Operator requirements for multicast mobility

Requirements from a Global Operator's perspective

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Motivation.

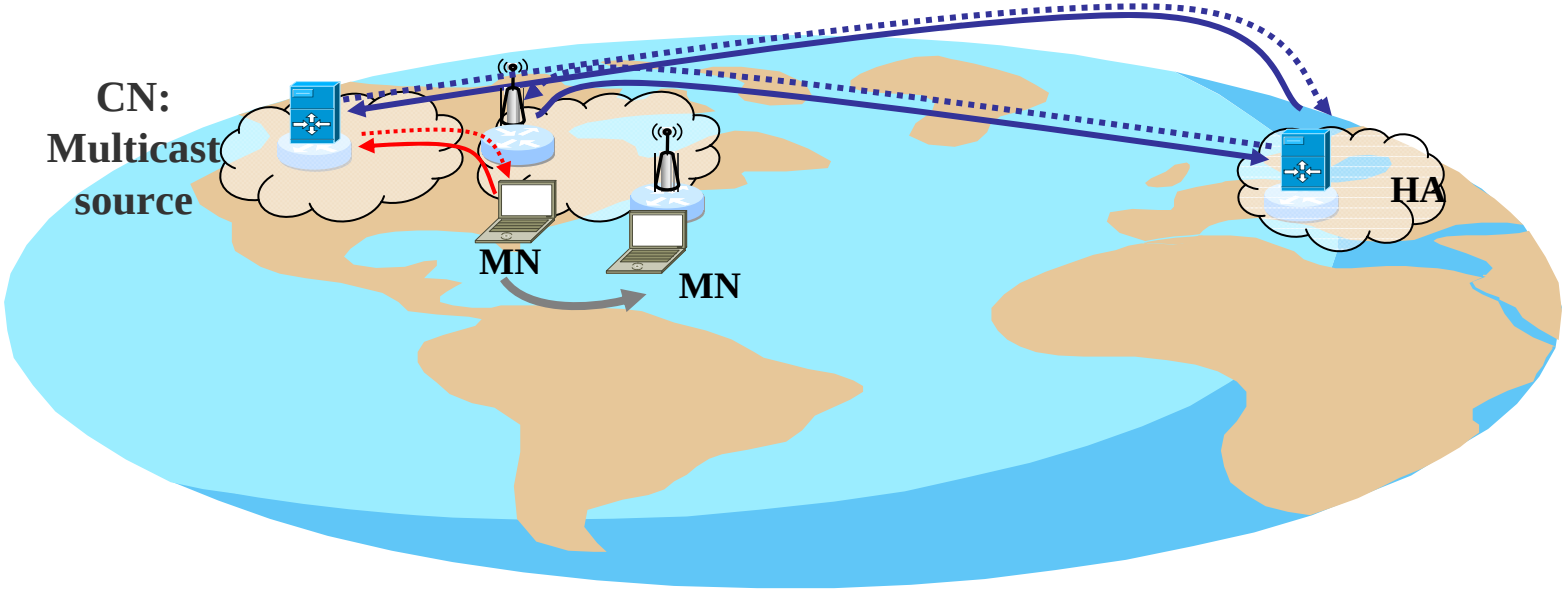
Future demand for mobile multicast services.

- Market trends and operator involvement in standards
  - NGN, convergent networks (NGN) and terminals: FMC
  - 3GPP Rel. 9 MBMS (Multimedia Broadcast/Multicast Service)
  - ITU-T / ISO/IEC: Recommendations on mobile multicast (Y. 2017)
- Exemplary applications benefit from MultiMob solution
  - Push to talk over wireless (packet based P2MP group voice)
  - Multi-party audio/video conferencing - Mobile chat and IM
  - Data file transfer to user groups (also on the move)
  - Multimedia streaming (on-line gaming, video, music, ...)
- In addition to user movement (cell and technology) handover may occur on operator decision (traffic shaping)

Enhancement of multicast management in fixed networks to support receiver mobility.

Global provision of unified converged services.

