




# **IP MULTIMEDIA SUBSYSTEM (IMS)**

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## TECHNOLOGY TRENDS

- Digitalization of media
- High speed broadband network technologies
  - HSPA (High Speed Packet Access) – evolved WCDMA
  - OFDMA (Orthogonal Frequency Division Multiple Access) – 3GPP LTE, WiMAX, MBWA, ADSL/VDSL, DVB-T/H etc.
- Internet became a major enabler of communications and transactions medium
- Fixed and Mobile Network communication convergence
- End user “ smart” devices with multimedia capabilities
- Machine-to-Machine (M2M) enabled services to support the “ internet of things”
- Virtualization and Cloud based services

## NEW USER BEHAVIOR

- “Always on” multimedia communication has become a lifestyle
- Personal mobility is key
  - Access to services and communicate from anywhere, at anytime, from any device
- Social networking
  - Facebook, Twitter, Tumblr, Instagram, Pinterest, etc.
- High demand for multimedia data enabled services
  - Video streaming, on-line games, video calls, multimedia messaging
- Location Based Services
- Mobile payment and banking over the internet data networks

# OPERATOR CHALLENGES AND OPPORTUNITIES

## Challenges

- Increased competition from established service providers and new OTT players (Google, Apple)
- Subscriber churning and brand erosion
- Loss of end-to-end service control and subscriber ownership
- Current networks can't cope with data demands
- Aging PSTN equipment resulting in high opex/capex
- Increase Fraud and Spam

## Opportunities

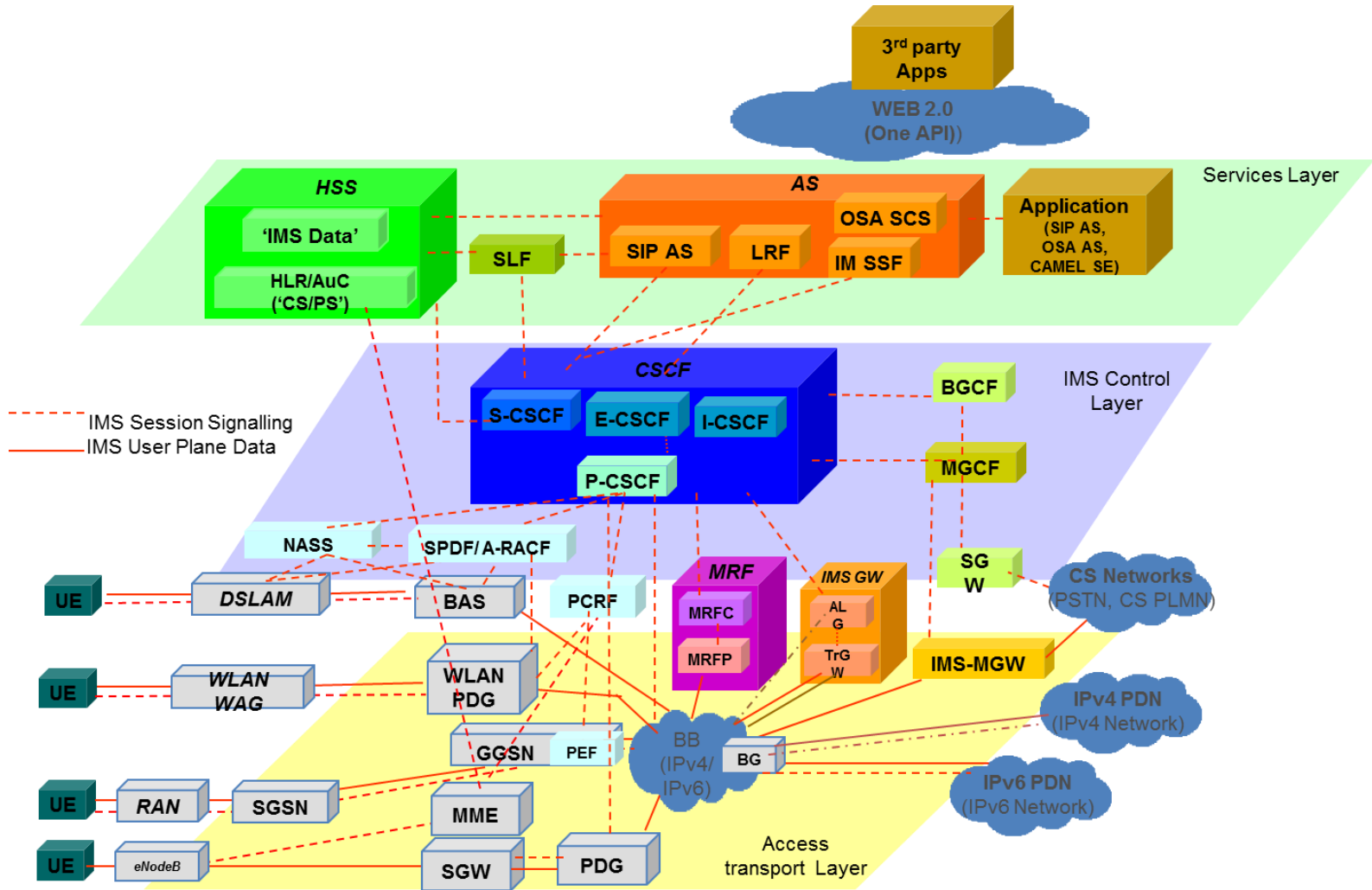
- New revenue streams by offering innovative, catchy, secure, ubiquitous, and differentiated multimedia communication services
- Entrance into new business verticals: payment services, health apps/services (e.g. mobile health), Info-tainment services, Utilities services (via M2M services), etc.

