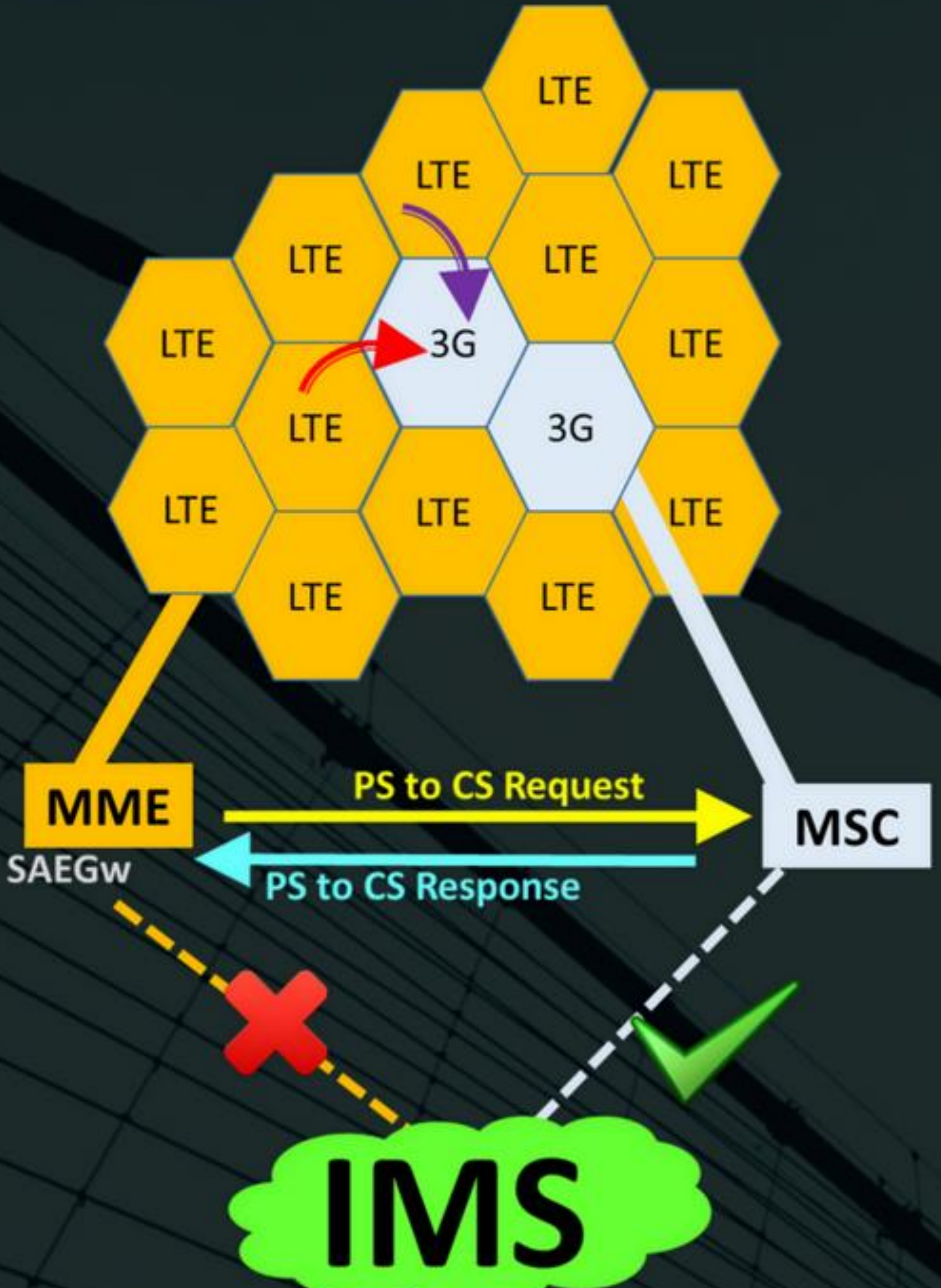
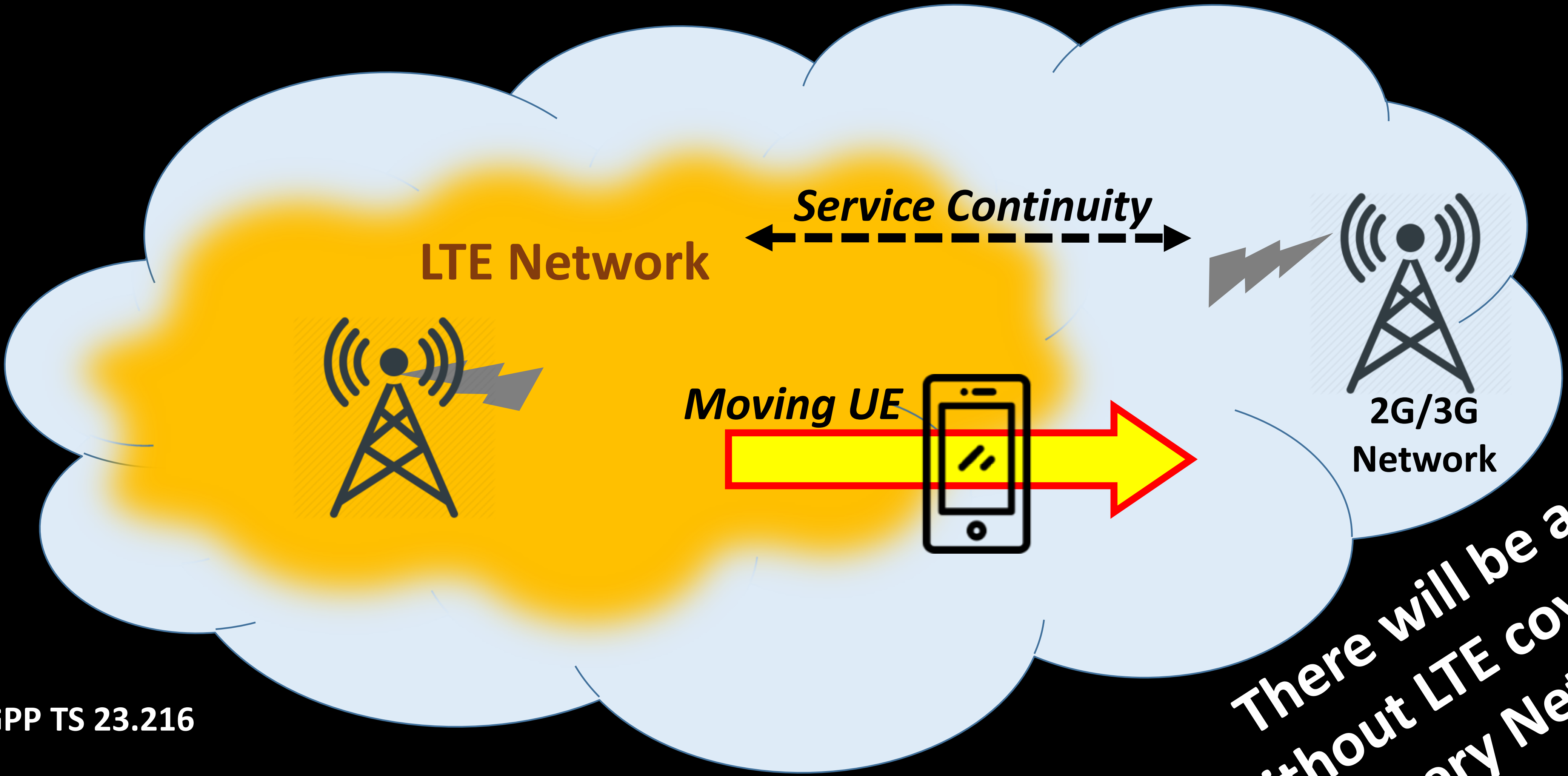
VoLTE SRVCC

Single Radio Voice Call Continuity



What is SRVCC
(Single Radio Voice Call Continuity)



