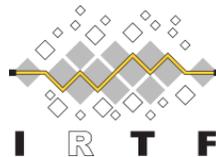


51st NMRG Meeting - IETF 104

Session 2

Laurent Ciavaglia



IRTF follows IETF policy (“Note Well”)

This is a reminder of IETF policies in effect on various topics such as patents or code of conduct.

It is only meant to point you in the right direction. Exceptions may apply. The IETF's patent policy and the definition of an IETF "contribution" and "participation" are set forth in BCP 79; please read it carefully.

As a reminder:

- By participating in the IETF, you agree to follow IETF processes and policies.
- If you are aware that any IETF contribution is covered by patents or patent applications that are owned or controlled by you or your sponsor, you must disclose that fact, or not participate in the discussion.
- As a participant in or attendee to any IETF activity you acknowledge that written, audio, video, and photographic records of meetings may be made public.
- Personal information that you provide to IETF will be handled in accordance with the IETF Privacy Statement.
- As a participant or attendee, you agree to work respectfully with other participants; please contact the ombudsteam (<https://www.ietf.org/contact/ombudsteam/>) if you have questions or concerns about this.

Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

- BCP 9 (Internet Standards Process)
- BCP 25 (Working Group processes)
- BCP 25 (Anti-Harassment Procedures)
- BCP 54 (Code of Conduct)
- BCP 78 (Copyright)
- BCP 79 (Patents, Participation)
- <https://www.ietf.org/privacy-policy/> (Privacy Policy)

Volunteers ?!

Minutes taker(s)

please use Etherpad: <https://etherpad.ietf.org/p/notes-ietf-104-nmrg>

Meetecho / Jabber scribe(s)

Blue Sheets!

Please fill the **Blue Sheets** and circulate them through the room

this is important to measure participation and plan proper room size at future meetings

NMRG @ IETF 104 week

20 years of NMRG !

Session 1 - Intent Based Networking (current session)

follow-up on IBN activity and work plan update

Session 2 - Future of NMRG (current session)

inputs to discussion on future of NMRG

Agenda

- 1. Introduction**
- 2. NMRG 1999-2019, a Retrospective**
- 3. AI for Network Management**
- 4. Discussion on future of the RG**

RG INFORMATION

2019 meetings plan

- April, IEEE IM 2019, Washington
 - 2 sessions, Tuesday, 08 April 2019
 - Outreach to IEEE/IFIP NM communities
- June, NMRG Workshop, Silicon Valley, USA (under preparation)
 - Exact date/time TBC, in week 10-14 June 2019 or week 24-28 June
- July, IETF 105, Montreal
 - Regular session(s)
 - Interim TBC
- October, NMRG Workshop, Bologna, (under preparation)
- November, IETF 106, Singapore
- Monthly virtual meetings + topic-specific ones as per need

ANRW 2019



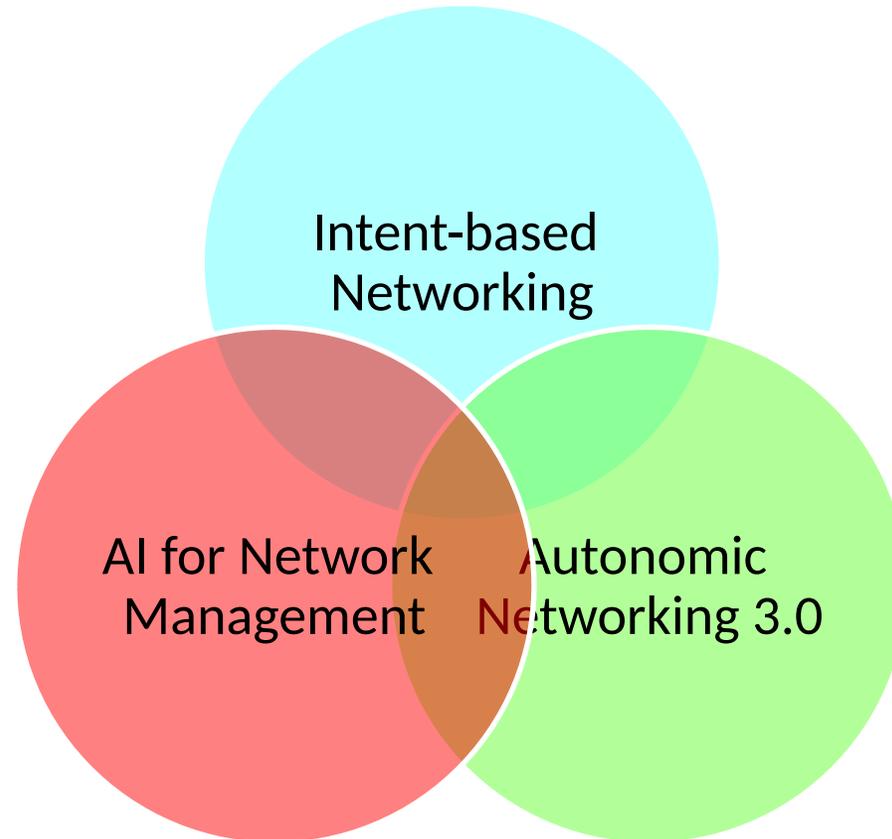
- <https://irtf.org/anrw/2019/>
- Call for Papers
 - [...] New approaches to network management, operations, and control
 - **Submit your ideas!**
 - Deadline: May 10, 2019

