Mobile Communication Congestion Exposure Scenario

http://datatracker.ietf.org/doc/draft-kutscher-conex-mobile/

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CONEX & Mobile Communications

- CONEX WG: Congestion exposure in a variety of use cases

- WG to focus on use case where end hosts and network containing destination host are CONEX-enabled
  - Other networks need not be

- Mobile communication networks
  - Well-defined roles for hosts, nodes, gateways
  - Well-defined network boundaries
  - Limited resources (wireless), fine-granular policing and accounting

Congestion in Mobile Communications

- Moving from telephony to data networks
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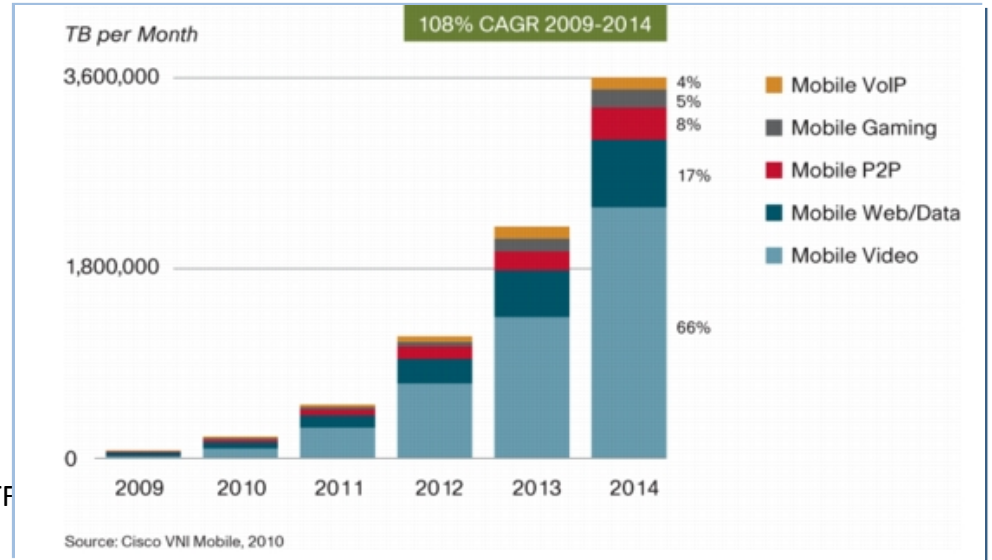
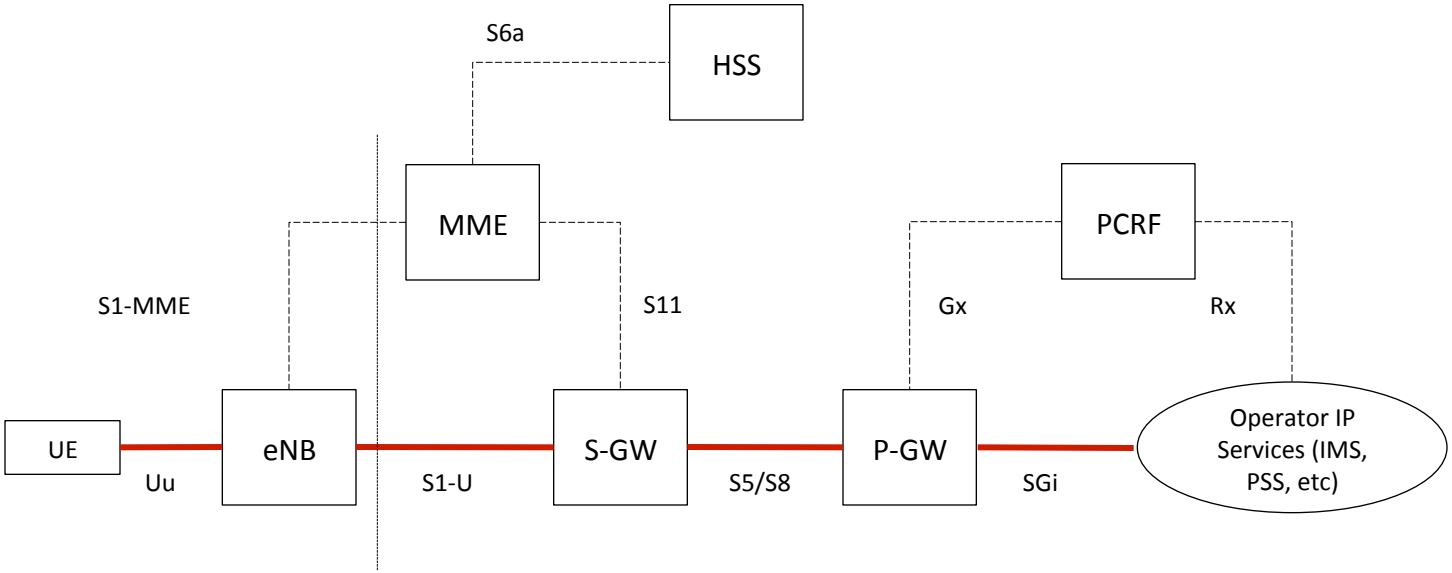
- Inconvenient news



