

VoLTE Evolution



Step by Step



- CS CORE
- EPC LTE
- CSFB
- SGS
- VOLTE

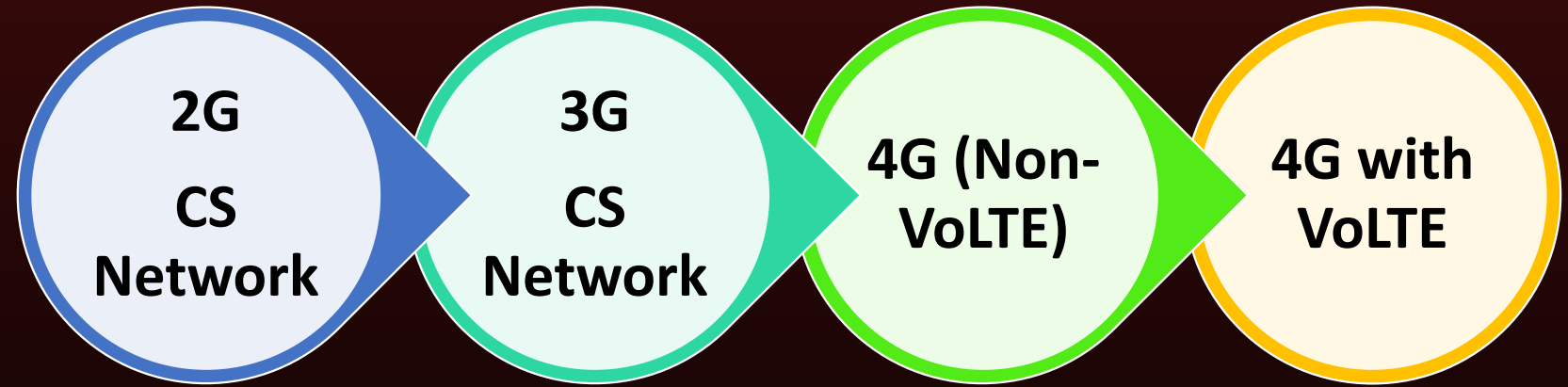


SECTION

1

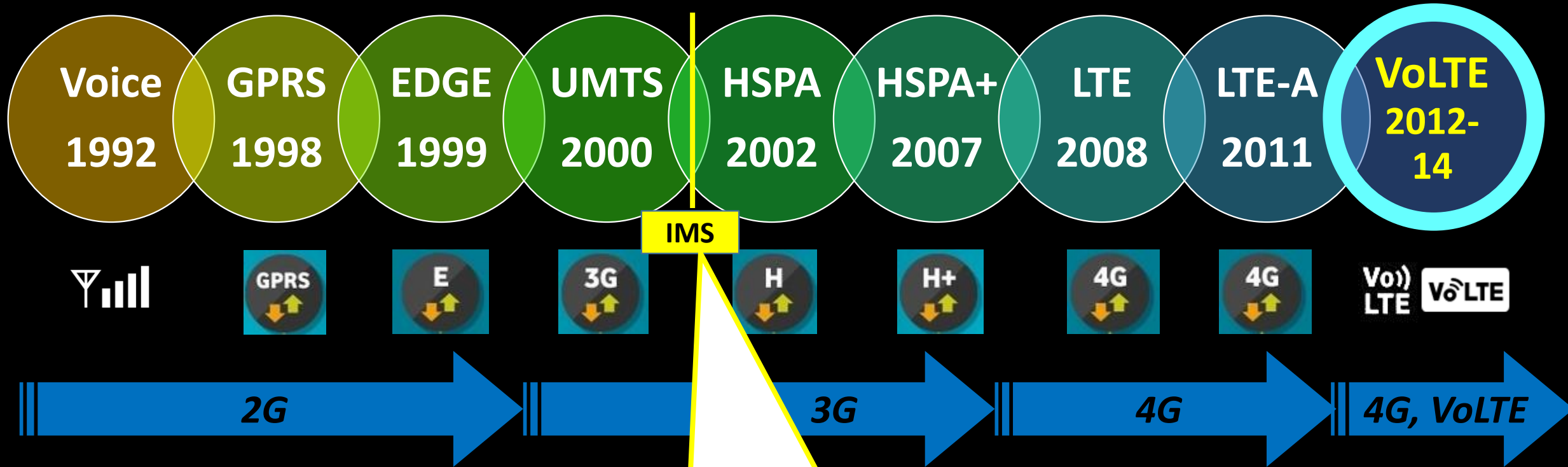
Volte Evolution

Evolution of Telephony ?



