Problem Statement

FMC BoF at IETF 85
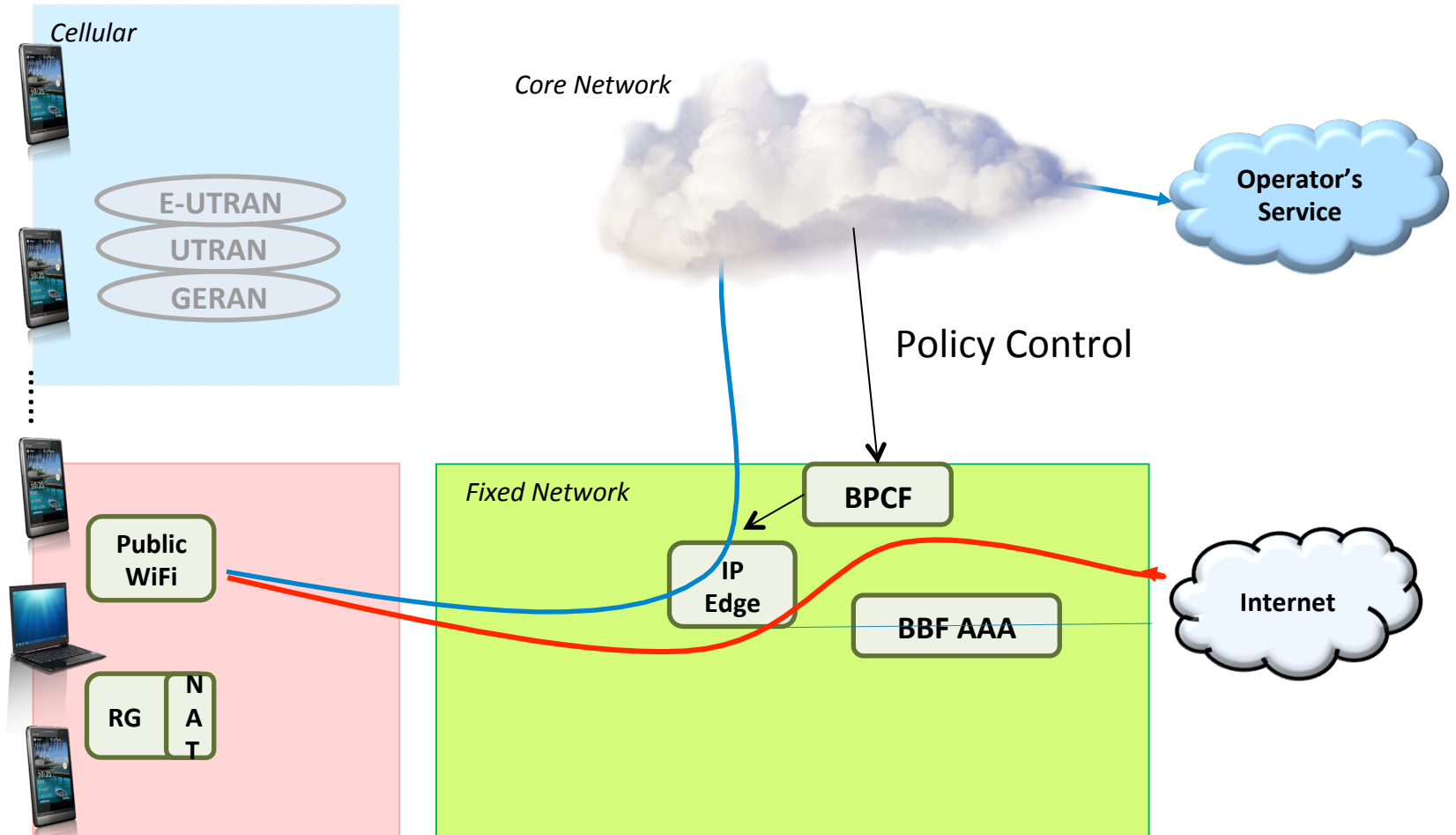
draft-xue-intarea-fmc-ps-02