3GPP TS 23.216

There will be areas without LTE coverage in every Network

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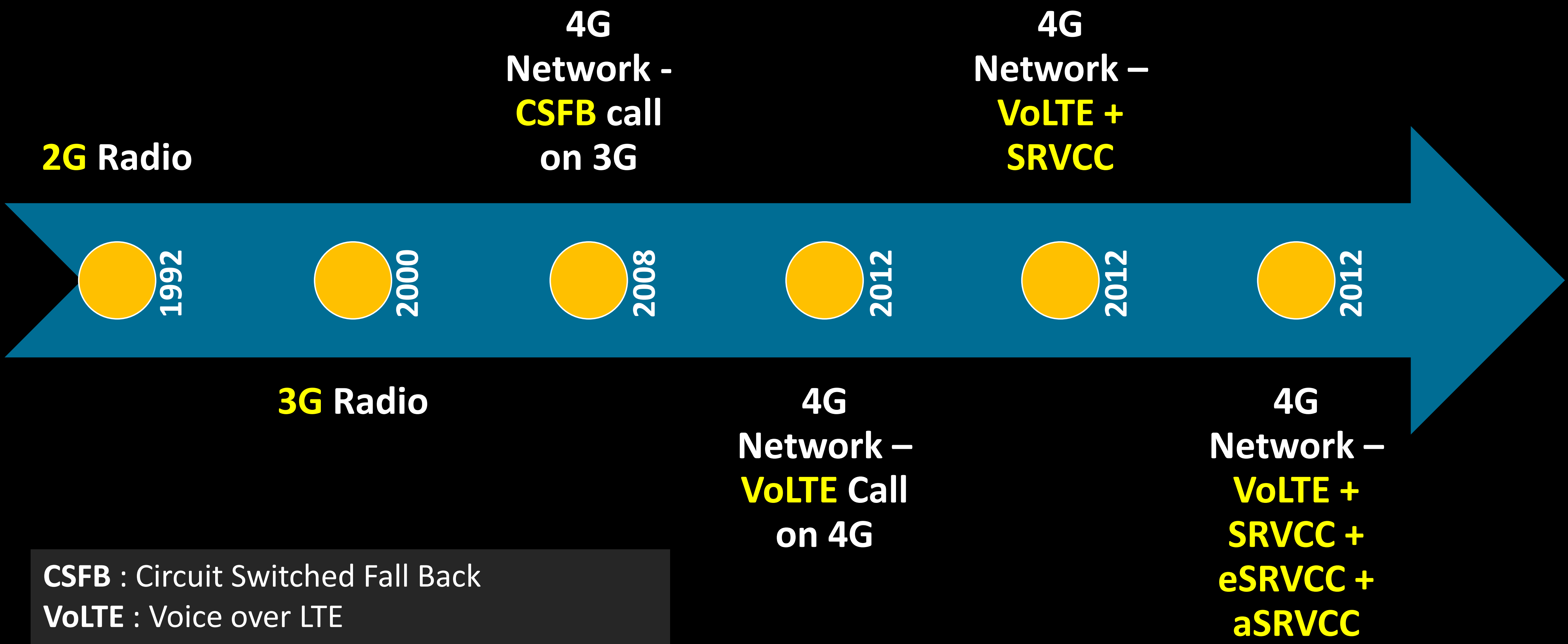
Evolution of Voice Call



CSFB : Circuit Switched Fall Back
VoLTE : Voice over LTE
SRVCC : Single Radio Voice Call Continuity
eSRVCC : Enhanced SRVCC
aSRVCC : Alerting SRVCC

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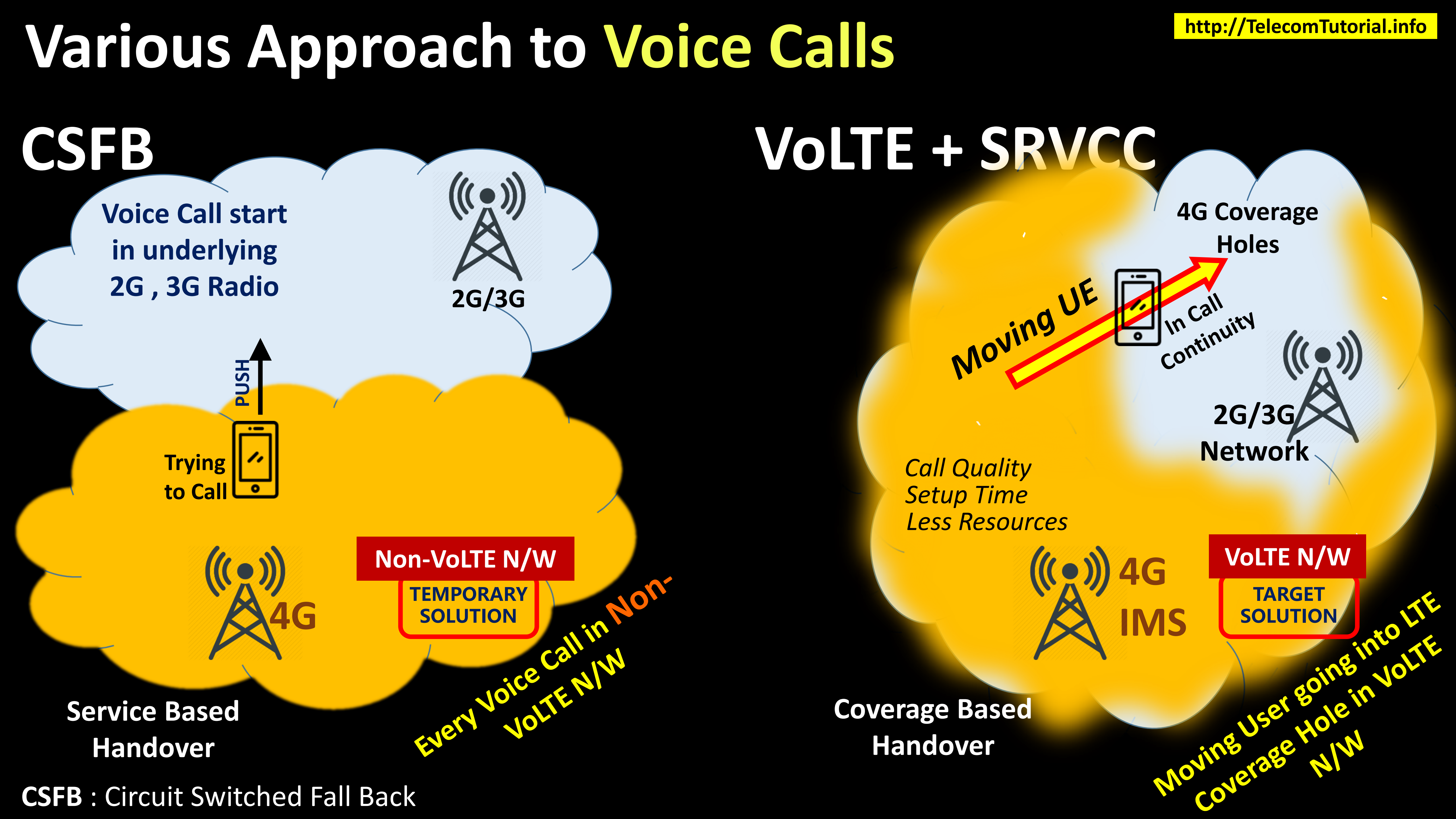


Various Approach to Voice Calls
http://TelecomTutorial.info
CSFB
Voice Call start in underlying 2G , 3G Radio
2G/3G
PUSH
Trying to Call
4G
Non-VoLTE N/W
TEMPORARY SOLUTION
Every Voice Call in Non-VoLTE N/W
Service Based Handover
CSFB : Circuit Switched Fall Back
VoLTE + SRVCC
4G Coverage Holes
Moving UE
In Call Continuity
2G/3G Network
Call Quality
Setup Time
Less Resources
4G
IMS
VoLTE N/W
TARGET SOLUTION
Coverage Based Handover
Moving User going into LTE Coverage Hole in VoLTE N/W

