

COIN

Computing in the Network

Jeffrey He, Eve M. Schooler, Marie-José Montpetit
(J/E/M)

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Note Well

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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:

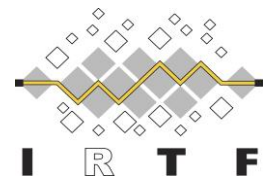
- [BCP 9](#) (Internet Standards Process)
- [BCP 25](#) (Working Group processes)
- [BCP 25](#) (Anti-Harassment Procedures)
- [BCP 54](#) (Code of Conduct)
- [BCP 78](#) (Copyright)
- [BCP 79](#) (Patents, Participation)
- <https://www.ietf.org/privacy-policy/> (Privacy Policy)

This session is being recorded

Administrivia



- Meetecho:
 - <https://meetings.conf.meetecho.com/ietf117/?session=30628>
 - Automatic Bluesheets
 - Integrated Jabber/IM/Chat
 - We will monitor both the **chat and the queue for questions**
 - In-person participants:
 - Use Onsite tool to sign into the session and to join the mic queue
 - Remote participants:
 - Use Full tool
 - Default to **audio muted** and **video off**, unless you are speaking
 - **Headphones strongly recommended**
- Live Minutes/Shared Notetaking:
 - <https://notes.ietf.org/notes-ietf-117-coinrg>
- Mailing list: coin@irtf.org
 - To subscribe: <https://www.ietf.org/mailman/listinfo/Coin>
- Meeting materials:
 - <https://datatracker.ietf.org/meeting/117/session/coinrg>



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

1. **Chairs Updates (J/E/M) (10 mins)**
2. **Revisit of COIN with advances of the last 4 years** - Marie-José Montpetit (30 mins)
3. **Research Topics (20 mins each)**
 - 3.1) **Oakestra: A lightweight Hierarchical Orchestration Framework for Edge Computing** – Nitinder Mohan (Technical University of Munich (TUM))
Paper: <https://www.usenix.org/conference/atc23/presentation/bartolomeo>
 - 3.2) **Attached Share-Nothing EdgeAI using SDN Pipelines: Explained by mobility geolocation network functions** – Sharon Barkai
Paper: Shared with mailing list (July 10th, 2023)
4. **RG Drafts (10 mins)**
 - 4.1) **Use case analysis** - Jungha Hong (ETRI)
Draft: <https://datatracker.ietf.org/doc/draft-irtf-coinrg-use-case-analysis/>
 - 4.2) **Terminology** - Jungha Hong (ETRI)
Draft: <https://datatracker.ietf.org/doc/draft-irtf-coinrg-coin-terminology/>
5. **Individual Drafts (10 mins each)**
 - 5.1) **Evolution of Cooperating Layered Architecture for SDN (CLAS) for Compute and Data Awareness** – Luis M. Contreras (Telefonica)
Draft: <https://datatracker.ietf.org/doc/draft-contreras-coinrg-clas-evolution/>
 - 5.2) **COIN Security** – Pascal Urien (Telecom Paris)
Draft: <https://datatracker.ietf.org/doc/draft-urien-coin-sec-01>
6. **RG topics and directions (10 mins)**

COIN Document Status (1 of 2)

- **RG Documents**

- [draft-irtf-coinrg-terminology](#) : Terminology for COIN
- [draft-irtf-coinrg-use-case-analysis](#): Use Case Analysis
- [draft-irtf-coinrg-use-cases](#) : Use Cases for In-Network Computing
- [draft-kutscher-coinrg-dir](#): Directions for Computing in the Network (expired, needs update)

- **Related Internet-Drafts**

- [draft-contreras-coinrg-clas-evolution](#): An Evolution of Cooperating Layered Architecture for SDN (CLAS) for Compute and Data Awareness
- [draft-urien-coin-sec](#): COIN Security
- [draft-urien-coinrg-iose](#): Internet of Secure Elements
- [draft-yao-coinrg-generic-framework](#): A Generic COIN Framework in controlled environments
- [draft-du-coinrg-coordination-on-data-plane](#): Data-driven Coordination of Network Devices in COIN
- [draft-li-coinrg-distributed-learning-architecture](#): Distributed Learning Architecture based on Edge-cloud Collaboration

COIN Document Status (2 of 2)

- **Other Documents (update status 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-req](#) : 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 and Discussion

Announcements & Future Meetings

- Meetings

- Interim ?

- **IETF 118 Prague (Nov 4-10)**

Schedule orthogonal to: 9th IEEE Conference on NFV-SDN, Dresden, Germany (Nov 7-9)

<https://nfvsdn2023.ieee-nfvsdn.org/>

Backup

Milestones @ IETF-114

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 2022	Milestone review for next Interim(proposed)