End-to-end QoS architecture and testbed for B3G systems: the Everest approach

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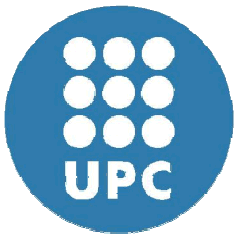
Outline

1. Introduction
2. QoS architecture
3. Testbed

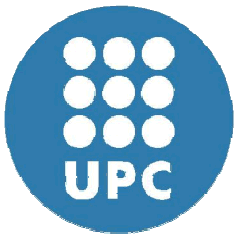
IST Everest project



Inovação

TeliaSonera

IST Everest project



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- investigate and propose RRM and CRRM mechanisms and algorithms in a heterogeneous access network

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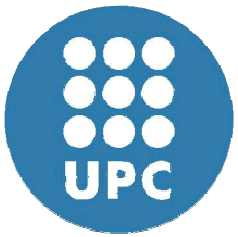

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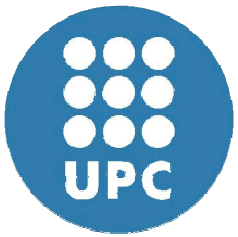

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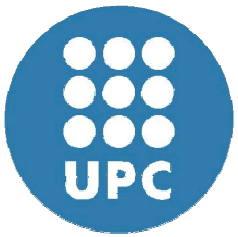

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- investigate and propose RRM and CRRM mechanisms and algorithms in a heterogeneous access network
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  - interactions between the CN QoS entities and the CRRM

