GPRS roaming network evolution to NGN
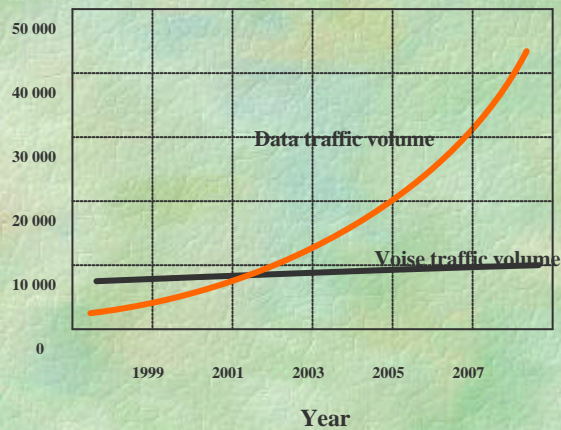
S .Brusilovsky, V. Derzhavina

LONIIS,
St.-Petersburg, Russia,
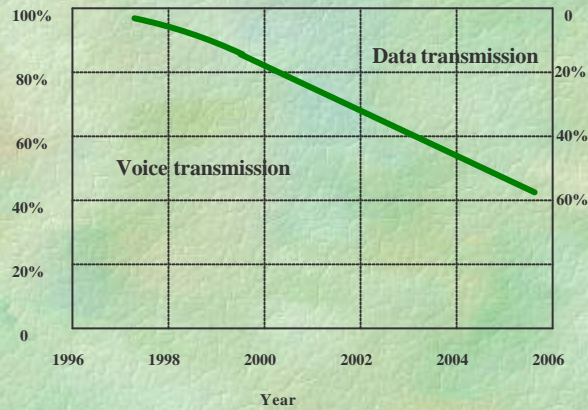**brus@loniis.org**

Telecommunication traffic: voice, data
(ETSI/TIPHON)

Offered load, Gbit/s

50 000

40 000

30 000 — Data traffic volume

20 000

10 000 — Voise traffic volume

0

1999 2001 2003 2005 2007

Year

Voice - Data transmission benefit

(Nokia)

