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OSINET GENERAL AGREEMENTS AND INFORMATION DOCUMENT

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National Institute of Standards
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1. OSINET ORGANIZATION AND POLICY

1.1 INTRODUCTION

The OSINET is an international organization established in 1984 to foster the development, promotion, and deployment of Open Systems Interconnection through activities related to interoperation tests and testing.

Open Systems, in general, are those that are able to communicate with other Open Systems which adhere to the same base standards. Yet, because communications standards are necessarily complex, there is no absolute assurance that implementations will be able to interwork over the complete range of functionality specified by the base standards. Interoperation testing, between pairs of implementations, gives some evidence of their abilities to interwork, at least over the range of tests carried out. But, interoperation testing does not guarantee general interworking of implementations. Hence, while OSINET promotes the development of interoperation test suites and the conduct of testing, it makes no claims as to the completeness of its results.

1.2 THE OSINET ORGANIZATIONAL ENTITY

The OSINET is an organization of potential users and potential suppliers of OSI products. Members include industry user companies, government user agencies, and supplier companies. OSINET is hosted by the National Institute of Standards and Technology (NIST), but is governed by its membership.

1.3 MISSIONS

The OSINET is engaged in three different activity areas. They are as follows:

1. The research and development of test suites and the conduct of OSI interoperability testing;

2. The demonstration and promotion of the OSI technology;

3. The testing and registration of announced OSI products.

1.4 ORGANIZATION OF OSINET DOCUMENTATION

Section 1 of this document contains the agreements reached by the OSINET Steering Committee relating to OSINET organization and policy; Sections 2-4 contain the rules and program of work pertaining to each of the activities listed in Section 1.3; Section 5 contains the names of the organizations participating in OSINET and the point(s) of contact for each organization, and Section 6 contains information on the services provided by the OSINET Network Information Center.

The MHS and FTAM interoperability tests developed by OSINET members are also documented separately and are available upon request.

1.5 INTERNAL ORGANIZATION OF OSINET

The OSINET consists of one physical and two organizational entities:

- The OSINET network, comprised of subnetworks, intermediate systems, and end systems
- The OSINET Steering Committee
- The OSINET Technical Committee.

The responsibility of the Steering Committee is to establish and manage OSINET. The Steering Committee determines and approves all OSINET projects. The responsibility of the Technical Committee is to carry out the technical program of work.

1.6 GENERAL REQUIREMENTS AND COSTS OF OSINET MEMBERSHIP

Companies must satisfy the following general requirements for OSINET membership, in addition to compliance with rules given in the remaining sections of this document and the associated Handbooks.

- A participating organization shall either 1) satisfy membership requirements through participation in a research and development project, or 2) satisfy membership requirements through participation in a testing and registration project, or 3) both.
- A participating organization shall provide an OSI end system or an OSI intermediate system on OSINET that supports an approved research and development project or a testing and registration of announced products project.
- To maintain eligibility in OSINET, an organization must attend three of the most recent four meetings of the NIST OSI Implementors' Workshop. Otherwise, a company may be admitted to OSINET by the Steering Committee on the basis of other significant participation.
- Personnel and other in-house resources are determined by the participating organization, after fulfilling obligations implied by the above items.
- Current suppliers of the backbone X.25 service are AT&T and Wang. Additional suppliers of X.25 service who wish to join OSINET are required to insure that OSINET connectivity is maintained. This can be accomplished by means of X.75 links to existing X.25 suppliers, by providing an intermediate system that uses the routing and relaying functions of the connectionless internetwork protocol to link to an existing X.25 network, or by arranging for another participant to provide the necessary intermediate system to link to an existing X.25 network.

- Costs associated with the installation, monthly charges, and traffic charges depend upon the X.25 service selected for an end or intermediate system that is directly attached to an X.25 service, and how that end or intermediate system is used. Section 5.3 gives the points of contact for procuring X.25 services for OSINET.

- Participants satisfying membership requirements through compliance to the research and development activities requirements must be able to use an OSINET Network Information Center service.

- Participants satisfying membership requirements through compliance with the testing and registration activities must be able to use the Network Registration Service.

- A Commitment, on company letterhead, to join OSINET must be sent to the OSINET Steering Committee Chairperson, National Institute of Standards and Technology, Building 225, Room B217, Gaithersburg, MD 20899.

1.7 GUIDELINE FOR PARTICIPANTS

An organization electing to join OSINET should expect to provide an operational end system or intermediate system on OSINET within six months of the date of joining.

1.8 STEERING COMMITTEE AND TECHNICAL COMMITTEE MEMBERSHIP

- A company desiring to participate as a member of the OSINET Steering Committee or the Technical Committee, or both, must be an OSINET member in good standing as defined earlier in this document.

- Each company may send one voting representative to meetings. To provide needed continuity, consistent participation by the same representative is requested.

- OSINET members and invited guests are permitted at the Technical and Steering Committee meetings.

- No additional costs beyond those identified above and those associated with the Network Registration Service will be charged to members of the Steering and Technical Committees.

1.9 VOTING

There is one vote allowed for each OSINET participating organization. In order to be allowed to vote the participating organization must attend one out of the last two meetings of the committee (Steering or Technical) in which the vote is cast. For a vote to be valid, two conditions must be met: 1) A majority of those organizations allowed to vote must be present; 2) A majority of those present must vote either yes or no.

1.10 LIAISON

The Steering Committee shall liaise with other organizations on matters of policy and OSINET management. The Technical Committee shall liaise with other organizations on matters of technical interest. Any proposed resulting agreements must be ratified by the Steering Committee.

1.11 PROJECTS WITH NON-MEMBER ORGANIZATIONS

The Steering Committee may approve OSINET projects involving other OSI-interest groups and OSINET members.

The Steering Committee may invite individual non-member organizations to propose OSINET projects that would involve member and non-member organizations. These projects must be approved by the Steering Committee in order to proceed.

1.12 ORGANIZATION ID ASSIGNMENT

The NSAP Address Organization ID is assigned by NIST to OSINET member organizations and to non-member organizations that wish to do cooperative testing on OSINET. The organization ID may be withdrawn when an organization cancels membership or ceases to participate in OSINET-sponsored activities.

2. RESEARCH AND DEVELOPMENT

2.1 INTRODUCTION

With regard to research and development, the OSINET has the following objectives:

- o Provide an open network environment for research and development by implementors and users of OSI protocols
- o Cooperate in participant-to-participant interoperation testing
- o Assist in the development of test services
- o Use either the Stable Agreements or the Working Agreements of the NIST OSI Implementors' Workshop for purposes of research and development
- o Strive to make OSINET systems available as often as circumstances permit.

2.2 ADDITIONAL MEMBERSHIP REQUIREMENTS

OSINET participants who satisfy membership requirements through their participation in research and development activities must, in addition to complying with the rules of Section 1 of this document, satisfy the following conditions.

- o A Participating organization shall either actively participate in at least one ongoing approved research and development project or maintain and make available an operational version of a completed project.
- o A participating organization must comply with the rules for interoperability testing contained in Section 7 of this document.

2.3 PROGRAM OF WORK

2.3.1 OSINET Research & Development Projects

2.3.1.1 X.400 Messaging

OSINET can optionally be used by interested participants for the interoperability testing of electronic messaging protocols using the CCITT X.400 Series of recommendations. Testing will be based on Version 2 of the Stable Implementation Agreements of the NIST OSI Workshop (NIST Special Publication 500-162).

Participants wishing to use OSINET to test electronic mail shall use MHS and ISO session (basic activity subset) as defined in SP-500-162. These protocols

shall operate either over the Transport Class 4 service as defined in SP-500-162 (Section 4.5.1) or over Transport Class 0 Service (Section 4.5.2).

2.3.1.1.1 Goals of OSINET Messaging Project

1. To provide a basis for conducting interoperability testing of ISO standard (X.400) messaging implementations among OSINET participants.

2. To verify that the X.400 functional standard defined by the NIST OSI Implementor's Workshop Agreements is a complete and unambiguous specification for interoperation; and to provide appropriate feedback to that SIG.

3. To provide expanded communication among OSINET participants by the use of electronic mail over OSINET.

4. To promote and publicize the use of X.400 messaging protocols.

5. To encourage the use of OSINET for communication among OSI Workshop participants.

2.3.1.1.2 Nature of OSINET Messaging Project

Participants in the OSINET Messaging project must provide network connectivity to the existing OSINET topology. Participation in the messaging project shall be an optional function for OSINET members.

An OSINET messaging participant may provide either a full end system (P1 and P2) or a message transfer service (P1 only) system. Both the PRMD-PRMD and PRMD-ADMD profiles will be utilized.

2.3.1.1.3 Messaging Agreements

Physically, all the PRMDs and ADMDs are attached to an X.25 network (Accunet, PSS or Transpac).

Logically, there are four testing topologies:

- o PRMD-PRMD direct connection
- o PRMD-ADMD direct connection
- o PRMD-ADMD-PRMD relay connection
- o PRMD-PRMD-ADMD relay connection, where the second PRMD acts as a PRMD relay supporting both profiles.

Participants can select one or more topologies they desire to test.[1]

2.3.1.1.4 Participating Systems

Each participant provides one or more MTAs and at least one UA.

2.3.1.1.5 Protocols Used

2.3.1.1.5.1 PRMD-PRMD

- Transport Class 4 and the Connectionless Network Protocol will be used.
- Session protocol is the Basic Application Subset (BAS).
- Application Protocols are P1 (Message Transfer) and P2 (Inter-Personal Messaging).
- 1980 X.25 Protocol will be used without SNDCP.

2.3.1.1.5.2 PRMD-ADMD

Session layer and above are identical to PRMD-PRMD. Any differences are as indicated by the NIST Agreements.

Transport Class 0 will be used.

1980 X.25 Protocol will be used without SNDCP.

[1] For example, participants can have both PRMD-PRMD and PRMD-ADMD connections at the same time. Subaddressing can be used to select the protocol stack.

2.3.1.1.6 Addressing Information Required

Two types of X.400 addressing information are required:

- Addressing information for communicating with, and routing to, an MTA (PRMD or ADMD):

  MTA Name
  Password
  ADMD Name
  PRMD Name
  Country
  S-selector
  T-selector
  NSAP
  DTE Address

- Addressing information for designating a message recipient (O/R name). For a PRMD-PRMD connection, each mail user will have the following attributes:

  Country
  ADMD Name (a single space)
  PRMD Name
  Organization (optional)
  Personal Name
    SurName
    Given Name (optional)
    Initials (optional)
    Generation Qualifier (optional)
  Organizational Units (optional, up to 4)
  Domain-Defined Attribute (optional)

For a PRMD-ADMD connection, each mail user will have the following attributes:

Country
ADMD Name
PRMD Name (required for users on PRMD, absent for ADMD users)
Organization (optional)
Personal Name
  SurName
  Given Name (optional)
  Initials (optional)
  Generation Qualifier (optional)
Organizational Units (optional, up to 4)
Domain-Defined Attribute (optional)

2.3.1.1.7 Specific Agreements

Each participant will adhere to the following agreements in testing as part of the OSINET messaging project:

1. MTANAME/Password shall be used for validation.

2. RTS checkpointing should be used and tested by implementations that provide this service.

3. Session segmentation may be used as negotiated, but is not required.

4. A maximum message size of 2MB will be accepted.

5. TSAP-ID will be a maximum of 16 digits as per X.410.

2.3.1.1.8 X.400 Message Handling Systems Testing

Initial interoperability testing is intended to demonstrate confidence that reasonable mail items can be exchanged between two systems. (Invalid mail items are not deliberately generated.)

The X.400 interoperability tests to be run for this optional OSINET project are contained in a separate document (OSINET X.400 Interoperability Tests) which is available upon request.

