              The Internet Standards Process -- Revision 3

Status of this Memo

   This document specifies an Internet Best Current Practices for the
   Internet Community, and requests discussion and suggestions for
   improvements. Distribution of this memo is unlimited.

Abstract

   This memo documents the process used by the Internet community for
   the standardization of protocols and procedures. It defines the
   stages in the standardization process, the requirements for moving a
   document between stages and the types of documents used during this
   process. It also addresses the intellectual property rights and
   copyright issues associated with the standards process.

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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 (IESG).

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 interconnected networks, which are not connected to the
   global Internet but use the Internet Standards.

   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 normally applies 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.

1.2 The Internet Standards Process

   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.

The goals of the Internet Standards Process are:
o   technical excellence;
o   prior implementation and testing;
o   clear, concise, and easily understood documentation;
o   openness and fairness; and
o   timeliness.

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
    must be 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
demands timely development of standards. The Internet Standards
Process is intended to balance these conflicting goals. The process
is believed to be as short and simple as possible without sacrificing
technical excellence, thorough testing before adoption of a standard,
or openness and fairness.

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 a number
of years of evolution, driven both by the needs of the growing and
increasingly diverse Internet community, and by experience.

1.3 Organization of This Document

   Section 2 describes the publications and archives of the Internet
   Standards Process. Section 3 describes the types of Internet
   standard specifications. Section 4 describes the Internet standards
   specifications track. Section 5 describes Best Current Practice
   RFCs. Section 6 describes the process and rules for Internet
   standardization. Section 7 specifies the way in which externally-
   sponsored specifications and practices, developed and controlled by
   other standards bodies or by others, are handled within the Internet
   Standards Process. Section 8 describes the requirements for notices
   and record keeping Section 9 defines a variance process to allow
   one-time exceptions to some of the requirements in this document
   Section 10 presents the rules that are required to protect
   intellectual property rights in the context of the development and
   use of Internet Standards. Section 11 includes acknowledgments of
   some of the people involved in creation of this document. Section 12
   notes that security issues are not dealt with by this document.
   Section 13 contains a list of numbered references. Section 14
   contains definitions of some of the terms used in this document.
   Section 15 lists the author's email and postal addresses. Appendix A
   contains a list of frequently-used acronyms.

2.   INTERNET STANDARDS-RELATED PUBLICATIONS

2.1 Requests for Comments (RFCs)

   Each distinct version of an Internet standards-related 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 can be obtained from a number of
   Internet hosts using anonymous FTP, gopher, World Wide Web, and other
   Internet document-retrieval systems.

   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 in addition to Internet Standards, 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 [5].
Every RFC is available in ASCII text. Some RFCs are also available
in other formats. The other versions 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.  *
*                                                       *
*********************************************************
```

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).

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
"STDxxx", but it keeps its RFC number and its place in the RFC
series. (see section 4.1.3)

Some RFCs standardize the results of community deliberations about
statements of principle or conclusions about what is the best way to
perform some operations or IETF process function. These RFCs form
the specification has been adopted as a BCP, it is given the
additional label "BCPxxx", but it keeps its RFC number and its place
in the RFC series. (see section 5)

Not all specifications of protocols or services for the Internet
should or will become Internet Standards or BCPs. Such non-standards
track specifications are not subject to the rules for Internet
standardization. Non-standards track specifications may be published
directly as "Experimental" or "Informational" RFCs at the discretion
of the RFC Editor in consultation with the IESG (see section 4.2).

