

Discussion on
Next Steps in Mobile Data Plane solutions
...or: Simplification as Design Principle ?

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Use and challenges of future networks

IoT

- Small, constrained in power, massive number of devices
- Mobile vs stationary
- Reachability as optional requirement

Mobile Internet

- Smartphone, INET communication, VoIP
- Mobile content sources (large content upload)

Mission Critical

- Low latency, reliable communication
- V2X, automation/industrial
- Healthcare



Heterogeneity..

Resources...

Costs...

Network Management...

Network Slicing

Multi-Access
Edge Computing

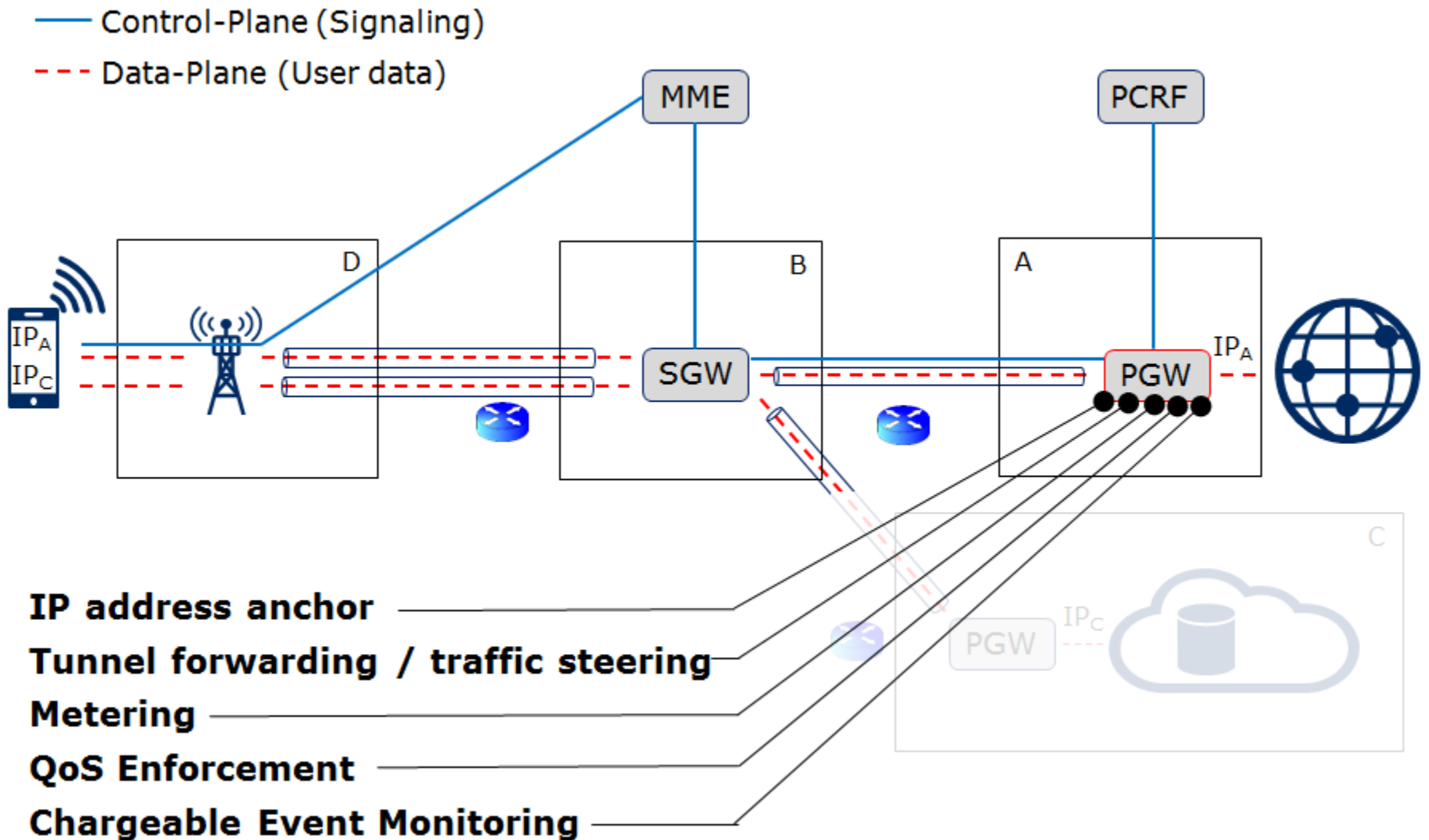


Control-/Data-Plane Separation

Tailored Services Provisioning

Data-Plane Concepts in EPS (4G)

What we have today...



What to do differently.. And why?

(input from various sources – non-exhaustive list)

- „Costs and complexity of today’s mobile data plane may not be justified for some deployments (industry verticals)“ – Simplification as design principle
- „Per-packet overhead counts“ – Reduce per-packet/tunnel overhead
- „De-couple control- from user plane“ – Independent deployment and selection
- „De-couple mobile device IP address from single session anchor“ – Enable optimized routing paths for non-routable mobile device IP address. Treat locator separate from identifier(s).
- „Access network-independent data plane“ – Unified data plane protocol
- „Greater control on data plane paths“ – Need for solution that enable data plane routing independent of mobile device IP address/prefix
- „Optimized operation between control-/data plane“ – Lower costs for data plane setup/update/teardown. Consider different expectation on IP address continuity.

Simplification has its limits

Still needed ...

- Traffic classification and QoS mapping
- Backward compatibility, e.g. with legacy radio access
- Support of non-IP data
- Means for chargeable event monitoring and reporting
- Support of dormant devices (outdated locator)
- Compatibility with IPv4 transport
- Private IP address support
- ..