Document Formats

Support of IA5 body part types is required.

2.3.1.2 Directory Services

Directory Services, based on the joint ISO/CCITT standard and implementation agreements developed at the NIST OSI Workshop, has been approved as an optional OSINET project.

2.3.1.3 FTAM Phase II

The OSINET Steering Committee has approved a Phase II FTAM project. The version of FTAM Phase II and the underlying layers is specified in Version 2 of the Stable Implementation Agreements document (SP-500-162). The FTAM interoperability tests to be run for this optional OSINET projet are contained in a separate document (OSINET FTAM Interoperability Tests) which is available upon request.

To participate in this optional OSINET project, a participant must have X.25 connectivity to the existing OSINET X.25 network. The Stable Implementation Agreements Document (SP-500-162) is the basis of the FTAM implementation to be provided and is also used to specify the underlying layer protocols supporting the FTAM Phase II implementation.

2.3.1.3.1 Protocols Used

- FTAM Phase II:
  (Based on IS) as described in Section 9 of SP-500-162, Version 2.

- o Upper Layers:

  Implementations will support the Session, Presentation, and ACSE requirements as stated in Section 5 of SP 500-162, Version 2.

- o Lower Layers:

  TP4 over CLNS is the preferred choice of Lower Layer protocols for the FTAM Phase II project; however, other choices of Lower Layer protocols are not precluded specifically (TPO over CONS).

2.3.1.4 DoD/OSI Gateway

There now exists an application layer gateway between DoD and OSI for Electronic Mail (SMTP/X.400) and File Transfer (FTP/FTAM). Testing of this gateway has been approved as an OSINET optional project.

2.3.2 Sources of Implementation Agreements

The long-haul services are presently provided by ACCUNET and WANGPAC. Since OSINET is intended to be international, it is expected that there will be other X.25 service providers in Europe and North America. It is hoped that the various X.25 services will evolve to a common version of CCITT Recommendation X.25, 1984.

The NIST/OSI Workshop for Implementors of OSI Protocols is an open international forum comprised of computer manufacturers, semiconductor manufacturers, common carriers, and industry and government users. It was established for the purpose of reaching implementation agreements on evolving standards from IEEE, ISO, and CCITT.

The OSINET participants have elected to implement protocols for OSINET according to the implementation specifications developed in that workshop. See SP-500-162.

It is expected that other forums and organizations might produce implementation specifications for standard protocols. The OSINET will make use of such specifications where its members have a commercial or research interest in them and when they are reviewed and approved in an international, open forum, and projects making use of them have been approved by the Steering Committee.

2.3.3 Role of The Technical Committee

The Technical Committee will collect and publish (in the OSINET Agreements Document) relevant point of contact information. Each participating member must provide to NIST the relevant SNPA (X.25 address), NSAP, TSAP, SSAP, PSAP. This information must be provided prior to the start of testing. The Technical Committee and the NIST will make this information available to members via the NIC.

The Technical Committee will review and publish the test scenarios for any approved testing projects. When appropriate, these scenarios will be reviewed by the appropriate SIG(S).

The Technical Committee will review and adjudicate any problems arising out of testing. These problems, when appropriate, will be reviewed by the applicable SIG(S) via the normal liaison procedures.

The Technical Committee will review and report the testing status at the Technical Committee Meetings. This status will be summarized for the Steering Committee and documented by NIST.

2.3.4 NIC Services

OSINET provides Network Information Center services. Currently NIC services are offered for X.400 and Phase II FTAM. For more information see Section 6 of this document.

2.3.5 OSINET Research & Development Testing

The following rules apply to all organizations participating in R & D testing on OSINET.

(a) Organizations should inform NIST of each protocol they intend to test and should fill out a questionnaire pertaining to their implementation of that protocol before testing begins.

(b) Participants can choose their own test partners or have their test partners assigned by NIST. Participants who choose their own test partners should notify NIST before testing begins. Participants should attempt to test with different hardware/software configurations and they are expected to be available for assignment as a test partner when necessary.

(c) OSINET members will develop a test suite for each protocol approved for OSINET testing by the OSINET Technical Committee. The test suites may contain mandatory and optional tests. The optional tests to be performed must be agreed on by the test partners before testing begins.

(d) Organizations participating in OSINET testing are strongly encouraged to be available for testing as often as circumstances in their organization permit. In order to ensure continued interoperability, participating organizations are encouraged to perform regression testing when changes are made to their OSINET system.

(e) Each organization is required to complete testing of a protocol with at least five (5) test partners, and to exchange addressing and news information with the Network Information Center (NIC) if a NIC exists for that project. This implies the successful completion of all mandatory tests in the test suite developed for that protocol.

Organizations should send NIST a test completion report when this milestone is reached. The test report should include the optional tests which were run, although these tests are not a requirement for the completion of testing. Testing with additional partners can be conducted and recorded, but will not pertain to the criteria for test completion.

(f) Test partners should report all problems of a general nature to the Network Information Center so that this information can be distributed to other participants. Test partners are also encouraged to suggest improvements to the interoperability test suites based on their testing experience.

3. PROMOTION AND DEMONSTRATION

3.1 INTRODUCTION

With respect to promotion and demonstration OSINET has the following specific objectives:

- Make tests and test methods publicly available
- Publicly demonstrate interoperation capabilities
- Promote and publicize OSINET
- Establish alliances and joint projects with other OSI-interest organizations
- Use the version (current at project initiation) of the protocol specifications of the Stable NIST OSI Implementors' Workshop Agreements for purposes of demonstrations.

4. TESTING AND REGISTRATION OF ANNOUNCED PRODUCTS

4.1 INTRODUCTION

The OSINET Testing and Registration of Announced Products function is intended to provide some confidence, in addition to that which may be gained through conformance testing, that implementations can interwork. The testing and registration function works as follows. Testing parties privately, voluntarily, and bilaterally agree to perform certain interoperation tests. The successful results of these tests, in the form of suppliers' declarations of interoperation, are registered with the OSINET Network Registration Service. Supporting documents (the Protocol Implementation Conformance Statement (PICS), Protocol Interoperation Test Report (PITR), and Test System Environment Specification (TSES)) are filed with NIST and may be obtained from the suppliers. Test cases may be obtained from OSINET. The Network Registration Service is an online database facility belonging to OSINET and residing at the National Institute of Standards and Technology (NIST). These registered data are to be made publicly available and are expected to be referenced in the process of procurement of open systems.

4.2 REQUIREMENTS FOR PARTICIPATING IN TESTING AND REGISTRATION

In addition to satisfying general membership requirements stated in Section 1 of this document, participants in the Testing and Registration of Announced Products project must comply with the following:

- Each testing and registration participant shall either actively engage in at least one test and registration activity or have at least one current entry in the Network Registration Service.

- Each testing and registration participant must be able to use the Network Registration Service.

4.2.1 User Testing and Supplier Registration

Participation of interoperability testing is open to suppliers and users with a genuine interest in verifying the functionality and support of OSI application services. Thus, testing may be executed by any OSINET member satisfying the requirements set forth in this document. However, only suppliers may register results of testing with the Network Registration Service. Users who choose to test under the testing and registration procedures are specifically excluded from filing a Supplier's Declaration of Interoperation (SDI) with the Network Registration Service.

A supplier of OSI products is defined as any organization which intends to offer its OSI systems for sale to purchasers in the open market. Such OSI systems shall be offered as a product, irrespective of the origin of the components. Suppliers may include independent sales organizations and value added resalers. A user of OSI products is defined as any organization that procures OSI products for operational use and does not intend to sale or resale such products in the open market.

4.3 GENERAL PROCEDURES FOR TESTING & REGISTRATION: TEST PARTIES' RESPONSIBILITIES

4.3.1 General Procedures

The following steps highlight the overall process of testing and registration of announced products. Additional detail, including document proformas and the Network Registration Service operation and use may be found in Section 4.8.

1. Select Test Parties

OSINET members select test parties at their own volition and by mutual consent. Any OSINET member may test with any other OSINET member. Contacting OSINET members to discuss possible testing and registration is addressed in the Section 4.8.

2. Execute Bilateral Agreement

The two test parties may execute a legally binding agreement concerning the testing and registration. It may cover non-disclosure of confidential information exchanged, the intent to register successful results, and the method of resolution of any test result anomalies. A sample agreement, for guidance only, appears in Section 4.8.7. The two test parties may use an agreement suitable to their purposes.

Multilateral agreements for testing relaying purposes (such as forwarding, relaying, and multi-casting), or relay functions in OSI, may be based and preconditioned on prior successful completion of bilateral testing of prerequisite tests, as specified by OSINET testing and registration requirements, between each pair and all cross pairs of parties. The format for such multilateral agreements is for further study.

3. Prepare TSES

Each party shall prepare and exchange a Test System Environment Specification (TSES) for the test suite to be tested, and other documentation as required. A proforma of the TSES may be found in Section 4.8.8. Note that the TSES and other documentation prepared by the test parties may contain confidential information prior to registration of test results, if this information has not been made public earlier through reporting conformance testing.

Note: When the test suite specifies a local area network, prior arrangements may have to be made with a third OSINET party for access to a LAN facility.

4. Conduct Test Campaign

Test parties execute the appropriate test suites. This may be an iterative process involving the discovery and correction of errors. Test suites are those approved by the OSINET Technical Committee.

5. Prepare Test Reports

If the test parties have agreed to register the successful results of testing, then each party shall complete and exchange Product Interoperation Test Reports (PITRs) for each protocol of the tested suite. Proformas of the test reports appear in Section 4.8.10.

6. Interpretation of Results and Resolution of Differences

Any problems arising in testing are to be resolved by the testing parties. Outside consultation, if any, is at the joint request of the testing parties and may be directed to the OSINET Technical Committee. The two steps above may have to be repeated as a result of correcting errors in implementations and in amending the test suite.

7. Register Results

If the test parties have agreed to register the successful results of testing then each shall prepare a Supplier's Declaration of Interoperation (SDI). A model declaration appears in Section 4.8.7. To register results each test party shall submit its SDI to the OSINET Network Registration Service. No other information, such as sales literature or advertising of any kind, shall appear in the database.

One copy, in hardcopy form, of the referenced documents is filed with NIST. Copies of the documents referenced by the SDI may be obtained from the suppliers.

4.3.2 Additional Test Parties' Responsibilities

An organization registering information with the Network Registration Service is responsible for the preparation and submission of that information, as outlined above. The organization is also responsible for the maintenance of that information, i.e., marking incorrect entries invalid and marking entries obsolete that have been superceded or for which products are no longer announced.

An organization entering information is responsible for the accuracy of that information. The NIST is not responsible for the integrity of the database.

Costs associated with the database maintenance are to be borne by the organizations submitting the entries.

4.4 STEERING COMMITTEE RESPONSIBILITIES

The Steering Committee determines the policies and approves the procedures for the use of OSINET with respect to testing and registration of announced products.

If erroneous current entries in the Network Registration Service database are brought to the attention of the Steering Committee then the Steering Committee shall cause the erroneous entries to be marked invalid. By so doing an erroneous entry is moved from the current entries to the invalid entries section of the database. A new, corrected entry may be entered by the original submitter as a new current entry.

4.5 TECHNICAL COMMITTEE RESPONSIBILITIES

Some documents used in the testing and registration process are adaptations of similar documents defined by ISO as conformance proformas. They have been modified to reflect the different nature of interoperation testing characterized by peer testing (rather than test laboratory and client) and implementation/implementation testing (rather than test system/implementation testing).

The Technical Committee shall develop, provide, adapt, and maintain the documents necessary for testing, as follows.

- Test suites for each approved protocol suite
- An ISO PICS Proforma for each approved protocol
- A Test System Environment Specification Proforma for each approved test suite
- A Product Interoperation Test Report Proforma for each approved protocol.