```
*********************************************************
*                                                       *
*      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. In the same way, not all RFCs *
*      which describe current practices have been given  *
*      the review and approval to become BCPs. See      *
*      RFC-1796 [6] for further information.            *
*                                                       *
*********************************************************
```

2.2 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-Drafts 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, 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.
This may also be done in a standards track document itself as long
as the specification in which the reference is made would stand as a
complete and understandable document with or without the reference to
the "Work in Progress".

3.   INTERNET STANDARD SPECIFICATIONS

Specifications subject to the Internet Standards Process fall into
one of two categories: Technical Specification (TS) and
Applicability Statement (AS).

3.1 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 might or might 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, are defined by an Applicability Statement.

3.2 Applicability Statement (AS)

An Applicability Statement specifies how, and under what
circumstances, one or more TSs may be applied to support a particular
Internet capability. An AS may specify uses for TSs that are not
Internet Standards, as discussed in Section 7.

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 (see section
3.3).

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 on which the AS relies (see section 4.1).
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.

3.3 Requirement Levels

An AS shall 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. For example, the TELNET
     protocol should be implemented by all systems that would benefit
     from remote access.

(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. For
     example, the DECNET MIB could be seen as valuable in an
     environment where the DECNET protocol is used.

As noted in section 4.1, 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
these TSs:

(d) Limited Use: The TS is considered to be 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.

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.

The "Official Protocol Standards" RFC (STD1) lists a general
requirement level for each TS, using the nomenclature defined in this
section. This RFC is updated periodically. 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.

4. THE INTERNET STANDARDS TRACK

Specifications that are intended 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 in section 4.1. The way in
which specifications move along the standards track is described in
section 6.

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 4.2 to cover these and other
specifications that are not considered to be on the standards track.

4.1 Standards Track Maturity Levels

Internet specifications 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.

4.1.1 Proposed Standard

The entry-level maturity for the standards track is "Proposed
Standard". A specific action by the IESG is required to move a
specification onto the standards track at the "Proposed Standard"
level.

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.

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

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
environment is not recommended.

4.1.2 Draft Standard

A specification from which at least two independent and interoperable
implementations from different code bases have been developed, and
for which sufficient successful operational experience has been
obtained, may be elevated to the "Draft Standard" level. For the
purposes of this section, "interoperable" means to be functionally
equivalent or interchangeable components of the system or process in
which they are used. If patented or otherwise controlled technology
is required for implementation, the separate implementations must
also have resulted from separate exercise of the licensing process.
Elevation to Draft Standard is a major advance in status, indicating
a strong belief that the specification is mature and will be useful.

The requirement for at least two independent and interoperable
implementations applies to all of the options and features of the
specification. In cases in which one or more options or features
have not been demonstrated in at least two interoperable
implementations, the specification may advance to the Draft Standard
level only if those options or features are removed.

The Working Group chair is responsible for documenting the specific
implementations which qualify the specification for Draft or Internet
Standard status along with documentation about testing of the
interoperation of these implementations. The documentation must
include information about the support of each of the individual
options and features. This documentation should be submitted to the
Area Director with the protocol action request. (see Section 6)

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.

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 a disruption sensitive
environment.

4.1.3 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 specification that reaches the status of Standard is assigned a
number in the STD series while retaining its RFC number.

4.2 Non-Standards Track Maturity Levels

Not every specification is on the standards track. A specification
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 specification may have been superseded by a more recent
Internet Standard, or have otherwise fallen into disuse or disfavor.

Specifications that are not on the standards track are labeled with
one of three "off-track" maturity levels: "Experimental",
"Informational", or "Historic". The documents bearing these labels
are not Internet Standards in any sense.

4.2.1 Experimental

The "Experimental" designation 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, subject only to
editorial considerations and to verification that there has been
adequate coordination with the standards process (see below). An
Experimental specification may be the output of an organized Internet
research effort (e.g., a Research Group of the IRTF), an IETF Working
Group, or it may be an individual contribution.

4.2.2 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
   (see section 4.2.3).

   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 10 may be published as
   Informational RFCs, with the permission of the owner and the
   concurrence of the RFC Editor.

4.2.3 Procedures for Experimental and Informational RFCs

