                  The Internet Standards Process -- Revision 2

Status of this Memo

   This memo provides information for the Internet community. This memo
   does not specify an Internet standard of any kind. Distribution of
   this memo is unlimited.

Notice

   This informational memo presents the current procedures for creating
   and documenting Internet Standards. This document is provisional,
   pending legal review and concurrence of the Internet Society
   Trustees. It is being published in this form to keep the Internet
   Community informed as to the current status of policies and
   procedures for Internet Standards work.

Abstract

   This document is a revision of RFC 1310, which defined the official
   procedures for creating and documenting Internet Standards.

   This revision (revision 2) includes the following major changes:

   (a) The new management structure arising from the POISED Working
        Group is reflected. These changes were agreed to by the IETF
        plenary and by the IAB and IESG in November 1992 and accepted by
        the ISOC Board of Trustees at their December 1992 meeting.

   (b) Prototype status is added to the non-standards track maturity
        levels (Section 2.4.1).

   (c) The Intellectual Property Rights section is completely revised,
        in accordance with legal advice. Section 5 of this document
        replaces Sections 5 and 6 of RFC-1310. The new section 5 has
        been reviewed by legal counsel to the Internet Society.

(d) An appeals procedure is added (Section 3.6).

(e) The wording of sections 1 and 1.2 has been changed to clarify
     the relationships that exist between the Internet Society and
     the IAB, the IESG, the IETF, and the Internet Standards process.

(f) An Appendix B has been added, listing the contact points for the
     RFC editor, the IANA, the IESG, the IAB and the ISOC. The
     "future issues" are now listed in Appendix C.

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1.   INTRODUCTION

     This memo documents the process currently used by the Internet
     community for the standardization of protocols and procedures. The
     Internet Standards process is an activity of the Internet Society
     that is organized and managed on behalf of the Internet community by
     the Internet Architecture Board (IAB) and the Internet Engineering
     Steering Group.

1.1 Internet Standards

The Internet, a loosely-organized international collaboration of
autonomous, interconnected networks, supports host-to-host
communication through voluntary adherence to open protocols and
procedures defined by Internet Standards. There are also many
isolated internets, i.e., sets of interconnected networks, which
are not connected to the Internet but use the Internet Standards.

Internet Standards were once limited to those protocols composing
what has been commonly known as the "TCP/IP protocol suite".
However, the Internet has been evolving towards the support of
multiple protocol suites, especially the Open Systems
Interconnection (OSI) suite. The Internet Standards process
described in this document is concerned with all protocols,
procedures, and conventions that are used in or by the Internet,
whether or not they are part of the TCP/IP protocol suite. In the
case of protocols developed and/or standardized by non-Internet
organizations, however, the Internet Standards process may apply
only to the application of the protocol or procedure in the
Internet context, not to the specification of the protocol itself.

In general, an Internet Standard is a specification that is stable
and well-understood, is technically competent, has multiple,
independent, and interoperable implementations with substantial
operational experience, enjoys significant public support, and is
recognizably useful in some or all parts of the Internet.

The procedures described in this document are designed to be fair,
open and objective; to reflect existing (proven) practice; and to
be flexible.

o   These procedures are intended to provide a fair, open, and
       objective basis for developing, evaluating, and adopting
       Internet Standards. They provide ample opportunity for
       participation and comment by all interested parties. At each
       stage of the standardization process, a specification is
       repeatedly discussed and its merits debated in open meetings
       and/or public electronic mailing lists, and it is made
       available for review via world-wide on-line directories.

o   These procedures are explicitly aimed at recognizing and
       adopting generally-accepted practices. Thus, a candidate
       specification is implemented and tested for correct operation
       and interoperability by multiple independent parties and
       utilized in increasingly demanding environments, before it
       can be adopted as an Internet Standard.

o   These procedures provide a great deal of flexibility to adapt
       to the wide variety of circumstances that occur in the
       standardization process. Experience has shown this
       flexibility to be vital in achieving the goals listed above.

The goal of technical competence, the requirement for prior
implementation and testing, and the need to allow all interested
parties to comment, all require significant time and effort. On
the other hand, today's rapid development of networking technology
places an urgency on timely development of standards. The
Internet standardization rules described here are intended to
balance these conflicting goals. The process is believed to be as
short and simple as possible without undue sacrifice of technical
competence, prior testing, or openness and fairness.

In summary, the goals for the Internet standards process are:

*   technical excellence;

*   prior implementation and testing;

*   clear, short, and easily understandable documentation;

*   openness and fairness; and

*   timeliness.

In outline, the process of creating an Internet Standard is
straightforward: a specification undergoes a period of development
and several iterations of review by the Internet community and

revision based upon experience, is adopted as a Standard by the
appropriate body (see below), and is published. In practice, the
process is more complicated, due to (1) the difficulty of creating
specifications of high technical quality; (2) the need to consider
the interests of all of the affected parties; (3) the importance
of establishing widespread community consensus; and (4) the
difficulty of evaluating the utility of a particular specification
for the Internet community.

From its inception, the Internet has been, and is expected to
remain, an evolving system whose participants regularly factor new
requirements and technology into its design and implementation.
Users of the Internet and providers of the equipment, software,
and services that support it should anticipate and embrace this
evolution as a major tenet of Internet philosophy.

The procedures described in this document are the result of three
years of evolution, driven both by the needs of the growing and
increasingly diverse Internet community, and by experience.
Comments and suggestions are invited for improving these
procedures.

The remainder of this section describes the organizations and
publications involved in Internet standardization. Section 2
presents the nomenclature for different kinds and levels of
Internet standard technical specifications and their
applicability. Section 3 describes the process and rules for
Internet standardization. Section 4 defines how relevant
externally-sponsored specifications and practices, developed and
controlled by other standards bodies or by vendors, are handled in
the Internet standardization process. Section 5 presents the
rules that are required to protect intellectual property rights
and to assure unrestricted ability for all interested parties to
practice Internet Standards.

1.2 Organizations

The following organizations are involved in the Internet standards
process.

*   IETF

     The Internet Engineering Task Force (IETF) is a loosely self-
     organized group of people who make technical and other
     contributions to the engineering and evolution of the
     Internet and its technologies. It is the principal body

engaged in the development of new Internet Standard
specifications, although it is not itself a part of the
Internet Society. The IETF is composed of individual Working
Groups, which are grouped into Areas, each of which is
coordinated by one or more Area Directors. Nominations to
the Internet Architecture Board and the Internet Engineering
Steering Group are made by a nominating committee selected at
random from the ranks of regular IETF meeting attendees who
have volunteered to serve as nominating committee members.

*   ISOC

     Internet standardization is an organized activity of the
     Internet Society (ISOC). The ISOC is a professional society
     that is concerned with the growth and evolution of the
     worldwide Internet, with the way in which the Internet is and
     can be used, and with the social, political, and technical
     issues that arise as a result. The ISOC Board of Trustees is
     responsible for approving appointments to the Internet
     Architecture Board from among the nominees submitted by the
     IETF nominating committee.