E2E QoS architecture

Initial assumptions

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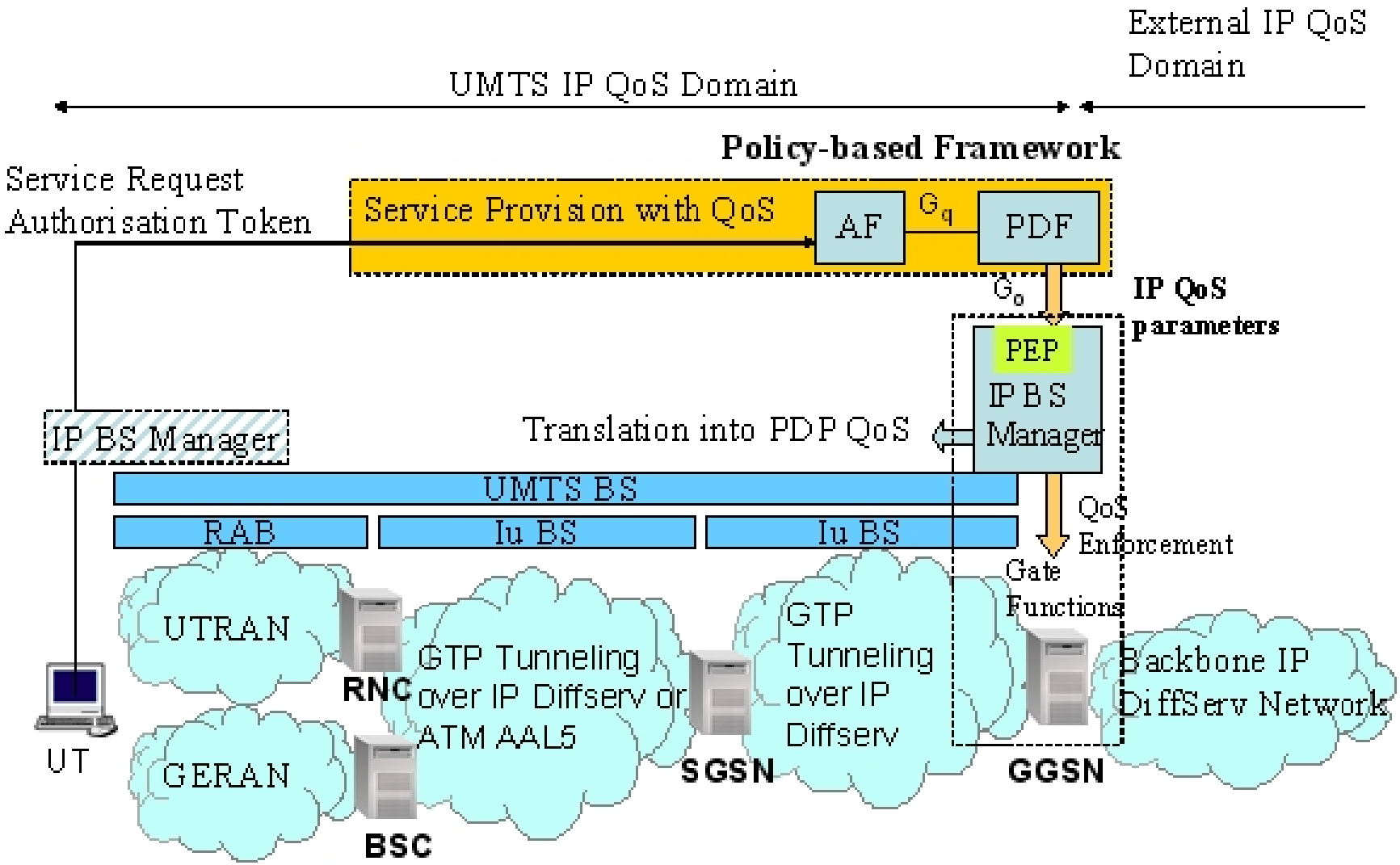
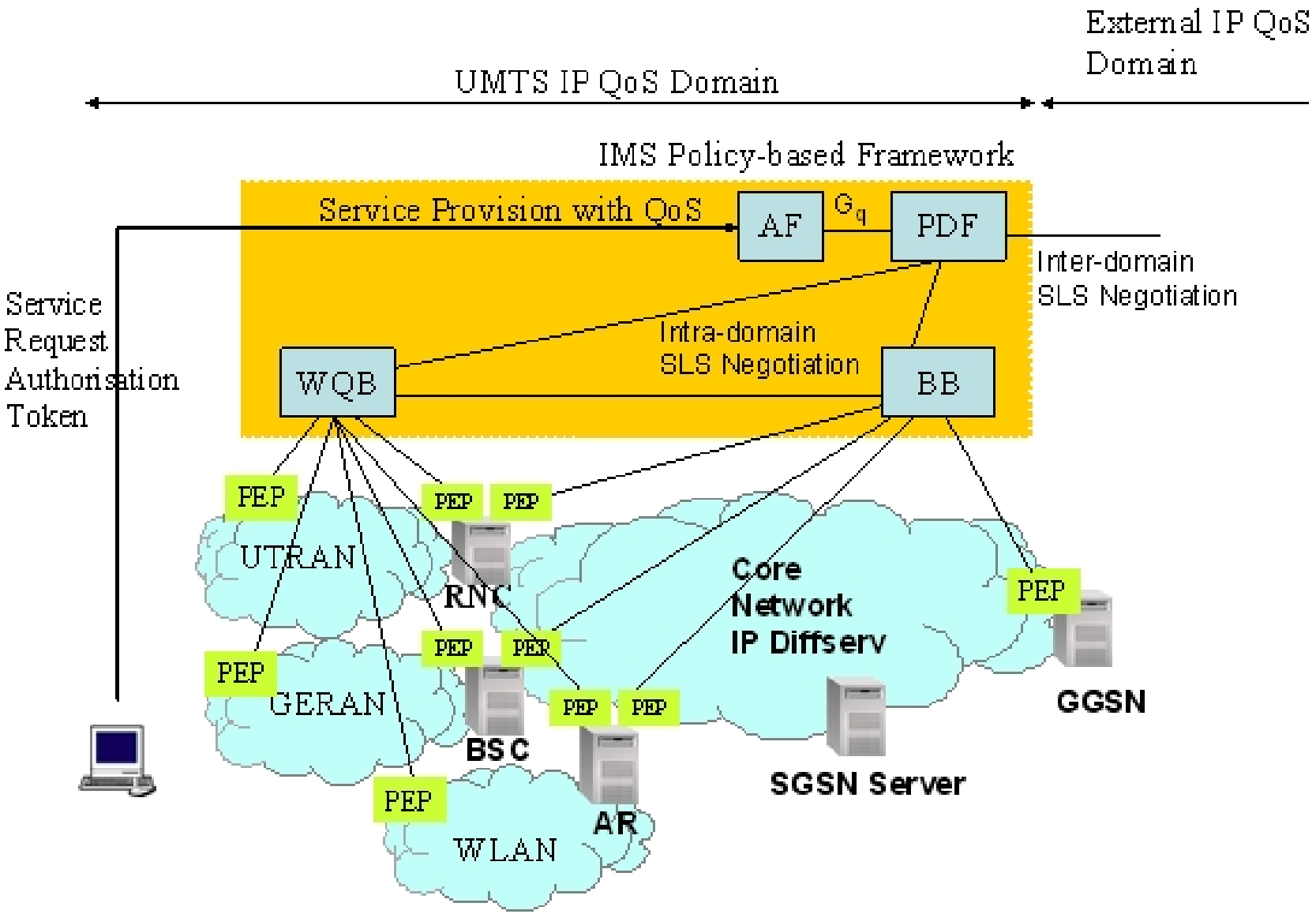
- Dynamic mapping between DiffServ and UMTS classes
- Policy-based QoS management

