

ScaleNet – Converged Networks of the Future

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25th Jan. 2007, ITG Workshop on FMC

Agenda.

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- Introduction
 - Motivation
 - Challenges and Opportunities
 - ScaleNet - Towards a converged network architecture
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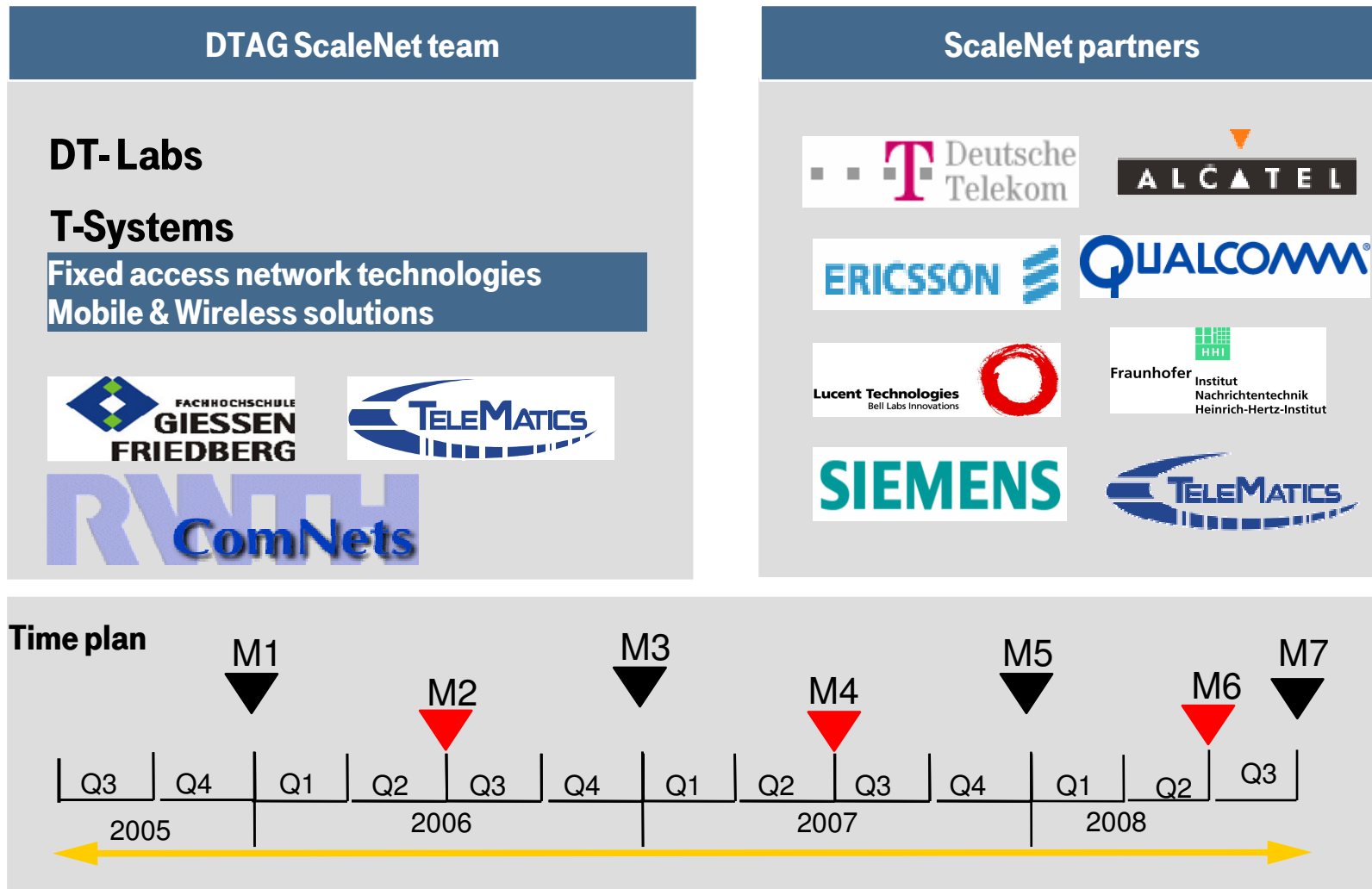
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Project organisation.

ScaleNet – BMBF funded research project.

ScaleNet



Definition.

Common understanding of FMC in ScaleNet.

Service convergence

- Same services are offered in wireline and wireless/mobile networks.

Network convergence

- Same infrastructure is used for wireline and wireless/mobile services.

Device convergence

- One device for access to services via different network technologies.

Commercial convergence

- The marketing and administration personnel of both the fixed and mobile departments are pooled together.

