

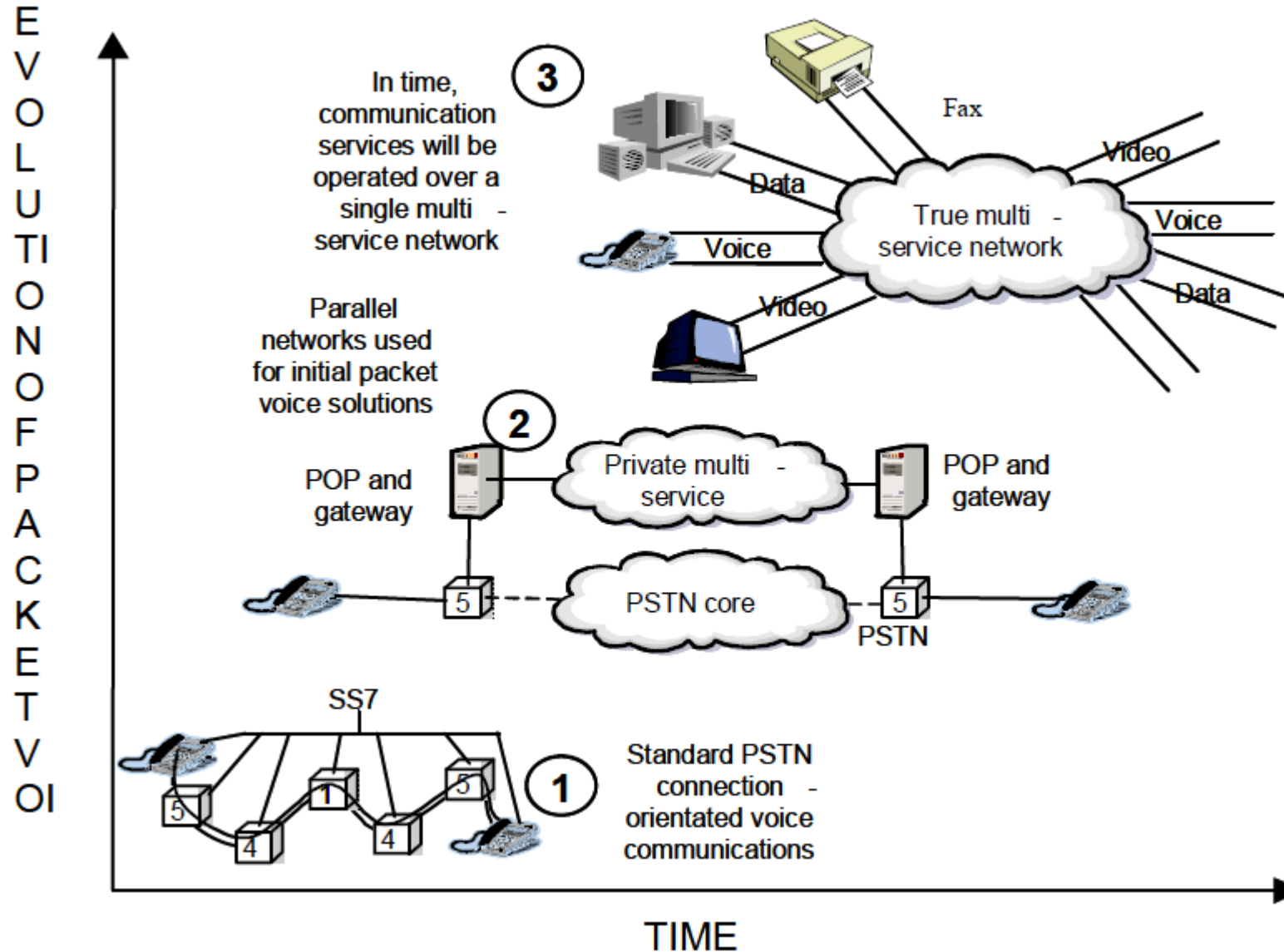
Core IMS/VoLTE

An Introduction for CS Core Specialist