   Unless they are the result of IETF Working Group action, documents
   intended to be published with Experimental or Informational status
   should be submitted directly to the RFC Editor. The RFC Editor will
   publish any such documents as Internet-Drafts which have not already
   been so published. In order to differentiate these Internet-Drafts
   they will be labeled or grouped in the I-D directory so they are
   easily recognizable. The RFC Editor will wait two weeks after this
   publication for comments before proceeding further. The RFC Editor
   is expected to exercise his or her judgment concerning the editorial
   suitability of a document for publication with Experimental or
   Informational status, and may refuse to publish a document which, in
   the expert opinion of the RFC Editor, is unrelated to Internet
   activity or falls below the technical and/or editorial standard for
   RFCs.

   To ensure that the non-standards track Experimental and Informational
   designations are not misused to circumvent the Internet Standards
   Process, the IESG and the RFC Editor have agreed that the RFC Editor
   will refer to the IESG any document submitted for Experimental or
   Informational publication which, in the opinion of the RFC Editor,
   may be related to work being done, or expected to be done, within the
   IETF community. The IESG shall review such a referred document
   within a reasonable period of time, and recommend either that it be
   published as originally submitted or referred to the IETF as a
   contribution to the Internet Standards Process.

   If (a) the IESG recommends that the document be brought within the
   IETF and progressed within the IETF context, but the author declines
   to do so, or (b) the IESG considers that the document proposes

something that conflicts with, or is actually inimical to, an
established IETF effort, the document may still be published as an
Experimental or Informational RFC. In these cases, however, the IESG
may insert appropriate "disclaimer" text into the RFC either in or
immediately following the "Status of this Memo" section in order to
make the circumstances of its publication clear to readers.

Documents proposed for Experimental and Informational RFCs by IETF
Working Groups go through IESG review. The review is initiated using
the process described in section 6.1.1.

4.2.4 Historic

A specification 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.)

Note: Standards track specifications normally must not depend on
other standards track specifications which are at a lower maturity
level or on non standards track specifications other than referenced
specifications from other standards bodies. (See Section 7.)

5. BEST CURRENT PRACTICE (BCP) RFCs

The BCP subseries of the RFC series is designed to be a way to
standardize practices and the results of community deliberations. A
BCP document is subject to the same basic set of procedures as
standards track documents and thus is a vehicle by which the IETF
community can define and ratify the community's best current thinking
on a statement of principle or on what is believed to be the best way
to perform some operations or IETF process function.

Historically Internet standards have generally been concerned with
the technical specifications for hardware and software required for
computer communication across interconnected networks. However,
since the Internet itself is composed of networks operated by a great
variety of organizations, with diverse goals and rules, 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.

While it is recognized that entities such as the IAB and IESG are
composed of individuals who may participate, as individuals, in the
technical work of the IETF, it is also recognized that the entities

themselves have an existence as leaders in the community. As leaders
in the Internet technical community, these entities should have an
outlet to propose ideas to stimulate work in a particular area, to
raise the community's sensitivity to a certain issue, to make a
statement of architectural principle, or to communicate their
thoughts on other matters. The BCP subseries creates a smoothly
structured way for these management entities to insert proposals into
the consensus-building machinery of the IETF while gauging the
community's view of that issue.

Finally, the BCP series may be used to document the operation of the
IETF itself. For example, this document defines the IETF Standards
Process and is published as a BCP.

5.1 BCP Review Process

Unlike standards-track documents, the mechanisms described in BCPs
are not well suited to the phased roll-in nature of the three stage
standards track and instead generally only make sense for full and
immediate instantiation.

The BCP process is similar to that for proposed standards. The BCP
is submitted to the IESG for review, (see section 6.1.1) and the
existing review process applies, including a Last-Call on the IETF
Announce mailing list. However, once the IESG has approved the
document, the process ends and the document is published. The
resulting document is viewed as having the technical approval of the
IETF.

Specifically, a document to be considered for the status of BCP must
undergo the procedures outlined in sections 6.1, and 6.4 of this
document. The BCP process may be appealed according to the procedures
in section 6.5.

Because BCPs are meant to express community consensus but are arrived
at more quickly than standards, BCPs require particular care.
Specifically, BCPs should not be viewed simply as stronger
Informational RFCs, but rather should be viewed as documents suitable
for a content different from Informational RFCs.

A specification, or group of specifications, that has, or have been
approved as a BCP is assigned a number in the BCP series while
retaining its RFC number(s).

6. THE INTERNET STANDARDS PROCESS

   The mechanics of the Internet Standards Process involve decisions of
   the IESG concerning the elevation of a specification onto the
   standards track or the movement of a standards-track specification
   from one maturity level to another. Although a number of reasonably
   objective criteria (described below and in section 4) are available
   to guide the IESG in making a decision to move a specification onto,
   along, or off the standards track, there is no algorithmic guarantee
   of elevation to or progression along the standards track for any
   specification. The experienced collective judgment of the IESG
   concerning the technical quality of a specification proposed for
   elevation to or advancement in the standards track is an essential
   component of the decision-making process.

6.1 Standards Actions

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