The Technical Committee has the following additional responsibilities:

- To design, develop, and maintain the Network Registration Service database facility
- To analyze, and report as appropriate, test purposes at the request of test parties
- To verify the accuracy of database entries at the request of the Steering Committee.

The Technical Committee shall not otherwise interpret test results and database entries.

4.6 ROLES AND RELATIONSHIPS BETWEEN OSINET AND NIST

The OSINET Steering Committee determines the policies and procedures of OSINET. OSINET is the registrar of the Network Registration Service.

The OSINET is not an incorporated entity. It is hosted by the National Institute of Standards and Technology (NIST) for the broad purpose of developing Open Systems with respect to interoperation test suites and testing. The NIST has been asked by OSINET to openly disseminate Network Registration Service entries upon request. The terms and conditions agreed to by NIST may be found in Section 4.8.4.

The Network Registration Service database presently resides on an NIST OSINET node.

4.7 USE OF THE NETWORK REGISTRATION SERVICE ENTRIES

The Network Registration Service (NRS) data may to be used for procurement and other purposes. It provides an up-to-date reference for announced OSI products in order to help users select interoperable OSI products. Only implementations that have met the OSINET testing criteria are listed.

The NIST makes available the NRS data. It may be procured directly from NIST. The NIST may publish it, periodically, in the Federal Register and the Commerce Business Daily.

Entries do not contain any confidential information.

Entries may be accessed online by OSINET members, at no charge.

Entries become publicly available and may not be deleted. Correct entries applicable to announced (and available) products are known as current entries Entries found to be in error are marked as invalid entries rather than current entries. Entries that are retired, for example because of new releases of products, are marked as obsolete entries rather than current entries. New entries, know as unreleased entries, are automatically made current after ten (10) days. As unreleased entries they may be edited by the submitter to correct typographical or other errors.

Unreleased entries and entries that have been marked invalid or obsolete will not be made accessible, generally, without a demonstrated need for such information.

The organization submitting an entry to the database retains all patents and copyrights. No patent or copyright licenses, expressed or implied, are granted by these submissions.

4.8 PROGRAM OF WORK

4.8.1. Introduction

This section contains information of a more detailed (rather than general) nature.

4.8.2 Points of Contact

The list of contacts for purposes of discussing possible testing and registration is maintained separately from this standing document because it is subject to frequent change. It is revised and distributed at each OSINET Steering Committee meeting.

To provide or update information, send the following to the OSINET Steering Committee chair.

Name

Organization

Address

Telephone number

Organization ID

Profile or profiles (See section 3 of the Supplier's Declaration of Interoperation.)

The points of contact list is sorted by organization ID, with multiple entries where different individuals represent their organization in these capacities.

It is planned that the contact list will become a part of the Network Registration Service database. Suppliers of information will be responsible for its maintenance.

4.8.3 Operation and Use of the Network Registration Service

The Technical Committee shall design and implement the NRS with the aid of the OSINET membership. Such aid may be in the forms of equipment, software, or software development personnel. The Technical Committee shall provide documentation for NRS use and understanding.

It is intended that the procedure be automated so that registration may take place online using OSINET. However, the Technical Committee and the NIST may provide an interim manual solution.

Minimal provisions shall include the abilities to enter (register) an item in the database with a unique identifying number (paired with the other test party's identical number), to retrieve a directory of the information, to retrieve selective entries, and to change the status of an entry.

4.8.4 Dissemination of Information

This section is to be completed by NIST and the OSINET Steering Committee, given the database design. Methods of dissemination of NRS data, to be discussed, are:

- o Online access via OSINET
- o NIST Bulletin Board System (interim solution)
- o Network Information Center access (interim solution)
- o Periodic publication in federal communications media
- o Hardcopy distribution by NIST, NTIS, or other agency.

This section should indicate that detailed documents referenced by NIST entries may be obtained as follows:

- o Test suites from OSINET
- o PICS, PITR, TSES from suppliers.

4.8.5 Support of the NRS

This section is to be completed by NIST and the OSINET Steering Committee. It describes how the database is maintained in a financial sense.

4.8.6 Model Bilateral Agreement

The sample agreement appearing below is intended for guidance only. Each test party pair may execute an agreement covering the handling of proprietary information, the resolution of testing problems, the intended use of test results, and other matters appropriate to their needs.

OSINET INTEROPERATION TESTING OF ANNOUNCED PRODUCTS AGREEMENT

This is an Agreement between Company A a Company A's corporate location doing business at Company A's interoperation testing business location and Company B a Company B's corporate location doing business at Company B's interoperation testing business location.

Whereas both parties to this Agreement are members of the OSINET, an organization established to foster the development, promotion, and deployment of Open Systems Interconnection (OSI) through activities related to interoperation test suites and testing and;

Whereas each party desires to perform tests to determine whether the OSI implementations used by their respective products are compatible and are able

to interoperate with each other within parameters established by the parties and;

Whereas, if it is determined through such testing that the parties' products are able to interoperate, then the parties jointly desire to confirm such interoperation by each, independently, registering the test results, with the OSINET Network Registration Service.

Now, therefore, the parties agree as follows:

1. Definitions - The below listed terms shall, when used in this Agreement, have the following meanings.

An ISO **Protocol Implementation Conformance** Statement (PICS) is a statement made by the supplier or implementor of an OSI implementation or system, stating which capabilities and options have been implemented, for a given OSI protocol.

A **Test System Environment** Specification (TSES) is a statement made by a supplier or implementor of an implementation which contains or references all of the information (in addition to that given in the PICS) related to the implementation and its environment, which will enable the test parties to execute an appropriate test suite against their implementations.

An **OSINET Test Suite** is a complete test scenario, possibly combined into nested test groups, that is necessary to perform interoperation testing for one or more OSI protocols. Test suites are those approved by the OSINET Technical Committee and available from OSINET.

A Product Interoperation Test Report (PITR) is a document written at the end of the interoperation testing process, giving the details of the testing carried out for a particular protocol suite.

A Supplier's Declaration of Interoperation (SDI) is a document written at the end of the interoperation testing process, stating the overall summary of the conformance of the system to the interoperation test suite.

2. Schedule - This interoperation test is scheduled to begin on _____ and be completed no later than _____. This test period may be extended by written agreement of both parties.

3. Implementations to be Tested - The implementations to be tested by each party are:

a) (Reference Party A's PICS and TSES.)

b) (Reference Party B's PICS and TSES.)

4. Test Suite - The test suite to be executed is _____, an approved OSINET test suite.

5. Documentation to be Provided - Before testing begins, each party shall

prepare and provide to the other party the TSES for the test suite for that party's implementation to be tested, plus other documents as needed.

The TSES shall be completed in accordance with the proforma found in the OSINET Testing and Registration of Announced Products Handbook.

6. Third Party Program Material - In the event that either participating party uses program materials in this testing in relation to which rights are owned by third parties, the participating party represents and warranties that it has any necessary permission, expressed or otherwise, to enable such program material to be used in these tests and in participating in these tests neither participating party will be infringing upon the rights of any third parties. Moreover, the participating party supplying such program material agrees to indemnify the other participating party against damages ensuing from any breach of these representations and/or warranties.

7. Confidential Information - Any confidential information exchanged between the parties in support of interoperation testing shall be governed by the terms and conditions of the Bilateral Confidential Disclosure Agreement attached hereto as Exhibit A.

8. Test Coordinators - Each party shall designate a Test Coordinator for purposes of carrying out these interoperation tests. Such Coordinators shall be responsible for technical coordination and interaction with the other party's Coordinator in performing the tests and in the exchange of documentation.

9. Testing Environment - Testing will take place through use of _____ network.

For testing over a wide area network the OSINET shall be used. Each participant will remain at its own location when conducting the tests.

For testing over a local area network the parties shall select a network belonging to an organization that is a member of OSINET. The parties shall make arrangements as necessary for the use of the facility housing the local area network.

10. Costs of Participation - Each party shall be responsible for providing all of its own equipment and software necessary for carrying out the tests. Each party shall also be responsible for obtaining connection to the OSINET or appropriate local area network. Each party shall bear all of its own costs associated with its involvement in testing including, but not limited to, hardware and software costs, personnel costs, travel expenses, and communications costs.

11. Testing Criteria - All mandatory tests of the OSINET test suite shall be executed. All optional services for which tests appear in the test suite, and to which the parties agree to execute, are named below, identified by scenario identifier, as defined by the OSINET Technical Committee.

(list of optional tests to be executed)

Successful interoperation testing is defined as the completion of the mandatory tests and the selected optional tests with the expected results as expressed in the abstract test specification.

12. Testing - The Test Coordinators shall work together to execute the test suite at mutually agreed to times within the Agreement schedule. Any problems arising in testing are to be resolved by the Test Coordinators. If, and only if, mutually agreed to the Test Coordinators may consult the OSINET Technical Committee or other third party for an interpretation of a test's purposes. In the event any problem cannot be resolved to the satisfaction of both parties or in the event that either party is not satisfied with an interpretation of the OSINET Technical Committee or other third party, then either party may cancel this Agreement upon fifteen (15) days written notice to the other party's Test Coordinator.

Each party shall prepare and exchange PITRs as appropriate to the test suite.

Test parties are encouraged to report problems with the test suites, of both a general and specific nature, to the Network Information Center so that this information may be distributed to other OSINET members, and to the Technical Committee so that test suites may be improved. Test parties also are encouraged to suggest improvements to the interoperability test suites based on their experiences.

Except as set forth in this Agreement, neither party shall disclose test results without written permission of the other party.

13. Registration of Test Results - The parties agree that, if the test results are successful, thereby demonstrating the interoperability of the designated implementations, with respect to the test suite, then each party may prepare a Supplier's Declaration of Interoperation for submission to the OSINET Network Registration Service. The SID may be used by OSINET and made available to the public as set forth in The General Agreements of OSINET and The OSINET Testing and Registration of Announced Products Handbook.

Detailed descriptions of PICS, TSES, and PITR in conformance with the proformas provided by the OSINET Technical Committee shall be submitted to the OSINET Steering Committee chairperson as part of the registration process the first time they are used. These documents shall be placed on hardcopy file as part of the registration. Subsequent registrations of successful testing using identical PICS, TSES, or PITR may reference the original submissions of these documents without requiring the PICS, TSES, or PITR to be resubmitted. Any changes made to the PICS, TSES, or PITR require that new submissions be made as part of the registration.

The parties agree that registration of test results with the OSINET Network Registration Service requires the mutual consent of both parties. Unilateral registration by one party without consent of the other party is prohibited.

The parties agree that successful completion of these interoperability tests demonstrates only the ability of the designated implementations to work together under the limited parameters set forth in the PICS, TSES, and PITRs

referenced, and according to the test suite exercised by each party, and does not guarantee that the parties' products will operate together in any other manner.

Neither party makes any representations or warranties to the other that the products and implementations used in these tests are compatible with the other party's products or implementations or that the products and/or implementations conform to OSI base standards or to any other specification.

Neither party represents or warrants that completion of these tests will enable a user to establish that any software or equipment communicates with any other software or equipment that implements OSI base standards or any other specification.

14. Limitation of Remedies - In no event shall either party be liable to the other for any damages, including lost profits, lost savings, or other incidental or consequential damages arising out of this Agreement and the tests carried out hereunder, even if the party has been advised of such damages; nor shall either party be liable for any claims against the other party by third parties.

15. Termination - Either party may terminate this Agreement at anytime upon fifteen (15) days written notice to the other party without further liability.

16. Abandonment - If either party to this Agreement, during any part of the proposed testing, shall be remiss in its responsibility or fail to follow up or contact (communicate with) the other party for fifteen (15) days without due notification or timely extension thereof, then this Agreement shall be declared abandoned.