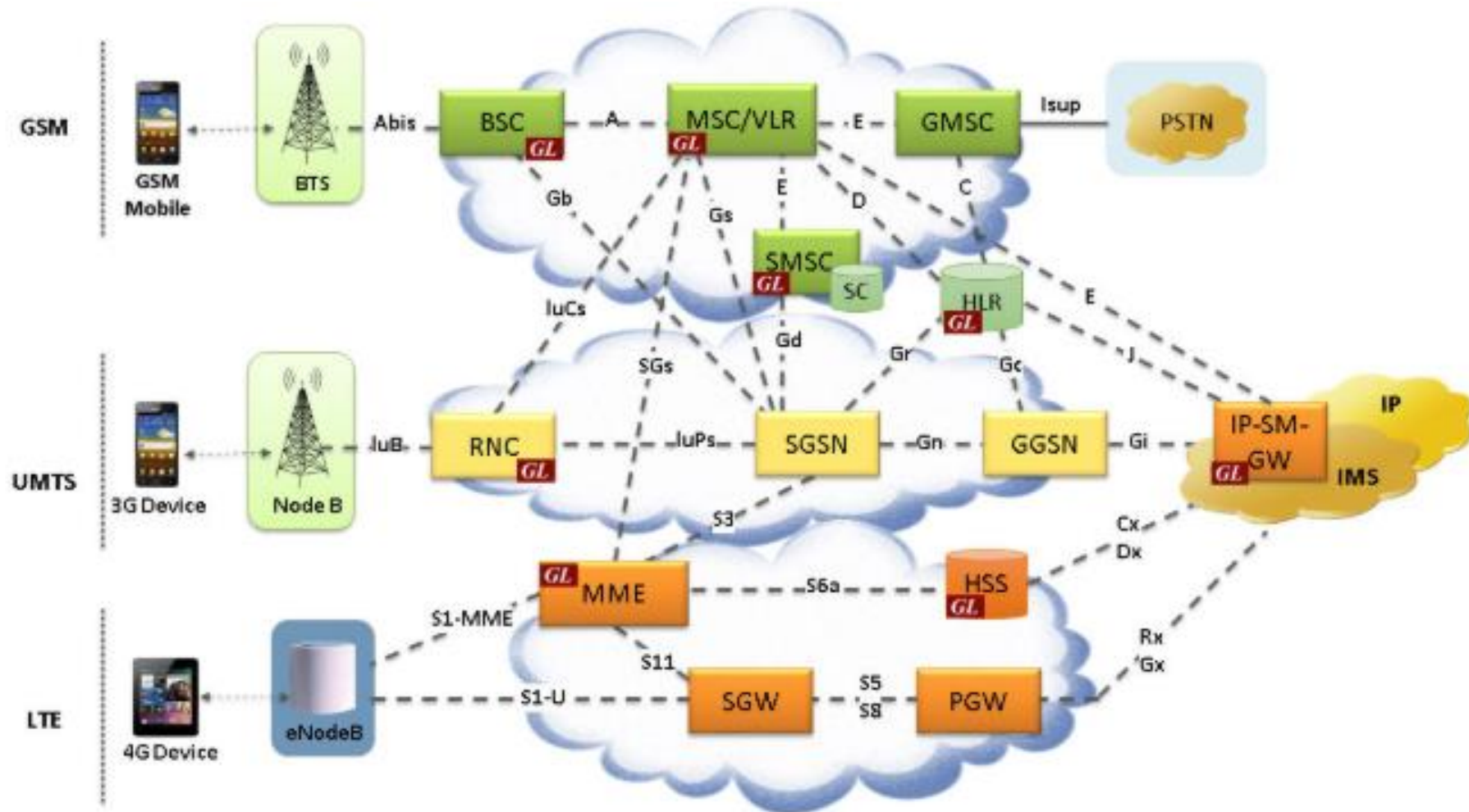
IMS Core Introduction

- Changes from CS
- Basic Elements

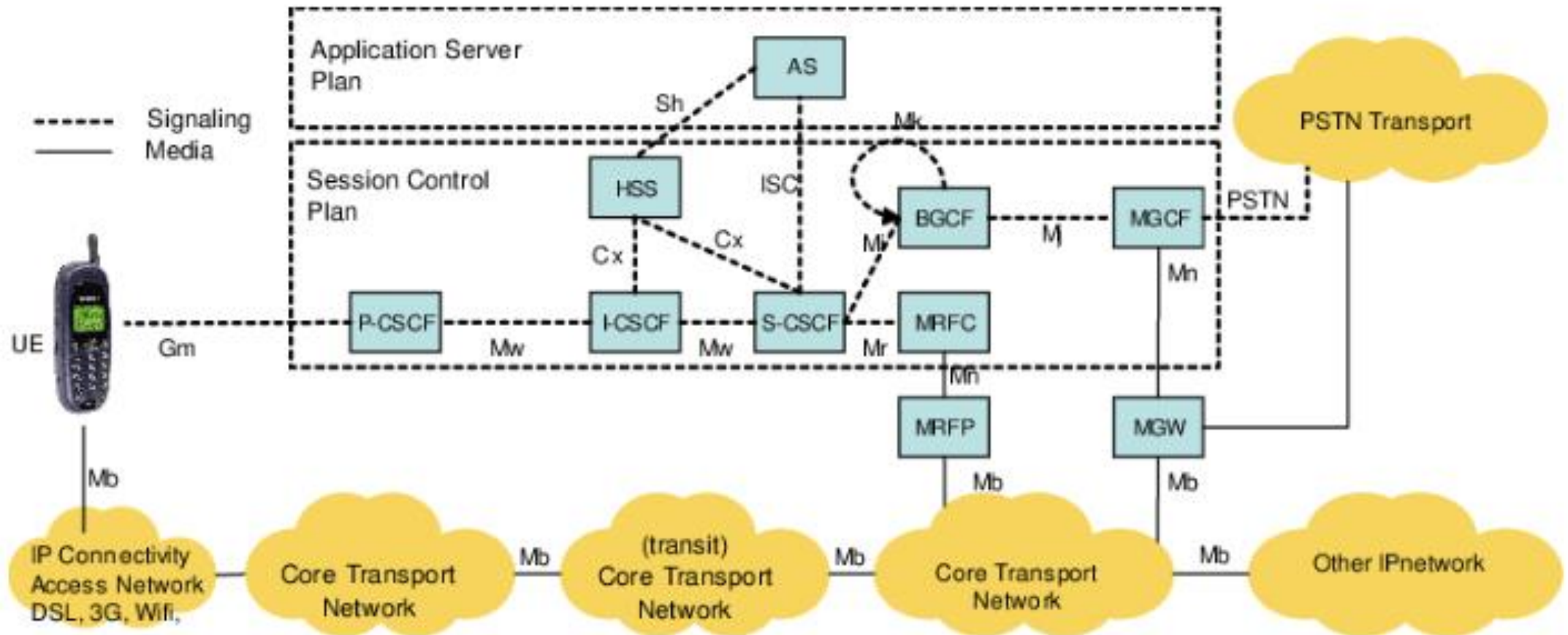