6.1.1 Initiation of Action

   A specification that is intended to enter or advance in the Internet
   standards track shall first be posted as an Internet-Draft (see
   section 2.2) unless it has not changed since publication as an RFC.
   It shall remain as an Internet-Draft for a period of time, not less
   than two weeks, that permits useful community review, after which a
   recommendation for action may be initiated.

   A standards action is initiated by a recommendation by the IETF
   Working group responsible for a specification to its Area Director,
   copied to the IETF Secretariat or, in the case of a specification not
   associated with a Working Group, a recommendation by an individual to
   the IESG.

6.1.2 IESG Review and Approval

   The IESG shall determine whether or not a specification submitted to
   it according to section 6.1.1 satisfies the applicable criteria for
   the recommended action (see sections 4.1 and 4.2), and shall in
   addition determine whether or not the technical quality and clarity
   of the specification is consistent with that expected for the
   maturity level to which the specification is recommended.

   In order to obtain all of the information necessary to make these
   determinations, particularly when the specification is considered by
   the IESG to be extremely important in terms of its potential impact

on the Internet or on the suite of Internet protocols, the IESG may,
at its discretion, commission an independent technical review of the
specification.

The IESG will send notice to the IETF of the pending IESG
consideration of the document(s) to permit a final review by the
general Internet community. This "Last-Call" notification shall be
via electronic mail to the IETF Announce mailing list. Comments on a
Last-Call shall be accepted from anyone, and should be sent as
directed in the Last-Call announcement.

The Last-Call period shall be no shorter than two weeks except in
those cases where the proposed standards action was not initiated by
an IETF Working Group, in which case the Last-Call period shall be no
shorter than four weeks. If the IESG believes that the community
interest would be served by allowing more time for comment, it may
decide on a longer Last-Call period or to explicitly lengthen a
current Last-Call period.

The IESG is not bound by the action recommended when the
specification was submitted. For example, the IESG may decide to
consider the specification for publication in a different category
than that requested. If the IESG determines this before the Last-
Call is issued then the Last-Call should reflect the IESG's view.
The IESG could also decide to change the publication category based
on the response to a Last-Call. If this decision would result in a
specification being published at a "higher" level than the original
Last-Call was for, a new Last-Call should be issued indicating the
IESG recommendation. In addition, the IESG may decide to recommend
the formation of a new Working Group in the case of significant
controversy in response to a Last-Call for specification not
originating from an IETF Working Group.

In a timely fashion after the expiration of the Last-Call period, the
IESG shall make its final determination of whether or not to approve
the standards action, and shall notify the IETF of its decision via
electronic mail to the IETF Announce mailing list.

6.1.3 Publication

If a standards action is approved, notification is sent to the RFC
Editor and copied to the IETF with instructions to publish the
specification as an RFC. The specification shall at that point 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's newsletter. This
shall constitute the "publication of record" for Internet standards
actions.

The RFC Editor shall publish periodically an "Internet Official
Protocol Standards" RFC [1], summarizing the status of all Internet
protocol and service specifications.

6.2 Advancing in the Standards Track

The procedure described in section 6.1 is followed for each action
that attends the advancement of a specification along 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 the announcement of the 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
a new number) 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 maturity 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 and the
usefulness of the technology. Following each such review, the IESG
shall approve termination or continuation of the development effort,
at the same time the IESG shall decide to maintain the specification
at the same maturity level or to move it to Historic status. This
decision shall be communicated to the IETF by electronic mail to the
IETF Announce 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.

6.3 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 be moved 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 3.2).

6.4 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 standards track specifications for the same function
   should be retired. In this case, or when it is felt for some other
   reason that an existing standards track specification should be
   retired, the IESG shall approve a change of status of the old
   specification(s) to Historic. This recommendation shall be issued
   with the same Last-Call and notification procedures used for any
   other standards action. A request to retire an existing standard can
   originate from a Working Group, an Area Director or some other
   interested party.

6.5 Conflict Resolution and Appeals

   Disputes are possible at various stages during the IETF process. As
   much as possible the process is designed so that compromises can be
   made, and genuine consensus achieved, however there are times when
   even the most reasonable and knowledgeable people are unable to
   agree. To achieve the goals of openness and fairness, such conflicts
   must be resolved by a process of open review and discussion. This
   section specifies the procedures that shall be followed to deal with
   Internet standards issues that cannot be resolved through the normal
   processes whereby IETF Working Groups and other Internet Standards
   Process participants ordinarily reach consensus.

6.5.1 Working Group Disputes

   An individual (whether a participant in the relevant Working Group or
   not) may disagree with a Working Group recommendation based on his or
   her belief that either (a) his or her own views have not been
   adequately considered by the Working Group, or (b) the Working Group
   has made an incorrect technical choice which places the quality
   and/or integrity of the Working Group's product(s) in significant
   jeopardy. The first issue is a difficulty with Working Group
   process; the latter is an assertion of technical error. These two