November 6, 2012, Atlanta, US
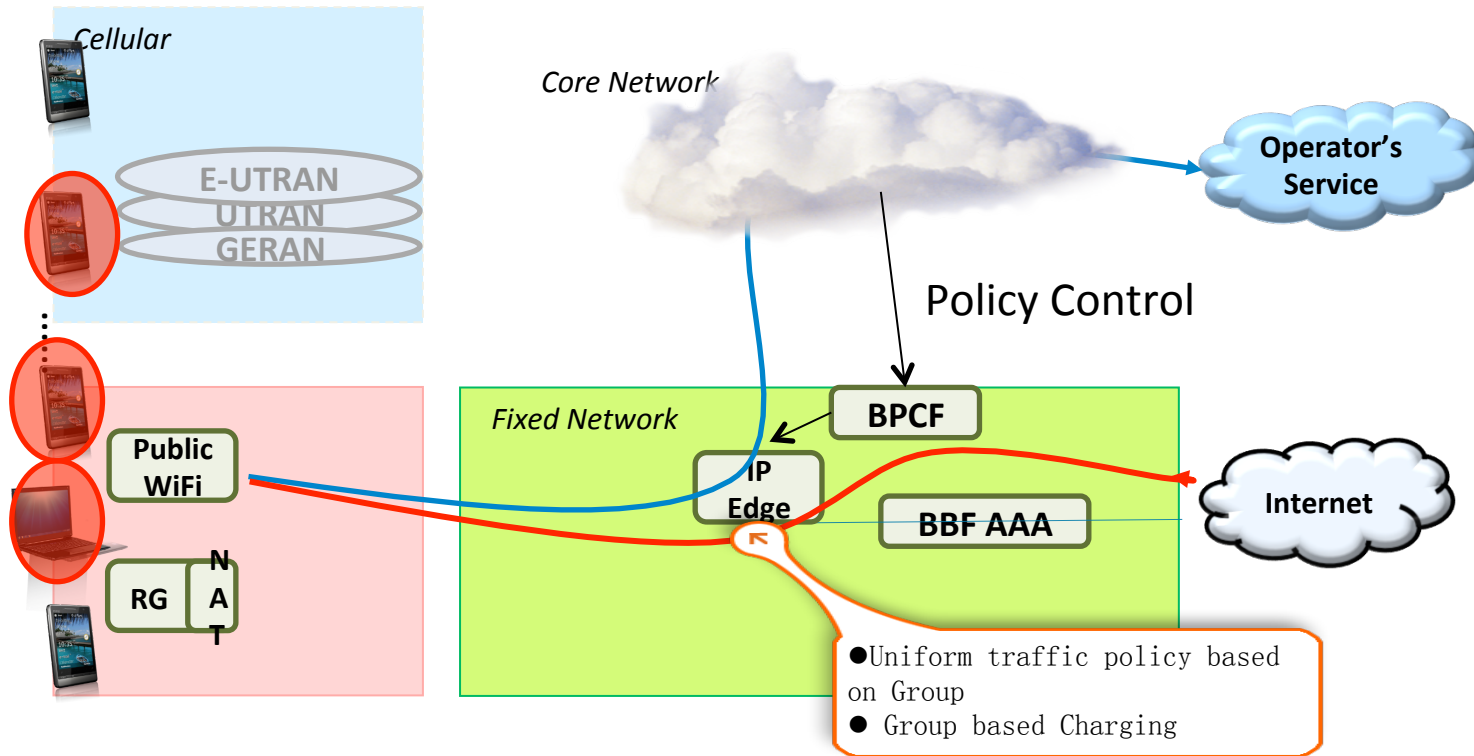
Our Scenarios

Operators Service & Internet

VPN Service

Game/Video (Skype etc.)

Remote education

Cloud

VoD or Live video

Internet/Meeting, etc
Hot Spot

Cellular

HD Video/QQ/MSN/Game
Home

WiFi

Internet service

Cellular   **WiFi**

High BW guaranteed for smart phone

Within coverage area , the internet, VPN or operator's service must be guaranteed

Fixed

• QoS and BW adjustable based on the traffic status;

Our Architecture

Cellular

Core Network

Operator's Service

E-UTRAN

UTRAN

GERAN

Policy Control

Fixed Network

BPCF

Public WiFi

IP Edge

BBF AAA

Internet

RG

N A T

Problem Statement Use Case 1 – Why Group ID?

- Service Quality (QoS) for subscriber should be guaranteed, no matter which type of device, so we need to bind all the devices belonging to one subscriber to one group
- All the devices belonging to one subscriber should be charging as one bill
- Application switching among different devices belonging to one group

Application for Use Case 1-Uniform Policy Control

Application: Bandwidth sharing, Application mobility, etc.

