Native Deployment of ICN in 4G/LTE Mobile Networks

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https://www.ietf.org/id/draft-irtf-icnrg-icn-lte-4g-01.txt
Introduction

• A holistic view of native ICN deployment in 4G and LTE mobile network
• Describes the use cases of how ICN can be deployed natively in:
  • Control plane
  • User plane (data transport)
  • User equipment (UE) using dual stack (IP/ICN) and native ICN deployment models
  • Mobile edge (MEC) network e.g. eNodeB
  • Mobile core network (EPC) gateways e.g. SGW, PGW
Summary of Draft Updates

- The draft has now become a WG draft
  - Thanks to the chairs, all reviewers and ICN community at large for their votes
- Implemented updates
  - Incorporated the review comments received from the reviewers
  - Further QoS problem definitions and clarifications
  - Further CUPS implementation discussion
  - Lab setup description
  - Paraphrasing of some of the text and updated/added new references
Draft Changes

• QoS
  • Comment on the research done so far
  • Necessity to handle QoS in data packets

• CUPS
  • Implication on Publisher placement
  • Implication on UPF capabilities
  • Implication on Interworking gateway

• Lab
  • Setup in progress
  • Testbed diagram
Future Plans

- The draft proposals are currently being implemented and tested in the lab
  - Future draft versions shall have updates based on the results from the lab trials

- Areas for future draft updates and/or new experimental drafts
  - Further investigate the impact of CUPS and traffic offloading at the edge to optimize the user plane traffic path using ICN (page 13)
  - Investigate the realization of TCL (Transport Convergence Layer) (page 14)
  - Impact analysis of ICN on mobility management messages structures and flows (page 17)
  - Investigate how ICN-IP interworking gateway function would perform the conversion between ICN and IP primitives for data retrieval (page 25)
  - Investigate lawful interception, billing/mediation, network slicing, and provisioning APIs requirements (page 26)
Thank you!

• For your continued support and valuable feedback
• We look forward to further comments and suggestions for improvements