   types of disagreement are quite different, but both are handled by
   the same process of review.

   A person who disagrees with a Working Group recommendation shall
   always first discuss the matter with the Working Group's chair(s),
   who may involve other members of the Working Group (or the Working
   Group as a whole) in the discussion.

   If the disagreement cannot be resolved in this way, any of the
   parties involved may bring it to the attention of the Area
   Director(s) for the area in which the Working Group is chartered.
   The Area Director(s) shall attempt to resolve the dispute.

   If the disagreement cannot be resolved by the Area Director(s) any of
   the parties involved may then appeal to the IESG as a whole. The
   IESG shall then review the situation and attempt to resolve it in a
   manner of its own choosing.

   If the disagreement is not resolved to the satisfaction of the
   parties at the IESG level, any of the parties involved may appeal the
   decision to the IAB. The IAB shall then review the situation and
   attempt to resolve it in a manner of its own choosing.

   The IAB decision is final with respect to the question of whether or
   not the Internet standards procedures have been followed and with
   respect to all questions of technical merit.

6.5.2 Process Failures

   This document sets forward procedures required to be followed to
   ensure openness and fairness of the Internet Standards Process, and
   the technical viability of the standards created. The IESG is the
   principal agent of the IETF for this purpose, and it is the IESG that
   is charged with ensuring that the required procedures have been
   followed, and that any necessary prerequisites to a standards action
   have been met.

   If an individual should disagree with an action taken by the IESG in
   this process, that person should first discuss the issue with the
   ISEG Chair. If the IESG Chair is unable to satisfy the complainant
   then the IESG as a whole should re-examine the action taken, along
   with input from the complainant, and determine whether any further
   action is needed. The IESG shall issue a report on its review of the
   complaint to the IETF.

   Should the complainant not be satisfied with the outcome of the IESG
   review, an appeal may be lodged to the IAB. The IAB shall then review
   the situation and attempt to resolve it in a manner of its own
   choosing and report to the IETF on the outcome of its review.

   If circumstances warrant, the IAB may direct that an IESG decision be
   annulled, and the situation shall then be as it was before the IESG
   decision was taken. The IAB may also recommend an action to the IESG,
   or make such other recommendations as it deems fit. The IAB may not,
   however, pre-empt the role of the IESG by issuing a decision which
   only the IESG is empowered to make.

   The IAB decision is final with respect to the question of whether or
   not the Internet standards procedures have been followed.

6.5.3 Questions of Applicable Procedure

   Further recourse is available only in cases in which the procedures
   themselves (i.e., the procedures described in this document) are
   claimed to be inadequate or insufficient to the protection of the
   rights of all parties in a fair and open Internet Standards Process.
   Claims on this basis may be made to the Internet Society Board of
   Trustees. The President of the Internet Society shall acknowledge
   such an appeal within two weeks, and shall at the time of
   acknowledgment advise the petitioner of the expected duration of the
   Trustees' review of the appeal. The Trustees shall review the

situation in a manner of its own choosing and report to the IETF on
the outcome of its review.

The Trustees' decision upon completion of their review shall be final
with respect to all aspects of the dispute.

6.5.4 Appeals Procedure

All appeals must include a detailed and specific description of the
facts of the dispute.

All appeals must be initiated within two months of the public
knowledge of the action or decision to be challenged.

At all stages of the appeals process, the individuals or bodies
responsible for making the decisions have the discretion to define
the specific procedures they will follow in the process of making
their decision.

In all cases a decision concerning the disposition of the dispute,
and the communication of that decision to the parties involved, must
be accomplished within a reasonable period of time.

[NOTE: These procedures intentionally and explicitly do not
establish a fixed maximum time period that shall be considered
"reasonable" in all cases. The Internet Standards Process places a
premium on consensus and efforts to achieve it, and deliberately
foregoes deterministically swift execution of procedures in favor of
a latitude within which more genuine technical agreements may be
reached.]

7. 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

    Various national and international standards bodies, such as ANSI,
    ISO, IEEE, and ITU-T, 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. All
of these are considered to be "open external standards" for the
purposes of the Internet Standards Process.

   (2) Other Specifications

   Other proprietary specifications that have come to be widely used
   in the Internet may be treated by the Internet community as if
   they were a "standards". Such a specification is not generally
   developed in an open fashion, is typically proprietary, and is
   controlled by the vendor, vendors, or organization that produced
   it.

7.1 Use of External Specifications

   To avoid conflict between competing versions of a specification, the
   Internet community will not standardize a specification 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.

7.1.1 Incorporation of an Open Standard

   An Internet Standard TS or AS may incorporate an open external
   standard by reference. For example, many Internet Standards
   incorporate by reference the ANSI standard character set "ASCII" [2].
   Whenever possible, the referenced specification shall be available
   online.

7.1.2 Incorporation of Other Specifications

   Other proprietary specifications may be incorporated by reference to
   a version of the specification as long as the proprietor meets the
   requirements of section 10. If the other proprietary specification
   is not widely and readily available, the IESG may request that it be
   published as an Informational RFC.

   The IESG generally should not favor a particular proprietary
   specification over technically equivalent and competing
   specification(s) by making any incorporated vendor specification
   "required" or "recommended".