ScaleNet
focus

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Motivation.

Operator's perspective on FMC.

- **Cost reduction (CAPEX and OPEX)**
 - Common network infrastructure (aggregation and core networks) and control functions (e.g. QoS, Mobility, AAA, ...)

- **Attractive new services and increasing usability for customers**
 - bundle services and subscriptions to simplify the service delivery
 - Always-best-connected

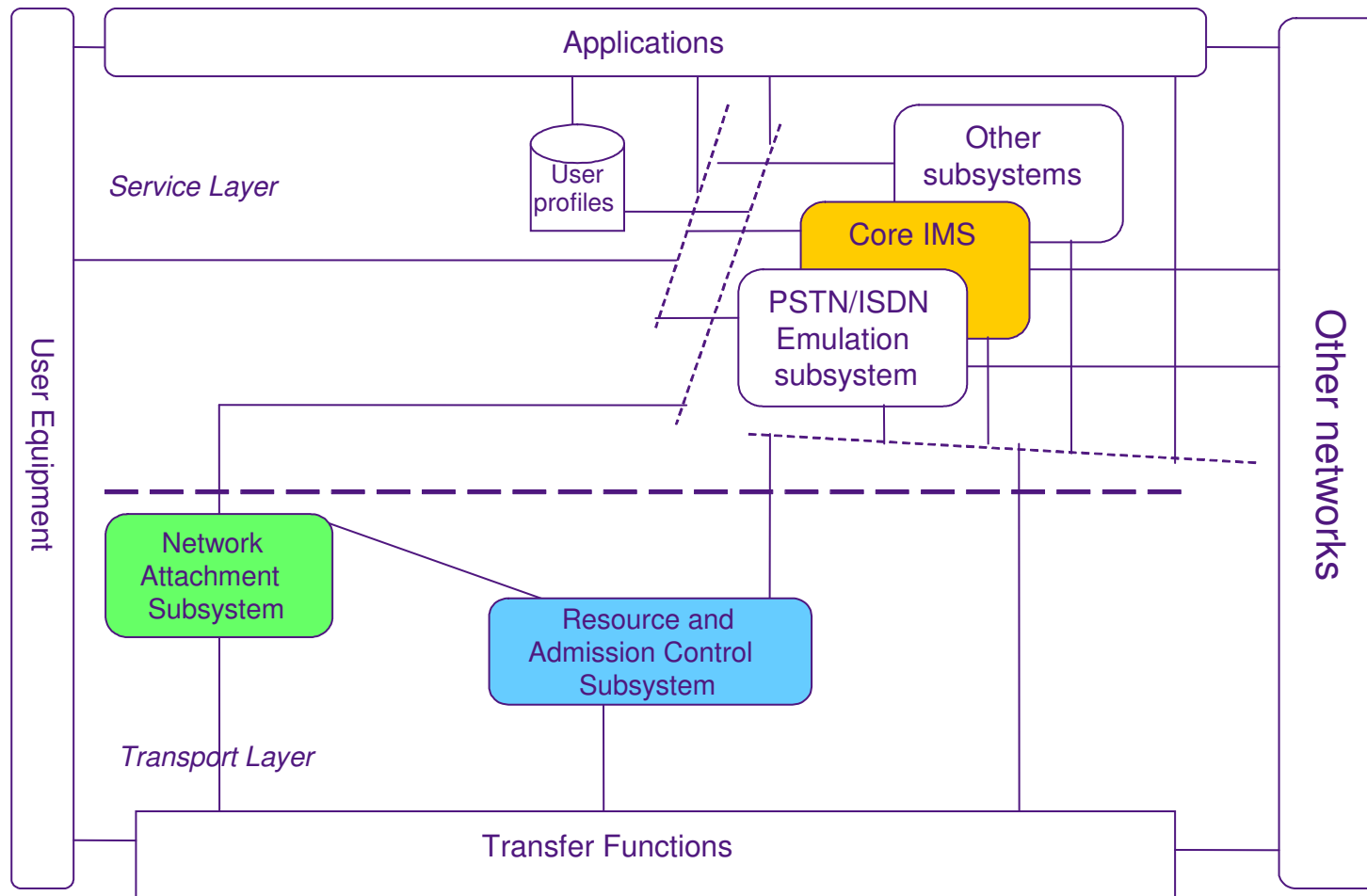
- **Future proof network evolution**
 - Simple, scalable, efficient network architecture
 - Meet the ever-increasing demand of bandwidth in mobile communications.

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ETSI TISPAN NGN Functional Architecture.