CS to PS Voice Evolution



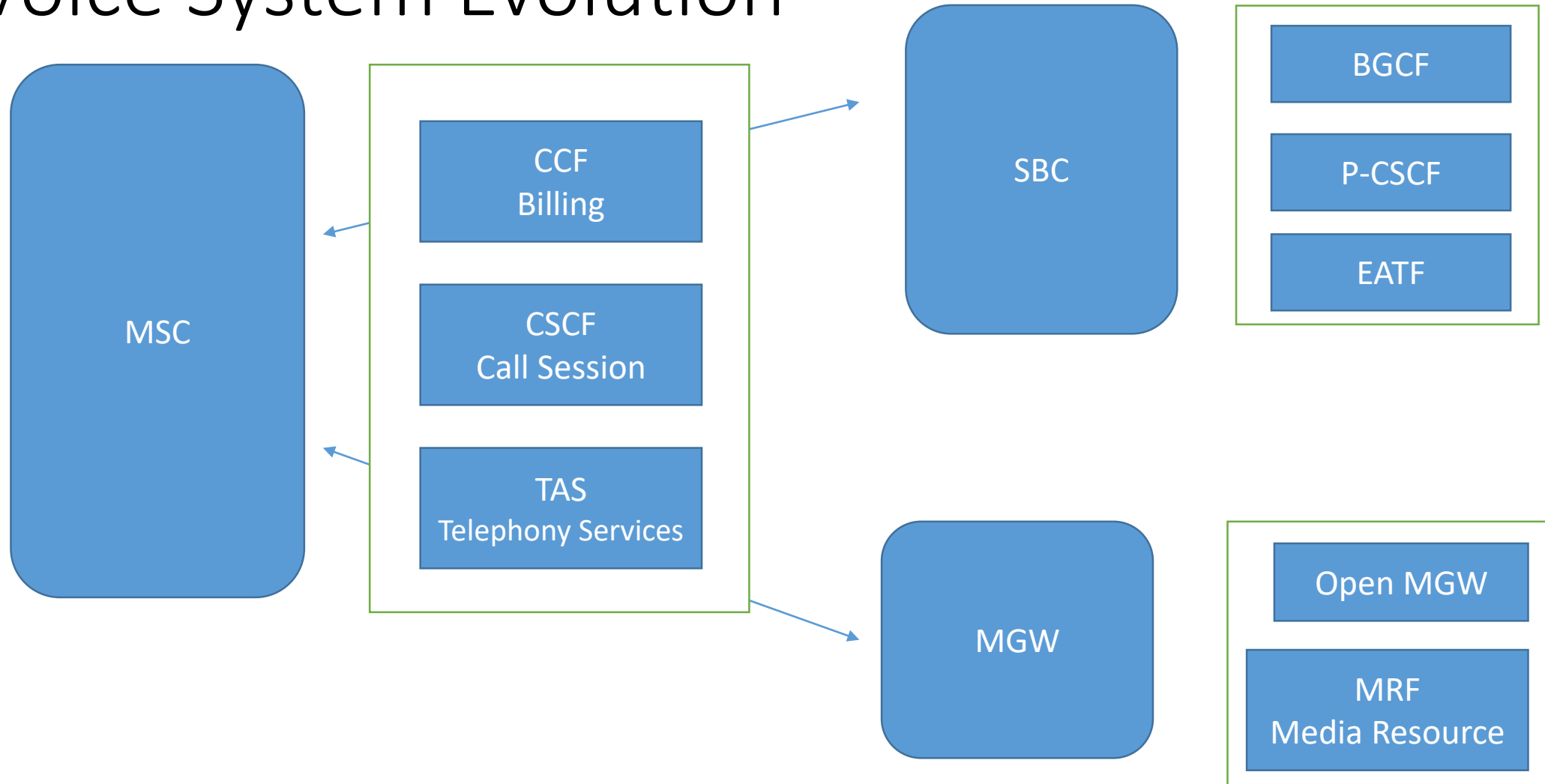
Differences in Access Between CS and VoLTE