17. No Endorsement - Testing of each party's product shall not be construed in any fashion as an endorsement or recommendation of the other party's product or as a statement or commitment that either party's products will support or be compatible with the other party's product.

18. Entire Agreement - Both parties acknowledge that they have read this Agreement, understand it, and agree to be bound by its terms and conditions and further agree that it is the complete and exhaustive statement of the agreement between the parties which supercedes all proposals oral or written, and all other communications between the parties relating to the subject matter hereof.

Agreed this ------- day of ------, 1989.

Party A

Signed _____

by _____

Party B

Signed _____

by _____

Exhibit A

Bilateral Confidential Disclosure Agreement

1. Definitions

"Company A Information" shall mean that information related to _____.

"Company B Information" shall mean that information related to _____.

"Residuals" shall mean that information which may be retained in intangible form in the minds of those employees of the receiving party who have had access to the confidential information in tangible form of the disclosing party during the term of this Agreement.

"Subsidiary" shall mean a corporation, company, or other entity more than fifty percent (50%) of whose outstanding shares or securities (representing the right other than as affected by events of default, to vote for the election of directors or other managing authority) are; or which does not have outstanding shares or securities, as may be the case in a partnership, joint venture or unincorporated association, but more than fifty percent (50%) of the ownership interest representing the right to make the decisions for such corporation, company or entity is; now or hereafter, owned or controlled, directly or indirectly, by a party hereto, but such corporation, company, or other entity shall be deemed to be a Subsidiary only so long as such ownership or control exists.

2. All disclosures of information by one party to the other party pursuant to this Agreement shall be made by or under the supervision of the Test Coordinator for the disclosing party to the Test Coordinator for the receiving party or his designee. All disclosures of information will be deemed to be nonconfidential unless specifically designated at the time of disclosure (as provided in Paragraph 3 below) as including confidential information. With respect to all such information disclosed by one party to the other party, except such information as is so designated as confidential information of the disclosing party, and subject to any patents or statutory copyrights existing in published materials at the time of disclosure, the disclosing party grants to the receiving party, to the extent, if any, of its interest therein, a nonexclusive, royalty free, irrevocable, unrestricted, and worldwide license to use, have used, disclose to others, make copies in the case of documents, and dispose of, all without limitation, such nonconfidential information in

any manner it determines, including the use of such nonconfidential information in the development, manufacture, marketing, and maintenance of products and services incorporating such nonconfidential information.

3. Prior to any disclosure of confidential information, the party making the disclosure shall provide a nonconfidential general description of the confidential information to be disclosed to the Test Coordinator of the other party, who shall give his written agreement that he understands the nature of the confidential information and he will accept it. When confidential information is disclosed in writing and accepted, such writing will state the date of disclosure, that the information contained therein is confidential and that it is being disclosed pursuant to this Agreement, and will contain an appropriate legend. If such disclosure is orally and/or visually made, the disclosure shall be clearly identified at the time of disclosure as being confidential. The confidentiality of the orally or visually disclosed information shall be confirmed in a written resume within twenty days following such disclosure. The resume will specifically recite that information which is confidential. Confidential information may not be copied without receiving prior written approval from the disclosing party.

4. Subject to the provisions of Paragraphs 5 and 6, for a period of two years from the date of disclosure, the receiving party agrees to use the same care and discretion to avoid disclosure, publication, or dissemination outside of the receiving party of received confidential information as the receiving party employs with similar information of its own which it does not desire to publish, disclose, or disseminate. Annex I attached hereto shall define minimum standards of care.

During such period, the receiving party agrees to limit the dissemination of the confidential information of the other party to those of its employees having a need to receive such information. It is understood that receipt of confidential information under this Agreement shall not create any obligation in any way limiting or restricting the assignment and/or reassignment of employees of the receiving party.

Within two months following the conclusion of testing, the receiving party will make reasonable effort to return to the other party all writings and resumes received from the disclosing party and copies thereof containing confidential information (except for one copy thereof which shall be retained by the receiving party for archival purposes). The receiving party will not be obligated to transfer to the disclosing party any reports and/or other written documentation prepared by the receiving party.

The receiving party shall be free to use the Residuals from any such confidential information, the reports and written documentation referred to in the preceding Paragraph, and any ideas, concepts and/or techniques contained therein for any purpose including the use of such information in the development, manufacture, marketing and maintenance of its products and services, subject only to the obligation not to disclose, publish or disseminate such confidential information during such foregoing specified period of confidentiality.

Following such period, no obligation of any kind is assumed by, or is to be implied against the receiving party, with respect to any confidential information, and the receiving party shall be free to disclose, publish and disseminate such confidential information to others without limitation and shall have all the rights relative to such information as are set forth in Paragraph 2 as if it had been transferred as nonconfidential information under such paragraph.

For purposes of this Agreement the term "receiving party" shall be construed to include not only Company A and Company B but also their individual subsidiaries, as that term is defined in Section 1.d.

5. Disclosure of confidential information shall not be precluded if such disclosure is:

A. In response to a valid order of a court or other governmental body of the United States or any political subdivision thereof; provided, however, that the disclosing party shall first have given notice to the other party and made a reasonable effort to obtain a protective order requiring that the information and/or documents so disclosed be used only for purposes for which the order was issued; or

B. Otherwise required by law, or

C. Necessary to establish rights under this Agreement.

6. Notwithstanding any other provisions of this Agreement, the obligations specified in Paragraph 4 above will not apply to any information that is:

a. Already in the possession of the receiving party or any of its Subsidiaries without obligation of confidence;

b. Independently developed by the receiving party or any of its Subsidiaries;

c. Or becomes publicly available without breach of this Agreement;

d. Rightfully received by the party from a third party; or

e. Released for disclosure by the disclosing party with its written consent.

The marketing of any product or service, including the supporting documentation thereof, which inherently discloses the confidential information of either party shall not in itself be deemed publication or disclosure of such information for purposes of this Agreement.

7. No license or immunity is granted by this Agreement by either party to the other, either directly or by implication, estoppel, or otherwise, under any patents. None of the information which may be disclosed shall constitute any

representation, warranty, assurance or guarantee by either party to the other with respect to the infringement of patents or other rights of others.

8. The rights and obligations of Paragraphs 2, 4, and 9 of this Agreement shall survive and continue after any expiration or termination of this Agreement and shall bind the parties and their legal representatives, successors and assigns.

9. Each party agrees to comply, and do all things necessary for the other party to comply, with all applicable Federal, State and local laws, regulations and ordinances, including but not limited to the Regulations of the United States Department of Commerce relating to the Export of Technical Data, insofar as they relate to the activities to be performed under this Agreement. Each party agrees to obtain the required government documents and approvals prior to export of any technical data disclosed to it or the direct product related thereto.

Annex I

1. Maintain listings of the writing, resumes or other items that contain confidential information of the other company.

2. Source all writings, resumes or other items, including work in progress, which contain confidential information, in a safe, file, desk, cabinet or other suitable container with locking device, or in a locked room with restricted access, when such writings, resumes or other items are not in use.

3. Provide limited access to those areas of its facilities where work is being performed under the Agreement only to those employees with the need to know.

4. Establish a plan for the recovery and/or reconstruction of lost or missing writings, resumes or other items which contain confidential information and promptly report the loss of same to the other party within 24 hours.

4.8.7 Model Supplier's Declaration

The following is Supplier's Declaration of Interoperation proforma which shall be used by each of the testing parties to register, with the OSINET Network Registration Service, the successful results of testing of announced products.

Supplier's Declaration of Interoperation Proforma

1. Identification

Network Registration Service entry identifier:

Entry date:

2. Test Parties

(Company A) (Company B)

3. System Under Test

(Product name and no. based on announcement)

(Hardware and operating system identification)

(Profile tested (each protocol and base standard version no.))

(Supplier's name, (company filing this report - this should contain a marketing contact))

4. Nature of Interoperation Testing

The purpose of interoperation testing is to increase the probability that different implementations can interwork. However, the complexity of OSI protocols makes exhaustive testing impractical on both technical and economic grounds. Furthermore, there is no guarantee that a system under test which has passed all the relevant tests conforms to a specification. Neither is there any guarantee that such a system under test will interwork with other real open systems. Rather, the passing of the tests give confidence that the system under test has the stated capabilities and that its behavior conforms consistently in representative instances of communication.

5. Limits and Reservations

This OSINET Network Registration Service entry is publicly available. No patent nor copyright licenses, expressed or implied, are granted by this submission.

6. Functionality Test Report

(List primary functions tested.)

7. Derived Systems

(List of implications, etc., in terms of other hardware configurations/operating systems this declaration covers.)

8. System Report Summary

PICS: (Reference number)

TSES: (Reference number)

PITR: (Reference number)

OSINET Interoperation Test Suite: (Reference/number)

4.8.8 Test System Environment Specification Proformas

This section is to be provided by the Technical Committee. One TSES proforma is needed for each approved test suite, such as FTAM and MHS.

They should be adapted from the ISO PIXIT proforma. For example, the 'test method' might read 'interoperation of peer implementations'; the 'real test system' might identify the OSINET test suite. 'Issue date' and 'issued to' are not relevant, since operation is private and the proformas are to be included here. Primarily, the test laboratory section should be removed and the sections to be completed by a client should be duplicated, one for each peer.

Test System Environment Specification (TSES)

TSES Number:_____

For Company:_____

1. Test Partner Participants

   Start Date:
   Test Agreement ID# (If any):

2. Test Suite Summary

   Protocol Standard (X.400, FTAM, etc.):
   Reference Recommendation (type and date of relevant standards):
   Test Suite Identification (version, release, date, etc.):

3. Partners

   3.1 Organization - (Testing Contact)
   Company Name/Division:
   Contact Name:
   Contact Address:
   Contact Telephone:

3.2 System Under Test
Product Name:
Release Information:
System Type:
Operating System Release Information:

Network Information:
Type of Network:
Network Vendor:
Specific Network Address(es) (X.25, X.121, 802.3):

Relevant Required Products and Release Information:

3.3 Protocol Layer Information (fill out for each layer)

3.3.1 Protocol Identification
Name:
Version:
PICS Document Reference #:

3.3.2 Implementation Under Test (IUT)

This subsection shall include such items as addresses, parameter values, and timer values required to test the IUT.

3.3.2.1 Addresses (SAPs):

3.3.2.2 Parameter Values:

Parameter Name	Parameter Type	Parameter Range	Parameter Value

The company provides the parameter range and the exact parameter value to be used is agreed between the company and the test partner.

3.3.2.3 Timer values:

Timer Name Type	Timer Range	Timer Value

4.8.9 Protocol Implementation Conformance Statement Proformas

The Technical Committee should provide a proforma for each approved protocol, for this section. Each should be adapted from the ISO proformas for conformance testing, in a manner similar to the adaptation outlined above for the TSES.

The proformas for conformance PICS may be found in the appropriate protocol standard or the protocol conformance test suite standard. If the proforma has not been done by ISO for a given protocol, then the Technical Committee should design a temporary one, so labeling it. It should be replaced when the ISO version has been done.

Once a temporary proforma has been used in connection with an NRS entry, it must be retired to an appendix of this document when an ISO replacement is available.

4.8.10 Product Interoperation Test Report Proformas

The Technical Committee should provide a PITR proforma for each approved protocol. They should be adaptations from the ISO work on PCTR conformance proformas.

5. POINTS OF CONTACT

5.1 POINTS OF CONTACT FOR OSINET PARTICIPANTS

This section provides the information suggested by the title. Each participating company is expected to complete its subsection.

