

COIN

Computing in the Network

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(J/E/M)

IETF 115 - London

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Note Well

This is a reminder of IETF policies in effect on various topics such as patents or code of conduct. It is only meant to point you in the right direction. Exceptions may apply. The IETF's patent policy and the definition of an IETF "contribution" and "participation" are set forth in BCP 79; please read it carefully.

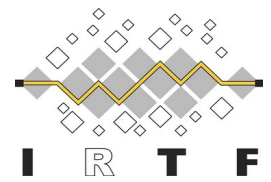
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Note Well - Policies
<https://ietf.org/policies>

Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

- BCP 9 (Internet Standards Process)
- BCP 25 (Working Group processes)
- BCP 25 (Anti-Harassment Procedures)
- BCP 54 (Code of Conduct)
- BCP 78 (Copyright)
- BCP 79 (Patents, Participation)
- <https://www.ietf.org/privacy-policy/>(Privacy Policy)

This session is being recorded



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](#)

Agenda

- *Chair Update (J/E/M) - 5 mins*
- *Papers (30 mins each)*
 - Lessons in practical in-network classification -- Changgang Zheng, Oxford
 - Paper: <https://arxiv.org/pdf/2205.08243.pdf>
 - Evolving the end-to-end Transport Layer in times of emerging computing in the network (COIN) – Ike Kunze, RWTH Aachen University
 - Paper: <https://www.comsys.rwth-aachen.de/fileadmin/papers/2022/2022-kunze-coin-transport.pdf>
 - Impact of DLT on provider networks – David Guzman, TU Munich
 - Paper: to appear in the upcoming ICBC2022
 - Draft: <https://datatracker.ietf.org/doc/draft-Trossen-rtgwg-impact-of-dlts/>
 - IIC Whitepaper: <https://www.iiconsortium.org/pdf/2022-01-10-Impact-of-Distributed-Ledgers-on-Provider-Networks.pdf>
- *New Draft (10 mins)*
 - Architecture of secure elements in the Internet whose resources are identified by URIs – Pascal Urien, Telecom Paris
 - Draft: <https://datatracker.ietf.org/doc/draft-li-coinrg-compute-resource-scheduling>
- *Chair and RG topics (15 mins)*

Administrivia

- Meetecho:
 - <https://meetings.conf.meetecho.com/interim/?short=5203a6a0-2a4b-4983-b351-791cb6c4d8f0>
 - Automatically-generated Bluesheets
 - Integrated Minutes:
 - <https://notes.ietf.org/notes-ietf-115-coinrg>
 - Integrated shared notetaking (**Please collaborate!**)
 - Integrated Chat/Jabber/IM
 - <https://zulip.ietf.org/#narrow/stream/coinrg>
 - We will monitor both the **chat and the queue for questions**
 - Default to **audio muted** and **video off**, unless you are speaking
 - **Wear headphones if you can**
- Mailing list: coin@irtf.org
 - To subscribe: <https://www.ietf.org/mailman/listinfo/Coin>
- Meeting materials:
 - <https://datatracker.ietf.org/meeting/115/session/coinrg>

COIN RG Document Status

- **RG Documents**

- [draft-irtf-coinrg-use-cases](#) : Use Cases for In-Network Computing (**expired and needs update**)
- [draft-kutscher-coinrg-dir](#): Directions for Computing in the Network (**expired and needs update**)

- **New drafts**

- [draft-li-coinrg-distributed-learning-architecture](#): Distributed Learning Architecture based on Edge-cloud Collaboration
- [draft-urine-coinrg-iose](#): Internet of Secure Elements

- **Other Documents (status updates needed from authors)**

- [draft-defoy-coinrg-p4-by-tenants-in-mobile-nw](#): Use Case for P4 Programmability by Tenants of Future Mobile Virtual Networks
- [draft-kunze-coinrg-transport-issues](#): Transport Protocol Issues of In-Network Computing Systems
- [draft-fink-coin-sec-priv](#): Enhancing Security and Privacy with In-Network Computing
- [draft-mcbride-edge-data-discovery-overview](#): Edge Data Discovery for COIN
- [draft-sarathchandra-coin-appcentres](#): In-Network Computing for App-Centric Micro-Services
- [draft-hsingh-coinrg-p4use](#): Use of P4 Programs in IETF Specifications
- [draft-hsingh-coinrg-reqs-p4com](#) - Requirements for P4 Program Splitting for Heterogeneous Network Node
- [draft-defoy-coinrg-mobile-discovery](#): Impact of Mobility on Discovery in COIN
- [draft-fu-coinrg-joint-optimization-reg](#) : Requirements of computing and network joint optimization and scheduling
- [draft-li-coin-oam-framework](#): COIN Operation, Administration and Maintenance Framework
- [draft-liu-coin-differential-reservation](#) : Differential Computing Resource Reservation
- [draft-liu-coinrg-requirement](#): Requirement of Computing in network
- [draft-mcbride-data-discovery-problem-statement](#): Data Discovery Problem Statement
- [draft-mcbride-edge-data-discovery-overview](#): Edge Data Discovery for COIN

Presentations

RG Topics

- Next Meeting
 - Interim?
 - IETF 116 - Yokohama - Hybrid – **Mar 25-31, 2023**
- Queue up discussion – retrospective / directions
 - Chairs' reflections after 3 years
- 5G NetApp Lab – proposal solicitation [e-mail Oct 25]
 - <https://community.5gasp.eu/netapplab>
- Hotnets'22 next week!
 - <https://conferences.sigcomm.org/hotnets/2022/accepted.html>

Thank You!

5G NetApp Lab

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101016448

Milestones as of Sept. 2022

Date	Milestone
Dec 2019 ✓	Capture the SoTA of the COIN landscape - <u>partly achieved</u>
Sep 2020 ✓	Articulate COIN challenges - <u>partly achieved</u>
Apr 2020	Discuss/catalog COIN requirements and implications for network elements (including network services, network SW stacks, network HW design, etc.) - <u>on going activity</u>
Apr 2020 ✓	Target COIN case studies, from architecture, implementation and use case standpoints - <u>drafts exist - on going activity</u>
Apr 2020 ✓	Apr 2020 Identify COIN network-related eco-system dependencies - <u>partly achieved</u>
Nov 2020	Work toward defining a COIN scope appropriate for the IRTF, within which new research, architectures, mechanisms and protocols can be proposed - <u>to do</u>
Nov 2021	LATE Milestone review - TBD