Evolution of SRVCC

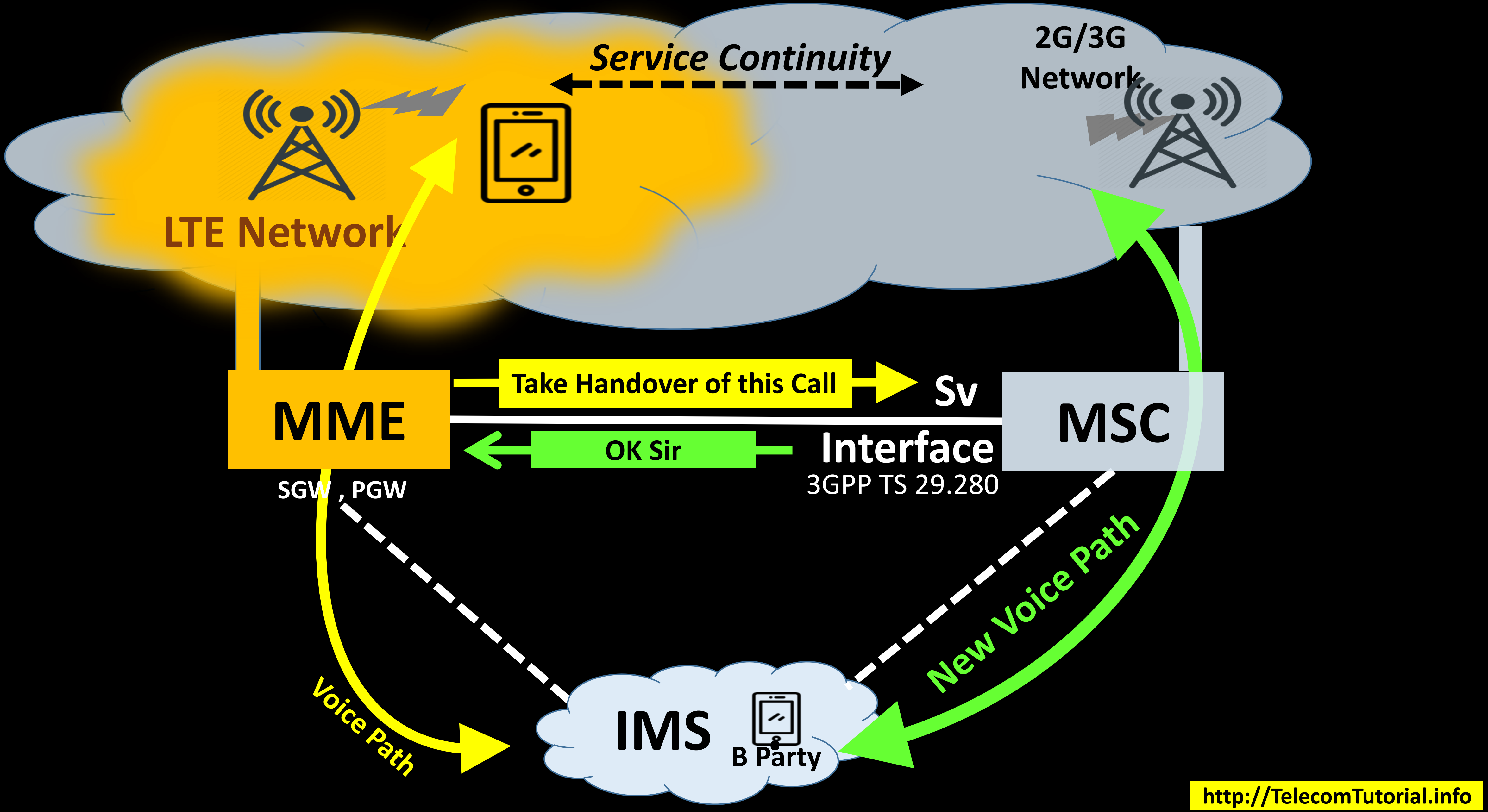
Name	3GPP Release	Description
Basic SRVCC	Rel 8	Call Continuity from E-UTRAN to UTRAN/GRAN
aSRVCC	Rel 10	Packet switched to Circuit Switched call transfer during Alerting Phase
eSRVCC	Rel 10	Enhanced SRVCC (Support for MSC Server assisted Mid Call Feature)
vSRVCC	Rel 11	Video SRVCC
rSRVCC	Rel 11	SRVCC from UTRAN/GRAN to E-UTRAN

Improve User experience

GSMA IR.64

3GPP TS 23.216

How it works


Service Continuity
2G/3G
Network
LTE Network
MME
Take Handover of this Call
Sv
MSC
OK Sir
Interface
3GPP TS 29.280
SGW , PGW
New Voice Path
Voice Path
IMS
B Party
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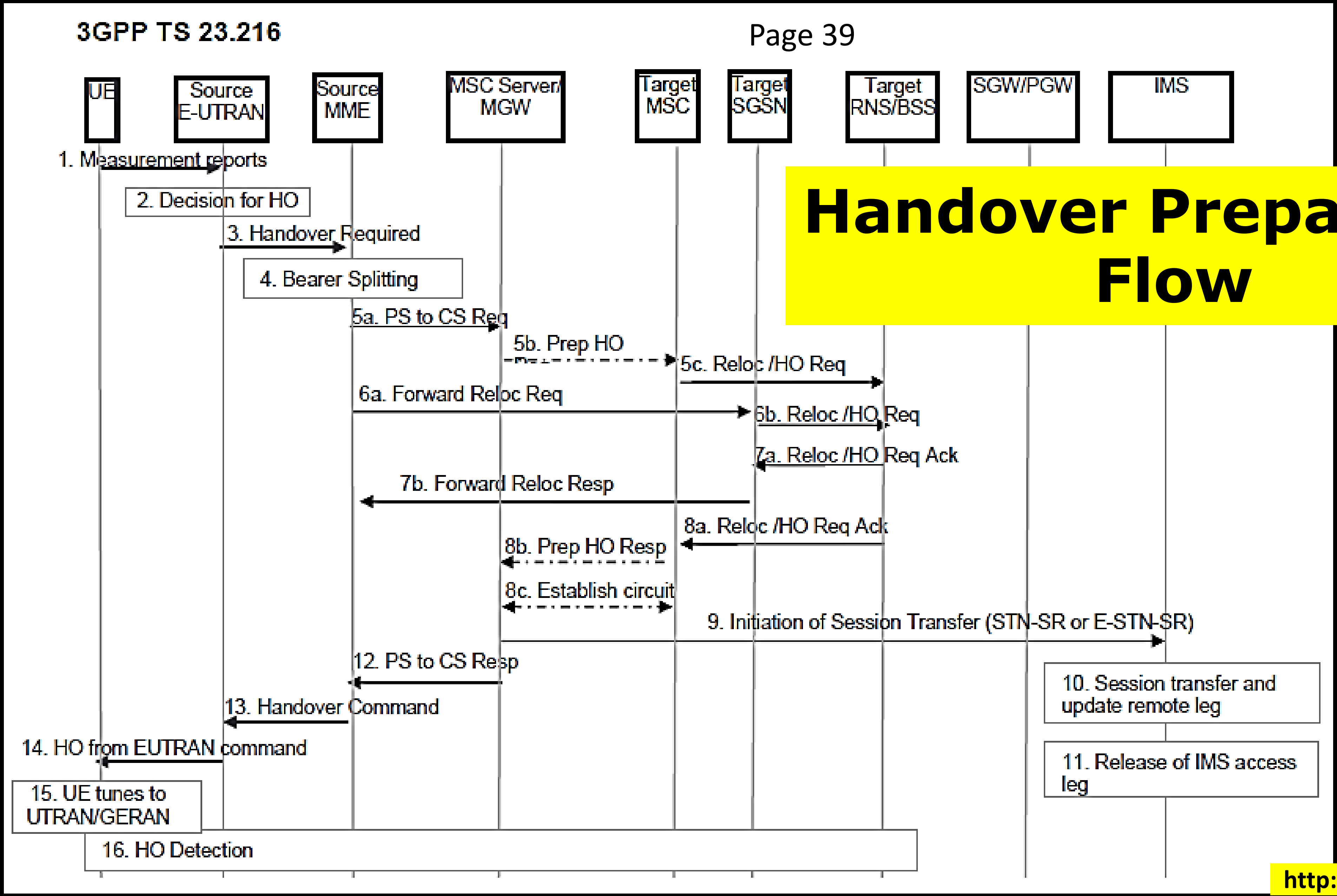
SRVCC Call flow