CS : Circuit Switched Network

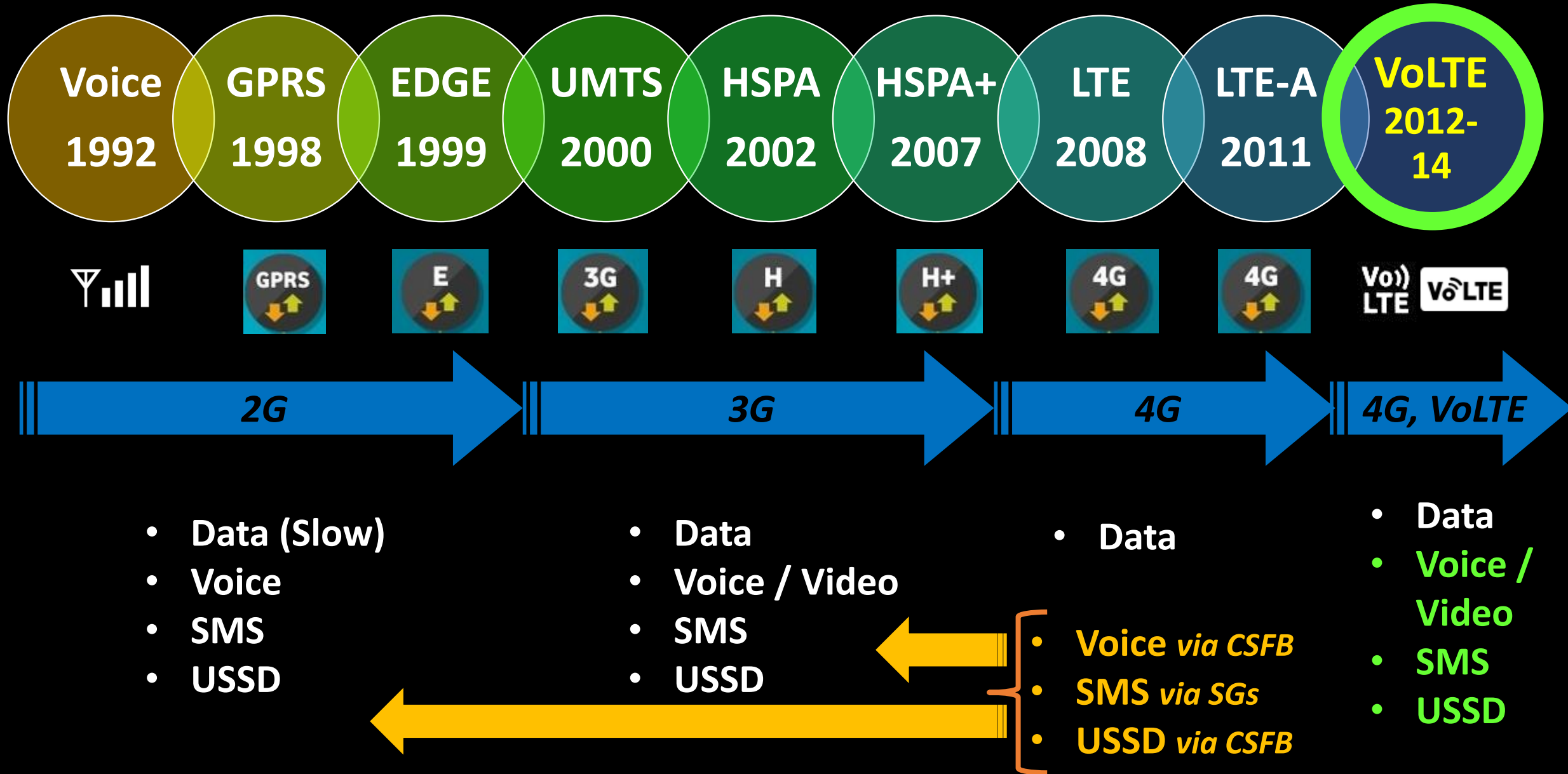
Evolution of Mobile Technology



IMS

