Participation in IETF from the region.

SANOG - 38

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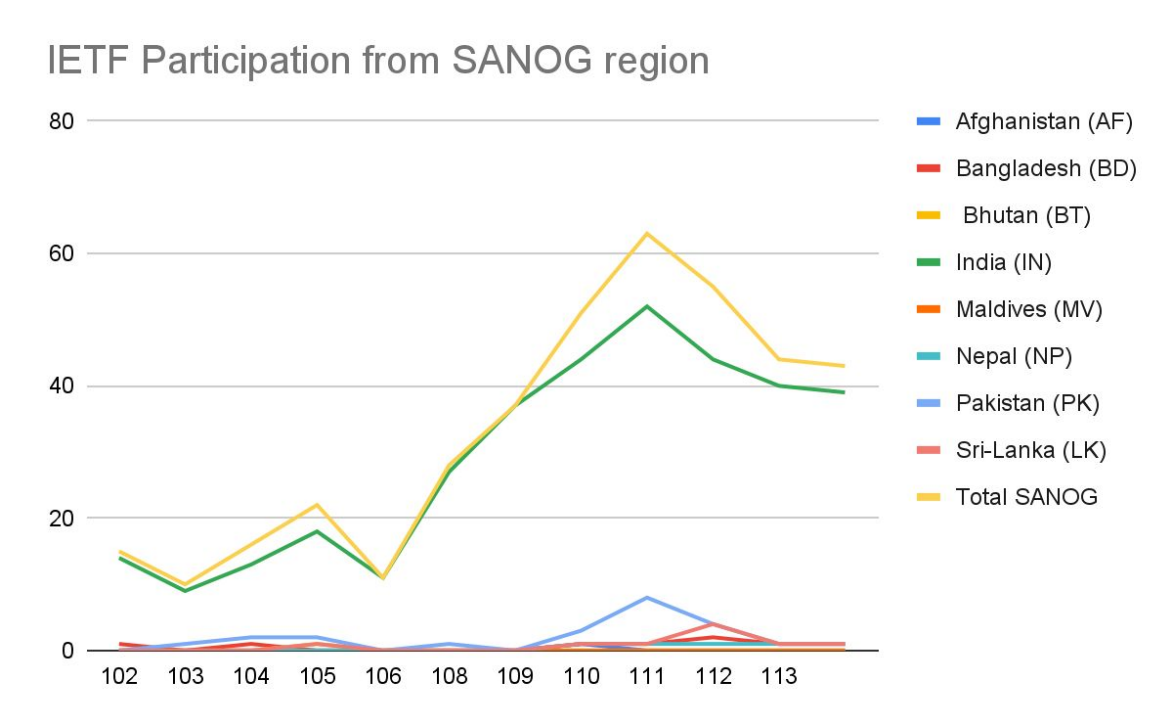
Introduction to IETF

- Internet Standards enables Interoperability. It ensures that s/w and h/w produced by different vendors can work together!
- The IETF (Internet Engineering Task Force) is the premier Internet standards organization with open process and freely available standards.
- 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.
- IETF is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet.

SANOG Region

- While east asia and australia have somewhat of a good participation, the participation from SANOG region is lagging!
  - NO IETF meetings in the region EVER!
    - IETF follows 1-1-1 policy (NA-Europe-Asia), but not all regions are the same!
- Network operator participations from the region is especially a concern.
  - All networks are not same, this region has unique challenges and thus it is key that those are well represented in the standard making process!