Handover Preparation Flow

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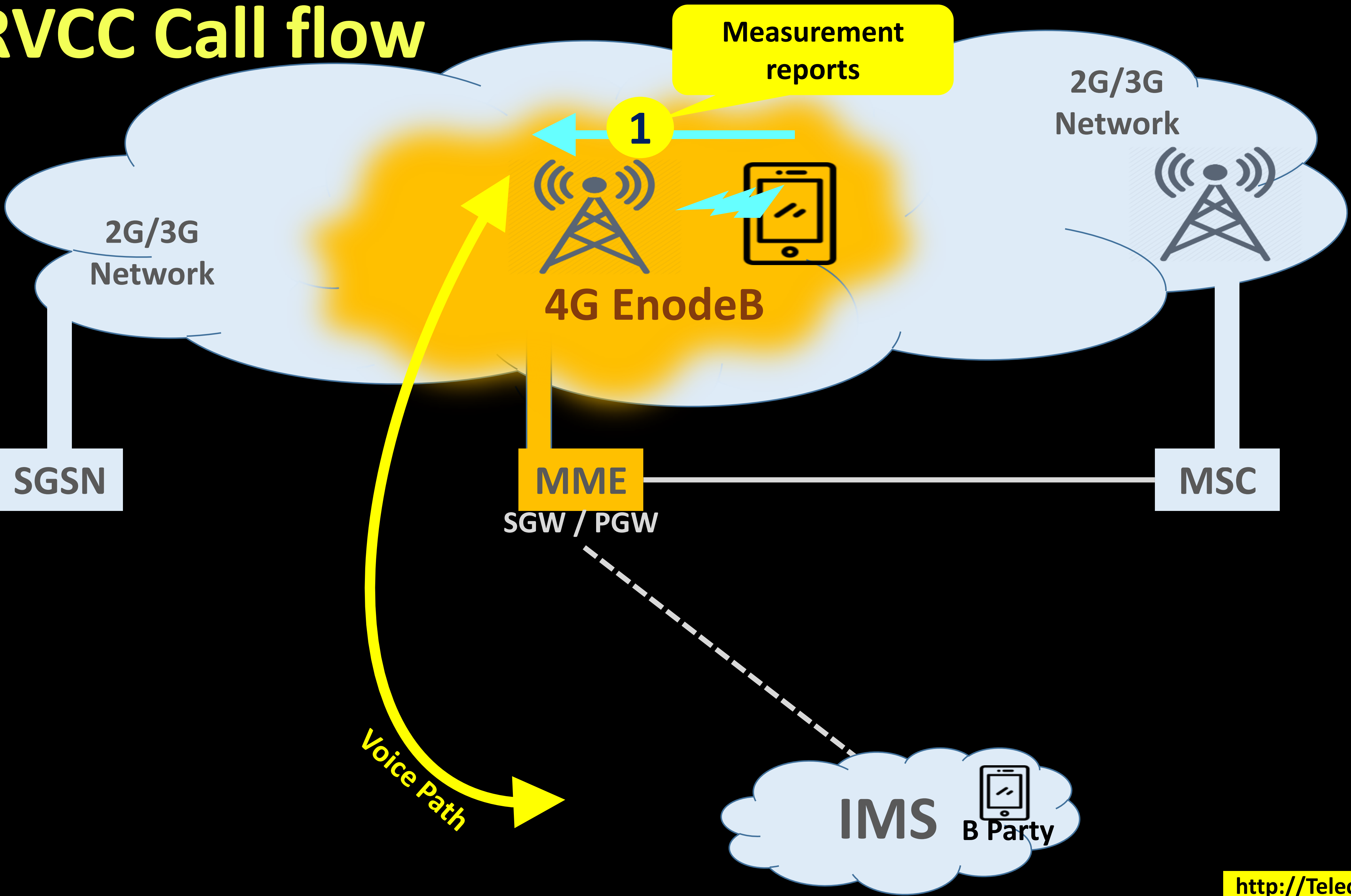
SRVCC Call flow



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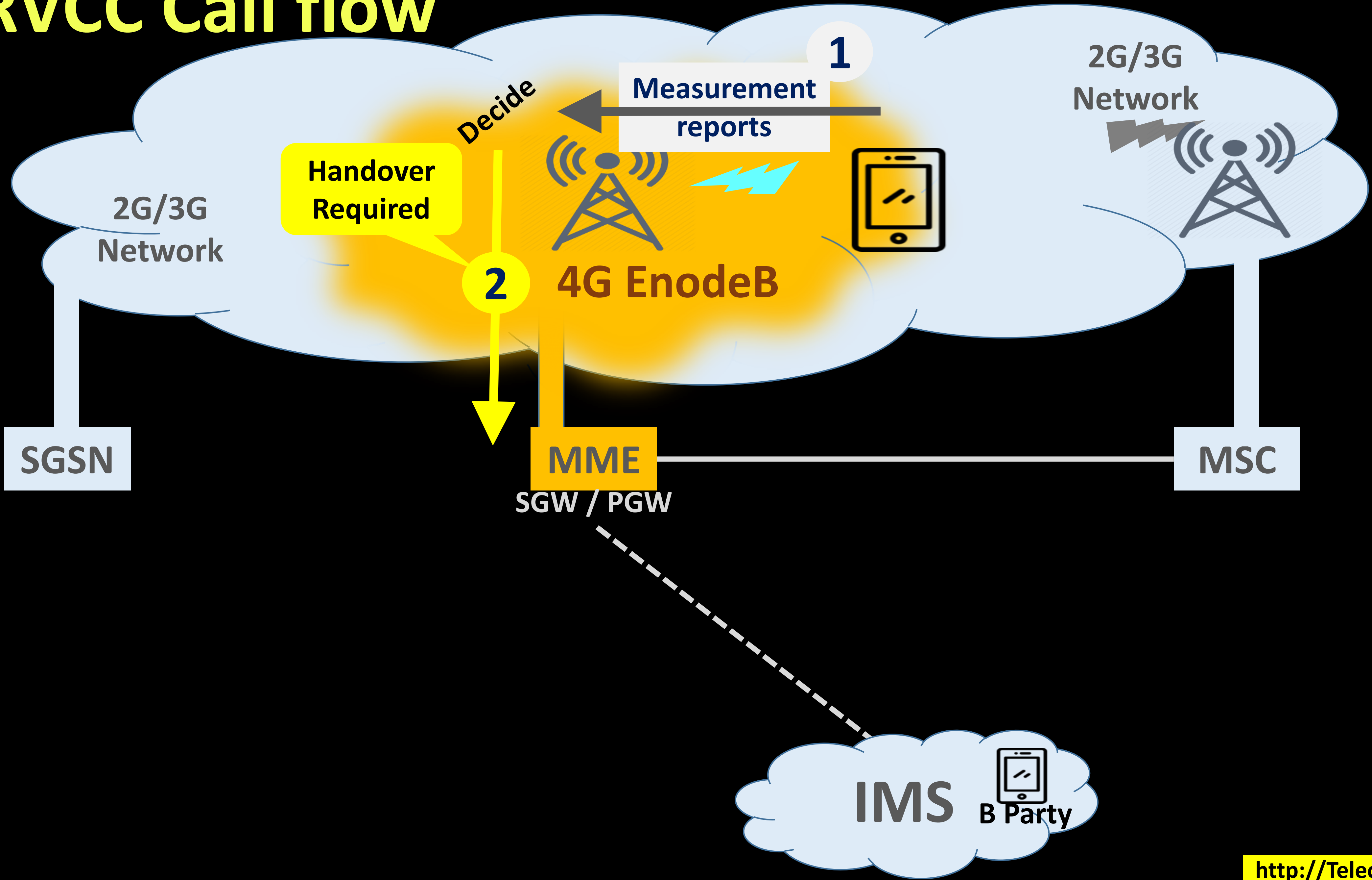
SRVCC Call flow



