IETF Working Group
Guidelines and Procedures

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.

Abstract

   The Internet Engineering Task Force (IETF) has responsibility for
   developing and reviewing specifications intended as Internet
   Standards. IETF activities are organized into working groups (WGs).
   This document describes the guidelines and procedures for formation
   and operation of IETF working groups. It describes the formal
   relationship between IETF participants WG and the Internet
   Engineering Steering Group (IESG). The basic duties of IETF
   participants, including WG Chair and IESG Area Directors are defined.

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1.   INTRODUCTION

      This document defines guidelines and procedures for Internet
      Engineering Task Force working groups. The Internet is a loosely-
      organized international collaboration of autonomous, interconnected
      networks; it supports host-to-host communication through voluntary
      adherence to open protocols and procedures defined by Internet
      Standards, a collection of which are commonly known as "the TCP/IP
      protocol suite". The Internet Standards Process is defined in [1].
      Development and review of potential Internet Standards from all
      sources is conducted by the Internet Engineering Task Force (IETF).

      The IETF is a large, open community of network designers, operators,
      vendors, users, and researchers concerned with the Internet and the
      technology used on it. The IETF is managed by its Internet
      Engineering Steering Group (IESG) whose membership includes an IETF
      Chair, responsible for oversight of general IETF operations, and Area
      Directors, each of whom is responsible for a set of IETF activities
      and working groups. The IETF Executive Director and IESG Secretary
      are ex-officio participants, as are the IAB Chair and a designated
      Internet Architecture Board (IAB) member. At present there are 10
      areas, though the number and purview of areas changes over time:

                User Services   (USV)
                Applications   (APP)
                Service Applications   (SAP)
                Transport Services   (TSV)
                Internet   (INT)
                Routing   (RTG)
                Network Management   (MGT)
                Operational Requirements   (OPS)
                Security   (SEC)
                Standards & Processes   (STD)

   Most areas have an advisory group or directorate. The specific name
   and the details of the role for each group differs from area to area,
   but the primary intent is that the group assist the Area Director,
   e.g., with the review of specifications produced in the area. An
   advisory group is formed by an Area Director (AD) and comprises
   experienced members of the IETF and technical community represented
   by the area. A small IETF Secretariat provides staff and
   administrative support for the operation of the IETF.

   The primary activities of the IETF are performed by committees known
   as working groups. There are currently more than 60 of these.
   Working groups tend to have a narrow focus and a lifetime bounded by
   completion of a specific task, although there are exceptions.

   There is no formal membership in the IETF. Participation is open to
   all. This participation may be by on-line contribution, attendance
   at face-to-face sessions, or both. Anyone from the Internet
   community who has the time and interest is urged to participate in
   IETF meetings and any of its on-line working group discussions.
   Participation is by individual technical contributors, rather than by
   formal representatives of organizations.

   This document defines procedures and guidelines for formation and
   operation of working groups in the IETF. It defines the relations of
   working groups to other bodies within the IETF. The duties of working
   group Chairs and Area Directors with respect to the operation of the
   working group are also defined. The document uses: "shall", "will",
   "must" and "is required" where it describes steps in the process that
   are essential, and uses: "suggested", "should" and "may" are where
   guidelines are described that are not essential, but are strongly
   recommended to help smooth WG operation.

1.1. IETF approach to standardization

   The reader is encouraged to study The Internet Standards Process [1].
   Familiarity with this document is essential for a complete
   understanding of the philosophy, procedures and guidelines described
   in this document.

   The goals of the process are summarized in [1]:

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

"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 perhaps revision based upon experience, is
adopted as a Standard by the appropriate body (see below),
and is published.

"In practice, the process is somewhat more complicated, due
to (1) the number and type of possible sources for
specifications; (2) the need to prepare and revise a
specification in a manner that preserves the interests of
all of the affected parties; (3) the importance of
establishing widespread community agreement on its technical
content; and (4) the difficulty of evaluating the utility of
a particular specification for the Internet community.
...
"These procedures are explicitly aimed at developing and
adopting generally-accepted practices. Thus, a candidate
for Internet standardization 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."

The IETF standardization process has been marked by informality. As
the community of participation has grown it has become necessary to
document procedures, while continuing to avoid unnecessary
bureaucracy. This goals of this balancing act are summarized in [1]
as:

"The procedures that are described here provide a great deal
of flexibility to adapt to the wide variety of circumstances
that occur in the Internet standardization process.
Experience has shown this flexibility to be vital in
achieving the following goals for Internet standardization:

        *   high quality,
        *   prior implementation and testing,
        *   openness and fairness, and
        *   timeliness."

1.2. Acknowledgments

Much of this document is due to the copy-and-paste function of a word
processor. Several passages have been taken from the documents cited
in the reference section. The POISED WG provided discussion and
comments. Three people deserve special mention, as especially large
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Cerf [7] from whom we borrowed the description of the IETF; and Greg
Vaudreuil and Steve Coya who provided several paragraphs. Also, John
Stewart and Steve Crocker did a truly stellar job of proof-reading.
However, all the errors you'll find are probably ours.

