified in Figure 2-2:

Activity 1-1: Independent of any other activity in the flow, a D-member (data provider) acquires and maintains a data set. The D-member makes this data set known to the network by cataloging it (see activity 1-5).

Activity 1-2: Independent of any other activity in the flow, a P-member (applications software provider) acquires and maintains applications software. The P-member makes this software known to the network by cataloging it (see Activity 1-5).

Activity 1-3: Independent of any other activity in the flow, a C-member (computer center) acquires and maintains a computational facility (hardware and system software). The C-member makes certain capabilities of this facility available to the network by cataloging it (see Activity 1-5).

Activity 1-5: Whenever a member makes a change in his configuration of data, process, or computational facility where this change may affect a user request for services, the change is cataloged. A data base of ADS capabilities is updated to reflect the newly added, modified, or deleted capability.

Activity 2-4: The actual system flow begins when a U-member (user) identifies a requirement for a data product.

Activity 3-4: The user defines his requirement for a data product in terms of the combination of data and processes needed to generate the data product. The locator provides assistance to the user in this process of requirements definition (Activity 3-5).

Activity 4-4a, b, c: The user negotiates data, process, and computational facility queries by identifying and locating specific capabilities in the network which might be used to meet his requirements. This negotiation process operates between the user and the locator, because the locator contains a current record of the capabilities of the network and its members (Activity 4-5). At the conclusion of this negotiation process the user instructs the network to provide the agreed data product based upon the facilities to which the user has negotiated access.

Activity 5-5: The system, through the locator, invokes one or more data sets, processes, and computational facilities.

Activity 6-1: The system accesses data from one or more D-members and forwards these data to the selected C-member. (The D-member and C-member may be identical.)

Activity 6-2: The system accesses applications software from one or more P-members and forwards this software to the selected C-member (the P-member and C-member may be identical).

Activity 7-3: The selected C-member receives the data and the applications software and executes the process against the data. The computational facility generates the data product that the user requested. The optional path which bypasses step 7-3 is used when the user requires pure data or pure process, for example, a copy of a data set or a copy of a computer program, and does not require any computation beyond the trivial one of copying. At this point, the U-member may take any one (or more) of the three courses of action identified as Activities 8-4, 9-1, and 9-5. The flow may end here, or the U-member may take one (or more) of the three further courses of action identified as Activities 9-1, 9-4, and 9-5.

Activity 8-4: The data product is delivered to the user. The flow may end or the U-member may take one (or more) of the three courses of action identified as Activities 9-1, 9-4, and 9-5.

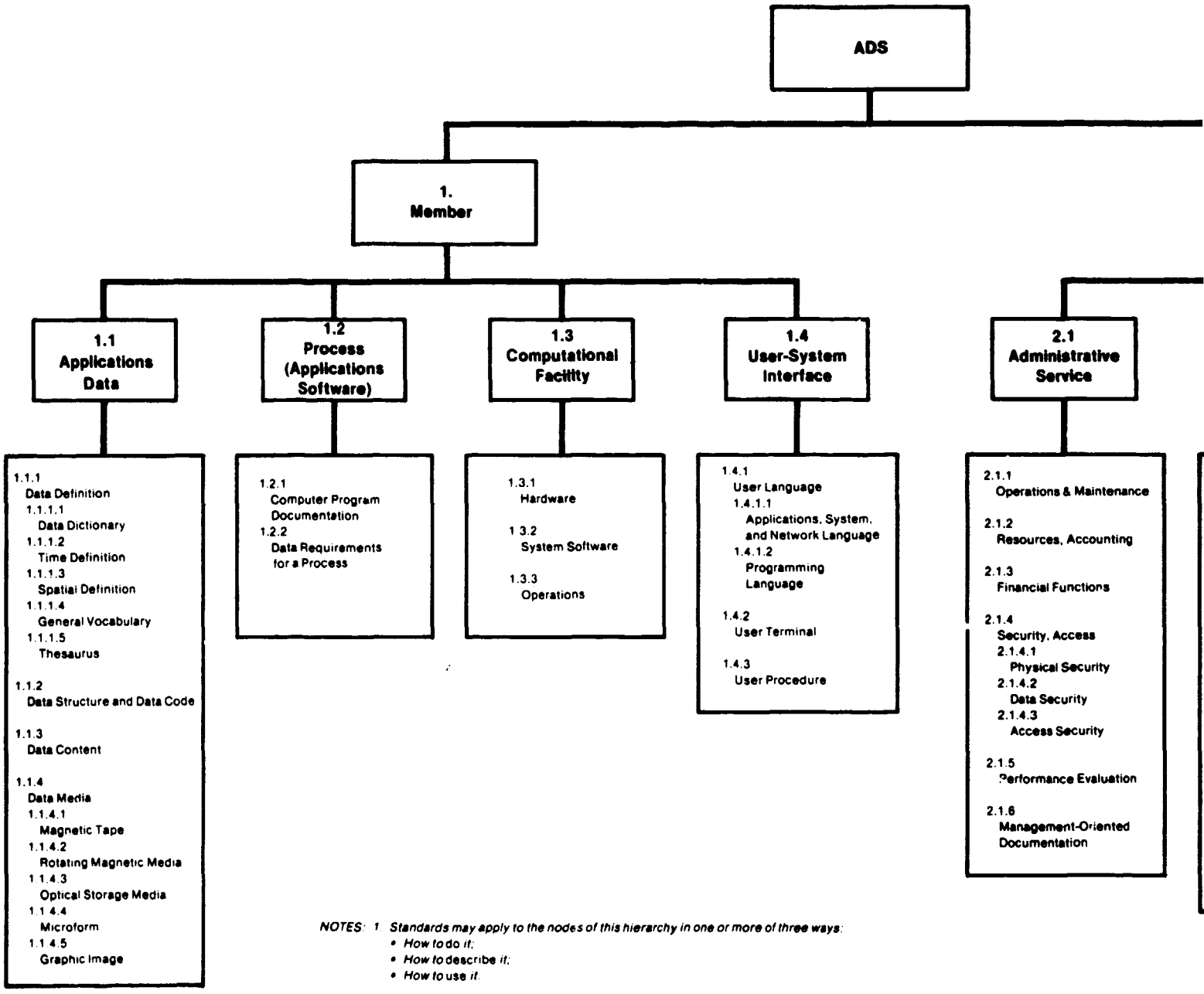
Activity 9-1: Optionally, the user may wish to maintain the data product as a new data set. This new data set is then considered to be resident within one or more of the D-members.

Activity 9-4: The user may, at his option, wish to make the data product available to other members or to persons or organizations outside of ADS.

Activity 9-5: The data product may be catalogued if it could be of interest to other users.

2.2 Step 2: Develop A Feature Classification for ADS Standards Based on the Logical Flow

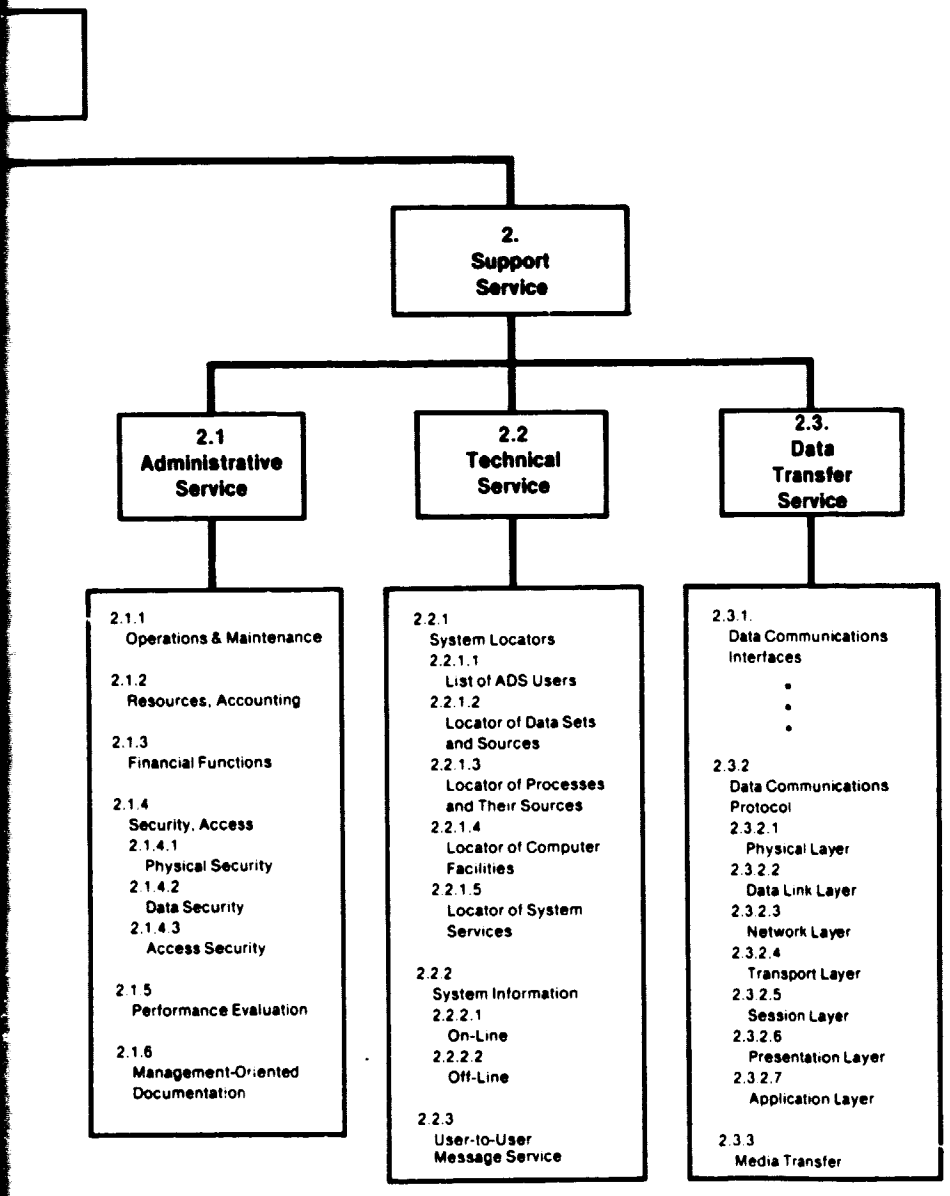
Figure 2-3 is an initial presentation of a hierarchical feature classification for ADS standards based on the ADS logical flow (Figure 2-2). It is not a finally defined formal organization of ADS, but a working definition of a classification scheme. The definitions of the classes in this classification are given in Appendix E.



NOTES: 1. *Standards may apply to the nodes of this hierarchy in one or more of three ways:*
- *How to* do *it;*
- *How to* describe *it;*
- *How to* use *it.*

2. *For each node of this hierarchy there may be* kernel *standards which apply to the system as a whole, and* extension *standards which apply to one or more, but not necessarily to all, ADS disciplines [user communities].*

FOLDOUT FRAME



a whole, and
r communities]

FIGURE 2-3
ADS FEATURE CLASSIFICATION

The seven nodes of the third horizontal level of this classification (1.1: Applications Data through 2.3: Data Transfer Service) are identified as the seven vertical levels of the ADS logical flow in Figure 2-2. The four nodes, Applications Data, Process (Applications Software), Computational Facility, and User-System Interface, correspond to the D-, P-, C-, and U-members, repectively, of the logical flow. The remaining three nodes of the feature classification, Administrative, Technical, and Data Transfer Service, correspond to the similarly-named levels of the logical flow.

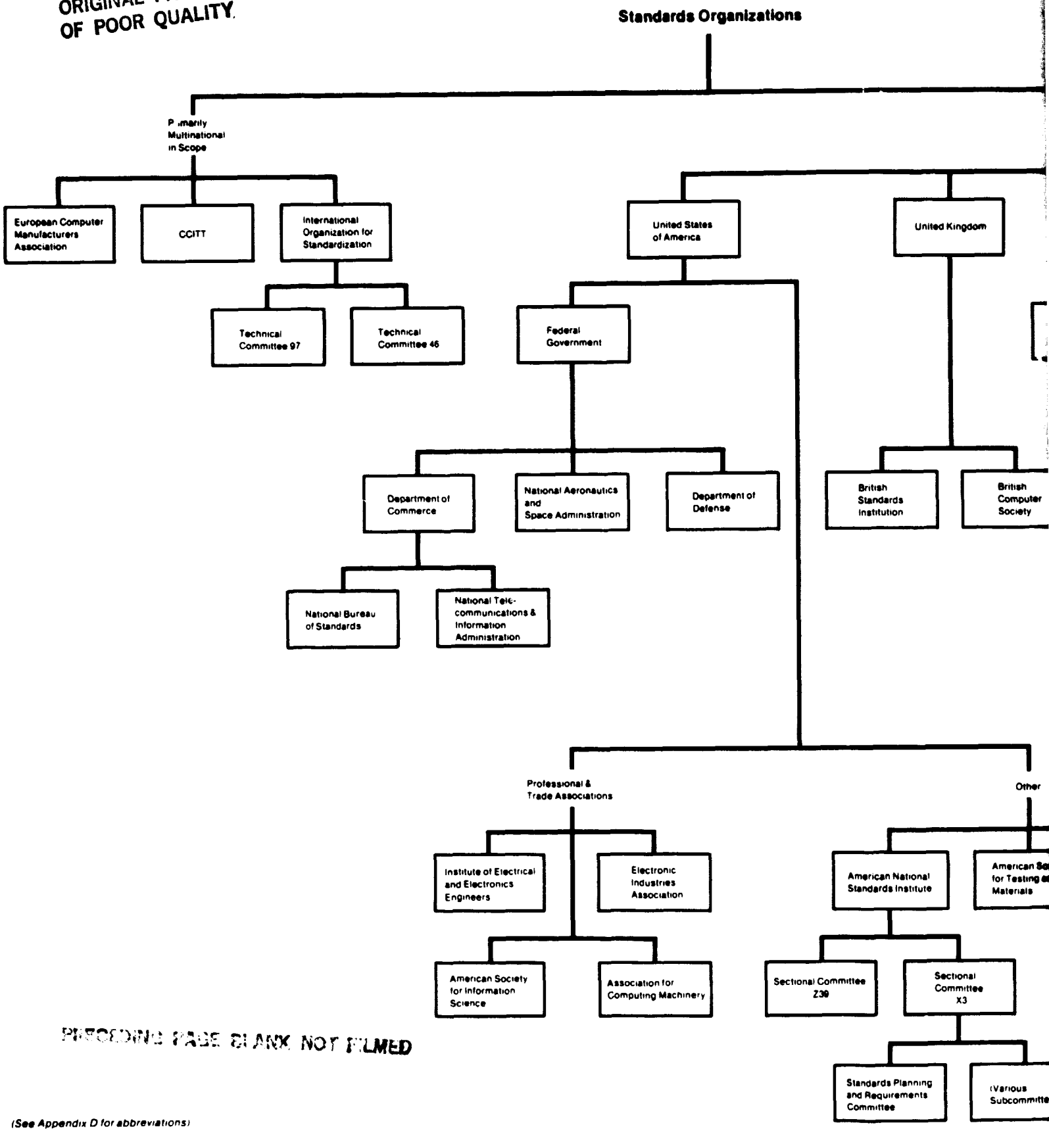
Below its third level, the classification becomes oriented to the technology necessary to support attainment of the ADS mission. Much of this technology, applicable to many missions and disciplines, is the subject of standards and guidelines developed by various federal, national, and international organizations.

The classification given in Figure 2-3 has been carried to sufficient depth so that existing industry standards will map into it approximately 1:1. It is recognized that a thorough program of standards for ADS must address standards in greater detail than is shown in Figure 2-3.

2.3 Step 3: Survey Federal, National, and International Standards Organizations

Standards which may affect or be used by ADS are produced, processed, or approved by a great variety of organizations. A practical taxonomy of the major such organizations relevant to ADS is shown in Figure 2-4.

MITRE conducted a survey of many of these organizations in order to identify standards which might be useful to ADS. In each case standards libraries in the fields affecting ADS were used. All standards in the areas of data processing and data communications were located, listed, and cross-checked for duplication from the standards already obtained. In cases in which the standards organization was either overseas (the international bodies), or highly diffused (such as the ANSI X3 subcommittees), MITRE surveyed standards through discussions with subcommittees and through secretariat offices to determine active standards areas. MITRE also interfaced with the current activities of the National Bureau of Standards Federal Computer Network Protocol Standards Program and other NBS standardization activities in face-to-face meetings with those active in the standards-formulating committees.



(See Appendix D for abbreviations)

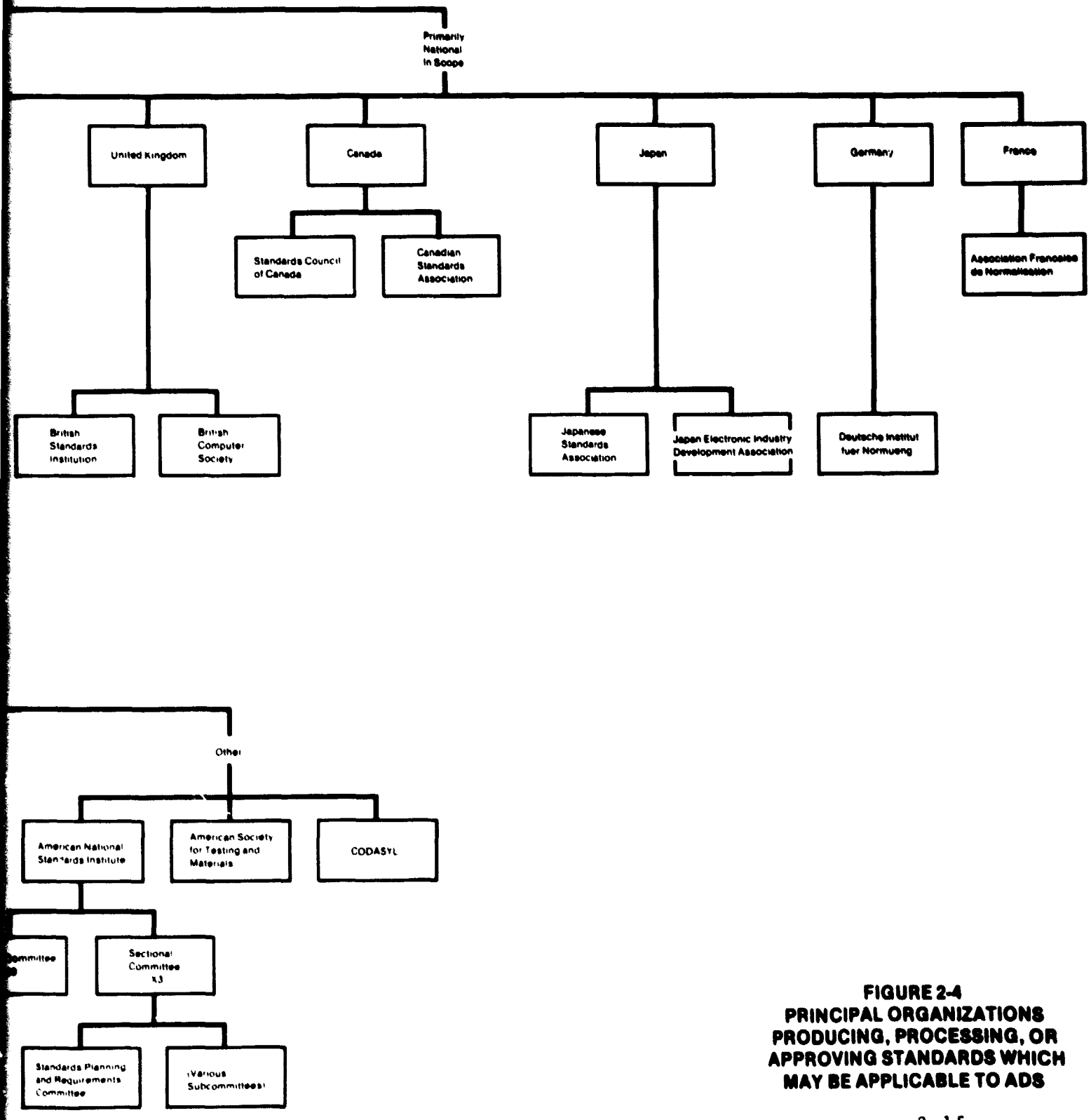


FIGURE 2-4
PRINCIPAL ORGANIZATIONS PRODUCING, PROCESSING, OR APPROVING STANDARDS WHICH MAY BE APPLICABLE TO ADS

MITRE used NBS and its technical standards libraries as primary and secondary sources of standards information. The NBS Standards Information Service holds a current collection of every major standard issued through federal, national, foreign national, and international non-treaty organizations. This resource proved of great value for identifying both current standards and current activities in standards. Also, meetings with personnel in NBS who are members of non-NBS standards committees were very useful, for they gave MITRE an understanding of the interrelated workings of current standards activities in ADS-applicable fields.

Standards were identified from the current ISO Catalog, Supplements, and Memento, for ISO/TC97. The proceedings of the 1977 Plenary Sessions of CCITT (the "Orange Book") outlined all relevant standards from two main study groups, SG VII and SG XVII. The 1980 ANSI catalog, the ANSI X3 Committee status summary, and CBEMA, the industry secretariat for X3, were substantial sources of national voluntary standards information. Pertinent industrial catalogs were standards sources for EIA and IEEE. Numerous draft documents and publications from NBS detailed the current status of activities, and two documents from the National Communications System - FTSC outlined the current activities in Federal Telecommunications Standards. Every Department of Defense procurement standard is listed in the DoD Index of Specifications and Standards (DODISS), and DCA's activities in protocol standards were outlined through telephone contacts. The ASIS Standards Committee provided valuable information. In the cases of the other organizations, representatives, liaisons, or local offices were contacted and current activities or lists were obtained.

Several of these organizations proved to have few or no unique standards applicable to ADS due sometimes to an organization adopting a set of standards verbatim from another standards body. Lack of standards applicable to ADS also may be caused by the charter of an organization not applying to the particular fields of data processing, data communication, or scientific distributed processing that ADS must cover. Such organizations do not appear in the list of ADS-applicable standards in Section 3 of this report.

2.4 Step 4: Select Standards Based on the Classification Scheme

The survey of standards organizations resulted in acquiring listings or actual copies of several hundred standards related to data processing, data communications, or some other aspect of the design, development, operation, maintenance, or evaluation of computer-based systems.

These standards were filtered through the ADS logical flow and ADS feature classification (Figures 2-2 and 2-3). The following criteria eliminated many from further consideration.

1. Eliminate standards for technologies of little or no applicability to ADS (example: punched paper tape).

2. Eliminate standards so basic that they can be assumed to be observed by all members (example: 120V AC electric current to computer components or to a computer manufacturer's transformer or converter).

3. Eliminate standards for applications not related to scientific computing (examples: COBOL, ATLAS).

4. Eliminate standards which have been superseded by other standards (such as earlier FORTRAN II).

The resultant set of standards, mapped into the ADS standards classification, is given in Section 3.

2.5 Step 5: Identify Classes for Which No Existing Standard Is Applicable

When applicable standards have been mapped into the ADS classification, each class remaining without a standard is a candidate for one of four types of treatment:

1. Identification of standards or practices applicable to that class after a survey of NASA-internal standards, guidelines, methodologies, and practices has been conducted.

2. Development of practices unique to each ADS member or discipline. These practices may be developed by ADS user-communities, with or without assistance from the ADS program.

3. Development of ADS-unique standards by the ADS program office, based on the practices and preferences of ADS members and user-communities.

4. Development of standards for ADS purposes by the ADS program office. The topics addressed by these standards may, however, be of general interest outside the ADS community. In these cases ADS standards might be used by standards organizations as drafts or models for their own standards.

Nodes of the ADS feature classification for which no standards have been identified are clearly indicated in Appendix C.

3. FEDERAL, NATIONAL, AND INTERNATIONAL STANDARDS APPLICABLE TO ADS

This section identifies federal, national, and international standards which are candidates for applicability to ADS. These standards have been compiled into a table at the end of this section which records selected items of information for each candidate standard in the following format:

Number. Each unique standard is given a sequentially assigned number for identification and indexing purposes within this report only. Example: #078.

Class. Each standard is related to one or more classes of the ADS feature classification previously shown as Figure 2-3. Example: 2.3 Data Transfer Service; 2.2.3 User-to-User Message Service.

Sponsor. The commonly used abbreviation of the primary organization sponsoring this standard is provided. Where the identities of this organization's subcommittees, branches, etc. are relevant, they are also given, separated by slashes (/). Each standard is indexed by sponsor in Appendix B. The full equivalents of all abbreviations are given in Appendix D. Example: ISO/TC97/SC6.

Document #, and Date. The sponsor's official alphanumeric designation for each standard is provided. If this designation does not include an effective date, such a date has been supplied.

Before official issuance, a standard may have no alphanumeric designation, and will either have no effective date, or a predicted approximate effective date. Example: 537, 1980.

Title. The official title of the standard is given in the table. Some obvious abbreviations have been used where no confusion will result. Example: American Standard Code for Information Interchange -- ASCII.

Status. The current or most recent status of the standard is given in the table to indicate whether or not it has been officially approved, if it is in preparation, in review, being revised, etc.

