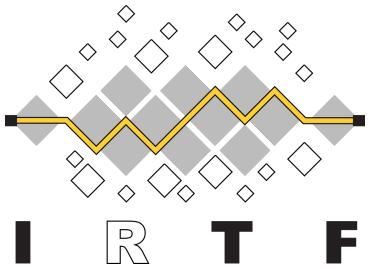

Systems and Protocol Aspects for Circumstellar Environments

Proposed **SPACE RG**

Chairs: Juan Fraire, Jörg Ott
Support: Nishant Sastry

IETF 124, Montreal, 6 November 2025

Note Well

By participating in the IETF you agree to follow IETF processes and policies. This Note Well is a reminder of some of those policies. For a linked version of this text, please visit *www.ietf.org/note-well* or use the QR code below.

- IETF participants are expected to behave in a professional manner and extend respect and courtesy to their colleagues at all times (see *RFC 7154: IETF Guidelines for Conduct and IETF Anti-Harassment Policy*). If you have any concerns about behavior, please contact the *Ombudsteam* who have a duty of confidentiality and extensive powers to act, as set out in *RFC 7776: IETF Anti-Harassment Procedures*.

- If you are aware that any IETF contribution (as defined in *RFC 5378: Rights Contributors Provide to the IETF Trust*) is covered by patents or patent applications that are owned or controlled by you, your employer or your sponsor, you must disclose that fact, or not participate in the discussion (see *RFC 8179: Intellectual Property Rights in IETF Technology*).

- For detailed process information consult *RFC 2026: Internet Standards Process* and *RFC 2418: IETF Working Group Guidelines and Procedures* and updates to those.

- The IETF routinely makes public written, audio, video, and photographic records of IETF activities, including your personal information as set out in the *IETF Privacy Statement*.

For advice, please talk to Working Group chairs or Area Directors.

Goals of the IRTF

- 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

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

- 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

WELCOME TO THE FIRST

OFFICIAL MEETING OF SPACE RG

Agenda

09:30 **Introduction** (chairs)

09:40 **Jason Gerard**, Amazon Kuiper (15 min)

- *Optical Downlinks Scheduling*

09:55 **Renata Texeira**, Netflix (20 min)

- *Netflix over LEO: Lessons in Adaptive Bitrate and Congestion Control*

10:15 **Pablo Madoery**, Carleton University (15 min)

- *An AI-Enabled Testbed for Satellite Mega-Constellations*

10:30 **Jianping Pan**, Univ Victoria (15 min, online)

- *Measuring Low-Earth-Orbit Satellite Networks*

10:45 **Maxime Piraux**, Aerospacelab (10 min, online)

- *A Code to Describe Satellite Constellations (draft-piraux-space-constellation-code)*

10:55 **Wrap-up**

Background

- Idea emerged around **IETF 120** (Vancouver)
- Two side meetings since: **IETF 122** (Bangkok) and **123** (Madrid)
- Variety of topics so far: observations and perspectives
  - **Measurements**
  - **Models**
  - **Sustainability**
  - **Routing**
  - **Computing**
- Charter bashing and identifying what (not) to do
- Resources
  - IRTF Page: https://www.irtf.org/spacerg.html
  - Github: https://github.com/irtf-spacerg
  - Mailing list: space@irtf.org

Purpose

- We are a Research Group – no standards, maybe other docs
  - Networked nodes with high mobility and topology dynamics
  - That may face environmental and resource constraints
- We are **not** an all-things-Starlink-measurements group
- **DO**
  - Bring cool research and findings
  - Share ideas, methodologies, software, and data
  - Document best practices for common problems (infrastructure, setups, parameters, tools)
  - Talk – repeatedly – to each other and build a community
  - Reach out to those not (yet) here
- **DON'T**
  - Write protocol specs that belong to DTN, TVR, TIPTOP, TCPM, QUIC, MoQ, …

Now

- SPACE RG provides a forum that brings together diverse communities to foster cross-disciplinary dialogue

- Want to listen to and understand different perspectives
- Intentionally **broad scope** in terms of **technologies** and **fields**

- Develop a joint understanding over the **next year** of where we want to go
- Build an **open**, **exploratory community**

- **Your contributions matter**

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10:55 **Wrap-up**