2.   WORKING GROUP (WG) FORMATION

IETF working groups (WGs) are the primary mechanism for development
of IETF specifications and guidelines, many of which are intended as
standards or recommendations. A working group may be established at
the initiative of an Area Director (AD) or it may be initiated by an
individual or group of individuals. Anyone interested in creating an
IETF working group must obtain the advice and consent of the
appropriate IETF Area Director under whose direction the working
group would fall and must proceed through the formal steps detailed
in this section.

A working group is typically created to address a specific problem or
produce a deliverable (a guideline, standards specification, etc.)
and is expected to be short-lived in nature. Upon completion of its
goals and achievement of its objectives, the working group as a unit
is terminated. Alternatively at the discretion of the IESG, Area
Director, the WG Chair and the WG participants, the objectives or
assignment of the working group may be extended by enhancing or
modifying the working group's charter.

2.1. Criteria for formation

When determining whether it is appropriate to create a working group,
the Area Director and the IESG will consider several issues:

-    Are the issues that the working group plans to address clear
     and relevant for the Internet community?

-    Are the goals specific and reasonably achievable, and
     achievable within the time frame specified by the
     milestones?

-    What are the risks and urgency of the work, to determine the
     level of attention required?

-    Do the working group's activities overlap with those of
     another working group? If so, it may still be appropriate to
     create the working group, but this question must be
     considered carefully by the Area Directors as subdividing
     efforts often dilutes the available technical expertise.

-       Is there sufficient interest and expertise in the working
        group's topic with at least several people willing to expend
        the effort to produce the desired result (e.g., a protocol
        specification)? Working groups require considerable effort,
        including management of the working group process, editing
        of working group documents, and contribution to the document
        text. IETF experience suggests that these roles typically
        cannot all be handled by one person; four or five active
        participants are typically required.

-       Does a base of interested consumers (end users) appear to
        exist for the planned work? Consumer interest can be
        measured by participation of end-users within the IETF
        process, as well as by less direct means.

   Considering the above criteria, the Area Director will decide whether
   to pursue the formation of the group through the chartering process.

2.2. Charter

   The formation of a working group requires a charter which is
   primarily negotiated between a prospective working group Chair and
   the relevant Area Director, although final approval is made by the
   IESG and all charters are reviewed by the Internet Architecture Board
   (IAB). A charter is a contract between a working group and the IETF
   to perform a set of tasks. A charter:

   1.   Lists relevant administrative aspects of the working group;

   2.   Specifies the direction or objectives of the working group
        and describes the approach that will be taken to achieve the
        goals; and

   3.   Enumerates a set of milestones together with time frames for
        their completion.

   When the prospective Chair, the Area Director and the IESG Secretary
   are satisfied with the charter form and content, it becomes the basis
   for forming a working group. The AD may require an initial draft of a
   charter to be available prior to holding an exploratory Birds of a
   Feather (BOF) meeting, as described below.

   Charters may be renegotiated periodically to reflect the current
   status, organization or goals of the working group. Hence, a charter
   is a contract between the IETF and the working group which is
   committing to meet explicit milestones and delivering concrete
   "products".

Specifically, each charter consists of 6 sections:

Working group name

     A working group name should be reasonably descriptive or
     identifiable. Additionally, the group shall define an
     acronym (maximum 8 printable ASCII characters) to reference
     the group in the IETF directories, mailing lists, and
     general documents.

  Chair(s)

     The working group may have one or two Chair(s) to perform
     the administrative functions of the group. The email
     address(es) of the Chair(s) shall be included.

  Area and Area Director(s)

     The name of the IETF area with which the working group is
     affiliated and the name and electronic mail address of the
     associated Area Director.

  Mailing list

     It is required that an IETF working group have a general
     Internet mailing list. Most of the work of an IETF working
     group will be conducted that.

     The charter shall include:

          The address to which a participant sends a
          subscription request and the procedures to follow when
          subscribing,

          The address to which a participant sends submissions
          and special procedures, if any, and

          The location of the mailing list archive, if any.

     A message archive should be maintained in a public place
     which can be accessed via FTP. The ability to retrieve from
     the archive via electronic mail requests also is
     recommended. Additionally, the address:

          ietf-archive@cnri.reston.va.us

     shall be included on the mailing list.

      NOTE: It is strongly suggested that the mailing list be on
      a host directly connected to the IP Internet to facilitate
      use of the SMTP expansion command (EXPN) and to allow mail
      archive access via FTP, gopher and the like in keeping with
      the general IETF rule for openness. If this is not possible,
      the message archive and membership of the list must be made
      available to those who request it by sending a message to
      the list-request alias.

Description of working group

The focus and intent of the group shall be set forth briefly. By
reading this section alone, an individual should be able to decide
whether this group is relevant to their own work. The first paragraph
must give a brief summary of the problem area, basis, goal(s) and
approach(es) planned for the working group. This paragraph will
frequently be used as an overview of the working group's effort.

The terms "they", "them" and "their" are used in this document as
third-person singular pronouns.

