



# **IETF 118**

## **Deepspace side meeting**

**QUIC over TAPS API for Deep Space, TAPSCE  
And  
Careful Resume**

# Hackathon Plan

- <What problem were you working on?>
  - Tune QUIC with TAPS API for using QUIC in deep space
  - <Specific problems to solve>
    - Support extremely long delay, no ack, disruption...
- <How you planned to solve it?>
  - implement TAPS on the top of QUIC
  - Identify QUIC and DTN parameters, profiles, features missing to be added

# What got done

- <Lessons learned from this hackathon>
  - TAPS and QUIC implementations over python asyncio might be assembled
    - <https://github.com/aiortc/aioquic>
    - <https://github.com/fg-inet/python-asyncio-taps/tree>
  - Max started to merge python-asyncio-taps and aioquic
  - [careful-resume](#) was implemented on Careful Resume table
  - [bdp frame](#) might be implemented later

# What is planed

- interop with Christian [Quic to Mars](#) implementation
- interop with QUIC implementations supporting Careful Resume
- get feedback from DTN [Bundle Protocol Implementations](#) to map parts of DTN using TAPS specifications
  - Early inputs <https://ipnsig-pwg.github.io/>
- Continue the discussion on [bdp frame](#)

# Wrap Up

Team members:

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Special thanks to Gorrry and Ana from Careful Resume Table, and the visitors from TAPS

# Careful Resume

draft-ietf-tsvwg-careful-resume

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Emile Stephan (Orange)  
Gorry Fairhurst (University of Aberdeen)  
Christian Huitema (Private Octopus Inc.)

# Careful Resume

\* From TSVWG WG, IETF-118, Prague, Nov 2023 slides

- Key mechanisms at start-up
  - Slow-start limits capacity use to prevent overshooting but impacts latency and other flows.
  - Hystart++ prevents overshooting the bottleneck and congestion, preserving shared capacity.
  - CR speeds up transfers with high data volume over large path capacity compared to large IW.
- Main Features
  - Reuses past parameters for faster connection restart.
  - Sender sets requirements for capacity utilisation.
  - Ensures safe response when capacity/RTT changes.