Where two or more standards are identical or nearly so, such as many ANSI and FIPS standards, they are placed in the same record in the table.

Some standards are entirely identical to others, have been adopted by other organizations, or are alike enough that they cover exactly the same topic and area. This condition is reflected by multiple repetition of these fields: Sponsor, Document #, Date, Title, and Status. Standards which are not substantially identical but are closely related are listed as Related Standards.

Remarks. Where the title of the standard does not characterize it adequately for ADS purposes, supplementary remarks have been provided.

ADS Use. The potential area of applicability of this standard to ADS is indicated in this field.

Table 3-1, which identifies the federal, national, and international standards which have possible applicability to ADS, follows. Its structure has been described above. Each standard in the table applies to at least one ADS class, as defined in the initial ADS feature classification, Figure 2-2. Standards which apply to more than one ADS class are included only once in the table. An index linking ADS classes to specific candidate standards may be found in Appendix C.

TABLE 3-1

CANDIDATE FEDERAL, NATIONAL, AND INTERNATIONAL STANDARDS APPLICABLE TO ADS

#001 CLASS: 1.1.1.1 Data Dictionary;
2.2.1.2 Locator of Data Sets and Sources

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBSIR 80-2115, 9/80

TITLE: Prospectus For Data Dictionary System Standard

STATUS: Functional Requirements: 10/81
Candidate Standard in Draft Form: 10/83
Recommended Standard for Final Approval: late 1984
Current: Conceptual Design Just Completed: 10/80

RELATED STANDARDS: ANSI X3H4 projects;
BCS/CODASYL Data Description Language Committee/Database Administration Working Group projects.

REMARKS: This standardized data dictionary is closely related to the efforts by the ANSI X3L8 Subcommittee on Data Elements in Information Processing, the ANSI X3H4 Subcommittee on the Information Resource Dictionary System, and the BCS Data Dictionary Working Group. NBS Special Publications 500-3 and 500-16 specify identified preliminary efforts in this direction.

ADS USE: This data dictionary may evolve into an "FY84 ADS-Applicable" guideline if its present orientation toward business can be broadened to include science.

TABLE 3-1

(CONTINUED)

#002 CLASS: 1.1.1.4 General Vocabulary

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-11-1, 9/30/77

TITLE: Dictionary for Information Processing

STATUS: Current as of 2/80
Revised 1977

SPONSOR, DOCUMENT #, DATE: ANSI/X3K5, ANSI X3/TR-1-1977

TITLE: American National Dictionary for Information Processing (ANDIP)

STATUS: Current as of 2/80

RELATED STANDARDS: #149, ISO 2382 - (1980); ISO/TC97 General Vocabulary projects.

REMARKS: Compilation of existing terms used in the information processing community.

ADS USE: Resource for defining terms for user-system communication.

#003 CLASS: 1.1.1.2 Time Definition

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP FED-STD-1002, 4/22/74

TITLE: Telecommunications: Time and Frequency Reference Information in Telecommunications Systems

STATUS: Current as of 6/1/80

REMARKS: This standard defines certain reference information in the time and frequency domains for use in telecommunications.

ADS USE: May be a candidate standard for time reference for some components of ADS.

TABLE 3-1

(CONTINUED)

#004 CLASS: 2.3 Data Transfer Service

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1004

TITLE: Communication Heading Formats for Digital Telecommunications Systems

STATUS: Pre-draft: 6/1/80
Proposed Release for Public Comment: 4/81
Proposed Approval for Publications: 11/81
Proposed Publication by GSA: 6/82

RELATED STANDARDS: ANSI/X3T5 Transport Layer Projects;
X3S3 Project 281;
X3L5 Information Interchange Data Description File projects;
ISO/TC97/SC6 Project 24 & network layer projects;
ISO/TC 97/SC16 projects;
proposed FED-STD-1000, -1000.3, -1000.4

REMARKS: This standard should specify items, content, and procedures to be used to construct communications headings for messages transported through data comunications systems.

ADS USE: Possible candidate for common message heading format.

TABLE 3-1

(CONTINUED)

#005 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-1-1, 12/24/80

TITLE: Code for Information Interchange (ASCII)

STATUS: Current as of 1/1/81
Supersedes FIPS-PUB-1, 11/1/68

SPONSOR, DOCUMENT #, DATE: ANSI/X3L2, ANSI X3.4-1977

TITLE: American National Standard Code for Information Interchange (ASCII)

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 646-1973

TITLE: 7-Bit Coded Character Set for Information Processing Interchange

STATUS: Current as of early 1980

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.3, 1972

TITLE: International Alphabet No. 5

STATUS: Current as of early 1977

REMARKS: Denotes the character set to be used for the general coded interchange of information among data communications and data processing systems.

ADS USE: Character set widely used across manufacturer and hardware lines. Prevalent 7-bit alphabet.

TABLE 3-1

(CONTINUED)

#006 CLASS: 1.4.1.1 Applications System, and Network Language

SPONSOR, DOCUMENT #, DATE: CODASYL Journal of Development, 9/14/80

TITLE: Common Operating System Command Language (COSCL), Version 1.6b

STATUS: Released by the CODASYL Computer Operating Systems Command Language Committee: 12/80
Version 2 expected: 1981

RELATED STANDARDS: #012, ANSI/X3H1 Job Control Language Projects; NBS/ICST Common Command Language Projects.

REMARKS: The CODASYL work in the Common Operating System Command Language area closely parallels that of ANSI/X3H1 and NBS/ICST. This proposed standard specifies a high-level user-oriented interface for an operating system and describes a key component of the CODASYL System Architecture: the command language. Version 2 should contain complete syntax for a usable subset of the system functions.

ADS USE: Possible ADS-wide standard for a common command language (since it accomodates all major applications languages).

#007 CLASS: 1.2.1 Computer Program Documentation

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-64, 8/1/79

TITLE: Guidelines for Documentation of Computer Programs and Automated Data Systems for the Initiation Phase

STATUS: Current as of 2/80

RELATED STANDARDS: #107, NBS-FIPS-PUB-38

REMARKS: Provides guidance in determining content, extent of documentation for initiation phase in software life cycle. Covers Project request preparation, feasibility cost/benefit documentation.

ADS USE: May provide vehicle for initiating project or contact with the ADS by a prospective member (user).

TABLE 3-1

(CONTINUED)

#008 CLASS: 1.4.2 User Terminal

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-67, 9/30/79

TITLE: Guideline for Selection of Data Entry Equipment

STATUS: Current as of 2/80

REMARKS: Provides information about general equipment characteristics and the factors which must be considered in selecting efficient and economical data entry systems.

ADS USE: Guideline for those who are considering purchase of hardware for communicating with ADS.

#009 CLASS: 2.1.4 Security, Access

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-65, 8/1/79

TITLE: Guideline for Automated Data Processing Risk Analysis

STATUS: Current as of 2/80

REMARKS: Presents a technique for conducting a risk analysis study of an ADP facility and related assets.

ADS USE: Could afford guidance in collecting and analyzing system performance and reliability in a C-member component of ADS.

TABLE 3-1

(CONTINUED)

#010 CLASS: 2.1.4.2 Data Security

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1027, 1980

TITLE: Telecommunications: Security Requirements for Use of the Data Encryption Standard

STATUS: Scheduled for Completion: FY-80
Advanced copies published: 2/80
Estimated publishing date by GSA: 9/80

REMARKS: This guideline outlines requirements for use of #019, NBS-FIPS-PUB 46, Data Encryption Standard, which this standard supports.

ADS USE: Security of data internal to a member-site.

#011 CLASS: 2.1.5 Performance Evaluation

SPONSOR, DOCUMENT #, DATE: ANSI/X3S35, ANSI X3.79-1980

TITLE: Measure of Systems Performance

STATUS: Current as of 5/80

REMARKS: Establishes a guideline for measuring ADP systems performance.

ADS USE: Possible candidate in evaluation of individual computer system performance.

TABLE 3-1

(CONTINUED)

#012 CLASS: 1.4 User-System Interface

SPONSOR, DOCUMENT #, DATE: ANSI/X3H1 (documents in draft) [9]

TITLE: Job Control Language (JCL) Standards

STATUS: Under development: 1/80
Release of proposal for public comment expected: 9/82

RELATED STANDARDS: NBS/ICST Job Control Language Projects;
#006, CODASYL Common Operating System Command Language (COSCL) Journal of Development

REMARKS: The ANSI Subcommittee Operating Systems Command and Response Languages X3H1, is currently developing command and response language standards for operating systems. This includes file naming conventions.

ADS USE: Possible candidate guideline for creation of ADS command and response (job control) standards.

TABLE 3-1

(CONTINUED)

#013 CLASS: 2.3.2.1 Physical Layer

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1000.1

TITLE: Physical Layer; Interface Specifications for Information Flow and Management Functions

STATUS: Pre-draft: 6/1/80
Proposed release for public comment: 6/81
Proposed approval for publication: 12/81
Proposed publication by GSA: 4/82

RELATED STANDARDS: ANSI X3T5, X3S3 projects;
EIA TR-30 projects;
ISO/TC97/SC6 projects;
CCITT SG VII, XVII projects.

REMARKS: Physical Layer (1), based on the Standard Reference Model Architecture will specify general information flow and mangement functions.

ADS USE: May affect specialization of physical link interconnections.

TABLE 3-1

(CONTINUED)

#014 CLASS: 2.3.2.2 Data Link Layer

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1000.2

TITLE: Data Link Layer: Interface Specifications for Information Flows and Management Functions

STATUS: Pre-draft: 6/1/80
Proposed release for public comment: 6/81
Proposed approval for publication: 12/81
Proposed publication by GSA: 4/82

RELATED STANDARDS: FED-STD-1003

REMARKS: Will specify boundary control parameters for information flows and management functions of the data link, or second, layer in the Standard Reference Model.

ADS USE: May affect all data link control protocols.

TABLE 3-1

(CONTINUED)

#015 CLASS: 2.3.2.2 Data Link Layer

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-71, 5/14/80

TITLE: Advanced Data Communications Control Procedures (ADCCP)

STATUS: Approved as Federal Information Processing Standard: 5/14/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3S34, ANSI X3.66-1979

TITLE: Advanced Data Communications Control Procedures (ADCCP)

STATUS: Current as of 5/80

REMARKS: This establishes procedures to be used on synchronous communications links. They are bit-oriented, code-independent, and interactive.

ADS USE: Possibly applicable to non-character controlled exchange of information. Must be considered at the ISO OSI Reference Model Layer 2 stage of building a communications link.

TABLE 3-1

(CONTINUED)

#016 CLASS: 2.1 Administrative Service
2.1.6 Management - Oriented Documentation

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-77, 9/1/80

TITLE: Guideline for Planning and Management of Database Applications

STATUS: Current as of 10/20/80

REMARKS: Serves as a technical primer for federal managers and applications analysts, to advise them of alternative software capabilities and recommended development practices for database applications. Specific guidelines address: planning, management, software selection.

ADS USE: Possible guideline for ADS data management applications: creation of recommended practices.

TABLE 3-1

(CONTINUED)

#017 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-37, 6/15/75

TITLE: Synchronous High Speed Signalling Rates Between Data Terminal Equipment & Data Communications Equipment

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, FED-STD-1001, 6/15/75

TITLE: Telecommunications: Synchronous High-Speed Data Signalling Rates Between Data Terminal Equipment & Data Communications Equipment

STATUS: Current as of 6/1/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3S36, ANSI X3.36-1975

TITLE: Synchronous High-Speed Data Signalling Rates Between Data Terminal Equipment and Data Communication Equipment

STATUS: Current as of 5/80

RELATED STANDARDS: NBS-FIPS-PUB-22-1, Synchronous Signalling Rates Between Data Terminal and Data Communication Equipment

REMARKS: Specifies rates for high-speed synchronous binary coded information transfer on wideband data communications channels.

ADS USE: Might be candidate standard for wideband synchronous coded data transmission.

TABLE 3-1

(CONTINUED)

#018 CLASS: 1.4.2 User Terminal

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1008, 1980

TITLE: Telecommunications: Coding and Modulation Requirements for Duplex 600 & 1200 Bit/Second Modems

STATUS: Scheduled for completion 10/80
Advanced copies published: 2/80
Estimated publication date by GSA: 9/80

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.22, 1977

TITLE: Coding and Modulation Requirements for Duplex 600 & 1200 Bit/Second Modems

STATUS: Current as of early 1977

REMARKS: This standard outlines the signalling requirements for the 600/1200 BPS modems for phonelines.

ADS USE: Strictly for designing or purchasing of low-to-medium speed asynchronous modems for phoneline connections.

TABLE 3-1

(CONTINUED)

#019 CLASS: 2.1.4.2 Data Security

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-46, 1/15/77

TITLE: Data Encryption Standard

STATUS: Current as of 2/80

RELATED STANDARDS: #20, ANSI X3.92-1981, Data Encryption Algorithm; ANSI X3 Project 293.

REMARKS: Provides a data encryption algorithm for use in cryptographic protection of data.

ADS USE: Possible ADS candidate for encrypted data requirements.

#020 CLASS: 2.1.4.2 Data Security

SPONSOR, DOCUMENT #, DATE: ANSI/X3/ENCR, ANSI X3.92-1981

TITLE: Data Encryption Algorithm

STATUS: Current as of 5/81 (2/6/81)
Approved: 12/31/80

RELATED STANDARDS: #19, NBS-FIPS-PUB-46, Data Encryption Standard

REMARKS: Provides a data encryption algorithm for use in cryptographic protection of digital data

ADS USE: Possible ADS candidate standard for encrypted data requirements.

TABLE 3-1

(CONTINUED)

#021 CLASS 1.4.1.2 Programming Languages

SPONSOR, DOCUMENT #, DATE: NBS/ICST (no document)

TITLE: Programming Language PASCAL

STATUS: To be published as a FIPS by 1982.

RELATED STANDARDS: Various projects supported by ANSI/X3, BSI, and other national standardization groups.

REMARKS: Specifies form and interpretation of the programming language PASCAL for computer program transportability.

ADS USE: Possible ADS candidate standard for a programming language which is likely to become widespread.

#022 CLASS: 1.1.1.3 Spatial Definition

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-55, 6/1/78

TITLE: Guideline for Codes for Named Populated Places & Related Entities of the States of the U.S.

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3L8, ANSI X3.47-1977

TITLE: Structure for the Identification of Named Populated Places and Related Entities of the States of the U.S. for Information Interchange

STATUS: Current as of 5/80

REMARKS: Provides structure for an unambiguous 5-digit (ZIP) code for named U.S. geographical entities.

ADS USE: Possible nonpolitical U.S. geographic locator standard.

TABLE 3-1

(CONTINUED)

#023 CLASS: 1.1.1.3 Spatial Definition

SPONSOR, DOCUMENT #, DATE: ANSI/Z39, ANSI Z39.27-1976

TITLE: Structure for the Identification of Countries of the World for Information Interchange

STATUS: Under continuous revision
Current as of 5/80 reporting

SPONSOR DOCUMENT #, DATE: ANSI/X3L8, ANSI X3.70-____

TITLE: Representation of Major Geopolitical Divisions for Information Interchange

STATUS: (Working) draft: 5/80

RELATED STANDARDS: NBS-FIPS-PUB-10-2;
ISO 3166-1974/A1-1977

REMARKS: Provides alphabetic codes for geopolitical entities, worldwide.

ADS USE: Possible candidate for geopolitical unit identification.

TABLE 3-1

(CONTINUED)

#024 CLASS: 1.1.1.3 Spatial Definition

SPONSOR, DOCUMENT #, DATE: ISO/TC46, ISO 3166-1974/A1-1977

TITLE: Code for Representation of Names of Countries

STATUS: Under continuous revision
Current as of 1977 listing

RELATED STANDARDS: ANSI Z39.27-1976;
NBS-FIPS-PUB-10-2

REMARKS: Provides a 2- and 3-character code for geopolitical units worldwide.

ADS USE: Possible candidate for geopolitical unit identification.

#025 CLASS: 1.1.1.3 Spatial Definition

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-10-2, 3/1/77

TITLE: Countries, Dependencies, and Areas of Special Sovereignity

STATUS: Under continuous revision
Current as of 2/80 reporting

RELATED STANDARDS: ISO 3166-1974/A1-1977; ANSI Z39.27-1976.

REMARKS: Assigns 2-character alphabetic codes to 224 geopolitical entities, worldwide.

ADS USE: Possible candidate for geopolitical unit identification.

TABLE 3-1

(CONTINUED)

#026 CLASS: 1.1.1.3 Spatial Definition

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-6-3, 12/15/79

TITLE: Counties and County Equivalents of the States of the United States

STATUS: Current as of 9/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3L8, ANSI X3.31-1973

TITLE: Structure for Identification of the Counties of the United States for Information Interchange

STATUS: ANSI X3.31-1973 adopted as earlier NBS-FIPS-PUB-6-2: 5/80
To be identical with present version of NBS-FIPS-PUB-6-3: 9/80

REMARKS: Provides names and three-digit codes for county-equivalent units in the United States.

ADS USE: May apply to general identification of U.S. geopolitical entities.

TABLE 3-1

(CONTINUED)

#027 CLASS: 1.1.1.3 Spatial Definition

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-5-1, 6/15/70

TITLE: States and Outlying Areas of the United States

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3L8, ANSI X3.38-1972 (R 1977)

TITLE: Identification of States of the United States (Including the District of Columbia) for Information Interchange

STATUS: Latest revision 1977
Current as of 5/80

REMARKS: Provides numeric codes and alphabetic abbreviations for States and D.C.

ADS USE: May apply to general identification of U.S. geopolitical entities.

#028 CLASS: 1.1.1.4 General Vocabulary

SPONSOR, DOCUMENT #, DATE: ISO/TC45, ISO/R 919-1969

TITLE: Guideline for the Preparation of Classified Vocabularies

STATUS: Current as of 1/77

REMARKS: Example of method is given in this guideline.

ADS USE: May be used for augmentation of data vocabulary or for the creation of disciplinary vocabularies.

TABLE 3-1

(CONTINUED)

#029 CLASS: 1.1.1.2 Time Definition

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 4031-1978

TITLE: Information Interchange - Representation of Local Time Differentials

STATUS: Current as of 1/80

RELATED STANDARDS: NBS-FIPS-PUB-59;
ANSI X3.51

REMARKS: Specifies time differential represenation in general use worldwide.

ADS USE: May already be de facto standard/practice.

#030 CLASS: 1.1.1.2 Time Definition

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-59, 2/1/79

TITLE: Representation of Universal Time, Local Time Differentials, and U.S. Time Zone References for Information Interchange

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3L8, ANSI X3.51-1975

TITLE: Representation of Universal Time, Local Time Differentials, and U.S. Time Zone References for Information Interchange

STATUS: Current as of 5/80

REMARKS: Specifies time representations in general use in the United States.

ADS USE: May already be de facto standard/practice.

TABLE 3-1

(CONTINUED)

#031 CLASS: 1.1.1 Data Definition
1.1.2 Data Structure and Data Code
1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: IEEE, Panel on Biomedical Pattern Recognition

TITLE: General Specifications for a Tape Format

STATUS: Task Group Formed: 1975
Tentative Specifications: 12/80

REMARKS: Provides very loose set of general specifications for magnetic tape format for digital images. Issued through the Biomedical Pattern Recognition Subcommittee of the Machine Intelligence and Pattern Analysis Committee for the IEEE Computer Society.

ADS USE: Possible model for ADS standards development on Image-oriented tape formats.

TABLE 3-1

(CONTINUED)

#032 CLASS: 1.1.1 Data Definition
1.1.2 Data Structure and Data Code
1.1.4.1 Magnetic Tape
1.1.4.5 Graphic Image

SPONSOR, DOCUMENT #, DATE: NATO/AC/243 (Panel III) RSG-4/SGIP, 2/76.

TITLE: Tape Format for Transferred Digital Imagery

STATUS: Issued by NATO Defense Research Group (DRG)/Subgroup on Image Processing (SGIP): 2/76

REMARKS: Issued by NATO AC/243 (Panel III) Research Study Group 4 (RSG-4) established as an intergovernmental panel on image pattern recognition. Used as specifications for a tape format to be used to transfer digital images between installations. Has provision for non-imagery data as well.

ADS USE: Possibility useful as a guideline for future ADS installation-independent image transfer format on magnetic tape. Reworking necessary for NASA data utility.

TABLE 3-1

(CONTINUED)

#033 CLASS: 1.1.1.2 Time Definition

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-58, 2/1/79

TITLE: Representation of Local Time of the Day (TOD) for Information Interchange

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3L8, ANSI X3.43-1977

TITLE: Representation of Local Time of the Day (TOD) for Information Interchange

STATUS: Current as of 5/80

REMARKS: Provides a standard character representation for time of the day.

ADS USE: May be widespread de facto standard/practice.

#034 CLASS: 1.1.1.2 Time Definition

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 3307-1975

TITLE: Information Interchange - Representation of Time of the Day

STATUS: Current as of 1/80

RELATED STANDARDS: ANSI & FIPS TOD Standards

REMARKS: Provides an alternate standard character representation for time of the day.

ADS USE: May be widespread de facto international standard/practice.

TABLE 3-1

(CONTINUED)

#035 CLASS: 1.1.1.2 Time Definition

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-4, 11/1/68

TITLE: Calendar Date

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3L8, ANSI X3.30-1971

TITLE: Representation for Calendar Date and Ordinal Date for Information Interchange

STATUS: Revision being developed: 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 2711-1973

TITLE: Information Processing Interchange - Representation of Ordinal Dates

STATUS: Current as of 1/80

REMARKS: Provides standard calendar date format.

ADS USE: May be already widely in use.

#036 CLASS: 1.1.1.3 Spatial Definition

SPONSOR, DOCUMENT #, DATE: USGS, 6/79

TITLE: Computer Files and Attribute Codes for Digital Line Graphs

STATUS: Current as of 5/80

REMARKS: Provides the Geological Survey's methods for identifying line graphs.

ADS USE: A possible candidate DB/DBMS standard (from the 2nd JPL DBMS workshop).

TABLE 3-1

(CONTINUED)

#037 CLASS: 1.1.1 Data Definition
1.1.2 Data Structure and Data Code
2.3.2.4 Transport Layer

SPONSOR, DOCUMENT #, DATE: ANSI/X3L5, ANSI X3.87-____

TITLE: Specification for an Information Interchange Data Descriptive File

STATUS: (Working) Draft (BSR): 5/80
Proposed Approval: to be determined

RELATED STANDARDS: ISO/TC97/SC15/N61 and
ISO Program 97.15.6, Interchangeable IRV Coded Data Files project
ANSI Working Paper X3L5/80-16F

REMARKS: Provides specifications for an installation-independent data descriptive file.

ADS USE: Possible general use guideline for data descriptive files.

TABLE 3-1

(CONTINUED)

#038 CLASS: 1.1.1 Data Definition

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, FED-STD-1037, 2/80

TITLE: Telecommunications: Glossary of Telecommunications Terms

STATUS: Advance copies published: 2/80
Estimated publication of final copies by GSA: 9/80

SPONSOR, DOCUMENT #, DATE: DOD/DMSSO, MIL-STD-188/120,-

TITLE: Glossary of Telecommunications Terms

STATUS: Current as of 7/1/80

REMARKS: Standard glossary of telecommunications terms for Federal governmental use.

ADS USE: Glossary -- vocabulary

TABLE 3-1

(CONTINUED)

#039 CLASS: 1.1.1 Data Definition
1.1.2 Data Structure and Data Code
1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO DIS 6863

TITLE:: Flexible Disk Labels and File Structure

STATUS: Proposal, Draft International Standard as of 11/80

SPONSOR, DOCUMENT #, DATE: ECMA, Standard 58 [9]

TITLE: Flexible Disk Labels and File Structure

STATUS: Current as of 12/80. Adopted by ECMA from ISO DIS 6863.

RELATED STANDARDS: ISO Project 97.15.5;
ANSI X3L5 Project 272.

REMARKS: Provides for magnetically recorded labels and file structure for flexible rotating magnetic media ("floppy disks") to facilitate information interchange.

ADS USE: Possible candidate ADS standard for magnetic labels for flexible rotating magnetic interchange media (that is, identification and file structure on floppy disks).

TABLE 3-1

(CONTINUED)

#040 CLASS: 1.1.1 Data Definition
1.4.1.1 Applications, System, and Network Language

SPONSOR, DOCUMENT #, DATE: ANSI/X3H1 (no document) [9]

TITLE: Command and Response Standards (Job Control Language) for Operating Systems

STATUS: Development Stage: 12/80
Proposal to be issued for public comment: 10/82

RELATED STANDARDS: NBS/ICST proposal on Operating System Language Standards;
CODASYL Common Operating System Command Language document release for comment expected by 12/80

REMARKS: Provides a set of commands response standards for operating systems. Also provides file naming conventions which may be indirectly useful to the issue of data management.

ADS USE: Possible contributor to future ADS guideline for file naming conventions and/or command language standards.

TABLE 3-1

(CONTINUED)

#041 CLASS: 1.4.1.2 Programming Language

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-69, 9/4/80

TITLE: Programming Language - FORTRAN

STATUS: Approved as FIPS: 9/4/80
Released to public: 11/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3J3, ANSI X3.9-1978

TITLE: Programming Language - FORTRAN

STATUS: Current as of May 1980

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 1539-1980

TITLE: Programming Language - FORTRAN

STATUS: Current as of 7/80 (2nd Update, ISO Catalog)
Revision of ISO/R 1539 - 1972

REMARKS: Specifies form and interpretation of FORTRAN for computer program transportability. ANSI X3.9-1978 is commonly known as "FORTRAN 77."