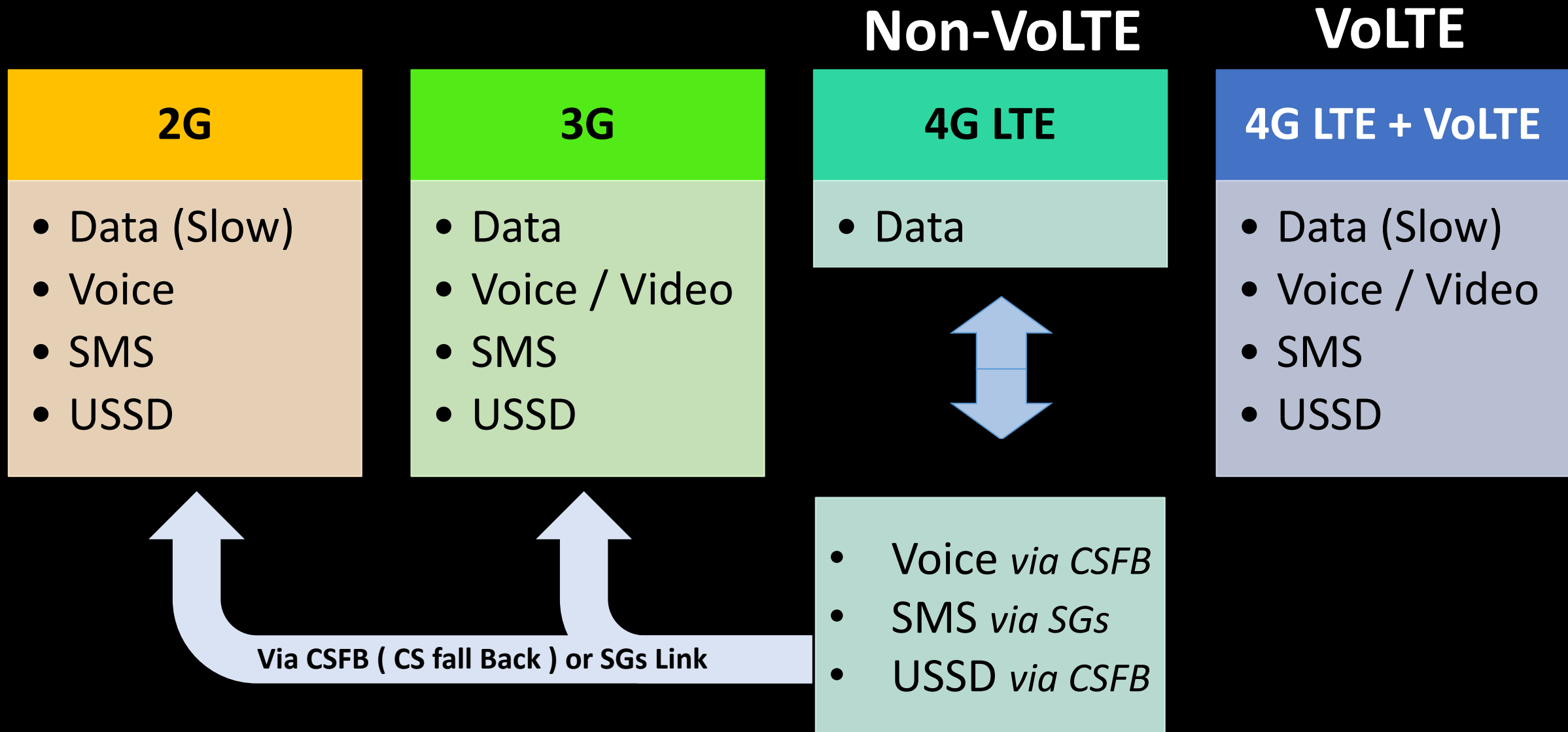
IMS was Opposed by various Operators due to multiple complexities involved

