Key areas of future 3GPP Systems evolution

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Main drivers

- The smartphone challenge
  - Traffic volume and patterns
- Enabling new opportunities, e.g.
  - Machine-to-machine communications
  - Proximity Services
  - Public Safety Networks, next generation TETRA
- Enhancing multi-access support, e.g. Hotspot 2.0
- Enabling the exploitation of fixed-mobile synergies

Smartphone challenge

- In 2015 the amount of mobile data transmitted in a day will be more than in a month today

- Continuous evolution of licensed radio technologies provides boost in available capacity
  - HSPA evolution
  - LTE and LTE Advanced

  3GPP is putting in great efforts to optimize and further develop radio technology

- Growth of mobile data traffic will outpace the rate of capacity expansions
  - Especially due to scarce availability of spectrum in most markets

Smartphone challenge

Paradigm shift brings lower level of network control

- OSs and apps have very little awareness of the network

→ Enhanced usage monitoring and control

→ Better interworking between network and app provider

Cost/GB efficiency will be key to success for operators

- New technology always brings better efficiency

→ Efficient handling of low-value bulk traffic needed

- Integral and seemless usage of non-licensed (non-3GPP) wireless technologies is important
- Operator control for IP interface selection

→Intelligent ways to flexibly channel network capacity to where it is needed

M2M communications

- Group based functions

- Small data transfer and device triggering

- Device monitoring

- Power consumption optimizations

Proximity Services

🔊 Proximity-based applications and services represent a recent and enormous social-technological trend

- These applications and these services are based on the awareness that two devices or two users are close to each other
- Awareness of proximity carries value, and generates demand for an exchange of traffic between them

🔊 Direct device-to-device LTE communication to enable ProSe

- Network-controlled discovery and communications between devices in proximity and under 3GPP network coverage

Public Safety networks

- Enable LTE-based Public Safety networks
    - Mission Critical BroadBand Data overlay using LTE to amend existing capabilities (e.g. TETRA)
    - Eventually replace exisiting MC voice networks with LTE voice
- Leverage the economies of scale of the LTE ecosystem
- Key enhancements
    - High Power UE category
    - Direct device-to-device communications
    - Group communications

Support for WiFi Hotspot 2.0

WiFi support already part of the 3GPP system

Extending support by:

- Leveraging cellular roaming to support WiFi roaming capability.

- Supporting Hotspot 2.0 and IEEE 802.11u in conjunction with ANDSF and PLMN selection mechanisms
  - Coherent and consistent support of 3GPP and WiFi mechanisms for unified netwoek selection, security, and roaming behaviour

Fixed-Mobile harmonization

- Synergies regarding user databases and policy control infrastructure are being analyzed
  - This brings cost savings that have both fixed and mobile customer base
- O&M harmonization work with TeleManagement Forum ongoing
  - Harmonization of network resource models
  - Fault Management Harmonization
    - Alarms and alarm handling

Summary

- As a global organization 3GPP is fully focused on
  - Providing the industry with timely technology evolution
    - Finding the right balance between evolution and revolution

  - Addressing the smartphone challenge with innovative features across radio and core

  - Optimizing the network for new business opportunities, e.g. machine-to-machine communications

Thank You !!

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