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ABSTRACT

This glossary was developed to fill the need for a commonality of vocabulary for the persons from diverse fields--computer experts, librarians, telecommunications engineers--who are working together in the relatively new field of library networking. The criteria for the inclusion of a term require that it be in current use relative to library networking, that it be a term unfamiliar to the library community but basic to its comprehension of library networking, or that the term's standard meaning be narrowed or modified by its use in a library networking context. The definitions are functional rather than formal. (Author/MBR)

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# NETWORK PLANNING PAPER

**NETWORK DEVELOPMENT OFFICE**

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Prepared by Dataflow Systems Inc.

for the

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4

## INTRODUCTION

The discussions of the working groups involved in planning the library bibliographic components of a national library network point to the need for standarized vocabulary. Papers presented at working group meetings reflect the same need. The relative newness of the field of library networking and the diversity of background of those working in this area or affected by its development create communication problems. Computer experts are talking to and writing for librarians. Librarians are explaining their needs to telecommunications engineers. Each brings different professional jargon to the combined discipline; each interprets standard terminology according to his own experience, thereby creating a meld of meanings as concepts are combined. Also, other concepts are gaining a new context when viewed from the standpoint of library networking.

The Network Development Office of the Library of Congress responded to this need for commonality of vocabulary by arranging to have this special glossary developed by Dataflow Systems Inc. of Bethesda, Maryland. This is a working document; as usage changes, as new terms evolve to describe different aspects of the field, and as library networking professionals work with the terms on a nationwide scale, the scope of the glossary and the definitions of the terms are expected to change.

An initial glossary was assembled using terms suggested by the Network Development Office and documents in its files, journal articles, minutes of working group meetings, and discussions with individuals. The list was reviewed and revised, and preliminary definitions were developed. The definitions are functional rather than formal. The criteria for inclusion of a term are: that it be in current use relative to library networking, that it be a term unfamiliar to the library community but basic to its comprehension of library networking, or that the term's standard meaning be narrowed or modified by its use in a library networking context.

Preliminary definitions were submitted to the Network Development Office and to designated group representatives for review. Participating in this effort were the Network Advisory Committee, Network Technical Architecture Group, National Commission on Libraries and Information Science (NCLIS), authorities study group, NCLIS/National Bureau of Standards

Task Force on Computer Network Protocols, and Council on
Computerized Library Networks. Representatives from each of
these groups devoted much time and thought to their review.
They offered many constructive comments, from the general and
philosophical to specific suggestions regarding style and
consistency. After definitions were reworked to reflect their
advice, consultations with the group representatives continued
with the revised glossary being sent for a second review.
Additional highly useful comments were received and, in the
main, are reflected in the definitions.

Please note that terms defined in the glossary are
underscored when they are used in the body of another definition.

Glossary users may wish to refer to the following
sources for definitions used in disciplines other then library
networking:

A Guide to Networking Terminology, A. J. Neumann, NBS
    Technical Note 803, March 1974.

A Compilation of Terms and Definitions Appearing in
    Z39 Standards, American National Standards (ANSI)
    Committee Z39, April 1977.

Data Processing Glossary, IBM (GC20-1699-5), October
    1977. (Includes definitions from American
    National Dictionary for Information Processing,
    Computer and Business Equipment Manufacturers
    Association, and ISO Vocabulary of Data
    Processing)

A GLOSSARY FOR LIBRARY NETWORKING

**access point**

> a data element used as a means of entry to a
> file or record. See also: heading.

**application level**

> the areas of a computer system that concern
> user processes, as distinguished from communi-
> cations and housekeeping functions. In library
> networks, application level refers to the
> computer processes in support of specific library
> operations, such as acquisitions, cataloging,
> serials control, reference, etc.

**architecture**

> the technical structure or configuration of
> a system.

**asynchronous operation**

> a mode of computer operation and telecommuni-
> cations transmission in which the time inter-
> vals between transmitted characters may be
> of unequal length.

**authentication**

> certification that the data content and con-
> tent designation of a given bibliographic
> record have been reviewed by an appropriate
> center of responsibility and that the record
> meets the established bibliographic standards
> of a network. See also: center of special
> authorization.