      To facilitate evaluation of the intended work and to provide
      on-going guidance to the working group, the charter shall
      describe the problem being solved and shall discuss
      objectives and expected impact with respect to:

      -     Architecture
      -     Operations
      -     Security
      -     Network management
      -     Transition (where applicable)

Goals and milestones

      The working group charter must establish a timetable for
      work. While this may be re-negotiated over time, the list
      of milestones and dates facilitates the Area Director's
      tracking of working group progress and status, and it is
      indispensable to potential participants identifying the
      critical moments for input. Milestones shall consist of
      deliverables that can be qualified as showing specific
      achievement; e.g., "Internet-Draft finished" is fine, but
      "discuss via email" is not. It is helpful to specify
      milestones for every 3-6 months, so that progress can be
      gauged easily. This milestone list is expected to be
      updated periodically. Updated milestones are re-negotiated
      with the Area Director and the IESG, as needed, and then are
      submitted to the IESG Secretary:

IESG-secretary@cnri.reston.va.us

An example of a WG charter is in Appendix A.

2.3. Charter review & approval

Working groups often comprise technically competent participants who
are not familiar with the history of Internet architecture or IETF
processes. This can, unfortunately, lead to good working group
consensus about a bad design. To facilitate working group efforts,
an Area Director may assign an Area Consultant from among the ranks
of senior IETF participants. (Area Consultants are described in the
section of Staff Roles.) At the discretion of the AD, approval of a
new WG may be withheld in the absence of sufficient Consultant
resources.

Once the Area Director (and the Area Directorate, as the AD deems
appropriate) has approved the working group charter, the charter is
submitted for review by the IAB and approval by the Internet
Engineering Steering Group using the criteria described previously.

The Internet Architecture Board (IAB) will review the charter of the
proposed WG to determine the relationship of the proposed work to the
overall architecture of the Internet Protocol Suite.

The approved charter is submitted to the IESG Secretary who records
and enters the information into the IETF tracking database and
returns the charter in a form formatted by the database. The working
group is announced to the IETF mailing list by the IESG Secretary.

2.4. Birds of a feather (BOF)

Often it is not clear whether an issue merits the formation of a
working group. To facilitate exploration of the issues the IETF
offers the possibility of a Birds of a Feather (BOF) session, as well
as the early formation of an email list for preliminary discussion.
Alternatively, a BOF may serve as a forum for a single presentation
or discussion, without any intent to form a working group.

A BOF is a session at an IETF meeting which permits "market research"
and technical "brainstorming". Any individual may request permission
to hold a BOF on a subject. The request must be filed with the
relevant Area Director. The person who requests the BOF is usually
appointed as Chair of the BOF. The Chair of the BOF is also
responsible for providing a report on the outcome of the BOF.

The AD may require the conduct of email discussion, prior to
authorizing a BOF. This permits initial exchanges and sharing of
framework, vocabulary and approaches, in order to make the time spent
in the BOF more productive. The AD may require that a BOF be held,
prior to establishing a working group, and the AD may require that
there be a draft of the WG charter prior to holding a BOF.

Usually the outcome of a BOF will be one of the following:

-    There was enough interest and focus in the subject to
     warrant the formation of a WG;

-    The discussion came to a fruitful conclusion, with results
     to be written down and published, however there is no need
     to establish a WG; or

-    There was not enough interest in the subject to warrant the
     formation of a WG.

There is an increasing demand for BOF sessions at IETF meetings.
Therefore the following rules apply for BOFs:

-    All BOFs must have the approval of the appropriate Area
     Director. The Secretariat will NOT schedule or allocate time
     slots without the explicit approval of the Area Director.

-    The purpose of a BOF is to conduct a single, brief
     discussion or to ascertain interest and establish goals for
     a working group. All BOF organizers are required to submit a
     brief written report of what transpired during the BOF
     session together with a roster of attendees to the IESG
     Secretary for inclusion in the Proceedings.

-    A BOF may be held only once (ONE slot at one IETF Plenary
     meeting).

-    Under unusual circumstances an Area Director may, at their
     discretion, allow a BOF to meet for a second time. Typically
     (though not a requirement) this is to develop a charter to
     be submitted to the IESG.

-    BOFs are not permitted to meet three times.

-       A BOF may be held for single-event discussion, or may pursue
        creation of normal IETF working groups for on-going
        interactions and discussions. When the request for a BOF
        comes from a formally-constituted group, rather than from an
        individual, the rules governing the handling of the request
        are the same as for all other BOFs and working groups.

-       When necessary, WGs will be given priority for meeting space
        over BOFs.

3.   WORKING GROUP OPERATION

   The IETF has basic requirements for open and fair participation and
   for thorough consideration of technical alternatives. Within those
   constraints, working groups are autonomous and each determines most
   of the details of its own operation with respect to session
   participation, reaching closure, etc. The core rule for operation is
   that acceptance or agreement is achieved via working group "rough
   consensus".

   A number of procedural questions and issues will arise over time, and
   it is the function of the Working Group Chair to manage the group
   process, keeping in mind that the overall purpose of the group is to
   make progress towards reaching rough consensus in realizing the
   working group's goals and objectives.

   There are few hard and fast rules on organizing or conducting working
   group activities, but a set of guidelines and practices have evolved
   over time that have proven successful. These are listed here, with
   actual choices typically determined by the working group participants
   and the Chair.