RG information

- New co-chair to be announced in a few weeks
 - Situation cleared with new IRTF chair
- Two RG secretaries appointed
 - Jéferson Campos Nobre and Pedro Martinez Julia

Thank you and good luck!

Research agenda



More details in

<https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8334913> (page 15)

Documents

- 6-7 active (individual) documents
 - Some related to research agenda items
 - Some new/renewed proposals
 - Part of NMRG evolution discussion

IBN topic - current work plan

as agreed at IETF100/Singapore

- **How to call stuff**
 - document(s) on terminology/taxonomy
- **How to express/model intent**
 - information model, grammar, languages
- **How to realize Intent Based Systems**
 - “reference” functional architecture, functional blocks/components, mechanisms/techniques, theory of operations/lifecycle
- **Additional work items could also investigate**
 - functions and techniques ; use cases ; what are the challenges and corresponding research items

IBN topic - work plan update

- **Extend/Update with:**
 - Problem statement, scope, design challenges and goals
 - Concepts definition
 - Intent at design and run time, impact of CI/CD(?)
 - Interoperability
 - Continuous measure/validation of intent realization
 - Evaluation, validation, implementation
- **Deliverables, Milestones, Criteria for RG adoption**
- **Progressing the work (RG support)**
 - Regular, dedicated virtual meetings (1 or 2 per month?)
 - Interim meetings: June, TBC ; July-IETF105 ; October, TBC
 - Hackathon...?
 - Mailing list, other tools needed?

Future of NMRG

- Some important questions and principles
 - What is our shared goal?
 - Define the collective outcome we want to achieve with the RG
 - Who is the public? Which communities?
 - Define the scope and beneficiaries
 - What is our approach / way of working?
 - What is the link with IETF?
- Pluri-disciplinary
 - different, complementary competencies to solve problems
- Cross-fertilization
 - provide and get knowledge from others, enrich our understandings, broaden our views

Future of NMRG

- **Charter update to capture current focus (e.g. IBN) and milestones**
- Inspiring talks e.g. at future IETF meetings
 - Hot Topics in Network Management
- **“In-depth” survey**
 - Change name? Charter? Stop NMRG?
 - Research topics?
 - Methods and tools?
 - Areas of improvement
 - Communities outreach. How, what for, what benefits?
 - How we run f2f, interim and virtual meetings
 - For all questions: clear proposals and motivations (why)!

Future of NMRG

- Some ideas and topics
 - Managing at ultra low and high scales and speed
 - Role and place of human (in the (management) loop), human-network interactions, instrumentation, visualization, trust/oversight
 - Post-NETCONF/YANG era
 - Site/Network Reliability Engineering field (SRE/NRE)
 - Foundations, principles, concepts, architectures, techniques, protocols, mechanisms, models, evaluations, benchmarking, tooling, toolchain, operations, lifecycle management
 - Application areas (IoT, 6G, nano-networks...)