# Operators and the Internet Engineering Task Force (IETF)

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V0.04

I E T F ®

# IETF Mission

The mission of the IETF is to make the Internet work better by producing high quality, relevant technical documents that influence the way people design, use, and manage the Internet. [RFC 3935]

# History and Context

- Chris Grundemann and Jan Zorz raised the topic of operator and IETF interworking at RIPE 68.
- There was a survey done on community participation and general awareness of what IETF is, how it works, and how to participate.
- draft-opsawg-operators-ietf-00
- It is unlikely that operators will start coming to the IETF. The IETF needs to reach out to the operators.
- Languages spoken in the IETF and in the field are very different.

# The Dream

In a perfect world…

- The IETF creates standard protocols with operator input and they work great
- Deployment and operationalization concerns are consistently addressed
- The level of operator engagement makes sense when compared to vendor and academic involvement
- Operators always know when their input is needed
- Operators always provide their input when it's needed

# The Reality

Many operators are not engaged enough…

- A significant portion of operators (particularly mid/small size) don't join IETF mailing lists nor do they show up to IETF meetings
- Academics and vendors rule many decision making processes within the IETF
- The operators expected to deploy these technologies often don't even know that they are being developed
- Critical new technologies are being developed with little to no direct operator input
- Things may be and often are broken…