SANOG Region

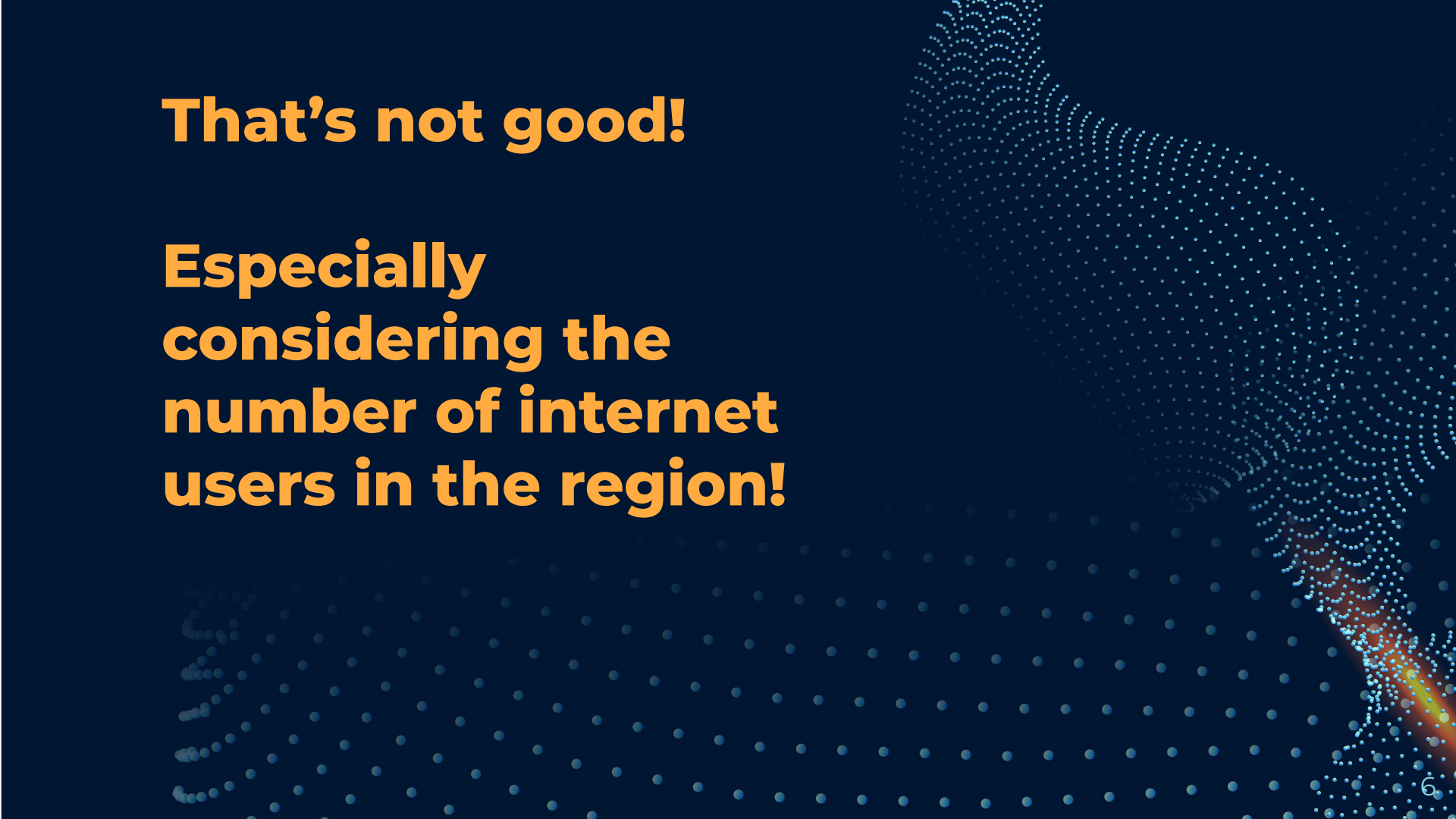


SANOG Region

IETF	Type	Afghanistan (AF)	Bangladesh (BD)	Bhutan (BT)	India (IN)	Maldives (MV)	Nepal (NP)	Pakistan (PK)	Sri-Lanka (LK)	Total SANOG	Total Participants
101	Onsite (London)	0	1	0	14	0	0	0	0	15	1235
102	Onsite (Montreal)	0	0	0	9	0	0	1	0	10	1078
103	Onsite (Bangkok)	0	1	0	13	0	0	2	0	16	879
104	Onsite (Prague)	0	0	1	18	0	0	2	1	22	1213
105	Onsite (Montreal)	0	0	0	11	0	0	0	0	11	1103
106	Onsite (Singapore)	0	0	0	27	0	0	1	0	28	1004
108	Online	0	0	0	37	0	0	0	0	37	1120
109	Online	1	1	0	44	0	1	3	1	51	1285
110	Online	0	1	0	52	0	1	8	1	63	1329
111	Online	0	2	0	44	0	1	4	4	55	1411
112	Online	0	1	0	40	0	1	1	1	44	1347
113	Hybrid (Vienna)	0	1	0	39	0	1	1	1	43	1428

That’s not good!

Especially considering the number of internet users in the region!



Why participate?

- IETF mission “make Internet work better” is everyone’s mission!
- The quality of the standards and documents impacts everyone in the industry!
  - It impacts Interoperability
  - It impacts network operations and stability
  - It impacts features and services
- Open process allows for anyone interested in providing technical contributions
  - Standards involve balancing various (and sometimes competing) interests! You are likely to be impacted, if your interests are not well represented during deliberations.
  - From consumer of standards become a participant in standard making!

WHY network operators needs to participate?

- Be on top of the new internet protocols and extensions
- Lot of work explicitly on Network Operations
  - input of operators is quite valuable to keep this work vibrant and relevant.
- Why should you care?
  - Are these real problems that impacts you?
  - Are these real network requirements? What's missing?
  - Are these in sync with operator's reality?
  - Is this going to be easy to deloy?
  - How would I troubleshoot this?
  - You might be deploying this and then you will most definitely care and it's usually too late to do anything!

Challenges to participation

- Time - It takes a lot of time to read mails, participate in meetings. No easy way to filter out information and engage in long discussions!
- Culture - Feeling that operator's input is not welcomed. Perception of not being welcoming to newcomers. Consensus building is a long tiring process. Governance model could be the best and worst thing about IETF. Seen as a vendor playground. WG meetings with document updates are difficult to follow...