Basic Diagram



Voice System Evolution



AS (The Brain)

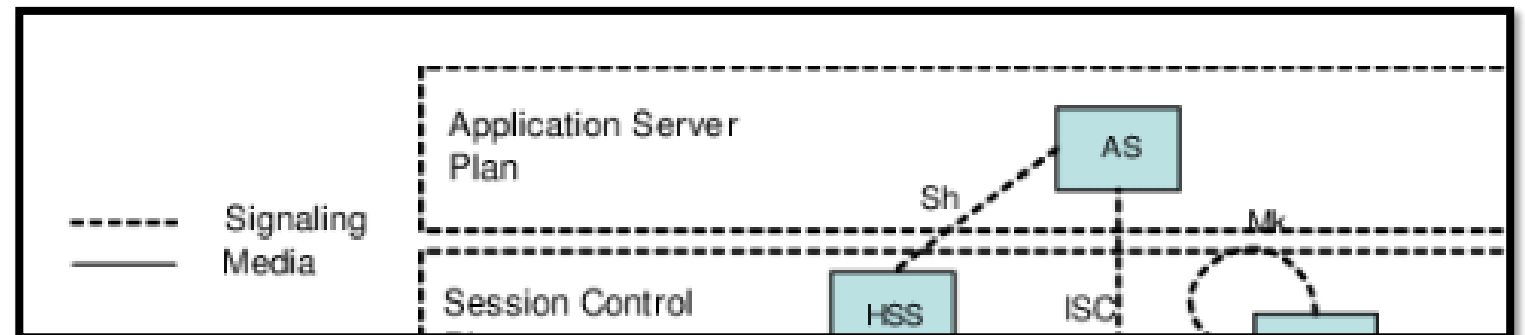
Application Server

- A Server Executes an application (Telephone, OSA, APP)
- The most important application is the Telephone (TAS)
- Receives SIP signalling to handle a service (Control) from S-CSCF
- Connects and ask details about UE to the HSS
- Application Server Layer

Protocols

SIP

Diameter



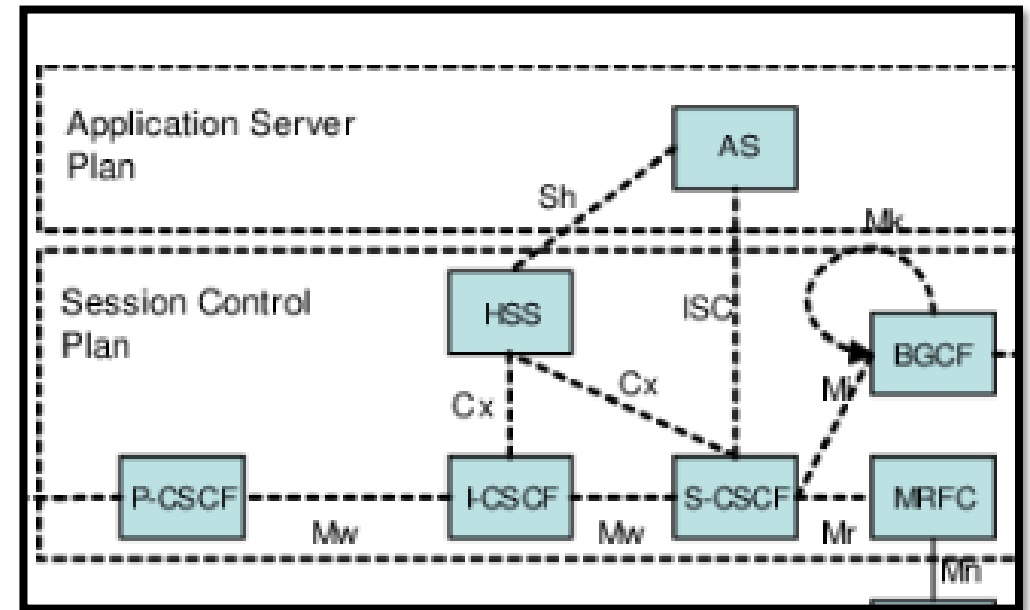
P-CSCF (The Proxy)