**authentication center**

> see: center of responsibility.

7

authoritative record

>    a record that is adjudged by a designated
>    center of responsibility to conform to a
>    network's standards.

authority control

>    the functions involved in establishing,
>    maintaining, and using authority files.

authority file

>    a set of records that identifies the estab-
>    lished or authoritative forms for headings
>    or access points for a set of bibliographic
>    records. Authority files include cross
>    references from variants to the preferred
>    forms of headings, and links from earlier
>    to later forms and between broader and
>    narrower terms and related terms. An
>    authority file may represent the authori-
>    tative forms of headings for an individual
>    institution, a group of related institutions,
>    or a network of related and/or unrelated
>    institutions.

authority record

>    a record of an individual heading in an
>    authority file. An authority record may
>    include heading variants, cross references
>    to and from the heading, cataloging notes,
>    historical information, and references to
>    the source of a heading.

bibliographic control

>    the functions necessary to generate and
>    organize records of library materials
>    for effective retrieval.

8

bibliographic data

> data representing individual bibliographic
> attributes of an item, typically including
> descriptive and subject cataloging elements,
> indexing elements, authority elements, and
> abstracts.

bibliographic group

> a set of functionally related bibliographic
> data.

bibliographic information

> the meaning assigned to bibliographic data.

bibliographic item

> a uniquely identified work or part of a work.

bibliographic (processing) services

> activities that assist libraries in
> establishing bibliographic control
> over their materials and in gaining
> access to mechanisms for their identifi-
> cation and retrieval. See also: biblio-
> graphic service center.

bibliographic record

> a collection of bibliographic data fields
> treated as one logical entity that describes
> a specific bibliographic item. See also:
> cataloging record.

bibliographic reference

> the set of bibliographic data needed for
> unique identification of an item.

bibliographic reference file

> see: catalog.

9

bibliographic service center

> an organization that serves as a broker or
> distributor of computer-based bibliographic
> (processing) services. A service center
> gains access to national library network
> resources through the facilities of a bibli-
> graphic utility. It does not necessarily
> contribute records directly to or maintain
> portions of the national library network
> data base.

bibliographic strip

> a coded summary of bibliographic data,
> especially as printed on the cover of a
> periodical, used for rapid identification
> of an item.

bibliographic unit

> 1) see: bibliographic item.
> 2) see: authority record.

bibliographic utility

> an organization that maintains online
> bibliographic data bases, enabling it
> to offer computer-based support to any
> interested users, including national
> library network participants. A biblio-
> graphic utility will maintain components
> of the national library network data
> store and provide a standard interface
> through which bibliographic service
> centers, and individual national library
> network participants may gain access to
> the nationwide network.

catalog

> a set of bibliographic records generally
> under control of authority files which
> describes the resources of a collection,
> library, or network. It is the instrument
> by which bibliographic control is maintained
> for a collection, library, or network, and
> by which the relationship between individual
> bibliographic records can be indicated.
> See also: library catalog.

10

cataloging record

>a bibliographic record that describes a
specific item and relates it to other
items described in the file.

center of authentication

>see: center of responsibility.

center of excellence

>an institution with the designated
responsibility for collecting, cata-
loging and providing bibliographic
records for materials in special
subject, geographic or language areas.
See also: resource library.

center of responsibility

>an organization(s) with designated
responsibility for establishing and
maintaining the authoritative form
of data elements to be used within
a network. See also: center of
special authorization.

center of special authentication

>see: center of special authorization.

center of special authorization

>an organization, other than a center of
responsibility, that is empowered to
authenticate specific data fields in
certain bibliographic records. Authenti-
cation by these centers of special
authorization can be overriden by
decision of a center of responsibility.

## centralized (computer) network

a computer network configuration in which
one computer or a group of centrally located
computers provides computing power and main-
tains control of application level programs
and telecommunications. See also: decentral-
ized (computer) network.

## centralized processing

1) computer processing in which one computer
or a group of centrally located computers
provides computing services and maintains
network control.

2) a system for ordering library materials,
preparing them for use, and preparing
cataloging records for them in one library
or agency for a group of libraries.
See also: bibliographic (processing)
services.