7.1.3 Assumption

   An IETF Working Group may start from an external specification and
   develop it into an Internet specification. This is acceptable if (1)
   the specification is provided to the Working Group in compliance with
   the requirements of section 10, and (2) change control has been
   conveyed to IETF by the original developer of the specification for
   the specification or for specifications derived from the original
   specification.

8. NOTICES AND RECORD KEEPING

   Each of the organizations involved in the development and approval of
   Internet Standards shall publicly announce, and shall maintain a
   publicly accessible record of, every activity in which it engages, to
   the extent that the activity represents the prosecution of any part
   of the Internet Standards Process. For purposes of this section, the
   organizations involved in the development and approval of Internet
   Standards includes the IETF, the IESG, the IAB, all IETF Working
   Groups, and the Internet Society Board of Trustees.

   For IETF and Working Group meetings announcements shall be made by
   electronic mail to the IETF Announce mailing list and shall be made
   sufficiently far in advance of the activity to permit all interested
   parties to effectively participate. The announcement shall contain
   (or provide pointers to) all of the information that is necessary to
   support the participation of any interested individual. In the case
   of a meeting, for example, the announcement shall include an agenda
   that specifies the standards- related issues that will be discussed.

   The formal record of an organization's standards-related activity
   shall include at least the following:

   o the charter of the organization (or a defining document equivalent
      to a charter);
   o complete and accurate minutes of meetings;
   o the archives of Working Group electronic mail mailing lists; and
   o all written contributions from participants that pertain to the
      organization's standards-related activity.

   As a practical matter, the formal record of all Internet Standards
   Process activities is maintained by the IETF Secretariat, and is the
   responsibility of the IETF Secretariat except that each IETF Working
   Group is expected to maintain their own email list archive and must
   make a best effort to ensure that all traffic is captured and
   included in the archives. Also, the Working Group chair is
   responsible for providing the IETF Secretariat with complete and
   accurate minutes of all Working Group meetings. Internet-Drafts that

have been removed (for any reason) from the Internet-Drafts
directories shall be archived by the IETF Secretariat for the sole
purpose of preserving an historical record of Internet standards
activity and thus are not retrievable except in special
circumstances.

9. VARYING THE PROCESS

   This document, which sets out the rules and procedures by which
   Internet Standards and related documents are made is itself a product
   of the Internet Standards Process (as a BCP, as described in section
   5). It replaces a previous version, and in time, is likely itself to
   be replaced.

   While, when published, this document represents the community's view
   of the proper and correct process to follow, and requirements to be
   met, to allow for the best possible Internet Standards and BCPs, it
   cannot be assumed that this will always remain the case. From time to
   time there may be a desire to update it, by replacing it with a new
   version. Updating this document uses the same open procedures as are
   used for any other BCP.

   In addition, there may be situations where following the procedures
   leads to a deadlock about a specific specification, or there may be
   situations where the procedures provide no guidance. In these cases
   it may be appropriate to invoke the variance procedure described
   below.

9.1 The Variance Procedure

   Upon the recommendation of the responsible IETF Working Group (or, if
   no Working Group is constituted, upon the recommendation of an ad hoc
   committee), the IESG may enter a particular specification into, or
   advance it within, the standards track even though some of the
   requirements of this document have not or will not be met. The IESG
   may approve such a variance, however, only if it first determines
   that the likely benefits to the Internet community are likely to
   outweigh any costs to the Internet community that result from
   noncompliance with the requirements in this document. In exercising
   this discretion, the IESG shall at least consider (a) the technical
   merit of the specification, (b) the possibility of achieving the
   goals of the Internet Standards Process without granting a variance,
   (c) alternatives to the granting of a variance, (d) the collateral
   and precedential effects of granting a variance, and (e) the IESG's
   ability to craft a variance that is as narrow as possible. In
   determining whether to approve a variance, the IESG has discretion to
   limit the scope of the variance to particular parts of this document
   and to impose such additional restrictions or limitations as it

determines appropriate to protect the interests of the Internet
community.

The proposed variance must detail the problem perceived, explain the
precise provision of this document which is causing the need for a
variance, and the results of the IESG's considerations including
consideration of points (a) through (d) in the previous paragraph.
The proposed variance shall be issued as an Internet Draft. The IESG
shall then issue an extended Last-Call, of no less than 4 weeks, to
allow for community comment upon the proposal.

In a timely fashion after the expiration of the Last-Call period, the
IESG shall make its final determination of whether or not to approve
the proposed variance, and shall notify the IETF of its decision via
electronic mail to the IETF Announce mailing list. If the variance
is approved it shall be forwarded to the RFC Editor with a request
that it be published as a BCP.

This variance procedure is for use when a one-time waving of some
provision of this document is felt to be required. Permanent changes
to this document shall be accomplished through the normal BCP
process.

The appeals process in section 6.5 applies to this process.

9.2 Exclusions

No use of this procedure may lower any specified delays, nor exempt
any proposal from the requirements of openness, fairness, or
consensus, nor from the need to keep proper records of the meetings
and mailing list discussions.

Specifically, the following sections of this document must not be
subject of a variance: 5.1, 6.1, 6.1.1 (first paragraph), 6.1.2, 6.3