*   IESG

     The Internet Engineering Steering Group (IESG) is responsible
     for technical management of IETF activities and the Internet
     Standards process. As part of the Internet Society, it
     administers the Internet Standards process according to the
     rules and procedures given in this document, which have been
     accepted and ratified by the Internet Society Trustees. The
     IESG is directly responsible for the actions associated with
     entry into and movement along the "standards track", as
     described in section 3 of this document, including final
     approval of specifications as Internet Standards. The IESG
     is composed of the IETF Area Directors and the chairperson of
     the IETF, who also serves as the chairperson of the IESG.

*   IAB

     The Internet Architecture Board (IAB) is a technical advisory
     group of the Internet Society. It is chartered by the
     Internet Society Trustees to provide oversight of the
     architecture of the Internet and its protocols, and to serve
     in the context of the Internet Standards process as a body to
     which the decisions of the IESG may be appealed (as described
     in section 3.6 of this document). The IAB is responsible for

approving appointments to the IESG from among the nominees
submitted by the IETF nominating committee.

Any member of the Internet community with the time and interest is
urged to participate actively in one or more IETF Working Groups
and to attend IETF meetings. In many cases, active Working Group
participation is possible through email alone; furthermore,
Internet video conferencing is being used experimentally to allow
remote participation. Participation is by individual technical
contributors rather than formal representatives of organizations.
The process works because the IETF Working Groups display a spirit
of cooperation as well as a high degree of technical maturity;
IETF participants recognize that the greatest benefit for all
members of the Internet community results from cooperative
development of technically superior protocols and services.

Members of the IESG and IAB are nominated for two-year terms by a
committee that is drawn from the roll of recent participation in
the IETF and chartered by the ISOC Board of Trustees. The
appointment of IESG and of IAB members are made from these
nominations by the IAB and by the ISOC Board of Trustees,
respectively.

The Internet Research Task Force (IRTF) is not directly part of
the standards process. It investigates topics considered to be
too uncertain, too advanced, or insufficiently well-understood to
be the subject of Internet standardization. When an IRTF activity
generates a specification that is sufficiently stable to be
considered for Internet standardization, the specification is
processed through the IETF using the rules in this document.

1.3 Standards-Related Publications

1.3.1 Requests for Comments (RFCs)

Each distinct version of a specification is published as part
of the "Request for Comments" (RFC) document series. This
archival series is the official publication channel for
Internet standards documents and other publications of the
IESG, IAB, and Internet community. RFCs are available for
anonymous FTP from a number of Internet hosts.

The RFC series of documents on networking began in 1969 as part
of the original ARPA wide-area networking (ARPANET) project
(see Appendix A for glossary of acronyms). RFCs cover a wide
range of topics, from early discussion of new research concepts

to status memos about the Internet. RFC publication is the
direct responsibility of the RFC Editor, under the general
direction of the IAB.

The rules for formatting and submitting an RFC are defined in
reference [5]. Every RFC is available in ASCII text, but some
RFCs are also available in PostScript. The PostScript version
of an RFC may contain material (such as diagrams and figures)
that is not present in the ASCII version, and it may be
formatted differently.

```
**********************************************************
*  A stricter requirement applies to standards-track    *
*  specifications: the ASCII text version is the        *
*  definitive reference, and therefore it must be a     *
*  complete and accurate specification of the standard, *
*  including all necessary diagrams and illustrations.  *
*                                                       *
**********************************************************
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The status of Internet protocol and service specifications is
summarized periodically in an RFC entitled "Internet Official
Protocol Standards" [1]. This RFC shows the level of maturity
and other helpful information for each Internet protocol or
service specification. See Section 3.1.3 below.

Some RFCs document Internet standards. These RFCs form the
'STD' subseries of the RFC series [4]. When a specification
has been adopted as an Internet Standard, it is given the
additional label "STDxxxx", but it keeps its RFC number and its
place in the RFC series.

Not all specifications of protocols or services for the
Internet should or will become Internet Standards. Such non-
standards track specifications are not subject to the rules for
Internet standardization. Generally, they will be published
directly as RFCs at the discretion of the RFC editor and the
IESG. These RFCs will be marked "Prototype", "Experimental" or
"Informational" as appropriate (see section 2.3).

```
**********************************************************
*   It is important to remember that not all RFCs       *
*   are standards track documents, and that not all     *
*   standards track documents reach the level of        *
*   Internet Standard.                                  *
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1.3.2 Internet Drafts

   During the development of a specification, draft versions of
   the document are made available for informal review and comment
   by placing them in the IETF's "Internet Drafts" directory,
   which is replicated on a number of Internet hosts. This makes
   an evolving working document readily available to a wide
   audience, facilitating the process of review and revision.

   An Internet Draft that is published as an RFC, or that has
   remained unchanged in the Internet Drafts directory for more
   than six months without being recommended by the IESG for
   publication as an RFC, is simply removed from the Internet
   Draft directory. At any time, an Internet Draft may be
   replaced by a more recent version of the same specification,
   restarting the six-month timeout period.

   An Internet Draft is NOT a means of "publishing" a
   specification; specifications are published through the RFC
   mechanism described in the previous section. Internet Drafts
   have no formal status, are not part of the permanent archival
   record of Internet activity, and are subject to change or
   removal at any time.

   ****
   *   Under no circumstances should an Internet Draft   *
   *   be referenced by any paper, report, or Request-for-*
   *   Proposal, nor should a vendor claim compliance   *
   *   with an Internet-Draft.   *
   ****

   Note: It is acceptable to reference a standards-track
   specification that may reasonably be expected to be published
   as an RFC using the phrase "Work in Progress", without
   referencing an Internet Draft.

1.4 Internet Assigned Number Authority (IANA)

   Many protocol specifications include numbers, keywords, and other
   parameters that must be uniquely assigned. Examples include
   version numbers, protocol numbers, port numbers, and MIB numbers.
   The IAB has delegated to the Internet Assigned Numbers Authority
   (IANA) the task of assigning such protocol parameters for the
   Internet. The IANA publishes tables of all currently assigned
   numbers and parameters in RFCs titled "Assigned Numbers" [3].

Each category of assigned numbers typically arises from some
protocol that is on the standards track or is an Internet
Standard. For example, TCP port numbers are assigned because TCP
is a Standard. A particular value within a category may be
assigned in a variety of circumstances; the specification
requiring the parameter may be in the standards track, it may be
Experimental, or it may be private. Note that assignment of a
number to a protocol is independent of, and does not imply,
acceptance of that protocol as a standard.

Chaos could result from accidental conflicts of parameter values,
so we urge that every protocol parameter, for either public or
private usage, be explicitly assigned by the IANA. Private
protocols often become public. Programmers are often tempted to
choose a "random" value or to guess the next unassigned value of a
parameter; both are hazardous.

