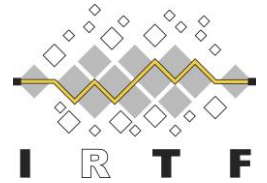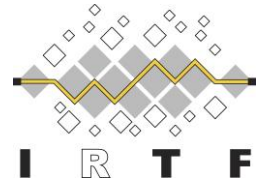# Inter-networking for AI

20250722 – Dirk Kutscher and Antoine Fressancourt
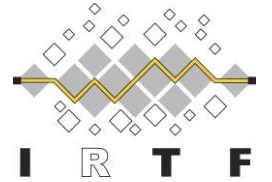
Note Well – Intellectual Property

- **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
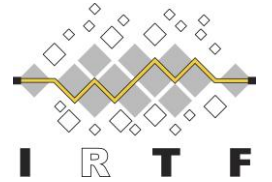
Note Well – Audio and Video Recordings

- 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

- Also see RFC 9775 (IRTF Code of Conduct)

Goals of the IRTF

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

- **The IRTF conducts research; it is not a standards development organisation**

- 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

Objectives of this Meeting

- Understand current problems and research challenges in networking for AI

- Start a discussion on what research should be done in the IRTF

- Mailing list: https://mailman3.irtf.org/mailman3/lists/net4ai.irtf.org/

Agenda for today

19:00 – 19:05 (5 min)	Meeting setup and introduction of the topic
19:05 – 19:25 (20 min)	*Load balancing strategies in AI/ML networks* by Costin Raiciu *(University Politechnica of Bucharest / Broadcom Inc.)*
19:25 – 19:45 (20 min)	*Lossy Network Transport for Large-Scale AI* by Ran Ben Basat *(University College London)*
19:45 – 20:00 (15 min)	Q&A and discussion on challenges to address in IRTF

Discussion

- Continuous research on (Inter-) Networking for AI?

- Potential topics

  - Bespoke transport protocols

  - Congestion signaling

  - In-network support (aggregation etc.)

  - APIs

  - Coexistance with other traffic

  - Low-latency and in-network computing-compatible security

- What not to do?

Mailing list: https://mailman3.irtf.org/mailman3/lists/net4ai.irtf.org/

Thank you!