Native Deployment of ICN in 4G/LTE Mobile Networks

IETF-103 @ Bangkok, Thailand.  
Sunday, November 4, 2018

Prakash Suthar, Milan Stolic, Anil Jangam (Cisco Systems)  
Dirk Trossen (InterDigital Inc)  
Ravishankar Ravindran (Huawei Technologies)

https://www.ietf.org/id/draft-irtf-icnrg-icn-lte-4g-02.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

• Incorporated the review comments received from the reviewers
  • Major changes
    • Updates on test procedure
      • In addition to testing using lab setup, use of simulation modules
    • Simulation of UE/eNodeB use cases (section 4.4 & 4.5) can be done using NS3 LTE model
    • Simulate of EPC functions use cases (section 4.6) can be done using NS3 EPC model
  • Minor changes
    • Reorganized normative and informative references
    • Corrected IEEE/ACM references formatting
    • Renumbering of section/subsection, figures and cross-references
Future Plans

• ICN QoS
  • Implementation of QoS in Information-Centric Networks (outside the scope of this draft)
  • Revised proposal is being reviewed

• Potential other work items
  • 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 call for adoption of this draft as informational RFC