## WHAT IS IP MULTIMEDIA SUBSYSTEM (IMS)?

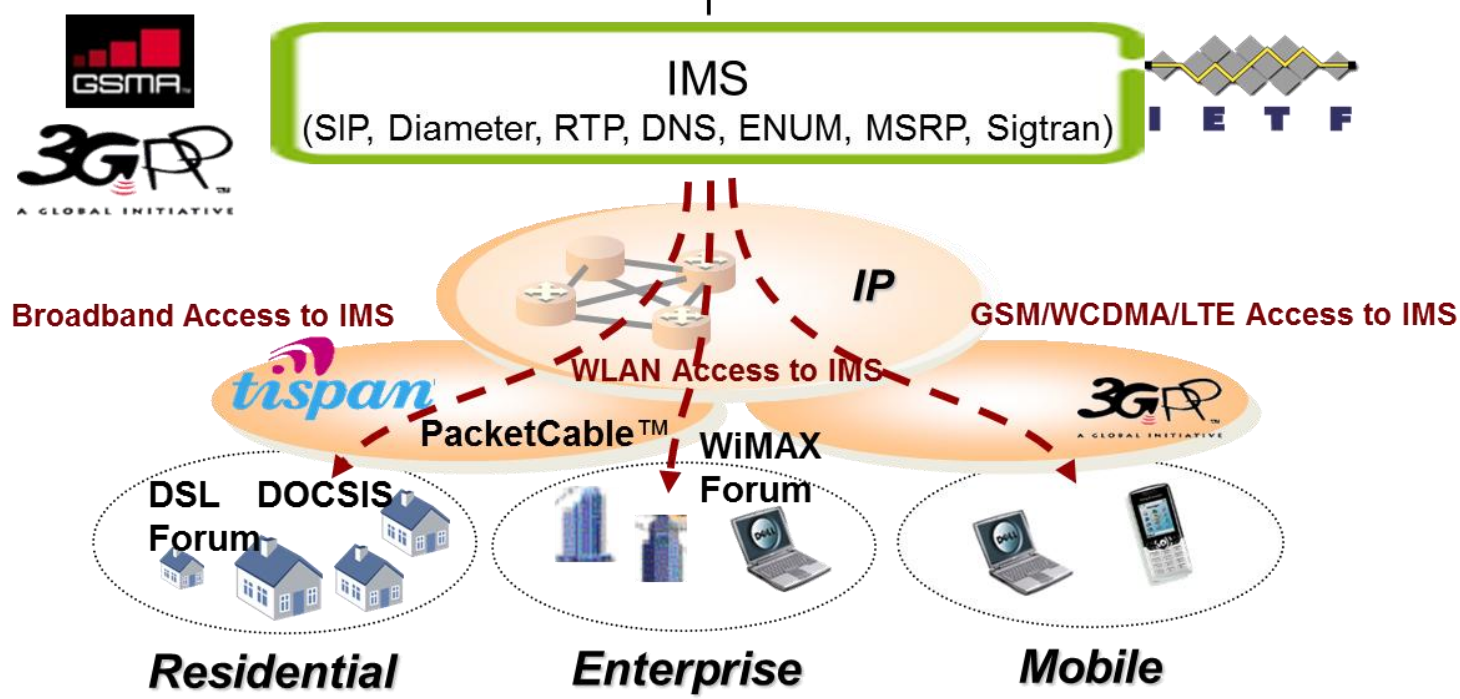
*“ Standardized all IP next generation network architecture framework for the delivery of multimedia communications”*