Evolution of Mobile Technology





Services in Non-VoLTE 4G Vs VoLTE Networks





Voice Service Flow

SECTION 2 Volte Evolution



Voice Calls

1

Call in CS Network
2G / 3G

2

Call via CSFB
LTE fallback to 2G/3G Network

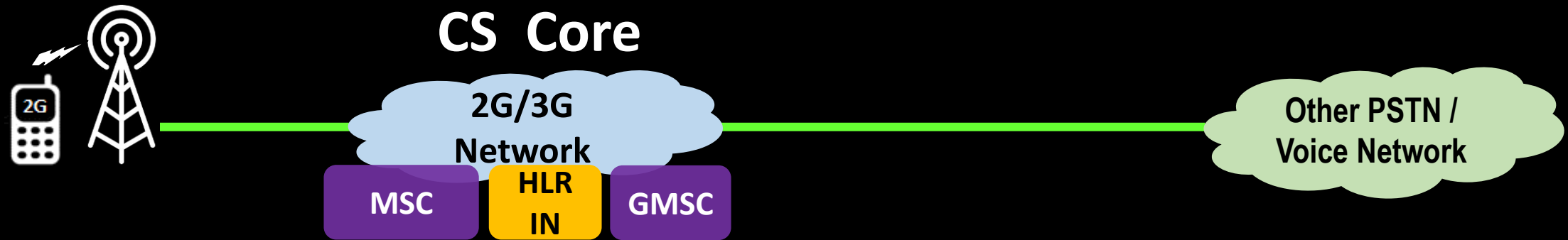
3

Call in VoLTE
over 4G Network

1
VOICE

Voice Call in CS - 2G / 3G Network

- ✓ Call in CS
- Call via CSFB
- Call in VoLTE



4G Support ✗

VoLTE Support ✗

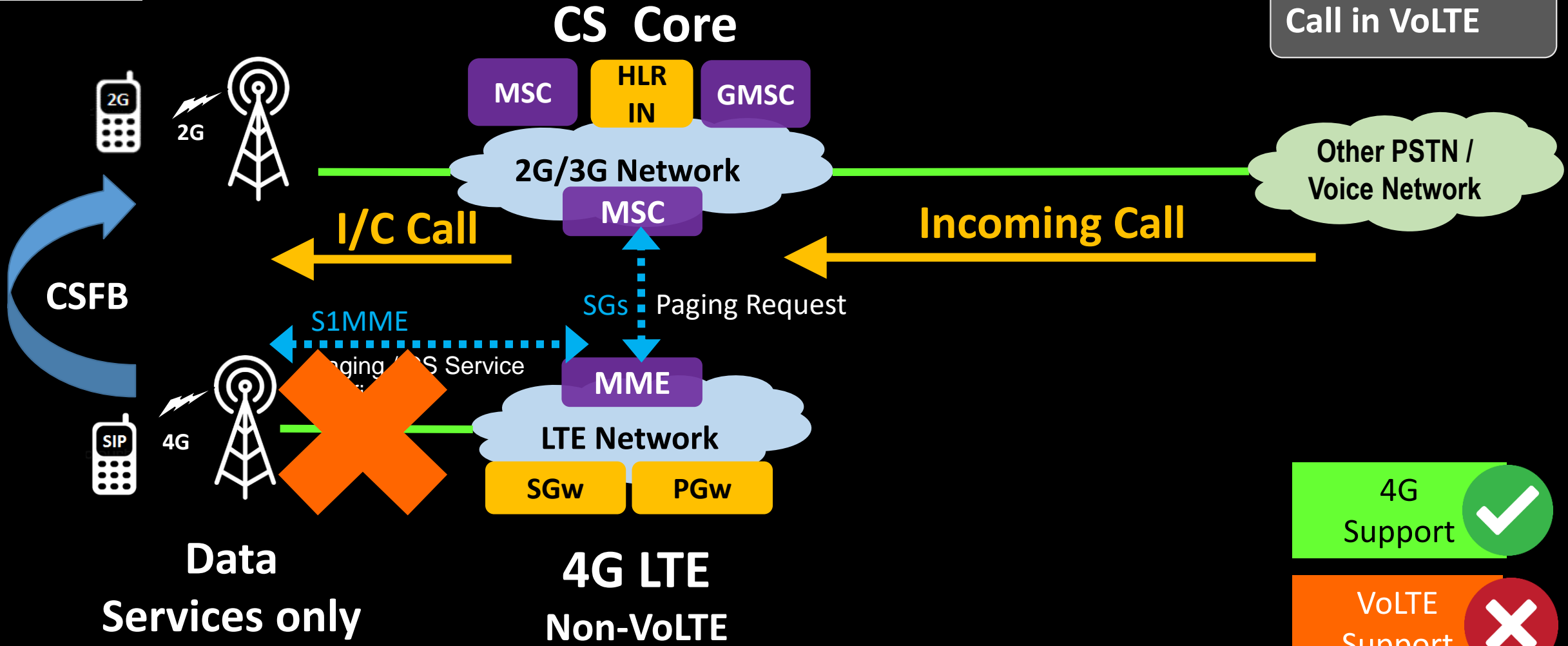
2 VOICE

Voice Call in Non-VoLTE 4G Network Via CSFB (Circuit Switched FallBack)