5.1.1 U. S. Air Force Communications Command

Point of Contact: Captain David Brabender
Building 3577
Mather Air Force Base, CA 95655-5000
Telephone: 916-364-4433

Organization ID: 10

5.1.2 U. S. Army Communications

Point of Contact: Mr. Thomas Pisani
U. S. Army Communications-Electronics Command
Systems Engineering & Integration Directorate
ATTN: AMSEL-SEI-TI
Fort Monmouth, N.J. 07703
Telephone: 201-544-2508

Organization ID: 26

5.1.3 U. S. Department of Agriculture

Point of Contact: Mr. Ronald deMunbrun
Administration Building
Office of Information Resources Management
Room 447W
14th & Independence Ave., S.W.
Washington, DC 20250
Telephone: 202-447-6275

Organization ID: 23

5.1.4 AT&T Communications

Point of Contact: Steve Griesmer
AT&T
Room 1M337
Crawfords Corner Road
Holmdel, NJ 07733

Telephone: 201-949-4328

Organization ID: 11

5.1.5 Boeing Computer Services

Point of Contact: Les Kerr
P.O. Box 24346
Seattle, WA 98124-0346
Telephone: 206-763-5868

Organization ID: 12

5.1.6 Boeing Computer Support Services, Inc.

Point of Contact: Mr. Philip Hewitt
Network Services Office
Bldg. 4727
P.O. Box 9022
Marshall Space Flight Center, AL 35812
Telephone: 205-544-5763

Organization ID: 33

5.1.7 Control Data

Point of Contact: Warren C. Veazie
Manager - ACSD
4201 Lexington Avenue North
Arden Hills, MN 55112
Telephone: 612-482-3700

Organization ID: 28

5.1.8 Corporation for Open Systems

Point of Contact: Vincent Roccanova
1750 Old Meadow Road
Suite 400
McLean, VA 22102-4306
Telephone: 703-883-2700

Organization ID: 37

5.1.9 CSIRO, Division of Information Technology

Point of Contact: Dr. Trevor Hales
CSIRO, Division of Information Technology
55 Barry Street, Carlton Victoria 3053. AUSTRALIA
Fax ISD: +61 3 347 8987,
Telex AA 152914
Telephone ISD: +61 3 347 8644 (W)

Organization ID: 5

5.1.10 Data General Corporation

Point of Contact: Liz Polnerow
Data General Corporation
4400 Computer Drive
M/S D112B
Westboro, MA 01580
Telephone: 508-870-6216

Organization ID: 13

5.1.11 Defense Communications Agency

Point of Contact: Mike Greifner
DCEC
Code R130
1860 Wiehle Avenue
Reston, VA 22090
Telephone: 703-437-2118

Organization ID: 22

5.1.12 Defense Logistics Agency

Point of Contact: Walter Simonson
Cameron Station
Alexandria, VA 22314

Organization ID: 7

5.1.13 Digital Equipment Corporation

Location: Littleton, MA

Steering Committee
Point of Contact: Paul Keresey
Digital Equipment Corp.
550 King Street
Littleton, MA 01460
Telephone: 508-486-7631

Technical Committee
Point of Contact: Gail Schlansky
LKG2-2/P5
Digital Equipment Corporation
550 King Street
Littleton, MA 01460-1289
Telephone: 508-486-5138

Location: Reading, England

Point of Contact: Lindsey Barker
RE02 G/MB,
Digital Equipment Corporation,
Digital Park II
Imperial Way
Reading
Berkshire.
RG2 OTU
Telephone: 011 44 734 853905

Organization ID: 14

5.1.14 Electronic Data Systems Corporation

Point of Contact: Jerrold S. Foley
300 East Big Beaver
P.O. Box 7019
Troy, MI 48007-7019
Telephone: 313-524-8416

Organization ID: 29

5.1.15 General Motors

Point of Contact: Gary Workman
APMES A/MD-39
30300 Mound Rd.
Warren, MI 48090
Telephone: 313-575-0632

Organzation ID: 15

5.1.16 Hewlett Packard

Point of Contact: Eva Kuiper
19490 Homestead Rd. 41M
Cupertino, CA 95014
Telephone: 408-447-3163

Organization ID: 16

5.1.17 Bull HN Information Systems

Point of Contact: Ron Harvey
P.O. Box 8000, H32
Phoenix, AZ 85066
Telephone: 602-861-4944

Point of Contact: Martin Hassenberg
Honeywell House
Godfrey Way

	Hanworth Road Hounslow, Middlesex, England TW4-5PW
Phone:	44 24 2291
Point of Contact:	Joel Spencer 675 Victoria Street Abbortsford, Victoria, AUSTRALIA 3067
Telephone:	61 3 420 0968
Point of Contact:	Ray Segura 675 Victoria Street Abbortsford, Victoria, AUSTRALIA 3067
Telephone:	61 3 420 0448
Organization ID:	17

5.1.18 IBM

Steering Committee Point of Contact:	John Heafner P.O. Box 12195 Dept. B35 Bldg. 503 RTP, NC 27709
Telephone:	919-254-4212
Technical Committee Point of Contact:	George L. Lotridge 1501 California Ave., N.W. Palo Alto, CA 94303-0828
Telephone:	415-855-4806
Location:	La Gaude, France
Point of Contact:	Jean-Louis Gal
Telephone:	011 33 93 584 722
Point of Contact:	Michael Shallcross Syndey, Australia
Telephone:	61 2 234 5596
Organization ID:	1

5.1.19 Intel Corporation

Point of Contact:	Jack Donnell 5200 Elam Young Parkway M/S HF3-61 Hillsboro, OR 97124-6497
Organization ID:	35

5.1.20 The MITRE Corporation

Point of Contact: Joel D. Jacobs
Burlington Road
Bedford, MA 01730
Telephone: 617-271-7373

Organization ID: 24

5.1.21 NASA-Ames

Point of Contact: Leon Shameson
Information and Communications Systems Division
Ames Research Center
Moffett Field, CA 94035
ATTN: EDN:233-18

Organization Code: 27

5.1.22 NASA-Goddard Space Flight Center

Point of Contact: Mr. Donald Wilson
ATTN: NCS - TS
8th & Courthouse Road
Washington, D.C. 20305-2010
Telephone: 202-692-2124

Organization ID: 31

5.1.23 National Institute of Standards and Technology

Point of Contact: Carol Edgar
Systems & Network Architecture Division
Building 225, Room B217
Gaithersburg, MD 20899
Telephone: 301-975-3613

Organization ID: 3

5.1.24 National Communications System

Point of Contact: Mr. Donald Wilson
ATTN: NCS-TS
8th & Courthouse Road
Washington, D.C. 20305-2010
Telephone: 202-692-2124

Organization ID: 32

5.1.25 Department of Navy

Point of Contact:	Curtis Cox NARDAC Washington Code 303 Bldg. 196 Washington Navy Yard Washington, DC 20374-4028
Telephone:	202-433-5422
Organization ID:	50

5.1.26 NCR

Steering Committee Point of Contact:	Scott Haynie NCR Corp. 3245 Platt Springs Rd. West Columbia, SC 29169
Telephone:	803-739-7697
Technical Committee Point of Contact:	Rick Johnson NCR Comten, Inc. 2700 Snelling Ave., N. St. Paul, MN 55113
Telephone:	612-638-7767
Organization ID:	4

5.1.27 Prime Computer Inc.

Point of Contact:	Laura Riguzzi M/S 10B-20 500 Old Connecticut Path Framingham, MA 01701
Telephone:	508-879-2960 X-7245
Organization ID:	36

5.1.28 Retix

Point of Contact:	John B. Stephensen Vice President, Engineering 2644 30th Street Santa Monica, CA 90405
Telephone:	213-399-2200
Organization ID:	6

5.1.29 Sun Microsystems

Point of Contact: Peter Vanderbilt
2500 Garcia Avenue
Mountain View, CA 94086
Telephone: 415-336-2960

Organization Code: 21

5.1.30 TASC

Point of Contact: Jonathan S. Katz
One Jacob Way
Reading, MA 01867
Telephone: 617-944-6850, Ext. 2282

Organization ID: 19

5.1.31 Telenet

Point of Contact: Miles Morimoto
12490 Sunrise Valley Road
Reston, VA 22096
Telephone: 703-689-6316

Organization ID: 38

5.1.32 Touch Communications

Point of Contact: Tom Freeman
250 East Hacienda Ave.
Campbell, CA 95008
Telephone: 408-374-2500

Organization ID: 25

5.1.33 Unisys

Organization Name: Unisys Defense Systems

Point of Contact: Anita Holmgren
5151 Camino Ruiz
Camarillo, CA 93011-6004
Telephone: 805-987-9300

Organization Name: Unisys Minicomputer Products Group

Point of Contact: Jamal Ketabi
747 Calle Plano
Camarillo, CA. 93010
Telephone: 805-987-3441

Organization Name: Unisys Large Systems Group

Point of Contact: Fred Loncar
P.O. Box 500
Mail Stop E11-15
Blue Bell, PA. 19424-0001
Telephone: 215-542-5747

Organization ID: 18

5.1.34 Wang

Steering Committee
Point of Contact: J. J. Cinecoe
One Industrial Avenue
Mailstop 014-A1B
Lowell, MA 01851
Telephone: 617-967-1030

Technical Committee
Point of Contact: Clark Cole
One Industrial Avenue
M/S 019-69A
Lowell, MA 01851
Telephone: 508-967-0819

Organization ID: 9

5.1.35 The Wollongong Group

Point of Contact: Dale Hanks
1129 San Antonio Rd.
Palo Alto, CA 94303
Telephone: 415-962-7287

Organization ID: 8

5.1.36 Xerox Corporation

Steering Committee
Point of Contact: John Stidd
Xerox Corporation
475 Oakmead Parkway
Sunnyvale, CA 94086
Telephone: 408-737-4338

Technical Committee
Point of Contact: Indru Bhatia
Location: Sunnyvale, CA
Telephone: 408-737-4721

Point of Contact: Eric Jeannin

Point of Contact: Eric Jeannin
Location: El Segundo, CA
Telephone: 213-333-5202

Organization ID: 30

5.1.37 Organization ID's Assigned to Non-OSINET Members

Several organizations expressed interest in doing testing with vendors participating in current OSINET projects. Organization ID's have been assigned to these organizations to allow them to do testing with OSINET members without becoming members themselves. These organizations are:

1. University of Wisconsin
   Organization ID = 51

2. International Computers, Ltd.
   Organization ID = 2

3. SICS (Swedish Institute - Computer Science)
   Organization ID = 54

4. NIST Workshop Objects Identifier
   Organization ID = 200

5. Digirede Informatica Ltd.
   Organization ID = 34

5.2 POINTS OF CONTACT FOR COMMITTEES

Jerry Mulvenna, Chair, OSINET Steering Committee, (301) 975-3622

Carol Edgar, Chair, OSINET Technical Committee, (301) 975-3613

Jim Converse, Liaison for MAP/TOP Steering Committee, (716) 726-1957

5.3 POINTS OF CONTACT FOR X.25 SERVICES

ACCUNET	Dan Avery AT&T Room 3A100 Rt. 202/206 North Bedminster, NJ 07921 (201) 234-8093
WANGPAC	Joe Hielscher Wang Laborabories, Inc. One Industrial Avenue Lowell, MA 01851 (617) 459-5000/967-1030
TELENET	Mike Hirsch Telenet Communications Corporation 12490 Sunrise Valley Drive Reston, VA 22096 (703) 689-5310

6.0 OSINET NETWORK INFORMATION CENTER SERVICES

6.1 INTRODUCTION

This section describes the services to be provided by the OSINET Network Information Center (NIC). These services are concerned with the dissemination of information about OSINET, and consist of files of textual data which are accessible at the NIC node.