ADS USE: Possible standard ADS language

#042 CLASS: 1.4.1 User Language

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1080

TITLE: Specification and Description Language

STATUS: Working Draft Stage: 6/1/80
Proposed release for public comment: 2/81
Proposed approval for publication: 1/82
Proposed publication by GSA as FED-STD: 4/82

RELATED STANDARDS: Already developed by CCITT; tailoring necessary.

REMARKS: Standard will describe a standard language for the specification and description of telecommunication functions.

ADS USE: Interesting prospect for a process or data description language.

TABLE 3-1

(CONTINUED)

#043 CLASS: 1.4.1.2 Programming Language

SPONSOR, DOCUMENT #, DATE: ANSI/X3J1, ANSI X3.53-197[illegible]

TITLE: Programming Language PL/I

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 6160-1979

TITLE: Programming Language - PL/I

STATUS: Current as of 1/80

RELATED STANDARDS: None

REMARKS: Provides a rigorous, complete definition of PL/I (ANSI documentation).

ADS USE: Possible candidate ADS user programming language.

TABLE 3-1

(CONTINUED)

#044 CLASS: 1.4.2 User Terminal

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1018

TITLE: Interface Between Data Circuit-Terminating Equipment and Switched Telephone Networks

STATUS: Very early predevelopment stage: 10/80
Proposed release for public comment: 5/85
Proposed approval for publication: 1/86
Proposed publication by GSA as FED-STD: 5/86

RELATED STANDARDS: NCS Staff work with EIA Technical Committee TR30.3, EIA Project 1373

REMARKS: Facilities interoperability/reuse of data circuit-terminating equipment within switched telephone networks.

ADS USE: Hardware-compatiblity guideline.

TABLE 3-1

(CONTINUED)

#045 CLASS: 2.3.2.1 Physical Laver

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, FED-STD-1031, 7/24/79

TITLE: Telecommunications: General Purpose 37-Position and 9-Position Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment

STATUS: Current as of 6/1/80

SPONSOR, DOCUMENT #, DATE: EIA Category 3, EIA RS-449, 11/77

TITLE: General Purpose 37-Position and 9-Position Interface for Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.24, 1977

TITLE: List of Definitions for Interchange Circuits Between Data-Terminal Equipment and Data Circuit-Terminating Equipment

STATUS: Current as of 1977 (early)

RELATED STANDARDS: EIA RS-449-1: Addendum #1

REMARKS: Supersedes the older RS-232-C (the previous universally accepted and implemented hardware interconnection standard).

ADS USE: Applicable to interconnecting of terminals to data links.

TABLE 3-1

(CONTINUED)

#046 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: ANSI/X3B5, ANSI X3.59-1980

TITLE: Magnetic Tape Cassette for Information Interchange, Dual Track Complementary Return-to-Bias Recording (CRB) on 3.81 mm (0.150-in) Tape

STATUS: Approved by BSR as new standard: 10/27/80

RELATED STANDARDS: #144, ANSI X3.48-1977, Magnetic Tape Cassette, Physical Description

REMARKS: Provides for recording ASCII on 3.81 mm (0.15-in) digital tape cassettes by using the density-independent CRB techniques.

ADS USE: Possible ADS candidate standard for recording data on magnetic tape cassettes by using the new (CRB) recording techniques

TABLE 3-1

(CONTINUED)

#047 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, FED-STD-1030, 9/24/75; 1030A 1/1/80

TITLE: Electrical Characteristics of Unbalanced Voltage Digital Interface Circuits

STATUS: Current as of 6/1/80

SPONSOR, DOCUMENT #, DATE: EIA, RS-423-A, 12/78

TITLE: Electrical Characteristics of Unbalanced Voltage Digital Interface Circuits

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: CCITT/SG VII, CCITT Recommendation X.26, 1977;
CCITT/SG XVII, CCITT Recommendation V.10, 1977

TITLE: Electrical Characteristics for Unbalanced Double-Current Interchange Circuits for General Use with Integrated Circuit Equipment in the Field of Data Communications

STATUS: Provisional amendments added to V.10, 5/77

RELATED STANDARDS: EIA RS-449 (mechanical characteristics)

REMARKS: Specifies electrical characteristics of unbalanced voltage digital interface circuit normally implemented in IC technology.

ADS USE: Output device hardware signal characteristic.

TABLE 3-1

(CONTINUED)

#048 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, FED-STD-1020, 9/24/75; 1020A, 1/1/80

TITLE: Electrical Characteristics of Balanced Voltage Digital Interface Circuits

STATUS: Current as of 6/1/80

SPONSOR, DOCUMENT #, DATE: EIA, RS-422-A, 12/78

TITLE: Electrical Characteristics of Balanced Voltage Digital Interface Circuits

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: CCITT/SG VII, CCITT Recommendation X.27, 1977;
CCITT/SG XVII, CCITT Recommendation V.11, 1977

TITLE: Electrical Characteristics for Balanced Double-Current Interchange Circuits for General Use with Integrated Circuit Equipment in the Field of Data Communications

STATUS: Provisional amendments added to V.11, 5/77

RELATED STANDARDS: EIA RS-449 (mechanical characteristics)

REMARKS: Specifies electrical characteristics of balanced voltage digital interface circuit normally implemented in IC technology.

ADS USE: Output device hardware signal characteristics.

TABLE 3-1

(CONTINUED)

#049 CLASS: 2.1.1 Operations & Maintenance

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.50, 1977

TITLE: Standard Limits for Transmission Quality of Data Transmission

STATUS: Current as of early 1977

REMARKS: Defines a set of limits for which transmission quality can be tested.

ADS USE: Possible recommended practice for test of data transmission quality.

#050 CLASS: 2.1.4.2 Data Security

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1026

TITLE: Interoperability-Related Requirements for Data Communication Encryption

STATUS: Comment Stage - released for public comment: 4/80
Proposed approval for publication: 6/81
Proposed publication by GSA as FED-STD: 12/81

RELATED STANDARDS: ANSI X3S38 project;
ISO planned project

REMARKS: Specifies requirements for encryption of data communications using the Data Encryption Standard algorithm.

ADS USE: Possible ADS interoperability/encryption guideline for secure data transmission.

TABLE 3-1

(CONTINUED)

#051 CLASS: 2.1.5 Performance Evaluation

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP Interim FED-STD-001033, 8/29/79

TITLE: Telecommunications: Digital Communication Performance Parameters

STATUS: Interim Standard - Current as of 6/1/80

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP Proposed FED-STD-1033

TITLE: Digital Communications Performance Parameters

STATUS: Interim published (see above)
Full Standard proposed release for public comment: 6/82
Standard proposed approval for publication: 6/83
Standard proposed publication by GSA as FED-STD: 1/84

RELATED STANDARDS: FTSC Subcommmittee work with ANSI X3S3 Task Group 5;
ANSI version of FED-STD-1033 (based upon Interim FED-STD-001033)

REMARKS: Defines selected digital communication performance parameters; provides user-oriented protocol/code independent means of specifying communication system performance.

ADS USE: ADS guideline for selection of distributed system components by performance.

TABLE 3-1

(CONTINUED)

#052 CLASS: 2.1.5 Performance Evaluation

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1043

TITLE: Digital Communications Performance Parameters (Measurement Techniques)

STATUS: Working draft in subcommittee: 6/80
Proposed release for public comment: 6/83
Proposed approval for publication: 12/84
Proposed publication by GSA as FED-STD: 6/85

RELATED STANDARDS: ANSI X3S35 Version of FED-STD-1043

REMARKS: Specifies the measurement techniques to be used in measuring the performance parameters defined in FED-STD-1033.

ADS USE: Possible techniques for measurement of communications system performance.

#053 CLASS: 2.1.5 Performance Evaluation

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.57, 1977

TITLE: Comprehensive Data Test Set

STATUS: Current as of 1/77

REMARKS: Test set for high speed data transmission quality checking.

ADS USE: Possible guideline package for high speed data transmission quality testing.

TABLE 3-1

(CONTINUED)

#054 CLASS: 2.3 Data Transfer Service

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.41, 1977

TITLE: Code-Independent Error Control System

STATUS: Current as of 1/77

REMARKS: Bit-oriented, code-independent system for error checking and control.

ADS USE: Possible error-control system guideline for ADS members' use.

#055 CLASS: 2.1.5 Performance Evaluation

SPONSOR, DOCUMENT #, DATE: ANSI/X3, ANSI X3.44-1977

TITLE: Determination of Performance of Data Communication System

STATUS: Current as of 5/80

REMARKS: Presents the means for determining performance within a data communication system over an information path, using ASCII.

ADS USE: Methodology for performance determination may be possible ADS methodologies/guideline.

TABLE 3-1

(CONTINUED)

#056 CLASS: 1.1.1.5 Thesaurus

SPONSOR, DOCUMENT #, DATE: ISO/TC46, ISO 2788-1977

TITLE: Documentation - Guidelines for the Establishment and Development of Monolingual Thesauri

STATUS: Current as of 1/77

RELATED STANDARDS: ANSI Z39 Thesaurus Guidelines (in particular, ANSI Z39.19)

ADS USE: Possible guideline for data thesaurus creation to supplement data dictionary.

#057 CLASS: 2.2.1 System Locators

SPONSOR, DOCUMENT #, DATE: ANSI/Z39, ANSI Z39.4-1968/R1974

TITLE: Basic Criteria for Indexes

STATUS: Current as of 1/80

RELATED STANDARDS: None

REMARKS: Basic library science indexing criteria.

ADS USE: Possible application to general index creation.

TABLE 3-1

(CONTINUED)

#058 CLASS: 1.1.1.5 Thesaurus

SPONSOR, DOCUMENT #, DATE: ANSI/Z39, ANSI Z39.19-1980

TITLE: Guidelines for Thesaurus Structure, Construction, and Use

STATUS: Approved version reissued 6/30/80

RELATED STANDARDS: Thesaurus recommendations of ISO, such as ISO 2788.

REMARKS: Converse of dictionary process for referencing data.

ADS USE: May be required for user lead-in to data dictionary.

#059 CLASS: 1.1.1.4 General Vocabulary

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1066

TITLE: Facsimile Vocabulary

STATUS: Working draft status: 6/1/80
Proposed release for public comment: 6/82
Proposed approval for publication: 6/83
Proposed publication as FED-STD by GSA: 12/83

RELATED STANDARDS: Proposed EIA Standards RS-465 and RS-466 (EIA TR29);
CCITT T-series Recommendations (Study group XIV);
FTSC Subcommitee.

REMARKS: This will standardize terms and definitions which will be applicable to all groups of facsimile apparatus.

ADS USE: For fax service through ADS between message-oriented users.

TABLE 3-1

(CONTINUED)

#060 CLASS: 2.3 Data Transfer Service

SPONSOR, DOCUMENT #, DATE: BSI/DPS20/492, 1980

TITLE: File Transfer, Account, and Management

STATUS: Current as of 5/80

RELATED STANDARDS: NBS/ICST File Transfer/Data Presentation Protocol Work

REMARKS: This is one of the current standards dealing with file transfer protocols.

ADS USE: Possible file transfer protocol candidate.

#061 CLASS: 2.2.1 System Locators

SPONSOR, DOCUMENT #, DATE: BSI/OC/20, BS 3700-1964

TITLE: Recommendations for the preparation of indexes for books, periodicals, and other publications

STATUS: Approved: 4/6/64
Current as of 4/75

RELATED STANDARDS: BSI Committee Reference OC/20/2;
BSI Draft for Comment D62/9827;
ANSI Z39.4-1968/R1974, Index;
ISO/TC46 Indexing Projects

REMARKS: Includes index and term definitions, makes recommendations on the content, organization, and presentation indexes. Outlines basic indexing principles and practice. Well-organized.

ADS USE: Possible ADS candidate reference standard for preparation of indexes in data cataloging or other information organizing.

TABLE 3-1

(CONTINUED)

#062 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1007

TITLE: Coding and Modulation Requirements for Duplex 9600 Bit/s Modems Used on Private Line Circuits

STATUS: Comment Stage - released for public comment: 8/80
Proposed approval for publication: 2/81
Proposed publication by GSA as FED-STD: 5/81

RELATED STANDARDS: CCITT Recommendation V.29;
NCS Staff work with CCITT and U.S. CCITT SG IV

REMARKS: Provides standard for characteristics of duplex 9600 bit/s modems. Extends the approved U.S. modem standard rate.

ADS USE: Possible intermediate-speed standard extension for duplex modems.

#063 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.29, 1977

TITLE: 9600 Bits Per Second Modem for Use in Leased Circuits

STATUS: Current as of 1/77

RELATED STANDARDS: NTIA/FTSP Proposed FED-STD-1007.

REMARKS: Standard for duplex 9600 bit/s modems.

ADS USE: Guideline for intermediate-speed modem standard development.

TABLE 3-1

(CONTINUED)

#064 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1009

TITLE: Coding and Modulation Requirements for Two-Wire, Duplex 2400 bit/s Modems

STATUS: Very early predevelopment stage: 6/1/80
Proposed release for public comment: 10/84
Proposed approval for publication: 5/85
Proposed publication as FED-STD by GSA: 12/85

RELATED STANDARDS: NCS Staff work with CCITT and U.S. CCITT SG IV; Project anticipated during 1981-1984 study period.

REMARKS: Provides U.S. Federal standard for characteristics of duplex 2400 bit/s modems. Similar to (ISO) CCITT and ISO standards.

ADS USE: Possible 2400 bit/s candidate for modem standard.

TABLE 3-1

(CONTINUED)

#065 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1014

TITLE: Coding and Modulation Requirements for Duplex 16 kpbs Modems

STATUS: Very early predevelopment stage: 6/1/80
Proposed release for public comment: 8/84
Proposed approval for publication: 5/85
Proposed publication as FED-STD by GSA: 9/85

RELATED STANDARDS: NCS staff work with CCITT and U.S. CCITT SG IV. Project anticipated during 1981-1984 study period.

REMARKS: Provides standard characteristics of duplex 16 kbps modems.

ADS USE: "High"-speed modem (for normal modem traffic) extension of earlier ANSI, ISO, FED-STD, and FIPS publications.

#066 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.35, 1977

TITLE: Data Transmission at 48 Kilobits per Second Using 60-108 kHz Group Band Circuits

STATUS: Current as of 1/77
Revision due: 11/80

REMARKS: Provides "high"-speed synchronous transmission standard for group band circuits.

ADS USE: Possible 48 kbps synchronous transmission extension.

TABLE 3-1

(CONTINUED)

#067 CLASS: 2.3.2.3 Network Layer

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1000.3

TITLE: Telecommunication Network Layer: Information Flow and Management Functions

STATUS: Draft Status: 6/1/80
Proposed release for public comment: 10/81
Proposed approval for publication: 4/82
Proposed publication as FED-STD by GSA: 8/82

RELATED STANDARDS: Joint work of ISO, CCITT, ANSI, and NCS members;
ANSI X3T5 and X3S3 Projects;
ISO/TC97/SC6 Projects;
CCITT SG VII and XVII projects.

REMARKS: Will provide standard boundary control parameters of the network layer (Layer 3) of the Standard Reference Model.

ADS USE: Possible broad usage as network function layer protocol over several types of systems.

TABLE 3-1

(CONTINUED)

#068 CLASS: 2.3.2.4 Transport Layer

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1000.4

TITLE: End-to-End Communication Transport Layer; Information Flow and Management Functions

STATUS: Draft Status: 6/1/80
Proposed release for public comment: 10/81
Proposed approval for publication: 4/82
Proposed publication as FED-STD by GSA: 8/82

RELATED STANDARDS: Joint work of ISO, CCITT, ANSI, and NCS members;
ANSI X3T5, Transport Layer;
ANSI X3S3 Project 281;
ISO/TC97/SC6 Project 24 (and other network layer projects);
ISO/TC97/SC16 Reference Model Projects.

REMARKS: Will provide standard boundary control parameters of the transport layer (Layer 4) of the Standard Reference Model.

ADS USE: Possible broad usage as transport layer protocol wide range of system.

TABLE 3-1

(CONTINUED)

#069 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.36, 1977

TITLE: Modems for Synchronous Data Transmission Using 60-108 kHz Group Band Circuits

STATUS: Current as of 1/77
Due for review: 11/80

REMARKS: Provides modem specification for synchronous transmission for a rate of 16 kbps.

ADS USE: Possible extension of modem specifications to 48 kbps.

#070 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1000

TITLE: Reference Model Architecture for Data Processing Systems Interconnected by Data Communication (Transport) Systems

STATUS: Proposed release for public comment: 1/81
Proposed approval for publication: 12/81
Proposed publication by GSA as FED-STD: 4/82

RELATED STANDARDS: ANSI X3T5 Projects, such as the ANSI Proposed Reference Model;
ISO/TC97/SC15 projects, such as ISO/TC97/SC16/N227, CCITT SG VII New Study Questions;
Extensive NTIA/FTSP projects.

REMARKS: Standard layered reference model architecture describing the basic functions of ADP systems interconnected by telecommunications systems, configured as open or distributed systems.

ADS USE: A candidate for the distributed systems reference model.

TABLE 3-1

(CONTINUED)

#071 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: ISO/TC97/SC16/537, Revised
ISO/DP 7498
ANSI X3S37-80-115

TITLE: Basic Reference Model for Open Systems Interconnection

STATUS: Published as ISO Draft Proposal ISO/DP 7498: 12/3/80
Supersedes ISO/TC97/SC26/N227, Revision 4
Balloting by ISO Membership for Approval: 3/31/81

RELATED STANDARDS: ANSI X3T5 and X3S3 projects, such as ANSI Proposed Reference Model;
NTIA/FTSP FED-STD-1000;
ISO/TC97/SC16 other projects;
CCITT SG VII New Study Question;
Extensive NTIA/FTSP projects.

REMARKS: Standard layered reference model architecture describing the basic functions of ADP systems interconnected by telecommunications systems, configured as open, or distributed, systems. Most developed of the currently proposed models.

ADS USE: A candidate for the distributed systems reference model.

TABLE 3-1

(CONTINUED)

#072 CLASS: 2.3.2.2 Data Link Layer

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 3309-1976, 2nd Edition

TITLE: Data Communication - High-Level Data Link Control Procedures - Frame Structure

STATUS: Current as of 1/80

RELATED STANDARDS: ISO/TC97/SC16/N227, ISO Standard Reference Model for Open Systems Interconnection, Version 4.

REMARKS: Describes frame structure for high level data link control procedures specified in #193, ISO 4335-1979, Elements of Procedures.

ADS USE: Possible frame structure methodology for data link layer communication protocols.

#073 CLASS: 2.3.2.2 Data Link Layer

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 4335-1979

TITLE: Data Communication - High Level Data Link Control Procedures - Elements of Procedures

STATUS: Current as of 1/80
Addendum 1 appended 1979

RELATED STANDARDS: ISO/TC97/SC16/N227, ISO Standard Reference Model for Open Systems Interconnection, Version 4.

REMARKS: Specifies elements of a method for a protocol in the data link layer, or Layer 2, of the Reference Model for Open Systems Interconnection.

ADS USE: Possible candidate protocol for data link layer communication among ADS members.

TABLE 3-1

(CONTINUED)

#074 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-18-1, 9/1/77

TITLE: Character Structure and Character Parity Sense for Parallel-by-Bit Data Communications in the Code for Information Interchange (ASCII)

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3S33, ANSI X3.25-1976

TITLE: Character Structure and Character Parity Sense for Parallel-by-Bit Data Communications in the American National Standard Code for Information Interchange

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, FED-STD-1012, 8/1/77

TITLE: Telecommunications: Character Structure and Character Parity Sense for Parallel-by-Bit Data Communication in the Code for Information Interchange

STATUS: Current as of 6/1/80

REMARKS: Specifies the character structure and sense of parity for parallel-by-bit, serial-by-character data communications using ASCII.

ADS USE: Possible standard for serial character transmission (low speed).

TABLE 3-1

(CONTINUED)

#075 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-16-1, 9/1/77

TITLE: Bit Sequencing of the Code for Information Interchange (ASCII) in Serial-by-Bit Data Transmission

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3S33, ANSI X3.15-1976

TITLE: Bit Sequencing of the American National Standard Code for Information Interchange in Serial-by-Bit Data Transmission

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, FED-STD-1010, 8/11/77

TITLE: Telecommunications: Bit Sequencing of the Code for Information Interchange in Serial-by-Bit Data Transmission

STATUS: Current as of 6/1/80

REMARKS: Specifies the character structure and sense of parity for serial-by-bit, serial-by-character data communication using ASCII.

ADS USE: Possible standard for bit-sequencing in serial low-speed transmission.

TABLE 3-1

(CONTINUED)

#076 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-17-1, 9/1/77

TITLE: Character Structure and Character Parity Sense for Serial-by-Bit Data Communications in the Code for Information Interchange (ASCII)

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3S33, ANSI X3.16-1976

TITLE: Character Structure and Character Parity Sense for Serial-by-Bit Data Communications in the American National Standard Code for Information Interchange

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, FED-STD-1011, 8/1/77

TITLE: Telecommunications: Character Structure and Character Parity Sense for Serial-by-Bit Data Communication in the Code for Information Interchange

STATUS: Current as of 6/1/80

REMARKS: Defines character structure for both synchronous and asynchronous modes. Discusses relationship between particular terminal media and character structure in data communication.

ADS USE: Candidate guideline for character structure definition for data communications

TABLE 3-1

(CONTINUED)

#077 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-22-1, 9/1/77

TITLE: Synchronous Signalling Rates Between Data Terminal and Data Communication Equipment

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3S36, ANSI X3.1-1976

TITLE: Synchronous Signalling Rates for Data Transmission

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendations V.5, V.6, 1977

TITLE: V.5: Standardization of Data-Signalling Rates for Synchronous Data Transmission in the General Switched Telephone Network

V.6: Standardization of Data-Signalling Rates for Synchronous Data Transmission of Leased Telephone-Type Circuits

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: EIA Category 3, EIA RS-269-B, 1/76

TITLE: Synchronous Signalling Rates for Data Transmission

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, FED-STD-1013, 8/11/77

TITLE: mmunications: Medium Synchronous Signalling Rates Between Data Terminal and Data Communication Equipment

STATUS: Current as of 6/1/80

REMARKS: Provides a group of medium (or low) signalling rates for synchronous serial or parallel binary data transmission Channel width 4kHz.

ADS USE: Only applies to ADS hook-up voice-grade synchronous lines.

TABLE 3-1

(CONTINUED)

#078 CLASS: 2.3 Data Transfer Service
2.2.3 User-to-User Message Service

SPONSOR, DOCUMENT #, DATE: ISO/TC97/SC6/N1948, 1979

TITLE: (Proposed) Communication Heading Format Standard

STATUS: Second Draft in Subcommittee: 1/79
Possible changes: 11/80

RELATED STANDARDS: Proposed FED-STD-1004.

REMARKS: Will provide standards for specifying items, content, and procedures used to construct communications headings via data communications systems.

ADS USE: This may provide a standard message heading format for ADS data communications messages.

TABLE 3-1

(CONTINUED)

#079 CLASS: 1.1 Applications Data

SPONSOR, DOCUMENT #, DATE: NBS/ICST

TITLE: Federal Data Base Management Standards Program

STATUS: Projects initiated: 1/79
Early development stage: 10/80
Final products: A family of DBM Standards published as NBS 500-Series Technical Documents: 1981-1984

RELATED STANDARDS: ANSI X3H2 Activities on Data Description Language for CODASYL-class systems; ANSI/X3J3 and X3J4 projects.

REMARKS: Methodologies for data base management standards are to be defined and described for major data management system types.

ADS USE: Possible ADS guideline or methodology for creating an ADS data base management standards program.

TABLE 3-1

(CONTINUED)

#080 CLASS: 2.3.2.4 Transport Layer

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/HLNP-81-1, 2/81

TITLE: Specification of the Transport Protocol

STATUS: Draft report: 2/81
Expected publication in the Federal Register for public comment: 4/81
Expected publication as a FIPS: 1981

RELATED DOCUMENTS: #071, ISO/TC97/SC16/537, Rev.;
ANSI and ISO Reference Model for Open Systems Interconnection Layer 4 Protocol Projects in ANSI/X3T5;
NBS/ICST Report No. ICST/HLNP-80-1, 3/80, "Features of the Transport and Session Protocols;"
NBS/ICST Report No. ICST/HLNP-80-2, 3/80, "Service Specifications of the Transport and Session Protocols;"
NBS/ICST Report No. ICST/HLNP-80-5, 6/80, "Formal Specification of the Transport and Session Protocols."

REMARKS. This protocol will encompass functions commonly referenced in the fourth layer of the ISO standard Reference Model for Open Systems Interconnection.

ADS USE: Possible candidate ADS transport layer protocol for a wide variety of systems which might be ADS members.