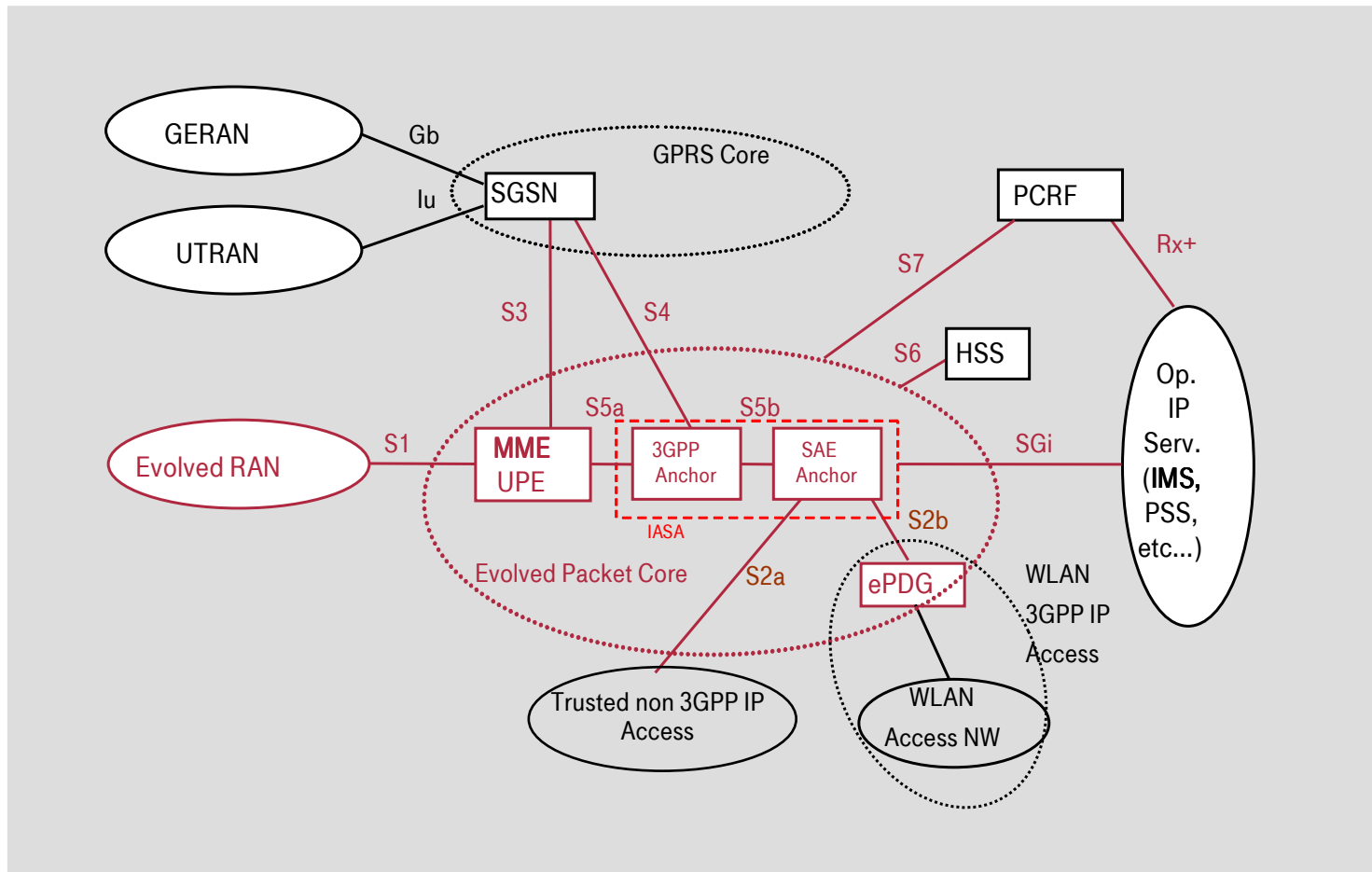
3GPP IMS Core is used in NGN.