Proxy Call Session Control Function

- The first element in the IMS Core from Access
- Receives Control Signalling from GGSN and routes to I-CSCF
- Check identity of the users and confirm this for processing for the S-CSCF
- Session Control Layer

Protocols

SIP



I-CSCF (Interrogator)

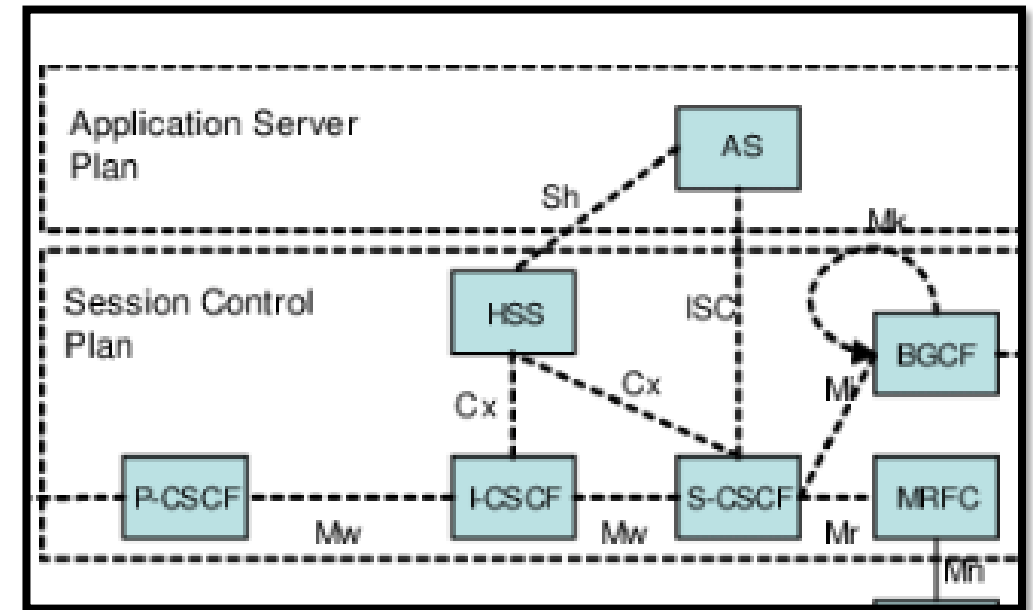
Interrogating Call Session Control Function

- Responsible for applying network domain security for topology hiding
- Locate and route to signaling from a home or visited P-CSCF to the S-CSCF
- Originates a request to the HSS to obtain the routing information
- Session Control Layer

Protocols

SIP

Diameter



S-CSCF (The Service Deliver)

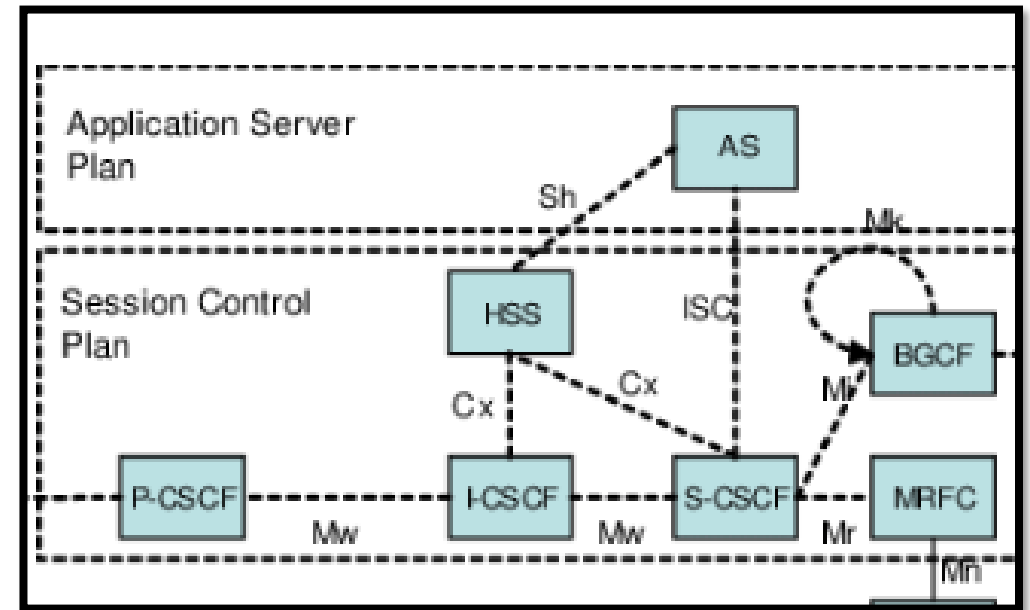
Serving Call Session Control Function

- Enables, obtains, and stores the user profiles from the HSS
- Communicates the registration information
- Selects an AS to handle a call
- Session Control Layer