3GPP TS 23.272



- Call in CS
- Call via CSFB**
- Call in VoLTE

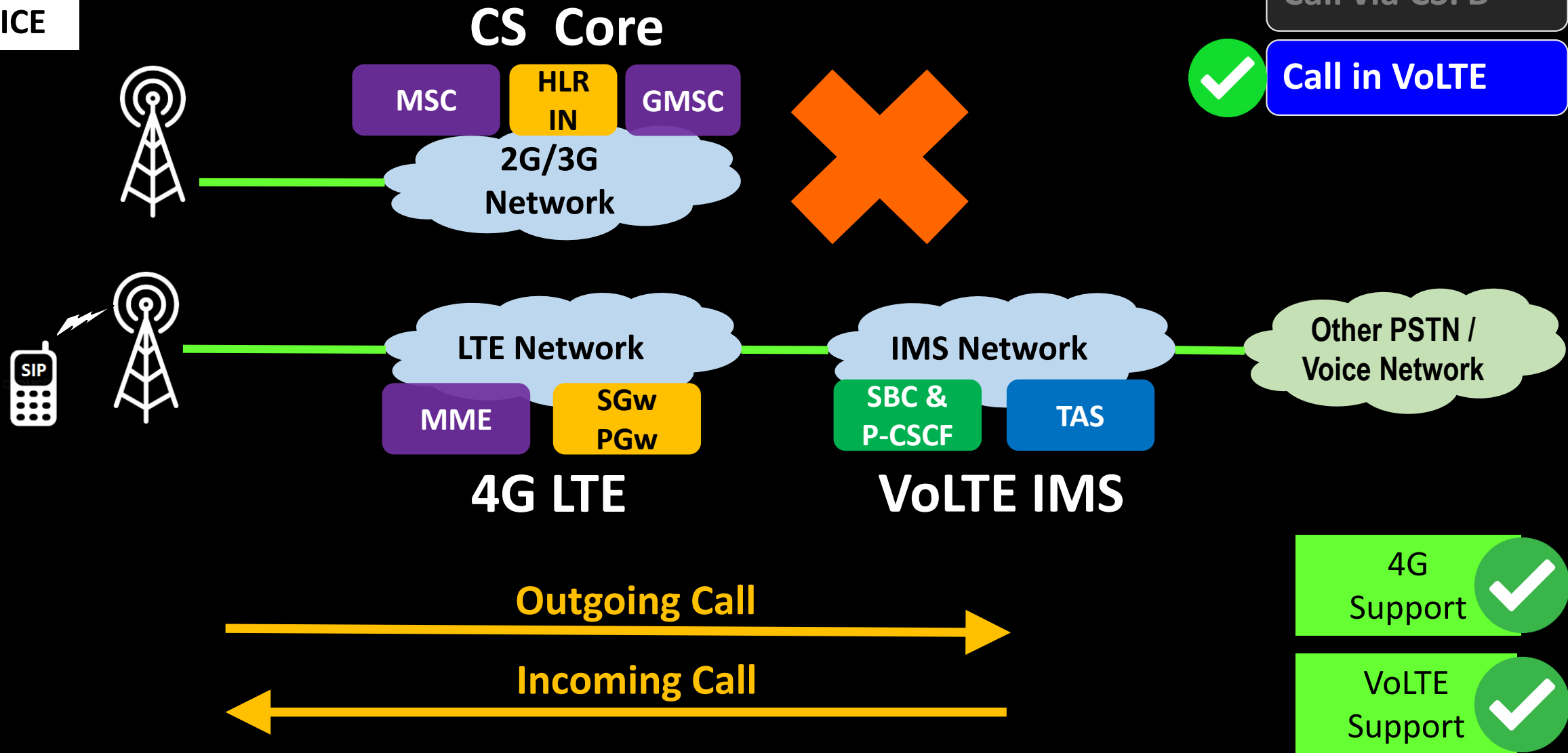


4G Support

VoLTE Support