TABLE 3-1

(CONTINUED)

#081 CLASS: 1.2.1 Computer Program Documentation
2.2.1.3 Locator of Processes and Their Sources

SPONSOR, DOCUMENT #, DATE: ANSI/X3K7, ANSI X3.88-____

TITLE: American National Standard for Computer Program Abstracts

STATUS: Draft Standard (BSR) as of 5/80
Approved by ASIS: 9/8/80

RELATED STANDARDS: ANSI Project 211, Document K7/79-6

REMARKS: Defines elements for abstracts of computer programs for efficient interchange of information.

ADS USE: Possible ADS candidate guideline for computer program abstracting (for documentation, cataloging).

TABLE 3-1

(CONTINUED)

#083 CLASS: 2.2.1 System Locators

SPONSOR, DOCUMENT #, DATE: ANSI/X3, SPARC/80-147, 1980

TITLE: Development of an American National Standard for an Information Resource Dictionary System (IRDS)

STATUS: Approval of project request document: 9/8/80
Formation of technical committee for project (X3H4): 9/8/80
In development: 2/81

RELATED STANDARDS: ANSI X3 Project 336

ADS USE: May develop into a methodology for an information resource dictionary system which might prove useful to the fully implemented ADS.

#084 CLASS: 2.3.2.2 Data Link Layer

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO DIS 4335/DAD2-(1980)

TITLE: Data Communications - High Level Data Link Control Procedures (HDLC), Addendum 2

STATUS: Draft International Standard - U. S. Member body approval

ADS USE: Possible candidate guideline for Layer 2 protocol-creation procedures.

TABLE 3-1

(CONTINUED)

#085 CLASS: 1.4.1.2 Programming Language

SPONSOR, DOCUMENT #, DATE: ANSI/X3J10 (no document)

TITLE: Programming Language APL

STATUS: X3J10 task group creation approved, development project assigned: 9/8/80

REMARKS: This task group is to define the programming language APL as other higher-level languages have been defined, such as FORTRAN or PL/I.

ADS USE: Definition of possible ADS-supported user programming language.

#086 CLASS: 1.1.1 Data Definition
1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: ISO/TC97 and ANSI/X3H2 CODASYL Data Definition Language (DDL) Description

TITLE: Data Definition Language

STATUS: ANSI draft X3H2 Standard Balloted: 9/8/80
ISO TC97 new work item

REMARKS: This item specifies the possible creation of a data definition language standard for ANSI and ISO.

ADS USE: Possible ADS candidate guideline for data definition languages.

TABLE 3-1

(CONTINUED)

#087 CLASS: 2.3.2.7 Application Layer

SPONSOR, DOCUMENT #, DATE: ANSI/X3T5 (project)

TITLE: Application Layer (7) Protocols

STATUS: Development project approval by ASIS: 9/8/80
New development project assigned to ANSI X3T5: 9/8/80

REMARKS: Development project to define protocols for the Layer 7 of the standard reference model.

ADS USE: Possible ADS candidate protocols for the applications level could be derived from the result of this project.

#088 CLASS: 2.3 Data Transfer Service

SPONSOR, DOCUMENT #, DATE: ISO/TC97 (project)

TITLE: Specification for a Data Interchange Application Language

STATUS: ISO TC97 New work item
Approved by ASIS: 9/8/80

ADS USE: Results of this project would specify a possible ADS standard data interchange application language framework.

TABLE 3-1

(CONTINUED)

#089 CLASS: 2.3.2.6 Presentation Layer

SPONSOR, DOCUMENT #, DATE: ANSI/X3T5 (project)

TITLE: Open System Interconnection (OSI) Presentation Layer (6) Services

STATUS: Approved by OSI, standard development assigned: 9/8/80

ADS USE: Possible ADS candidate presentation layer protocols could emerge as results of this project.

#090 CLASS: 2.3.2.5 Session Layer

SPONSOR, DOCUMENT #, DATE: ANSI/X3T5 (project)

TITLE: Open System Interconnection (OSI) Session Layer (5) Services

STATUS: Approved by OSI, standard development assigned: 9/8/80

ADS USE: Possible ADS candidate session layer protocols could emerge as result of this project.

TABLE 3-1

(CONTINUED)

#091 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: CCITT/SG VII, CCITT Recommendation X.21, 1977

TITLE: General Purpose Interface Between Data Terminal Equipment (DTE) and Data Circuit-Terminating Equipment (DCE) for Synchronous Operation on Public Data Networks

STATUS: Current as of early 1977
Revision due: 11/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3S37, ANSI X3.69-____

TITLE: General Purpose Interface Between Data Terminal Equipment (DTE) and Data Circuit-Terminating Equipment (DCE) for Synchronous Operation on Public Data Networks

STATUS: (Working) draft: 5/80

RELATED STANDARDS: ANSI document X3S37/75-54-D5.

REMARKS: Provides a general interface for all X.21-type synchronous-signal type operations on public data networks.

ADS USE: Possible ADS candidate standard for synchronous-signal message-switched operations on public data networks between/among members.

TABLE 3-1

(CONTINUED)

#092 CLASS: 2.3.1 Data Communication Interface

SPONSOR, DOCUMENT #, DATE: ISO/TC97 (new work area)

TITLE: Interfaces in the Local Area Network

STATUS: Proposed new work item:
Supported by ISO/TC97.
Not supported by ASIS: 9/80.

ADS USE: Possible specifications for future ADS local area network interface standards or guidelines would be created as a result of this project.

#093 CLASS: 1.2 Process (Applications Software)

SPONSOR, DOCUMENT #, DATE: ISO/TC97

TITLE: Graphical Kernel System (GKS)

STATUS: New work item: 1980
Approved by ASIS: 9/8/80

REMARKS: Set of functions for graphical data processing.

ADS USE: Possible ADS stored process guideline or methodology.

#094 CLASS: 1.1.1.5 Thesaurus

SPONSOR, DOCUMENT #, DATE: ANSI/Z39, ANSI Z39.19-____

TITLE: Guidelines for Thesaurus Structure, Construction and Use

STATUS: Draft (BSR) approved 9/8/80 by ASIS, previous 1/21/80 affirmed.

ADS USE: ADS candidate guideline for construction of thesauri for ADS data material access and indexing.

TABLE 3-1

(CONTINUED)

#095 CLASS: 2.1.4.2 Data Security

SPONSOR, DOCUMENT #, DATE: ANSI/X3/ENCR (project)

TITLE: Encryption of Data on Removable Storage Media

STATUS: Developmental project.
Approved by ASIS: 9/8/80

ADS USE: Possible guideline for media-related data encryption.

#096 CLASS: 2.1.4.2 Data Security
2.3.2.4 Transport Layer

SPONSOR, DOCUMENT #, DATE: ANSI/X3T5/ENCR (project)

TITLE: Encryption and Decryption at Transport Layer 4

STATUS: Development project.
Approved by ASIS: 9/8/80

ADS USE: Possible guideline for transport-layer development of protocols in data encyrption/description.

#097 CLASS: 2.1.4.2 Data Security
2.3.2.6 Presentation Layer

SPONSOR, DOCUMENT #, DATE: ANSI/X3/ENCR
ANSI/X3T5 (project)

TITLE: Presentation (Layer 6) Encryption and Decryption

STATUS: Development project.
Approved by ASIS: 9/8/80

ADS USE: Possible guideline for presentation-layer development of protocols in data encryption/decryption.

TABLE 3-1

(CONTINUED)

#098 CLASS: 2.3.2.2 Data Link Layer

SPONSOR, DOCUMENT #, DATE: ANSI/X3T9 (project)

TITLE: Local Distributed Data Interface (LDDI) Data Link Layer (2)

STATUS: ASIS approval received: 9/8/80

ADS USE: Possible guideline for specification of the data link for protocol for local distributed data interfaces.

#099 CLASS: 2.3.2.1 Physical Layer

SPONSOR, DOCUMENT #, DATE: ANSI/X3T9

TITLE: Local Distributed Data Interface (LDDI) Physical Link Layer (1)

STATUS: Development project.
ASIS approval received: 9/8/80

ADS USE: Possible guideline for specification of the physical layer protocol development for local distributed data interfaces.

TABLE 3-1

(CONTINUED)

#100 CLASS: 2.1.4.2 Data Security
1.4.2 User Terminal

SPONSOR, DOCUMENT #, DATE: ANSI/X3, Project 95

TITLE: Data Terminal Equipment/Data Encryption Equipment Interface

STATUS: Project reassigned to X3T1: 9/8/80
Previous task group X3S38 dissolved: 9/8/80

REMARKS: This project has been reassigned to a subcommittee. A new task group will be created.

ADS USE: The results of this project will define a possible ADS guideline for a data terminal to data encryptor interface.

#101 CLASS: 1. Member

SPONSOR, DOCUMENT #, DATE: ANSI/X3, Technical Report

TITLE: Guide for Technical Documentation of Computer Projects

STATUS: Publication approved: 9/8/80

RELATED STANDARDS: NBS-FIPS-PUB-38, Documentation of Computer Programs

ADS USE: Possible ADS guideline for computer program documentation.

TABLE 3-1

(CONTINUED)

#10 CLASS: 1.1.1.3 Spatial Definition

SPONSOR, DOCUMENT #, DATE: ANSI/X3L8, ANSI X3.61-1978

TITLE: Representation of Geographic Point Locations for Information Interchange

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-70, 10/24/80

TITLE: Representation of Geographic Point Locations for Information Interchange

STATUS: Current as of 2/81

RELATED STANDARDS: USGS/NOAA/NASA point location reference representation work projects

REMARKS: This document establishes uniform formats for geographic point location data and provides a means for representation of these data in digital form for intersystem information interchange.
NOTE: NBS-FIPS-PUB-70 adopts ANSI X3.61-1978 with modifications made to meet special Federal requirements.

ADS USE: Possible point-reference geographic digitization system.

TABLE 3-1

(CONTINUED)

#103 CLASS: 1.2.1 Computer Program Documentation

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-24, 6/24/72

TITLE: Flowchart Symbols and Their Use in Information Processing

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3K2, ANSI X3.5-1970

TITLE: Flowchart Symbols and Their Use in Information Processing

STATUS: Revision being developed in technical committee: 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 1028-1973

TITLE: Information Processing - Flowchart Symbols

STATUS: Current as of 1/80

RELATED STANDARDS: Revision in ANSI X3K2, Project 81.

REMARKS: Establishes flowchart symbols and usage in preparation of flowcharts for information processing systems. ISO standard very similar, not identical.

ADS USE: Documentation of programs and conceptual ADS components.

TABLE 3-1
(CONTINUED)

#105 CLASS: 2.3 Data Transfer Service

SPONSOR, DOCUMENT #, DATE: ANSI/X3S34, ANSI X3.28-1976

TITLE: Procedures for the Use of Communications Control Characters of ASCII for Information Interchange in Specified Data Communication Links

STATUS: Current as of 5/80

REMARKS: Presents control procedures for specified data communication links that employ the control characters of ASCII.

ADS USE: Possible candidate character-oriented communication control procedures.

TABLE 3-1

(CONTINUED)

#106 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: ANSI/X3B1, ANSI X3.85-____

TITLE: One-Half Inch Magnetic Tape for Information Interchange, Self-Loading

STATUS: In early draft: 5/80

REMARKS: Early standard for self-loading magnetic tape units (data streaming)

ADS USE: Possible guideline for specifying data streaming back-up media for ADS members.

#107 CLASS: 1.2.1 Computer Program Documentation

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-38, 2/15/76

TITLE: Guidelines for Documentation of Computer Programs and Automated Data Systems

STATUS: Current as of 2/80

REMARKS: Provides basic guidance in computer software development documentation.

ADS USE: May be modified for use as a methodology or practice for ADS.

TABLE 3-1

(CONTINUED)

#108 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 2375-1974

TITLE: Data Processing - Procedure for Registration of Escape Sequence

STATUS: Current as of 1/80

RELATED STANDARDS: #136, ANSI X3.83-1980, USA Sponsorship of this standard.

REMARKS: Procedure for registration of escape sequences, another code extension technique.

ADS USE: Possible ADS candidate methodology for registering extensions to data codes.

#109 CLASS: 1.1.2. Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-19, 2/1/72

TITLE: Guidelines for Registering Data Codes

STATUS: Current as of 2/80

REMARKS: Establishes procedures for registering codes and obtaining information on codes in development.

ADS USE: Might be guideline for data dissemination ADS function.

TABLE 3-1

(CONTINUED)

#110 CLASS: 1.1.1 Data Definition

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-20, 3/1/72

TITLE: Guidelines for Describing Information Interchange Formats

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ANSI/X10, ANSI X10.1-1972

TITLE: Guidelines for Describing Information Interchange Formats

STATUS: Current as of 5/80

REMARKS: Identifies, defines physical, logical characteristics of formatted information.

ADS USE: Possible guideline for exchange of data or messages.

#111 CLASS: 1.1. Applications Data

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-28, 12/5/77

TITLE: Standardization of Data Elements and Representations

STATUS:

RELATED STANDARDS: NBS/ICST Data Standardization Activities;
DOD Directive 5000.11;
DOD Instruction 5000.12

REMARKS: Defines policies and responsibilities for federal government-wide program for data element/representation standardization.

ADS USE: Methodology needed by ADS, standard must be rewritten.

TABLE 3-1

(CONTINUED)

#112 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-50, 2/1/78

TITLE: Recorded Magnetic Tape Information Interchange (6250 cpi or 246 cpmm)

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3B1, ANSI X3.54-1976

TITLE: Recorded Magnetic Tape for Information Interchange (6250 cpi, Group Coded Recording)

STATUS: Current as of 5/80

REMARKS: Specifies the recorded characteristics of the 9-track, ½" wide magnetic tape and the data format for ASCII representation.

ADS USE: Obvious industry standard, may be one of the exchange format guidelines for ADS.

TABLE 3-1

(CONTINUED)

#113 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-25, 6/30/78

TITLE: Recorded Magnetic Tape for Information Interchange (1600 cpi, Phase Encoded)

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3B2, ANSI X3.39-1973

TITLE: Recorded Magnetic Tape for Information Interchange (1600 cpi, Phase Encoded)

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC79, ISO 3788-1976

TITLE: Information Processing - 9-track, 12.7 mm (0.5 in.) Wide Magnetic Tape for Information Interchange Recorded at 63rpmm (1600 rpi), Phase-Encoded (rpmm and rpi are the proper ISO usages for characterizing magnetic tape density).

STATUS: Current as of 1/80

REMARKS: Specifies the recorded characteristics of the 9-track ½" wide magnetic tape and the data format for ASCII representation.

ADS USE: Obvious industry standard, may be one of the exchange format guidelines for ADS.

TABLE 3-1

(CONTINUED)

#114 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-3-1, 6/30/73

TITLE: Recorded Magnetic Tape for Information Interchange (800 cpi, NRZI)

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3B1, ANSI X3.22-1973

TITLE: Recorded Magnetic Tape for Information Interchange (800 cpi, NRZI)

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 1863-1976

TITLE: Information Processing - 9-track, 12.7 mm (0.5 in.) Wide Magnetic Tape for Information Interchange Recorded at 32 rpmm (800 rpi) (rpmm and rpi are the proper ISO usages for characterizing magnetic tape density).

STATUS: Current as of 1/80

REMARKS: Specifies the recorded characteristics of the 9-track, ½" wide magnetic tape and the data format for ASCII representation.

ADS USE: Widely used format for recording information on ½", 9-track magnetic tape. May be one of the exchange format guidelines for ADS.

TABLE 3-1

(CONTINUED)

#115 CLASS: 2.3 Data Transfer Service

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/HLNP-81-_, _/81

TITLE: Remote Job Entry (RJE) Protocol

STATUS: Feature analysis to be published: 1981
To be published as a FIPS: 1983

REMARKS: This protocol will define kernel elements of the remote job entry process between different equipment.

ADS USE: Possible candidate ADS guideline for an RJE protocol.

#116 CLASS: 2.3.2.5 Session Layer

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/HLNP-80-15, 10/80

TITLE: Service Specification of a Network Interprocess Communication Protocol

STATUS: Draft report: 10/80
Specification of protocol under development: 7/81
Expected publication as a FIPS: 1981

RELATED DOCUMENTS: NBS/ICST Report No. ICST/HLNP-80-12, 9/80, "Features of Network Interprocess Communication Protocols"

REMARKS: This report describes the proposed network interprocess communication (NIPC) protocol from the viewpoint of the user of the protocol.

ADS USE: Possible candidate ADS guideline for ADS-related interprocess protocol development.

TABLE 3-1

(CONTINUED)

#117 CLASS: 2.3.2.6 Presentation Layer

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/HLNP-81-3, 3/81

TITLE: Virtual Terminal Protocol (VTP) Feature Analysis

STATUS: Draft report: 3/81
Service specification under development: 1981
To be published as a FIPS: 1982

RELATED STANDARDS: ANSI/X3H1 Common Command Language (CCL) and Virtual Terminal Protocol (VTP) Activities

REMARKS: This report extends currently developing protocols (CCL, File Transfer, Data Presentation, Session, and Transport) to the concept of the virtual terminal.

ADS USE: Possible candidate ADS data terminal equipment to data communications equipment protocol to be developed in the future.

#118 CLASS: 2.3.2 Data Communications Protocol

SPONSOR, DOCUMENT #, DATE: NBS/ICST, HLNP Project

TITLE: Distributed Data "Protocol"

STATUS: No current activity in development: 10/80
Expected publication: late 1985

RELATED STANDARDS: Related ANSI X3T5 projects.

REMARKS: Currently a place holder, not a "protocol" concept yet.

ADS USE: Distributed data-related specifications for development of ADS-specific protocols could emerge from this project.

TABLE 3-1

(CONTINUED)

#119 CLASS: 2.1.6 Management-Oriented Documentation
1.2.1 Computer Programming Documentation

SPONSOR, DOCUMENT #, DATE: DOD/DAPTS, DOD Standard 7935.1-S, 9/13/77

TITLE: Automated Data Systems Documentation Standards

STATUS: Current as of 3/31/80

RELATED STANDARDS: DoD Directive 5000.11

REMARKS: Specifies complete internal documentation standards for all phases of automatic data systems.

ADS USE: Methodology good candidate for ADS use - particulars may have to be changed.

#120 CLASS: 1.1 Applications Data

SPONSOR, DOCUMENT #, DATE: DoD/DMSSO, DoD Directive No. 5000.11, 12/7/64

TITLE: Data Elements and Data Codes Standardization Program

STATUS: Current as of 3/31/80
Issued: 12/7/64

RELATED STANDARDS: None.

REMARKS: Establishes program to facilitate data interchange and compatibility. Defines terms, policy, responsibility, and program plan.

ADS USE: Possible directive guideline for similar internal ADS standardization program.

TABLE 3-1

(CONTINUED)

#121 CLASS: 1.4.1 User Language

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/HLNP-80-4, 6/80

TITLE: Common Command Language Feature Analysis

STATUS: Standard protocol in working draft: 10/80
Expected release for preliminary comment: 1982

RELATED STANDARDS: NBS Activities in ICST/Protocol Standards Program

ADS USE: Possible ADS adoption as elements of guidelines for common command languages and CCL protocols.

#122 CLASS: 2.3.2 Data Communications Protocol

SPONSOR, DOCUMENT #, DATE: ECMA/TC23/80-23, 2/80

TITLE: File Transfer Protocol

STATUS: Continued development: 2/80

RELATED STANDARDS: NBS/ICST Common Command Language and Protocol; NBS/ICST File Transfer Protocol.

REMARKS: Provides consistent protocol for file transfer between systems.

ADS USE: Possible ADS candidate Layer 7 file transfer protocol.

TABLE 3-1

(CONTINUED)

#123 CLASS: 2.3 Data Transfer Service

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/LANP-81-1, 4/81

TITLE: Specification and Analysis of Local Area Network (LAN) Architecture Based on the ISO Reference Model

STATUS: Draft report: 4/81
To be published as a FIPS: 1981

RELATED STANDARDS: NBS/ICST Laboratory Testing of Local Area Network Technologies

REMARKS: This document provides specification and analysis of the current LAN technologies.

ADS USE: Possible candidate ADS guideline for defining LAN technologies available for member use.

#124 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No.. ICST/CBOS-80-2, 9/80

TITLE: Specification of a Draft Message Format Standard

STATUS: Draft report: 9/80
Comment solicited in Federal Register: 2/13/81
Expected release as a FIPS: 1981

RELATED STANDARDS: #004, proposed FED-STD-1004;
ANSI X3T5 Transport Layer Projects;
ANSI X3S3 Project 281;
ISO/TC97/SC6 Project 24;
ISO/TC97/SC16 Transport Layer Projects.

REMARKS: This draft standard will specify the format and content of a message exchanged using computer-based message systems (CBMS's). It models the CBMS environment and sets up semantics, fields, and protocols for encoding and decoding such messages.

ADS USE: Possible ADS user guideline for format and content of user-to-user message exchange across the ADS network.

TABLE 3-1

(CONTINUED)

#125 CLASS: 2.3.2.3 Network Layer

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/HLNP-80-11, 9/80

TITLE: Service Specification of an Internetwork Protocol

STATUS: Draft report: 9/80
Expected release for preliminary comment accelerated to late 1981 or early 1982
Expected publication as a FIPS: 1982

RELATED DOCUMENTS: NBS/ICST Report No. ICST/HLNP-80-8, 7/80, "Features of Internetwork Protocol"

REMARKS: This document provides the service specification for the NBS-proposed internetwork protocol or gateway protocol, referred to as "accelerated layer 3½" in the Reference Model for Open Systems Interconnection.

ADS USE: Possible candidate ADS standard for an internetwork protocol for use by the members of ADS.

TABLE 3-1

(CONTINUED)

#126 CLASS: 2.3.2.6 Presentation Layer
2.3.2.7 Application Layer

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/HLNP-80-9, 10/80

TITLE: Service Specification of the File Transfer Protocol (FTP) and the Data Presentation Protocol (DPP)

STATUS: Draft report: 10/80
Expected release for preliminary comment: 1981
To be eventually published as a FIPS.

RELATED DOCUMENTS: NBS, ISO, ANSI, and ECMA projects for higher-layer (6, 7) protocols for the Reference Model for Open Systems Interconnection;
NBS/ICST Report No. ICST/HLNP-80-6, 9/80, "Features of the File Transfer Protocol (FTP) and the Data Presentation Protocol (DPP)."

REMARKS: This document describes the service specifications for the NBS-proposed protocols for file transfer and data presentation (resident at layers 7 and 6 of the Reference Model for Open Systems Interconnection).

ADS USE: Possible Layers 7 and 6 common protocols for many systems that are ADS members.

TABLE 3-1

(CONTINUED)

#128 CLASS: 1.4.1.2 Programming Language

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-68, 9/4/80

TITLE: Programming Language - Minimal BASIC

STATUS: Approved as FIPS: 9/4/80
Released to public: 11/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3J2, ANSI X3.60-1978

TITLE: Programming Language - Minimal BASIC

STATUS: Current as of 5/80

RELATED STANDARDS: ANSI X3J2 BASIC projects;
BASIC Bulletin 1 (X3J2 document), released 12/80

REMARKS: Provides a minimal subset of the BASIC language to be operable on any computer (including minis). First in a proposed series of standards on BASIC.

ADS USE: One of the possible ADS program interchange languages. Included here because of the universality of BASIC as a programming language.

#129 CLASS: 1.1 Applications Data

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-45, 9/30/76

TITLE: Guide for the Development, Implementation, and Maintenance of Standards for the Representation of Computer Processed Data Elements

STATUS: Current as of 2/80

RELATED STANDARDS: DoD Directive 5000.11

REMARKS: Provides basic concepts and terminology of data standardization. Describes the data characteristics, basic coding methods, and principles of code development.

ADS USE: Guideline for standardization internal to ADS communities.

TABLE 3-1

(CONTINUED)

#130 CLASS: 2.1.5. Performance Evaluation

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-49, 5/1/77

TITLE: Guideline on Computer Performance Management: An Introduction

STATUS: Current as of 2/80

REMARKS: This guideline details the responsibilities of ADP management in meeting user requirements, managing and planning for ADP resources, communicating with upper management, and communicating with vendors.

ADS USE: Candidate ADS guideline for performance management of computer systems.

TABLE 3-1

(CONTINUED)

#131 CLASS: 1.1.1 Data Definition
1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: ANSI/X3L5, ANSI X3.27-1978

TITLE: Magnetic Tape Labels and File Structures for Information Interchange

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-79, 10/17/80

TITLE: Magnetic Tape Labels and File Structure for Information Interchange

STATUS: Current as of 2/81

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 1001-1979

TITLE: Information Processing - Magnetic Tape Labelling and File Structure for Information Interchange

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: CSA Z243.7-1971

TITLE: Magnetic Tape Labels and File Structure for Information Interchange

STATUS: Current as of 4/77
Identical to earlier ANSI X3.27-1969
Identical to earlier ISO R1001-1973

RELATED STANDARDS: ANSI/X3 project on volume labels for magnetic media (Proposal released for comment at the end of 1980).

REMARKS: Establishes a standard for magnetically recorded labels to identify and structure files on magnetic tape. Establishes standard physical block and record structure for these files.

ADS USE: Information interchange file structuring standard or guideline for physical magnetic tape files in ADS.