Shared Resources in LTE



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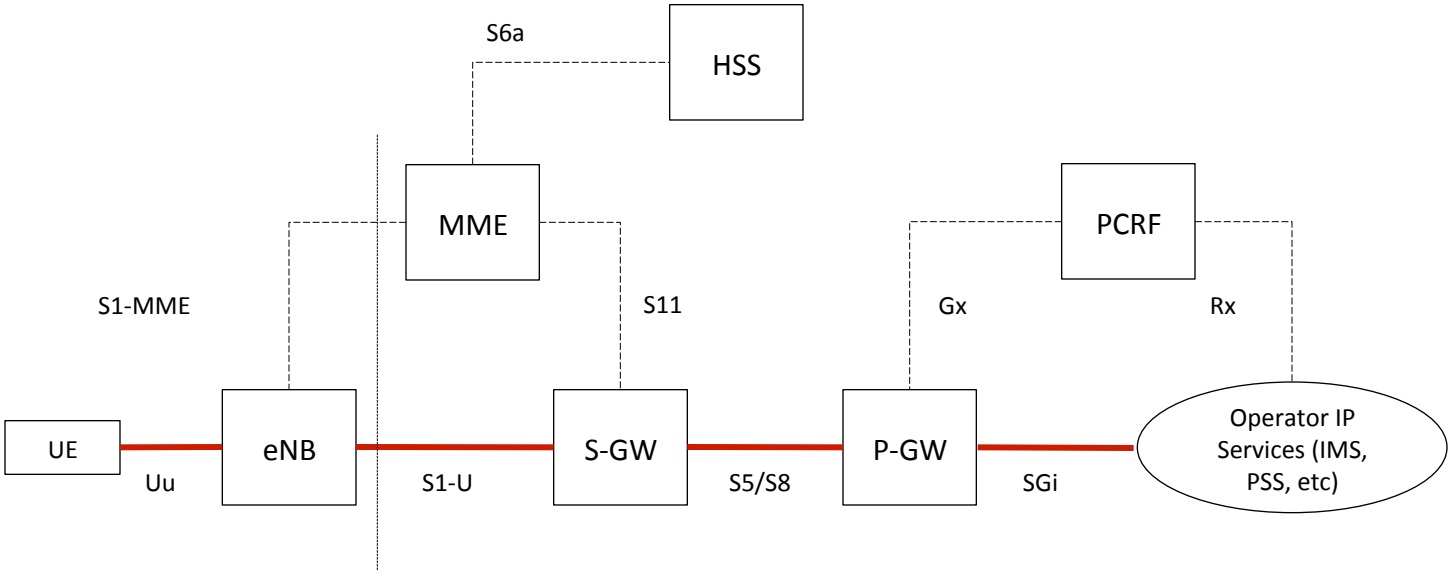
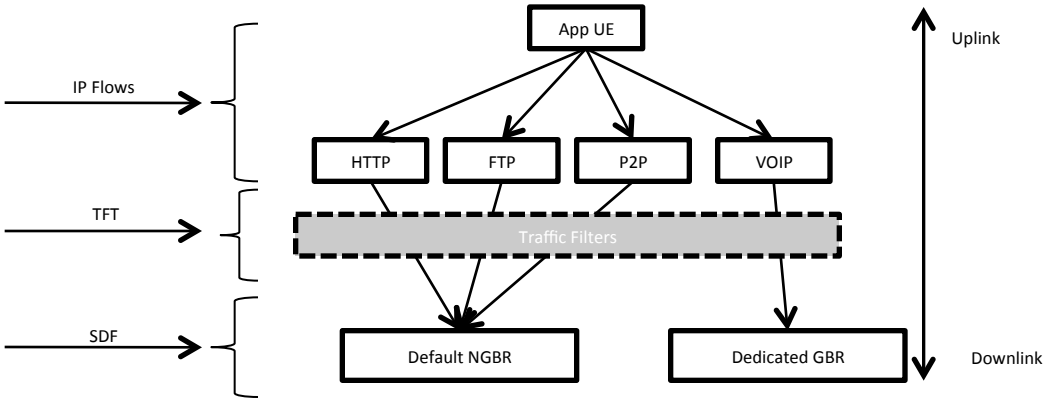


EPS Bearers:
QoS approach
for managing them



More Resource Management

- Selected Traffic Offload
  - Mitigate congestion in core network by avoiding tunneling best-effort traffic to gateways, home networks etc.

- 3GPP chartered to add DPI to policy framework
  - In fact already deployed in many networks

Assumptions for Our Work

- It‘s really about capacity sharing
  - Static differentiation between „best-effort“ and „important“ traffic not useful for that: the Internet is best-effort
  - Need reasonable resource sharing and acceptable performance for all applications
  - Low delay just as important for good user experience

- Mobile communication networks are used just as any other access network
  - Bulk background traffic, interactive applications – all in parallel, on shared links
  - Dynamic incentives to back-off will be useful

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- Describing 3GPP's EPS
- Analyzing CONEX use cases in mobile communication networks
  - Traffic management
  - Incentivize scavenger transport
  - Accounting for congestion volume
  - Differential QoS
  - Partial vs. Full Deployment
- CONEX in the EPS
  - Across operator domains
  - Within one operator network
  - Implementing CONEX mechanisms and policing functions
- Implications for CONEX
  - What we should consider for the mechanism spec

Implications for CONEX

- Consider dynamic path conditions
  - Wireless access, multi-access, mobility
- Requirements for fine-granular resource control (wireless)
- Tunneling
- Traffic Offload
- Roaming
- IPv4?