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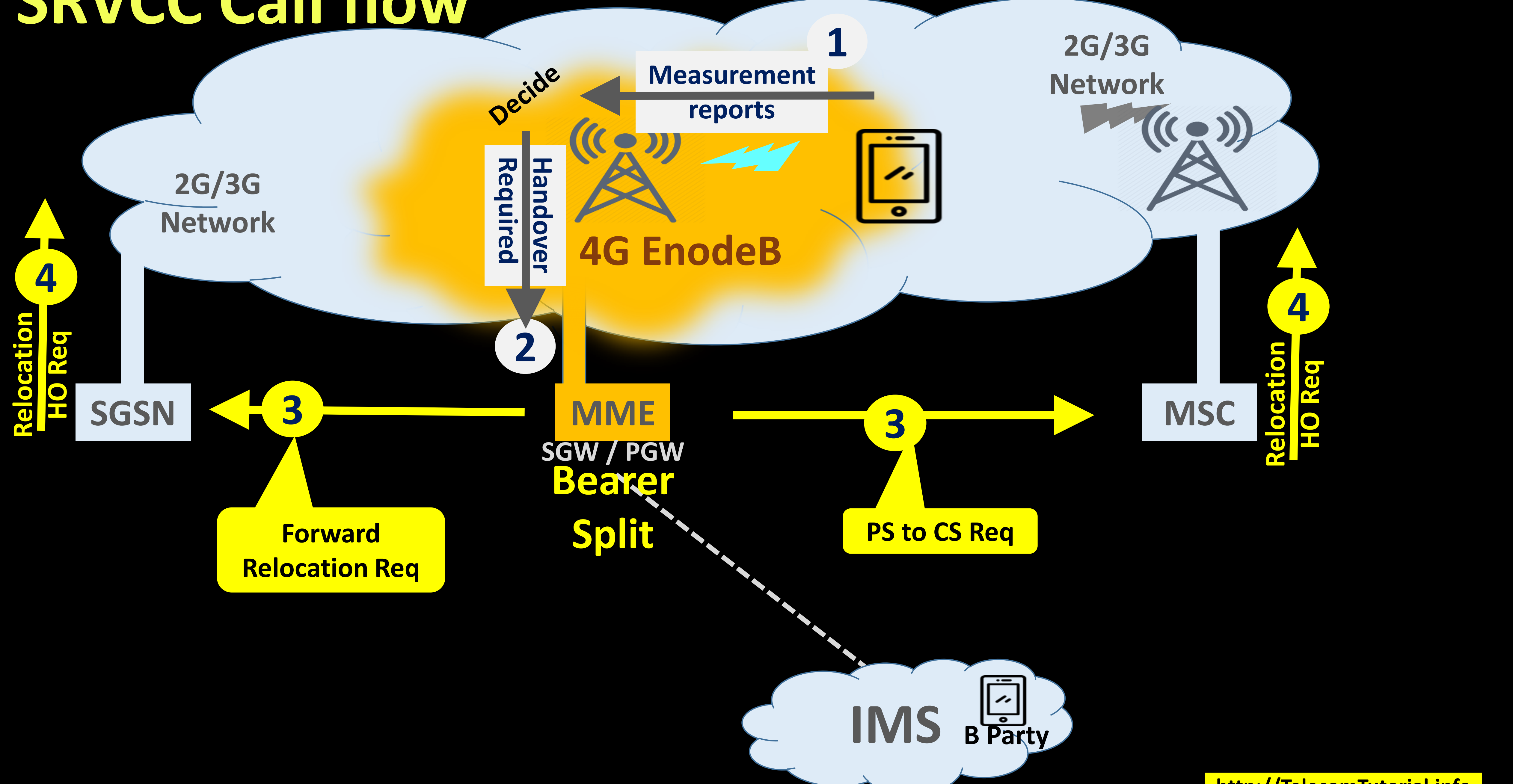
SRVCC Call flow



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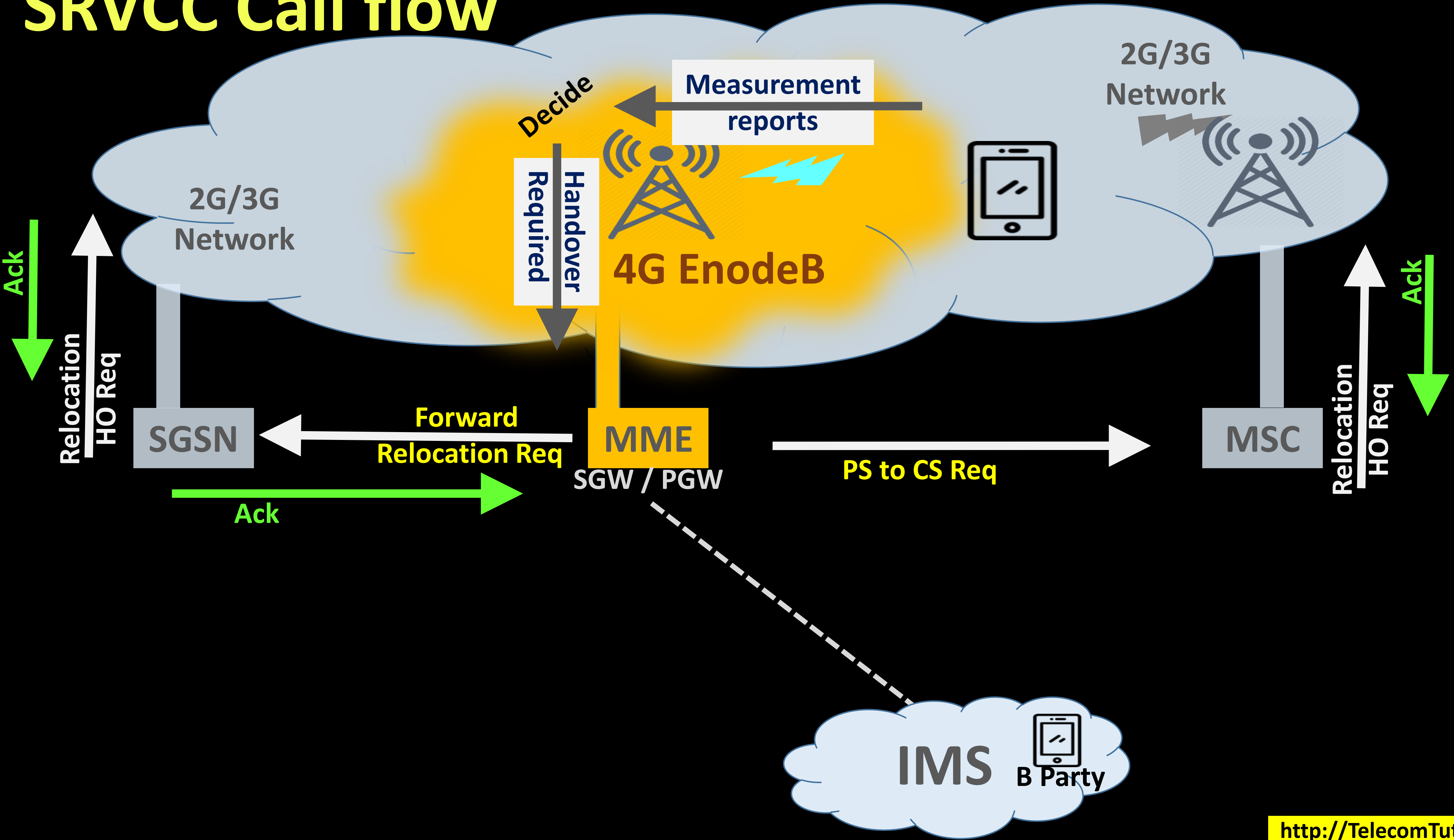
SRVCC Call flow



