The Label "RFC"
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Abstract

The perception and reality of the RFC series have long been separate. More than 20 years of attempts to correct perception, starting with RFC 1796, have been unsuccessful. This document proposes an experiment to see if changing the labels on document will have any effect on fixing that problem.

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1. Introduction

RFC 1796 [RFC1796] was published in April of 1995. At that time, it was clear that there was an "regrettably well spread misconception" that the label "RFC" implied "some level of recognition". Not a lot has changed in the 23 years since that statement.

The common perception of the significance of the "RFC" label is simple. That simple interpretation doesn’t capture the broad range of uses that the label is applied to. The view expressed in RFC 1796 was that this loss of information was adequately addressed by further engaging in dialog. This includes the provision of prominent notices in documents, such as the "Status of this Note" section, as well as providing explanations about what documents mean. This view further holds that the merits of a document do not solely derive from the status of the document, but from the quality and substance of its contents.

This document suggests that this view to some degree underestimates the value of a label (or "brand"). It also overestimates the willingness of audiences to engage with the nuanced interpretation that is required to appreciate the complexity of a document. An RFC can address complex technical matters that require considerable expertise in the field to understand with enough detail to appreciate the full implications.

The Internet Standards Process [RFC2026] describes a process that has consistently produced quality documents. This document proposes an experiment that limits the use of the "RFC" label to the product of that process.

The value of the other documents currently published on the RFC series is undeniable. The creation of new series’ for documents produced by different processes will ensure that critical information - and dissenting viewpoints - retain a venue for reaching an audience.

2. Nuance in Interpretation

Misconceptions about the significance of publication as an RFC is commonplace. This isn’t a design failure, but an inherent property of the current system of document streams. However, that potential for misunderstanding can be problematic.

Capturing the nuance required to properly understand a protocol is difficult, and a large number of documents fail to properly convey that status.
For example, ZRTP [RFC6189] was published as an informational RFC on the IETF stream after the IETF reached consensus to develop DTLS-SRTP [RFC5764] for the same use case.

Similarly, HTTP Live Streaming (HLS) [RFC8216] was published on the Independent Submissions Stream in defiance of a standardized protocol, MPEG-DASH [DASH].

Both describe de-facto standards, each of which are implemented in more than one product and deployed. Both are also highly contentious.

Each captures a range of design decisions that differ from the commonly-accepted view. Aspects of these designs have merit and documenting them has value, if only from the perspective of understanding alternative approaches.

That value does not naturally extend to deployment, even if each document contains enough detail to implement and deploy the protocol they describe. If nothing else, the deployment of these protocols could adversely affect interoperability relative to implementations of their more widely accepted alternatives.

Information about the status of the document is contained entirely in the "Status of this Note" section. For instance, ZRTP is published with IETF consensus, so the significance of it not being an "Internet Standards Track specification" is easily lost. That it also limits its mention of DTLS-SRTP to comparative criticisms makes it possible to interpret the document as it represents itself: a newer, superior technique.

There are numerous examples of RFCs that make an honest representation of their status in more than just the boilerplate. In addition to those proprietary documents that identify that status in their title, a number of documents are clear about status and intent. For example, though RFC 6886 [NAT-PMP] was deployed, it includes clear statements on status, as well as sections on how to migrate to the IETF consensus protocol [RFC6887]; to go further, because RFC 5690 [ACK-Congestion] was never deployed, it avoids any misapprehension by not requesting allocation of necessary codepoints.

3. No Shortage of Venues for Publication

So why is the publication of an RFC so keenly sought, when the document doesn’t capture the output of the Internet Standards Process?
It might be reasonable to say that the goal is to create a stable, referenceable specification for a technology that might be of interest to the Internet community. This view is consistent with the rationale given in the Section 2 of [RFC4846], which formalized the Independent Submissions Stream.

For the examples given, a principled reason for publication is well justified. While neither document represents IETF consensus, they are both technical contributions of some value.

It's not obvious that this goal is not accomplished by publishing specifications on a web site. For instance, the examples from Section 2 both ZRTP and HLS have a presence on the Internet where specifications and related material are published (http://zfoneproject.com/zrtp_ietf.html [1] and https://developer.apple.com/streaming/ [2] respectively). The Internet Archive (https://web.archive.org/ [3]) shows that these sites have been available and stable for an extended period. Furthermore, both websites publish links to updated specifications ([ZRTPBIS] and [HLSBIS]).

If the intent is to reach an IETF audience, then there are many other venues for publication that achieve the same goal. For instance, input from the academic community is often provided in the form of papers. Other inputs variously use blogs, journal articles, source code repositories, and even posts to mailing lists. For work that is taken as a normative dependency a higher standard of publication is likely necessary, but most of these alternative forms can be cited informatively.

4. RFC == Standards Track

This documents proposes reserving the "RFC" label for those documents that are the product of the Internet Standards Process [RFC2026].