3
VOICE

VoLTE Call



- Call in CS
- Call via CSFB
- Call in VoLTE

4G Support

VoLTE Support

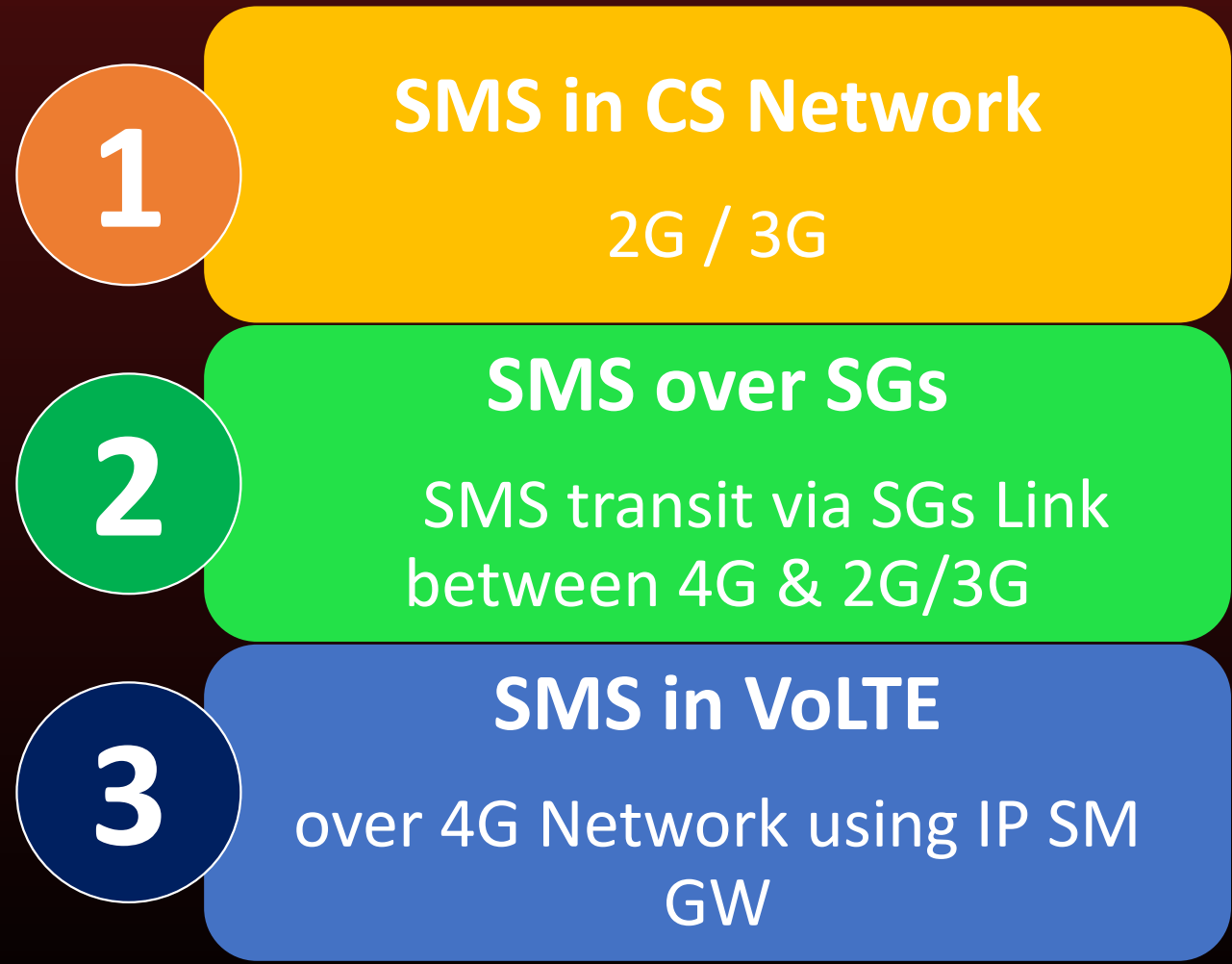