Use Case 1 – Protocol Issues
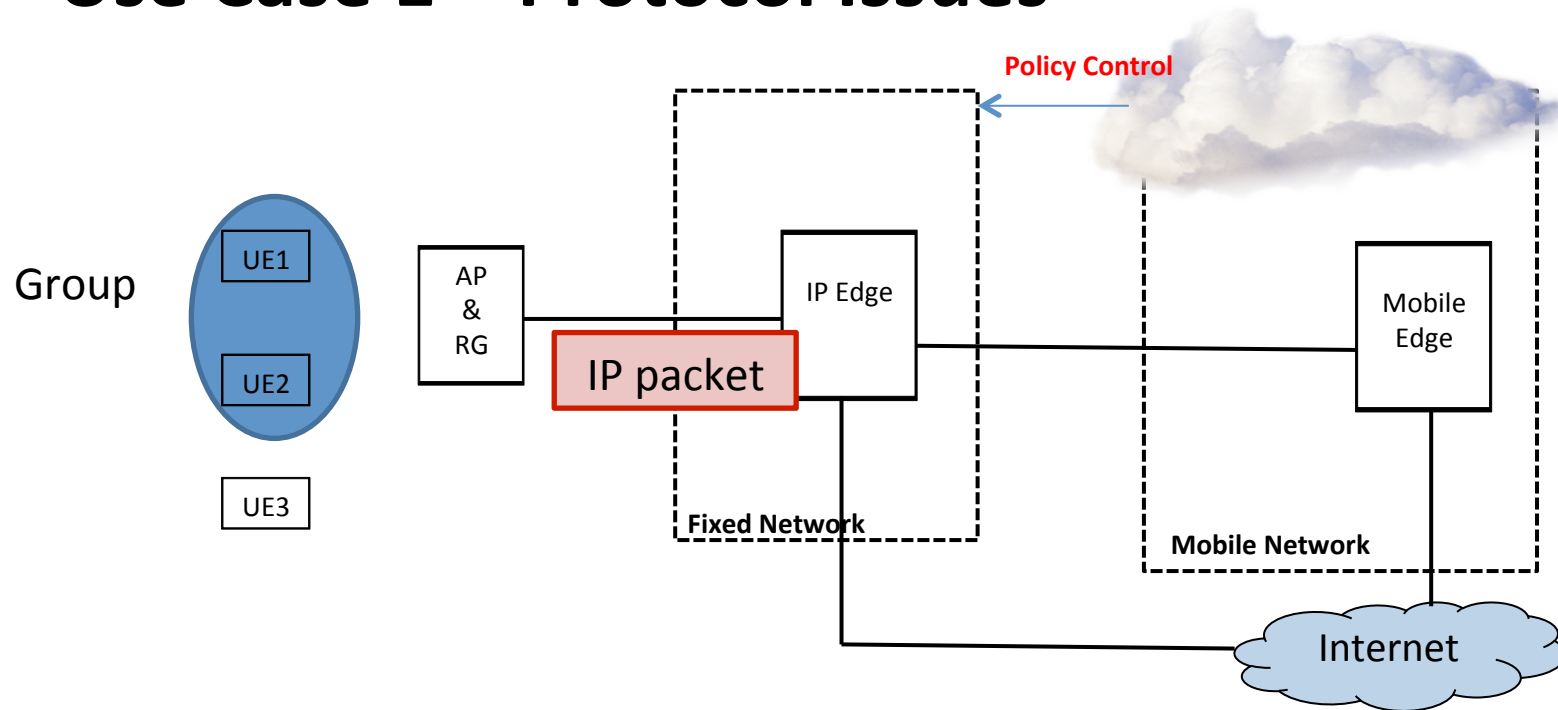
- IP edge is the policy enforcement point for FMC architecture.
- To enforcement policy, the first thing is to recognize the traffic, which means to base on the IP packet, the IP edge should enforce right policy for special group.
- We need to transmit the group ID using IP layer protocols

Use Case 1 – Solution Approaches

- Embed Group Identifier in network layer, so that different nodes in the network can make use of it.
  - Subscriber/Group ID can be transmitted in IP layers as option IPv4 header or IPv6 header
  - ICMP can be used
  - UDP can be used
- Protocol work in IETF is needed.