TABLE 3-1

(CONTINUED)

#132 CLASS: 1.2.1 Computer Program Documentation
2.2.1.3 Locator of Processes and Their Sources

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-30, 6/30/74

TITLE: Software Summary for Describing Computer Programs and Data Systems

STATUS: Current as of 2/80

REMARKS: Establishes a standard Federal agency form in documenting abstracts of programs and automated data systems.

ADS USE: Candidate ADS guideline for a format for abstracts of processes.

#133 CLASS: 1.1.4.4 Microform

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-54, 7/15/78

TITLE: Computer Output Microform (COM) Formats and Reduction Ratios, 16mm and 105mm

STATUS: Current as of 2/80

RELATED STANDARDS: (Peripheral): ISO and ANSI Microcopying Standards for microcopy.

REMARKS: Specifies the image arrangement, size, and reduction arrangement for two widely used COM microforms generated by computer output microfilmers.

ADS USE: Candidate standard for ADS information interchange high-volume output by computer output microform (COM).

TABLE 3-1

(CONTINUED)

#134 CLASS: 2.1.4.1 Physical Security

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-31, 6/-/74

TITLE: Guideline for ADP Physical Security and Risk Management

STATUS: Current as of 2/80

REMARKS: Provides general guidance to Federal organizations in developing physical security and risk management programs for ADP facilities.

ADS USE: Guideline framework candidate for member site risk management for ADS users, other members. Usable as planning and evaluation checklist.

#135 CLASS: 2.1.4.2 Data Security

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-41, 5/30/75

TITLE: Computer Security Guidelines for Implementing the Privacy Act of 1974

STATUS: Current as of 2/80

REMARKS: Provides guidance in the selection of technical and related procedural methods for protecting personal data in ADP systems.

ADS USE: Candidate methodology for data and access security for ADS members.

TABLE 3-1

(CONTINUED)

#136 CLASS: 2.1.6 Management-Oriented Documentation

SPONSOR, DOCUMENT #, DATE: ANSI/X3L2, ANSI X3.83-1980

TITLE: USA Sponsorship Procedure for ISO Registration According to ISO 2375

STATUS: Current as of 5/80

RELATED STANDARDS: #108, ISO 2375-1974, Escape Sequences Registration

REMARKS: Sponsorship of ISO data interchange registration of escape sequences.

ADS USE: May provde a useful pattern for sponsorship of ADS candidate standards.

#137 CLASS: 1.3 Computational Facility
2.1 Administrative Service

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-42-1, 12/1/75

TITLE: Guidelines for Benchmarking ADP Systems in the Competitive Procurement Environment

STATUS: Current as of 2/80

REMARKS: Recommends practices for Federal agencies to use in planning and conducting benchmark tests for computer systems procurement.

ADS USE: Candidate recommended practice for ADS member which desires to test equipment before procurement decisions.

TABLE 3-1

(CONTINUED)

#138 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-35, 6/1/75

TITLE: Code Extension Techniques in 7 or 8 Bits

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3L2, ANSI X3.41-1974

TITLE: Code Extension Techniques for Use with the 7-Bit Coded Character Set for American National Standard Code for Information Interchange (ASCII)

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 2022-1973

TITLE: Code Extension Techniques for Use with the ISO 7-Bit Coded Character Set

STATUS: Current as of 1/80

REMARKS: Specifies methods for extending the 7-bit ASCII in either a 7-bit or 8-bit environment.

ADS USE: Candidate recommended practice if at least two ADS members must extend a data code for information interchange needs.

TABLE 3-1

(CONTINUED)

#139 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-15, 10/1/71

TITLE: Subsets of the Standard Code for Information Interchange (ASCII)

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 963-1973

TITLE: Information Processing Guide for the Definition of 4-Bit Character Sets Derived from the 7-Bit Coded Character Set for Information Interchange

STATUS: Current as of 1/80

REMARKS: Provides standard subsets of ASCII for data terminal or data processing devices which support a limited character set.

ADS USE: Guideline for creating compatible subsets of ASCII for ADS user (U-member) devices with limited character set.

TABLE 3-1

(CONTINUED)

#140 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-36, 6/1/75

TITLE: Graphic Representation of the Control Characters of ASCII

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3L2, ANSI X3.32-1973

TITLE: Graphic Representation of the Control Characters of American National Standard Code for Information Interchange (ASCII)

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 2047-1975

TITLE: Information Processing - Graphical Representations for the Control Characters of the 7-Bit Coded Character Set

STATUS: Current as of 1/80

REMARKS: Specifies graphical representations for the ASCII characters which normally correspond to "non-printing" characters.

ADS USE: Candidate recommended practice for ADS users at the computer program interchange level.

TABLE 3-1

(CONTINUED)

#141 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-7, 3/7/69

TITLE: Implementation of the Code for Information Interchange and Related Media Standards

STATUS: Current as of 2/80

REMARKS: Explains the scope of ASCII, instructions for implementation, use. Supplements FIPS-1, the definition of ASCII.

ADS USE: Convertible by ADS into general methodology for implementation of interchange code(s).

#142 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 962-1974

TITLE: Information Processing - Implementation of the 7-Bit Coded Character Set and its 7- and 8-Bit Extensions on 9-Track 12.7 mm (0.5 in.) Magnetic Tape

STATUS: Current as of 1/80

RELATED STANDARDS: None.

REMARKS: This is similar to NBS-FIPS-PUB-7, Implementation of ASCII, but specifies one medium : 9-track magnetic tape.

ADS USE: See #141, NBS-FIPS-PUB-7.

TABLE 3-1

(CONTINUED)

#143 CLASS: 1.1.2 Data Structure and Data Code
1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 4341-1978

TITLE: Information Processing - Magnetic Tape Cassette and Cartridge Labelling and File Structure for Information Interchange

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: ECMA, Standard #1

TITLE: Information Processing - Magnetic Tape Cassette and Cartridge Labelling and File Structure for Information Interchange

STATUS: Current as of 11/80

RELATED STANDARDS: ISO Project 97.15.3;
ANSI X3/B5 Project 217

REMARKS: Specifies magnetic tape cassette and magnetic tape cartridge labelling and file structure for interchangeability.

ADS USE: Possible guideline for ADS interchange media file labelling and structure.

TABLE 3-1

(CONTINUED)

#144 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-51, 2/1/78

TITLE: Magnetic Tape Cassettes for Information Interchange [3.810 mm (0.150 in.) Tape at 32 bpmm (800 bpi) Phase Encoded]

STATUS: Current as of 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3B5, ANSI X3.48-1977

TITLE: Magnetic Tape Cassettes for Information Interchange [3.810 mm (0.150 in.) Tape at 32 bpmm (800 bpi), Phase Encoded]

STATUS: Current as of 1/80

REMARKS: Specifies the physical, magnetic, and recorded characteristics of a magnetic tape cassette.

ADS USE: Candidate media hardware characteristic standard for ADS.

TABLE 3-1

(CONTINUED)

#145 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-52, 7/15/78

TITLE: Recorded Magnetic Tape Cartridge for Information Interchange, 4-Track 6.30 mm (¼ in.) (1600 bpi), Phase Encoded

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3B5, ANSI X3.56-1977

TITLE: Recorded Magnetic Tape Cartridge for Information Interchange (4-Track, 0.25 inch, 6.30 mm, 1600 bpi, 63bpmm, Phase Encoded)

STATUS: Current as of 2/80

REMARKS: Specifies format and recording requirements for representing ASCII on magnetic tape cartridge.

ADS USE: Possible ADS candidate for data transfer cartridges among users, off-line.

#146 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 3275-1974

TITLE: Information Processing - Implementation of the 7-Bit Coded Character Set and Its 7-Bit and 8-Bit Extensions on 3.81 mm Magnetic Tape Cassette for Data Interchange

STATUS: Current as of 1/80

REMARKS: Specifies implementation of what is (essentially) ASCII in the magnetic tape cassette environment.

ADS USE: ADS candidate methodology for uniform preparation of interchange cassettes.

TABLE 3-1

(CONTINUED)

#147 CLASS: 1.3.1 Hardware
2.1.1 Operations and Maintenance

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-56, 9/15/78

TITLE: Guideline for Managing Multivendor Plug-Compatible ADP Systems

STATUS: Current as of 2/80

REMARKS: Provides general assistance to Federal ADP managers responsible for the planning, acquisition, or operation of an ADP system involving multiple-source components or services.

ADS USE: Candidate ADS guidelines for members designing systems to be in contact with ADS.

TABLE 3-1

(CONTINUED)

#148 CLASS: 1.3.1 Hardware

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-60-1, 8/27/79

TITLE: I/O Channel Interface

STATUS: Being printed: 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3T9, ANSI X3.67-WD

TITLE: I/O Channel Interface

STATUS: Working Draft (BSR): 5/80

RELATED STANDARDS: ANSI document X3T9/600, Revision 2

REMARKS: Defines functional, electrical, and mechanical interface specifications for connecting computer peripheral equipment as part of automatic data processing systems.

ADS USE: Possible ADS candidate guideline for hardware interface specifications for member site use.

TABLE 3-1

(CONTINUED)

#149 CLASS: 1.1.1.4 General Vocabulary

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 2382-(1980)

TITLE: Data Processing - Vocabulary - Sections 1 through 19 (Section 08, 09, 13, 15, 17, 18 not in print)

STATUS: Continuously updated
Current as of 3/80

RELATED STANDARDS: None.

REMARKS: This vocabulary is divided into 19 sections, and each section is used as a separate standard. Available sections are:

ISO 2382/1 - Section 01:	Fundamental Terms
ISO 2382/2 - Section 02:	Arithmetic & Logic Operations
ISO 2382/3 - Section 03:	Equipment Technology (Selected Terms)
ISO 2382/4 - Section 04:	Organization of Data
ISO 2382/5 - Section 05:	Representation of Data
ISO 2382/6 - Section 06:	Preparation of Handling of Data
ISO 2382/7 - Section 07:	Digital Computer Programming
ISO 2382/10 - Section 10:	Operating Techniques and Facilities
ISO 2382/11 - Section 11:	Control, I/O, and Arithmetic Equipment
ISO 2382/12 - Section 12:	Data Media, Storage, and Related Equipment
ISO 2382/14 - Section 14:	Reliability, Maintenance, and Availability
ISO 2382/16 - Section 16:	Information Theory
ISO 2382/19 - Section 19:	____

ADS USE: Resource for defining terms for user-system communication.

TABLE 3-1

(CONTINUED)

#150 CLASS: 1.3.1 Hardware

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-61, 2/16/79

TITLE: Channel Level Power Control Interface

STATUS: Being Printed: 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3T9, ANSI X3.68-WD

TITLE: Channel Level Power Control Interface

STATUS: Working draft (BSR): 5/80

RELATED STANDARDS: ANSI document X3T9/666, Revision 2

REMARKS: Defines the functional, electrical, and mechanical interface specifications for a power control interface for use in connecting computer peripheral equipment as part of automatic data processing systems.

ADS USE: Possible ADS candidate guideline for hardware interface specifications for member site use.

TABLE 3-1

(CONTINUED)

#151 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-62, 2/16/79

TITLE: Operational Specifications for Magnetic Tape Subsystems

STATUS: Being printed: 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3T9, ANSI X3.75-____

TITLE: Operational Specifications for Magnetic Tape Subsystems

STATUS: Working Draft: 5/80
To be withdrawn.

RELATED STANDARDS: ANSI document X3T9/787, Revision 3

REMARKS: Defines operational specifications for connecting magnetic tape equipment as part of automatic data processing systems.

ADS USE: Possible ADS candidate guideline for magnetic tape peripheral equipment compatibility at member site.

TABLE 3-1

(CONTINUED)

#152 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-63, 8/27/79

TITLE: Operational Specifications for Rotating Mass Storage Subsystems

STATUS: Being printed: 2/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3T9, ANSI X3.81-____

TITLE: Operational Specifications for Rotating Mass Storage Subsystems

STATUS: Working draft: 5/80
To be withdrawn.

RELATED STANDARDS: ANSI document X3T9/848, Revision 2

REMARKS: Defines operational specifications for connecting rotating mass storage (magnetic disk) equipment as part of automatic data processing systems.

ADS USE: Possible ADS candidate guideline for rotating mass storage (magnetic disk) peripheral equipment compatibility at member site.

TABLE 3-1

(CONTINUED)

#153 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: ANSI/X3S3, ANSI X3.24-1968

TITLE: Signal Quality at Interface Between Data Processing Terminal Equipment and Synchronous Data Communication Equipment for Serial Data Transmission

STATUS: Revision being developed: 5/80

SPONSOR, DOCUMENT #, DATE: EIA Category 3, ANSI/EIA RS-334-1968, 3/67

TITLE: Signal Quality at Interface Between Data Processing Terminal Equipment and Synchronous Data Communication Equipment for Serial Data Transmission

STATUS: Current as of 1/80; see above, ANSI X3.24

REMARKS: Applicable to the exchange of serial binary data signals and timing signals across an interface between data processing terminal equipment and synchronous data communication equipment.

ADS USE: Candidate ADS signal quality standard for serial, synchronous communication.

TABLE 3-1

(CONTINUED)

#155 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.5, 1977

TITLE: Standardization of Data-Signalling Rates for Synchronous Data Transmission in the General Switched Telephone Network

STATUS: Current as of early 1977
To be revised: 11/80

REMARKS: See #017, NBS-FIPS-PUB-37

ADS USE: Possible methodology for establishment of ADS candidate standards for data transmission rates.

TABLE 3-1

(CONTINUED)

#156 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: CCITT/SG XVII, CCITT Recommendation V.6, 1977

TITLE: Standardization of Data-Signaling Rates for Synchronous Data Transmission of Leased Telephone-Type Circuits

STATUS: Current as of early 1977
To be revised: 11/80

REMARKS: See #154, NBS-FIPS-PUB-37

ADS USE: Possible methodology for establishment of ADS candidate standards for data transmission rates.

#157 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ANSI/X3B8, ANSI X3.82-1980

TITLE: One-Sided Single-Density Unformatted 5.25 Inch Flexible Disk Cartridge for 3979 BPR Use

STATUS: Published: 2/6/81

RELATED STANDARDS: ANSI document X3B8/78-150.

REMARKS: Provides early standard for 5¼-inch single-sided magnetic flexible disks ("minifloppies").

ADS USE: Possible candidate ADS standard for smaller-dimensional magnetic flexible disk interchange media.

TABLE 3-1

(CONTINUED)

#158 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: ANSI/X3B1, ANSI X3.40-1976

TITLE: Unrecorded Magnetic Tape for Information Interchange (9-Track 200 and 800 cpi, NRZI, and 1600 cpi, PE)

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 1864-1975

TITLE: Information Processing - Unrecorded 12.7 mm (0.5 in.) Wide Magnetic Tape for Information Interchange - 8 and 32 rpmm (200 and 800 rpi), NRZI, and 63 rpmm (1600 rpi), Phase Encoded

STATUS: Current as of 1/80

REMARKS: Provides specifications for ½-inch wide unrecorded magnetic tape and reels for digital recording for information interchange.

ADS USE: Possible ADS magnetic tape specification guideline for users. Probable de facto industry norm.

#159 CLASS: 1.1.3 Data Content

SPONSOR, DOCUMENT #, DATE: ANSI/X3L5, ANSI X3.42-1975

TITLE: Representation of Numeric Values in Character Strings for Information Interchange

STATUS: Current as of 5/80

REMARKS: Specifies the syntax for representations of numeric values.

ADS USE: Possible ADS guideline for uniform numeric value representation.

TABLE 3-1

(CONTINUED)

#160 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 4873-1979

TITLE: Information Processing - 8-Bit Coded Character Set for Information Interchange

STATUS: Current as of 1/80

REMARKS: 8-bit coded character set.

ADS USE: Possible 8-bit interchange code for ADS members: guideline.

#161 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ANSI/X3B7, ANSI X3.58-1977

TITLE: Unrecorded Eleven-Disk Pack, General, Physical, and Magnetic Requirements

STATUS: Current as of 5/80

REMARKS: Specifies the general, physical, and magnetic characteristics required for physical interchange of magnetic eleven-disk packs for use in electronics data-processing systems.

ADS USE: Possible ADS standard for rigid disk-pack interchange media.

TABLE 3-1

(CONTINUED)

#162 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ANSI/X3B7, ANSI X3.46-1974

TITLE: Unrecorded Magnetic Six-Disk Pack (General, Physical, and Magnetic Characteristics)

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 2864-1974

TITLE: Interchangeable Magnetic Six-Disk Pack - Physical and Magnetic Characteristics

STATUS: Current as of 1/80

RELATED STANDARDS: #163, ISO 3561-1976, Track Format for this disk pack.

REMARKS: Specifies the general, and magnetic requirements for interchangeability of the magnetic six-disk pack between disk storage drives and associated information processing systems.

ADS USE: Possible ADS standard for rigid disk-pack interchange media.

TABLE 3-1

(CONTINUED)

#163 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 3561-1976

TITLE: Information Processing - Interchangeable Magnetic Six-Disk Pack - Track Format

STATUS: Current as of 1/80

RELATED STANDARDS: #162, Six-Disk Pack

REMARKS: Specifies track format for interchangeable magnetic six-disk pack.

ADS USE: Possible ADS standard for formatting rigid disk-pack interchange media.

#164 CLASS: 1.1.1 Data Definition

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-34, 1/1/75

TITLE: Guide for Use of International System of Units (SI) in Federal Information Processing Standards Publications

STATUS: Current as of 2/80

REMARKS: Establishes requirements for use of SI in FIPS PUBS.

ADS USE: Possible ADS candidate recommended practice for off-line member communication.

TABLE 3-1

(CONTINUED)

#165 CLASS: 1.1.1 Data Definition

SPONSOR, DOCUMENT #, DATE: ANSI/X3L8, ANSI X3.50-1976

TITLE: Representations for U.S. Customary, SI, and Other Units to be Used in Systems with Limited Character Sets

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 2955-1977

TITLE: Information Processing - Representation of SI and Other Units for Use in Systems with Limited Character Sets

STATUS: Current as of 1/80

REMARKS: Provides representations for units of weights and measures for use in data interchange systems with limited graphic character sets.

ADS USE: Possible ADS candidate recommended practice for off-line member communication.

TABLE 3-1

(CONTINUED)

#166 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 3562-1976

TITLE: Information Processing - Interchangeable Magnetic Single-Disk Cartridge (Top Loaded) - Physical and Magnetic Characteristics

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: ANSI/X3B7, ANSI X3.71-____

TITLE: General, Physical, and Magnetic Characteristics of Single-Disk Cartridge (Top Loaded)

RELATED STANDARDS: ANSI document X3B7/548, Revised;
#167, ISO 3563-1976, Track format;
ANSI (working) draft X3.76 - ____, Supplement to ANSI X3.71;
ANSI Document X3B7/589.

REMARKS: Provides the general, physical, and magnetic requirements for interchangeability of the top loading magnetic single-disk cartridge.

ADS USE: Possible ADS standard for rigid disk-cartridge interchange media.

TABLE 3-1

(CONTINUED)

#167 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 3563-1976

TITLE: Information Processing - Interchangeable Magnetic Single-Disk Cartridge (Top Loaded) - Track Format

STATUS:

RELATED STANDARDS: #166, ISO 3652-1976, Cartridge Characteristics

REMARKS: Specifies track format for top loaded magnetic single-disk cartridge.

ADS USE: Possible ADS standard for formatting rigid disk-cartridge interchange media.

#168 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ANSI/X3B7, ANSI X3.89-____

TITLE: Unrecorded Single Disk Double Density Cartridge (Front Load)

STATUS: Current as of 5/80

RELATED STANDARDS: ANSI document X3B7/621

REMARKS: Provides general interchangeability requirements of front-loading double density magnetic single-disk cartridge. Similar to #169, ANSI X3.52-1976.

ADS USE: Possible ADS standard for rigid disk-cartridge interchange media.

TABLE 3-1

(CONTINUED)

#169 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ANSI/X3B7, ANSI X3.52-1976

TITLE: Unrecorded Single-Disk Cartridge (Front Loading, 2200 bpi), General, Physical, and Magnetic Requirements

STATUS: Current as of 5/80

REMARKS: Provides the general, physical and magnetic requirements for interchangeability of the front loading magnetic single-disk cartridge.

ADS USE: Possible ADS standard for rigid disk-cartridge interchange media.

#170 CLASS: 2.3.1 Data Communications Interface
2.2.3 User-to-User Message Service

SPONSOR, DOCUMENT #, DATE: ANSI/X3S33, ANSI X3.57-1977

TITLE: Structure for Formatting Message Headings for Information Interchange Using the American National Standard Code for Information Interchange for Data Communication System Control

STATUS: Current as of 5/80

REMARKS: Specifies information items used to construct a message heading and prescribes the sequence of these items. It is intended to satisfy the message heading format requirements in #105, ANSI X3.28-1976, User Control Characters of ASCII in Specified Data Communication Links.

ADS USE: Possible ADS guideline for message heading construction in user-to-user message service.

TABLE 3-1

(CONTINUED)

#171 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ANSI/X3B7, ANSI X3.63-____

TITLE: Unrecorded Twelve-Disk Pack for Information Interchange

STATUS: (Working) Draft: 5/80

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 4337-1977

TITLE: Information Processing - Interchangeable Magnetic Twelve-Disk Pack (100 Megabytes)

STATUS: Current as of 1/80

RELATED STANDARDS: ANSI Document X3B7/499.

REMARKS: Specifies general, physical, and magnetic characteristics of the magnetic twelve-disk pack (ISO: 100 megabytes).

ADS USE: Possible ADS standard for magnetic rigid-disk interchange media.

#172 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ANSI/X3B7, ANSI X3.84-____

TITLE: Unformatted Twelve-Disk Pack

STATUS: (Early Working) Draft: 5/80

RELATED STANDARDS: ANSI Document X3B7/610.

REMARKS: Specifies other characteristics of unformatted magnetic twelve-disk pack for information interchange.

ADS USE: Possible ADS standard for unformatted multiple-disk packs.

TABLE 3-1

(CONTINUED)

#173 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: ANSI/X3B1, ANSI X3.55-1977

TITLE: Unrecorded Magnetic Tape Cartridge for Information Interchange (0.250 inch, 1600 bpi, Phase Encoded)

STATUS: Current as of 5/80

RELATED STANDARDS: None.

REMARKS: Provides minimum specifications and requirements for 3.810 mm (0.150 in.) magnetic tape critridge for data interchange between information processing systems using ASCII.

ADS USE: Possible ADS guideline for magnetic tape cartridge specifications.

#174 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 4057-1979

TITLE: Information Processing - Data Interchange on 6.30 mm (0.25 in.) Magnetic Tape Cartridge, 63bpmm (1600 bpi), Phase Encoded

STATUS: Current as of 1/80

REMARKS: See #145, ANSI X3.56-1977, Recorded Tape Cartridge.

ADS USE: Possible ADS interchange medium standard.

TABLE 3-1

(CONTINUED)

#175 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 1155-1978

TITLE: Information Processing - Use of Longitudinal Parity to Detect Errors in Information Messages

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: CSA, Z243.10-1974

TITLE: Information Processing - Use of Longitudinal Parity to Detect Errors in Information Messages

STATUS: Identical to ISO 1155-1973
Current as of 4/77

RELATED STANDARDS: NBS-FIPS-PUBS 16-1 and 17-1;
ANSI X3.[illegible] and X3.16;
FED-STD-[illegible]0 and 1011.

REMARKS: Specifies longitudinal parity error-checking method in message transmission.

ADS USE: Possible ADS guideline for signal quality maintenance.

TABLE 3-1

(CONTINUED)

#176 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 1177-1973

TITLE: Information Processing - Character Structure for Start/Stop and Synchronous Transmission

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: CSA, Z243.11-1974

TITLE: Information Processing - Character Structure for Start/Stop and Synchronous Transmission

STATUS: Current as of 4/77

RELATED STANDARDS: NBS-FIPS-PUBS 16-1 and 17-1;
ANSI X3.15 and X3.16;
FED-STDS 1010 and 1011.

REMARKS: Specifies character structure start/stop and synchronous transmission.

ADS USE: Possible ADS guideline for signal quality maintenance.

TABLE 3-1

(CONTINUED)

#177 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 1745-1975

TITLE: Information Processing - Basic Mode Control Procedures for Data Communications Systems

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: CSA, Z243.13-1975

TITLE: Information Processing - Basic Mode Control Procedures for Data Communications Systems

STATUS: Current as of 4/77

REMARKS: Specifies the basic procedures for data communication mode control.

ADS USE: Possible ADS guideline framework for writing and mode control procedures for the member-supported data communications systems.

#178 CLASS: 2.3 Data Transfer Service

SPONSOR, DOCUMENT #, DATE: ANSI/X3L2, ANSI X3.64-1979

TITLE: Additional Controls for Use with the American National Standard Code for Information Interchange (ASCII)

STATUS: Current as of 5/80

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-86, 1/29/81

TITLE: Additional Controls for Use with the American National Standard Code for Information Interchange (ASCII)

STATUS: Being printed: 2/81

REMARKS: Provides a general set of controls to accommodate the foreseeable needs in diverse information interchange applications: interactive terminals, line printers, COM devices, and other I/O and auxiliary devices.

ADS USE: Possible ADS standard (guideline for writing) for ADS member output device control specifications.