- Enables **openness** encouraging multi-vendor offerings of data products, services and solutions
- Provides **deployment adaptability** and **functional reusability**
- Supports **Policy and Charging controls** for the delivery of multimedia services
- Offers **flexible access** (anywhere, anytime, from any device) to multimedia services
- Supports **legacy** telephony services and new **innovative** multimedia communication services
- Delivers **P2P, P2A, A2P, A2A/M2M** multimedia communication services

# 3GPP / TISPAN IMS ARCHITECTURAL OVERVIEW







# IMS AND STANDARDS ORGANIZATIONS

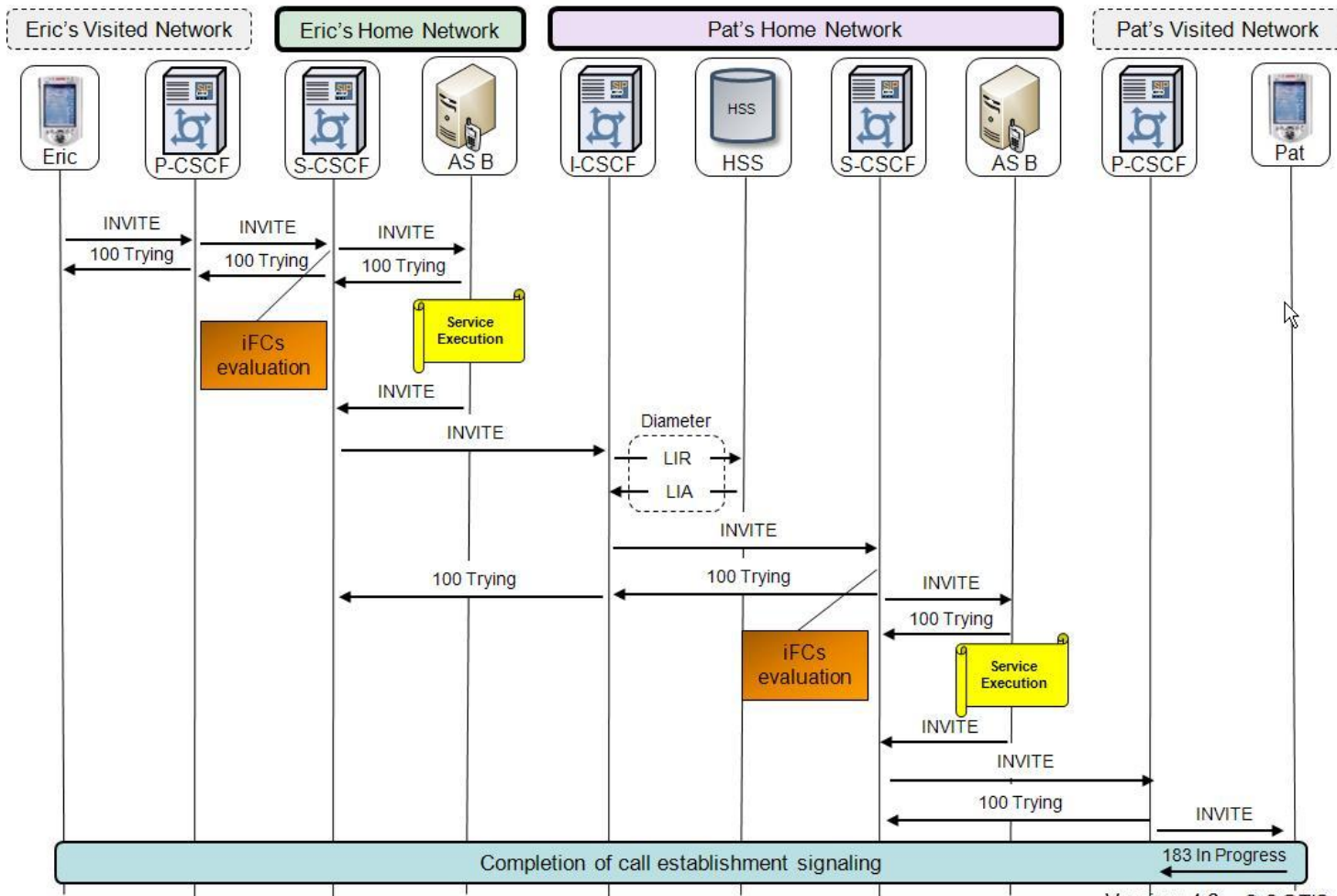