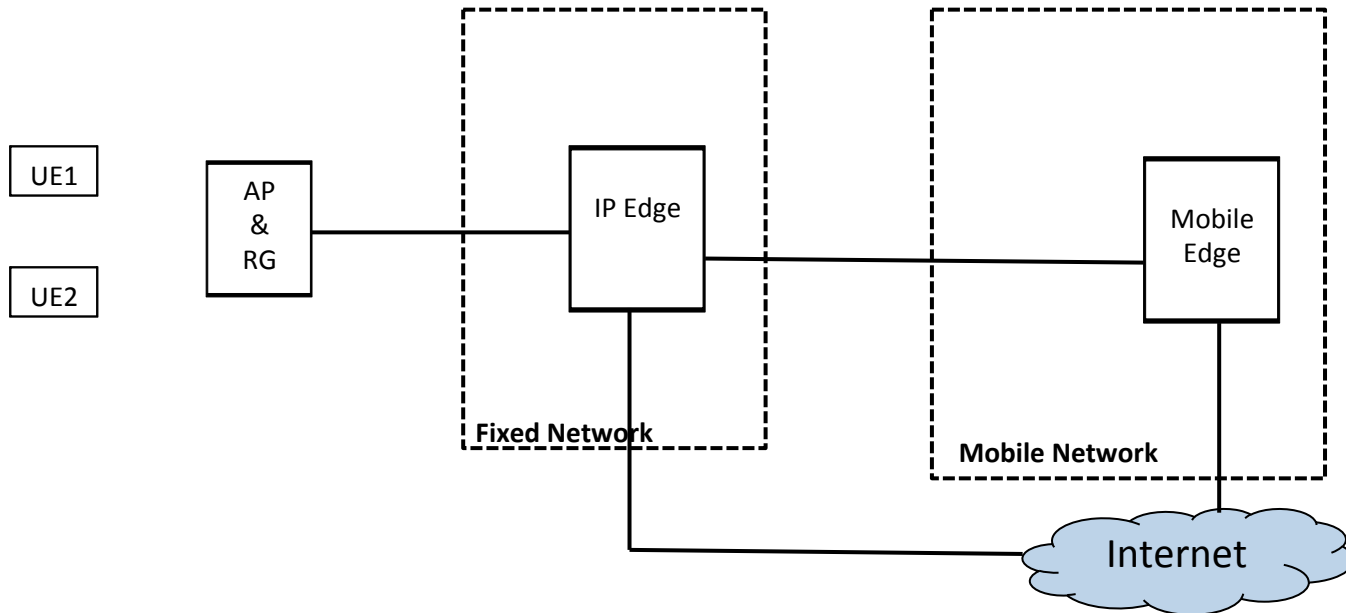# Problem Statement Use Case 2 - UE mobility in IP network
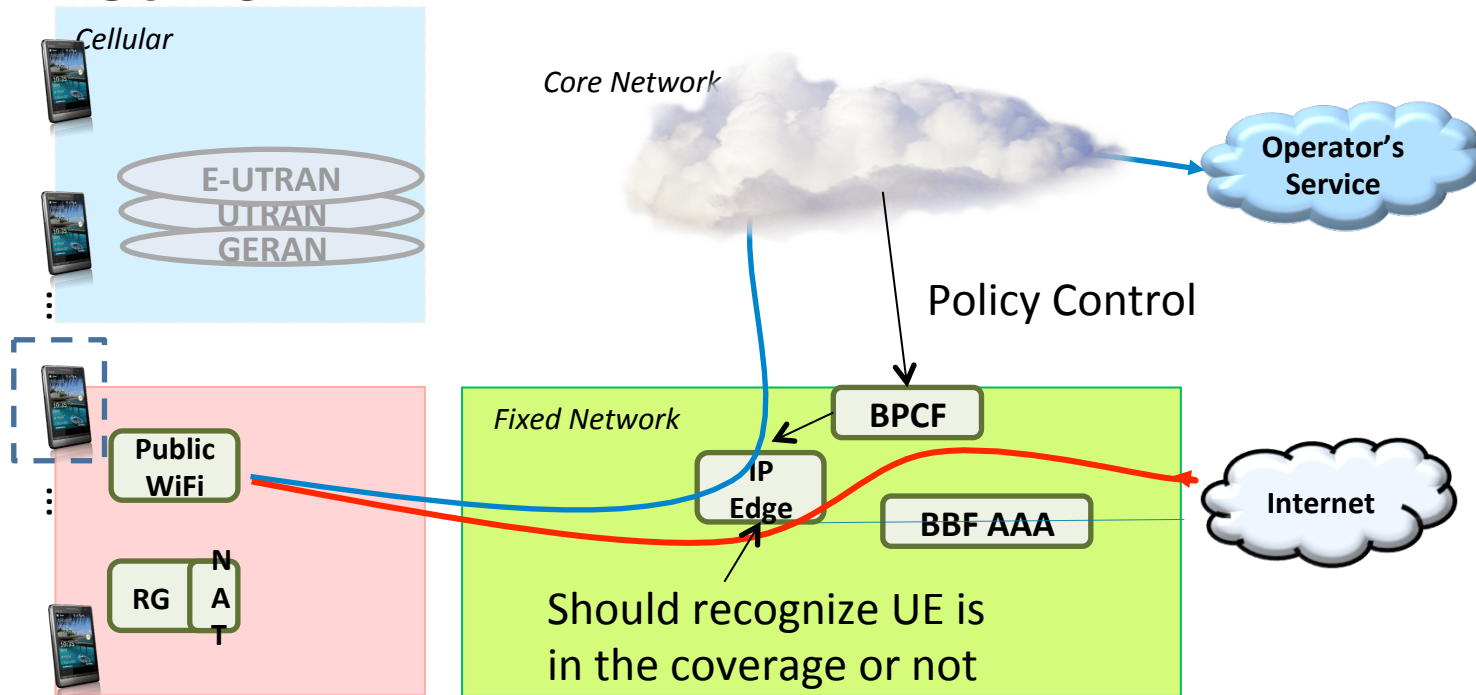
- Issues:
  - Fixed network does not track devices
  - Devices connected to Wi-Fi come and go, so their status must be tracked
  - Mobility tracking should be enabled in hot spot or home WiFi access network