## channel

1) the connection between a message source
and a message sink in a communications
system.

2) a means of one-way transmission of data.

## check digit

a digit that has a specified relationship to
the other data in a data element, used to
determine the accuracy of numeric data.

## circuit switching

see: line switching.

## citation

see: bibliographic reference.

common carrier

> a telecommunications company that is regulated
> by an appropriate government agency and that
> offers services to the general public via
> shared circuits.

communications carrier

> see: specialized common carrier.

communications computer

> a special purpose computer used to control or
> format data transmitted between network nodes.

communications controller

> see: communications computer.

communications format

> a format for the transmission (as opposed to
> the processing) of machine-readable biblio-
> graphic data.

communications network

> the physical means for a group of nodes to
> intercommunicate data.

configuration

> the arrangement of components or functions
> within a system.

content designator

> a means of specifying the data elements in
> a given field of a machine-readable record.

control character

        a character whose occurrence initiates, modifies
or terminates a control function.

control field

        a-field that supplies parameters which
may be required in the processing of a
bibliographic record.  See also:  data
field.

control function

        an operation that affects the recording,
processing, transmission, or interpretation
of data.

control message

        a network communications transmission involved
with managing, supervising, and coordinating
the message flow at the application level.

copy-specific data

        data sufficient to identify multiple copies
and to describe unique bibliographic attributes
among those copies of an item described by a
single bibliographic record, where the copies
are owned by a single organization:  Copy-
specific data do not indicate an actual site
where an item is located within the organiza-
tion.  See also:  site data.

data

        a representation to which meaning can be
assigned.

data base

    1)  a structured collection of data developed
       according to uniform standards.

    2)  an entire set of data available to a
       computer system.

data base access services

> organizations that offer access to one or
> more data bases. The services may provide
> direct access to data bases they develop
> and maintain, or through a royalty arrange-
> ment provide access to data bases developed
> and maintained by others.

data base management

> the control processes for the formatting, in-
> putting, storing, retrieving, modifying, and
> outputting of data in large computer data files.

data base vendors

> see: data base access services.

data communication

> the transfer of data from one point to another
> over communications channels.

data element

> a defined unit of data within a system.

data field

> a field containing bibliographic or other
> data not required as parameters for the processing
> sing of a bibliographic record, as distinguished
> from a control field.

data link

> the assemblage of communications equipment and
> interconnecting circuits that allows data to
> be exchanged between two or more stations.

15

decentralized input

> a system in which data for input are accepted
> from various nodes. In terms of the national
> library network, decentralized input will allow
> bibliographic records and authority records to
> be originated and authenticated by designated
> centers of responsibility and communicated via
> telecommunications, magnetic tape or hard copy
> for inclusion in the national library network
> data base.

decentralized (computer) network

> a computer network configuration in which
> computing power and/or control functions
> are distributed over several network nodes.
> See also: centralized (computer) network.

distributed (computer) processing

> 1) computer processing systems in which the
> control functions and/or computing functions
> are shared among several network nodes.
>
> 2) a single logical set of processing functions
> implemented across a number of computers.

distributed data bases

> logically interconnected data bases or portions
> of data bases (indexes, locations, etc.) that
> reside in separate physical locations in a
> network.

distributed network

> 1) see: decentralized (computer) network.
>
> 2) a network design in which each node is
> connected to every other node either
> directly or through intermediate nodes.

extension bit/byte

> a bit/byte coding scheme used to designate
> an extended range of characters, commonly
> called "escape characters," typically in-
> cluding upper case and lower case alphabets,
> special characters, and numerals.

field

> a specified set of contiguous characters
> in a record, used for a particular category
> of data.

file

> a collection of related records.

fixed field

> a field that always has a specific number of
> character spaces allocated, regardless of the
> data contents.  See also:  variable field.

format recognition process

> a computer process for constructing machine-
> readable bibliographic records from a stream
> of data, utilizing a specific format that
> facilitates identification of content designators.

front end computer

> a subsidiary computer that performs the control
> and conversion functions necessary for data
> transmission between host computers and the
> communications network.  See also:  host front
> end processor, network front end processor.