6.2 OBJECTIVES AND ASSUMPTIONS

6.2.1 Objectives

The objectives of the NIC services are as follows:

* to provide information about OSINET and its participants
* to enable addressing information to be obtained in lieu of obtaining it from a directory service facility
* to provide an OSINET news service to OSINET members

6.2.2 Assumptions

The following assumptions are made concerning the use of the NIC services:

* access to NIC services is available only through OSINET
* operation of the protocol suite defined in section 7 of this document is required to access the NIC services
* a member organization constitutes any major organizational unit which operates as a company unto itself. For example

NIST (Gaithersburg) is an organization
NIST (Boulder) is an organization

Both are part of NIST, but each operates as an individual company, therefore each could be considered a separate company if each attached to OSINET. Currently, NIST Boulder has no plans to attach to OSINET.

Although, each of the above companies would have the same organization identifier as assigned by NIST these would be distinguished by the subnet identifier of the NSAP address (see Appendix A).

6.2.3 File Naming Conventions

The NIC will be the repository for quite a large number of files. In order to insure that everyone can access these files, a set of file naming conventions is needed. The current file naming conventions are as follows:

* the filename may consist of alphabet characters, digits, underscores, or a period
* filename length is limited to 21 characters in length including the period)
* filename may have at most 1 period
* filename may have up to 3 characters or digits after the period

6.3 NIC SERVICES

6.3.1 General Description

The NIC services consists of five types of files:

* a HELP or README file, consisting of a general description of the NIC services, a definition of the file naming conventions, and instructions on how to access the NIC files
* a MEMBERS file, containing a list of OSINET member organizations, and the filename of the relevant COMPANY file

* a COMPANY file, containing all addressing and contact information for an OSINET member organization

* NEWSHEET files, each containing a news article submitted by an organization

* PROBLEM REPORT files, each documenting a problem or problems encountered during interoperability testing

To simplify submitting the necessary files to the NIC, templates for the COMPANY, NEWSHEET, and PROBLEM REPORT files are available at the NIC. When an organization attaches to OSINET, it will copy the template files, edit the files, and send the edited files back to the NIC. Filenames for the returned files can be found throughout the remaining sections of this document.

In addition, there are two more files which are created periodically by the NIC:

* Concatenated NEWS File, contains every NEWS (with current up-to-date items) which have been submitted to the NIC

* Concatenated PROBLEMS File, contains every PROBLEM REPORT file submitted to the NIC

After the concatenated files have been created, the individual files used to create them are deleted.

6.3.2 HELP or README File

This file contains ASCII text that gives a detailed description of the Network Information Center (NIC) services and how they are to be used. This file is created and updated by the NIC. Any major revisions to this file will be announced by the NIC in a news item.

6.3.2.1 File Attributes

This section describes the file attributes associated with the HELP or README file.

Filename: README
Permitted Actions: read
Contents Type: FTAM-2

Access Control: ("read", initiator identity & filestore password)
Date and Time of Creation: UTC format

6.3.2.2 File Contents

The contents consist of a file type field which contains README and then the ASCII text of the file.

Figure 1 shows the format of the README file.

6.3.3 MEMBERS File

This file contains a list of the OSINET member organizations There is only one MEMBERS file on the NIC file system. It is created and maintained by the NIC. Any additions or deletions to the file will be announced by the NIC in a news item.

6.3.3.1 File Attributes

This section describes the file attributes of the MEMBERS file:

Filename: MEMBERS
Permitted Actions: read
Contents Type: FTAM-2
Access Control: ("read", initiator identity & filestore password)
Date and Time of Creation: UTC format

6.3.3.2 File Contents

This file contains a file type field which contains MEMBERS and then a list of entries, one per member, in ASCII text format.

Organization Name Field: Contains the name of an organization member of OSINET. The name should be generated using the file naming conventions in section 6.2.3 of this document.

An entry in the MEMBERS file also acts as the filename of a specific organization's COMPANY file.

Figure 3 shows the format of the MEMBERS file.

6.3.4 COMPANY File

These files, one per organization, are organized into four main sections, ORGANIZATION, ADDRESSING, X.400 CONTACT, and SYSTEM DESCRIPTION. Each organization is responsible for creating and maintaining its COMPANY file. Changes to a COMPANY file should be announced as a news item.

6.3.4.1 File Attributes

This section describes the file attributes of the COMPANY file:

```
Filename: COMPANY
Permitted Actions: read/replace
Contents Type: FTAM-2
Access Control: ("read", initiator identity & filestore
                password), ("replace", initiator identity
                & filestore password)
Date and Time of Creation: UTC format
```

6.3.4.2 File Contents

The contents of a COMPANY file will consist of a file type field containing COMPANY. The file will consist of four main sections, ORGANIZATION, ADDRESSING, X.400 CONTACT, and SYSTEM DESCRIPTION.

The ORGANIZATION section of the file must contain the names, addresses and telephone numbers of the primary OSINET contact and the Steering and Technical Committee representatives. This section should also contain a description of the network configuration supported.

Figure 5 shows the template used for a COMPANY file. The filename for the COMPANY template file is COMPANY.

The ADDRESSING section of the file must contain the addressing information for each system of that organization attached to

OSINET. The addressing information has been broken down into two sections, one for FTAM and one for X.400. This makes it easier to enter the correct information. Each organization simply fills out the portion of the addressing section which applies to their implementation associated addressing information. The addressing information includes PSAP selector, SSAP selector, TSAP selector, NSAP address.

The FTAM portion of the ADDRESSING section contains a list of system identifiers and their associated addressing information. Each list element has five fields, each of which is an ASCII character string terminated with CRLF. The entries for PSAP, SSAP, TSAP, NSAP, and SNPA are represented in the appropriate number of octets:

System Identifier: contains the name of a particular OSINET system. This system name is used to identify a system for administrative purposes without resorting to abstract addresses. It is composed of:

PSAP Selector: not used at this time

SSAP Selector: session selector, up to 16 octets in length

TSAP Selector: transport selector, 2 octets in length

NSAP Address: network address, up to 32 octets in length This may contain the Accunet address.

SNPA (X.121 Address): subnetwork point of attachment, from 4 to 8 octets in length

The X.400 portion of the ADDRESSING section contains a list of system identifiers and their associated addressing information. Each list element has nine fields, each of which is an ASCII character string terminated with CRLF. The entries for SSAP, TSAP, NSAP, and SNPA are represented in the appropriate number of octets:

System Identifier: contains the name of a particular OSINET system. This system name is used to identify a system for administrative purposes without resorting to abstract addresses. It is composed of:

SSAP Selector: session selector, up to 16 octets in length

TSAP Selector: transport selector, 2 octets in length

NSAP Address: network address, up to 32 octets in length This may contain the Accunet address.

SNPA (X.121 Address): subnetwork point of attachment, from 4 to 8 octets in length

MTA Name: message transfer agent name

MTA Password: message transfer agent password

Country Name: name of country MTA located in, maximum length of 3 characters

ADMD Name: Administrative Management Domain name, should contain one space in all O/R names of messages originated in a PRMD that is not connected to an ADMD, and in O/R names of recipients reachable only through a PRMD; otherwise, this attribute should contain an appropriate ADMD name. Maximum length is up to 16 characters or digits.

PRMD Name: Private Management Domain name, at least one of these must be supplied. Maximum length is 16 characters.

The X.400 CONTACT section of the file must contain the names mail addresses of individuals who may be contacted in a particular organization. The purpose of this section is to provide an interim directory of mail users for OSINET prior to the development of ISO/CCITT directory protocols. Participants not involved in the X.400 Messaging project may also find this section useful when sending "mail" to persons within another organization via FTAM.

This section consists of a list of X.400 Originator/Recipient names and their associated fields. Each list element has fourteen fields, each of which is an ASCII character string terminated with CRLF. The fields of a list element are as follows:

* Person Free-Form Name: contains the name of a particular person reachable via OSINET electronic mail in the organization in question

* Personal Information: contains telephone number and mailing address of a person. Particular fields are:

    * Telephone
    * Street Address
    * City, State, Zip

* FTAM Suffix: suffix to be added to an FTAM filename to designate the recipient (like a person's initials)

* X.400 O/R Name: contains the X.400 Originator/Recipient name elements, which are as follows:

* Country Name (MANDATORY): maximum length of 3 characters

* ADMD Name (MANDATORY): Administration Management Domain Name; maximum length of 16 characters or digits

* PRMD Name (MANDATORY): Private Management Domain Name; maximum length of 16 characters

* Organization Name: note - there is no necessary relationship between the Organization name used for identifying OSINET members and the X.400 O/R address element "organization"; maximum length of 64 characters

* Surname (MANDATORY): maximum length of 40 characters

* Given Name: maximum length of 16 characters

* Initials: maximum length of 5 characters, excluding surname initial, periods and spaces

* Generational Qualifier: maximum length of 3 characters

* Organizational Unit: maximum length of 32 characters per occurrence; maximum of 4 occurrences

The SYSTEM DESCRIPTION section of the file consists of all relevant information concerning systems attached to OSINET. The following pieces of information constitute a system description, each is in ASCII text format and terminated by CRLF:

* System Identifier: The system name is used to iden-itfy a system for administrative purposes without resorting tp abstract addresses. It is composed of:

* Location: The system location identifies the geographic location of the open system. If known, the longitude and latitude of the system could be used to identify the system on a map.

* Contact: The contact identifies one or more people who are responsible for the daily operation of the system, i.e. the system administrators and/or operators. This field contains the subfields of street address, city, state, zip code, telphone number and preferred time for contact.

* Date and Time of Last Modification: The date and time of last modification of this file should be encoded within the file in UTC format.

* Supported Protocols: The supported protocols information identifies the suite of protocols that the system supports. This field contains the subfields of application entity title, presentation, session, transport and network. If applicable, the following names may be used.

Application:

* FTAM-1 for phase one support of FTAM

* X.400-1 for phase one of X.400

* Dir-Client, Dir-Server for directory Service

* Mgmt-Client, Mgmt-Agent for system management services

* CASE

Other names may be used for applications not listed above.

Presentation:
Identifies the supported presentation contexts; currently not supported.

Session:
Identifies the functional units and options of the Session Layer (see the conformance section of the protocol specification).

Transport:
Identifies the classes and options of the Transport Layer (see the conformance section of the protocol specification).

Network:
Identifies the network layer protocols. The following may be used:

* CLNP - for the connectionless network protocol (IS8473)

* CLNP/Null - for the null subset of the CLNP

* CLNP/X.25-80 - for the SNDCP for operating the CLNP over an X.25 subnetwork that conforms to the CCITT 1980 Recommendation

* CLNP/X.25-84 - for the SNDCP for operating the CLNP over an X.25 subnetwork that conforms to the CCITT 1984 Recommendation

    * X.25-80 - for operating X.25 as the SNAcP

    * X.25-84 - for operating the 1984 X.25 protocol as the SNAcP

* Configuration: The configuration information identifies the hardware and software on thé system. Other relevant information, such as version numbers, may be included. This field contains the two subfields, hardware and software.

* Restrictions: Any additional information, such as days or hours of use, should be included in the restrictions section.

6.3.5 NEWSHEET File

This file contains a news article for general release to all OSINET members. News files are created and submitted to the NIC by any OSINET member. News files are than accessible by any OSINET member.

6.3.5.1 File Attributes

This section describes the file attributes of a NEWSHEET file:

```
Filename: NEWS
Permitted Actions: read/replace
Contents Type: FTAM-2
  Access Control:  ("read", initiator identity & filestore
                   password), ("replace", initiator identity
                                & filestore password)
Date and Time of Creation: UTC format
```

6.3.5.2 File Contents

A file of this type contains information dealing with a "piece" of news. Every field is in ASCII text format and terminated by CRLF. The first field is a filetype field which contains NEWS. The remainder of fields are as follows:

Submitted By: This specifies the organization submitting the news article

Date Submitted: The date the news article was submitted

Valid Until (Date): The date after which the news article is no longer valid or current

Subject: A brief title or heading for the news article

News Text: The actual text of the news article

Figure 7 shows the template used for the NEWSHEET file. The filename of the NEWSHEET template file is NEWSTEMP.