3.1. Session planning

   For coordinated, structured WG interactions, the Chair must publish a
   draft agenda well in advance of the actual session. The agenda needs
   to contain at least:

-       The items for discussion;

-       The estimated time necessary per item; and

-       A clear indication of what documents the participants will
        need to read before the session in order to be well
        prepared.

Publication shall include sending a copy to the working group mailing
list and to the IETF-Announce list. Notices for the IETF-Announce
list should be sent to:

        ietf-announce-post@cnri.reston.va.us

All working group actions shall be taken in a public forum, and wide
participation is encouraged.   A working group will conduct much of
its business via electronic mail distribution lists but may meet
periodically to discuss and review task status and progress, to
resolve specific issues and to direct future activities. It is
common, but not required, that a working group will meet at the
trimester IETF Plenary events. Additionally, interim sessions may be
scheduled for telephone conference, video teleconference, or for
face-to-face (physical) sessions.

All working group sessions (including those held outside of the IETF
meetings) shall be reported by making minutes available. These
minutes should include the agenda for the session, an account of the
discussion including any decisions made, and a list of attendees. The
Working Group Chair is responsible for insuring that session minutes
are written and distributed, though the actual task may be performed
by someone designated by the Working Group Chair. The minutes shall
be submitted in printable ASCII text for publication in the IETF
Proceedings, and for posting in the IETF Directories and are to be
sent to:

        minutes@cnri.reston.va.us

3.2. Session venue

Each working group will determine the balance of email and face-to-
face sessions that is appropriate for achieving its milestones.
Electronic mail permits the widest participation; face-to-face
meetings often permit better focus and therefore can be more
efficient for reaching a consensus among a core of the working group
participants. In determining the balance, the WG must ensure that
its process does not serve to exclude contribution by email-only
participants. Also note that decisions reached during IETF meetings
are NOT final, but must be conveyed to the mailing list to verify WG
consensus.

IETF Meetings

If a WG needs a session at an IETF meeting, the Chair must apply for
time-slots as soon as the first announcement of that IETF meeting is
made by the IETF Secretariat to the WG-chairs list. Session time is
a scarce resource at IETF meetings, so placing requests early will

   facilitate schedule coordination for WGs requiring the same set of
   experts.

   The application for a WG session at an IETF meeting shall be made to
   the IETF Secretariat. Alternatively some Area Directors may want to
   coordinate WG sessions in their area and request that time slots be
   coordinated through them. After receiving all requests for time
   slots by WGs in the area, the Area Director(s) form a draft session-
   agenda for their area, which is then sent to the WG chairs of the
   area. After approval it will be sent to the IETF Secretariat.

   An application must contain:

   -    The amount of time requested;

   -    The rough outline of the WG agenda that is expected to be
        covered;

   -    The estimated number of people that will attend the WG
        session;

   -    Related WGs that must not be scheduled for the same time
        slot(s); and

   -    Individuals whose attendance is desired.

   The Secretariat allots time slots on the basis of the session-agenda
   made by the Area Director(s). If the proposed session- agenda for an
   area does not fit into the IETF meeting-agenda, the IETF Secretariat
   will adjust it to fit, after consulting the Area Director(s) and the
   relevant chairs. The Secretariat will then form a draft session-
   agenda and distribute it among the Working Group Chairs for final
   approval.

   NOTE: While open discussion and contribution is essential to working
   group success, the Chair is responsible for ensuring forward
   progress. When acceptable to the WG, the Chair may call for
   restricted participation (but not restricted attendance!) at IETF
   working group sessions for the purpose of achieving progress. The
   Working Group Chair then has the authority to refuse to grant the
   floor to any individual who is unprepared or otherwise covering
   inappropriate material.

On-line

   It can be quite useful to conduct email exchanges in the same manner
   as a face-to-face session, with published schedule and agenda, as
   well as on-going summarization and consensus polling.

Many working group participants hold that mailing list discussion is
the best place to consider and resolve issues and make decisions.
Choice of operational style is made by the working group itself. It
is important to note, however, that Internet email discussion is
possible for a much wider base of interested persons than is
attendance at IETF meetings, due to the time and expense required to
attend.

3.3. Session management

Working groups make decisions through a "rough consensus" process.
IETF consensus does not require that all participants agree although
this is, of course, preferred. In general the dominant view of the
working group shall prevail. (However, it must be noted that
"dominance" is not to be determined on the basis of volume or
persistence, but rather a more general sense of agreement.)
Consensus can be determined by balloting, humming, or any other means
on which the WG agrees (by rough consensus, of course).

The challenge to managing working group sessions is to balance the
need for open and fair consideration of the issues against the need
to make forward progress. The working group, as a whole, has the
final responsibility for striking this balance. The Chair has the
responsibility for overseeing the process but may delegate direct
process management to a formally-designated Facilitator.

It is occasionally appropriate to revisit a topic, to re-evaluate
alternatives or to improve the group's understanding of a relevant
decision. However, unnecessary repeated discussions on issues can be
avoided if the Chair makes sure that the main arguments in the
discussion (and the outcome) are summarized and archived after a
discussion has come to conclusion. It is also good practice to note
important decisions/consensus reached by email in the minutes of the
next 'live' session, and to summarize briefly the decision-making
history in the final documents the WG produces.