The IANA is expected to avoid frivolous assignments and to
distinguish different assignments uniquely. The IANA accomplishes
both goals by requiring a technical description of each protocol
or service to which a value is to be assigned. Judgment on the
adequacy of the description resides with the IANA. In the case of
a standards track or Experimental protocol, the corresponding
technical specifications provide the required documentation for
IANA. For a proprietary protocol, the IANA will keep confidential
any writeup that is supplied, but at least a short (2 page)
writeup is still required for an assignment.

2. NOMENCLATURE

   2.1 The Internet Standards Track

   Specifications that are destined to become Internet Standards
   evolve through a set of maturity levels known as the "standards
   track". These maturity levels -- "Proposed Standard", "Draft
   Standard", and "Standard" -- are defined and discussed below in
   Section 3.2.

   Even after a specification has been adopted as an Internet
   Standard, further evolution often occurs based on experience and
   the recognition of new requirements. The nomenclature and
   procedures of Internet standardization provide for the replacement
   of old Internet Standards with new ones, and the assignment of
   descriptive labels to indicate the status of "retired" Internet
   Standards. A set of maturity levels is defined in Section 3.3 to
   cover these and other "off-track" specifications.

2.2 Types of Specifications

   Specifications subject to the Internet standardization process
   fall into two categories: Technical Specifications (TS) and
   Applicability Statements (AS).

   2.2.1 Technical Specification (TS)

      A Technical Specification is any description of a protocol,
      service, procedure, convention, or format. It may completely
      describe all of the relevant aspects of its subject, or it may
      leave one or more parameters or options unspecified. A TS may
      be completely self-contained, or it may incorporate material
      from other specifications by reference to other documents
      (which may or may not be Internet Standards).

      A TS shall include a statement of its scope and the general
      intent for its use (domain of applicability). Thus, a TS that
      is inherently specific to a particular context shall contain a
      statement to that effect. However, a TS does not specify
      requirements for its use within the Internet; these
      requirements, which depend on the particular context in which
      the TS is incorporated by different system configurations, is
      defined by an Applicability Statement.

   2.2.2 Applicability Statement (AS)

      An Applicability Statement specifies how, and under what
      circumstances, one or more TSs are to be applied to support a
      particular Internet capability. An AS may specify uses for TSs
      that are not Internet Standards, as discussed in Section 4.

      An AS identifies the relevant TSs and the specific way in which
      they are to be combined, and may also specify particular values
      or ranges of TS parameters or subfunctions of a TS protocol
      that must be implemented. An AS also specifies the
      circumstances in which the use of a particular TS is required,
      recommended, or elective.

      An AS may describe particular methods of using a TS in a
      restricted "domain of applicability", such as Internet routers,
      terminal servers, Internet systems that interface to Ethernets,
      or datagram-based database servers.

      The broadest type of AS is a comprehensive conformance
      specification, commonly called a "requirements document", for a

particular class of Internet systems, such as Internet routers
or Internet hosts.

An AS may not have a higher maturity level in the standards
track than any standards-track TS to which the AS applies. For
example, a TS at Draft Standard level may be referenced by an
AS at the Proposed Standard or Draft Standard level, but not by
an AS at the Standard level.

An AS may refer to a TS that is either a standards-track speci-
fication or is "Informational", but not to a TS with a maturity
level of "Prototype", "Experimental", or "Historic" (see
section 2.4).

Although TSs and ASs are conceptually separate, in practice a
standards-track document may combine an AS and one or more related
TSs. For example, Technical Specifications that are developed
specifically and exclusively for some particular domain of
applicability, e.g., for mail server hosts, often contain within a
single specification all of the relevant AS and TS information.
In such cases, no useful purpose would be served by deliberately
distributing the information among several documents just to
preserve the formal AS/TS distinction. However, a TS that is
likely to apply to more than one domain of applicability should be
developed in a modular fashion, to facilitate its incorporation by
multiple ASs.

2.3 Standards Track Maturity Levels

ASs and TSs go through stages of development, testing, and
acceptance. Within the Internet standards process, these stages
are formally labeled "maturity levels".

This section describes the maturity levels and the expected
characteristics of specifications at each level.

2.3.1 Proposed Standard

The entry-level maturity for the standards track is "Proposed
Standard". A Proposed Standard specification is generally
stable, has resolved known design choices, is believed to be
well-understood, has received significant community review, and
appears to enjoy enough community interest to be considered
valuable. However, further experience might result in a change
or even retraction of the specification before it advances.

Usually, neither implementation nor operational experience is
required for the designation of a specification as a Proposed
Standard. However, such experience is highly desirable, and
will usually represent a strong argument in favor of a Proposed
Standard designation.

The IESG may require implementation and/or operational
experience prior to granting Proposed Standard status to a
specification that materially affects the core Internet
protocols or that specifies behavior that may have significant
operational impact on the Internet. Typically, such a
specification will be published initially with Experimental or
Prototype status (see below), and moved to the standards track
only after sufficient implementation or operational experience
has been obtained.

A Proposed Standard should have no known technical omissions
with respect to the requirements placed upon it. However, the
IESG may recommend that this requirement be explicitly reduced
in order to allow a protocol to advance into the Proposed
Standard state, when a specification is considered to be useful
and necessary (and timely), even absent the missing features.

Implementors should treat Proposed Standards as immature
specifications. It is desirable to implement them in order to
gain experience and to validate, test, and clarify the
specification. However, since the content of Proposed
Standards may be changed if problems are found or better
solutions are identified, deploying implementations of such
standards into a disruption-sensitive customer base is not
normally advisable.

2.3.2 Draft Standard

A specification from which at least two independent and
interoperable implementations have been developed, and for
which sufficient successful operational experience has been
obtained, may be elevated to the "Draft Standard" level. This
is a major advance in status, indicating a strong belief that
the specification is mature and will be useful.

A Draft Standard must be well-understood and known to be quite
stable, both in its semantics and as a basis for developing an
implementation. A Draft Standard may still require additional
or more widespread field experience, since it is possible for
implementations based on Draft Standard specifications to

demonstrate unforeseen behavior when subjected to large-scale
use in production environments.

2.3.3 Internet Standard

A specification for which significant implementation and
successful operational experience has been obtained may be
elevated to the Internet Standard level. An Internet Standard
(which may simply be referred to as a Standard) is
characterized by a high degree of technical maturity and by a
generally held belief that the specified protocol or service
provides significant benefit to the Internet community.

A Draft Standard is normally considered to be a final
specification, and changes are likely to be made only to solve
specific problems encountered. In most circumstances, it is
reasonable for vendors to deploy implementations of draft
standards into the customer base.