- Money - Expensive to attend meetings 3 times a year!
- Awareness - what it does? How it operates? How to participate? How to take the first step?
- Seen as not relevant for operators - fights over bits on wire, things that are far away from real deployments, no support from management...

Tips to participate

- Identify what interest you, pick 1-2 key WG, monitor a few more!
  - Join with mailing list (use digest mode for a single mail) if you are worried about number of emails
  - Use IMAP to read when free (if you don't want to subscribe)
  - Start reviewing stuff and provide inputs
- Start with remote participation to IETF meetings
  - Use fee waivers
  - Participate in IEPG (Internet Engineering and Planning Group), Hackathon, and other events around IETF

Links

- Join the mailing list - https://www.ietf.org/how/lists/
- Attend IETF meetings - https://www.ietf.org/how/meetings/
  - Online with Fee Waiver available - https://www.ietf.org/forms/114-registration-fee-waiver/
- Prepare for the meeting
  - Agenda, slides, internet drafts are posted in advance
  - Check past discussions - mailing list archives, minutes
  - Pick a small set of sessions to prepare in-depth (be a tourist for the rest)
- Ask for help
- Learn the culture
- IETF 114 in next week - https://www.ietf.org/how/meetings/114/ - Hybrid meeting based in Philly!

Key areas of Interest

Operations

IEPG (Internet Engineering and Planning Group), Operations and Management Area Working Group (opsawg), IOT Operations (iotops)

IPv6

IPv6 Operations (v6ops), IPv6 Maintenance (6man)

BGP

Global Routing Operations (grow), Inter-Domain Routing (idr), SIDR Operations (sidrops)

DNS

Domain Name System Operations (dnsop), Extensions for Scalable DNS Service Discovery (dnssd)

Research

ACM/IRTF Applied Networking Research workshop (anrw), Network Management (nmrg)

Measurements

IP Performance Measurement (ippm), Measurement and Analysis for Protocols (maprg)

Hot Topics

- MPLS - Extension to MPLS header for MPLS Network Action Indicators (MNA) and MPLS Ancillary Data in the packet in a joint meeting.
- IDR - Inter-domain Intent-aware Routing using Color
- Network Slicing - Traffic Engineering Architecture and Signaling (teas), Distributed Mobility Management (dmm) discussion on IETF Network slicing and its realization
- IPv6 Extension Headers in open Internet
- New Transport - QUIC, L4S (Low Latency, Low Loss, Scalable Throughput).