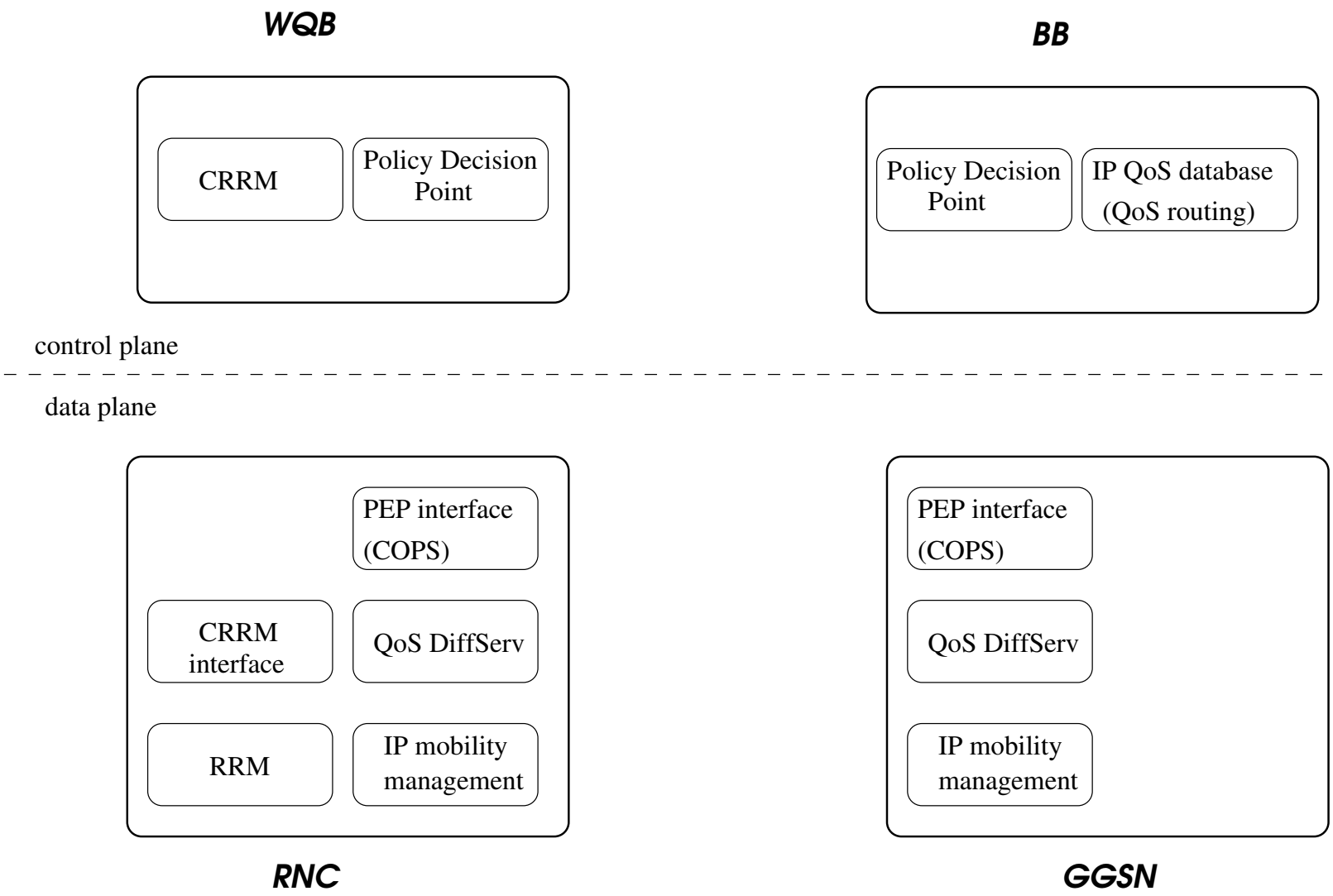
UMTS R5/R6 QoS architecture



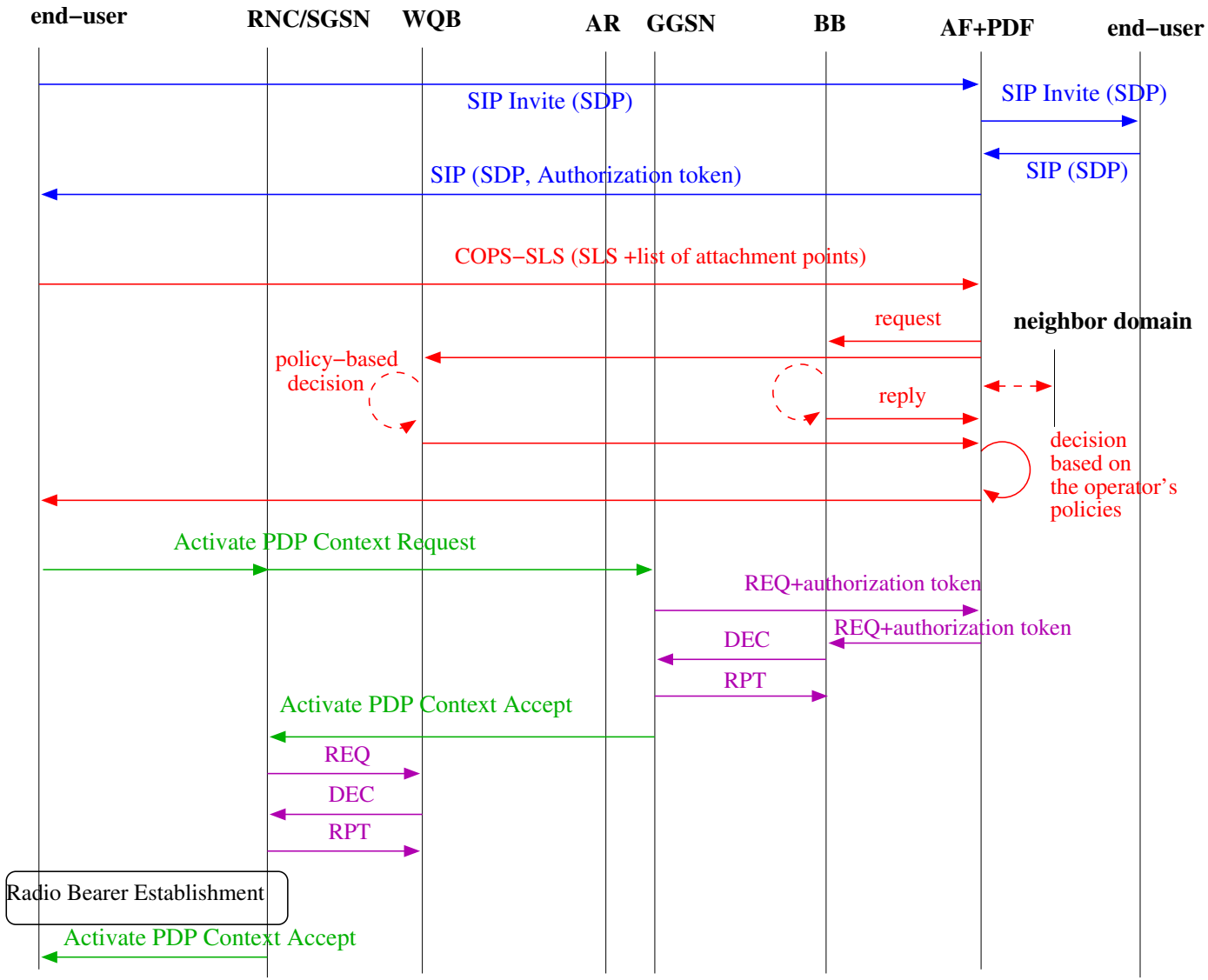
Everest QoS architecture