# EXAMPLES OF IMS ENABLED COMMUNICATION SERVICES

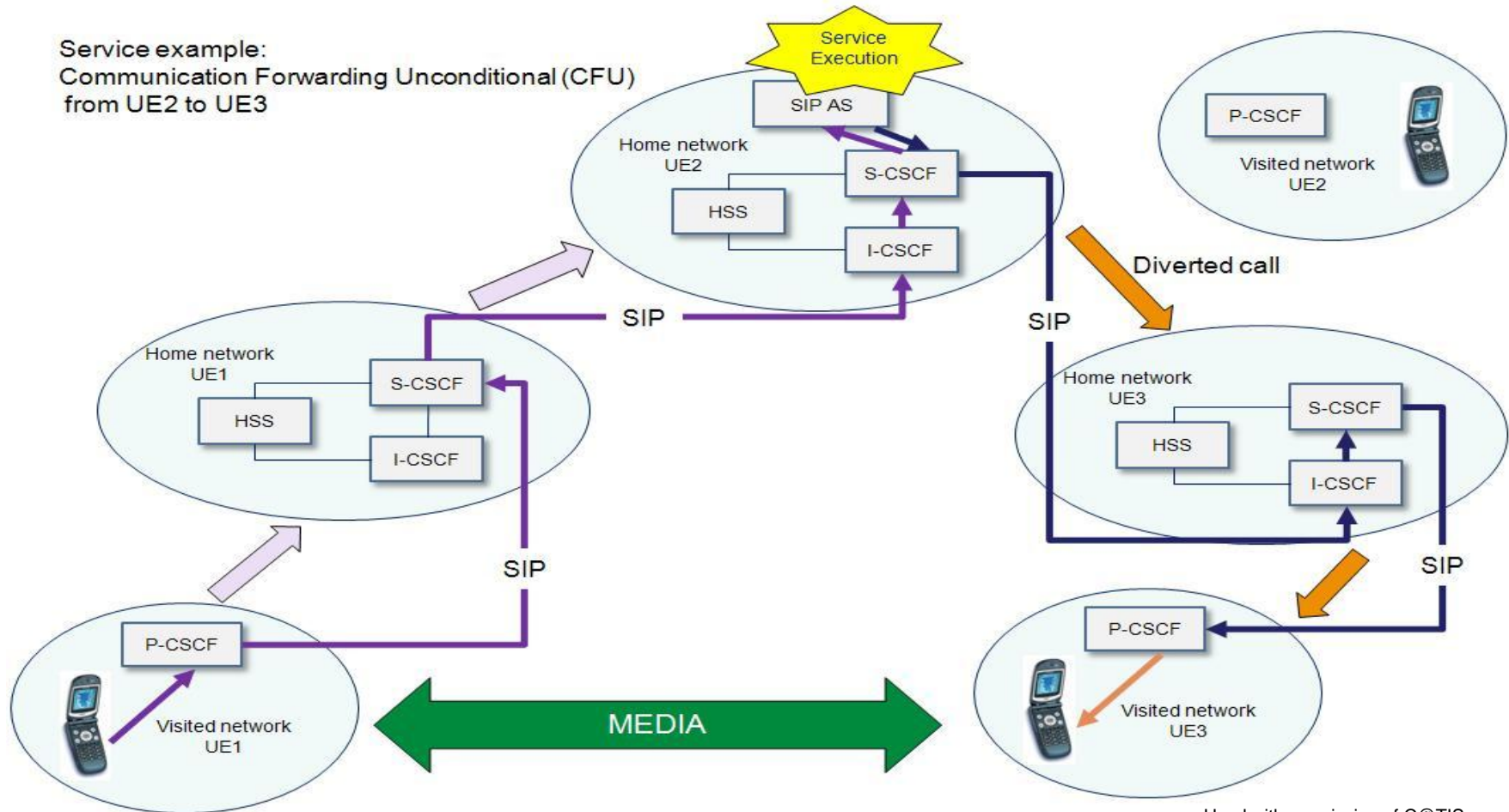
-  **Supplementary Services**
  - Call Diversion, Call Barring, Call Hold
  - Conferences (Adhoc, Scheduled, 3<sup>rd</sup> party call)
  - Call session transfer from one device to another
  - Advice of Charge/On-line Charging (prepaid service)
-  **Regulatory Services**
  - Number Portability
  - Legal/Lawful intercept service
  - Emergency calls
-  **Rich Communication Services (RCS)**
  - Voice & Video call
  - Text chat (Instant Messaging and Presence)
  - Image/File Transfer
-  **3<sup>rd</sup> Party Services and Application connectivity**