New work in IETF 114

- Stub Network Auto Configuration for IPv6 (snac)
  - the stub network is able to connect automatically any infrastructure link/capability
- Source Address Validation in Intra-domain and Inter-domain Networks (savnet)
  - Beyond uRPF, a new routing-protocol-independent architectures and procedures to accurately determine the valid incoming router interfaces for specific source prefixes
- Media over QUIC (moq)
  - a low-latency media delivery protocol for ingest and distribution for live streaming, gaming, and media conferencing and allows efficient scaling.
- Secure Asset Transfer Protocol (satp)
  - transferring digital assets between networks or systems

New work in IETF 114

- Transfer dIGital cREdentialS Securely (tigress)
  - A protocol that will facilitate credential transfers from one person's device to another person's device.
- Supply Chain Integrity, Transparency, and Trust (scitt)
  - Aims to improve supply chain security by making the actions of entities in that supply chain transparent and thereby accountable
- JSON Web Proofs (jwp)
  - JSON Object Signing and Encryption (JOSE) extension to support the privacy-enhancing primitives of selective disclosure and unlinkability
- Multicast Source Routing over IPv6 (msr6)
  - Native IPv6 based multicast source routing solution
- Check out this Blog
  - https://www.ietf.org/blog/ietf114-new-topics/

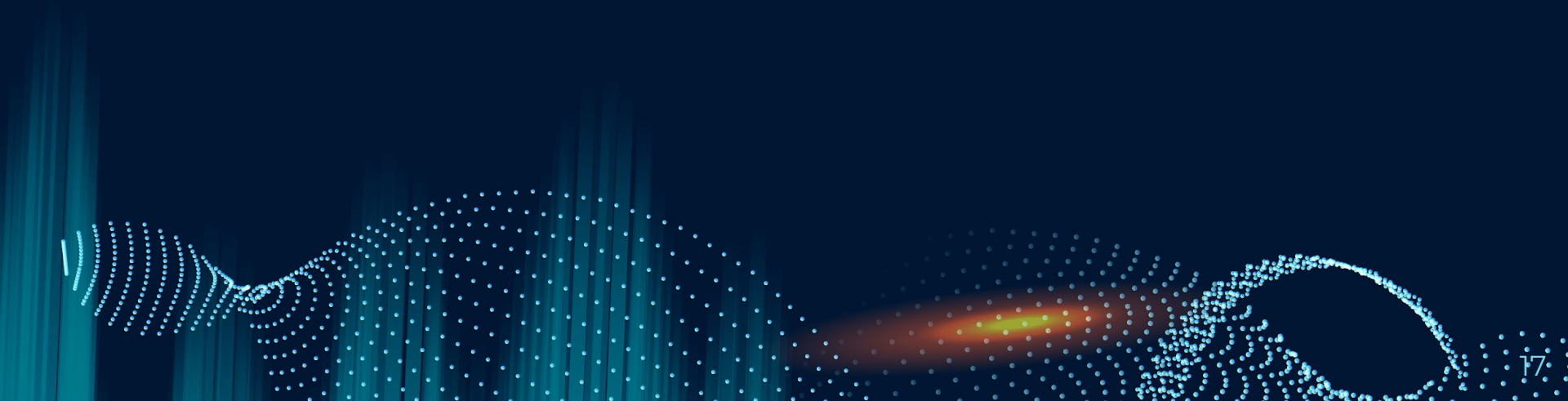
Local Resources...