front end processor

> see:  front end computer.

full-duplex operation

17

> see:  two-way simultaneous operation.

fully connected network

       a network in which each node is directly
       connected for communications purposes with
       every other node.

half-duplex operation

      see:  two-way alternate operation.

header

       the control data that precede a message
       text; for example, source or destination
       code, priority, message type.

heading

       the form of a name, subject, uniform title,
       series, etc., used as an access point to a
       bibliographic record or authority record. The
       totality of headings in an authority file
       is indicative of the organization of an
       entire catalog and the rules used to
       structure the catalog.

heterogeneous (computer) network

       a network that has dissimilar host computers,
       such as those of various manufacturers.
       See also:  homogeneous (computer) network.

HFEP

      see:  host front end processor.

hierarchical (computer) network

       a computer network in which processing and
       control functions are delegated to several
       levels of specially suited computers.

holdings data

1) data sufficient to identify a number of
items owned by an organization, where
the several items are described jointly
by a single bibliographic record, common-
ly used with respect to serials (volumes,
issues, etc.). Not to be used interchange-
ably with locations data.

2) data that indicate the scope of the entire
collection, or a specific part of the col-
lection, of a library or group of libraries.

homogeneous (computer) network

a network with similar host computers, such
as those of one model of one manufacturer.
See also: heterogeneous (computer) network.

host

a system or subsystem in a network that
performs actual processing operations against
a data base and with which other network
nodes communicate.

host computer

a network computer that performs the pri-
mary processing services such as computation,
data base access, and data manipulation.
See also: communications computer.

host front end processor

a front end computer at a host site. It
provides the interface between the host com-
puter and the logical network front end pro-
cessor. Host front end processor functions
encompass message formatting, character con-
version, operating system control and input/
output supervisor control.

10

host site

> a network location that receives communica-
> tions from other network nodes, performs
> operations on them (via a host computer)
> and sends communications to other nodes.

information retrieval

> the process of selecting from data bases
> relevant citations to bibliographic items
> or other pieces of data, using a variety
> of access points (subjects, names, dates, et
> and often employing logical operations to
> define the search strategy.

information retrieval services

> see: data base access services.

institution authority record

> see: local authority record.

interface

> the point or process that joins two
> system components.
>
> 1)   a shared boundary, defined by common
>      physical, signal and logical charac-
>      toristics, across which data travel.
>
> 2)   a device that facilitates interopera-
>      tion of two systems, as between data
>      communications equipment and data
>      processing equipment or terminal
>      installations.
>
> Interfaces between computers and communi-
> cations systems may be divided into various
> classes of functions, e.g., physical,
> electrical, logical and procedural.

interstate network

> a network with nodes in more than one state.

intrastate network

> a network that exists wholly within one
> state; it may, however, be a regional net-
> work at the same time.

item

> see: bibliographic item.

level(s)

> relative position(s) in the hierarchical
> structure of a system.

library bibliograpnic component

> that portion of the national library network
> encompassing its bibliographic service system
> and segments of its communications system,
> and exclusive of the resource library system.

library catalog

> a set of bibliographic records that de-
> scribes the collection of a library. Gener-
> ally characterized by conformity to a given
> set of cataloging standards with respect to
> choice and form of entry, description and
> subject analysis, a library catalog represents
> an attempt to maintain a coherent organization
> of a library's bibliographic records and to
> show the interrelationship of the bibliographic
> items represented.

line switching

> a method of handling messages in communications
> networks in which a circuit path is set up
> between incoming and outgoing lines. See
> also: message switching.

**link**

> a communications path between two nodes or
> points.  See also:  interface, data link.

**local authority record**

> a record in an authority file that conforms
> to purely local catalog requirements.  In a
> quadraplanar structure, this type of record
> is held at the "institution level."

**locations data**

> data that identify the organization(s)
> holding one or more items described by
> a specific bibliographic record.  Loca-
> tions data do not include copy-specific
> data or site data for those items associ-
> ated with an organization.  See also:
> copy-specific data, site data.