Reference: ETSI ES 282007, TISPAN, IMS, Functional architecture

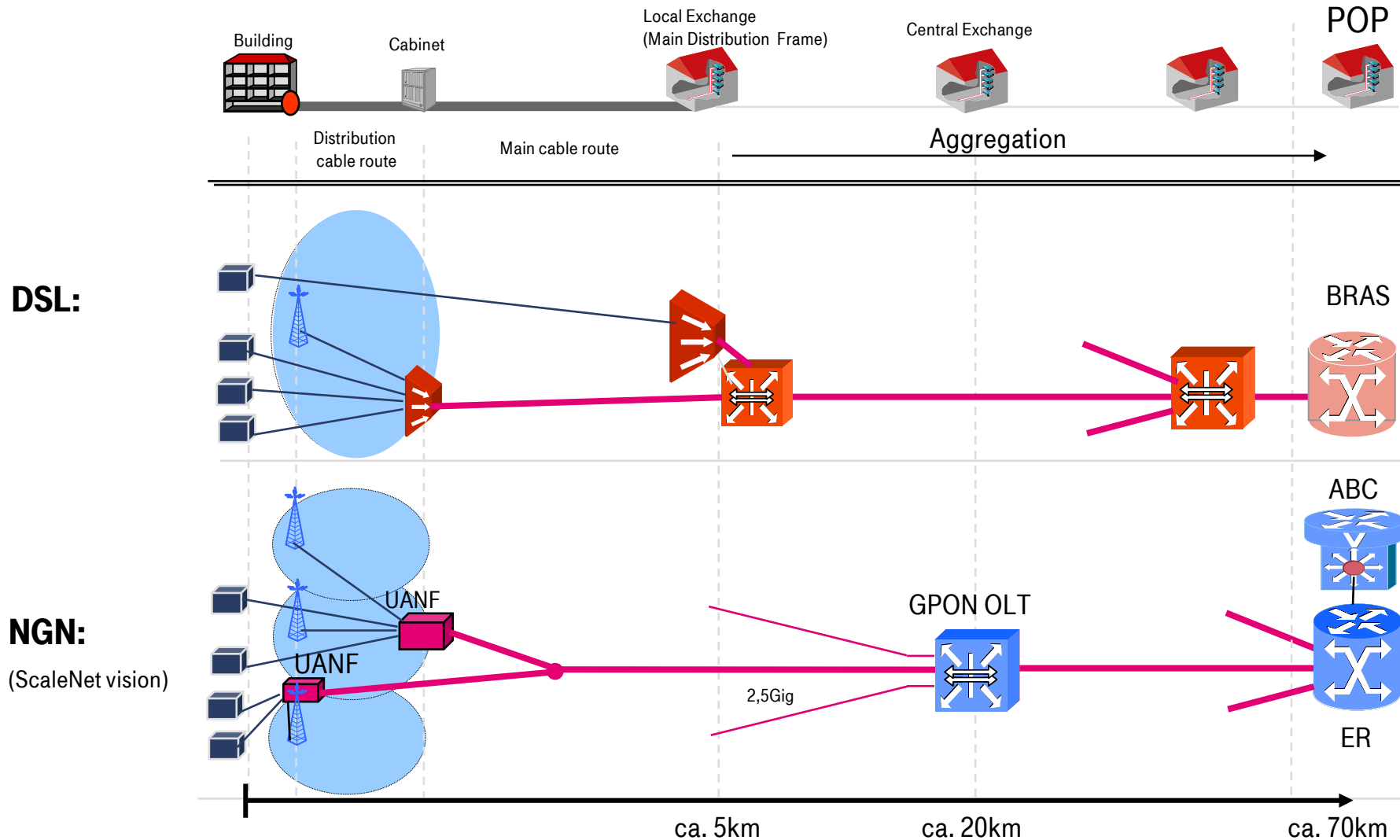
NGMN LTE/SAE Function Architecture.

Packet Core is adopted in NGMN.