6.3.6 PROBLEM REPORT File

This file contains a problem report for general release to all OSINET members. Problem report files are created and submitted to the NIC by any OSINET member. Problem report files are then accessable by any OSINET member.

6.3.6.1 File Attributes

This section describes the file attributes of a PROBLEM REPORT file:

```
Filename: PROBLEM
Permitted Actions: read/replace
Contents Type: FTAM-2
  Access Control:  ("read", initiator identity & filestore
                   password), ("replace", initiator identity
                                & filestore password)
Date and Time of Creation: UTC format
```

6.3.6.2 File Contents

A file of this type contains information dealing with a problem discovered during interoperability testing. Every field is in ASCII text format and terminated by CRLF. The first field is a file type field which contains PROBLEM. The remainder of fields are as follows:

Submitted By: This specifies the organization submitting

the problem report

Date Submitted: The date the problem report was submitted

Subject: A brief title or heading for the problem report

Problem Text: The actual text of the problem report

Figure 9 shows the template used for the PROBLEM REPORT file. The filename of the PROBLEM REPORT template file is PRBLMTMP.

6.4 Concatenated Files

6.4.1 NEWS File

This file contains a concatenation of all of the NEWS files for a given twenty-four hour period. There is only one file of this type and it is created and maintained by the NIC. The attributes of the file are as follows:

Filename: NEWS
Permitted Actions: read
Contents Type: FTAM-2
Access Control: ("read", initiator identity & filestore password)
Date and Time of Creation: UTC format

6.4.2 PROBLEMS File

This file contains a concatenation of all of the PROBLEM files for a given twenty-four hour period. There is only one file of this type and it is created and maintained by the NIC. The attributes of the file are as follows:

Filename: PROBLEMS
Permitted Actions: read
Contents Type: FTAM-2
Access Control: ("read", initiator identity & filestore password)
Date and Time of Creation: UTC format

```
FILE TYPE:  README
FILE TEXT:  string

    (  the actual text of the file  )
    (  will be composed of a        )
    (  sequence of string CRLF      )
```

Figure 1. README File Format

```
FILE TYPE:  README
FILE TEXT:  This is an example of a README file.  In the future
     this file will contain information regarding the use of
     the NIC services.
```

Figure 2. README File Example

```
FILE TYPE:  MEMBERS
ORGANIZATION NAME:
ORGANIZATION NAME:
ORGANIZATION NAME:
ORGANIZATION NAME:
ORGANIZATION NAME:
ORGANIZATION NAME:
ORGANIZATION NAME:

  (  as many as necessary to  )
  (  account for all members  )

ORGANIZATION NAME:
```

Figure 3. MEMBERS File Format

```
FILE TYPE:  MEMBERS
ORGANIZATION NAME:  BOEING_COMPUTER
ORGANIZATION NAME:  BULL_AZ
ORGANIZATION NAME:  DIGITAL_UK
ORGANIZATION NAME:  DIGITAL_US
ORGANIZATION NAME:  IBMPA
ORGANIZATION NAME:  IBMLG
ORGANIZATION NAME:  NIST_DC

  (  as many as necessary to  )
  (  account for all members  )

ORGANIZATION NAME:  NCR_COMTEN
ORGANIZATION NAME:  RETIX
ORGANIZATION NAME:  UNISYS
```

Figure 4. MEMBERS File Example

```
FILE TYPE:  COMPANY
ORGANIZATION NAME:


          ORGANIZATION INFORMATION
          ------------------------


ORGANIZATION CONTACT:
  NAME:
  ADDRESS:

    ( as many lines as necessary    )
    ( to complete the address       )
    ( each in the form  string CRLF )

  TELEPHONE NUMBER:
  PREFERRED TIME FOR CONTACT:

STEERING COMMITTEE REPRESENTATIVE:
  NAME:
  ADDRESS:

    ( as many lines as necessary    )
    ( to complete the address       )
    ( each in the form  string CRLF )

  TELEPHONE NUMBER:
  PREFERRED TIME FOR CONTACT:

TECHNICAL COMMITTEE REPRESENTATIVE:
  NAME:
  ADDRESS:

    ( as many lines as necessary    )
    ( to complete the address       )
    ( each in the form  string CRLF )

  TELEPHONE NUMBER:
  PREFERRED TIME FOR CONTACT:

ORGANIZATION ID:
NETWORK CONFIGURATION:
```

ADDRESSING INFORMATION

FTAM

```
SYSTEM IDENTIFIER:
  PSAP SELECTOR:
  SSAP SELECTOR:
  TSAP SELECTOR:
  NSAP ADDRESS (or Network Entity Title
    for an intermediate system):
  SNPA ACCESS ADDRESS (X.121 Address):

    (  as many sets as needed to     )
    (  account for all open systems  )
    (  which have access to OSINET   )

SYSTEM IDENTIFIER:
  PSAP SELECTOR:
  SSAP SELECTOR:
  TSAP SELECTOR:
  NSAP ADDRESS (or Network Entity Title
    for an intermediate system):
  SNPA ACCESS ADDRESS (X.121 Address):

SYSTEM IDENTIFIER:
  PSAP SELECTOR:
  SSAP SELECTOR:
  TSAP SELECTOR:
  NSAP ADDRESS (or Network Entity Title
    for an intermediate system):
  SNPA ACCESS ADDRESS (X.121 Address):
```

X.400
~~~~~

```
SYSTEM IDENTIFIER:
  SSAP SELECTOR:
  TSAP SELECTOR:
  NSAP ADDRESS (or Network Entity Title
    for an intermediate system):
  SNPA ACCESS ADDRESS (X.121 Address):
  MTA NAME:  string  CRLF
  MTA PASSWORD:
  COUNTRY NAME:
  ADMD NAME:
  PRMD NAME:

    (  as many sets as needed to     )
    (  account for all open systems  )
    (  which have access to OSINET   )

SYSTEM IDENTIFIER:
  SSAP SELECTOR:
  TSAP SELECTOR:
  NSAP ADDRESS (or Network Entity Title
    for an intermediate system):
  SNPA ACCESS ADDRESS (X.121 Address):
  MTA NAME:
  MTA PASSWORD:
  COUNTRY NAME:
  ADMD NAME:
  PRMD NAME:

SYSTEM IDENTIFIER:
  SSAP SELECTOR:
  TSAP SELECTOR:
  NSAP ADDRESS (or Network Entity Title
    for an intermediate system):
  SNPA ACCESS ADDRESS (X.121 Address):
  MTA NAME:
  MTA PASSWORD:
  COUNTRY NAME:
  ADMD NAME:
  PRMD NAME:
```
~~~~~

X.400 CONTACT INFORMATION

```
CONTACT:
PERSON FREE-FORM NAME:
  TELEPHONE:
  ADDRESS:          ( as many lines as needed       )
                    ( each in the form  string CRLF )
  FTAM SUFFIX:
X.400 O/R NAME:
  COUNTRY NAME (MANDATORY):
  ADMD NAME (MANDATORY):
  PRMD NAME (MANDATORY):
  ORGANIZATION NAME:
  SURNAME (MANDATORY):
  GIVEN NAME:
  INITIALS:
  GENERATIONAL QUALIFIER:
  ORGANIZATIONAL UNIT:
  ORGANIZATIONAL UNIT:
  ORGANIZATIONAL UNIT:
  ORGANIZATIONAL UNIT:

     (  as many sets as necessary to enumerate all persons who  )
     (  can be reached at this organization.  Optional parts    )
     (  of O/R names may be omitted.                            )

PERSON FREE-FORM NAME:
  TELEPHONE:
  ADDRESS:              ( as many lines as needed       )
                        ( each in the form  string CRLF )
  FTAM SUFFIX:
X.400 O/R NAME:
  COUNTRY NAME (MANDATORY):
  ADMD NAME (MANDATORY):
  PRMD NAME (MANDATORY):
  ORGANIZATION NAME:
  SURNAME (MANDATORY):
  GIVEN NAME:
  INITIALS:
  GENERATIONAL QUALIFIER:
  ORGANIZATIONAL UNIT:
  ORGANIZATIONAL UNIT:
  ORGANIZATIONAL UNIT:
  ORGANIZATIONAL UNIT:
```

```
      SYSTEM DESCRIPTION INFORMATION
      ------------------------------


SYSTEM IDENTIFIER:
LOCATION:
CONTACT:
  ADDRESS:

    ( as many lines as necessary    )
    ( to complete the address       )

  TELEPHONE NUMBER:
  PREFERRED TIME FOR CONTACT:
DATE LAST MODIFIED:
SUPPORTED PROTOCOLS:
  APPLICATION:
  PRESENTATION:
  SESSION:
  TRANSPORT:
  NETWORK:

     (  as many sets as necessary to  )
     (  account for all application   )
     (  entity titles associated      )
     (  with a particular system      )

SUPPORTED PROTOCOLS:
  APPLICATION:
  PRESENTATION:
  SESSION:
  TRANSPORT:
  NETWORK:
CONFIGURATION:
  HARDWARE:
  SOFTWARE:
RESTRICTIONS:
```

Figure 5. COMPANY FIle Template

FILE TYPE: COMPANY
ORGANIZATION NAME: NIST

ORGANIZATION INFORMATION

ORGANIZATION CONTACT:
NAME: Gerard Mulvenna
ADDRESS: National Institute of Standards and Technology
Bldg. 225, Room B-217
Gaitherburg, MD 20899
TELEPHONE NUMBER: 301-975-3631
PREFERRED TIME FOR CONTACT: 9:00 AM - 4:00 PM EST

STEERING COMMITTEE REPRESENTATIVE:
NAME: Gerard Mulvenna
ADDRESS: National Institute of Standards and Technology
Bldg. 225, Room B-217
Gaitherburg, MD 20899
TELEPHONE NUMBER: 301-975-3631
PREFERRED TIME FOR CONTACT: 9:00 AM - 4:00 PM EST

TECHNICAL COMMITTEE REPRESENTATIVE:
NAME: Carol Edgar
ADDRESS: National Institute of Standards and Technology
Bldg. 225, Room B-217
Gaithersburg, MD 20899
TELEPHONE NUMBER: 301-975-3613
PREFERRED TIME FOR CONTACT: 9:00 AM - 4:00 PM EST

ORGANIZATION ID: 3
NETWORK CONFIGURATION:
a) VAX 11/780 intermediate system
b) MicroVAX II as end system
c) 802.3 LAN ETHERNET attachments

ADDRESSING INFORMATION

FTAM

SYSTEM IDENTIFIER:
  INITIATOR IDENTITY: NIC
  FILESTORE PASSWORD: NICMAN
  PSAP SELECTOR: RMS
  SSAP SELECTOR: FTAM
  TSAP SELECTOR: OSIF
  NSAP ADDRESS (or Network Entity Title
    for an intermediate system): 47000400030003AA0004008A1C00
  SNPA ACCESS ADDRESS (X.121 Address): 31342023011007

X.400

SYSTEM IDENTIFIER:
  SSAP SELECTOR: null
  TSAP SELECTOR: MHS
  NSAP ADDRESS (or Network Entity Title
    for an intermediate system): 47000400030003AA0004008A1C00
  SNPA ACCESS ADDRESS (X.121 Address): 31342023011007
  MTA NAME: OSI_NIC
  MTA PASSWORD: OSI_NIC
  COUNTRY NAME: US
  ADMD NAME: null
  PRMD NAME: NCSL