TABLE 3-1

(CONTINUED)

#179 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: ANSI/EIA, RS-352-1968 (R1978)

TITLE: One Half Inch (12.7mm) Magnetic Tape Reel for Computer Use (Requirements for Interchange)

STATUS: Current as of 5/80

REMARKS: Covers the essential reel dimensions for successful interchangeability of magnetic tape reels.

ADS USE: May be de facto recommended practice at present.

#180 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: ANSI/EIA, RS-404-1978

TITLE: Start-Stop Signal Quality Between Data Terminal Equipment and Non-Synchronous Data Communication Equipment

STATUS: Current as of 5/80

REMARKS: Specifies quality of serial binary signals and timing signals across the interface between data processing terminal equipment and synchronous communication equipment.

ADS USE: Possible ADS signal quality measurement/monitor guideline for member sites.

TABLE 3-1

(CONTINUED)

#181 CLASS: 2.3.1 Data Communications Interface

SPONSOR, DOCUMENT #, DATE: CCITT/SG VII, CCITT Recommendation X.25, 1977

TITLE: Interface Between Data Terminal Equipment (DTE) and Data Circuit - Terminating Equipment (DCE) for Terminals Operating in the Packet Mode on Public Data Networks

STATUS: Current as of early 1977
Revision due: 11/80

SPONSOR, DOCUMENT #, DATE: NTIA/FTSP, Proposed FED-STD-1041

TITLE: Data Terminal Equipment to Data Communication Equipment Interface for Packet Switched Telecommunications Networks

STATUS: Comment status - release for public comment: 4/80
Proposed approval for publication: 5/81
Proposed joint publication by GSA as FIPS and FED-STD: 9/81

SPONSOR, DOCUMENT #, DATE: ANSI/X3S3 projects on X.25

TITLE: Interface Between Data Terminal Equipment (DTE) and Data Circuit-Terminating Equipment (DCE) for Terminals Operating in the Packet Mode on Public Data Networks

STATUS: Draft, under development: 11/80

RELATED STANDARDS: FED-STD-1003;
FED-STD-1013;
ANSI and ISO Packet-Switched Operations Projects

REMARKS: Provides general interface for all packet-switched mode operations on public data networks. The proposed FED-STD is directly adopted from CCITT Recommendation X.25 for federal commonality of data communications interfaces.

ADS USE: Possible ADS candidate standard for interfaces between/among members providing packet-switched network operations.

TABLE 3-1

(CONTINUED)

#182 CLASS: 1.4.1.2 Programming Language

SPONSOR, DUCMENT #, DATE: ANSI/X3J13, ANSI X3.74-____

TITLE: Programming Language PL/I Subset (General Purpose)

STATUS: In early draft: 5/80

RELATED STANDARDS: ANSI X3J13 PL/I Projects; (#043, ANSI X3.53-1976, "full" PL/I)

REMARKS: Provides a general purpose subset of the full PL/I language specification.

ADS USE: Possible supported subset of PL/I on smaller facilities of ADS members.

#183 CLASS: 2.3 Data Transfer Service

SPONSOR, DOCUMENT #, DATE: ANSI/X3T9, ANSI X3.90-____

TITLE: Small Computer to Peripheral Bus

STATUS: In early draft: 5/80

RELATED STANDARDS: ANSI document X3T9/940, Revision 4; IEEE 488-type bus projects.

REMARKS: Minicomputer-to-peripheral bus considerations.

ADS USE: Possible ADS candidate methodology for small-computer "new technology" data bus architecture.

TABLE 3-1

(CONTINUED)

#184 CLASS: 1.3 Computational Facility
2.3 Data Transfer Service

SPONSOR, DOCUMENT #, DATE: ANSI/X3T9, ANSI X3.91-____

TITLE: Storage Module Interfaces

STATUS: In early draft: 5/80

RELATED STANDARDS: ANSI document X3T9/1073

REMARKS: Early stages. Defines interfaces between storage modules and electronic information processing equipment.

ADS USE: Possible candidate for methodology of defining storage module interfaces among ADS members.

#185 CLASS: 1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: ANSI/X3B5, ANSI X3.72-____

TITLE: Parallel Recorded Magnetic Tape Cartridge (¼-inch wide)

STATUS: In early draft: 5/80

RELATED STANDARDS: ANSI document X3B5/77-33.

REMARKS: Early stages. Specifies format parallel recording on ¼-inch wide magnetic tape cartridges.

ADS USE: Possible ADS candidate standard for this form of recovering on tape cartridge-type media.

TABLE 3-1

(CONTINUED)

#186 CLASS: 2.3.2.1 Physical Layer

SPONSOR, DOCUMENT #, DATE: ISO/TC97, ISO 2110-1980

TITLE: Data Communications - Data Terminal and Data Communication Equipment - Interchange Circuits - Assignment of Connector Pin Numbers

STATUS: Current as of 1/80

SPONSOR, DOCUMENT #, DATE: EIA Category 3, EIA RS-232-C, 8/69

TITLE: Interface Between Data Terminal Equipment and Data Communication Equipment Using Serial Binary DAta Interchange

STATUS: (Current as of 1/80)
Superseded by RS-449: 8/79
Adopted by DoD: 3/79

RELATED STANDARDS: Similar standards:
(ISO 2110-1972 is very similar to) EIA RS-232-C, 8/69
CCITT Recommendations V.24, V.28.
New standards:
BS 4505, pt. 5;
EIA RS-449
FED-STD-1031

REMARKS: Provides description of electrical, mechanical, and signed interface: assignment of connector pin numbers to functional control lines in data terminal to data communication equipment interfaces.

ADS USE: Older universal interface. Superseded in Federal procurement by RS-449, but still extremely widespread among potential low data rate ADS users.

TABLE 3-1

(CONTINUED)

#187 CLASS: 1.1.4.2 Rotating Magnetic Media

SPONSOR, DOCUMENT #, DATE: ANSI/X3B8, ANSI X3.73-1980

TITLE: Single-Sided Flexible Disk (6631 BPR) for Information Interchange

STATUS: Current as of 5/80

REMARKS: Provides early standard for 8-inch single-sided magnetic flexible disks.

ADS USE: Possible candidate ADS standard for magnetic flexible disk interchange media.

TABLE 3-1

(CONTINUED)

#188 CLASS: 1.1.1.2 Time Definition

SPONSOR, DOCUMENT #, DATE: NASA/GSFC, (X-560-63-2) Aerospace Date Systems Standard 5.6, 12/16/80

TITLE: Parallel Grouped Binary Time Code for Space and Ground Applications-PB5

STATUS: Preliminary Version: 12/16/80
Approval Pending

RELATED STANDARDS: Previous binary time codes PB1 - PB4

REMARKS: This time code provides a standardized byte-oriented format for various user needs. It provides time resolution from the second down to the nanosecond, and archival and retrieval date unambiguity within 27.379 years (the repetition cycle).

ADS USE: This time code may be an ADS candidate standard for applications data time definition.

TABLE 3-1

(CONTINUED)

#189 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NASA JPL, Document 663-11, 1/15/81

TITLE: Multimission End-to-End Information System (MEIS) "Standard Format Data Unit" Development Guidelines and Standards

STATUS: Preliminary Review Draft
Draft-1: 1/15/81

RELATED STANDARDS: Supersedes JPL Standard Format Data Record (10/80)

REMARKS: This unified set of guidelines and standards describes a global type of standard message formatting protocol, the Standard Format Data Unit (SFDU) is to be used in the JPL Multimission End-to-End Information System networks, with emphasis on storage, retrieval, and processing activities.

ADS USE: Basis for an ADS candidate guideline for a preferred ADS standard exchange data unit.

#190 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NASA JPL, NASA Planetary Program Flight/ Ground Data System Standards, Section 2.3

TITLE: Telemetry Format Standard

STATUS: Revision 5 Approved: 6/1/77

RELATED STANDARDS:

REMARKS: This standard is primarily used to define the frame and word characteristics and structure of the telemetry format for data transmitted from the spacecraft to Earth.

ADS USE: This standard may provide an ADS guideline for defining frame and word characteristics and structure of data format for data storage.

TABLE 3-1

(CONTINUED)

#191 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NASA/GSFC, (X-560-63-2) Standard 3.3, 3/23/79

TITLE: Aerospace Data Systems Standards:
Space Data Packetization Standard

STATUS: Preliminary: 3/23/79
Approval Pending

RELATED STANDARDS: NASA JPL Packet Telemetry Standard:
Document 663-9;
NEEDS Guideline for Packet Telemetry

REMARKS: This guideline is intended to direct the development of a standard for aerospace data. It describes a set of specifications that define the data structures for the transmission of space-acquired observational and/or housekeeping data from the primary sensor instruments to the user in a form commonly referred to as the packet telemetry mode.

ADS USE: Possible ADS guideline for a format for data interchange and/or storage, adapted from the identifying and routing elements in the packet header and body.

TABLE 3-1

(CONTINUED)

#192 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NASA JPL, Document 663-9, 2/18/81

TITLE: JPL Packet Telemetry Standard

STATUS: Working Copy: 2/18/81

RELATED STANDARDS: NASA/GSFC Space Data Packetization Standard 3.3; NEEDS Guideline for Packet Telemetry

REMARKS: This standard describes a set of specifications that define data structures to be included in the transmission of deep-space-acquired data from sensor instruments to the user in the packet telemetry mode.

ADS USE: Possible ADS guideline for a format for data interchange and/or storage, adapted from the identifying and routing elements in the packet header and body.

TABLE 3-1

(CONTINUED)

#193 CLASS: 1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: NASA End-to-End Data System (NEEDS), Guideline, 2/18/81

TITLE: NEEDS Guideline for Packet Telemetry

STATUS: Working Draft: 2/18/81

RELATED STANDARDS: NASA JPL Packet Telemetry Standard: Document 663-9; NASA/GSFC Space Data Packetization Standard 3.3

REMARKS: This guideline for the NASA End-to-End Data System (NEEDS) is upward-compatible with respect to the two existing JPL and GSFC packet standards. That is, data in either standard will conform to the NEEDS guideline, but not necessarily to one another.

ADS USE: Possible ADS guideline for a format for data interchange and/or storage, adapted from the identifying and routing elements in the packet header and body.

TABLE 3-1

(CONTINUED)

#194 CLASS: 1.2.1 Computer Program Documentation

SPONSOR, DOCUMENT #, DATE: NASA JPL, IOM 366.18/81-XX, 4/24/81

TITLE: Oceanic Pilot System Programming Standards

STATUS: Draft Document as of 4/24/81

REMARKS: This document constitutes a set of guidelines to be used for programming in the Oceanic Pilot System (OPS). The guidelines are intended for use on the Digital Equipment Corporation machines which make up the initial Oceanic Pilot configuration, as well as other machines which may come on line at a later time.

ADS USE: This programming standard may be a candidate guideline for ADS specifying minimum points of programming style to be followed for programmer-to-programmer ease in interchange of applications software.

#195 CLASS: 1.1.1 Data Definition

SPONSOR, DOCUMENT #, DATE: IEEE, Task 854, 3/81

TITLE: Floating-Point Representation Project

STATUS: Working group has been organized: 3/81

RELATED STANDARDS: IEEE Task P754, Draft 8.0, Standard for Binary Floating-Point Arithmetic

REMARKS: This proposed standard will specify a family of representations of floating-point numbers. It is related to the Standard for Binary Floating-Point Arithmetic (in public-comment stage), but no working document exists as of 6/81.

ADS USE: Possible future ADS-wide floating-point representation for data interchange.

TABLE 3-1

(CONTINUED)

#196 CLASS: 1.1.1 Data Definition
1.1.2 Data Structure and Data Code

SPONSOR, DOCUMENT #, DATE: ISO/TC97/SC14/N261 , 11/80
ISO DP 7352

TITLE: Guidelines for the Organization and Representation of Data Elements for Data Interchange

STATUS: Draft Proposal: 11/80

RELATED STANDARDS: Related ISO/TC97/SC14 Projects on representation of data elements

REMARKS: This standard provides guidelines on the manner in which data to be interchanged can be identified, defined, represented, and structured. It defines data structures, provides examples, and outlines general conventions to be used for formalized data interchange.

ADS USE: Possible ADS guideline for setting up data elements for interchange of applications data.

TABLE 3-1

(CONTINUED)

#197 CLASS: 1.1.2 Data Structure and Data Code
1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: Landsat Ground Station Operators' Working Group/Landsat Tape Standards Group (LGSOWG/LTSG), International Format, 4/81

TITLE: The Standard Family of CCT Formats

STATUS: Current as of 6/81

RELATED DOCUMENTS: LGSOWG/LTSG, CCB-CCT-0001A, 10/16/78, "User Computer Compatible Tape (CCT) Format Family Requirements - Final Report;"
LGSOWG/LTSG, CCB-CCT-0002A, 8/28/79, "The CCT Family of Tape Formats - Final Report;"
#198, Landsat-D User CCT Tape Format;
#201, Standard Format for the Transfer of Geocoded Polygon Data.

REMARKS: This standard family provides a common framework into which many types of remote sensing data can fit, eases data interchange and access, allows the user to communicate by text on magnetic tape, and provides local user tailoring options.

ADS USE: Possible candidate ADS standard for tape formats for interchange of remote sensing data.

TABLE 3-1

(CONTINUED)

#198 CLASS: 1.1.2 Data Structure and Data Code
1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: Landsat Ground Station Operators' Working Group/ Landsat Tape Standards Group, FOR-LSD-0001A, 8/28/79

TITLE: Landsat-D User CCT Tape Format

STATUS: Final report: 8/28/79

RELATED STANDARDS: #197, The Standard Family of CCT Formats; #201, Standard Format for the Transfer of Geocoded Polygon Data.

REMARKS: This interface control document defines the data format for Computer Compatible Tapes (CCT's) that are produced by the Data Management System at the Goddard Space Flight Center. It defines the Landsat-D CCT format, and includes the CCT Family of Tape Formats super-structure conventions.

ADS USE: Possible candidate ADS standard for tape formats for interchange of remote sensing data.

TABLE 3-1

(CONTINUED)

#199 CLASS: 2.1.4.3 Access Security

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-83, 9/29/80

TITLE: Guideline on User Authentication Techniques for Computer Network Access Control

STATUS: Being printed: 2/81

RELATED STANDARDS: #207, NBS-FIPS-PUB-73

REMARKS: This document provides guidance in the selection and implementation of techniques for authenticating the users of remote terminals in order to safeguard against unauthorized access to computers and computer networks.

ADS USE: Possible ADS guideline for member selection and implementation of access control techniques.

#200 CLASS: 2.1.5 Performance Evaluation

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-57, 8/1/78

TITLE: Guidelines for the Measurement of Interactive Computer Service Response Time and Turnaround Time

STATUS: Current as of 2/81

REMARKS: This document provides a methodology for measuring interactive computer service response time and turnaround time. It addresses interactive computer utilization characterized by an interchange of input and output between a computer and a person using a keyboard terminal, and describes functional performance measures that can be employed.

ADS USE: Possible candidate ADS guideline for measurement of service response and computer use at each member site.

TABLE 3-1

(CONTINUED)

#201 CLASS: 1.1.2 Data Structure and Data Code
1.1.4.1 Magnetic Tape

SPONSOR, DOCUMENT #, DATE: Government of Canada/ Spatial Data Transfer Committee (SDTC), FOR-SDP-0001A, 12/79

TITLE: Standard Format for the Transfer of Geocoded Polygon Data

STATUS: Released as Canada Centre for Remote Sensing (CCRS) research report 79-3: 12/79

RELATED STANDARDS: #197, The Standard Family of CCT Formats; #198, Landsat-D User CCT Tape Format.

REMARKS: This report describes a standard format for the transfer of geocoded information in spatial data polygon files by computer compatible tape (CCT). It conforms to "The CCT Family of Tape Formats" superstructure developed by the Landsat Ground Station Operators' Working Group (LGSOWG).

ADS USE: Possible candidate ADS standard for tape format for transfer of geocoded polygon data (remote sensing data based on earth surface areas of uniform characteristics.

#202 CLASS: 2.3.2 Data Communications Protocol

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/HLNP-80-3, 6/80

TITLE: Formal Description Techniques for Network Protocols

STATUS: Draft report: 6/80

RELATED STANDARDS: #203, Formal Methods for Communication Protocol Specification

REMARKS: This report contains a set of criteria for evaluating a formal description technique, the unambiguous formalism which serves as a protocol design specification.

ADS USE: Possible candidate ADS guideline for formal description of ADS-specific network protocols.

TABLE 3-1

(CONTINUED)

#203 CLASS: 2.3.2 Data Communications Protocol

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/HLNP-80-7, 6/80

TITLE: Formal Methods for Communication Protocol Specification

STATUS: Draft report: 6/80

RELATED STANDARDS: #202, Formal Description Techniques for Network Protocols

REMARKS: This document represents an exploratory effort in studying methods for specifying and verifying computer communications protocols. It should be of interest to anyone concerned with design, analysis, procurement, and evaluation of computer networks and communications protocols.

ADS USE: Possible ADS guideline for formal specification and verification of candidate ADS communications protocols.

TABLE 3-1

(CONTINUED)

#204 CLASS: 2.3.2.5 Session Layer

SPONSOR, DOCUMENT #, DATE: NBS/ICST, Report No. ICST/HLNP-81-2, 3/81

TITLE: Specification of the Session Protocol

STATUS: Draft report: 3/81
Expected publication in the Federal Register for public comment: 4/81
Expected publication as a FIPS: 1981

RELATED DOCUMENTS: #071, ISO/TC97/SC16/537, Rev.;
ANSI and ISO Reference Model for Open Systems Interconnection Layer 5 Protocol Projects in ANSI/X3T5;
NBS/ICST Report No. ICST/HLNP-80-1, 3/80, "Features of the Transport and Session Protocols;"
NBS/ICST Report No. ICST/HLNP-80-2, 3/80, "Service Specifications of the Transport and Session Protocols;"
NBS/ICST Report No. ICST/HLNP-80-5, 6/80, "Formal Specification of the Transport and Session Protocols."

REMARKS: This protocol will emcompass functions commonly referenced in the fifth layer of the ISO standard Reference Model for Open Systems Interconnection.

ADS USE: Possible candidate ADS session layer protocol for a wide variety of systems which might be ADS members.

TABLE 3-1

(CONTINUED)

#205 CLASS: 1.1.4.4 Microform

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-82, 9/26/80

TITLE: Guideline for Inspection and Quality Control for Alphanumeric Computer-Output Microforms (COM)

STATUS: Being printed: 2/81

RELATED STANDARDS: #133, NBS-FIPS-PUB-54

REMARKS: This document provides basic information on the questions associated with generating microforms by computers, and describes test procedures to ensure that the output is of high quality.

ADS USE: Possible candidate ADS guideline for generation of computer-output microforms for data interchange.

#206 CLASS: 1.1.4.1 Magnetic Tape
2.1.6 Management-Oriented Documentation
2.3.3 Media Transfer

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-53, 4/1/78

TITLE: Transmittal Form for Describing Computer Magnetic Tape File Properties

STATUS: Current as of 2/80

RELATED STANDARDS: #110, NBS-FIPS-PUB-20

REMARKS: This document provides a standard form (SF-277) for Federal agencies to use in documenting the physical properties and characteristics of a recorded magnetic tape file.

ADS USE: Possible candidate ADS standard, with suitable modification, for documentation of physical properties and characteristics of a magnetic tape file needed by a recipient discipline used to process the tape.

TABLE 3-1

(CONTINUED)

#207 CLASS: 2.1.4 Security, Access

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-73, 6/30/80

TITLE: Guidelines for Security of Computer Applications

STATUS: Current as of 2/81

RELATED STANDARDS: #009, NBS-FIPS-PUB-65

REMARKS: This document describes the different security objectives for a computer application, explains the control measures that can be used, and identifies the decisions that should be made at each stage of the life cycle of a sensitive computer application.

ADS USE: Possible ADS guideline for setting up the security procedures for a member using sensitive computer applications.

#208 CLASS: 2.1.4.2 Data Security

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-74, (no date)

TITLE: Guidelines for Implementing and Using the NBS Data Encryption Standard (DES)

STATUS: Pending final approval by the ICST Director: 2/81

RELATED STANDARDS: #019, NBS-FIPS-PUB-46, Data Encryption Standard

REMARKS: These implementation and use guidelines for the NBS Data Encryption Standard should be released in 1981.

ADS USE: Possible ADS guideline for implementation and use of NBS-FIPS-PUB-46, if this standard is selected for ADS use.

TABLE 3-1

(CONTINUED)

#209 CLASS: 1.3 Computational Facility
2.1 Administrative Service

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-75, 9/18/80

TITLE: Guideline for Constructing Benchmarks for ADP System Acquisition

STATUS: Being printed: 2/81

RELATED STANDARDS: #137, NBS-FIPS-PUB-42-1

REMARKS: This document describes a practical, step-by-step procedure for constructing benchmarks for use during the acquisition of ADP systems. Ten steps in the benchmark construction process are identified, involving such areas as: selection of the benchmark team, workload analysis and forecasting, construction of the benchmark mix, and documentation of the benchmark package.

ADS USE: Candidate guideline for ADS member which desires to construct benchmarks for use during ADS system acquisition.

TABLE 3-1

(CONTINUED)

#210 CLASS: 1.1.1.1 Data Dictionary
2.2.1.2 Locator of Data Sets and Sources

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-76, 8/20/80

TITLE: Guideline for Planning and Using a Data Dictionary System

STATUS: Current as of 2/81

RELATED STANDARDS: #001, NBSIR 80-2115, Prospectus for Data Dictionary System Standard

REMARKS: This guideline describes the capabilities of a data dictionary system (DDS), discusses selection considerations, and provides guidance for pre-implementation planning, implementation, and operational use of the DDS.

ADS USE: Possible ADS guideline, with suitable modifications, for the selection and implementation of a data dictionary system.

TABLE 3-1

(CONTINUED)

#211 CLASS: 2.3.2.2 Data Link Layer

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-78, 9/26/80

TITLE: Guideline for Implementing Advanced Data Communication Control Procedures (ADCCP)

STATUS: Being printed: 2/81

RELATED STANDARDS: #015, NBS-FIPS-PUB-71, ADCCP

REMARKS: This document provides guidance for selecting an ADCCP class of procedures. The use of ADCCP is required under certain conditions specified in NBS-FIPS-PUB-71.

ADS USE: Possible ADS guideline for implementing ADCCP, if this set of data link layer procedures is selected for ADS use.

#212 CLASS: 2.1 Administrative Service

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-80, 12/19/80

TITLE: Guide for Implementation of Federal Information Processing Standards (FIPS) in the Acquisition and Design of Computer Products and Services

STATUS: Being printed: 2/81

REMARKS: This document provides basic information about the FIPS that are in effect and identifies the computer products and services to which they may apply.

ADS USE: Possible ADS guideline for creating an implementation guide for the ADS standards handbook series.

TABLE 3-1

(CONCLUDED)

#213 CLASS: 2.1.4.2 Data Security

SPONSOR, DOCUMENT #, DATE: NBS/ICST, NBS-FIPS-PUB-81, 12/2/80

TITLE: Data Encryption Standard (DES) Modes of Operation

STATUS: Being printed: 2/81

RELATED STANDARDS: #019, NBS-FIPS-PUB-46, Data Encryption Standard

REMARKS: This document defines four modes of operation for the DES which may be used in a wide variety of applications. The modes specify how the data will be encrypted (cryptographically protected) and decrypted (returned to original form). The modes included are the Electronic Codebook (ECB) mode, the Cipher Block Chaining (CBC) mode, the Cipher Feedback (CFB) mode, and the Output Feedback (OFB) mode.

ADS USE: Possible ADS guide;ine for operating with the Data Encryption Standard, if this standard is selected for ADS use.

4. CONCLUSIONS AND RECOMMENDATIONS

This initial ADS standards report has been updated to identify data processing and data communications standards issued by organizations external to and within NASA. Several hundred standards were initially identified by this process. MITRE selected a subset of these as being tentatively applicable to ADS. Those standards were placed within a logical framework for the NASA OSTA Applications Data Service (ADS) developed for this purpose.

The selected standards are those which with or without modifications are suitable for use by the ADS network, its members, or its users. They constitute a baseline upon which to build a comprehensive set of ADS standards. The actual extent of usefulness of each candidate standard for ADS is suggested in Table 3-1, but has not been finally determined, since the planned ADS standards requirements analysis has not yet been conducted. When this analysis has been completed, the most suitable use of each standard in the table can then be determined.

Of the three areas of particular interest to ADS, data cataloging, data structures, and data communications protocols, only the last has been a topic of extensive activity by standards organizations. Close and cooperative development continues in defining reference models for open systems interconnection (distributed data systems). Work in formulating the standard protocols for communication among the function layers has been intensive. The main activities in the United States in this field are being coordinated by the NBS Federal Computer Network Protocol Standards Program. Participation in these activities is also being conducted by ANSI, ISO, ECMA, CCITT, EIA, IEEE, DCA, and several universities.

Standards for data vocabularies and indexing have existed for several years. Proposed standards for data dictionaries have been initiated within the last three years. Data base management standardization recently received its start at the federal level. Issues related to data cataloging standards have only begun receiving attention at the voluntary and governmental (federal) level.