# Network Operations Lifecycle
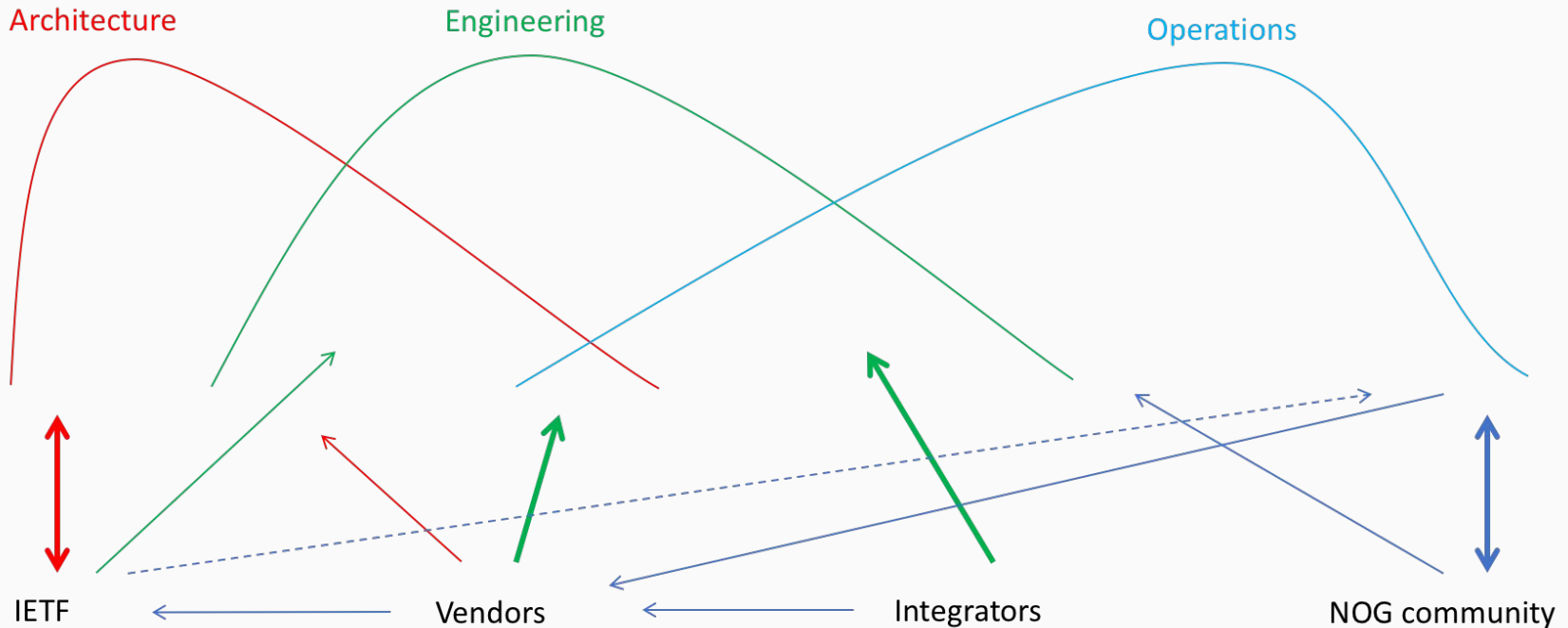
# From RIPE 68: "Operators and the IETF"

Some issues are easy to solve:

- Don't know what IETF does: 8%
- Don't know how to participate: 58%
- Aware that the work in the IETF happens on mailing lists: 54%

Some are harder:

- Don't have enough time: 64%
- Don't feel my operator input is welcomed: 44%

Source: https://www.internetsociety.org/deploy360/projects/operators-and-the-ietf/

# TL;DR:
# How to participate / find out more

- Work in the IETF takes place in Working Groups
- Working Groups are clustered into Areas
- Participation is open to any interested individual
- Work happens on mailing lists
- Remote meeting participation is possible
- You **really** don't have to attend meetings to actively participate or contribute.
- Review documents / participate on lists / participate remotely

**Best starting point:** https://www.ietf.org/about/participate/

IETF Hackathons

We believe in:
Rough consensus and running code

# Transport Area (TSV) Update

- Increasing use of encryption, for both transport and applications
  - Some examples: TCPINC (opportunistic TCP encryption), QUIC (encryption-only)
- Evolving transport protocol behavior
  - Some examples: L4S, Dual-AQM, PIE, FD-CoDEL, plus research like BBR
  - User-space protocols can evolve more quickly, without OS/middlebox upgrades
- Monitoring and debugging a heavily-encrypted network
  - Examples: Alternate Marking and In-situ OAM from IPPM working group

**Brian Trammell**
**IAB, IPPM WG chair, PANRG chair**

# Routing Area (RTG) Update

- More than Just IP Routing!
  - 26 Active WGs: https://datatracker.ietf.org/wg/#rtg
  - MPLS, SDN/Overlays, Mobility/Hybrid Networks, IoT, IP Routing
  - Merge of IS-IS and OSPF WGs into LSR WG.
- Routing Security -- What is needed?
- New work new WGs: Focus on DC Routing
  - New Hybrid Distance Vector/Link State Protocols
  - Link State Vector Routing (lsvr): Leverages BGP (transport + BGP-LS)
  - Routing In Fat Trees (rift): Purpose-Build Protocol for CLOS/Fat-Tree Topologies

**Jeff Tantsura**
**IAB, Routing WG and RIFT WG chair**

# Operations and Management Area (OPS) Update

Management:

- Development of a hierarchy of data models for management and operations.
- New work starting on model driven telemetry.
- "Classic" network management and operations maintenance - IPFIX, BMP, RADIUS, TACACS.

Operations:

- BGP Large Communities, default deny EBGP policy, IPv6 prefix per host.

**Warren Kumari & Ignas Bagdonas**
**Operations and Management Area Directors**

# Internet Architecture Board (IAB) Update

- Programs
  - PrivSec, StackEvo, RSOC, Plenary, Liaison Oversight, IANA stewardship
- Documents, workshops, and topics
  - naming (ENAME workshop)
  - draft-trammell-wire-image and draft-hardie-path-signals
  - draft-arkko-arch-low-latency and draft-arkko-arch-virtualization
  - general internet trends, e.g., consolidation (CO-OP WG on Thursday)

**Jari Arkko & Jeff Tantsura**
**Internet Architecture Board**

# What next?

Talk to us:

- Just after this session outside.
- … or at any other time.

About:

- Specific drafts **you** have concerns about or issues with
- Other introductions with the authors or IETF participants
- Something like a BoF / Track at RIPE 77 in Amsterdam
- Anything else related to the IETF

We need your help to build
what you need.

Come tell us what that is!

**I E T F**®