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S. Dawkins, Ed.
Huawei

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An IRTF Primer for IETF Participants

Abstract

This document provides a high-level description of things for Internet Engineering Task Force (IETF) participants to consider when bringing proposals for new research groups (RGs) into the Internet Research Task Force (IRTF). This document emphasizes differences in expectations between the two organizations.

Status of This Memo

This document is not an Internet Standards Track specification; it is published for informational purposes.

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1. Introduction and Scope

This document provides a high-level description of things for Internet Engineering Task Force (IETF) participants to consider when bringing proposals for new research groups (RGs) into the Internet Research Task Force (IRTF). This document emphasizes differences in expectations between the two organizations.

IRTF RG guidelines and procedures are described in BCP 8 [RFC2014], and this document does not change those guidelines and procedures in any way.

2. The IRTF Is Not the IETF

A number of proposals from experienced IETF participants for new IRTF RGs have encountered problems because the IETF participants were making proposals appropriate for the IETF, but not for the IRTF. [RFC2014] describes the origin of IRTF RGs but doesn't provide much detail about the process, which is intended to be flexible and accommodate new types of RGs. Lacking that detail, experienced IETF participants fall back on what they know, assume that chartering an IRTF RG will be similar to chartering an IETF working group (WG), follow the suggestions in [RFC6771] to gather a group of interested parties, and then follow the suggestions in [RFC5434] to prepare for a successful BOF and eventually, a chartered WG.

Both of these documents are excellent references for proposals in the IETF, but their suggestions may result in a proposal that is almost the opposite of what the IRTF Chair is looking for in a proposal for an IRTF RG. The mismatches fall into some consistent categories, and this document lists the ones that come up repeatedly.

The target audience of this document is IETF participants bringing proposals to the IRTF.

It's worth noting that the IRTF Chair has substantial autonomy on what RGs are chartered and how they reach that stage. The IRTF Chair at the time of writing is Lars Eggert.

2.1. Research and Engineering

> "To me, the fundamental outcome of research is understanding, and the fundamental outcome of engineering is a product." - Fred Baker

In some ways, research is about a journey, and engineering is about a destination. If a researcher answers a question in a way that opens another question, that can be success. If an engineer keeps working on a product without finishing it, that is usually a failure.

Research can be open-ended, while engineering can come to a stopping point when the result is "good enough" -- good enough to ship.

> "If it has to work when you're finished, it wasn't research, it was engineering." - attributed to Dave Clark

2.2. Scope

IRTF RGs have a scope large enough to interest researchers, attract them to the IRTF, and keep them busy doing significant work. Their charters are therefore usually much broader than IETF WG charters, and RGs often discuss different topics underneath the charter umbrella at different times, based on current research interests in the field.

IETF WGs are chartered with a limited scope and specific deliverables. If deliverables and milestones are known, the proposal is likely too limited for the IRTF.

2.3. Time Frames

IRTF RGs bring researchers together to work on significant problems. That takes time. The effort required by a RG is likely to take at least three to five years, significantly longer than IETF WGs envision when they are chartered.

2.4. Alternatives

IRTF RGs are encouraged to explore more than one alternative approach to the chartered problem area. There is no expectation that the RG will "come to consensus" on one approach. The RG may publish multiple competing proposals as research produces results.

IETF WGs normally use the IETF consensus process (as described in [RFC7282]) to drive interoperable solutions into the market place. That often includes reducing the number of approaches to something manageable for an implementer, preferably one, whether that means starting with an approach the WG participants agree on, or considering alternatives with a view to picking one rather than spending significant effort on alternatives that won’t go forward.

The IRTF, as an organization, may also charter multiple RGs with somewhat overlapping areas of interest, which the IETF tries very hard to avoid.

2.5. Process

All IRTF participants have the obligation to disclose IPR and otherwise follow the IRTF’s IPR policies, which closely mirror the IETF’s IPR policies; in all other aspects, IRTF RG operation is much less constrained than IETF WG operation.

