Enabling ICN in 3GPP's 5GC Architecture

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Draft Objectives

- **Explore opportunities of deploying ICN in 3GPP's 5GC architecture**
- **Motivations include:**
  - Flatter Architecture, related work going on in DMM too
  - Benefits from ICN enabled receiver-oriented transport, Storage/Caching, Seamless Mobility, network integrated edge computing
  - New ways to handle challenges from eMBB, MMTC and URLLC classes of application
- **Propose architectural control and user functions to enable ICN formally in 5GC**
  - Considering Network Slicing, NFV/SDN principles
- **Using the non-IP PDU for native deployment of ICN in 5G and open issues related to using this feature**
- **Use case Scenarios**
  - Smart Mobility
  - Multi-viewer VR
  - Seamless Mobility
  - Underlay for Control function

[1]Ravi Ravindran, Prakash Suthar et al, "*Deploying ICN in 3GPP's 5G NextGen Core Architecture*", IEEE, 5G World Forum, July, 2018

Draft Outline

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Draft Updates

- New co-author Greg White
- Editorial corrections
- Section 5.2.2 : ICN over non-IP PDU
  - IPoC considerations towards non-IP PDU deployments
    - IPoC proposal follows from draft-white-icnrg-ipoc-01
    - In addition to native ICN applications, IP services can benefit from ICN too.
- Section 6: 5G/ICN Deployment Scenarios
  - ICN operation in Cloud-Native Operator Environment
  - Discusses a use case of ICN as an underlay to support control functions in 5G
    - This is in the context of IP-over-ICN architecture proposal based on IP-over-ICN architecture (Dirk Trossen et al.)

Next Steps

- A good document to capture ICN in 5GC enablement related work , flexible to adapt to other contributions related to :
  - Architecture
  - Routing, Mobility, Caching, Computing etc
  - Policy, Charging, Legal Intercepts, QoS etc.
  - Use case scenarios

- Would like to see the interest in the group to take it up as a RG item
  - Could make good case for ICN in Rel 16 and beyond.