



COIN

Computing in the Network

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(J/E/M)

IETF 109 – Virtual

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Connectivity Hints

- **Documentation and participation**
 - Meeting material: <https://datatracker.ietf.org/rg/coinrg/meetings/>
 - Etherpad: <https://codimd.ietf.org/notes-ietf-108-coinrg>
 - Jabber: <xmpp:coinrg@jabber.ietf.org?join>
- Please remember that **all sessions are being recorded**
- Please also:
 - Ensure your **video is off and wear headphones if you can**
 - **Keep yourself muted** unless you are speaking
 - We will monitor both the **chat and the queue for questions**

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>

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- 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 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](#)

COIN

- Our goal:
 - Foster research in computing in the network to improve performance for networks, applications, users*
- Scope:
 - Architectures
 - Protocols
 - Real-world use cases, applications, work in progress
- Focus:
 - The core-to-edge compute continuum

Agenda (1)

- Chairs update -- 10 min
 - 1) Reminder of IPR policies
 - 2) Current drafts
 - 3) Milestones list and plans for updating / achieving
- Presentations
 - **"IETF-LISP Virtual Routing for AI at the Edge" -- 10 mins**
datatracker.ietf.org/doc/draft-barkai-lisp-nexagon
(Sharon Barkai)
 - **"Directions for Computing in the Network" -- 15 mins**
<https://datatracker.ietf.org/doc/draft-kutscher-coinrg-dir/>
(Dirk Kutscher, University of Applied Sciences Emden, Germany; Joerg Ott, TUM, Germany)
 - **Data Discovery and discussion -- 10 mins**
"Edge Data Discovery"
datatracker.ietf.org/doc/draft-mcbride-edge-data-discovery-overview
 - **Current Work on the Use Cases -- 15 mins**
tools.ietf.org/html/draft-kunze-coin-industrial-use-cases-02
(Ike Kunze, Aachen University, Dirk Trossen, Huawei)

Agenda (2)

- Presentations (continued)
 - **Separation of Data Path and Data Flow Sublayers in the Transport Layer -- 10 mins**
tools.ietf.org/html/draft-asai-tsvwg-transport-review-00
(H. Asai, Preferred Networks)
 - **Transport Protocol Issues of In-Network Computing Systems -- 10 mins**
tools.ietf.org/html/draft-kunze-coinrg-transport-issues
(D. Trossen, Huawei)
 - **In-Network Computing for App-Centric Micro-Services -- 10 mins**
datatracker.ietf.org/doc/draft-sarathchandra-coin-appcentres
(D. Trossen, Huawei)
 - **Enhancing Security and Privacy with In-Network Computing -- 10 mins**
datatracker.ietf.org/doc/draft-fink-coin-sec-priv
(Inna Fink, Aachen University)
 - **Piccolo Celtic Project -- 10 mins**
(Philip Eardley, BT)
- Future plans and Discussion -- 10 mins
 - 1) Research Group Items
 - 2) Interim ?
 - 3) Preparation for the next IETF meeting
 - 4) Open discussion

Drafts(1)

- Candidate RG Document
 - [draft-kunze-coin-industrial-use-cases-04](#) :Use Cases for In-Network Computing
 - [draft-kutscher-coinrg-dir-02](#) :Directions for Computing in the Network
- Drafts presented
 - [draft-kunze-coinrg-transport-issues-03](#) : Transport Protocol Issues of In-Network Computing Systems
 - [draft-fink-coin-sec-priv-01](#) : Enhancing Security and Privacy with In-Network Computing
 - [draft-mcbride-edge-data-discovery-overview-05](#) : Edge Data Discovery for COIN
 - [draft-sarathchandra-coin-appcentres-03](#) : In-Network Computing for App-Centric Micro-Services

Drafts(2)

- Draft not presented
 - [draft-defoy-coinrg-mobile-discovery-00](#): **Impact of Mobility on Discovery in COIN**
 - [draft-fu-coinrg-joint-optimization-req-00](#) : **Requirements of computing and network joint optimization and scheduling**
 - [draft-hsingh-coinrg-p4use-00](#) : **Use of P4 Programs in IETF Specifications**
 - [draft-li-coin-oam-framework-00](#) : **COIN Operation, Administration and Maintenance Framework**
 - [draft-liu-coin-differential-reservation-01](#) : **Differential Computing Resource Reservation**
 - [draft-liu-coinrg-requirement-03](#) : **Requirement of Computing in network**
 - [draft-mcbride-data-discovery-problem-statement-00](#) : **Data Discovery Problem Statement**
 - draft-montpetit-coin-xr-03: **In Network Computing Enablers for Extended Reality**
 - draft-he-coin-managed-networks-01 : **In-Network Computing for Managed Networks: Use Cases and Research Challenges**

Milestones

- Current Milestones
 - Dec 2019 Capture the SoTA of the COIN landscape - partly achieved
 - Dec 2019 Articulate COIN challenges - partly achieved
 - Apr 2020 Discuss/catalog COIN requirements and implications for network elements (including network services, network SW stacks, network HW design, etc.) – to do
 - Apr 2020 Target COIN case studies, from architecture, implementation and use case standpoints - partly achieved
 - Apr 2020 Identify COIN network-related eco-system dependencies - partly achieved
 - Nov 2020 Work toward defining a COIN scope appropriate for the IRTF, within which new architectures, mechanisms and protocols can be proposed – to do
- Updates? Suggestions for new milestones? Milestones that should be changed/deleted?

Presentations

***Advice to presenters:
Link your work to the charter and to the
cloud-to-edge continuum***

Future Plans

- **Interim Meeting in early February?**

- *Document adoption/management???*
- *New research topics*
- *Invited talks*

- **IETF 110**

- *Meeting likely virtual*
- *Experience from last week*
- *Potential goals*
 - *Tools development ???*
 - *Architecture evolution and multi-stream processing project???*