Each IRTF RG is permitted (and encouraged) to agree on a way of working together that best supports the specific needs of the group. This freedom allows IRTF RGs to bypass fundamental IETF ways of working, such as the need to reach at least rough consensus, which IRTF RGs need not do. Therefore, the mode of operation of IRTF RGs can also change over time, for example, perhaps becoming more like IETF WG operation as the research the group has been progressing matures.

2.6. Charters

The purpose of charters in the IRTF is to broadly sketch the field of research that a group is interested in pursuing and to serve as an advertisement to other researchers who may be wondering if the group is the right place to participate.

IETF WG charters tend to be very narrow. They are intended to constrain the work that the working group will be doing, and they may contain considerable text about what the working group will not be working on.

2.7. Deliverables

There is no expectation that IRTF RGs publish RFCs, although many do. Some IRTF research groups produce IRTF-stream RFCs, while others produce Internet-Drafts that form the basis of IETF-stream RFCs, and still others may deliver reports, white papers, academic journal articles, or even carry out relevant high-level discussions that aren't ever published but influence other research. IRTF RGs are successful when they stimulate discussion, produce relevant outputs, and impact the research community.

IETF WG deliverables tend to be specific protocol, deployment, and operational specifications, along with problem statements, use cases, requirements, and architectures that inform those specifications. Almost all IETF working groups are chartered to deliver Internet standards, which isn't an option for IRTF RGs.

2.8. Completion

IRTF RGs may produce the outputs they expected to produce when they were chartered, but it also happens that researchers consider what they've learned and start work on better solutions. This can happen whether or not the research underway has been completed, and the process can continue until the RG itself decides that it is time to conclude or when the IRTF Chair determines that there is no more energy in the group to do research.

IETF WGs will typically conclude when they meet their chartered milestones, allowing participants to focus on implementation and deployment, although the WG mailing list may remain open for a time.

3. Now That You Know What Not to Do

The current IRTF Chair, Lars Eggert, is fond of saying, "Just act like an IRTF research group for a year, and we'll see if you are one."

There are many ways to "act like an IRTF research group". [RFC4440] contains a number of points to consider when proposing a new RG. Some possibilities include:

1. Identify and recruit a critical mass of researchers who can review and build off each other's work.

2. Identify other venues that may overlap the proposed RG, and understand what value the proposed RG provides beyond what's already underway elsewhere.

3. Hold a workshop to survey work that might set the stage for a RG on questions of interest, perhaps in concert with existing academic events.

4. If the proposed RG expects to have outputs that will ultimately be standardized in the IETF, identify and recruit engineers who can review and provide feedback on intermediate results.

But every proposed RG is different, so e-mailing the IRTF Chair to start the conversation is a perfectly reasonable strategy.

4. Security Considerations

This document provides guidance about the IRTF chartering process to IETF participants and has no direct Internet security implications.

5. References

5.1. Normative References

[RFC2014] Weinrib, A. and J. Postel, "IRTF Research Group Guidelines and Procedures", BCP 8, RFC 2014, October 1996, <http://www.rfc-editor.org/info/rfc2014>.

5.2. Informative References

[RFC4440] Floyd, S., Paxson, V., Falk, A., and IAB, "IAB Thoughts on the Role of the Internet Research Task Force (IRTF)", RFC 4440, March 2006, <http://www.rfc-editor.org/info/rfc4440>.

[RFC5434] Narten, T., "Considerations for Having a Successful Birds-of-a-Feather (BOF) Session", RFC 5434, February 2009, <http://www.rfc-editor.org/info/rfc5434>.

[RFC6771] Eggert, L. and G. Camarillo, "Considerations for Having a Successful "Bar BOF" Side Meeting", RFC 6771, October 2012, <http://www.rfc-editor.org/info/rfc6771>.

[RFC7282] Resnick, P., "On Consensus and Humming in the IETF", RFC 7282, June 2014, <http://www.rfc-editor.org/info/rfc7282>.

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Author’s Address

Spencer Dawkins (editor)
Huawei Technologies

EMail: spencerdawkins.ietf@gmail.com