SMS Service Flow

SECTION

3

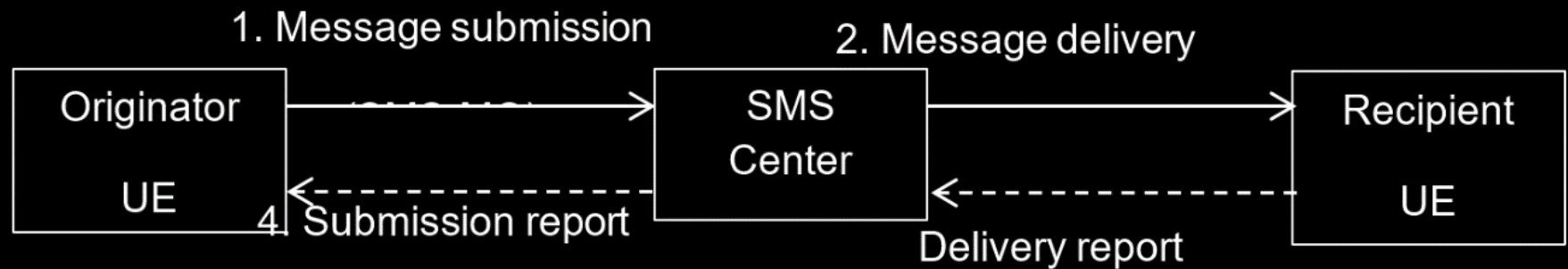
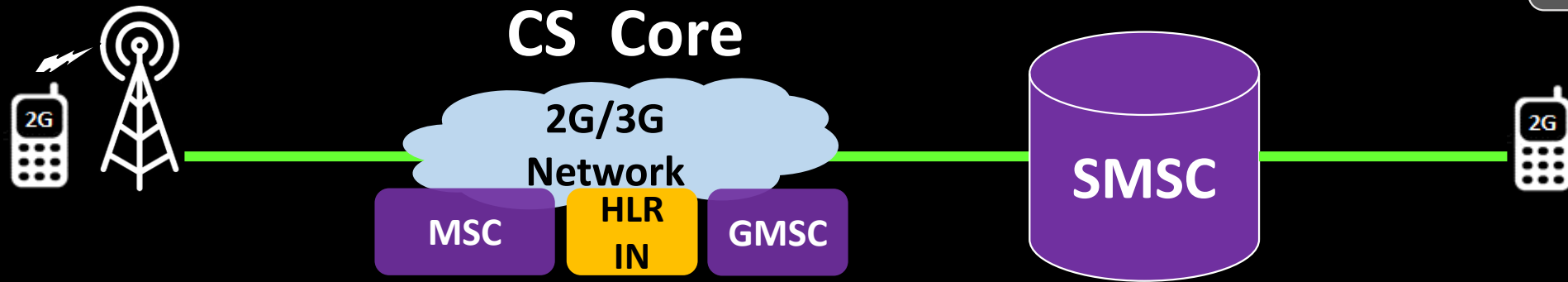
Volte Evolution