- Roaming MN as member of multicast group served by CN
- Traditional Remote Subscription or Bi-directional Tunnel:
  - Reconstruct multicast tree or use non-optimal route via HA
  - => Degraded performance and/or heavy network load



Requirements from a global operator.ppt

Mobile Multicast requirements.

A global operator‘s perspective.

- Overarching multicast support in fixed and mobile networks
- Continuous MC service support across different access technologies
- Harmonized multicast delivery via different domains, operators, countries, ...
- Requirements to preserve QoS performance
- Aim to reduce load of access and transport network
- Cost saving expected thanks to standardized solutions
- Preservation of user and network privacy and security

Thank you for your attention!

Backup

Why multicast mobility?

- Operator and commercial trends
  - Everything goes mobile / towards fixed-mobile converged networks and services, convergent devices
  - NGN (Next Generation Network) services and applications will offer multicast features and thus require large bandwidth and efficient multicast mechanisms because of high traffic volume and high number of receivers (ITU-T)
    - Large market and deployment expectations for fully IP based environment
  - 3GPP Rel. 9 MBMS (Multimedia Broadcast/Multicast Service) ... allow utilization of solutions using IETF protocols ... architecture enables efficient usage of radio- and core-network resources
  - ITU-T / ISO/IEC: Recommendations on mobile multicast communications (Framework, Protocol over native IP and overlay multicast network) / Y. 2017: Multicast Functions in NGN

Backup

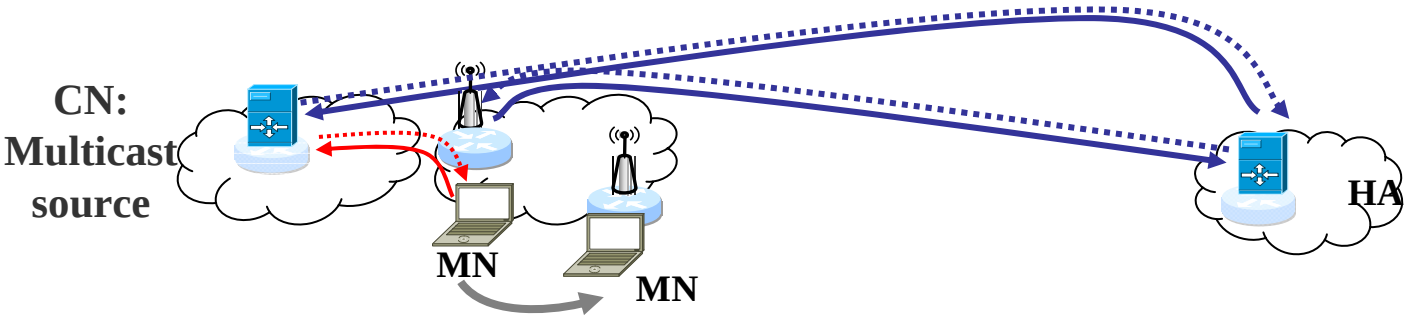
Why multicast mobility? (2)

- Future applications benefit from efficient mobile multicast
  - Digital Multimedia Broadcasting (DMB) and IPTV are typical broadcast services – individually tailored multicast would require additional session management
  - Push to talk over wireless and cellular (packet based P2MP group voice)
  - Multi-party audio/video conferencing - Mobile chat and (instant) messaging
  - Data file transfer to recipients group (also on the move) e.g. for E-learning applications
  - Multimedia streaming (on-line gaming, video, music, ...)
- Mobility (cell and technology handover) may not only occur due to user movement but also in case of operator decision e.g. for network load redistribution

Enhancement of multicast management in fixed networks to support receiver mobility.

Global provision of unified converged services.

- Roaming Mobile Node (MN) subscribing to multicast service from CN via IGMP/ MLD at visited network
- In case of MIPv6-based support of movement (Remote Subscription or Bi-directional Tunnel)
  - Either complete replacement of multicast tree is required or a non-optimal path via remote Home Agent (HA) has to be used
  - Results in performance degradation and/or heavy load on the transport network w/o 'MultiMob standard'



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