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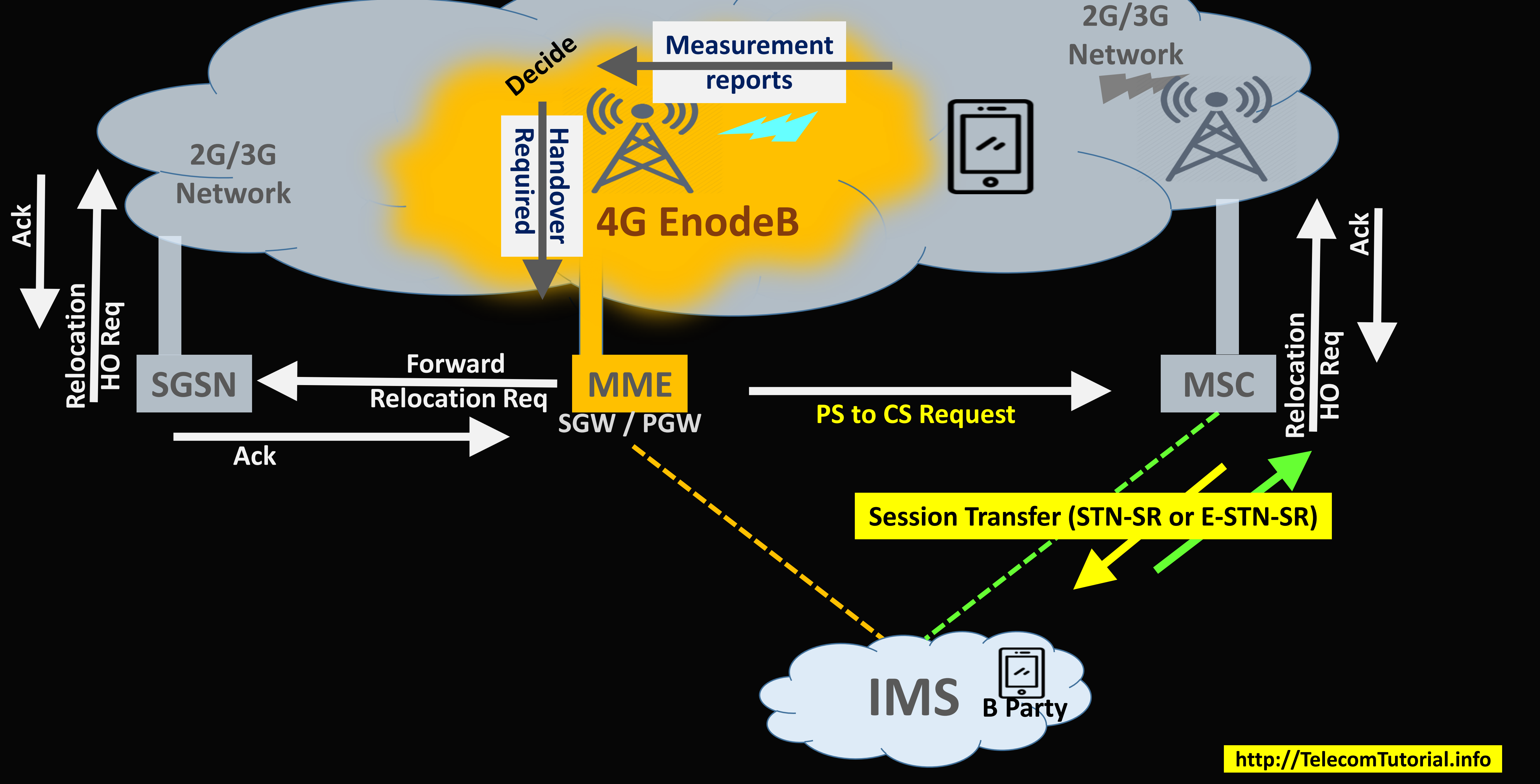
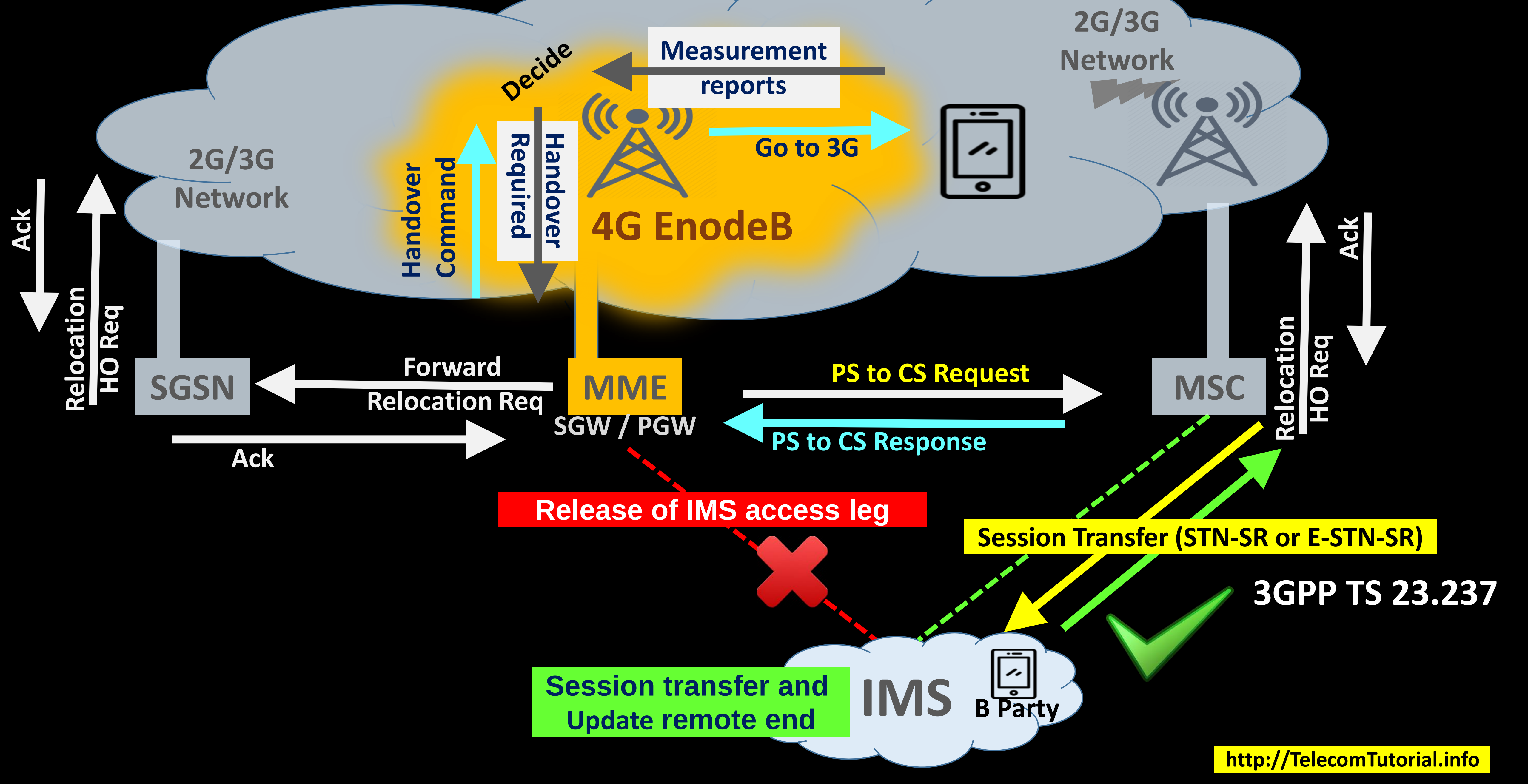
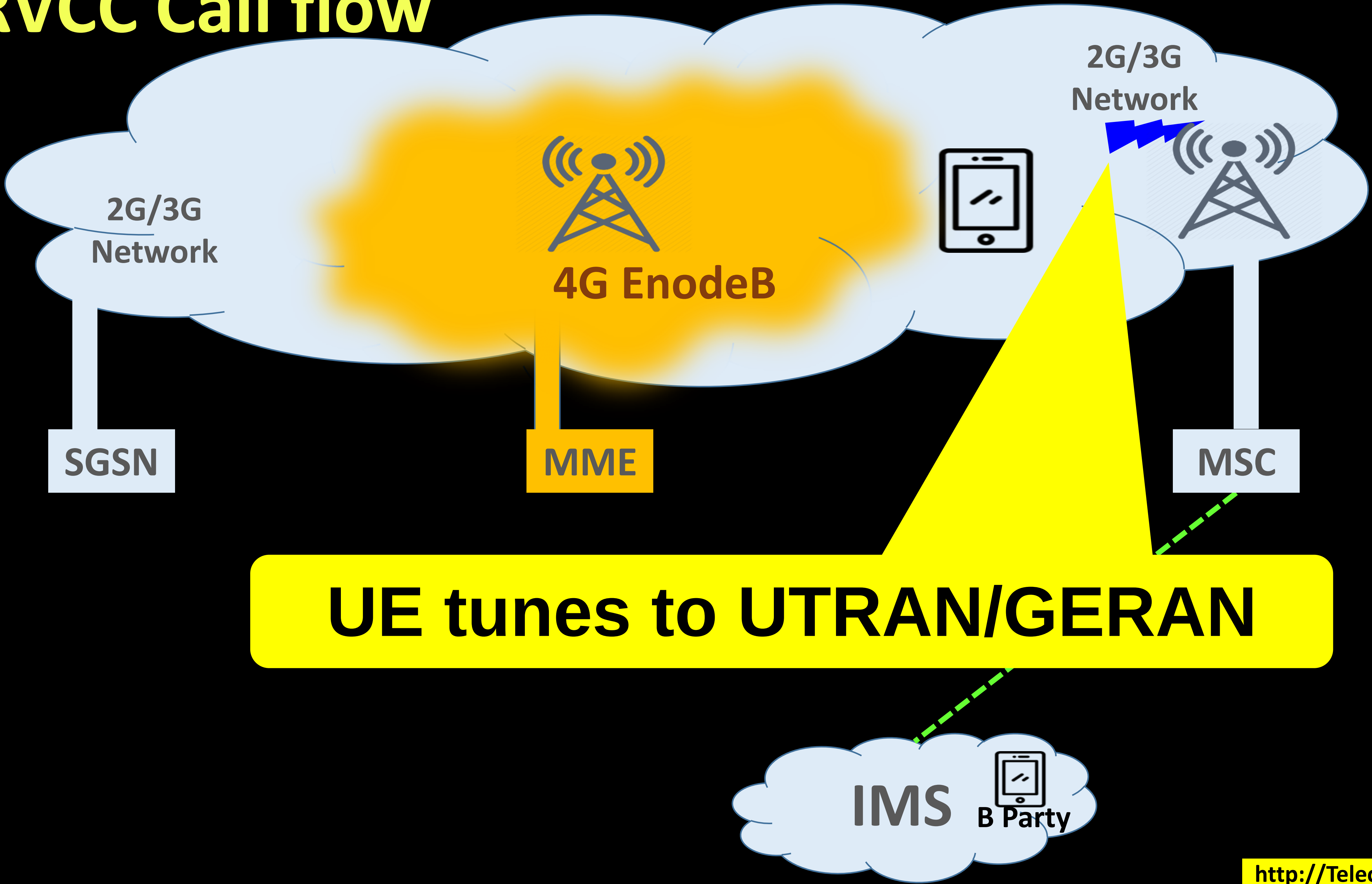
SRVCC Call flow