2.4 Non-Standards Track Maturity Levels

Not every TS or AS is on the standards track. A TS may not be
intended to be an Internet Standard, or it may be intended for
eventual standardization but not yet ready to enter the standards
track. A TS or AS may have been superseded by more recent
Internet Standards, or have otherwise fallen into disuse or
disfavor.

Specifications not on the standards track are labeled with one of
four off-track maturity levels: "Prototype, "Experimental",
"Informational", and "Historic". There are no time limits
associated with these non-standard track labels, and the documents
bearing these labels are not Internet standards in any sense. As
the Internet grows, there is a growing amount of credible
technical work being submitted directly to the RFC Editor without
having been gone through the IETF. It is possible that such
outside submissions may overlap or even conflict with ongoing IETF
activities. In order for the best technical result to emerge for
the community, we believe that the such outside submissions should
be given the opportunity to work within IETF to gain the broadest
possible consensus.

It is also possible that supporters of a view different from the
IETF may wish to publish their divergent view. For this reason,
it is important that, ultimately, authors should have the
opportunity to publish Informational and Experimental RFCs should

they wish to. However, it is also possible that this could open a
loophole in which developers could try to bypass the IETF
consensus process completely by publishing an Informational RFC
(and relying on the prestige of the RFC series to gain community
support for their document).

For all these reasons, the IESG and the RFC Editor have agreed to
the following policy for publishing Info and Exp RFCs:

1.   The RFC Editor will bring to the attention of the IESG all
      Informational and Experimental submissions that the RFC
      Editor feels may be related to, or of interest to, the IETF
      community.

2.   The IESG will review all such referrals within a fixed length
      of time and make a recommendation on whether to publish, or
      to suggest that the author bring their work within the IETF.

3.   If the IESG recommends that the work be brought within the
      IETF, but the author declines the invitation, the IESG may
      add disclaimer text into the standard boilerplate material
      added by the RFC Editor (e.g., "Status of this memo").

      2.4.1 Prototype

         For new protocols which affect core services of the
         Internet or for which the interactions with existing
         protocols are too complex to fully assimilate from the
         written specification, the IESG may request that
         operational experience be obtained prior to advancement to
         Proposed Standard status. In these cases, the IESG will
         designate an otherwise complete specification as
         "Prototype". This status permits it to be published as an
         RFC before it is entered onto the standards track. In
         this respect, "Prototype" is similar to "Experimental",
         except that it indicates the protocol is specifically
         being developed to become a standard, while "Experimental"
         generally indicates a more exploratory phase of
         development.

      2.4.2 Experimental

         The "Experimental" designation on a TS typically denotes a
         specification that is part of some research or development
         effort. Such a specification is published for the general
         information of the Internet technical community and as an

archival record of the work. An Experimental
specification may be the output of an organized Internet
research effort (e.g., a Research Group of the IRTF), or
it may be an individual contribution.

Documents intended for Experimental status should be
submitted directly to the RFC Editor for publication. The
procedure is intended to expedite the publication of any
responsible Experimental specification, subject only to
editorial considerations, and to verification that there
has been adequate coordination with the standards process.

2.4.3 Informational

An "Informational" specification is published for the
general information of the Internet community, and does
not represent an Internet community consensus or
recommendation. The Informational designation is intended
to provide for the timely publication of a very broad
range of responsible informational documents from many
sources, subject only to editorial considerations and to
verification that there has been adequate coordination
with the standards process.

Specifications that have been prepared outside of the
Internet community and are not incorporated into the
Internet standards process by any of the provisions of
Section 4 may be published as Informational RFCs, with the
permission of the owner.

2.4.4 Historic

A TS or AS that has been superseded by a more recent
specification or is for any other reason considered to be
obsolete is assigned to the "Historic" level. (Purists
have suggested that the word should be "Historical";
however, at this point the use of "Historic" is
historical.)

2.5 Requirement Levels

An AS may apply one of the following "requirement levels" to
each of the TSs to which it refers:

(a) Required: Implementation of the referenced TS, as specified
     by the AS, is required to achieve minimal conformance. For
     example, IP and ICMP must be implemented by all Internet
     systems using the TCP/IP Protocol Suite.

(b) Recommended: Implementation of the referenced TS is not
     required for minimal conformance, but experience and/or
     generally accepted technical wisdom suggest its desirability
     in the domain of applicability of the AS. Vendors are
     strongly encouraged to include the functions, features, and
     protocols of Recommended TSs in their products, and should
     omit them only if the omission is justified by some special
     circumstance.

(c) Elective: Implementation of the referenced TS is optional
     within the domain of applicability of the AS; that is, the AS
     creates no explicit necessity to apply the TS. However, a
     particular vendor may decide to implement it, or a particular
     user may decide that it is a necessity in a specific
     environment.

As noted in Section 2.4, there are TSs that are not in the
standards track or that have been retired from the standards
track, and are therefore not required, recommended, or elective.
Two additional "requirement level" designations are available for
such TSs:

(d) Limited Use: The TS is considered appropriate for use only
     in limited or unique circumstances. For example, the usage
     of a protocol with the "Experimental" designation should
     generally be limited to those actively involved with the
     experiment.

(e) Not Recommended: A TS that is considered to be inappropriate
     for general use is labeled "Not Recommended". This may be
     because of its limited functionality, specialized nature, or
     historic status.

The "Official Protocol Standards" RFC lists a general requirement
level for each TS, using the nomenclature defined in this section.
In many cases, more detailed descriptions of the requirement
levels of particular protocols and of individual features of the
protocols will be found in appropriate ASs.

3. THE INTERNET STANDARDS PROCESS

   3.1 Review and Approval

      A "standards action" -- entering a particular specification into,
      advancing it within, or removing it from, the standards track --
      must be approved by the IESG.

      3.1.1 Initiation of Action

         Typically, a standards action is initiated by a recommendation
         to the appropriate IETF Area Director by the individual or
         group that is responsible for the specification, usually an
         IETF Working Group.

         After completion to the satisfaction of its author and the
         cognizant Working Group, a document that is expected to enter
         or advance in the Internet standardization process shall be
         made available as an Internet Draft. It shall remain as an
         Internet Draft for a period of time that permits useful
         community review, at least two weeks, before submission to the
         IESG with a recommendation for action.

      3.1.2 IESG Review and Approval

         The IESG shall determine whether a specification satisfies the
         applicable criteria for the recommended action (see Sections
         3.2 and 3.3 of this document).

         The IESG shall determine if an independent technical review of
         the specification is required, and shall commission one when
         necessary. This may require creating a new Working Group, or
         an existing group may agree to take responsibility for
         reviewing the specification. When a specification is
         sufficiently important in terms of its potential impact on the
         Internet or on the suite of Internet protocols, the IESG shall
         form an independent technical review and analysis committee to
         prepare an evaluation of the specification. Such a committee
         is commissioned to provide an objective basis for agreement
         within the Internet community that the specification is ready
         for advancement.