Fixed Network Architecture Evolution

NGN Access Node to connect NGMN NodeB



BRAS - Broadband remote access server

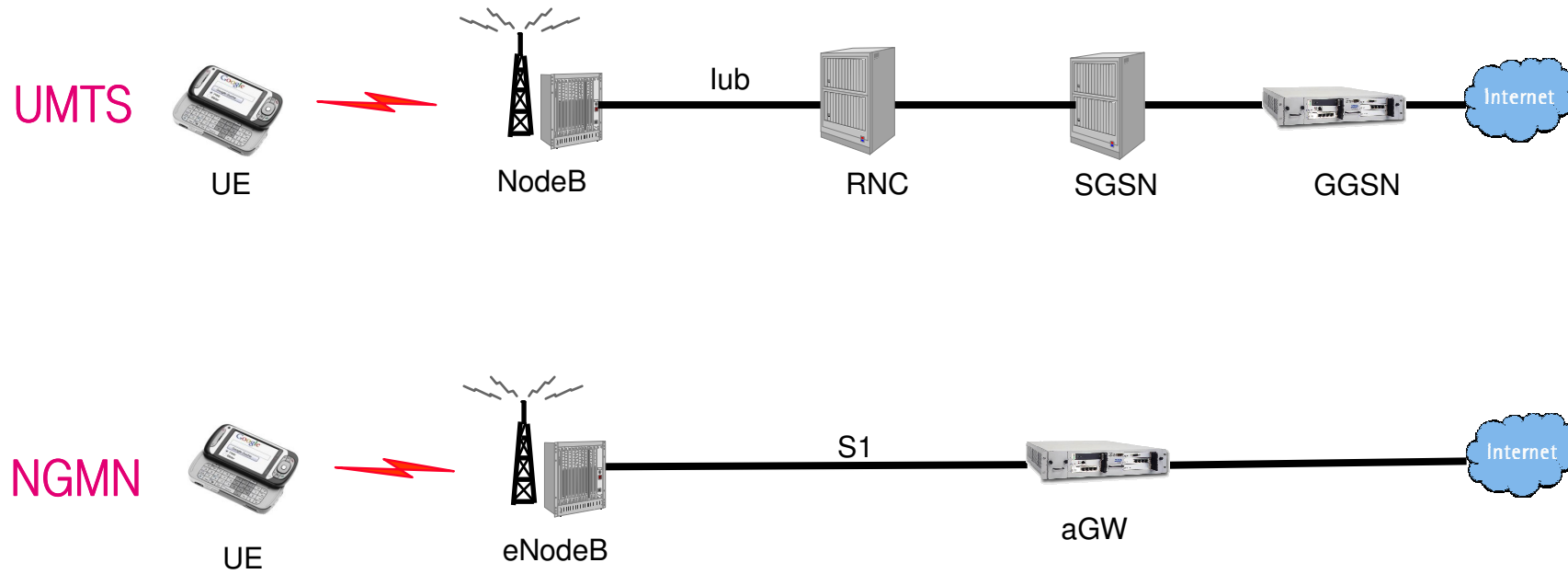
ER - Edge router

POP - point-of-presence DSL - Digital Subscriber Line

GPON OLT - Gigabit passive network optical line termination

Mobile Network Evolution

NGMN - Two node architecture.