To facilitate making forward progress, a Working Group Chair may wish
to direct a discussion to reject or defer the input from a member,
based upon the following criteria:

Old

   The input pertains to a topic that already has been resolved
   and is redundant with information previously available;

Minor

   The input is new and pertains to a topic that has already
   been resolved, but it is felt to be of minor import to the
   existing decision;

   Timing

   The input pertains to a topic that the working group has not
   yet opened for discussion; or

   Scope

   The input is outside of the scope of the working group
   charter.

3.4. Contention and appeals overview

   In the course of group design processes, strife happens. Strife and
   contention are particularly likely when working groups comprise many
   constituencies. On the other hand differences in view are vital to
   the success of the IETF and healthy debate is encouraged. Sometimes
   debates degenerate into something akin to warfare. For these
   circumstances, the IETF has an extensive review and appeals process.

   Formal procedures for requesting review and conducting appeals are
   documented in The Internet Standards Process [1]. A brief summary is
   provided, here.

   In fact the IETF approach to reviews and appeals is quite simple:
   When an IETF participant feels that matters have not been conducted
   properly, they should state their concern to a member of IETF
   management. In other words, the process relies upon those who have
   concerns raising them. If the result is not satisfactory, there are
   several levels of appeal available, to ensure that review is possible
   by a number of people uninvolved in the matter in question.

   Reviews and appeals step through four levels, each in turn:

   WG Chair

   An appeal must begin with the management closest to the
   operation of the working group, even if the concern applies
   to their own handling of working group process.

   Area

      If discussion and review with the WG Chair do not produce a
      satisfactory result, the complainant may bring their concern
      to the cognizant Area Director.

   IESG

      If a concerned party is not satisfied with the results of
      the area-level review, then they may bring the matter to the
      IESG Chair and the Area Director for Standards & Processes.
      The IESG Chair and the Standards & Processes AD will bring
      the issue before the full IESG for an additional review and
      will report the resolution back to the parties.

   IAB

      The IAB provides a final opportunity to appeal the results
      of previous reviews.   If a concerned party does not accept
      the outcome of the IESG review, then they may take their
      concern to the IAB, by contacting the IAB Chair.

   Concerns entail either a disagreement with technical decisions by the
   working group or with the process by which working group business has
   been conducted. Technical disagreements may be about specific
   details or about basic approach. When an issue pertains to
   preference, it should be resolved within the working group. When a
   matter pertains to the technical adequacy of a decision, review is
   encouraged whenever the perceived deficiency is noted. For matters
   having to do with preference, working group rough consensus will
   dominate.

   When a matter pertains to working group process, it is important that
   those with a concern be clear about the manner in which the process
   was not open or fair and that they be willing to discuss the issue
   openly and directly. In turn, the IETF management will make every
   effort to understand how the process was conducted, what deficiencies
   were present (if any) and how the matter should be corrected. The
   IETF functions on the good will and mutual respect of its
   participants; continued success requires continued attention to
   working group process.

4. WORKING GROUP TERMINATION

   Working groups are typically chartered to accomplish a specific task.
   After that task is complete, the group will be disbanded. However if
   a WG produces a Proposed or Draft Standard, the WG will become
   dormant rather than disband (i.e., the WG will no longer conduct

formal activities, but the mailing list will remain available to review the work as it moves to Draft Standard and Standard status.)

If, at some point, it becomes evident that a working group is unable to complete the work outlined in the charter, the group, in consultation with its Area Director can either:

1.   Recharter to refocus on a smaller task,

2.   Choose new Chair(s), or

3.   Disband.

If the working group disagrees with the Area Director's choice, it may appeal to the IESG.

5. STAFF ROLES

Working groups require considerable care and feeding. In addition to general participation, successful working groups benefit from the efforts of participants filling specific functional roles.

5.1. WG Chair

The Working Group Chair is concerned with making forward progress through a fair and open process, and has wide discretion in the conduct of WG business. The Chair must ensure that a number of tasks are performed, either directly or by others assigned to the tasks. This encompasses at the very least the following:

Ensure WG process and content management

  The Chair has ultimate responsibility for ensuring that a working group achieves forward progress and meets its milestones. For some working groups, this can be accomplished by having the Chair perform all management-related activities. In other working groups -- particularly those with large or divisive participation -- it is helpful to allocate process and/or secretarial functions to other participants. Process management pertains strictly to the style of working group interaction and not to its content. It ensures fairness and detects redundancy. The secretarial function encompasses document editing. It is quite common for a working group to assign the task of specification Editor to one or two participants. Often, they also are part of the design team, described below.

Moderate the WG email list

  The Chair should attempt to ensure that the discussions on
  this list are relevant and that they converge to consensus
  agreements. The Chair should make sure that discussions on
  the list are summarized and that the outcome is well
  documented (to avoid repetition). The Chair also may choose
  to schedule organized on-line "sessions" with agenda and
  deliverables. These are structured as true meetings,
  conducted over the course of several days (to allow
  participation across the Internet.) Participants are
  expected to allocate time to the meeting, usually in the
  range of 1-2 hours per day of the "meeting".

