66th NMRG Meeting

IETF 114, Hybrid

Chairs: Laurent Ciavaglia, Jérôme François

Secretaries: Jéferson Campos Nobre, Pedro Martinez-Julia

Note Well – Intellectual Property

- **The IRTF follows the IETF Intellectual Property Rights (IPR) disclosure rules**
- By participating in the IRTF, you agree to follow IRTF processes and policies:
  - If you are aware that any IRTF 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
  - The IRTF expects that you file such IPR disclosures in a timely manner – in a period measured in days or weeks, not months
  - The IRTF prefers that the most liberal licensing terms possible are made available for IRTF Stream documents – see RFC 5743
  - Definitive information is in RFC 5378 (Copyright) and RFC 8179 (Patents, Participation), substituting IRTF for IETF, and at https://irtf.org/policies/ipr

Note Well – Audio and Video Recordings

- The IRTF routinely makes recordings of online and in-person meetings, including audio, video and photographs, and publishes those recordings online

- If you participate in person and choose not to wear a red “do-not-photograph” lanyard, then you consent to appear in such recordings, and if you speak at a microphone, appear on a panel, or carry out an official duty as a member of IRTF leadership then you consent to appearing in recordings of you at that time

- **If you participate online, and turn on your camera and/or microphone, then you consent to appear in such recordings**

Note Well – Privacy & Code of Conduct

- As a participant in, or attendee to, any IRTF activity you acknowledge that written, audio, video, and photographic records of meetings may be made public
- Personal information that you provide to IRTF will be handled in accordance with the Privacy Policy at https://www.ietf.org/privacy-policy/
- 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
- See RFC 7154 (Code of Conduct) and RFC 7776 (Anti-Harassment Procedures), which also apply to IRTF

Goals of the IRTF

The IRTF conducts research; it is not a standards development organization

The Internet Research Task Force (IRTF) focuses on longer term research issues related to the Internet while the parallel organization, the IETF, focuses on shorter term issues of engineering and standards making.

While the IRTF can publish informational or experimental documents in the RFC series, its primary goal is to promote development of research collaboration and teamwork in exploring research issues related to Internet protocols, applications, architecture, and technology.

See “An IRTF Primer for IETF Participants” – RFC 7418

Online meeting etiquette

- **The session is being recorded.**
- Please keep your audio muted and video off when not presenting/speaking.
- When speaking, please start by stating your name

Useful links

- Materials: https://datatracker.ietf.org/meeting/114/session/nmrg
- Meetecho: https://meetings.conf.meetecho.com/ietf114/?group=nmrg
- Notes: https://codimd.ietf.org/notes-ietf-114-nmrg
- Video recording: https://www.youtube.com/user/ietf/playlists (available post-meeting)

Agenda 1/2

- Introduction and RG status, RG Chairs, 10 min
- Guest presentation: Using the RFC 7575 and Models at Runtime for Enabling Autonomic Networking in SDN, Felipe Alencar, 15 min Best paper award, 8th Workshop Pre-IETF/IRTF, 2021, Brazil ; as part of the 41st Brazilian Computing Society Congress (CSBC 2021)

- Network Digital Twins
  - Digital Twin Network: Concepts and Reference Architecture, Cheng Zhou, 5 min https://datatracker.ietf.org/doc/draft-irtf-nmrg-network-digital-twin-arch/
  - Data Collection Requirements and Technologies for Digital Twin Network, Cheng Zhou, 5 min https://datatracker.ietf.org/doc/draft-zcz-nmrg-digitaltwin-data-collection/
  - A Performance-Oriented Digital Twin for Carrier Networks, Jordi Paillissé & Albert Cabellos, 15 min https://datatracker.ietf.org/doc/draft-paillisse-nmrg-performance-digital-twin/
  - Digital Twin Network Flow Simulation, Danyang Chen or Hongwei Yang, 5 min https://datatracker.ietf.org/doc/draft-yz-nmrg-dtn-flow-simulation/
  - One-way delay measurement method based on Digital Twin Network, Danyang Chen or Hongwei Yang, 5 min https://datatracker.ietf.org/doc/draft-yc-nmrg-dtn-owd-measurement/
  - Wrap-up, RG chairs, 5 min Network digital twin side meeting -Wednesday, July 27th, 18:00 - 19:30, room: Philadelphia South

Agenda 2/2

- **Green Networking**
  - **Management for Green Networking, Alex Clemm, 15 min** https://datatracker.ietf.org/doc/draft-cx-green-ps/ https://datatracker.ietf.org/doc/draft-cx-green-metrics/
  - **What has the IETF ever done for Energy, Toerless Eckert, 10 min** https://datatracker.ietf.org/doc/draft-eckert-ietf-and-energy-overview/ https://github.com/toerless/energy **https://github.com/toerless/energy/raw/main/what-has-the-ietf-ever-done-for-energy.pdf**

- **Artificial Intelligence**
  - **Considerations of deploying AI services in a distributed approach, Yong-Geun Hong, 15 min** https://datatracker.ietf.org/doc/draft-hong-nmrg-ai-deploy/
  - **Research Challenges in Artificial Intelligence for Network Management, 5 min** https://datatracker.ietf.org/doc/draft-francois-nmrg-ai-challenges/
- **Intent Based Networking**
  - **Network measurement intent - one of IBN use cases, Danyang Chen or Kehan Yao, 5 min** https://datatracker.ietf.org/doc/draft-yang-nmrg-network-measurement-intent/

Status of RG documents

- **IANA OK (No action needed) - sent to RFC editor (EDIT)**
  - Intent-Based Networking - Intent Classification

  https://datatracker.ietf.org/doc/draft-irtf-nmrg-ibn-intent-classification/
  - Intent-Based Networking - Concepts and Definitions

  https://datatracker.ietf.org/doc/draft-irtf-nmrg-ibn-concepts-definitions/
- **Active RG document**
  - Digital Twin Network: Concepts and Reference Architecture

  https://datatracker.ietf.org/doc/draft-irtf-nmrg-network-digital-twin-arch/
- **Suggested revision before a second call for adoption**
  - Network measurement intent - one of IBN use cases

  https://datatracker.ietf.org/doc/draft-yang-nmrg-network-measurement-intent/

Future meetings

- Interim meetings, follow-ups and new proposals
  - Designing, deploying and operating distributed AI
    - Looking to co-locate meeting with conference or workshop
  - Network Digital Twin (side meeting today 18:00 - 19:30, room: Philadelphia South)
  - IBN use cases

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- November 2022, IETF 115, London, UK