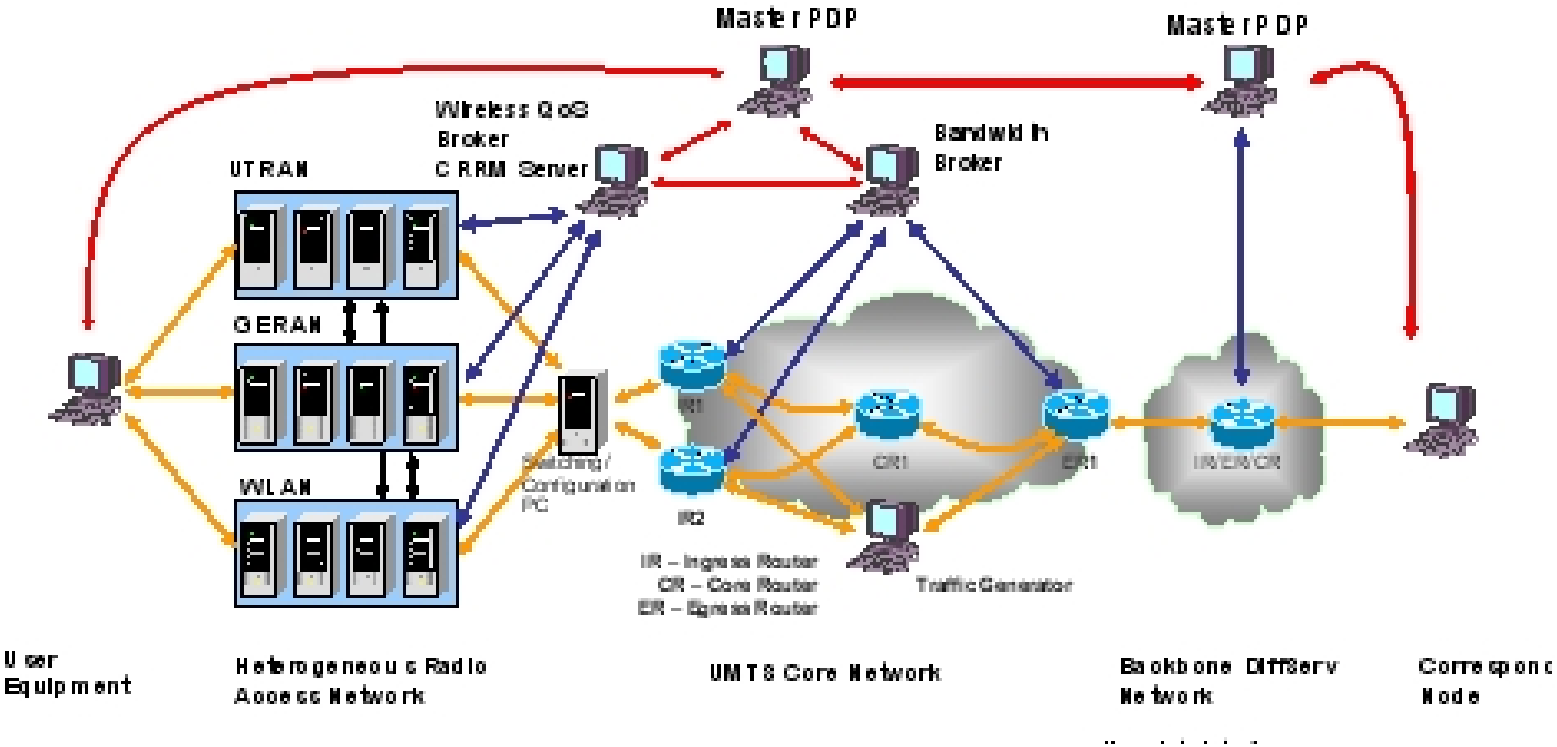
Functionalities of the entities



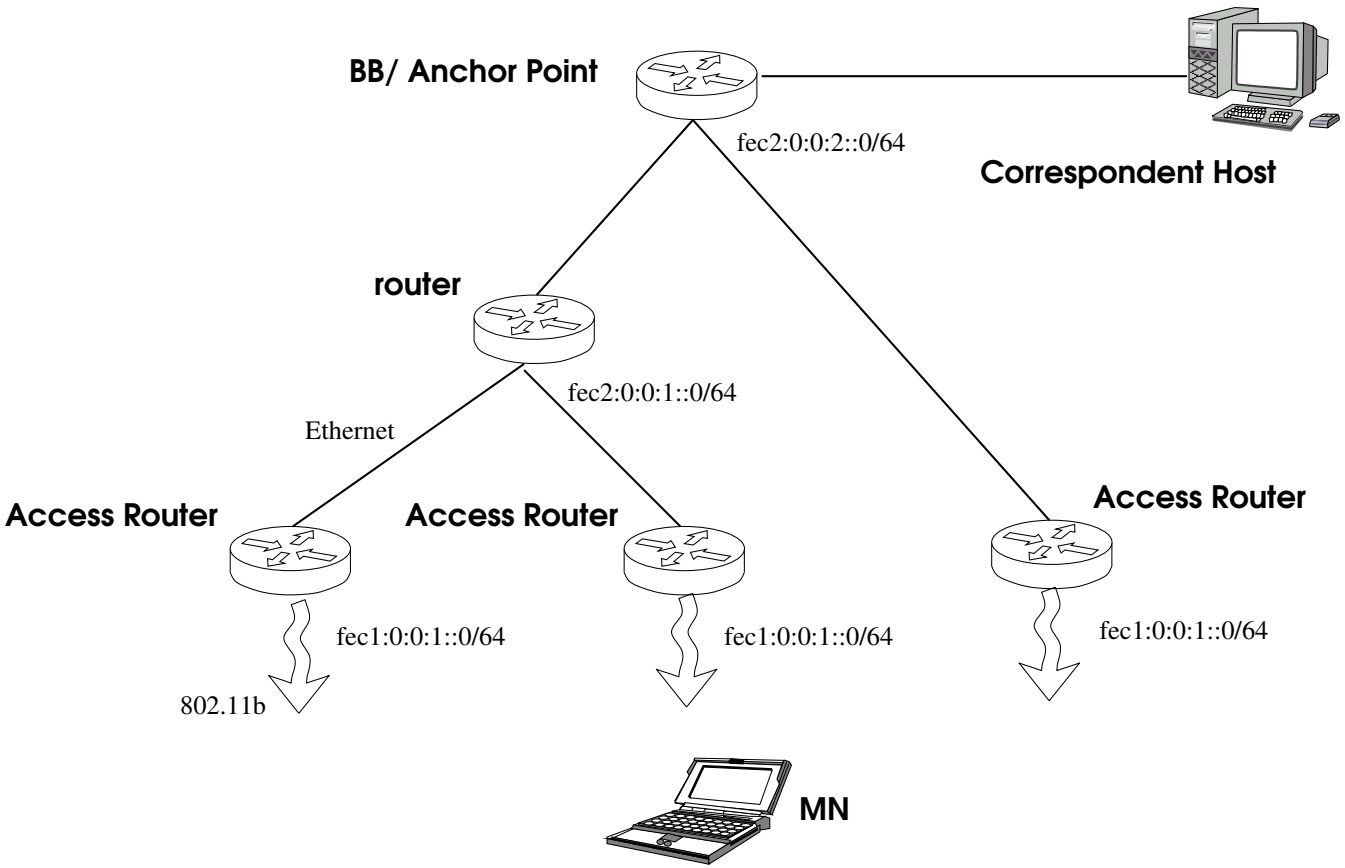