Organize, prepare and chair face-to-face & on-line formal sessions

  The Chair should plan and announce sessions well in advance.
  (See section on Session Planning for exact procedures.)

Communicate results of sessions

  The Chair and/or Secretary must ensure that minutes of a
  session are taken and that an attendance list is circulated.
  See the section on Session Documents for detailed
  procedures.

  Immediately after a session, the WG Chair must immediately
  provide the Area Director with a very short report
  (approximately one paragraph, via email) on the session.
  This is used in an Area Report as presented in the
  Proceedings of each IETF meeting.

Distribute the work

  Of course each WG will have participants who may not be able
  (or want) to do any work at all. Most of the time the bulk
  of the work is done by a few dedicated participants. It is
  the task of the Chair to motivate enough experts to allow
  for a fair distribution of the workload.

Document development

  Working groups produce documents and documents need authors.
  The Chair will make sure that authors of WG documents
  incorporate changes as discussed by the WG. See the section
  on Session Documents for details procedures.

   Document publication

      The Chair and/or Secretary will work with the RFC Editor to
      ensure document conformance with RFC publication
      requirements and to coordinate any editorial changes
      suggested by the RFC Editor. A particular concern is that
      all participants are working from the same version of a
      document at the same time.

5.2. WG Editor/Secretary

   Taking minutes and editing working group documents often is performed
   by a specifically-designated participant or set of participants. In
   this role, the Editor's job is to record WG decisions, rather than to
   perform basic specification.

5.3. WG Facilitator

   When meetings tend to become distracted or divisive, it often is
   helpful to assign the task of "process management" to one
   participant. Their job is to oversee the nature, rather than the
   content, of participant interactions. That is, they attend to the
   style of the discussion and to the schedule of the agenda, rather
   than making direct technical contributions themselves.

5.4. Design teams

   The majority of the detailed specification effort within a working
   group may be done by self-selecting sub-groups, called design teams,
   with the (implicit or explicit) approval of the working group. The
   team may hold closed sessions for conducting portions of the
   specification effort. In some cases design teams are necessary to
   make forward progress when preparing a document. All work conducted
   by a design team must be available for review by all working group
   participants and the design team must be responsive to the direction
   of the working group's consensus.

5.5. Area Consultant

   At the discretion of the AD, a Consultant may be assigned to a
   working group. Consultants are senior participants in the IETF
   community. They have technical background appropriate to the WG and
   experience in Internet architecture and IETF process.

5.6. Area Director

   Area Directors are responsible for ensuring that working groups in
   their area produce coherent, coordinated, architecturally consistent
   and timely output as a contribution to the overall results of the
   IETF. This very general description encompasses at the very least
   these detailed tasks related to working groups:

   Area planning

     The Area Director determines activities appropriate to the
     area. This may include initiating working groups directly,
     rather than waiting for proposals from IETF participants.

   Coordination of WGs

     The Area Director coordinates the work done by the various
     WGs within (and sometimes even outside) the relevant area.

   IETF Meeting Schedule

     The Director tries to coordinate sessions in such a way that
     experts can attend the relevant sessions with a minimum of
     overlap and gaps between sessions. (See section on WG
     sessions for details.)

   Reporting

     The Area Director reports to the IETF on progress in the
     area.

   Reviewing

     The Area Director may appoint independent reviewers prior to
     document approval. The Area Director tracks the progress of
     documents from the area through the IESG review process, and
     report back on this to the WG Chair(s).

   Progress tracking

     The Area Director tracks and manages the progress of the
     various WGs with the aid of a regular status report on
     documents and milestones that is generated by the IESG
     Secretary. The Area Director forwards this report to the WG
     chairs. This in turn helps the chairs to manage their WGs.

5.7. Area Directorate

   An area directorate consists of senior members of the technical
   community and are appointed by the Area Director who then tasks them
   with technical oversight and review of specific area activities. An
   Area Director chairs the directorate. At the request of the AD,
   directorate members conduct specification reviews and may be assigned
   as Area Consultants, to provide architectural assistance.

6. WORKING GROUP DOCUMENTS

6.1. Session documents

   All relevant documents for a session (including the final agenda)
   should be published and available at least two weeks before a session
   starts.

   It is strongly suggested that the WG Chair make sure that an
   anonymous FTP directory be available for the upcoming session. All
   relevant documents (including the final agenda and the minutes of the
   last session) should be placed in this directory. This has the
   advantage that all participants can FTP all files in this directory
   and thus make sure they have all relevant documents. Also, it will be
   helpful to provide electronic mail-based retrieval for those
   documents.

6.2. IETF meeting document archive

   In preparing for an IETF meeting it is helpful to have ready access
   to all documents that are being reviewed. While documents usually are
   placed in the internet-drafts Internet Repository or in the
   respective working group archives or just published in some mail-
   lists, there are just too many things to browse or read through.
   Also, many documents are modified immediately before a meeting.