X.400 CONTACT INFORMATION

CONTACT:
PERSON FREE-FORM NAME: Carol Edgar
TELEPHONE: 301-975-3613
ADDRESS: National Institute of Standards and Technology
Bldg. 225, Room B-217
Gaithersburg, MD 20899
FTAM SUFFIX: CAE
X.400 O/R NAME:
COUNTRY NAME (MANDATORY): US
ADMD NAME (MANDATORY): null
PRMD NAME (MANDATORY): NCSL
ORGANIZATION NAME: OSIAPP
SURNAME (MANDATORY): EDGAR
GIVEN NAME: CAROL
INITIALS:
GENERATIONAL QUALIFIER:
ORGANIZATIONAL UNIT:
ORGANIZATIONAL UNIT:
ORGANIZATIONAL UNIT:
ORGANIZATIONAL UNIT:

PERSON FREE-FORM NAME: Alper Kerman
TELEPHONE: 301-975-3387
ADDRESS: National Institute of Standards and Technology
Bldg. 225, Room B-217
Gaithersburg, MD 20899
FTAM SUFFIX: AAK
X.400 O/R NAME:
COUNTRY NAME (MANDATORY): US
ADMD NAME (MANDATORY): null
PRMD NAME (MANDATORY): NCSL
ORGANIZATION NAME: OSIAPP
SURNAME (MANDATORY): KERMAN
GIVEN NAME: ALPER
INITIALS:
GENERATIONAL QUALIFIER:
ORGANIZATIONAL UNIT:
ORGANIZATIONAL UNIT:
ORGANIZATIONAL UNIT:
ORGANIZATIONAL UNIT:

```
      SYSTEM DESCRIPTION INFORMATION
      ------------------------------


SYSTEM IDENTIFIER:  MHS
LOCATION:  NIST, Gaithersburg, MD  20899, USA
CONTACT:  Paul Markovitz
  ADDRESS:  National Institute of Standards and Technology
            Bldg. 225, Room B-217
            Gaithersburg, MD  20899
  TELEPHONE NUMBER:  301-975-3606
  PREFERRED TIME FOR CONTACT:  9:00 AM - 4:00 PM EST
DATE LAST MODIFIED:  Feb. 22, 1989
SUPPORTED PROTOCOLS:
  APPLICATION:  MHS, FTAM II
  PRESENTATION:  YES
  SESSION:  YES
  TRANSPORT:  Class 4, 0
  NETWORK:  802.3

CONFIGURATION:
  HARDWARE:  MicroVAX II
  SOFTWARE:  Version 5.0-2 VMS
RESTRICTIONS:  Must contact Paul Markovitz before testing.
```

Figure 6. COMPANY File Example

```
FILE TYPE:  NEWS
SUBMITTED BY:
DATE SUBMITTED:
VALID UNTIL (DATE):
SUBJECT:
NEWS TEXT:

   (  the actual text of the news     )
   (  article will be composed of a   )
   (  sequence of string CRLF         )
```

Figure 7. NEWS File Template

```
FILE TYPE:  NEWS
SUBMITTED BY:  NBSWASHDC
DATE SUBMITTED:  January 30, 1987
VALID UNTIL (DATE):  March 14, 1987
SUBJECT:  March NBS/OSI Implementors Workshop
NEWS TEXT:  The next NBS/OSI Implementors Workshop will be held
            March 9 - 13, 1987
```

Figure 8. NEWS File Example

```
FILE TYPE:  PROBLEM
SUBMITTED BY:
DATE SUBMITTED:
SUBJECT:
PROBLEM TEXT:

   (  the actual text of the problem )
   (  report will be composed of a   )
   (  sequence of string CRLF        )
```

Figure 9. PROBLEM REPORT File Template

```
FILE TYPE:  PROBLEM
SUBMITTED BY:  NISTDC
DATE SUBMITTED:  June 13, 1989
SUBJECT:  Filenames over 32 chars in length
PROBLEM TEXT:  The NIC has a problem with filenames which
               are over 32 chars. in length.  Please follow
               the guidelines for filenames listed in the
               NIC section of the General Agreements doc.
```

Figure 10. PROBLEM REPORT File Example

7. REFERENCES AND BIBLIOGRAPHY

NIST

NIST Special Publication 500-162: Stable Implementation Agreements for Open Systems Interconnection Protocols, Version 1, National Institute of Standards and Technology, Bldg. 225, Rm. B217, Gaithersburg, MD 20899.

FIPS 107, Local Area Networks: Baseband Carrier Sense Multiple Access with Collision Detection Access Method and Physical Layer Specifications and Link Layer Protocol, National Technical Information Service (NTIS), U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161.

FIPS 100, Interface Between Data Terminal Equipment (DTE) and Data Circuit-Terminating Equipment (DCE) For Operation With Packet-Switched Data Communications Networks, NTIS, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161.

ISO

Addendum to IS 8473 Covering Provision of the Connectionless-Mode Network Service, ISO/TC97/SC 6/N3453.

Network Service Definition, IS 8348.

Addendum to the Network Service Definition Covering Connectionless Data Transmission, IS 8348 AD1.

Addendum to the Network Service Definition Covering Network Layer Addressing, IS 8348 AD2.

Internal Organization of the Network Layer, DIS 8648.

Protocol for Providing the Connectionless Network Service, IS 8473.

Information Processing Systems - Local Area Networks - Part 2: Logical Link Control, IS 8802/2.

Information Processing Systems - Local Area Networks - Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) and Physical Layer Specification, IS 8802/3.

Information Processing Systems - Local Area Networks - Part 4: Token-Passing Bus Access Method and Physical Layer Specification, IS 8802/4.

Information Processing Systems - Open Systems Interconnection - Transport Service Definition, IS 8072.

Information Processing Systems - Open Systems Interconnection - Transport Protocol Specification, IS 8073.

Information Processing Systems - Open Systems Interconnection - Session Service Definition, IS 8326.

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Information Processing Systems - Open Systems Interconnection - File Transfer Access and Management Part 1: General Description, IS 8571-1, (ISO TC97/SC21 N2331).

Information Processing Systems - Open Systems Interconnection - File Transfer Access and Management Part II: The Virtual Filestore, IS 8571-2, (ISOTC97/SC21/N2332).

Information Processing Systems - Open Systems Interconnection - File Transfer Access and Management Part III: Service Definition, IS 8571-3, (ISO TC97/SC21/N2333).

Information Processing Systems - Open Systems Interconnection - File Transfer Access and Management Part IV: Protocol Specification, IS 8571-4, (ISO TC97/SC21/N2334).

Data Communication - X.25 Packet Layer Specification for Data Terminal Equipment, IS 8208.

7-bit Coded Character Set for Information Processing Interchange, ISO-646, 1973.

Information Interchange--Representation of Local Time Differentials ISO-3307, 1975.

The above documents may be obtained from: Frances E. Schrotter, ANSI, ISO TC97/SC6 Secretariat, 1430 Broadway, New York, New York 10018

CCITT

X.25, Interface Between Data Terminal Equipment (DTE) and Data Circuit-Terminating Equipment (DCE) for Terminals Operating in the Packet Mode on Public Data Networks.

X.400, Message Handling Systems: System Model-Service Elements.

X.401, Message Handling Systems: Basic Service Elements and Optional User Facilities

X.408, Message Handling Systems: Encoded Information Type Conversion Rules.

X.409, Message Handling Systems: Presentation Transfer Syntax and Notation.

X.410, Message Handling Systems: Remote Operations and Reliable Transfer Server.

X.411, Message Handling Systems: Message Transfer Layer.

X.420, Message Handling Systems: Interpersonal Messaging User Agent Layer.

X.430, Message Handling Systems: Access Protocol for Teletex Terminals.

The above documents may be obtained from International Telecommunications Union, Place des Nations, CH 1211, Geneve 20 Switzerland.

ATT COMMUNICATIONS

DOC #54010 - X.25 Interface Specification and Packet Switching Capabilities, January 1984.

DOC #54012 - X.75 Interface Specification and Packet Switching Capabilities, August 1984.

See Section 3.1 for information on how to obtain these documents.

WANG

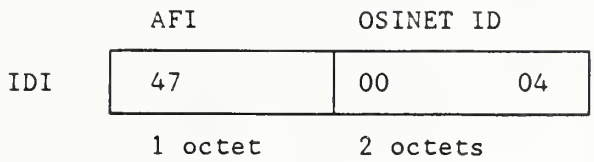
C/30 PSN X.25 Interface Specification, Release 3, Report No. 5500, November, 1983.

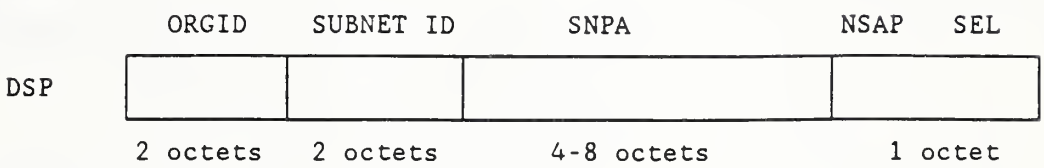
Packet Switch Node (PSN) 5.0 Release Note.

The above documents may be obtained from Joe Hielscher, Wang, One Industrial Avenue, Lowell, MA 01851

APPENDIX A: NETWORK ADDRESSING INFORMATION

The NSAP address form chosen by OSINET participants follows.





Routing on the X.25 backbone is based on the ORGID and possibly the subnet ID.

The SNPA is only meaningful to the destination subnetwork.

ISO has assigned OSINET an OSINET ID = 4. NIST is the administrative authority for Organization ID's. Organization ID assignments are specified in decimal form with company contact information in section 5.1.

READER RESPONSE FORM

You will receive the documents from the next OSINET Technical Committee meeting either by attending the next meeting or completing and returning the form below.

NAME: _____

ORGANIZATION: _____

ADDRESS: _____
_____
_____
_____

PHONE: _____

Mail the above form to:

Carol Lemnah
National Institute of Standards and Technology
Building 225, Room B217
Gaithersburg, MD 20899

July 1989

NIST-114A
(REV. 3-89)

U.S. DEPARTMENT OF COMMERCE
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

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OSINET General Agreements and Information Document

5. AUTHOR(S)

Gerard F. Mulvenna

6. PERFORMING ORGANIZATION (IF JOINT OR OTHER THAN NIST, SEE INSTRUCTIONS)

U.S. DEPARTMENT OF COMMERCE
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
GAITHERSBURG, MD 20899

7. CONTRACT/GRANT NUMBER

8. TYPE OF REPORT AND PERIOD COVERED

9. SPONSORING ORGANIZATION NAME AND COMPLETE ADDRESS (STREET, CITY, STATE, ZIP)

10. SUPPLEMENTARY NOTES

[ ] DOCUMENT DESCRIBES A COMPUTER PROGRAM; SF-185, FIPS SOFTWARE SUMMARY, IS ATTACHED.

11. ABSTRACT (A 200-WORD OR LESS FACTUAL SUMMARY OF MOST SIGNIFICANT INFORMATION. IF DOCUMENT INCLUDES A SIGNIFICANT BIBLIOGRAPHY OR LITERATURE SURVEY, MENTION IT HERE.)

This document contains the OSINET charter and rules of participation in the OSINET research and development activities, the promotion and demonstration activities and the OSINET Testing and Registration Service.

12. KEY WORDS (6 TO 12 ENTRIES; ALPHABETICAL ORDER; CAPITALIZE ONLY PROPER NAMES; AND SEPARATE KEY WORDS BY SEMICOLONS)

Interoperability testing; Network Information Center; OSI; OSINET; protocol; Testing and Registration Service.

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