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Alternative Decision Making Processes for Consensus-blocked Decisions in the IETF
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Abstract

This document proposes an experimental set of alternative decision-making processes for use in IETF working groups. There are a small number of cases in IETF working groups in which the group has come to consensus that a particular decision must be made but cannot come to consensus on the decision itself. This document describes alternative mechanisms which can be used to come to a decision in those cases. This is not meant to provide an exhaustive list, but to provide a known set of tools which can be used when required.

1. Introduction.

Dave Clark's much-quoted credo for the IETF cites "rough consensus and running code" as the key criteria for decision making in the IETF. Aside from a pleasing alliteration, these two touchstones provide a concise summary of the ideals which guide the IETF's decision making. The first implies an open process in which any technical opinion will be heard and any participant's concerns addressed; the second implies a recognition that any decision must be grounded in solid engineering and the known characteristics of the network and its uses. The aim of the IETF is to make the best possible engineering choices and protocol standards for the Internet as a whole, and these two statements guide it in making its choices and standards.

In a small number of cases, working groups within the IETF cannot reach consensus on a technical decision which must be made in order to ensure that an interoperable mechanism or set of standards is available in some sphere. In most of these cases, there are two or more competing proposals at approximately the same level of technical maturity, deployment, and specification. In some cases, working groups can achieve consensus to advance multiple proposals and to either revisit the question when experienced has been gained or to build the required mechanisms to handle multiple options for the life of the protocol. In other cases, however, a working group decides that it must advance a single proposal. Choosing among these proposals can be especially difficult when each is optimized for slightly different use cases, as this implies that the working group's best choice depends on the participants' views of likely future use. Further problems arise when different proposals assign costs in implementation, deployment, or use to different groups, as it is a normal human reaction to seek to prevent one's own ox being gored.

This document puts forward a set of experimental mechanisms which for use in that small number of cases. In order to gauge the results of those cases where one of these mechanisms is used, it is suggested that the Last Call issued to the IETF community note that such a mechanism was used and which one of the set was chosen. If and when the community becomes satisfied that one or more of these methods is useful, it should be documented in a BCP for that small number of cases.

In no way should this experiment or any future BCP for this small number of cases take precendence over the IETF's normal mode of operation.

2. Rough Consensus as a baseline approach.

The Conflict Research Consortium at the University of Colorado

outlines the pros and cons of consensus as:

> The advantage of consensus processes is that the resulting decision is one that meets the interests of all the parties and that everyone can support. The disadvantage is that developing such a decision can be a very slow process, involving many people over a long period of time. There is also a relatively high probability of failure. If a quick decision is needed, the consensus approach may not work. Consensus rule processes also tend to favor those that oppose change and want to preserve the status quo. All these people have to do is refuse to support any consensus compromises and they will win (at least as long as they can delay change). (CONFLICT)

Using "rough consensus" as a guideline limits some of disadvantages of consensus processes by ensuring that individuals or small factions cannot easily block a decision which has otherwise general support. The second touchstone of "running code" can also limit the disadvantages of consensus processes by requiring that statements opposing particular proposals be technically grounded.

These limitations do not change the core mechanisms of consensus-building, however, and the IETF process continues to require individual participants both to use their best engineering judgment to select among proposals and to balance their own interests with those of the Internet as a whole. Active participation and a willingness to compromise, possibly on key points, are needed. Historically, this has worked because a large majority of participants have recognized that the Internet's growth and enhancement are more important overall than any specific short-term advantage.

In other words, the use of "rough consensus" is sufficient in most cases in the IETF to ensure that individuals or small groups are heard when they raise technical objections, but that they cannot block progress when a general agreement has been reached. This document does not suggest changing the usual mechanisms for achieving forward progress; it proposes mechanisms for use when a working group has consensus that it must make a decision, but it cannot make that decision by the usual rules.

3. Conditions for use.

In general, working groups should consider using alternate decision making processes when it is clear both that a choice must be made and that the choice cannot be made by continued discussion, refinement of specifications, and implementation experience. A guideline for determining that these conditions have been met is included below.

3.1 There is a clear decision to be reached.

There must be a clear statement of the decision to be reached. This may be in the working group's charter, in requirements documents, or in other documents developed by the working group. Prior to any invocation of an alternate decision making process, the Chair(s) should confirm with the working group that there is general agreement on the decision to be reached. This should include a specific consensus call on whether the working group can advance multiple proposals or must select a single proposal for the work item.

3.2 Proposals are available in draft form.

Proposed solutions must be available as Internet drafts and must be sufficiently specified to cause the Chair(s) to believe that they could be, possibly with further refinement, published as an IETF specification. If the Chair indicates to those proposing a solution that it is insufficiently specified, concrete problems to be resolved must be identified and a reasonable amount of time provided to resolve those problems. Note that if one of the proposed solutions is "do nothing", an explicit draft to that effect must be available; it may, however, be produced when the group invokes an alternate decision making process.