Similarly, data structures have only recently been an area of standardization by standards bodies. Often, at the physical level, data structures have been implied by a particular manufacturer's hardware requirement or architecture. Many such

structures (such as the 32-bit word) exist as current practices, but are not current subjects of standardization. Logical data structures have also arisen as adjuncts of convenience from the major high- and low-level data processing languages (FORTRAN, COBOL, PL/I, assembly languages). Work in common command languages, leading toward machine-independent executives, is proceeding at NBS and NASA, as well as in CODASYL.

It is recommended that the following actions, which build upon the current effort, be pursued:

1. Continue monitoring federal, national, and international standards development; maintain and update Table 3-1.

2. Design an ADS standards development process for OSTA, based on existing practices but tailored to ADS requirements which are to be determined in the requirements analysis.

3. Create and maintain a strong OSTA/ADS standards committee to foster interpilot sharing concerning common development issues.

4. Identify and document candidate ADS methodologies from the three current OSTA Pilot Data Systems (Atmospheres, Earth Resources, and Oceans) relative to data catalog and data set structure, organization, format, and content, and computer network protocols.

5. Identify a representative number of planned and prospective ADS users from the ADS Pilots and key OSTA programs; survey the identified user community and define and document requirements for ADS-related standards; encourage active user input into OSTA/ADS standards activities.

6. Develop and document criteria and procedures which will be used to evaluate standards proposed for ADS. These criteria and procedures will provide the capabilities to:

   - evaluate standards relative to ADS requirements;
   - perform comparative analyses of competitive standards; and

- recommend standards for ADS specifying the rationale used in selection, alternatives considered, cost and implementation implications.

7. Evaluate and document the methods being implemented in the current ADS Pilots and the applicable standards (developed previously) using procedures and criteria developed above to develop candidate OSTA/ADS Standards.

8. Develop, document, and publish a candidate set of OSTA/ADS standards.

9. Develop mechanisms by which participants in the ADS standardization processes may join external standards efforts, so that ADS itself may affect evolving standards in the information processing and data communications arena. Participate in coordination efforts for developing standards.

10. Develop formal ties where appropriate with agencies of the federal government which handle types of data similar to those which NASA handles (examples: USGS and NOAA), in order to develop common terminology and structuring of data.

11. Investigate existing standards-evaluation policies and practices of ANSI, NBS, and other bodies for applicability to ADS.

5. REFERENCES

[1] NASA/Goddard Space Flight Center, ADS Pilot Data System Demonstrations, RTOP 656-13-02, Greenbelt, MD, 20 February 1980.

[2] NASA/Goddard Space Flight Center, Work Plan for ADS Activities Related to RTOP 656-13-01, Greenbelt, MD, June 1980.

[3] NASA/Goddard Space Flight Center, Full-Scale ADS Planning Studies, RTOP 656-13-20, Greenbelt, MD, 14 May 1980.

[4] NASA/Goddard Space Flight Center, ADS Study Report, Greenbelt, MD, 10 June 1980.

[5] NASA/Goddard Space Flight Center, OSTA Data Systems Planning Workshop Reports, Executive Summary, Greenbelt, MD, 13 June 1980.

[6] NASA/Goddard Space Flight Center, OSTA/ADS Data System Standards and Guidelines Program, RTOP 656-13-10, Greenbelt, MD, 15 May 1980.

[7] NASA/Goddard Space Flight Center, Summary Charts for ADS Activities Related to RTOP 656-13-01, Greenbelt, MD, (no date).

[8] Control Data Corporation, The World of EDP Standards (Second Printing) Tech Memo TM4, Marjorie F. Hill, September 1972.

[9] Jet Propulsion Laboratory, California Institute of Technology, Survey of Standards Applicable to a Data Base Management System (Draft), Jose L. Urena, Pasadena, CA, 15 November 1980.

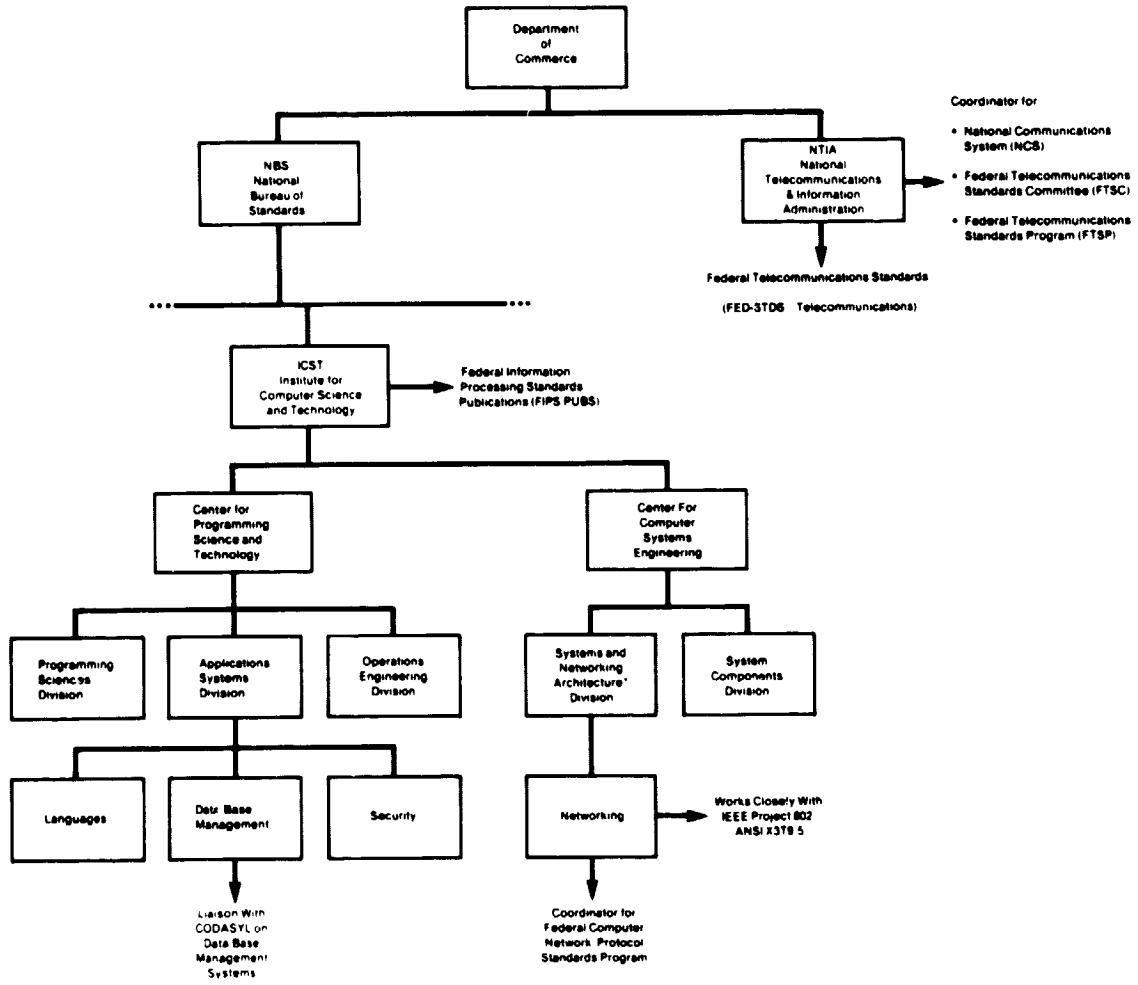
[10] Martin H. Weik, Standard Dictionary of Computers and Information Processing (Revised Second Edition), Rochelle Park, NJ: Hayden Book Company, Inc., 1977.

[11] Philip H. Enslow, Jr., Network Architectures - Student Notebook to Accompany the Course Presented by Systems Technology Forum, Burke, VA: System Technology Forum, Inc., September 1980.

APPENDIX A

STANDARDS ORGANIZATIONS

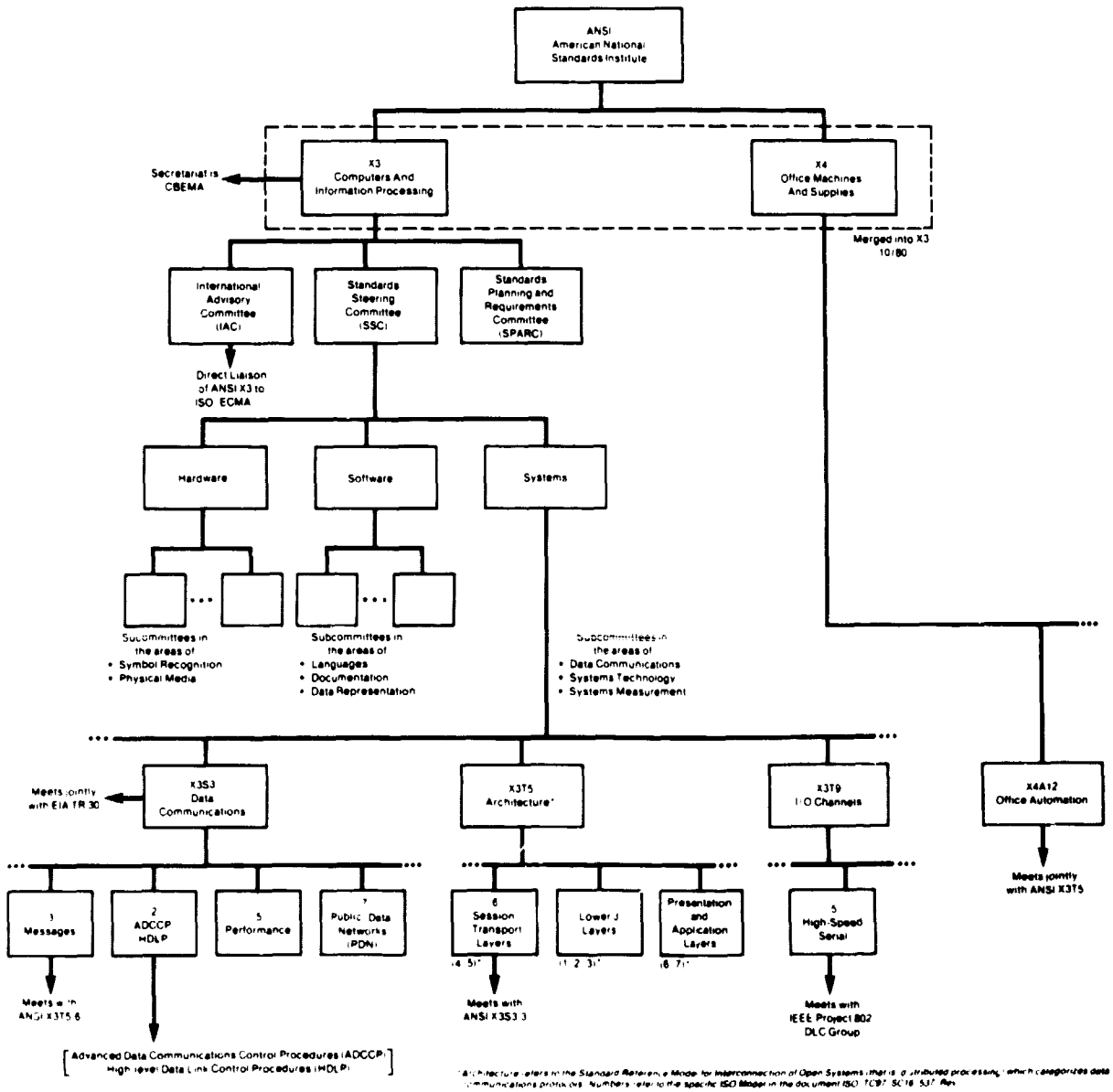
Figure A-1 presents the major standards organizations in information processing and data communications, and their interrelationships.
The assistance of Eric Scace and Wayne McCoy of the Institute for Computer Science and Technology, National Bureau of Standards, is gratefully acknowledged.



Note: The Branches and Divisions of ICST work closely with each Technical Committee, Subcommittee, Task Group, and Working Group of the information processing arms of ANSI, EIA, IEEE, and ISO.

Architecture refers to the Standard Reference Model for Interconnection of Open Systems that is distributed processing, which categorizes data communications protocols. Numbers refer to the specific ISO Model in the document ISO TC97, SC16 53, Rev.

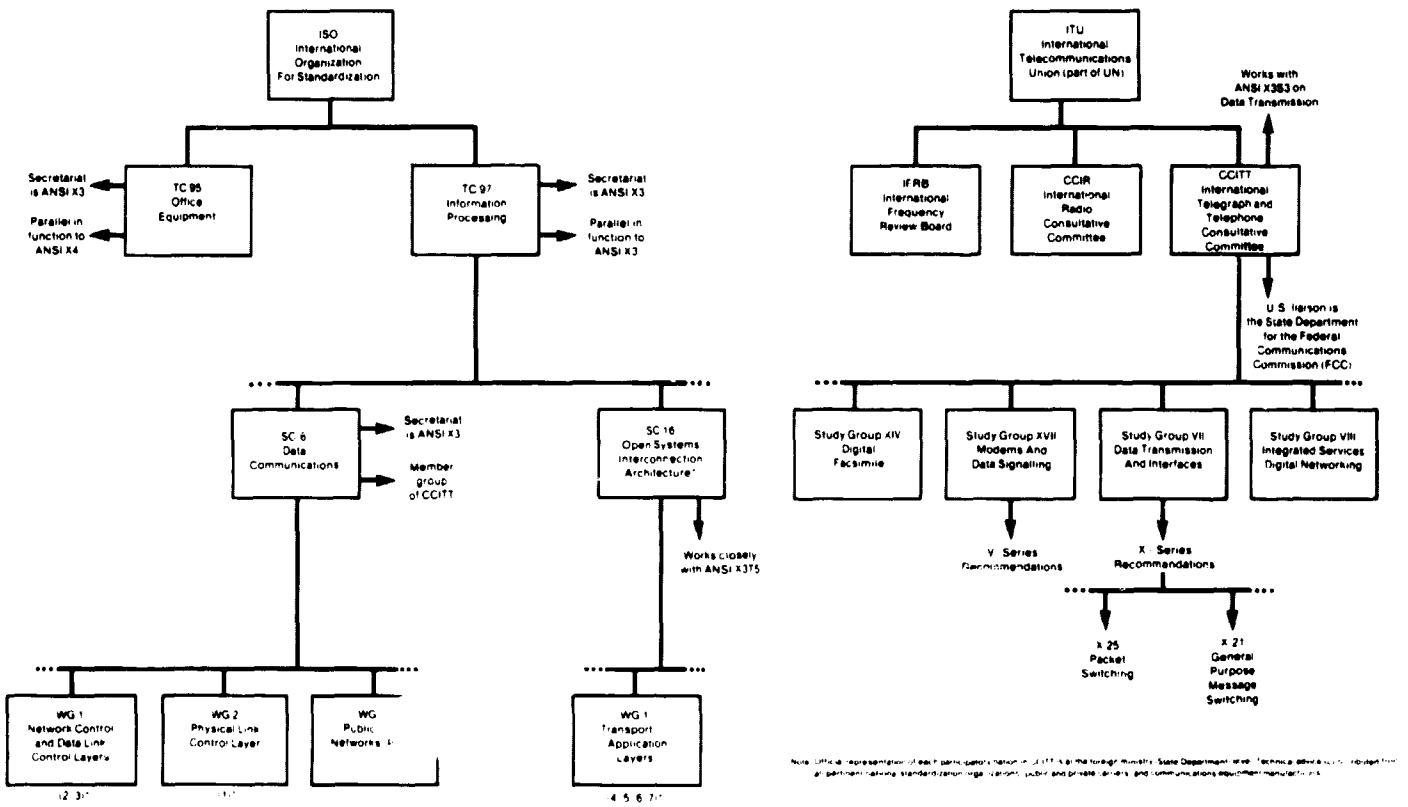
UNITED STATES DEPARTMENT OF COMMERCE



* Architecture refers to the Standard Reference Model for Interconnection of Open Systems that is a structured processing which categorizes data communications protocols. Numbers refer to the specific ISO Stages in the document ISO TC97 SC16 537 Rev.

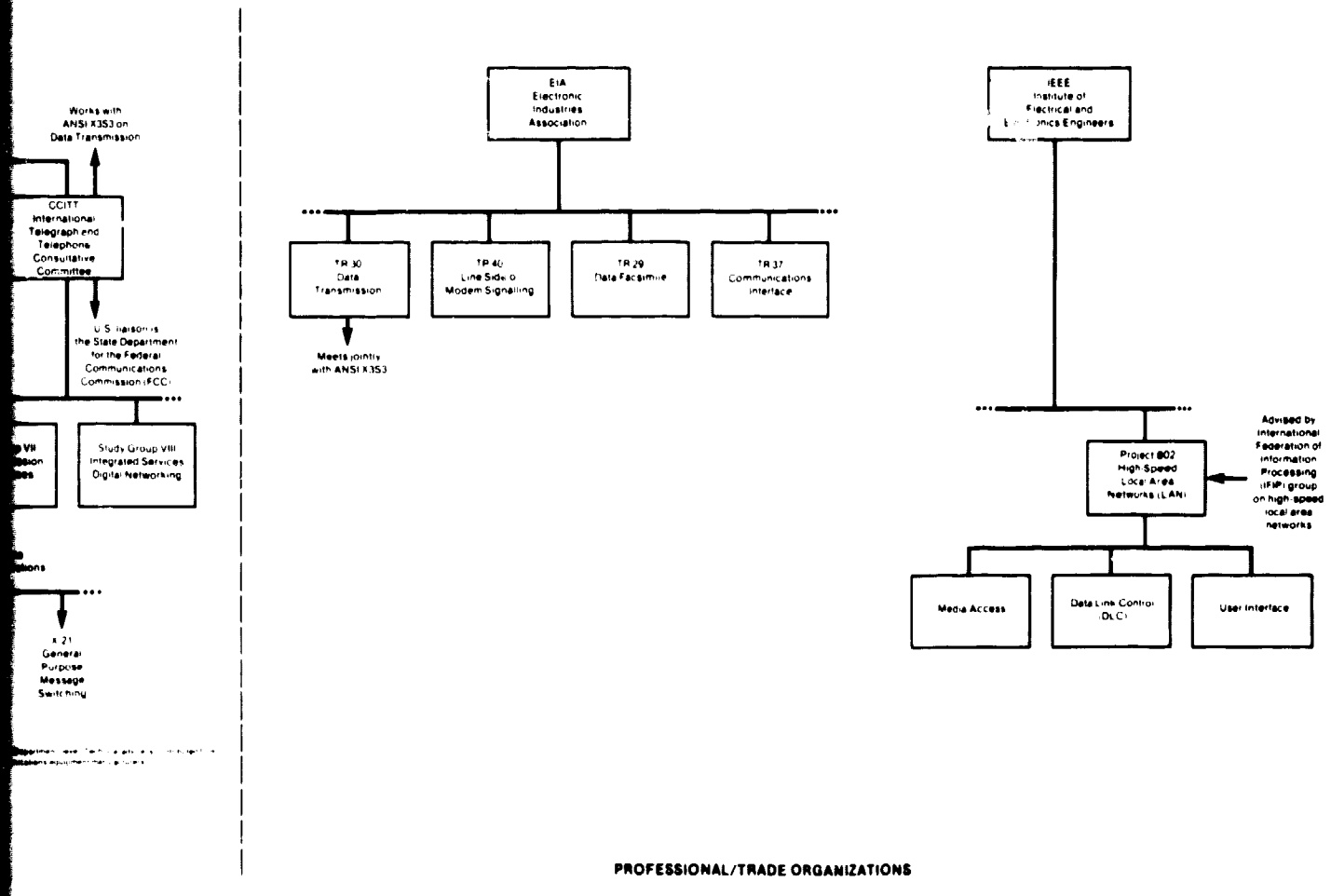
AMERICAN NATIONAL STANDARDS INSTITUTE

FIGURE A-1
MAJOR STANDARDS ORGANIZATIONS
AND INTERRELATIONSHIPS



INTERNATIONAL ORGANIZATIONS

ORIGINAL PAGE IS
OF POOR QUALITY



PROFESSIONAL/TRADE ORGANIZATIONS

FIGURE A-1
MAJOR STANDARDS ORGANIZATIONS AND INTERRELATIONSHIPS (CONCLUDED)

APPENDIX B

INDEX TO FEDERAL, NATIONAL, AND INTERNATIONAL STANDARDS

Each standard referenced in Table 3-1 is indexed here by standards organization, standard designation (or mnemonic), and Table 3-1 reference number. The organizations indexed are the following:

American National Standards Institute
British Standards Institution
Canadian Standards Association
Conference on Data System Languages
International Telegraph and Telephone Consultative Committee
Department of Defense
Electronics Industries Association
European Computer Manufacturers Association
Federal Telecommunications Standards - National Telecommunications and Information Agency
Government of Canada - Spatial Data Transfer Committee
Institute of Electrical and Electronics Engineers
International Organization for Standardization
Landsat Ground Station Operators' Working Group - Landsat Tape Standards Group
National Aeronautics and Space Administration, Goddard Space Flight Center
National Aeronautics and Space Administration, Jet Propulsion Laboratory
National Aeronautics and Space Administration, NASA End-to-End Data System Project
National Bureau of Standards, Federal Information Processing Standards Publications
North Atlantic Treaty Organization
United States Geological Survey

Table entries without designation numbers appeared without them in citation. Documents generated through a standardization project are usually shown as entries with slashes in the designation.

The FED-STDS are a product of an interdepartmental effort known as the Federal Telecommunications Standards Program for the National Communications System. The National Telecommunications and Information Agency (of the United States Department of Commerce) is the standards reporter.