         The IESG shall communicate its findings to the IETF to permit a
         final review by the general Internet community. This "last-
         call" notification shall be via electronic mail to the IETF
         mailing list. In addition, for important specifications there

shall be a presentation or statement by the appropriate Working
Group or Area Director during an IETF plenary meeting. Any
significant issues that have not been resolved satisfactorily
during the development of the specification may be raised at
this time for final resolution by the IESG.

In a timely fashion, but no sooner than two weeks after issuing
the last-call notification to the IETF mailing list, the IESG
shall make its final determination on whether or not to approve
the standards action, and shall notify the IETF of its decision
via email.

3.1.3 Publication

Following IESG approval and any necessary editorial work, the
RFC Editor shall publish the specification as an RFC. The
specification shall then be removed from the Internet Drafts
directory.

An official summary of standards actions completed and pending
shall appear in each issue of the Internet Society Newsletter.
This shall constitute the "journal of record" for Internet
standards actions. In addition, the IESG shall publish a
monthly summary of standards actions completed and pending in
the Internet Monthly Report, which is distributed to all
members of the IETF mailing list.

Finally, the IAB shall publish quarterly an "Internet Official
Protocol Standards" RFC, summarizing the status of all Internet
protocol and service specifications, both within and outside
the standards track.

3.2 Entering the Standards Track

A specification that is potentially an Internet Standard may
originate from:

(a) an ISOC-sponsored effort (typically an IETF Working Group),

(b) independent activity by individuals, or

(c) an external organization.

Case (a) accounts for the great majority of specifications that
enter the standards track. In cases (b) and (c), the work might
be tightly integrated with the work of an existing IETF Working

Group, or it might be offered for standardization without prior
IETF involvement. In most cases, a specification resulting from
an effort that took place outside of an IETF Working Group will be
submitted to an appropriate Working Group for evaluation and
refinement. If necessary, an appropriate Working Group will be
created.

For externally-developed specifications that are well-integrated
with existing Working Group efforts, a Working Group is assumed to
afford adequate community review of the accuracy and applicability
of the specification. If a Working Group is unable to resolve all
technical and usage questions, additional independent review may
be necessary. Such reviews may be done within a Working Group
context, or by an ad hoc review committee established specifically
for that purpose. Ad hoc review committees may also be convened
in other circumstances when the nature of review required is too
small to require the formality of Working Group creation. It is
the responsibility of the appropriate IETF Area Director to
determine what, if any, review of an external specification is
needed and how it shall be conducted.

3.3 Advancing in the Standards Track

A specification shall remain at the Proposed Standard level for at
least six (6) months.

A specification shall remain at the Draft Standard level for at
least four (4) months, or until at least one IETF meeting has
occurred, whichever comes later.

These minimum periods are intended to ensure adequate opportunity
for community review without severely impacting timeliness. These
intervals shall be measured from the date of publication of the
corresponding RFC(s), or, if the action does not result in RFC
publication, the date of IESG approval of the action.

A specification may be (indeed, is likely to be) revised as it
advances through the standards track. At each stage, the IESG
shall determine the scope and significance of the revision to the
specification, and, if necessary and appropriate, modify the
recommended action. Minor revisions are expected, but a
significant revision may require that the specification accumulate
more experience at its current maturity level before progressing.
Finally, if the specification has been changed very significantly,
the IESG may recommend that the revision be treated as a new
document, re-entering the standards track at the beginning.

Change of status shall result in republication of the
specification as an RFC, except in the rare case that there have
been no changes at all in the specification since the last
publication. Generally, desired changes will be "batched" for
incorporation at the next level in the standards track. However,
deferral of changes to the next standards action on the
specification will not always be possible or desirable; for
example, an important typographical error, or a technical error
that does not represent a change in overall function of the
specification, may need to be corrected immediately. In such
cases, the IESG or RFC Editor may be asked to republish the RFC
with corrections, and this will not reset the minimum time-at-
level clock.

When a standards-track specification has not reached the Internet
Standard level but has remained at the same status level for
twenty-four (24) months, and every twelve (12) months thereafter
until the status is changed, the IESG shall review the viability
of the standardization effort responsible for that specification.
Following each such review, the IESG shall approve termination or
continuation of the development. This decision shall be
communicated to the IETF via electronic mail to the IETF mailing
list, to allow the Internet community an opportunity to comment.
This provision is not intended to threaten a legitimate and active
Working Group effort, but rather to provide an administrative
mechanism for terminating a moribund effort.

3.4 Revising a Standard

A new version of an established Internet Standard must progress
through the full Internet standardization process as if it were a
completely new specification. Once the new version has reached
the Standard level, it will usually replace the previous version,
which will move to Historic status. However, in some cases both
versions may remain as Internet Standards to honor the
requirements of an installed base. In this situation, the
relationship between the previous and the new versions must be
explicitly stated in the text of the new version or in another
appropriate document (e.g., an Applicability Statement; see
Section 2.2.2).

3.5 Retiring a Standard

As the technology changes and matures, it is possible for a new
Standard specification to be so clearly superior technically that
one or more existing Internet Standards for the same function

should be retired. In this case, the IESG shall approve a change
of status of the superseded specification(s) from Standard to
Historic. This recommendation shall be issued with the same
Last-Call and notification procedures used for any other standards
action.

3.6 Conflict Resolution and Appeals

IETF Working Groups are generally able to reach consensus, which
sometimes requires difficult compromises between differing
technical solutions. However, there are times when even
reasonable and knowledgeable people are unable to agree. To
achieve the goals of openness and fairness, such conflicts must be
resolved with a process of open review and discussion.
Participants in a Working Group may disagree with Working Group
decisions, based either upon the belief that their own views are
not being adequately considered or the belief that the Working
Group made a technical choice which essentially will not work.
The first issue is a difficulty with Working Group process, and
the latter is an assertion of technical error. These two kinds of
disagreements may have different kinds of final outcome, but the
resolution process is the same for both cases.

Working Group participants always should first attempt to discuss
their concerns with the Working Group chair. If this proves
unsatisfactory, they should raise their concerns with an IESG Area
Director or other IESG member. In most cases, issues raised to
the level of the IESG will receive consideration by the entire
IESG, with the relevant Area Director or the IETF Chair being
tasked with communicating results of the discussion.

For the general community as well as Working Group participants
seeking a larger audience for their concerns, there are two
opportunities for explicit comment. (1) When appropriate, a
specification that is being suggested for advancement along the
standards track will be presented during an IETF plenary. At that
time, IETF participants may choose to raise issues with the
plenary or to pursue their issues privately, with any of the
relevant IETF/IESG management personnel. (2) Specifications that
are to be considered by the IESG are publicly announced to the
IETF mailing list, with a request for comments.

Finally, if a problem persists, the IAB may be asked to adjudicate
the dispute.