Protocols

SIP

Diameter



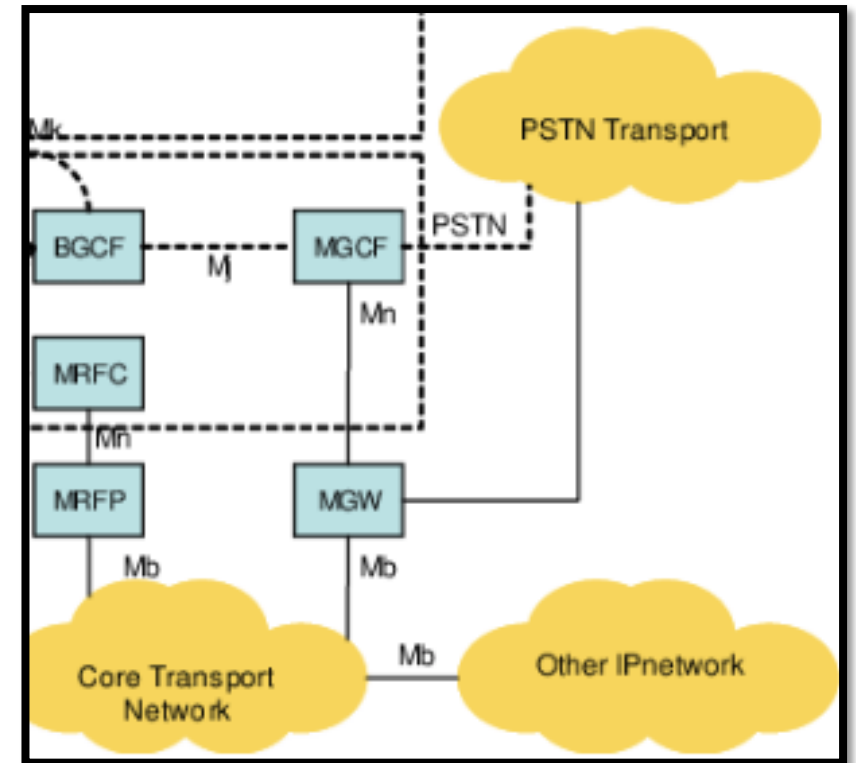
MGCF (The Old Man)

Media Gateway Control Function  Mobile Softswitch Center

Protocols

SIP

H.248



MRF (The receptionist)

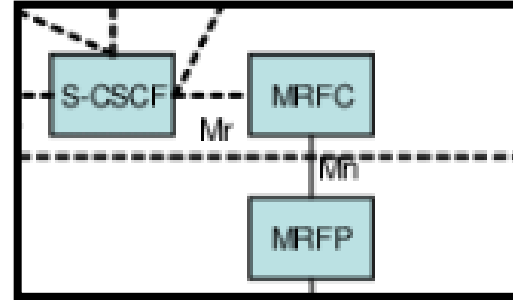
Media Resource Function

- Provides announcement playback
- Receives a request from SCSCF to get a tone and deliver the sound
- Session Control Layer

Protocols

SIP

RTP



SCC -AS (The Gateway)