Part in total revenue

Data transmission

Voice transmission

Year
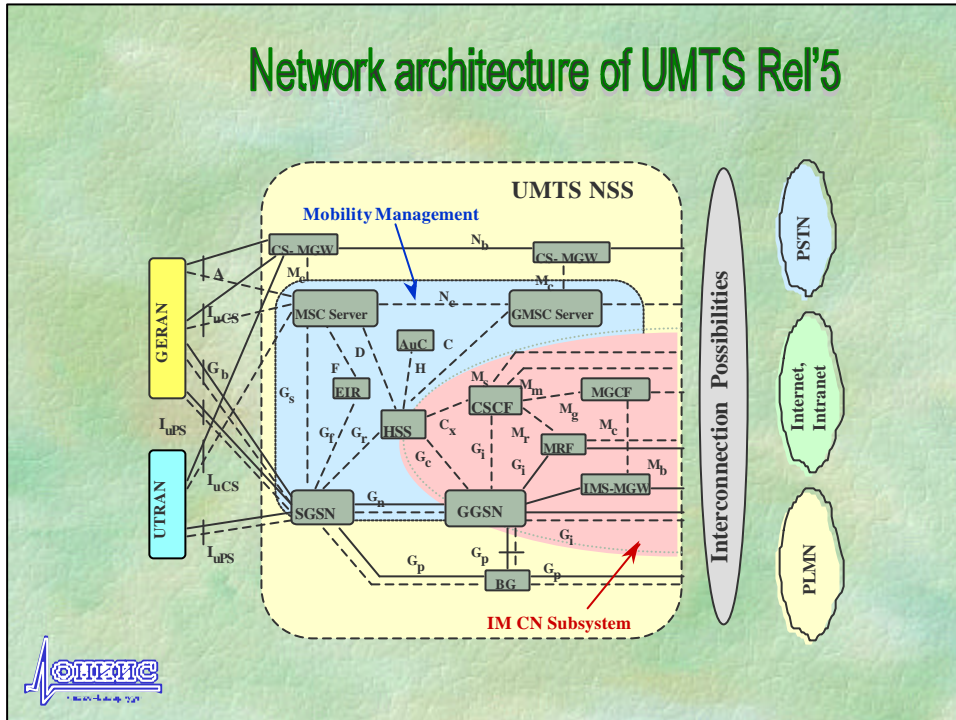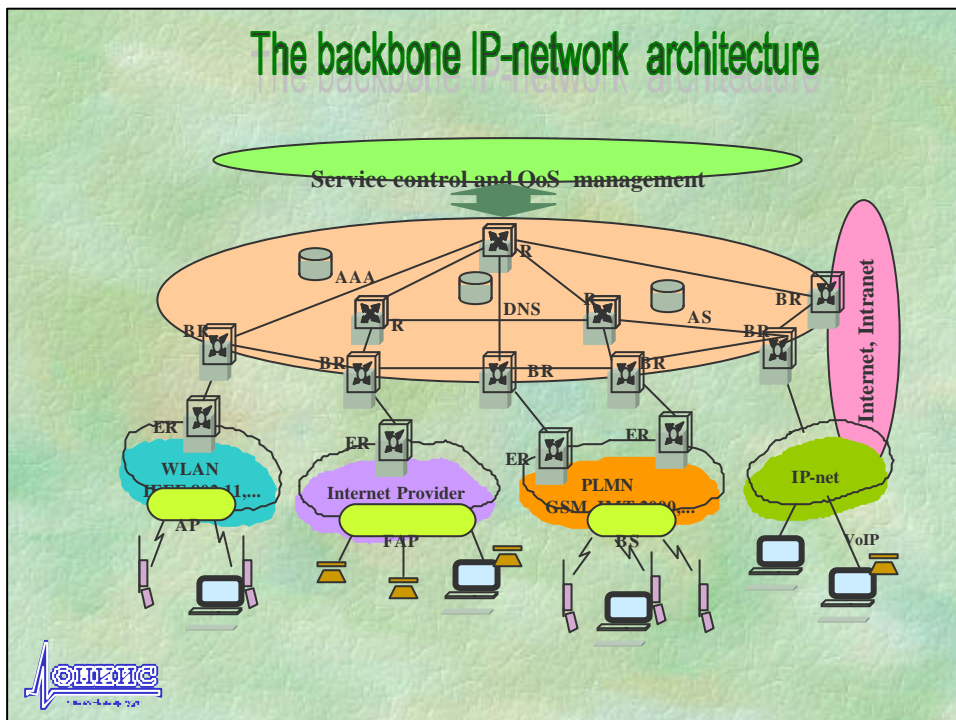
Topology of a GPRS Roaming Network
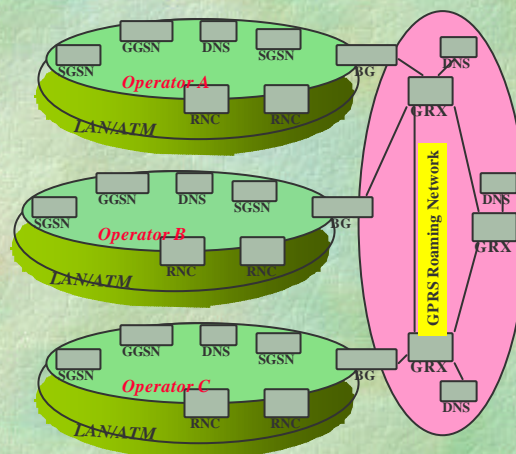
Network architecture of UMTS Rel'5

The backbone IP-network architecture

Conclusion

1. The GPRS transit networks **are required** to provide roaming services in 2G+ mobile systems, for example, GSM ph2+

2. Supporting 3G services and applications demands **to deploy** the inter-PLMN backbone IP-networks in IMT-2000

3. **It is expedient** to create 3G inter-PLMN backbone as NGN using evolutionary development of GPRS transit IP-networks

4. The creation of 3G inter-PLMN backbone includes solving some problems, for example:
   - IP Adressing - schedule and terms of IPv6 deployment
   - Security and Screening - implementation of firewalls, support of encryption and tunnelling methods
   - Quality of Service - QoS classes and IP parameters