         *   If a concern involves questions of adequate Working Group
              discussion, the IAB will attempt to determine the actual
              nature and extent of discussion that took place within the
              Working Group, based upon the Working Group's written record
              and upon comments of other Working Group participants.

         *   If a concern involves questions of technical adequacy, the
              IAB may convene an appropriate review panel, which may then
              recommend that the IESG and Working Group re-consider an
              alternate technical choice.

         *   If a concern involves a reasonable difference in technical
              approach, but does not substantiate a claim that the Working
              Group decision will fail to perform adequately, the Working
              Group participant may wish to pursue formation of a separate
              Working Group. The IESG and IAB encourage alternative points
              of view and the development of technical options, allowing
              the general Internet community to show preference by making
              its own choices, rather than by having legislated decisions.

   4. EXTERNAL STANDARDS AND SPECIFICATIONS

      Many standards groups other than the IETF create and publish
      standards documents for network protocols and services. When these
      external specifications play an important role in the Internet, it is
      desirable to reach common agreements on their usage -- i.e., to
      establish Internet Standards relating to these external
      specifications.

      There are two categories of external specifications:

      (1) Open Standards

           Accredited national and international standards bodies, such as
           ANSI, ISO, IEEE, and ITU-TS, develop a variety of protocol and
           service specifications that are similar to Technical
           Specifications defined here. National and international groups
           also publish "implementors' agreements" that are analogous to
           Applicability Statements, capturing a body of implementation-
           specific detail concerned with the practical application of
           their standards.

(2) Vendor Specifications

        A vendor-proprietary specification that has come to be widely
        used in the Internet may be treated by the Internet community as
        if it were a "standard". Such a specification is not generally
        developed in an open fashion, is typically proprietary, and is
        controlled by the vendor or vendors that produced it.

To avoid conflict between competing versions of a specification, the
Internet community will not standardize a TS or AS that is simply an
"Internet version" of an existing external specification unless an
explicit cooperative arrangement to do so has been made. However,
there are several ways in which an external specification that is
important for the operation and/or evolution of the Internet may be
adopted for Internet use.

(a) Incorporation of an Open Standard

        An Internet Standard TS or AS may incorporate an open external
        standard by reference. The reference must be to a specific
        version of the external standard, e.g., by publication date or
        by edition number, according to the prevailing convention of the
        organization that is responsible for the specification.

        For example, many Internet Standards incorporate by reference
        the ANSI standard character set "ASCII" [2]. Whenever possible,
        the referenced specification shall be made available online.

(b) Incorporation of a Vendor Specification

        Vendor-proprietary specifications may be incorporated by
        reference to a specific version of the vendor standard. If the
        vendor-proprietary specification is not widely and readily
        available, the IESG may request that it be published as an
        Informational RFC.

        For a vendor-proprietary specification to be incorporated within
        the Internet standards process, the proprietor must meet the
        requirements of section 5 below, and in general the
        specification shall be made available online.

        The IESG shall not favor a particular vendor's proprietary
        specification over the technically equivalent and competing
        specifications of other vendors by making it "required" or
        "recommended".

(c) Assumption

    An IETF Working Group may start from an external specification
    and develop it into an Internet TS or AS. This is acceptable if
    (1) the specification is provided to the Working Group in
    compliance with the requirements of section 5 below, and (2)
    change control has been conveyed to IETF by the original
    developer of the specification. Continued participation in the
    IETF work by the original owner is likely to be valuable, and is
    encouraged.

The following sample text illustrates how a vendor might convey
change control to the Internet Society:

    "XXXX Organization asserts that it has the right to transfer to
    the Internet Society responsibility for further evolution of the
    YYYY protocol documented in References (1-n) below. XXXX
    Organization hereby transfers to the Internet Society
    responsibility for all future modification and development of
    the YYYY protocol, without reservation or condition."

5.   INTELLECTUAL PROPERTY RIGHTS

   5.1. General Policy

    In all matters of intellectual property rights and procedures, the
    intention is to benefit the Internet community and the public at
    large, while respecting the legitimate rights of others.

   5.2. Definitions

    As used in this section, the following terms have the indicated
    meanings:

    o   "Trade secrets" are confidential, proprietary information.

    o   "Contribution" means any disclosure of information or ideas,
          whether in oral, written, or other form of expression, by an
          individual or entity ("Contributor").

    o   "Standards track documents" are specifications and other
          documents that have been elevated to the Internet standards
          track in accordance with the Internet Standards Process.

o   "Copyrights" are purportedly valid claims to copyright in all
        or part of a contribution to standards work, whether or not
        the contribution becomes a standards track document,
        including but not limited to any works by third parties that
        the contribution is based on or incorporates.

o   "ISOC" refers to the Internet Society and its trustees,
        officers, employees, contractors, and agents, as well as the
        IAB, IETF, IESG, IRTF, IRSG, and other task forces,
        committees, and groups coordinated by the Internet Society.

o   "Standards work" is work involved in the creation, testing,
        development, revision, adoption, or maintenance of an
        Internet standard that is carried out under the auspices of
        ISOC.

o   "Internet community" refers to the entire set of persons,
        whether individuals or entities, including but not limited to
        technology developers, service vendors, and researchers, who
        use the Internet, either directly or indirectly, and users of
        any other networks which implement and use Internet
        Standards.

5.3 Trade Secret Rights

   Except as otherwise provided under this section, ISOC will not
   accept, in connection with standards work, any idea, technology,
   information, document, specification, work, or other contribution,
   whether written or oral, that is a trade secret or otherwise
   subject to any commitment, understanding, or agreement to keep it
   confidential or otherwise restrict its use or dissemination; and,
   specifically, ISOC does not assume any confidentiality obligation
   with respect to any such contribution.

5.4. Rights and Permissions

   In the course of standards work, ISOC receives contributions in
   various forms and from many persons. To facilitate the wide
   dissemination of these contributions, it is necessary to establish
   specific understandings concerning any copyrights, patents, patent
   applications, or other rights in the contribution. The procedures
   set forth in this section apply to contributions submitted after 1
   April 1994. For Internet standards documents published before
   this date (the RFC series has been published continuously since
   April 1969), information on rights and permissions must be sought
   directly from persons claiming rights therein.

5.4.1. All Contributions

By submission of a contribution to ISOC, and in consideration
of possible dissemination of the contribution to the Internet
community, a contributor is deemed to agree to the following
terms and conditions:

1.   Contributor agrees to grant, and does grant to ISOC, a
      perpetual, non-exclusive, royalty-free, world-wide right
      and license under any copyrights in the contribution to
      reproduce, distribute, perform or display publicly and
      prepare derivative works that are based on or incorporate
      all or part of the contribution, and to reproduce,
      distribute and perform or display publicly any such
      derivative works, in any form and in all languages, and to
      authorize others to do so.