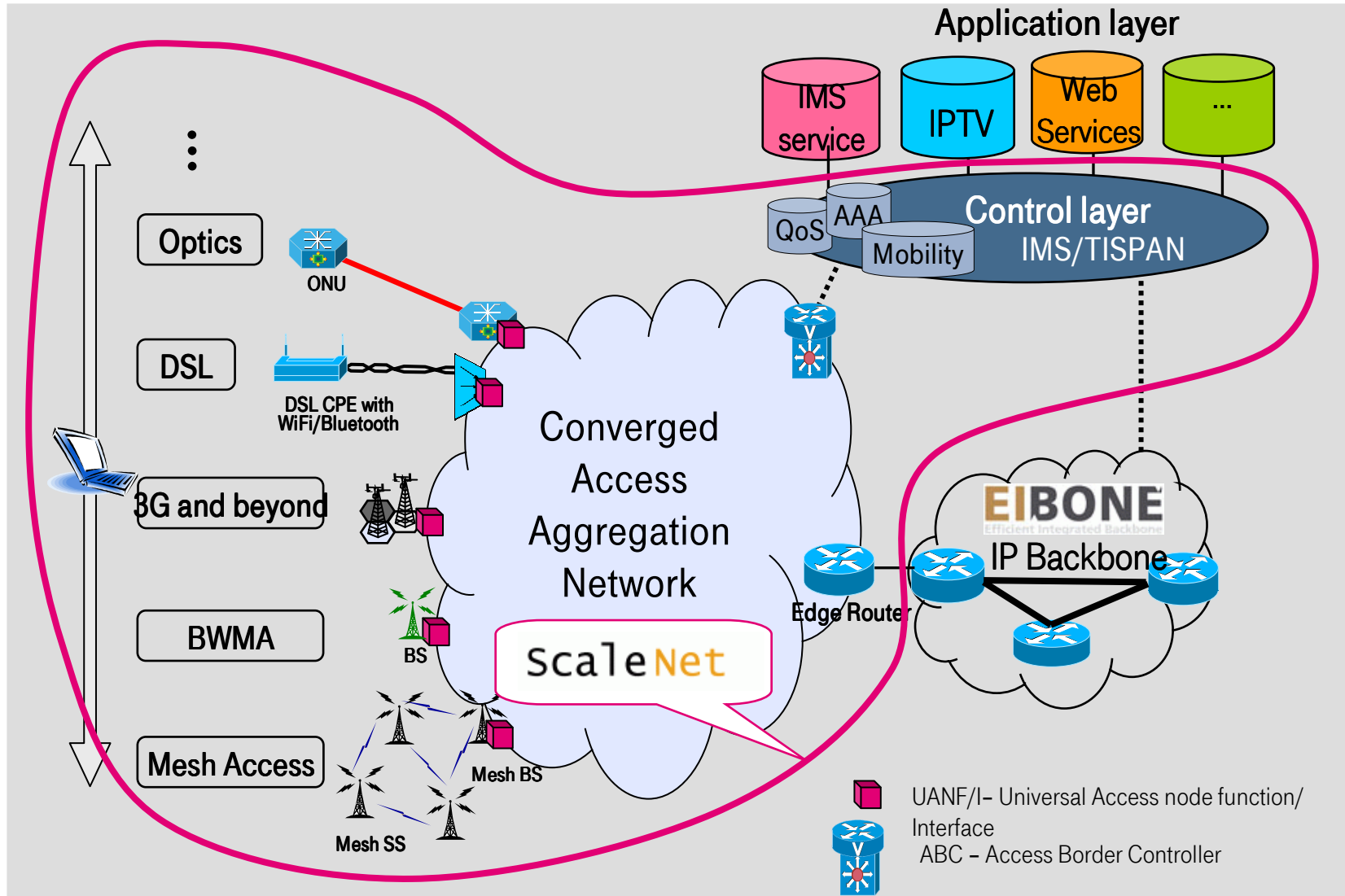


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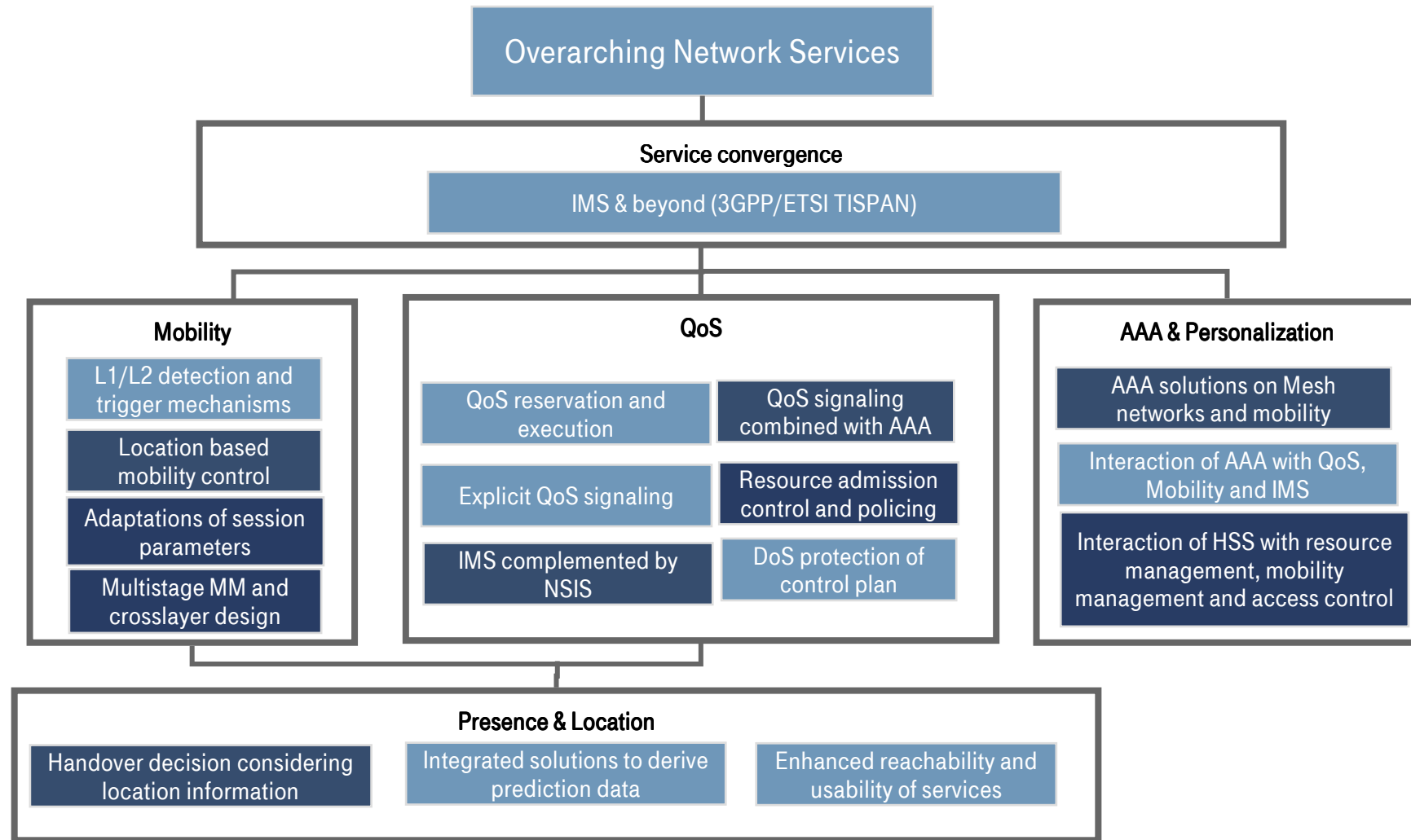
ScaleNet - Converged Networks of the Future

Toward a converged network architecture.