American National Standards Institute (ANSI)

Designation of Standard	Table 3-1 Reference Number
X3.1-1976	#077
X3.4-1977	#005
X3.5-1970	#103
X3.9-1978	#041
X3.15-1976	#075
X3.16-1976	#076
X3.22-1973	#114
X3.24-1968	#153
X3.25-1976	#074
X3.27-1978	#131
X3.28-1976	#105
X3.30-1976	#035
X3.31-1973	#026
X3.32-1973	#140
X3.36-1975	#017
X3.38-1972/R1977	#027
X3.39-1973	#113
X3.40-1976	#158
X3.41-1974	#138
X3.42-1975	#159
X3.43-1977	#033
X3.44-1977	#055
X3.46-1974	#162
X3.47-1977	#022
X3.48-1977	#144
X3.50-1976	#165
X3.51-1975	#030
X3.52-1970	#169
X3.53-1976	#043
X3.54-1976	#112
X3.55-1977	#173
X3.56-1977	#145
X3.57-1977	#170
X3.58-1977	#161
X3.59-1980	#046
X3.60-1978	#128
X3.61-1978	#102
X3.63-	#171
X3.64-1979	#178
X3.66-1979	#015

American National Standards Institute (ANSI) (Continued)

Designation of Standard	Table 3-1 Reference Number
X3.67-WD	#148
X3.68-WD	#150
X3.69-	#091
X3.70-	#023
X3.71-	#166
X3.72-	#185
X3.73-1980	#187
X3.74-	#182
X3.75-	#151
X3.79-1980	#011
X3.81-	#152
X3.82-1980	#157
X3.83-1980	#136
X3.84-	#172
X3.85-	#106
X3.87-	#037
X3.88-	#081
X3.89-	#168
X3.90-	#183
X3.91-	#184
X3.92-1981	#020
X10.1-1972	#110
Z39.4-1968/R1974	#057
Z39.19-1980	#058
Z39.19-	#094
Z39.27-1976	#023
X3/TR-1-1977	#002
X3/TR-	#101
X3 SPARC/80-147	#083
X3 Project 95	#100
X3/ENCR	#095
X3/ENCR	#096
X3/ENCR	#097
X3H1	#040
X3H1	#012
X3H2	#086
X3J10	#085
X3S3	#181

American National Standards Institute (ANSI) (Concluded)

Designation of Standards	Table 3-1 Reference Number
X3T5	#087
X3T5	#089
X3T5	#090
X3T5	#097
X3T9	#098
X3T9	#099

British Standards Institution (BSI)

BS3730-1964	#061
DPS20/492	#060

Canadian Standards Association (CSA)

Z243.7-1971	#131
Z243.10-1974	#175
Z243.11-1974	#176
Z243.13-1975	#177

Conference on Data Systems Languages (CODASYL)

Journal of Development (COSCL)	#006

International Telegraph and Telephone Consultative Committee (CCITT)

V.3	#005
V.5	#077
V.5	#155
V.6	#077
V.6	#156
V.10	#047
V.11	#048
V.22	#018
V.24	#045
V.29	#063
V.35	#066
V.36	#069
V.41	#054
V.50	#049
V.57	#053

C-3

International Telegraph and Telephone Consultative Committee (CCITT) (Concluded)

Designation of Standard	Table 3-1 Reference Number
X.21	#091
X.25	#181
X.26	#047
X.27	#048

Department of Defense (DoD)

MIL-STD-188/120	#038
DoD-DIR-5000.11	#120
DoD-STD-7935.1-S	#119

Electronic Industries of America (EIA)

RS-232-C	#186
RS-269-B	#077
RS-422-A	#048
RS-423-A	#047
RS-449	#045
(RS-449-1	#045)

ANSI/EIA

RS-334-1968	#153
RS-352-1968/R1978	#179
RS-404-1978	#180

European Computer Manufacturers Association (ECMA)

1	#143
58	#039
TC23/80-23	#122

Federal Telecommunications Standards, National Telecommunications and Information Agency (FED-STDS) (NTIA)

1001	#017
1002	#003
1010	#075
1011	#076
1012	#074

Federal Telecommunications Standards, National Telecommunications and Information Agency (FED-STDS) (NTIA) (Concluded)

	Designation of Standard	Table 3-1 Reference Number
	1013	#077
	1020	#048
	1020A	#048
	1030	#047
	1031	#045
	1037	#038
Interim	001033	#051
Proposed	1000	#070
	1000.1	#013
	1000.2	#014
	1000.3	#067
	1000.4	#068
	1004	#004
	1007	#062
	1008	#018
	1009	#064
	1014	#065
	1018	#044
	1026	#050
	1027	#010
	1033	#051
	1041	#181
	1043	#052
	1066	#059
	1080	#042

Government of Canada, Spatial Data Transfer Committee (SDTC)

	FOR-SDP-0001A	#201

Institute of Electrical and Electronics Engineers (IEEE)

	Biomedical Pattern Recognition	#031
	IEEE Task 854	#195

International Organization for Standardization (ISO)

Designation of Standard	Table 3-1 Reference Number
646-1973	#005
R919-1969	#028
962-1974	#142
963-1973	#139
1001-1979	#131
1028-1973	#103
1155-1978	#175
1177-1973	#176
1539-1980	#041
1745-1975	#177
1863-1976	#114
1864-1975	#158
2022-1973	#138
2047-1975	#140
2110-1980	#186
2375-1974	#108
2382-(1980)	#149
2711-1973	#035
2788-1977	#056
2864-1974	#162
2955-1977	#165
3166-1974/A1-1977	#024
3275-1974	#146
3307-1975	#034
3309-1976, Second Edition	#072
3561-1976	#163
3562-1976	#166
3563-1976	#167
3788-1976	#113
4031-1978	#029
4057-1979	#174
4335-1979	#073
4337-1977	#171
4341-1978	#143
4873-1979	#160
6160-1979	#043
DIS 4335/DAD2-1980	#084
DIS 6863	#039

International Organization for Standardization (ISO) (Concluded)

Designation of Standard	Table 3-1 Reference Number
TC97/SC6/N1948	#078
TC97/SC11/N261	#196
TC97/SC16/537, Revised	#071
TC97	#086
TC97	#088
TC97	#092
TC97	#093
Landsat Ground Station Operators' Working Group, Landsat Tape Standards Group (LGSOWG) (LTSG)	
International Format	#197
FOR-LSD-0001A	#198
National Aeronautics and Space Administration, Goddard Space Flight Center (NASA/GSFC)	
X-560-63-2, Standard 5.6	#188
X-560-63-2, Standard 3.3	#191
National Aeronautics and Space Administration, Jet Propulsion Laboratory (NASA JPL)	
Document 663-11	#189
Planetary Program Flight/Ground Data Systems Standards, Section 2.3	#190
Document 663-9	#192
IOM-366.18/81-XX	#194
National Aeronautics and Space Administration, NASA End-to-End Data System (NEEDS)	
Guideline for Packet Telemetry	#193

National Bureau of Standards, Federal Information Processing Standards Publications (NBS) (FIPS-PUBS)

Designation of Standard	Table 3-1 Reference Number
1-1	#005
3-1	#114
4	#035
5-1	#027
6-3	#026
7	#141
10-2	#025
11-1	#002
15	#139
16-1	#075
17-1	#076
18-1	#074
19	#109
20	#110
22-1	#077
24	#103
25	#113
28	#111
30	#132
31	#134
34	#164
35	#138
36	#140
37	#017
38	#107
41	#135
42-1	#137
45	#129
46	#019
49	#130
50	#112
51	#144
52	#145
53	#206
54	#133
55	#022
56	#147
57	#200
58	#033
59	#030

National Bureau of Standards, Federal Information Processing Standards Publications (NBS) (FIPS-PUBS) (Continued)

Designation of Standard	Table 3-1 Reference Number
60-1	#148
61	#150
62	#151
63	#152
64	#007
65	#009
67	#008
68	#128
69	#041
70	#102
71	#015
73	#207
74	#208
75	#209
76	#210
77	#016
78	#211
79	#131
80	#212
81	#213
82	#205
83	#199
86	#178
NBSIR 80-2115	#001
ICST/CBOS-80-2	#124
ICST/HLNP-80-3	#202
ICST/HLNP-80-4	#121
ICST/HLNP-80-7	#203
ICST/HLNP-80-9	#126
ICST/HLNP-80-11	#125
ICST/HLNP-80-15	#116
ICST/HLNP-81-1	#080
ICST/HLNP-81-2	#204
ICST/HLNP-81-3	#117
ICST/HLNP-81-	#115
ICST/HLNP project	#118
ICST/LANP-81-1	#123

National Bureau of Standards, Federal Information Processing Standards Publications (NBS) (FIPS-PUBS) (Concluded)

Designation of Standard	Table 3-1 Reference Number
ICST/Federal Data Base Management Standards Program	#079
ICST project	#021
North Atlantic Treaty Organization (NATO)	
RSG-4/SGIP	#032
United States Geological Survey	
Computer Files and Attribute Codes for Digital Line Graphs	#036

APPENDIX C

INDEX TO THE ADS FEATURE CLASSIFICATION

This appendix provides an index to the ADS feature classification presented in Figure 2-3. Standards in Table 3-1 are tabulated by ADS class number and class name.

ADS Class Number	ADS Class Name and Standards in Table 3-1 Applicable to This Class
1.	Member, #101
1.1	Applications Data, #079, #111, #120, #129
1.1.1	Data Definition, #031, #032, #037, #038, #039, #040, #086, #110, #131, #164, #165, #195, #196
1.1.1.1	Data Dictionary, #001, #210
1.1.1.2	Time Definition, #003, #029, #030, #033, #034, #035, #188
1.1.1.3	Spatial Definition, #022, #023, #024, #025, #026, #027, #036, #102
1.1.1.4	General Vocabulary, #002, #028, #059, #149
1.1.1.5	Thesaurus, #056, #058, #094
1.1.2	Data Structure and Data Code #005, #031, #032, #037, #039, #086, #108, #109, #124, #131, #138, #139, #140, #141, #142, #143, #160, #189, #190, #191, #192, #193, #196, #197, #198, #201
1.1.3	Data Content, #159
1.1.4	Data Media, NO STANDARDS FOR THIS CLASS
1.1.4.1	Magnetic Tape, #031, #032, #046, #106, #112, #113, #114, #143, #144, #145, #146, #151, #158, #173, #174, #179, #185, #197, #198, #201, #206

ADS Class Number	ADS Class Name and Standards in Table 3-1 Applicable to This Class
1.1.4.2	Rotating Magnetic Media, #039, #152, #157, #161, #162, #163, #166, #167, #168, #169, #171, #172, #187
1.1.4.3	Optical Storage Media, NO STANDARDS FOR THIS CLASS
1.1.4.4	Microform, #133, #205
1.1.4.5	Graphic Image, #032
1.2	Process (Applications Software), #093
1.2.1	Computer Program Documentation, #007, #021, #081, #103, #107, #119, #132, #194
1.2.2	Data Requirements for a Process, NO STANDARDS FOR THIS CLASS
1.3	Computational Facility, #137, #184, #209
1.3.1	Hardware, #147, #148, #150
1.3.2	System Software, NO STANDARDS FOR THIS CLASS
1.3.3	Operations, NO STANDARDS FOR THIS CLASS
1.4	User-System Interface, #012
1.4.1	User Language, #042, #121
1.4.1.1	Applications, System, and Network Language, #006, #040
1.4.1.2	Programming Language, #021, #041, #043, #085, #128, #182
1.4.2	User Terminal, #008, #018, #044, #100
1.4.3	User Procedure, NO STANDARDS FOR THIS CLASS
2.	Support Service, NO STANDARDS FOR THIS CLASS
2.1	Administrative Service, #016, #137, #209, #212

ADS Class Number	ADS Class Name and Standards in Table 3-1 Applicable to This Class
2.1.1	Operations and Maintenance, #049, #147
2.1.2	Resources, Accounting, NO STANDARDS FOR THIS CLASS
2.1.3	Financial Functions, NO STANDARDS FOR THIS CLASS
2.1.4	Security, Access, #009, #207
2.1.4.1	Physical Security, #134
2.1.4.2	Data Security, #010, #019, #020, #050, #095, #096, #097, #100, #135, #208, #213
2.1.4.3	Access Security, #199
2.1.5	Performance Evaluation, #011, #051, #052, #053, #055, #130, #200
2.1.6	Management-Oriented Documentation, #016, #119, #136, #206
2.2	Technical Service, NO STANDARDS FOR THIS CLASS
2.2.1	System Locators, #057, #061, #083
2.2.1.1	List of ADS Users, NO STANDARDS FOR THIS CLASS
2.2.1.2	ocator of Data Sets and Sources, #001, #210
2.2.1.3	Locator of Processes and Their Sources, #081, #132
2.2.1.4	Locator of Computer Facilities, NO STANDARDS FOR THIS CLASS
2.2.1.5	Locator of System Services, NO STANDARDS FOR THIS CLASS
2.2.2	System Information, NO STANDARDS FOR THIS CLASS
2.2.2.1	On-line, NO STANDARDS FOR THIS CLASS
2.2.2.2	Off-line, NO STANDARDS FOR THIS CLASS

ADS Class Number	ADS Class Name and Standards in Table 3-1 Applicable to This Class
2.2.3	User-to-User Message Service, #078, #170
2.3	Data Transfer Service, #004, #054, #060, #078, #088, #105, #115, #123, #178, #183, #184
2.3.1	Data Communications Interface, #017, #047, #048, #062, #063, #064, #065, #066, #069, #070, #071, #074, #075, #076, #077, #091, #092, #153, #155, #156, #170, #175, #176, #177, #180, #181
2.3.2	Data Communications Protocol, #118, #122, #202, #203
2.3.2.1	Physical Layer, #013, #045, #099, #186
2.3.2.2	Data Link Layer, #014, #015, #072, #073, #084, #098, #211
2.3.2.3	Network Layer, #067, #125
2.3.2.4	Transport Layer, #037, #068, #080, #096
2.3.2.5	Session Layer, #090, #116, #204
2.3.2.6	Presentation Layer, #089, #097, #117, #126
2.3.2.7	Application Layer, #087, #126
2.3.3	Media Transfer, #206

APPENDIX D

GLOSSARY, ACRONYMS, AND ABBREVIATIONS

ACM	Association for Computing Machinery
ADP	Automatic Data Processing
ADS	(1) NASA Applications Data Service* (2) NASA Aerospace Data Standards (3) DoD Automated Data System (generic term)
AFNOR	Association Francais de Normalisation (French Standards Association)
ANS	(1) American National Standard (2) American Nuclear Society
ANSI	American National Standards Institute, formerly known as USASI, the United States of America Standards Institute, and as ASA, the American Standards Association
ANSI X3	ANSI Sectional Committee for information processing and data communications. Merged with ANSI X4 in October 1980.
ANSI X4	ANSI Sectional Committee for office machines and supplies. Merged into ANSI X3 in October 1980.
ANSI Z39	ANSI Sectional Committee for library and information science.
ASIS	American Society for Information Science
ASTM	American Society for Testing and Materials
bps	bits per second
BCS	British Computer Society

*In this document the abbreviation ADS is often encountered. In every case it is intended to refer to definition (1), that is, the NASA Applications Data Service.

BSI	British Standards Institution
BSR	Board of Standards Review (ANSI)
CAS	Chinese Agency for Standardization
CBEMA	Computer and Business Equipment Manufacturers' Association (U.S.A.)
CCIR	International Radio Consultative Committee
CCITT	International Telegraph and Telephone Consultative Committee
CCL	Common Command Language
CCT	Computer Compatible Tape
CODASYL	Conference on Data Systems Languages
COSCL	Common Operating System Command Language
cpi	characters per inch
cpmm	characters per millimeter
CSA	Canadian Standards Association
DAD	Draft Addendum (ISO)
DAPTS	Directorate for Automation, Policy, Technology, and Standards (U.S. Department of Defense)
DCA	Defense Communications Agency (U.S. Department of Defense)
DDS	Data Dictionary Standard
DES	Data Encryption Standard
DIN	Deutsche Institut fuer Normueng (German Standards Institute)
DIR	Directive
DIS	Draft International Standard (ISO)

discipline	An area of investigation of interest to specific groups of OSTA-affiliated scientists.
discipline users	Individual scientists or groups of scientists who use an ADS network member facility to assist them in analyzing data relevant to their research.
DLC	Data Link Control
DMSSO	Defense Materiel Standards and Specifications Organization (U.S. Department of Defense)
DoC	U.S. Department of Commerce
DoD	U.S. Department of Defense
ECMA	European Computer Manufacturers Association
EDP	Electronic Data Processing
EIA	Electronic Industries of America
FCNPSP	Federal Computer Network Protocol Standards Program (NBS)
FIPS	Federal Information Processing Standard(s) (NBS)
FTSC	Federal Telecommunications Standards Committee
FTSP	Federal Telecommunications Standards Program
GOSt	State Organization of Standards (U.S.S.R.)
GSA	U.S. General Services Administration
HLNP	High-Level Network Protocol (NBS/ICST)
IAC	International Advisory Committee (ANSI X3)
IEC	International Electrotechnical Commission
IED	Information Extraction Division (NASA/Goddard Space Flight Center)
ICST	Institute for Computer Science and Technology (NBS)
IEEE	Institute of Electrical and Electronics Engineers

IFIP	International Federation for Information Processing
IFRB	International Frequency Review Board
IR	Internal Report, or Interagency Report (NBS)
I/O	Input/Output
ISO	International Organization for Standardization
ITU	International Telecommunications Union, formerly also known as the International Telegraphic Union
JEIDA	Japan Electronic Industry Development Association
JSA	Japanese Standards Association
kbps	thousand bits per second
LAN	local area network
LGSOWG	Landsat Ground Station Operators' Working Group
locator	Any technology, process, or collection which assists in the identification of, search for, and retrieval of data and information of any kind.
LTSG	Landsat Tape Standards Group
members	Facilities at one physical and organizational location which participate in ADS
MIL-STD	Military Standard
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NBS	National Bureau of Standards, an agency of the U.S. Department of Commerce
NCS	National Communications System
NEEDS	NASA End-to-End Data System

NOAA	National Oceanographic and Atmospheric Administration (U.S. Department of Commerce)
NTIA	National Telecommunications and Information Administration, an agency of the U.S. Department of Commerce
OSTA	NASA Office of Space and Terrestrial Applications
PDN	public data network
rpi	magnetic flux reversals per inch
rpmm	magnetic flux reversals per millimeter
RS	Recommended Standard (EIA)
Ryyyy	reaffirmed in the year yyyy
SC	subcommittee (ISO)
SC 6	ISO/TC97 Subcommittee on Data Communications
SC 16	ISO/TC97 Subcommittee for Open Systems Interconnection Architecture
SCC	Standards Council of Canada
SD	Special Document
SDTC	Spatial Data Transfer Committee (Government of Canada)
Secre-tariat	An organization or group authorized to assume the responsibility for a standards committee [8]
SG	Study Group (CCITT)
Sponsor	An organization or group which assumes responsibility of its own standards where no standards committee exists [8]
SPARC	Standards Planning and Requirements Committee (ANSI X3)
SSC	Standards Steering Committee (ANSI X3)

Standards Guidelines Methodologies	Criteria for judgement embodied in one or more documents. Refer to Table 1-1.
TC	Technical Committee
TC 95	ISO Technical Committee on Office Machines
TC 97	ISO Technical Committee on Information Processing
TR	(1) Technical Committee (EIA) (2) Technical Report
VTP	Virtual Terminal Protocol
WD	working draft (ANSI)
WG	Working Group (ISO)
WMO	World Meteorological Organization

APPENDIX E

DEFINITIONS OF THE CLASSES OF THE ADS FEATURE CLASSIFICATION (FIGURE 2-3)

ADS - The OSTA Applications Data Service, the entity for which this survey of candidate standards is written.

1. Member - A facility at one physical and organizational location which participates in ADS.

1.1 Applications Data - Scientific data, engineering data, telemetry data, and data processed at any "level" (as defined in the OSTA Data Systems Planning Workshop Report of 6/13/80 [5].

1.1.1 Data Definition - The identification of the content of data, including the meaning and use of such data.

1.1.1.1 Data Dictionary - An alphanumerically arranged list of the descriptions of the elements of data available. The list of descriptions may be extended to include the key elements or code names of data subelements [10].

1.1.1.2 Time Definition - The identification of periods of time which apply to data.

1.1.1.3 Spatial Definition - The identification of physical locations which apply to data, such as latitude and longitude.

1.1.1.4 General Vocabulary - A dictionary of definitions compiled for identifying elements of ADS, terms used in class 1.1.1.1 (Data Dictionary) and class 1.1.1.5 (Thesaurus), and other general ADS-related terminology.

1.1.1.5 Thesaurus - A collection of words or terms from class 1.1.1.4 (General Vocabulary) used to cross-reference, classify, or index other words or terms in class 1.1.1.4. This cross-referencing collection of words or terms aids in retrieval of information listed under related terms from the Data Dictionary (class 1.1.1.1).

1.1.2 Data Structure and Data Code - A logical arrangement in which data may be represented in input, storage, transmission, and output from one ADS user to another. This includes bit patterns which are conventionalized representations of characters or symbols.

1.1.3 Data Content - The actual numeric or textual values or images in a set of data.

1.1.4 Data Media - Physical facility for data storage or transmittal.

1.1.4.1 Magnetic Tape - Any tape with a surface of magnetic material, on which data may be stored by selective polarization of the surface. Usually used for archival or transmittal purposes [10].

1.1.4.2 Rotating Magnetic Media - A flat circular plate or group of plates with magnetic surfaces, on which data may be stored by selective polarization of the surface. The disk medium may be rigid or soft. Used for direct access storage of data [10].

1.1.4.3 Optical Storage Media - Any storage media for digital data, which utilizes a controlled beam of light (usually a laser beam) to expose minute areas of a photosensitive surface. May be either rotating or flat-plate. Used for archival and update only (at this time) [10].

1.1.4.4 Microform - Any data media that contains microimages, that is, images that cannot be read by the unaided eye.

1.1.4.5 Graphic Image - Photographic print, phototransparency, video image, map, or other graphic presentation.

1.2 Process (Applications Software) - Any software written explicitly for processing of applications data (class 1.1).

1.2.1 Computer Program Documentation - Descriptions of computer programs or packages.

1.2.2 Data Requirements for a Process - The basic set of data and necessary procedures required for a discipline-user to make use of a process accessible through ADS. This includes the concept of data integration.

1.3 Computational Facility - Any physical set of computational hardware, software, and personnel which is dedicated to processing applications data.

1.3.1 Hardware - Computational units, machinery, and interconnections (that is, hardware in the ordinary ADP sense) that exist at a member site, such as an image processing facility.

1.3.2 System Software - Facility-specific software located at a computational facility (class 1.3).

1.3.3 Operations - The set of procedures by which a computational facility (class 1.3) is run.

1.4 User-System Interface - The repertoire of interactions between the user and the computer languages, terminals, and procedures which are the user's connection to ADS.

1.4.1 User Language - A language which a discipline-user would employ to communicate with the various functions of ADS, write programs, access data, or execute jobs.

1.4.1.1 Applications, System, and Network Language - A language consisting primarily of procedural instructions, each capable of specifying a function to be executed, such as common command languages and executives.

1.4.1.2 Programming Language - A language in which most applications processes (class 1.2) would be written, such as FORTRAN or assembly languages.

1.4.2 User Terminal - The data termination equipment through which the user communicates with the various functions of ADS. This also includes the necessary subsystems and equipment (such as modems) used in this interface.

1.4.3 User Procedure - A procedure which a user must follow to acquire any service available to ADS members.

2. Support Service - Service normally associated with the central functions of a distributed data processing (network) service, namely: administrative, technical, and data transfer. Standards in this class would apply to any service available to ADS members.

2.1 Administrative Service - A user service provided by those who administer the operation and maintenance of ADS. This includes resource accounting, quality assurance, security, and similar functions.

2.1.1 Operations and Maintenance - The functions which the ADS central facility performs to permit continuing operability of ADS.

2.1.2 Resources, Accounting - All facilities available to ADS, and the managerial and fiscal oversight of these resources.

2.1.3 Financial Functions - Member or user charges for storage, archiving, computation, dissemination of information, and other chargeable activities.

2.1.4 Security, Access - Ensuring the integrity of data available to ADS, and ensuring appropriate and authorized use of ADS resources.

2.1.4.1 Physical Security - The integrity of the physical plant which contains any member of ADS, and all related issues such as risk analysis, natural disaster planning, and personnel security.

2.1.4.2 Data Security - The integrity of data in the ADS system and all related issues such as encryption, the ability to keep some data selectively private, etc.

2.1.4.3 Access Security - The ability of a member of ADS to monitor, circumscribe, or limit the ability of any other member or user to gain access to, update, and delete a set of data.

2.1.5 Performance Evaluation - The processes which report the performance of ADS and those which assess whether ADS is operating according to its specifications.

2.1.6 Management-Oriented Documentation - All forms of documented reporting of the loading, use, and performance of ADS.

2.2 Technical Service - A service provided by ADS that allows a user to 1) locate information about data which he may wish to access, 2) find information about ADS and its services and procedures, or 3) correspond with other users.

2.2.1 System Locators - Compendia which are available to an ADS user listing data sets available, software available, and computational facilities available.

2.2.1.1 List of ADS Users - A list of those persons and organizations using ADS, and their addresses.

2.2.1.2 Locator of Data Sets and Sources - A searchable list of all ADS data sets and their sources or locations.

2.2.1.3 Locator of Processes and Their Sources - A searchable list of all ADS applications software packages and their sources or locations.

2.2.1.4 Locator of Computer Facilities - A searchable list of computational facilities available to an ADS user, and the locations or addresses of these facilities.

2.2.1.5 Locator of System Services - A searchable list of all system services available to an ADS user.

2.2.2 System Information - General information regarding the types of support and value-added services available to a user.

2.2.2.1 On-Line - System information (class 2.2.2) available to a user in an interactive, electronic form.

2.2.2.2 Off-Line - System information (class 2.2.2) available to a user in hard-copy form.

2.2.3 User-to-User Message Service - Any general way by which an ADS user may communicate brief textual information through ADS to another ADS user.

2.3 Data Transfer Service - A service provided by ADS that allows a user to communicate data or processes between or among different facilities, terminals, or data bases. This class covers all possible interfaces and protocols among the various nodes in ADS and the means of transfer of data among these nodes. The transfer may be physical or electronic, and of any degree of transparency to the user.

2.3.1 Data Communications Interface - This term takes on a broader meaning than that of interface in an open systems interconnection model. It refers to any of the ways that dissimilar elements of ADS may communicate as well as to

the standards or methods by which information is transferred between layers in any layered open systems interconnection model.

2.3.2 Data Communications Protocol - Any of the sets of rules which govern the means by which information is exchanged between peer entities in a layer (of systems communicating in an open systems interconnection architecture) [11].

2.3.2.1 Physical Layer - The layer (of a layered system in an open systems interconnection architecture) which provides mechanical, electrical, and procedural functions for transmission of transparent bit streams across a physical connection (transmission path) between data terminal equipment and data circuit terminating equipment [11].

2.3.2.2 Data Link Layer - The layer (of a layered system in a open systems interconnection architecture) which provides functional and procedural means for the reliable transmission (transfer) of blocks or frames of data across a data transmission link. Examples of functions provided in this layer are formatting of transmission blocks, error detection and recovery, flow control, and link synchronization [11].

2.3.2.3 Network Layer - The layer (of a layered system in an open systems interconnection architecture) which provides transparent transfer of data over network connections. Examples of functions provided in this layer are logical link management, routing, multiplexing, and sequencing [11].

2.3.2.4 Transport Layer - The layer (of a layered system in an open system interconnection architecture) which provides host-to-host data transfer, or end-to-end control of data transport from data system to data system. Examples of functions provided in this layer are address mapping, multiplexing of connections, sequence control, and segmenting/blocking [11].

2.3.2.5 Session Layer - The layer (of a layered system in an open systems interconnection architecture) which provides task-to-task control (that is, control of concurrently executable tasks) through establishment, disconnection, and management of sessions. The support functions in this layer are interfacing higher-level message specification to the transport subsystem, prioritizing and queueing

messages, matching responses to requests (that is, dialogue), and flow control/pacing [11].

2.3.2.6 Presentation Layer - The layer (of a layered system in an open system interconnection architecture) which provides interpretation of the meaning of the data exchanges. In general, services such as management of formats and format translation are provided. Particular examples of protocols for these are virtual terminal protocols, file transfer protocols, and job transfer/manipulation protocols [11].

2.3.2.7 Application Layer - The layer (of a layered system in an open systems interconnection architecture) which provides system and application management, and which comes into contact with application processes (class 1.2) at the user level which perform information processing. The protocols thrcugh which these processes communicate reside in this topmost layer [11].

2.3.3 Media Transfer - Non-electronic transfer of data media among ADS members, e.g., magnetic tape transmittal.