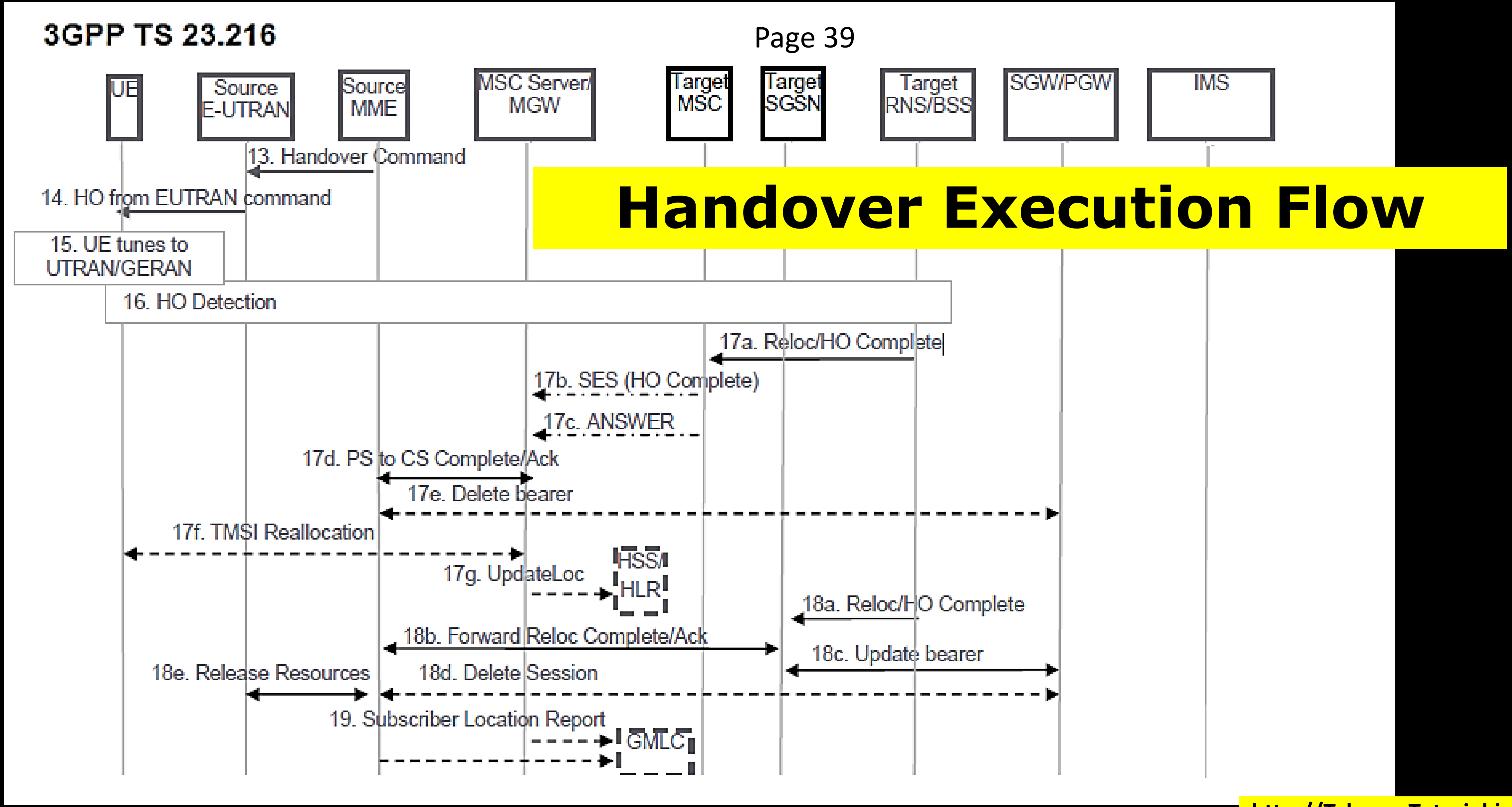
SRVCC Call flow



SRVCC Call flow



SRVCC Call flow



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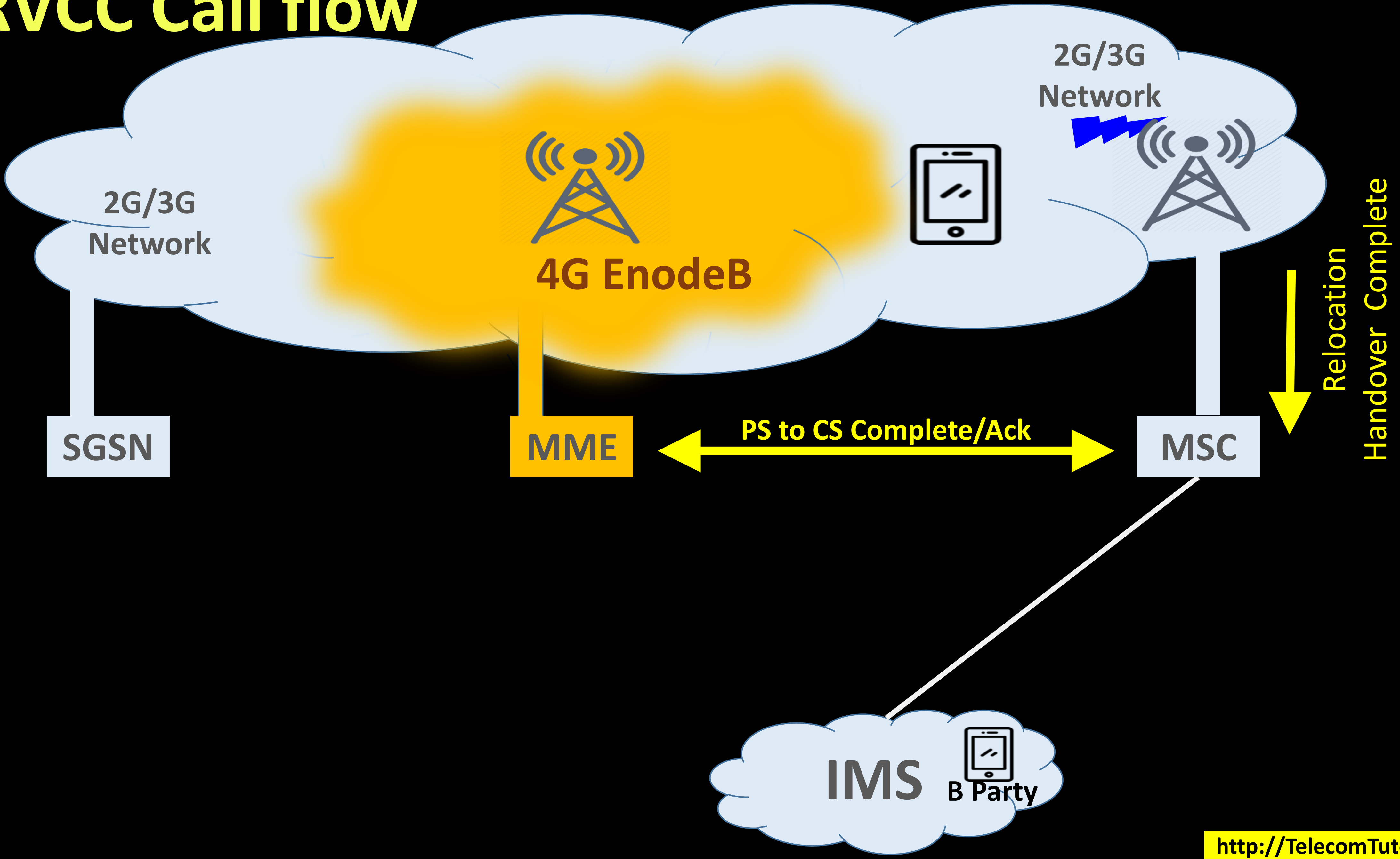
SRVCC Call flow