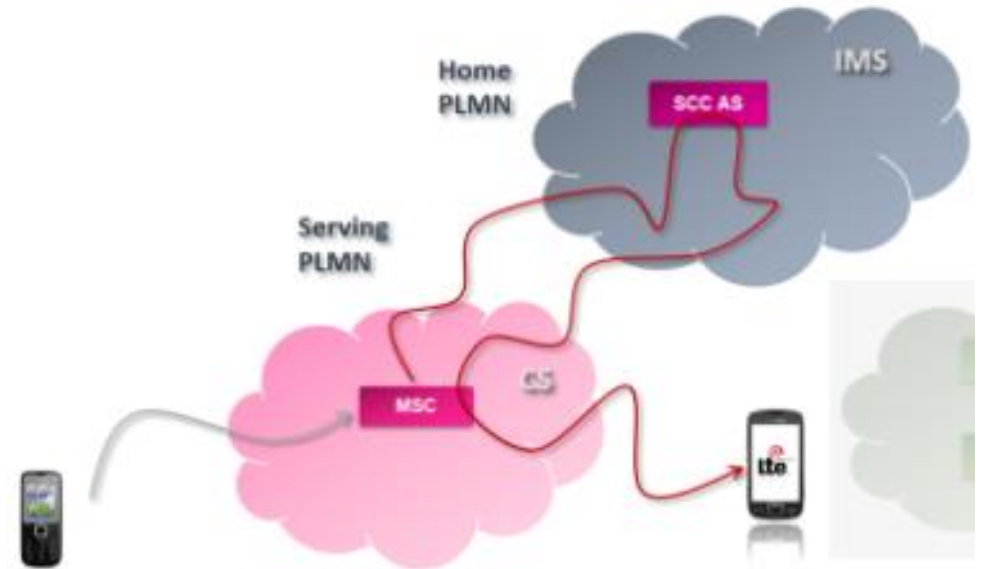
Service Centralization and
Continuity Application Server

- IMS control of services where the media is transported via the CS network
- Supports Single Radio Voice Call Continuity
- Session establishment when using CS access for an IMS service
- Connection with HSS and SCSCF
- Application Server Layer

Protocols

SIP

Diameter



CCF (the accountant)

Charging Collection Function

- Collects charging records from the IMS elements for off-line charging
- Obtains the Records from TAS
- Session Control Layer

