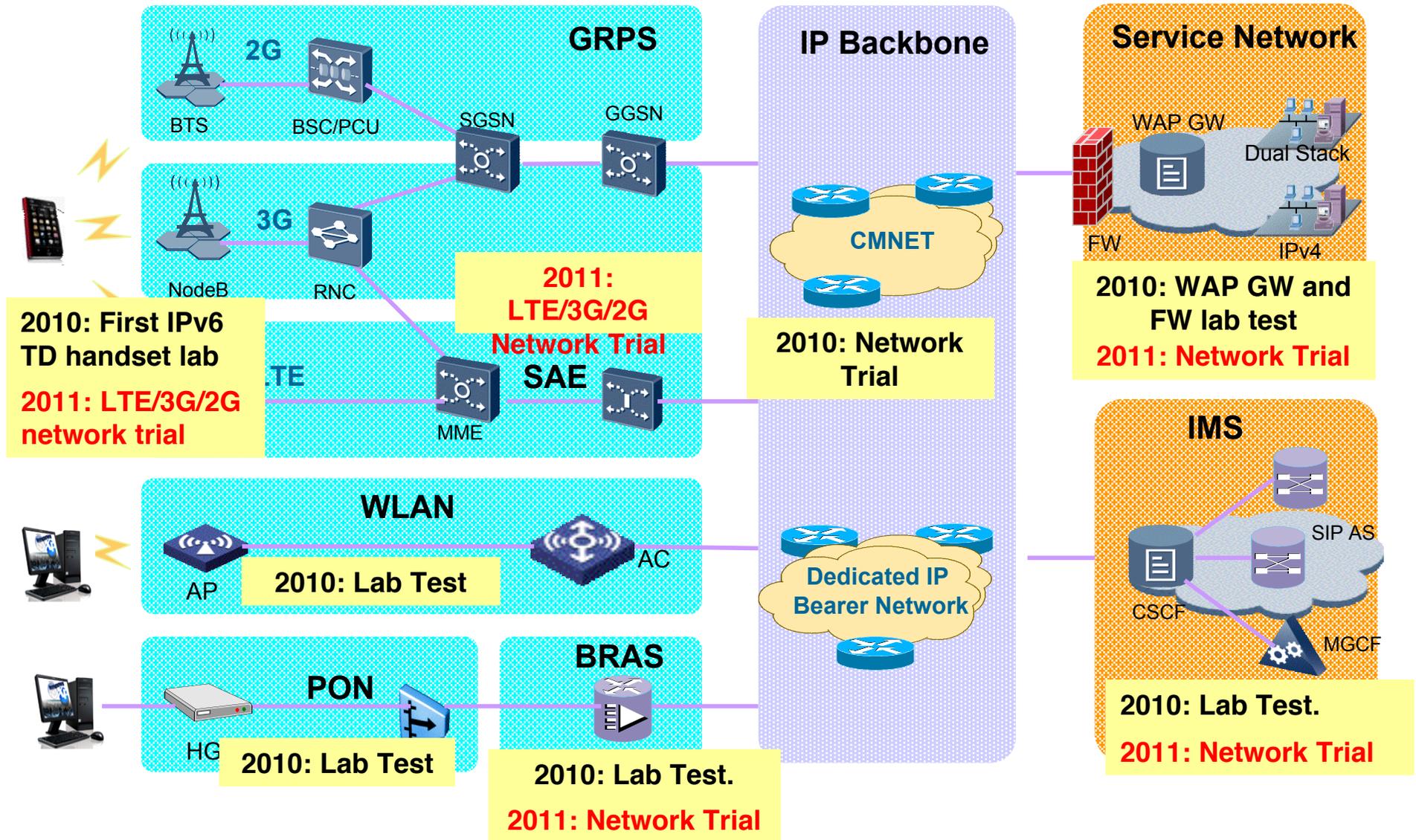


# China Mobile IPv6 Status – E2E Considerations



# Major Issues with IPv6 Deployment

## Router Testing

- IPv6 routing implementations are closely dependent on IPv4 systematic architecture. IPv6 routing couldn't run without IPv4 routing protocols
- IPv6 MIBs varied significantly from vendor to vendor. It's hard to build the integrated OAM platform

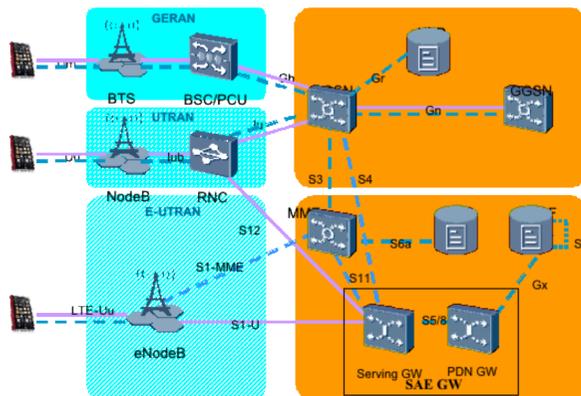
## Firewall Testing

- Basic IPv6 protocol analysis functions, such as packet filtering, are supported well in all equipments.
- Some equipments only support Dual Stack. Tunnel and translation are not supported.
- RIPng, OSPFv3, BGP4+ are supported in few equipments.
- IPsec and VPN functionalities can't be supported in a majority of vendors
- IPv6 performance are not good in some equipments.