E2E signaling: session establishment



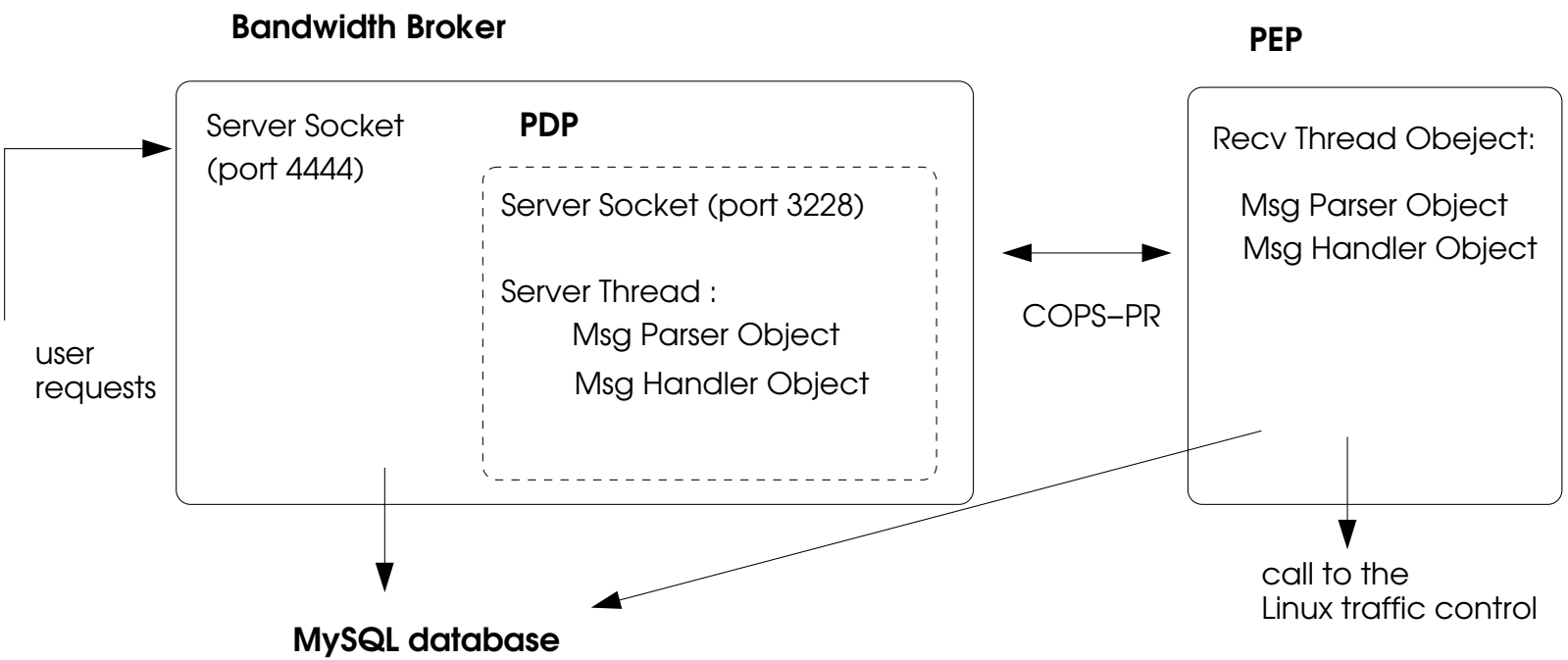
Complete testbed



IP CN testbed



IP CN testbed: bandwidth broker