(first sentence), 6.5 and 9.

10. INTELLECTUAL PROPERTY RIGHTS

10.1. 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.

10.2 Confidentiality Obligations

   No contribution that is subject to any requirement of confidentiality
   or any restriction on its dissemination may be considered in any part
   of the Internet Standards Process, and there must be no assumption of
   any confidentiality obligation with respect to any such contribution.

10.3. Rights and Permissions

   In the course of standards work, the IETF receives contributions in
   various forms and from many persons. To best facilitate the
   dissemination of these contributions, it is necessary to understand
   any intellectual property rights (IPR) relating to the contributions.

10.3.1. All Contributions

   By submission of a contribution, each person actually submitting the
   contribution is deemed to agree to the following terms and conditions
   on his own behalf, on behalf of the organization (if any) he
   represents and on behalf of the owners of any propriety rights in the
   contribution.. Where a submission identifies contributors in
   addition to the contributor(s) who provide the actual submission, the
   actual submitter(s) represent that each other named contributor was
   made aware of and agreed to accept the same terms and conditions on
   his own behalf, on behalf of any organization he may represent and
   any known owner of any proprietary rights in the contribution.

   1. Some works (e.g. works of the U.S. Government) are not subject to
      copyright. However, to the extent that the submission is or may
      be subject to copyright, the contributor, the organization he
      represents (if any) and the owners of any proprietary rights in
      the contribution, grant an unlimited perpetual, non-exclusive,
      royalty-free, world-wide right and license to the ISOC and the
      IETF under any copyrights in the contribution. This license
      includes the right to copy, publish and distribute the
      contribution in any way, and to prepare derivative works that are
      based on or incorporate all or part of the contribution, the
      license to such derivative works to be of the same scope as the
      license of the original contribution.

   2. The contributor acknowledges that the ISOC and IETF have no duty
      to publish or otherwise use or disseminate any contribution.

   3. The contributor grants permission to reference the name(s) and
      address(es) of the contributor(s) and of the organization(s) he
      represents (if any).

   4. The contributor represents that contribution properly acknowledge
      major contributors.

   5. The contribuitor, the organization (if any) he represents and the
      owners of any proprietary rights in the contribution, agree that
      no information in the contribution is confidential and that the
      ISOC and its affiliated organizations may freely disclose any
      information in the contribution.

   6. The contributor represents that he has disclosed the existence of
      any proprietary or intellectual property rights in the
      contribution that are reasonably and personally known to the
      contributor. The contributor does not represent that he
      personally knows of all potentially pertinent proprietary and
      intellectual property rights owned or claimed by the organization
      he represents (if any) or third parties.

   7. The contributor represents that there are no limits to the
      contributor's ability to make the grants acknowledgments and
      agreements above that are reasonably and personally known to the
      contributor.

      By ratifying this description of the IETF process the Internet
      Society warrants that it will not inhibit the traditional open and
      free access to IETF documents for which license and right have
      been assigned according to the procedures set forth in this
      section, including Internet-Drafts and RFCs. This warrant is
      perpetual and will not be revoked by the Internet Society or its
      successors or assigns.

10.3.2. Standards Track Documents

   (A) Where any patents, patent applications, or other proprietary
        rights are known, or claimed, with respect to any specification on
        the standards track, and brought to the attention of the IESG, the
        IESG shall not advance the specification without including in the
        document a note indicating the existence of such rights, or
        claimed rights. Where implementations are required before
        advancement of a specification, only implementations that have, by
        statement of the implementors, taken adequate steps to comply with
        any such rights, or claimed rights, shall be considered for the
        purpose of showing the adequacy of the specification.
   (B) The IESG disclaims any responsibility for identifying the
        existence of or for evaluating the applicability of any claimed
        copyrights, patents, patent applications, or other rights in the
        fulfilling of the its obligations under (A), and will take no
        position on the validity or scope of any such rights.

   (C) Where the IESG knows of rights, or claimed rights under (A), the
        IETF Executive Director shall attempt to obtain from the claimant
        of such rights, a written assurance that upon approval by the IESG
        of the relevant Internet standards track specification(s), any
        party will be able to obtain the right to implement, use and
        distribute the technology or works when implementing, using or
        distributing technology based upon the specific specification(s)
        under openly specified, reasonable, non-discriminatory terms.
        The Working Group proposing the use of the technology with respect
        to which the proprietary rights are claimed may assist the IETF
        Executive Director in this effort. The results of this procedure
        shall not affect advancement of a specification along the
        standards track, except that the IESG may defer approval where a
        delay may facilitate the obtaining of such assurances. The
        results will, however, be recorded by the IETF Executive Director,
        and made available. The IESG may also direct that a summary of
        the results be included in any RFC published containing the
        specification.

10.3.3 Determination of Reasonable and Non-discriminatory Terms

   The IESG will not make any explicit determination that the assurance
   of reasonable and non-discriminatory terms for the use of a
   technology has been fulfilled in practice. It will instead use the
   normal requirements for the advancement of Internet Standards to