2.   Contributor acknowledges that ISOC has no duty to publish
      or otherwise use or disseminate every contribution.

3.   Contributor grants ISOC permission to reference the
      name(s) and address(s) of the contributor as well as other
      persons who are named as contributors.

4.   Where the contribution was prepared jointly with others,
      or is a work for hire, the contributor represents and
      warrants that the other owner(s) of rights have been
      informed of the rights and permissions granted to ISOC and
      that any required authorizations have been obtained.
      Copies of any such required authorizations will be
      furnished to ISOC, upon request.

5.   Contributor acknowledges and agrees that ISOC assumes no
      obligation to maintain any confidentiality with respect to
      any aspect of the contribution, and warrants that the the
      contribution does not violate the rights of others.

6.   All material objects in which contributions are submitted
      to ISOC become the property of ISOC and need not be
      returned to the contributor.

Where appropriate, written confirmation of the above terms and
conditions will be obtained in writing by ISOC, usually by
electronic mail; however, a decision not to obtain such
confirmation in a given case shall not act to revoke the prior
grant of rights and permissions with respect to the

contribution as provided herein. Except as provided below, the
Executive Director of the IETF Secretariat, or a person
designated by the Executive Director, will be responsible for
obtaining written confirmations.

In the case of IETF Working Groups, the responsibility for
identifying the principal contributor(s) for purposes of
obtaining written confirmation of the above rights and
permissions will be assumed by the Editor or Chair of the
particular Group. While only those persons named as principal
contributor(s) will generally be requested to provide written
confirmation, it is the responsibility of all contributors to
standards work to inform the IETF Secretariat of any
proprietary claims in any contributions and to furnish the
Secretariat with any required confirmation.

Where any person participating in standards work asserts any
proprietary right in a contribution, it is the responsibility
of such person to so inform the Editor or Chair of the group,
promptly, in writing. The Editor or Chair will then determine
whether to list the person as a principal contributor, or to
revise the document to omit the particular contribution in
question.

   5.4.2. Standards Track Documents

   (A) ISOC will not propose, adopt, or continue to maintain any
        standards, including but not limited to standards labelled
        Proposed, Draft or Internet Standards, which can only be
        practiced using technology or works that are subject to
        known copyrights, patents or patent applications, or other
        rights, except with the prior written assurance of the
        owner of rights that:

        1.   ISOC may, without cost, freely implement and use the
             technology or works in its standards work;

        2.   upon adoption and during maintenance of an Internet
             Standard, any party will be able to obtain the right
             to implement and use the technology or works under
             specified, reasonable, non-discriminatory terms; and

        3.   the party giving the assurance has the right and
             power to grant the licenses and knows of no other
             copyrights, patents, patent applications, or other

rights that may prevent ISOC and members of the
Internet community from implementing and operating
under the standard.

    (B)   ISOC disclaims any responsibility for identifying the
existence of or for evaluating any copyrights, patents,
patent applications, or other rights, on behalf of or for
the benefit of any member of the Internet community, and
ISOC takes no position on the validity or scope of any
such rights. Further, ISOC will take no position on the
ownership of inventions made during standards work, except
for inventions of which an employee or agent of the
Internet Society is a joint inventor. In the latter case,
the Internet Society will make its rights available under
license to anyone in the Internet community in accordance
with the written assurances set forth below.

5.5. Notices

    (A)   When a written assurance has been obtained as set forth
below, the relevant standards track documents shall include
the following notice:

"_____(name of rights' owner) has provided written
assurance to the Internet Society that any party will be
able to obtain, under reasonable, nondiscriminatory
terms, the right to use the technology covered
by_____(list copyrights, patents, patent
applications, and other rights) to practice the
standard. A copy of this assurance may be obtained from
the Executive Director of the IETF Secretariat.   The
Internet Society takes no position on the validity or
scope of the copyrights, patents, patent applications,
or other rights, or on the appropriateness of the terms
and conditions of the assurances. The Internet Society
does not make any representation there are no other
rights which may apply to the practice of this standard,
nor that it has made any effort to identify any such
rights. For further information on the Internet
Society's procedures with respect to rights in standards
and standards-related documentation, see RFC_____,
dated_____."

    (B)   ISOC encourages all interested parties to bring to its
attention, at the earliest possible time, the existence of
any copyrights, patents, patent applications, or other rights

pertaining to Internet Standards. For this purpose, each
standards document will include the following invitation:

> "The Internet Society invites any interested party to
> bring to its attention any copyrights, patents or patent
> applications, or other proprietary rights which purport
> to cover technology or works that may be required to
> practice this standard. Please address the information
> to the Executive Director of the Internet Engineering
> Task Force Secretariat."

(C) When applicable, the following sentence will be included in
     the notice:

> "As of _____, no information about any copyrights,
> patents or patent applications, or other proprietary
> rights has been received."

(D) The following copyright notice and disclaimer will be
     included in all ISOC standards-related documentation:

> "Copyright (c) ISOC (year date). Permission is granted
> to reproduce, distribute, transmit and otherwise
> communicate to the public any material subject to
> copyright by ISOC, provided that credit is given to the
> source. For information concerning required
> permissions, please contact the Executive Director of
> the Internet Engineering Task Force Secretariat."

> ISOC hereby informs the Internet community and other
> persons that any standards, whether or not elevated to
> the Internet Standard level of maturity, or any
> standards-related documentation made available under the
> auspices of ISOC are provided on an "AS IS" basis and
> ISOC DISCLAIMS ALL WARRANTIES, EXPRESSED OR IMPLIED,
> INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF
> MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR
> THAT ANY STANDARD OR DOCUMENTATION DOES NOT VIOLATE THE
> RIGHTS OF OTHERS.

5.6. Assurances

The agreement on assurances set forth below will normally be
entered into between the owner of rights and ISOC at the time a
standards track document in which proprietary rights are claimed
reaches the "Proposed Standard" stage of maturity:

This is an agreement between _____(hereinafter
called "Rights Holder") and the Internet Society on behalf of
itself and its trustees, officers, employees, contractors and
agents, the Internet Architecture Board, Internet Engineering
Steering Group, Internet Engineering Task Force, and other task
forces, committees and groups coordinated by the Internet Society
(hereinafter called "ISOC"), and for the benefit of all users of
the Internet and users of any other networks which implement and
use Internet Standards (hereinafter together with ISOC called
"Internet community"). This agreement takes effect when signed on
behalf of the Rights Holder and the Internet Society.

The Rights Holder represents that it has or will have rights
in patent applications, patents, copyrights, trade secrets, and
other proprietary rights in various countries (hereinafter called
"Rights") which may block or impede the ability of the Internet
community to implement and operate under the standards set forth
in ISOC standards document ____,____, and ____(the listed
standards and any similar or related standards now existing or
later developed are together hereinafter called "Standards"). The
Rights as they presently exist are listed on attached Schedule A.
The Rights Holder further agrees to review the Rights listed in
Schedule A from time to time, and, in particular, immediately
prior to the elevation of the Standards to the Internet Standard
level of maturity in accordance with the Internet Standards
Process, and to inform the Executive Director of the Internet
Engineering Task Force Secretariat promptly upon learning of any
new Rights in the Standards that should be added to the list in
Schedule A.