IP CN testbed: BB & micromobility (BCMP)

- The BCMP protocol can be decomposed into several functions:

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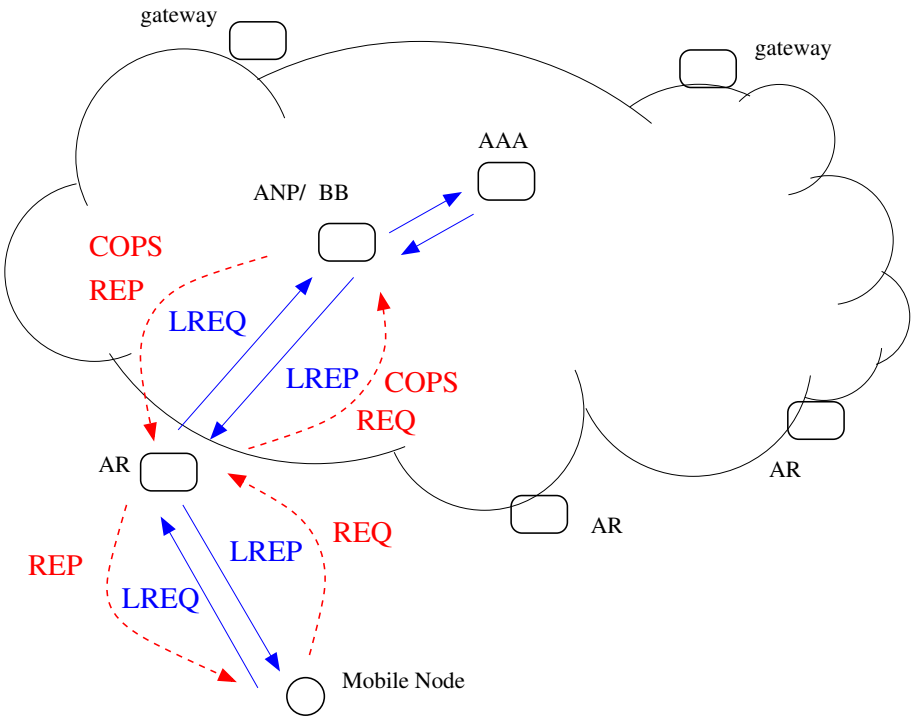
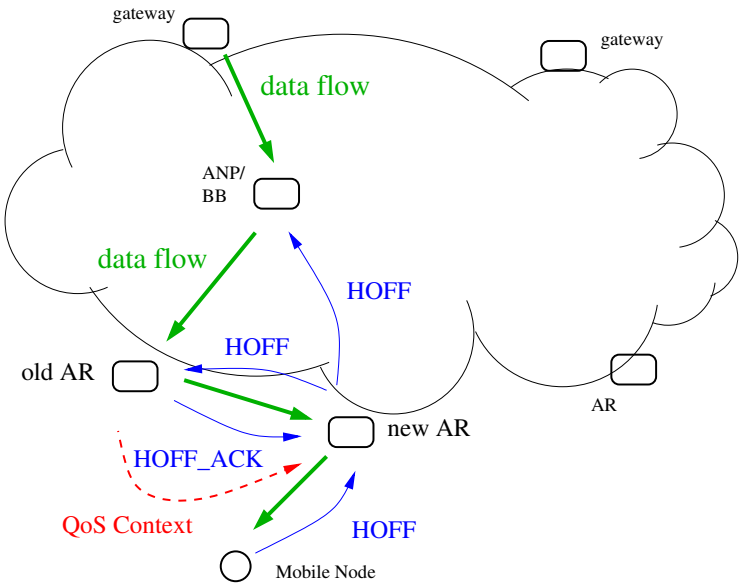
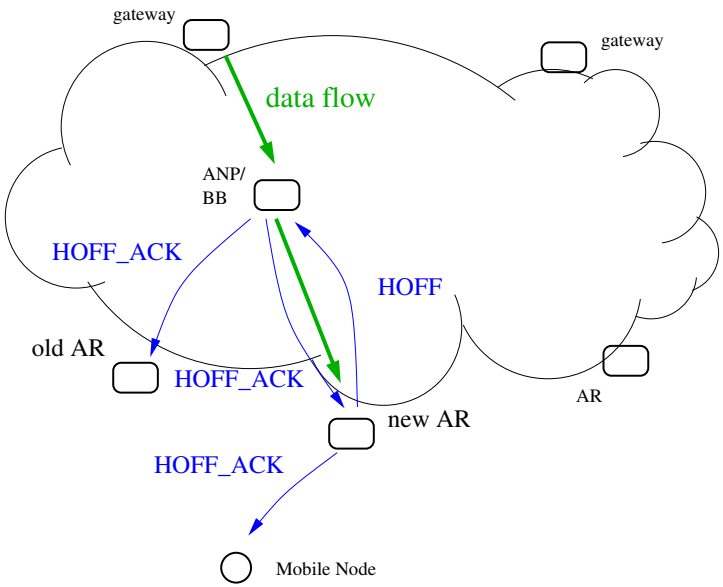