**message**

> 1)  a single transmission in one direction,
>     consisting of a header and data.
>
> 2)  a unit of information transmitted from
>     one node to another on a network.

**message delivery system**

> the communications computers and network
> front end processors which control the
> transmission of messages between network
> hosts, and the telecommunications facilities
> used for message transmission.  See also:
> message processing system.

**message processing system**

> the host computers and host front end
> processors in a network that perform
> operations on network messages.
> See also:  message delivery system.

message switching

       a telecommunications technique in which a
message is received, stored (usually until
the best outgoing line is available), and
then re-transmitted toward its destination.
No direct connection between the incoming
and outgoing lines is set up as in line
switching. See also: packet switching.

message text

       the substantive portion of a network trans-
mission, i.e., blocks of data exclusive of
control characters. See also: header.

message text format

       standardized format for messages in a network.
Types of message text formats include query
text, bibliographic text, reply text, error
text. A message text format for a network
could be 1) header length, 2) header, 3) data
length, 4) data.

modem

       modulator-demodulator: a device that modulates
and demodulates digital signals so that they
may be transmitted over an analog communica-
tions transmission medium, such as a telephone
line.

multistate network

       see: interstate network.

multitype network

       a network that serves more than one type of
organization, such as a library network with
both academic and special libraries as partici-
pants. This refers to types of network parti-
cipants and not to geographical coverage.

national bibliographic center

> an organization that provides bibliographic
> control at the national level, contributing
> bibliographic records and authority records
> to the national library network data base.

national bibliographic control

> 1) the systematic and nationally coordinated
>    organization and provision of bibliographic
>    data on all materials available in the
>    nation's libraries.
>
> 2) a subsystem of the universal bibliographic
>    control system.

national bibliographic data base

> see:  national library network data base.

national bibliographic data store

> see:  national library network data store.

national bibliographic service

> bibliographic service emanating from a national
> bibliographic center, e.g., the Library of
> Congress, to support the nation's libraries
> with tools for consistent and uniform catalog-
> ing, and for nationwide interlibrary loan.

national library and information service network

> a system to facilitate access to the nation's
> library and information resources.  The pro-
> posed network is to consist of three coor-
> dinated parts:  a resource system, a biblio-
> graphic service system, and a communications
> system.

national library network

the library-oriented components of the
national library and information service
network, in all three of its proposed parts:
bibliographic, resource and communications.
The national library network will include the
contributors to the national library network
data store, and will encompass several hier-
archical levels: centers of responsibility,
centers of special authorization, bibliographic
utilities, and bibliographic service centers
or major resource libraries.

The national library network is expected
to provide services to support the identifica-
tion of items, the location of items, the trans-
fer of items shared by the network's partici-
pants (interlibrary loan), and the acquisition
of such items.

national library network data base

a compatible set of machine-readable files
of bibliographic data constructed according
to network standards and designed to support
national library network services.

national library network data store

the aggregate of machine-readable files of
bibliographic data possessed by the national
library network's contributors. The data
store provides the data from which the
national library network data base is built.

Since the data store comprises records of
only the library sector of the information
community, it represents only one facet of
the nationwide library and information service
data store.

national library network union catalog

a union catalog or set of union catalogs
derived from the national library network
data base.

national library network union catalog (cont'd)

> A national library network union catalog
> will provide a non-redundant, sorted index to
> the network's resources, and interface with a
> larger, international network. Summary loca-
> tions data will direct requests to network
> participants where more specific locations
> statements are maintained for an item.

national network

> see: national library network.

nationwide library network

> see: national library network.

network

> 1) two or more organizations engaged in a
>    common pattern of information exchange
>    through telecommunications links, for
>    some common objectives.
>
> 2) an interconnected or interrelated group
>    of nodes.

network authority record

> an authority record created according to
> standards for content and content designa-
> tion agreed to by network participants.

network control program

> a subsystem of a host computer in a network,
> which controls the operations of the communi-
> cations computer.

network coordinating agency

> an agency responsible for coordinating the
> development of the library bibliographic
> component of the national library and infor-
> mation service network.