- IIESoc (India Internet Engineering Society) is a non-profit entity that brings together different stakeholders from the computer networking community across industry, academia, service providers and government.
  - It exists to further the adoption of IETF standards and increase awareness & participation in the IETF process.
- Established in 2017 by some of us regular IETFers from India and diaspora.
- Aim to bridge the gap between India and Internet Standards

- Organize various events
  - IPv6 Webinar Series
  - Regular RFCsWeLove Meetup
  - Annual Connections Event
  - Indian Community @ IETF get together
- Provide
  - Help and guidance to anyone interested in participating in IETF from India
  - Mentor during the IETF week
  - Informal discussions on any technical internet topic
- Helped many
  - with writing their first draft and attending meetings!

Thanks!

IETF 114 starts next week!



IETF Principles

- Open Process - anyone can participate, everything is open!
- Technical Competence - based on sound network engineering principles; in areas where IETF has technical competence!
- Volunteer Core - participants/leadership are those who come to IETF to further IETF's mission of "making the Internet work better!"
- Rough consensus and running code - combined engineering judgement and real-world experience in implementation/deployment
- Protocol Ownership - accepts the responsibility for all aspects of the protocol!

How does IETF work?

- You are in individual when you participate at IETF
  - No membership / No dues!
  - Mostly sponsored by companies/institutions
  - But we are individuals, i.e. individual opinion and technical arguments matters only!
- Areas and Working Groups
- Mailing List is all that matters
  - All formal decision on the list
- IETF has 3 meetings per year
  - High-bandwidth F2F communication
  - Cross Area collaboration
- Rough Consensus
  - Measure of opinions, but no voting!
- Running Code
  - IETF Hackathon
  - Datatracker Code Sprint

IETF Areas & Working Groups

- The IETF divides its work into a number of Areas, each comprised of working groups.
  - Applications and Real-Time Area (art)
  - General Area (gen)
  - Internet Area (int)
  - Operations and Management Area (ops)
  - Routing Area (rtg)
  - Security Area (sec)
  - Transport Area (tsv)
- Areas have Area Directors (ADs) that forms the Internet Engineering Steering Group
- Working Groups (WGs) are the primary mechanism for development of IETF specifications and guidelines.
  - They are created with a charter that describes the specific problem or deliverables they will deliver.
- WG have WG co-chairs

What is an RFC?

- Request for Comment
  - The name is historic
    - it was created as a way to share notes among researchers.
  - RFC Series has a longer history (1969) than the IETF (1986)
    - By Steve Crocker
    - Internet Pioneer Jon Postel was RFC Editor for 28 years!
- Ideas are published as Internet-drafts
  - Working documents (not standards)
  - This is where you start contributing to IETF!
- The final consensus ideas are published as RFCs
  - An archival document.
  - Over 9200; around 200 RFCs per year!
  - RFCs can be from other streams (apart from IETF)

Internet-Drafts (I-Ds)

- Working documents
  - Capture ideas or discussion points
  - Multiple revision leading upto RFCs
- I-Ds are posted (not published)
  - Anyone can do it
- Starting point for discussion
  - Don't have to complete/perfect
  - They may go many changes, completely re-written, merged or abandoned!
- I-Ds expire in 6 months
  - Referenced as “work in progress”
- Working Group Adopted I-Ds
  - When a WG is ready to develop a particular document, it "adopts" an existing individual document as a starting point.
  - Leads to change in the name
    - draft-ietf-<wgname>-... from draft-<lastname>-...

Towards Consensus

- You need to get agreement and support from across the WG
  - It could be rough! It is NOT a majority rule!
- Consensus doesn't require that everyone is happy and agrees that the chosen solution is the best one. Consensus is when everyone is sufficiently satisfied with the chosen solution, such that they no longer have specific objections to it.
- You must address any valid technical objection
  - Address, not necessarily accommodate!
- Read more
  - RFC 7282: On Consensus and Humming in the IETF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