   The InterNIC Directory and Database Services provides a current-
   ietf-docs archive to enable people to get all documents that are
   relevant for the up-coming IETF meeting. This document database will
   be removed two weeks after the IETF meeting.

   The completeness of this archive depends on the authors and working
   group chairs submitting the documents. Each WG Chair is requested to
   submit the agenda to this archive.

   Structure of the archive:

   On ds.internic.net documents will be stored under the appropriate
   working group name under the appropriate area name in the directory:

        /pub/current-ietf-docs

   Each area will also have a directory called bof where a document to
   be discussed in a BOF meeting will be placed. At the area level a
   directory called plenary will be created to hold documents or
   presentation material related to a plenary session. Any filename
   conflicts will be resolved by the InterNIC's administrator and the
   submitter will be informed via electronic mail. Example:

        /pub/current-ietf-docs/app/osids
        /pub/current-ietf-docs/int/sip

   Access via anonymous FTP:

   Anonymous FTP to ds.internic.net and change directory to

        /pub/current-ietf-docs/

   and browse and get the document of interest.

   Access via gopher:

   Connect to gopher.internic.net and select the menu item:

        4.   InterNIC Directory and Database Services (AT&T)/

   and then the menu item:

        3. Documents to be reviewed at the *** IETF

   One may use the public-access gopher client by:

        telnet gopher.internic.net

   Submission of documents via anonymous FTP:

   FTP to ds.internic.net and login as anonymous. Change directory to:

        /incoming/current-ietf-docs

   Put the document using the following filename convention,

        <area>.<wgname>.<filename>
   e.g.:

        plenary.mondayVGs.ps
        app.osids.agenda
        app.osids.internic-talk-VGs.ps

Note that the names of areas and working groups are their official
short-form acronyms,

Submission of documents via electronic mail:

Send mail to

        admin@ds.internic.net

with the following subject line:

        IETF - <area>.<wgname>.<filename>

e.g.:

        IETF - app.osids.agenda

NOTE: Instead of sending a fresh copy of an already available
document, you may ask the InterNIC's administrators to create a link
to an existing internet-draft/RFC/ID

NOTE: If you do not remember your area or working group acronym get
the file /ftp/ietf/1wg-summary.txt from ds.internic.net via anonymous
FTP.

6.3. Internet-Drafts (I-D)

The Internet-Drafts directory is provided to working groups as a
resource for posting and disseminating early copies of working group
documents. This repository is replicated at various locations around
the Internet. It is encouraged that draft documents be posted as soon
as they become reasonably stable.

It is stressed here that Internet-Drafts are working documents and
have no official standards status whatsoever. They may, eventually,
turn into a standards-track document or they may sink from sight.
Internet-Drafts are submitted to:

        internet-drafts@cnri.reston.va.us

The format of an Internet-Draft must be the same as for an RFC [2].
Further, an I-D must contain:

-       Beginning, standard, boilerplate text which is provided by
        the Secretariat;

-       The I-D filename; and

-    The expiration date for the I-D.

   Complete specification of requirements for an Internet-Draft are
   found in the file:

            1id-guidelines.txt

   in the internet-drafts directory at an Internet Repository site.

6.4. Request For Comments (RFC)

   The work of an IETF working group usually results in publication of
   one or more documents, as part of the Request For Comments (RFCs) [2]
   series. This series is the archival publication record for the
   Internet community. A document can be written by an individual in a
   working group, by a group as a whole with a designated Editor, or by
   others not involved with the IETF. The designated author need not be
   the group Chair(s).

   NOTE: The RFC series is a publication mechanism only and publication
   does not determine the IETF status of a document. Status is
   determined through separate, explicit status labels assigned by the
   IESG on behalf of the IETF. In other words, the reader is reminded
   that all Internet Standards are published as RFCs, but NOT all RFCs
   specify standards.

   For a description on the various categories of RFCs the reader is
   referred to [1, 4, 5, 6].

6.5. Submission of documents

   When a WG decides that a document is ready for publication, the
   following must be done:

   -    The version of the relevant document as approved by the WG
        must be in the Internet-Drafts directory;

   -    The relevant document must be formatted according to RFC
        rules [2].

   -    The WG Chair sends email to the relevant Area Director, with
        a copy to the IESG Secretary. The mail should contain the
        reference to the document, and the request that it be
        progressed as an Informational, Experimental, Prototype or
        standards-track (Proposed, Draft or Internet Standard) RFC.

   The IESG Secretary will acknowledge receipt of the email. Unless
   returned to the WG for further development, progressing of the

document is then the responsibility of the IESG. After IESG
approval, responsibility for final disposition is the joint
responsibility of the RFC Editor and the WG Chair and Editor.

6.6. Review of documents

Usually in case of a submission intended as an Informational or
Experimental RFC minimal review is necessary. However, if the WG or
the RFC Editor thinks that an extensive review is appropriate, the
Area Director may be asked to conduct one. This review may either be
done by the AD and other IESG participants or the IESG may ask for an
independent review (e.g., by someone not part of the WG in question)
from the Area Directorate or elsewhere.

A review will lead to one of three possible conclusions:

1.   The document is accepted as is.

     This fact will be announced by the IESG Secretary to the
     IETF mailing list and to the RFC Editor. Publication is then
     further handled between the RFC Editor and the author(s).