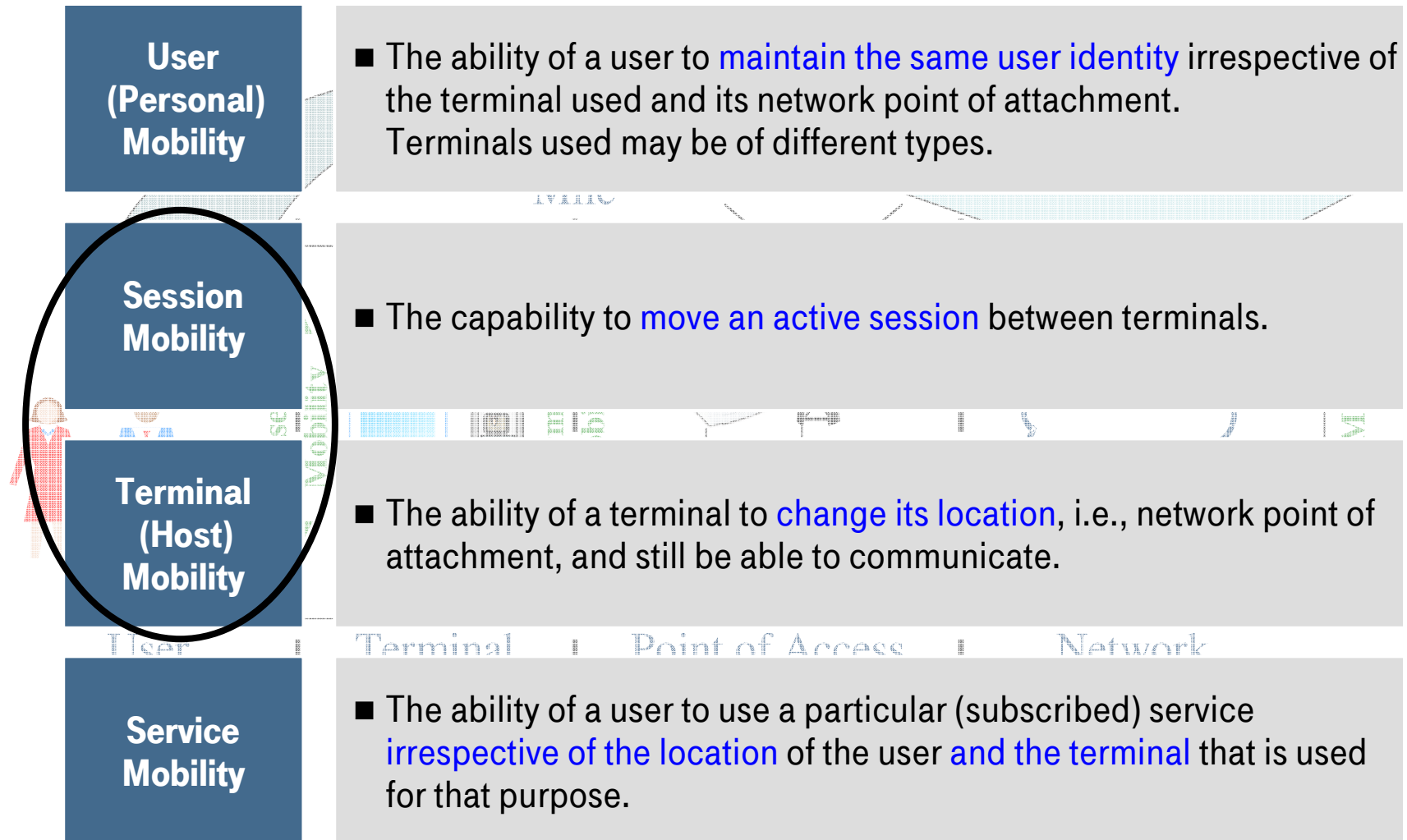
Overarching Network Functions. ScaleNet Module logic.