**network front end processor**

> a front end computer that acts as the inter-
> face between the host or the host front end
> processor and the network. Its responsibilities
> include the reliable routing of messages to and
> from the associated host front end processor and
> the transmission of messages from other network
> nodes.

**network library resource system**

> one of the three components of the national
> library and information service network. The
> resource system will designate responsibility
> to information facilities for providing access
> to needed library materials and coordinate
> support for collection development.

**network node**

> a station, terminal or communications computer
> in a computer network.

**network operations center**

> a center that controls, manages and
> maintains a network.

**network redundancy**

> additional links beyond the minimum number
> necessary to connect all network nodes.

**network security**

> the measures taken to protect a network's
> equipment, communications, and files from
> unauthorized access, accidental or willful
> interference, and damage or destruction.

**network text**

> see: message text format.

network topology

      the configuration of links and nodes in a
      network.

network transaction

      a transaction between nodes in a network.

node

      see:  network node.

originating host

      1)  the initiator of a network session.

      2)  the host computer at the source of a
          message transmitted to a target host
          in a network.

packet switching

      a type of data communications in which small
      defined blocks of data called packets are
      independently transmitted from point to point
      between source and destination, and reassembled
      into proper sequence at the destination.

port

      the communications interface subsystem of
      a computer, front end computer, or terminal.

post telephone and telegraph (PTT)

      government-operated or government-authorized
      (usually European) common carriers.

protocol

> the conventions used in communicating
> between nodes and levels in a network,
> specifically a formal set of conventions
> governing the format and relative sequenc-
> ing of message exchanges. (Note: the use
> of "protocol" for communications conventions
> between nodes at the same level, and "inter-
> face" between nodes at adjacent levels has
> been suggested.)

PTT

> see: post telephone and telegraph.

quadraplanar structure

> a form of data representation in which
> bibliographic data and locations data collected
> from more than one institution are organized
> with minimal duplication of data elements by
> distinguishing four levels or types of data
> planes: universal or system, multi-institution
> or collection, single institution, and copy.
> Data elements from a record that are alike for
> all institutions in the system belong to the
> universal plane, those common only to subsets
> of institutions are on the multi-institution
> planes, and likewise for the other levels.

query

> a data message structured so as to elicit
> a response.

real time system

> a computer system that receives and processes
> data, and can utilize the results immediately
> to guide subsequent processing operations.

### regional network

> a network with nodes in a defined geographic area.  A regional network may operate wholly within a state (intrastate network), or have participants across state lines (interstate network).

### registry

> a conceptual entity designed to function as a depository for message text format standards and the current and correct version of the network protocol for the national library network, and as an assigner of control codes for inclusion in the header field.

### reliability

> the ability of a system to perform its intended functions under stated conditions for a stated period of time.  See also:  vulnerability.

### remote input

> a method of input in which data are entered for processing via an input device that has access to a computer through a telecommunications link. See also:  decentralized input.

### resource library

> a library designated as responsible for developing collections in special groups of materials and for providing access to these materials to other libraries.  See also:  center of excellence.

### resource sharing

> 1) sharing of materials among cooperating libraries.
>
> 2) sharing of bibliographic data.

resource sharing (cont'd)

    3)   sharing of library processing services
and the computer facilities, programs,
and telecommunications to provide these
services.

response time

the elapsed time between an indication of the
end of a query and the display of the first
character of the response.

ring network

a computer network in which each computer is
connected to two adjacent computers in a
circular pattern.

service center

see: bibliographic service center.

session

an association between an originating host
and a target host through a sequence of con-
trol messages that explicitly begin and
end the session. A session may have a number
of transactions which, in turn, may comprise
many messages.

sink

1) a computer or terminal that receives and
processes data from a connected channel.

2) the point of usage of data in a network.
See also: source.

site data

> data sufficient to identify the actual physical location and shelving position of an item. For example, site data may specify special collection sites in single-branch collections and branch sites in multiple-branch collections, and may include call number data.

source

> 1) a computer or terminal which enters data into a connected channel.
>
> 2) the point of entry of data into a network. See also: sink.

specialized common carrier

> 1) a company authorized by a government agency to provide limited telecommunications services. Examples of specialized common carriers are the value-added networks.
>
> 2) the term is also used to connote all those common carriers not covered in the original federal communications legislation.

star network

> a computer network in which each peripheral network node is connected only to the computer(s) at a single central facility. See also: centralized (computer) network.

state network

> see: intrastate network.

station

> an input or output point in a telecommunications system.