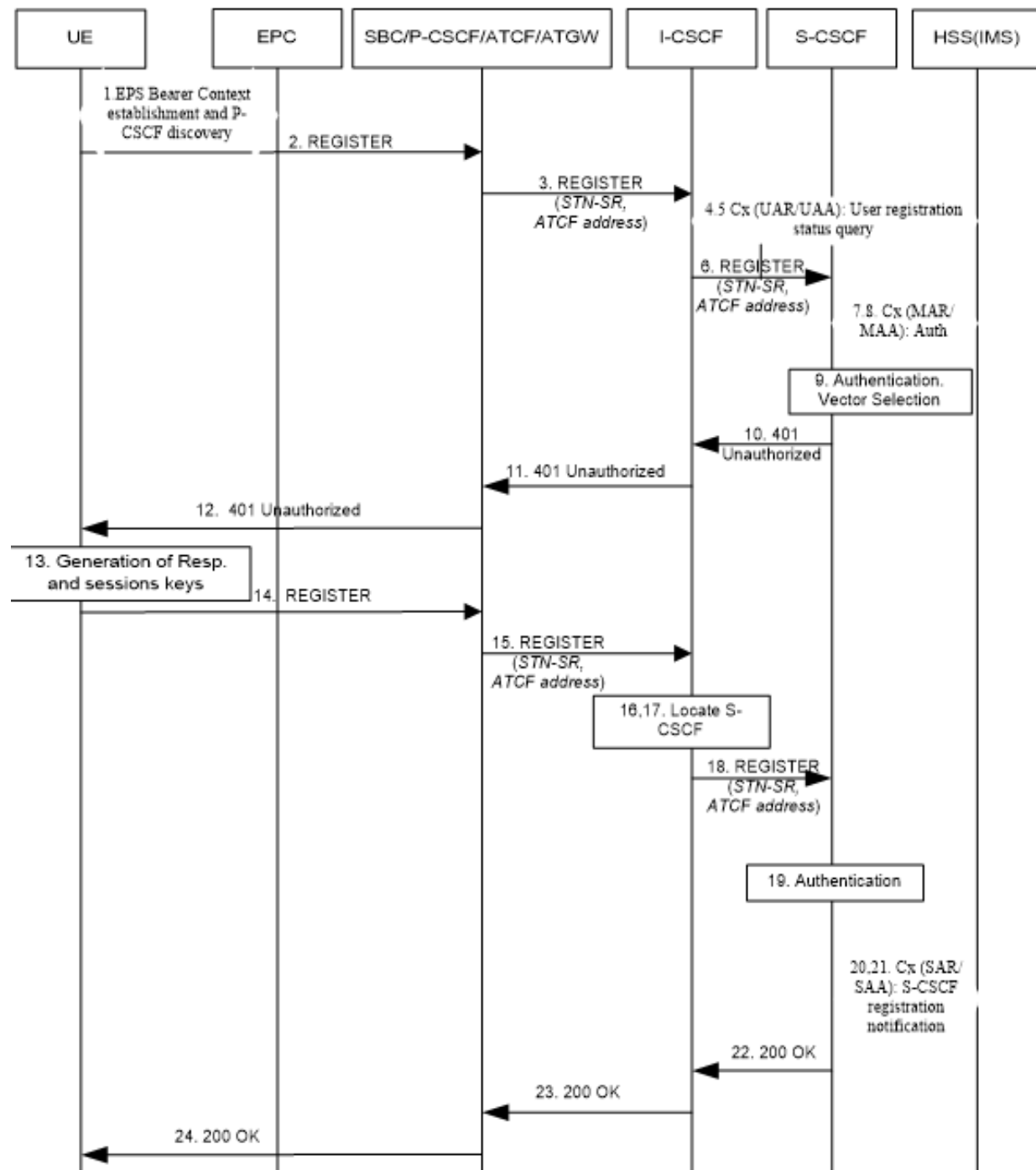
Protocols

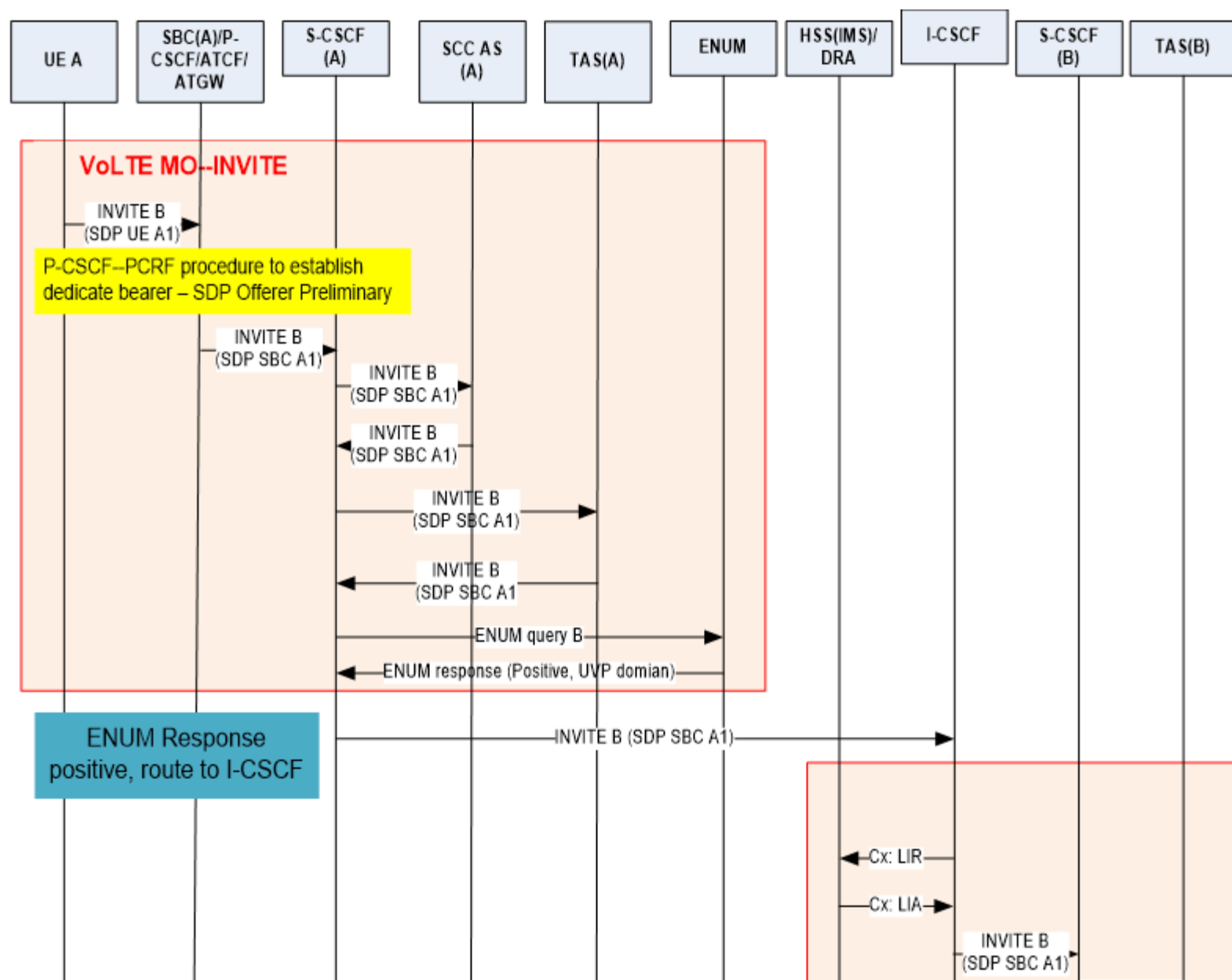
Diameter

Basic Call Flows

- Registration
- VoLTE to VoLTE
- VoLTE to CS

Registration





Call VoLTE to VoLTE

VoLTE to CS