- The BCMP protocol can be decomposed into several functions:
  - initial login

IP CN testbed: BB & micromobility (BCMP)





- The BCMP protocol can be decomposed into several functions:
  - initial login
  - handover execution

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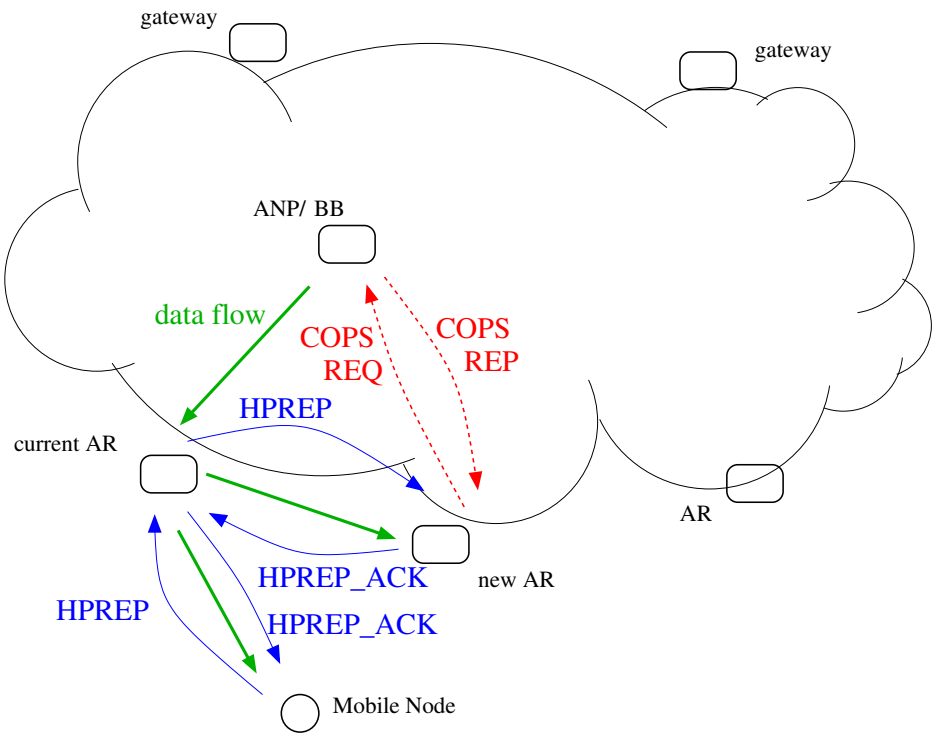

- The BCMP protocol can be decomposed into several functions:
  - initial login
  - handover execution
  - handover preparation (optional)

Summary

- End-to-end QoS architecture extending 3GPP policy-based QoS framework
- Complete testbed: *heterogeneous RANs emulator + IP CN testbed*
  - IP CN: DiffServ + Bandwidth Broker + micromobility (BCMP)

- On-going work:
  - integration of the RANs emulator and the IP CN
  - future tests:
    - impact of RRM on e2e session
    - IP handover delay
    - mapping of QoS classes (radio/DiffServ)