32

target host

    1) the host computer in a network session
    with which the originating host communi-
    cates.

    2) the destination of a message transmitted
    in a network from an originating host.

telecommunications

    transmission and reception of data by
    electromagnetic means.

teleprocessing

    automated data processing that utilizes
    telecommunications facilities for data
    transmission.

TELPAK

    commercial telecommunications services using
    wide-band transmission techniques for multiple
    channel, high-speed and video communication.

terminal

    1) a device for entering data into or
    receiving data from a computer system
    or computer network.

    2) a point in a communications network at
    which data can either enter or leave.

text

    1) the part of a message that contains the
    substantive information; the body of a
    message, exclusive of control characters.
    See also: message text.

text (cont'd)

2) the accepted format for a standardized
network communication, e.g., query text,
reply text, error text, etc. See also:
message text format.

3) a sequence of characters forming part of
a transmission from a data source to a
data sink, preceded by a header and
followed by an "end of text" signal.

transaction

1) an operational unit of processing at the
application level; a complete step of
data processing.

2) a logical grouping of messages in both
directions between originating hosts and
target hosts in a network.

two-way alternate operation

mode of operation of a data link in which data
may be transmitted in both directions, one way
at a time, over a single channel.

two-way simultaneous operation

-mode of operation of a data link in which
data may be transmitted simultaneously in
both directions over two channels.

union catalog

1) a catalog that describes the contents of
physically separate library collections,
indicating by means of locations data
the libraries in which a given item may
be found.

2) subsets of the national library network
data base.

a) See: national library network union
catalog.

union catalog (cont'd)

        b) Other union catalogs that coexist in
           the data base, with headings that con-
           form to standards of various specialized
           centers of special authorization or
           centers of responsibility.

universal bibliographic control (UBC)

    an international system for handling
bibliographic data that describe biblio-
graphic items produced anywhere in the
world.

validation

a machine or manual process in which the
data and the content designators of a
record are matched against standards, and
notification is given of any errors or in-
consistencies detected. Not only is the
record itself checked (verification) but
it is also checked against existing files.
No data are changed during validation.
Examples of validation processes include
using a check digit to confirm the accuracy
of numeric data and checking a record
against existing files for possible record
duplication.

value-added network

a network operated by a private company
that is authorized by a government agency
to lease basic communications services
from common carriers and specialized
common carriers, to augment the services
through additional facilities, such as
switching centers and store-and-forward
devices, and to resell the enhanced ser-
vice to end users. Telenet and Tymnet
are examples of value-added networks.

variable field

>   a field in a record the length of which is
>   determined by the number of characters re-
>   quired to store the data in a given occur-
>   rence of that field.  The length may vary
>   from one occurrence of a variable field to
>   the next.  See also:  fixed field.

verification

>   a process in which a record is proofread to
>   determine whether it is complete and error-
>   free.  See also:  validation.

virtual circuit

>   a telecommunications path that uses a
>   number of point-to-point circuits con-
>   nected through switching by communica-
>   tions computers.  Data transfer is
>   accomplished by forwarding data in blocks
>   from node to node toward the destination,
>   such that the circuit appears as a single
>   physical transmission path.

voice-grade line

>   a telephone line suitable for transmission
>   of speech, digital or analog data, or
>   facsimile, generally with a frequency range
>   of 300 to 3000 cycles per second.

vulnerability

>   the extent to which a system is susceptible
>   to malfunctions under stated conditions.
>   See also:  reliability.

WATS

>   see:  wide area telecommunications service.

wide area telecommunications service (WATS)

> communications service that allows users
> to use telecommunications facilities for
> voice or data transmission within speci-
> fied zones for a flat monthly charge,
> without regard to the number or length
> of transmissions.

wide-band

> a communications channel or group of channels
> with a data capacity greater than that of a
> voice-grade line.