3.3 The working group has discussed the issue without reaching resolution.

Consensus-building requires significant amounts of discussion, and there is no general rule for indicating how much discussion a technical issue requires before a group should reach consensus. If there is any question about whether the discussion has been sufficient, the working group chair(s) should always err on the side of allowing discussion to continue. Before using an alternate decision making process, the working group chair(s) should also make an explicit call for consensus, summarizing the technical issues and the choice to be made. If new technical points are made during the call for consensus, discussion should continue. If no new points are raised, but the group cannot come to consensus, the working group may consider using an alternate decision making process. Under no circumstances is the working group required to use an alternate decision making process.

3.4 There is an explicit working group last call to use an alternate method.

In item 3.3 above, it is noted that the Chair(s) should make an explicit call for consensus on the technical issues and should proceed only after that call has yielded no forward progress. A different last call on the question of whether to use an alternate decision making method is required, with a stated period for

comments by working group members. This is to indicate that the decision to use an alternate method should be taken at least as seriously as the decision to advance a document on the standards track. It also provides a clear signal that this is a last moment for participants to reconsider their positions. The decision to use an alternate decision making process requires the rough consensus of the working group, as determined by the Chair(s). The choice of which alternate decision to use may be made in the last call or may be the subject of separate discussions within the working group. If the group comes to consensus that an alternative method is required but does not come to consensus on the method to use, an external review team (c.f. section 4.1, below) will be formed.

In discussions of this draft, several points have been raised about the viability of any mechanism that requires consensus to use an alternative to consensus-based decision making. Some of those concerns pointed out that groups having trouble achieving consensus on the technical matter may have similar problems achieving consensus on the procedural matter. Others have been concerned that this will be used as an attempt to end-run rough consensus. These are all valid concerns, and they point both to the need to retain rough consensus as the baseline mechanism and to exercise caution when using these alternate methods. More importantly, though, they highlight the nature of these alternatives. They are primarily mechanisms that allow people to see the need for compromise in a new way, to back away from entrenched technical positions by putting the technical choice in the hands of the broader community, and to highlight that the choice for each participant is now between achieving *a* decision and failure.

There is a fundamental tension between the IETF community's desire to get the best decision for a particular technical problem and the IETF community's desire to get a decision that has community buy-in in the form of rough consensus. These mechanisms cannot resolve that fundamental tension. They may, however, provide a way forward in some situations which might otherwise end in deadlock or stagnation.

4. Alternate methods.

In setting up an alternate method, care must be given that the process by which the decision is reached remains open and remains focused on making the best technical choice for the Internet as a whole. The steps set out below provide a straw proposal for four such mechanisms. These are relatively heavy weight systems, partially to highlight the gravity of choosing to invoke these methods and partially to ensure that the IETF community as a whole is alerted to and kept informed of the process. Note that alternate procedures have been used in the past; see RFC 3127 (RFC3127) for a description of that used in the decision between

two competing candidate protocols for Authentication, Authorization and Accounting. By setting out these proposals, this document does not intend to limit working group choice, but to provide a set of well defined processes that obviate the need for reinvention in most cases.

4.1 Alternate method one; external review team formation.

The working group notifies the IETF community that it intends to form an external review team by making a public announcement on the IETF-announce mailing list. That announcement should include a summary of the issue to be decided and a list of the internet-drafts which contain the alternate proposals. It should also include the name and location of an archived mailing list for the external review team's deliberations.

4.1.1 External review team membership.

External review teams have five members who must meet the same eligibility requirements as those set out a voting member of the NomCom (2727bis). Explicitly excluded from participation in external review teams are all those who have contributed to the relevant working group mailing list within the previous 12 months, the IESG, the IAB, and the sitting NomCom.

Volunteers to serve on the review team send their names to the IETF executive director. Should more than five volunteer, five are selected according to the process outlined in RFC2777(RFC2777) note that the same rules on affiliation apply here as to the NomCom, to reduce the burden on any one organization and to remove any implication of "packing" the review team.

Participants in the working group may actively solicit others to volunteer to serve on the review team but, as noted above, they may not serve themselves if they have commented on the list within the previous 12 months.

4.1.2 External review team deliberation.

The external review team is alloted one month for deliberations and any member of the team may extend that allotment by two weeks by notifying the relevant working group Chair(s) that the extension will be required.

The team commits to reading the summary provided during the IETF announcement and all of the relevant Internet drafts. Members may also read the archived mailing list of the working group, and they may solicit clarifications from the document authors, the working group chairs, or any other technical experts they see fit. All

such solicitations and all deliberations among the review team of the proposals should take place on the archived mailing list mentioned in the IETF announcement. The team members may, of course, have one-on-one discussions with relevant individuals by phone, email, or in person, but group deliberations should be on the archived list.

4.1.3. Decision statements.

Each member of the external review team writes a short decision statement, limited to one page. That decision statement contains a list of the proposals in preference order. It may also contain a summary of the review team member's analysis of the problem and proposed solutions, but this is not required. These decision statements are sent to the archived mailing list, the relevant working group chair(s), and the IESG.