The Rights Holder believes and affirms that it will derive
benefits by permitting ISOC and the Internet community to
implement and operate under the Standards without interference of
any of the Rights. The policy of ISOC is not to propose, adopt,
or continue to maintain the Standards unless written assurances
are given by the Rights Holder with respect to proprietary rights.
Accordingly, in consideration of the benefits noted above and
other good and valuable consideration, the Rights Holder makes the
assurances set forth herein.

The Rights Holder grants to ISOC a cost-free, perpetual,
non-exclusive, world-wide license under the Rights with respect to
implementing and operating under the Standards. The license
extends to all activities of ISOC involving the Standards without
limit, including the rights to reproduce, distribute, propose,
test, develop, analyze, enhance, revise, adopt, maintain,

withdraw, perform and display publicly, and prepare derivative
works in any form whatsoever and in all languages, and to
authorize others to do so. The Rights Holder also grants ISOC
permission to use the name and address of Rights Holder in
connection with the Standards.

     The Rights Holder relinquishes any right or claim in any
trade secret which is part of the Rights, and makes the trade
secrets available without restriction to the Internet community.
The Rights Holder hereby acknowledges that ISOC assumes no
obligation to maintain any confidentiality with respect to any
aspect of the Standards, and warrants that the Standards do not
violate the rights of others.

     The Rights Holder assures ISOC that the Rights Holder shall
grant to any member of the Internet community, as a beneficiary of
this agreement, a non-exclusive, perpetual, world-wide license
under the Rights, with respect to operating under the Standards
for a reasonable royalty and under other terms which are
reasonable considering the objective of ISOC to assure that all
members of the Internet community will be able to operate under
the Standards at a minimal cost. The license discussed in this
paragraph shall permit the licensee to make, have made, test,
enhance, implement, and use methods, works, computer programs, and
hardware as needed or desirable for operating under the Standards.
Every license shall include a clause automatically modifying the
terms of the license to be as favorable as the terms of any other
license under the Rights previously or later granted by the Rights
Holder.

     A form of the license shall always be publicly accessible on
the Internet, and shall become effective immediately when the
member of the Internet community executes it and posts it for
delivery to the Rights Holder either by mail or electronically.
The initial version of the license shall be in the form attached
as Schedule B.

     The Rights Holder represents and warrants that its rights are
sufficient to permit it to grant the licenses and give the other
assurances recited in this agreement. The Rights Holder further
represents and warrants that it does not know of any rights of any
other party in any country which would block or impede the ability
of ISOC and the Internet community to implement or operate under
the Standards, or that would prevent the Rights Holder from
granting the licenses and other assurances in this agreement.

This agreement shall not be construed to obligate the ISOC to propose, adopt, develop, or maintain any of the Standards or any other standard.

6. REFERENCES

   [1] Postel, J., "Internet Official Protocol Standards", STD 1, RFC
        1600, USC/Information Sciences Institute, March 1994.

   [2] ANSI, Coded Character Set -- 7-Bit American Standard Code for
        Information Interchange, ANSI X3.4-1986.

   [3] Reynolds, J., and J. Postel, "Assigned Numbers", STD 2, RFC
        1340, USC/Information Sciences Institute, July 1992.

   [4] Postel, J., "Introduction to the STD Notes", RFC 1311,
        USC/Information Sciences Institute, March 1992.

   [5] Postel, J., "Instructions to RFC Authors", RFC 1543,
        USC/Information Sciences Institute, October 1993.

APPENDIX A: GLOSSARY OF ACRONYMS

ANSI: American National Standards Institute
ARPA: (U.S.) Advanced Research Projects Agency
AS: Applicability Statement
ASCII: American Standard Code for Information Interchange
ITU-T: Telecommunications Standardization sector of the International
        Telecommunications Union (ITU), a UN treaty organization;
        ITU-T was formerly called CCITT.
IAB: Internet Architecture Board
IANA: Internet Assigned Numbers Authority
IEEE: Institute of Electrical and Electronics Engineers
ICMP: Internet Control Message Protocol
IESG: Internet Engineering Steering Group
IETF: Internet Engineering Task Force
IP: Internet Protocol
IRTF: Internet Research Task Force
ISO: International Organization for Standardization
ISOC: Internet Society
MIB: Management Information Base
OSI: Open Systems Interconnection
RFC: Request for Comments
TCP: Transmission Control Protocol
TS: Technical Specification

APPENDIX B: CONTACT POINTS

To contact the RFC Editor, send an email message to: "rfc-
editor@isi.edu".

To contact the IANA for information or to request a number, keyword or
parameter assignment send an email message to: "iana@isi.edu".

To contact the IESG, send an email message to: "iesg@cnri.reston.va.us".

To contact the IAB, send an email message to: "iab-contact@isi.edu".

To contact the Executive Director of the ISOC, send an email message to
"amr@isoc.org".

APPENDIX C: FUTURE ISSUES

It has been suggested that additional procedures in the following areas
should be considered.

o   Policy Recommendations and Operational Guidelines

       Internet standards have generally been concerned with the technical
       specifications for hardware and software required for computer
       communication across interconnected networks. The Internet itself
       is composed of networks operated by a great variety of
       organizations, with diverse goals and rules. However, good user
       service requires that the operators and administrators of the
       Internet follow some common guidelines for policies and operations.
       While these guidelines are generally different in scope and style
       from protocol standards, their establishment needs a similar
       process for consensus building. Specific rules for establishing
       policy recommendations and operational guidelines for the Internet
       in an open and fair fashion should be developed, published, and
       adopted by the Internet community.

o   Industry Consortia

       The rules presented in Section 4 for external standards should be
       expanded to handle industry consortia.

o   Tracking Procedure

       It has been suggested that there should be a formal procedure for
       tracking problems and change requests as a specification moves
       through the standards track. Such a procedure might include
       written responses, which were cataloged and disseminated, or simply
       a database that listed changes between versions. At the present
       time, there are not sufficient resources to administer such a
       procedure.

       A simpler proposal is to keep a change log for documents.

o   Time Limit

     An explicit time limit (e.g., 3 months) has been suggested for IESG
     resolution concerning a standards action under the rules of Section
     3.1.2. If it were necessary to extend the time for some reason,
     the IETF would have to be explicitly notified.

o   Bug Reporting

     There is no documented mechanism for an individual community member
     to use to report a problem or bug with a standards-track
     specification. One suggestion was that every standards RFC should
     include an email list for the responsible Working Group.

Security Considerations

     Security issues are not discussed in this memo.

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