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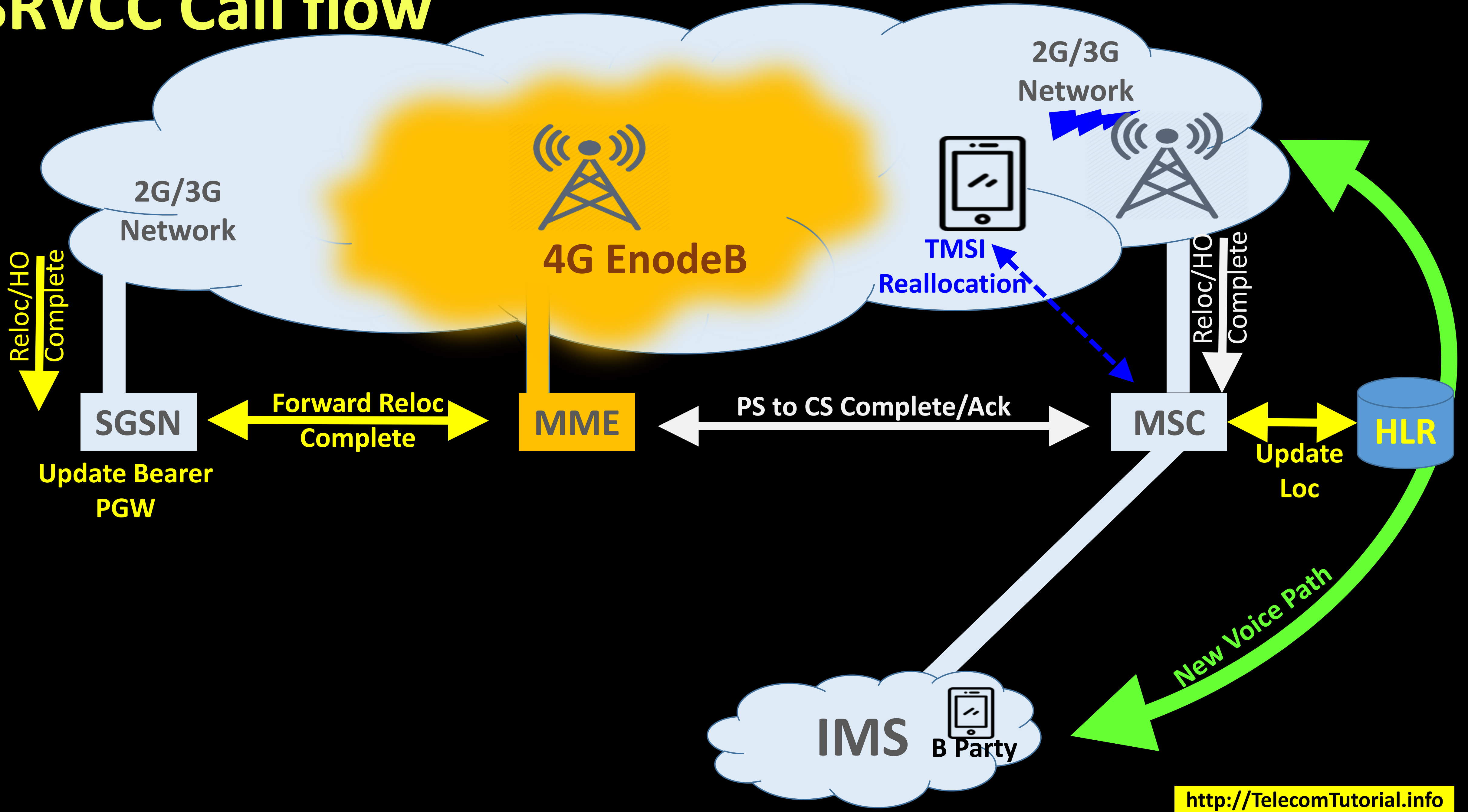
SRVCC Call flow



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SRVCC Identities

Session transfer number for SRVCC (STN-SR)

- Used for Session Transfer of Call to CS Domain
- E.164 Nomenclature (Similar to MSRN)
- Flow
  - HSS -> MME (s6, Attach Flow)
  - MME -> MSC (Sv, PS->CS Req)
  - MSC -> IMS (Voice Call)

Correlation MSISDN (C-MSISDN)

- Used for correlation of sessions at access transfer
- MSISDN of User in CS Network
- Helps to Identify Session to be Transferred

Network Changes required for Enabling SRVCC

- ATCF
- ATGW
- MSS
- E-UTRAN
- MME
- HSS
- SR-VCC-IWF
- SCC-AS

New

Enhanced SRVCC (eSRVCC)

Benefits of eSRVCC

- **Interruption Time Reduced**
  - SRVCC : 800-1000 ms
  - eSRVCC : < 300 ms

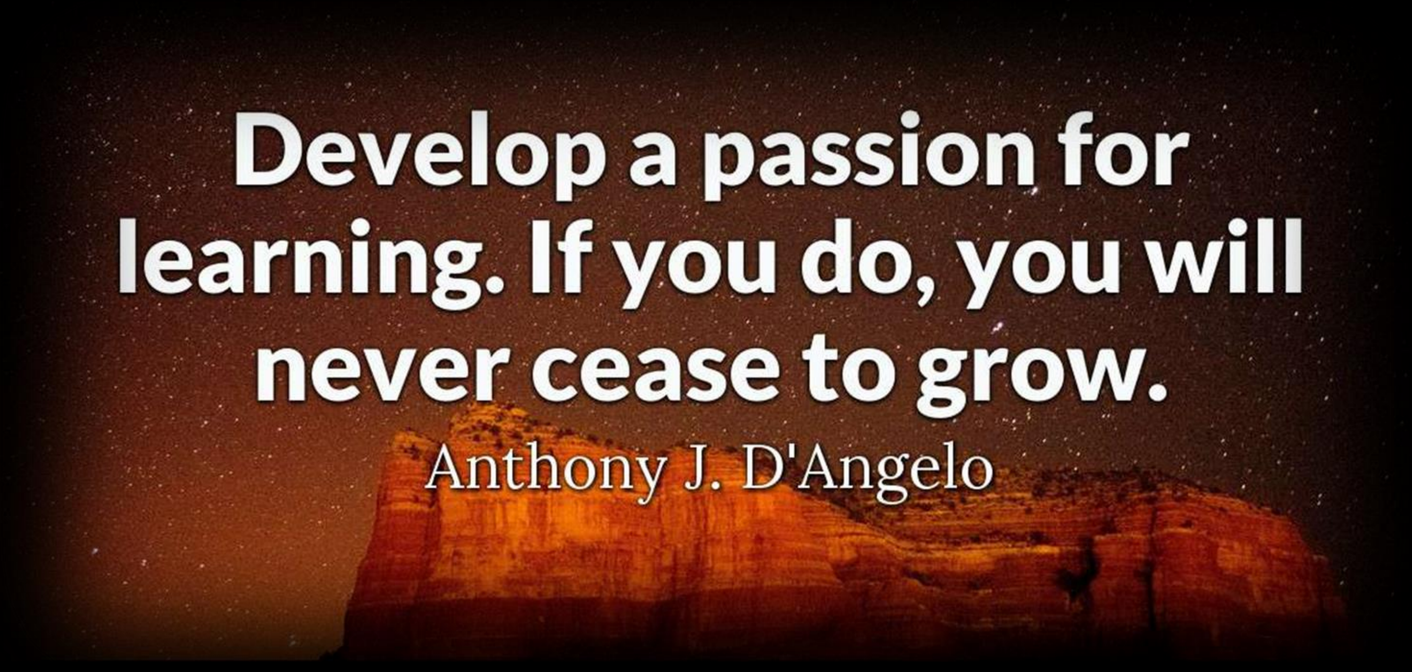
Changes Done for eSRVCC

- **Anchoring Point Change**
  - **SRVCC** : Home SCC-AS (*Call Must Go Back to Home Network for Roamers*)
  - **eSRVCC** : Serving Network ATCF/ATGW (Call can be Switched in Visited Network Itself – This Saves Time)

Further Study ..

Specs Ref	Name of Document
GSMA, IR.92	IMS Profile for Voice and SMS
GSMA, IR.94	IMS Profile for Conversational Video Service
3GPP, TS.23.216	Single Radio Voice Call Continuity (SRVCC)
GSMA, IR.64	IMS Service Centralization and Continuity Guidelines V6.0
3GPP, TS22.278	Service Requirements for the Evolved Packet System (EPS)
3GPP, TS23.237	IP Multimedia Subsystem (IMS) Service Continuity Stage 2

Vikas Shokeen



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