## Service Testing

- All our own service platforms in China Mobile's network are IPv4-only, it's not easy to be upgraded today.
- 64 NAT translation may not guarantee service compatibility.

## 2G/3G/LTE Network Equipment Testing



### 2G/3G network equipment

- ✓ Some vendors did not support IPv6 at that time and had no roadmap
- ✓ Some GGSN did not support one function, that is GGSN advertises RA message periodically

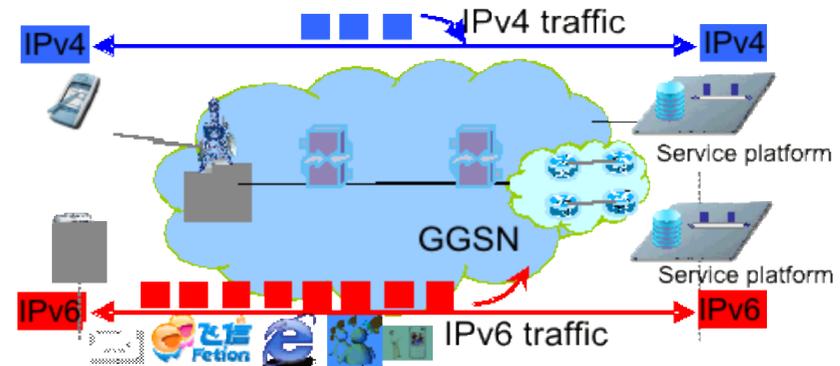
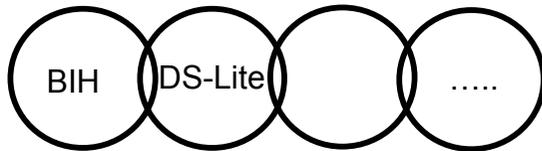
### LTE network equipment

- ✓ IPv6 is under verified.

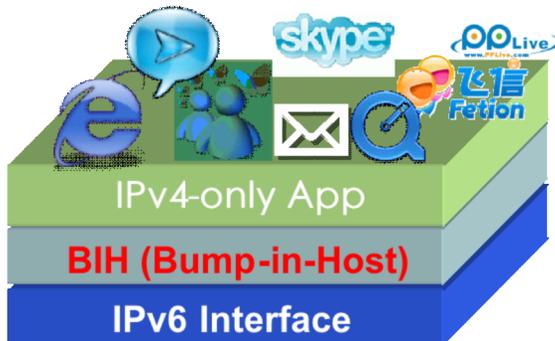
# Steering IPv4 Traffic to IPv6: DO Real IPv6

## Many Technologies for IPv6 Traffic Steering

■ Solution set could be integrated by multiple IPv6-Increasing solutions; such as



## BIH is one effective way for IPv6 traffic steering



### Application Transparent

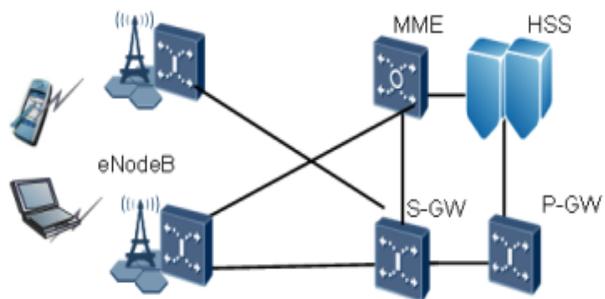
BIH modules are transparent to conventional IPv4 applications, whereby it avoids modification of various applications and facilitates IPv6 deployment

### IPv4 & IPv6 Applications Coexistence

BIH is one solution trying to migrate and deploy IPv6&IPv4 coexistence networks without any technical gaps

# IPv6 and LTE – New Network New Opportunity

## IPv6 is Essential for LTE



- It is estimated that LTE users in 2015 will be 0.3 billion.
- LTE is always-on, which means whenever the terminal turns on no matter whether a service will be used or not, an IP address should be assigned to the terminal.

Both LTE and IPv6 Represent the Best Next Generation Migration Opportunity, Only IPv6 Can Support the Need of LTE Network

## CMCC IPv6 Technology Base for Innovative IPv6 Transition

- Deploying dedicated IPv6 APN to steer traffic
- New services, such as machine-to-machine, use IPv6
- Test and evaluate IPv6 migration techniques
- Guide mobile network transition to IPv6