   verify that the terms for use are reasonable. If the two unrelated
   implementations of the specification that are required to advance
   from Proposed Standard to Draft Standard have been produced by
   different organizations or individuals or if the "significant
   implementation and successful operational experience" required to
   advance from Draft Standard to Standard has been achieved the
   assumption is that the terms must be reasonable and to some degree,
   non-discriminatory. This assumption may be challenged during the
   Last-Call period.

10.4. Notices

   (A) Standards track documents shall include the following notice:

        "The IETF takes no position regarding the validity or scope of
        any intellectual property or other rights that might be claimed
        to pertain to the implementation or use of the technology
        described in this document or the extent to which any license
        under such rights might or might not be available; neither does
        it represent that it has made any effort to identify any such
        rights. Information on the IETF's procedures with respect to
        rights in standards-track and standards-related documentation
        can be found in BCP-11. Copies of claims of rights made

available for publication and any assurances of licenses to
be made available, or the result of an attempt made
to obtain a general license or permission for the use of such
proprietary rights by implementors or users of this
specification can be obtained from the IETF Secretariat."

(B) The IETF encourages all interested parties to bring to its
attention, at the earliest possible time, the existence of any
intellectual property rights pertaining to Internet Standards.
For this purpose, each standards document shall include the
following invitation:

"The IETF invites any interested party to bring to its
attention any copyrights, patents or patent applications, or
other proprietary rights which may cover technology that may be
required to practice this standard. Please address the
information to the IETF Executive Director."

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

"Copyright (C) The Internet Society (date). All Rights
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furnished to others, and derivative works that comment on or
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Internet standards in which case the procedures for copyrights
defined in the Internet Standards process must be followed, or
as required to translate it into languages other than English.

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(D) Where the IESG is aware at the time of publication of proprietary rights claimed with respect to a standards track document, or the technology described or referenced therein, such document shall contain the following notice:

"The IETF has been notified of intellectual property rights claimed in regard to some or all of the specification contained in this document. For more information consult the online list of claimed rights."

11. ACKNOWLEDGMENTS

There have been a number of people involved with the development of the documents defining the IETF Standards Process over the years. The process was first described in RFC 1310 then revised in RFC 1602 before the current effort (which relies heavily on its predecessors). Specific acknowledgments must be extended to Lyman Chapin, Phill Gross and Christian Huitema as the editors of the previous versions, to Jon Postel and Dave Crocker for their inputs to those versions, to Andy Ireland, Geoff Stewart, Jim Lampert, and Dick Holleman for their reviews of the legal aspects of the procedures described herein, and to John Stewart, Robert Elz and Steve Coya for their extensive input on the final version.

In addition much of the credit for the refinement of the details of the IETF processes belongs to the many members of the various incarnations of the POISED Working Group.

12. SECURITY CONSIDERATIONS

Security issues are not discussed in this memo.

13. REFERENCES

   [1] Postel, J., "Internet Official Protocol Standards", STD 1,
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   [3] Reynolds, J., and J. Postel, "Assigned Numbers", STD 2,
        USC/Information Sciences Institute, October 1994.

   [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.

   [6] Huitema, C., J. Postel, and S. Crocker "Not All RFCs are
        Standards", RFC 1796, April 1995.

14. DEFINITIONS OF TERMS

   IETF Area - A management division within the IETF. An Area consists
      of Working Groups related to a general topic such as routing. An
      Area is managed by one or two Area Directors.
   Area Director - The manager of an IETF Area. The Area Directors
      along with the IETF Chair comprise the Internet Engineering
      Steering Group (IESG).
   File Transfer Protocol (FTP) - An Internet application used to
      transfer files in a TCP/IP network.
   gopher - An Internet application used to interactively select and
      retrieve files in a TCP/IP network.
   Internet Architecture Board (IAB) - An appointed group that assists
      in the management of the IETF standards process.
   Internet Engineering Steering Group (IESG) - A group comprised of the
      IETF Area Directors and the IETF Chair. The IESG is responsible
      for the management, along with the IAB, of the IETF and is the
      standards approval board for the IETF.
   interoperable - For the purposes of this document, "interoperable"
      means to be able to interoperate over a data communications path.
   Last-Call - A public comment period used to gage the level of
      consensus about the reasonableness of a proposed standards action.
      (see section 6.1.2)

     online - Relating to information made available over the Internet.
        When referenced in this document material is said to be online
        when it is retrievable without restriction or undue fee using
        standard Internet applications such as anonymous FTP, gopher or
        the WWW.
     Working Group - A group chartered by the IESG and IAB to work on a
        specific specification, set of specifications or topic.

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APPENDIX A: GLOSSARY OF ACRONYMS

    ANSI: American National Standards Institute
    ARPA: (U.S.) Advanced Research Projects Agency
    AS: Applicability Statement
    FTP: File Transfer Protocol
    ASCII: American Standard Code for Information Interchange
    ITU-T: Telecommunications Standardization sector of the
               International Telecommunication 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
    IRSG   Internet Research Steering Group
    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
    WWW: World Wide Web