It's true that the Internet Standards Process isn’t perfect and it cannot guarantee a particular level of quality. Any failings can (and should) be addressed by improving the process.

Reserving the RFC Series for the publication of products of the Internet Standards Process would ensure clarity about what "RFC" means.

4.1. New Labels for Other Documents

The IETF publishes informational and experimental documents. The expectations around what level of agreement is necessary to publish
these documents differs from documents published on the standards track. These documents should use other labels.

The IETF publishes best current practice (BCP) documents that describe its own processes. These don’t codify agreement about a protocol inasmuch as they don’t describe something implemented in software. They do follow the same processes and require similar levels of agreement. Use of the RFC label for BCP documents is appropriate, though there is no inherent reason not to use another label either.

Similarly, the IRTF and IAB produce documents that do not represent an agreement in the same way. These documents should use other labels.

The possible exception to this are the documents produced by the Crypto-Forum Research Group (CFRG). If it is considered important to publish CFRG documents with the "RFC" label, then it should be possible to attain IETF consensus for publication in the RFC Series.

The Independent Submissions Editor also publishes RFCs. These documents should use other labels.

4.2. No Change to Existing Documents

There is no point in revising existing documents. These documents were published with an expectation of immutability. Thus, any attempt to relabel these would be limited to changing document metadata. Copies of documents taken prior to any updates might not be updated.

Any misconception that might exist in relation to existing documents is likely irreparable. Retracting the issuance of RFC numbers for the hundreds of documents that might need to be assigned new labels retrospectively isn’t realistic. Thus, this document does not propose any action for documents already published.

4.3. Should the Experiment Fail

If the community determines that the negative consequences of this experiment outweigh the benefits, then documents published with new labels will be allocated RFC numbers. This requires that during the experiment:

- the altered publication system needs to produce an output for affected documents that would be compatible with later publication as RFC; and
o the ongoing experiment - specifically its potential for failure - be considered when implementing changes to processes on affected streams.

It might also be possible to reserve RFC numbers, which would preserve the loosely chronological ordering of RFCs by number. This document does not take any position on whether this effort would be worthwhile.

### 4.4. A New Label is Necessary

Almost every RFC published in the last 35 years contains a "Status of this Memo" section. Recent documents include a markings in the header, signifying the stream and status (or category). In addition, the most widely used source for RFCs, [https://tools.ietf.org/html/][4], uses a colour-coding scheme to highlight the status of documents.

The "STD" label hasn’t been especially effective in distinguishing those documents that attain the rare status of Full Internet Standard. The BCP subseries has been more effective, perhaps because of the greater familiarity of its primary audience with its meaning.

It’s possible that with a move to presenting RFCs in HTML rather than text, new methods of signaling status could be developed. For instance, using styling such as colour, layout, or font choice to represent origin and status. However, the choice of rendering is not part of the canonical XML document. Alternative renderings could legitimately erase that information.

That leads to the conclusion that clearer marking for status, while possibly helpful, would not be sufficiently effective in addressing the problem.

### 5. How To Measure Success

A term of 3 years is proposed as being long enough to provide enough evidence to assess the effect of a change of labels.

One hypothesis this experiment proposes to test is the degree to which the "RFC" label motivates authors seeking publication. Though numbers are unlikely to provide a clear answer when so much of the problem is subjective, measuring the rate of submission and publication for affected documents could provide some insight.

Measuring different sources gives a multiple perspectives relative to the output of the standards process. For instance, informational documents are closely related to the standards process and so are
hypothesized to be relatively unaffected by any change, whereas IAB documents might follow a separate cadence and could be unaffected.

Documents published by the IETF as Informational, and those published on the Independent Submissions Stream are most likely to have a high enough volume to produce a large enough sample. Publication rates for other sources might not be high enough to observe differences.

In the first test, the rate of requests for publication over time is recorded. If the introduction of the experiment causes the number to drop relative to long-term trends, then that drop might indicate that interest in publication is driven in part by the label.

The second test will record the number of documents published using new labels. A drop in publication rate relative to that of those documents published with the "RFC" label could also indicate that a change of label has some effect.

Trends in publication rates are easy to gather; some work might be required to establish the rate of submissions prior to the commencement of any experiment.

Any measurement is susceptible to noise, and the rate of publication on many streams is not high, nor is it consistent. Some allowance should be made for fluctuations as the experiment is commenced, or as processes change to support the experiment.

6. Security and Privacy Considerations

It is believed that there are none.

7. IANA Considerations

This document makes no request of IANA.

8. References

8.1. Informative References

[ACK-CONGESTION]


**[NEWTRK-RFC]** Rosenberg, J. and A. Mankin, "What’s In a Name: RFC", draft-rosenberg-mankin-newtrk-rfc-00 (work in progress), October 2004.


8.2. URIs


Acknowledgments

This isn’t really a new position. It’s a little embarrassing to find that all these arguments are merely a reiteration of arguments articulated more than a decade ago. [NEWTRK-RFC] contains many of the same arguments.

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