New Enhanced Integrated



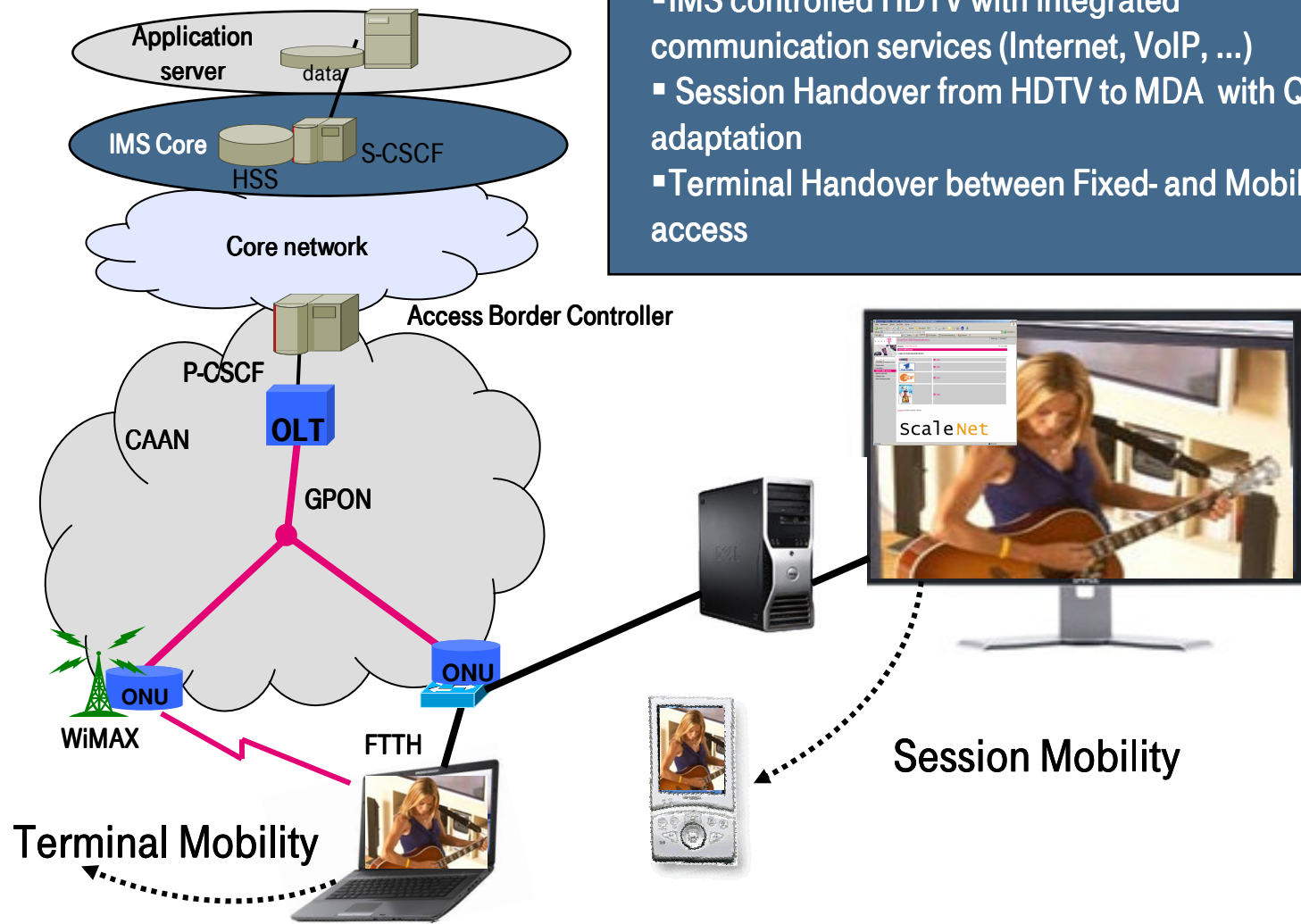
Mobility is the key enabler of FMC.

Terminal/Session/User/Service Mobility.



Demonstration

Broadband, FMC, Quadplay on CeBit 2007



Conclusions.

An integrated FMC network addressing Network and Service convergence with mobility support

- Integrated FMC approach enables new attractive services bundles, increasing revenues, retaining and winning customers, cost reductions (CAPEX and OPEX)

Network convergence

Converged Access Aggregation Network

- Enables Network convergence
- Unified methods for traffic forwarding, QoS, Mobility, AAA, ...
- Universal Access node function/Interface used for adaptation to different Access solutions
- Access Border Controller enables QoS, Mobility,...

Service convergence

Control layer (IMS & beyond)

- Enables Service convergence
- Standardised service control overlay for easy and fast service creation and delivery in an IP based environment
- Offers a set of basic control mechanisms necessary for every service, common functions can be reused for multiple applications., e.g. AAA, QoS, Security, ...