2.   Changes regarding content are suggested to the author(s)/WG.

     Suggestions must be clear and direct, so as to facilitate
     working group and author correction of the specification.
     Once the author(s)/WG have made these changes or have
     explained to the satisfaction of the reviewers why the
     changes are not necessary, the document will be accepted for
     publication as under point 1, above.

3.   The document is rejected.

     This will need strong and thorough arguments from the
     reviewers. The whole IETF and working group process is
     structured such that this alternative is not likely to arise
     for documents coming from a working group. After all, the
     intentions of the document will already have been described
     in the WG charter, and reviewed at the start of the WG.

If any individual or group of individuals feels that the review
treatment has been unfair, there is the opportunity to make a
procedural complaint. The mechanism for procedural complaints is
described in the section on Contention and Appeal.

Before the IESG makes a final decision on a standards-track document,
the IESG Secretary will issue a "Last Call" to the IETF mailing list.
This Last Call will announce the intention of the IESG to consider

the document, and it will solicit final comments from the IETF within
a period of two weeks. It is important to note that a Last Call is
intended as a brief, final check with the Internet community, to make
sure that no important concerns have been missed or misunderstood.
The Last Call cannot serve as a more general, in-depth review.

7. SECURITY CONSIDERATIONS

    Security issues are not discussed in this memo.

8. REFERENCES

    [1] Internet Architecture Board and Internet Engineering Steering
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        the F.Y.I. Notes", RFC 1150, Proteon, USC/Information Sciences
        Institute, March 1990.

    [4] Postel, J., Editor, "Introduction to the STD Notes", RFC 1311,
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        1, RFC 1600, IAB, March 1994.

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9. AUTHORS' ADDRESSES

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APPENDIX: SAMPLE WORKING GROUP CHARTER

Multiparty Multimedia Session Control (mmusic)

 Charter

 Chair(s):
     Eve Schooler   <schooler@isi.edu>
     Abel Weinrib   <abel@bellcore.com>

 Transport Area Director(s)
     Allison Mankin   <mankin@cmf.nrl.navy.mil>

 Mailing lists:
     General Discussion:confctrl@isi.edu
     To Subscribe: confctrl-request@isi.edu
     Archive: venera.isi.edu:~/confctrl/confcrtl.mail

Description of Working Group:

The demand for Internet teleconferencing has arrived, yet an
infrastructure to support this demand is barely in place.
Multimedia session control, defined as the management and
coordination of multiple sessions and their multiple users in
multiple media (e.g., audio, video), is one component of the
infrastructure. The Multiparty Multimedia Session Control
Working Group is chartered to design and specify a protocol to
perform these functions.

The protocol will provide negotiation for session membership,
underlying communication topology and media configuration. In
particular, the protocol will support a user initiating a
multimedia multiparty session with other users ("calling" other
users) over the Internet by allowing a teleconferencing
application on one workstation to explicitly rendezvous with
teleconferencing applications running on remote workstations.
Defining a standard protocol will enable session-level
interoperability between different teleconferencing
implementations.

The focus of the working group is to design a session negotiation
protocol that is tailored to support tightly-controlled
conferences. The MBONE currently carries primarily loosely-
controlled sessions, i.e., sessions with little to no interaction
among members and with no arbitration facility, security, or
coordination of quality-of-service options for time-critical
media. Users may learn of available sessions using the "sd"
utility or other out of band mechanisms (e.g., email). However,

there is clearly also a need for tightly-controlled sessions that
provide mechanisms for directly contacting other users to
initiate a session and for negotiating conference parameters such
as membership, media encodings and encryption keys. In addition,
these sessions should support renegotiation during a session, for
example to add or delete members or change the media encoding.
It is possible that the protocol will, in the limiting case, also
support loosely-controlled sessions.

The main goal of the working group will be to specify the session
control protocol for use within teleconferencing software over
the Internet. The working group will focus on the aspects of the
session control problem that are well understood, while keeping
an eye on evolving research issues. Toward this end, the working
group has made an inventory of existing conferencing systems and
their session control protocols. The working group will document
the requirements of the existing prototypes as a basis for the
protocol development. The working group will iteratively refine
the protocol based on implementation and operational experience.

Furthermore, the working group will coordinate with other efforts
related to multimedia conferencing, such as directory services
for cataloguing users and conferences, the RTP and RTCP protocols
developed by the Audio/Video Transport Working Group, resource
reservation and management at the network level, and schemes for
multicast address allocation.

Goals and Milestones:

>   May 93   Hold an on-line working group meeting to discuss
>   the conference control framework, the relevant
>   terminology, a functional taxonomy and how
>   different conversational styles place
>   requirements on session protocols.
>
>   Jun 93   Submit the Conference Session Control Protocol to
>   the IESG for consideration as an Experimental
>   Protocol.
>
>   Aug 93   Post an Internet-Draft describing the Session
>   Control Requirements.
>
>   Nov 93   Post an Internet-Draft of the Session Control
>   Protocol.
>
>   Mar 94   Submit a revised Internet-Draft based on
>   implementation experience.