4.1.4 Decision statement processing.

The Decision statements will be tallied according to "instant-runoff voting" rules, also known as "preference voting" rules (VOTE).

4.2 Alternate method two; mixed review team.

This mechanism allows for the working group to designate a review team that involves those outside the working group as well as those who have been involved in the process within the working group. While it may appear that having a single representative of each proposal will have a null effect on the outcome, this unlikely to be the case except when there is a binary choice, because of the rules for decision statement processing (c.f. 4.2.4 below). As in 4.1, the working group notifies the IETF community that it intends to form a mixed review team by making a public announcement on the IETF-announce mailing list. That announcement should include a summary of the issue to be decided and a list of the internet-drafts which contain the alternate proposals. It should also include the name and location of an archived mailing list for the external review team's deliberations.

4.2.1 Mixed review team membership.

Mixed review teams are composed of one designated representative of each of the proposals, typically the Internet draft's principal author, and six external members. Five of the external members are selected as according 4.1.1. above. The sixth is designated by the IESG as a chair of the group. Though the primary role of the chair is to ensure that the process is followed, she or he may vote and engage in the deliberations.

4.2.2 Mixed review team deliberation.

The review team is alloted one month for its deliberations and any member of the team may extend that allotment by two weeks by notifying the review team Chair that the extension will be required.

The review team commits to reading the summary provided during the IETF announcement and all of the relevant Internet drafts. Members may also read the archived mailing list of the working group, and any other technical experts they see fit. All such solicitations and all deliberations among the review team of the proposals should take place on the archived mailing list mentioned in the IETF announcement.

4.2.3 Decision statements.

As in 4.1.3, above.

4.2.4 Decision statement processing.

As in 4.1.4, above.

4.3 Alternate method three; qualified short-straw selection.

As in 4.1 and 4.2, the working group notifies the IETF community that it plans to use an alternate decision mechanism by making a public announcement on the IETF-announce mailing list. That announcement should include a summary of the issue to be decided and a list of the Internet-drafts which contain the alternate proposals.

In this method, a single working group participant is selected to make the decision. Any individual who has contributed to the working group in the twelve months prior to the working group last call on the technical question (c.f. 3.3, above) may volunteer to serve as the decision maker. Individuals may qualify as participants by having made a public statement on the working group mailing list, serving as an author for an Internet draft under consideration by the working group, or making a minuted comment in a public meeting of the working group. The Chair(s) may not volunteer. Each qualified volunteer sends her or his name to the working group chair and the IETF Executive Director within 3 weeks of the announcement sent to the IETF-announce mailing list. The IETF Executive Director then uses the selection procedures described in RFC2777 to select a single volunteer from the list. That volunteer decides the issue by naming the internet-draft containing the selected proposal in an email to the relevant working group chair, the working mailing list, and the IESG.

4.4 Alternate method four; random assignment.

Among the small number of cases for which consensus in not an appropriate method of decision-making are a tiny minority for which the decision involves no technical points at all, but involves the need to select among options randomly. The IDN working group, as an example, needed to designate a specific DNS prefix. As the decision involved early access to a scarce resource, a random selection was required. In such cases, a working group may ask IANA to make a random assignment from among a set of clearly delineated values. Under such circumstances, IANA will be guided by RFC2777 in its selection procedures. Under extraordinary circumstance, the working group may, with the approval of the IESG, ask IANA to select among a pool of Internet Drafts in this way.

5. Appeals.

The technical decisions made by these processes may be appealed according to the same rules as any other working group decision, with the explicit caveat that the working group's consensus to use an alternate method stands in for the working group's consensus on the technical issue.

6. Security Considerations.

The risk to moving to a system like this is that it shifts the basis of decision making within the IETF. The hope in providing these mechanisms is that certain decisions which may be intractable under consensus rules may be tractable under the rules set out here. The risk, of course, is that forcing the evaluation to occur under these rules may allow some set of individuals to game the system.

7. IANA Considerations.

Section 4.3 may require the IANA to make random selections among a known set of alternates.

8. Normative References

Eastlake, Donald 3rd. "Publicly Verifiable Nomcom Random Selection", RFC2777.
(RFC2727)

J. Galvin, Ed. "IAB and IESG Selection, Confirmation, and Recall Process: Opera draft-ietf-nomcom-rfc2727bis-09.txt (2727bis).

9. Non-Normative References

Mitton, D. et al. "Authentication, Authorization, and Accounting: Protocol Evaluation", RFC3127. (RFC3127)

Center for Democracy and Voting. "Frequently Asked Questions about IRV", http://www.fairvote.org/irv/faq.htm . (VOTE)

International Online Training Program on Intractable Conflict,"Consensus Rule Processes", Conflict Research Consortium, University of Colorado, USA. http://www.colorado.edu/conflict/peace/treatment/consenpr.htm (CONFLICT)

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