Application for Use Case 2 –Resource management

The IP edge router should adjust the load in the network for the roaming devices.

IP edge router

IP edge router

Fixed Access

Fixed Access

Phone

Phone

PAD/PDA

Phone
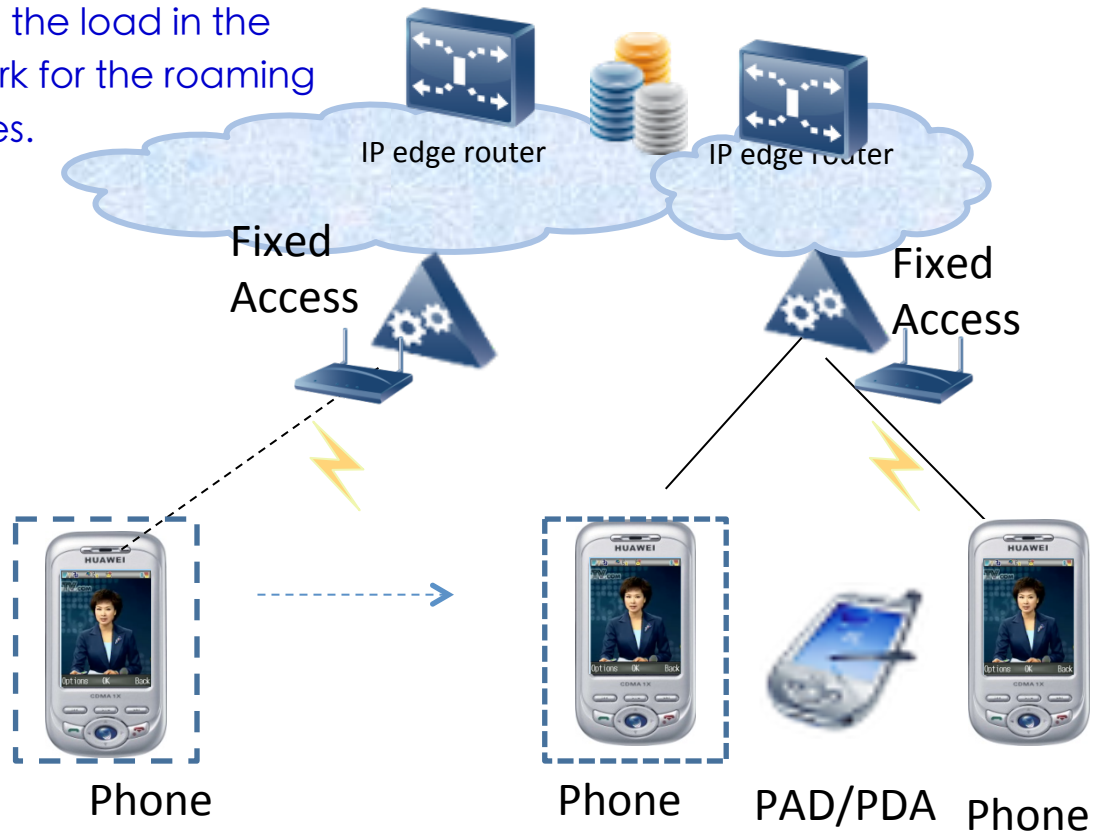
Use Case 2 – Protocol Issues

UE1

UE2

AP & RG

IP Edge

Mobile Edge

Fixed Network

Mobile Network

Internet

- Fixed IP network edge routers need to signaling protocol to report the connectivity status of the devices;

- Access points need to transmit the status via protocols

Use Case 2 – Solution Approaches

- New extension based on CAPWAP.
  - Connectivity status transmitted via protocols such as CAPWAP.
  - New signaling protocol.
- Protocol work in IETF is needed.

Thank You