# EXAMPLE BASIC IMS CALL SESSION FLOW

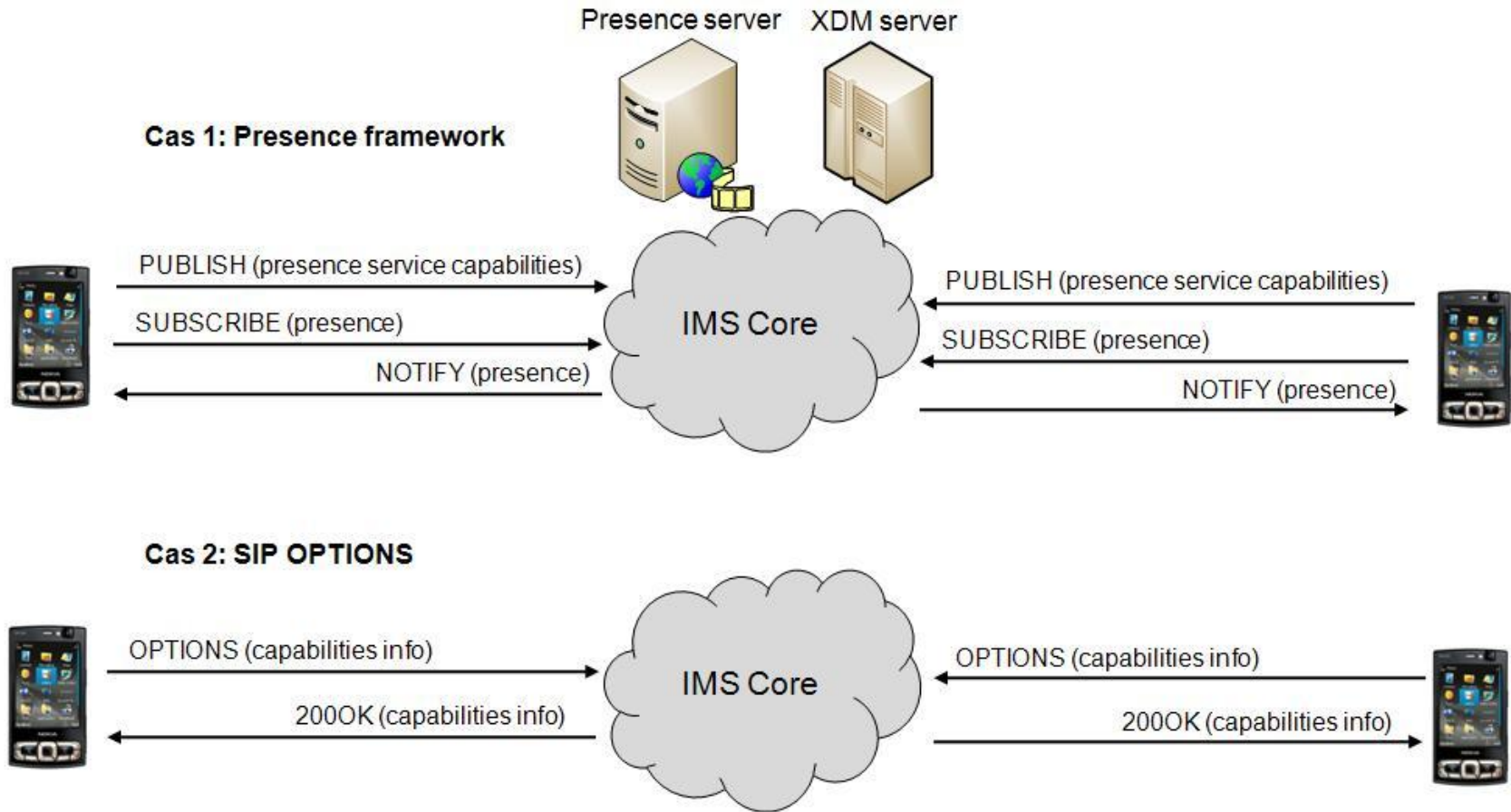


# CALL FORWARD UNCONDITIONAL (CFU)

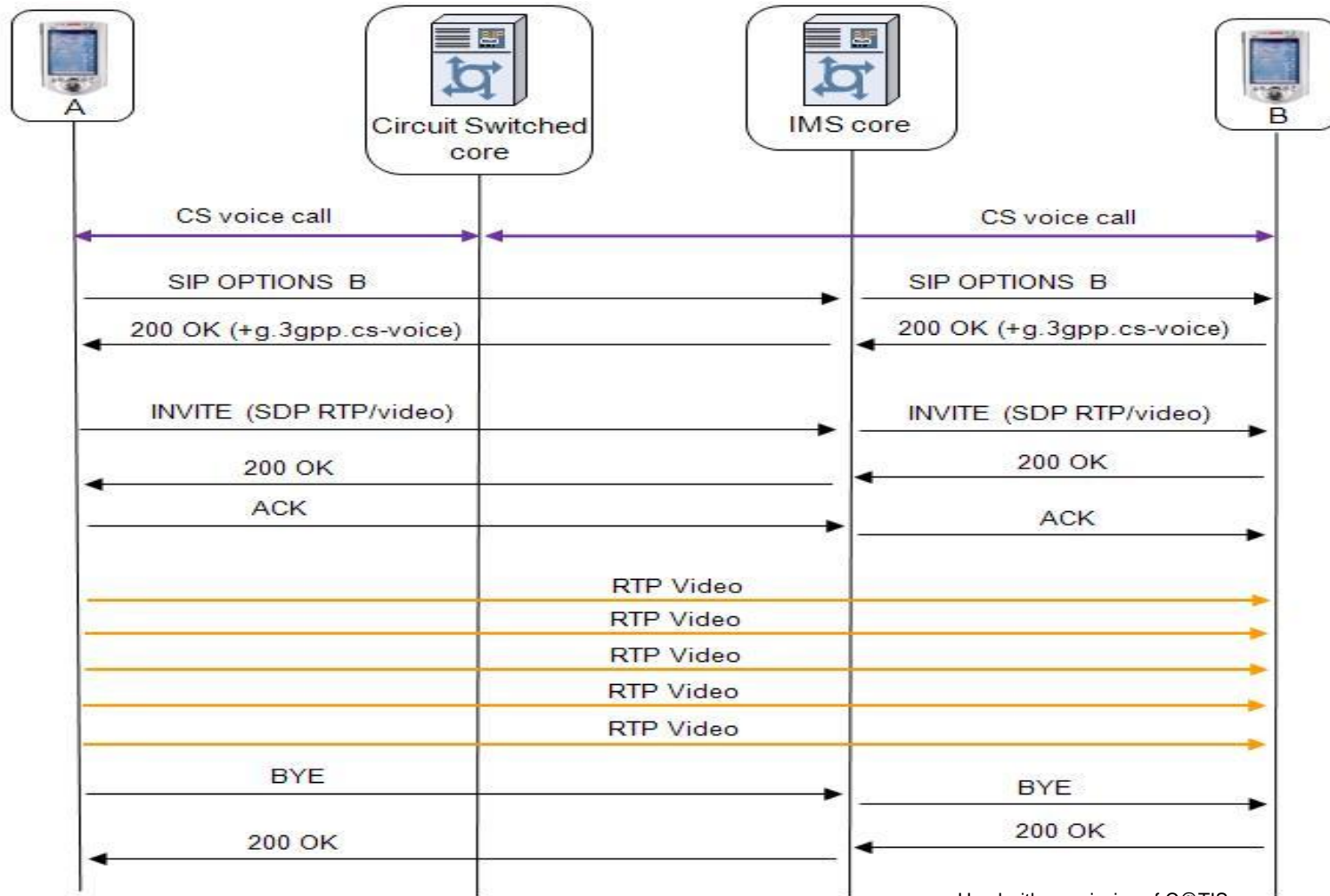
Service example:  
Communication Forwarding Unconditional (CFU)  
from UE2 to UE3



## RCS SERVICE FLOWS FOR PRESENCE & CAPABILITIES EXCHANGES



# RCS-IMS COMBINATIONAL SERVICE VOICE & VIDEO



## KEY IMS BENEFITS

- Opens the possibility for different industry players to cooperate in the creation and support of innovative communication services that satisfy users demands
- Creates increased business opportunities for the operators to expand into new markets and find new revenue
- Enables Operators to satisfy the data services demands and needs of their customers
- Legacy telecom infrastructure can be phased out incrementally – no forked lift network migration
- Operators maintain “Control” of their service offerings and subscriptions – no longer becoming a “dumb” pipe
- Open and standard interfaces enable integration of new components, services, and technologies