1 SMS

SMS in CS - 2G / 3G Network

- ✓ SMS : CS NW
- SMS over SGs
- SMS : VoLTE NW



4G Support ❌

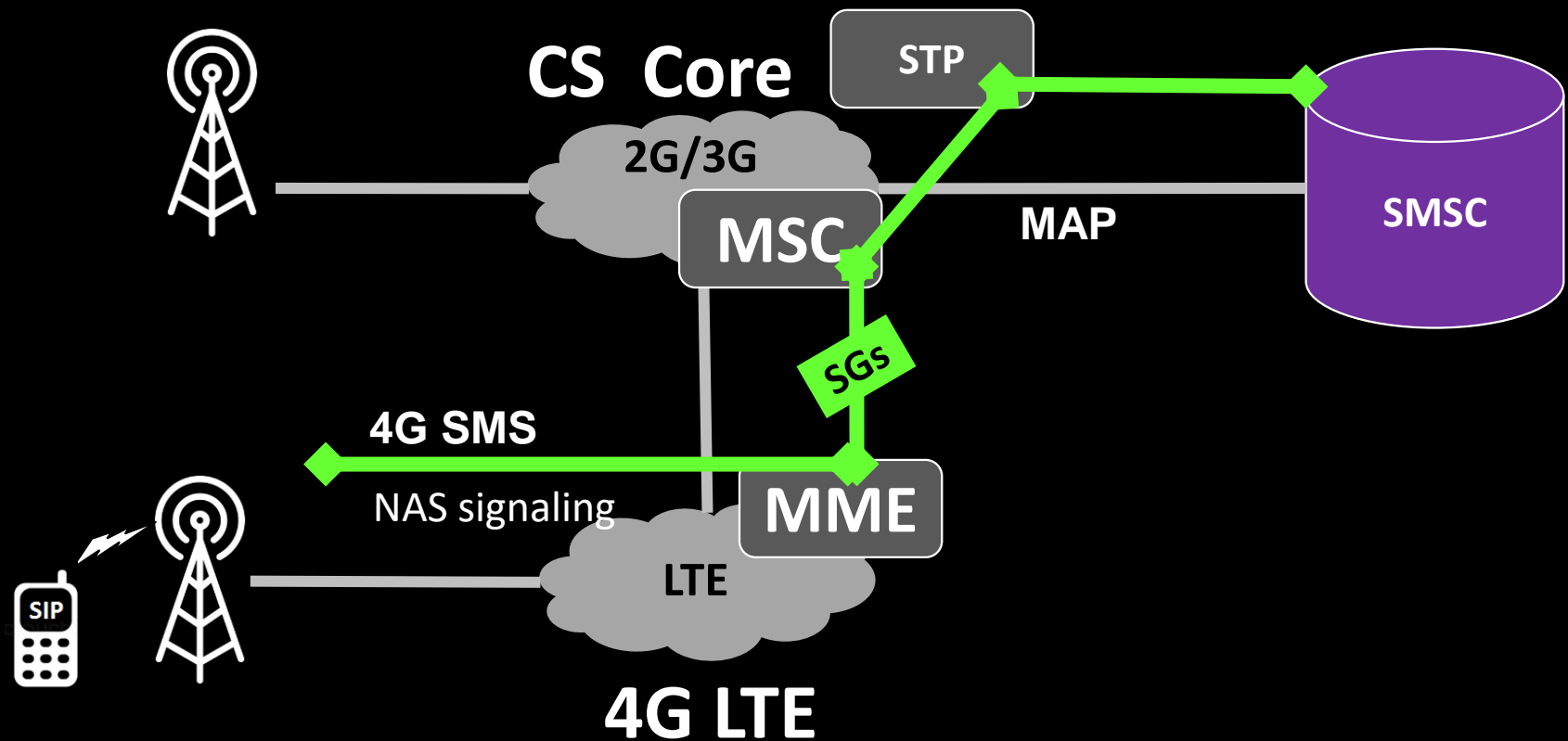
VoLTE Support ❌

2 SMS

SMS over SGs - Non-VoLTE Network

4G SMS over SGsAP and MAP

- SMS : CS NW
- SMS over SGs**
- SMS : VoLTE NW



3GPP TS 29.118 – SGs Interface
NG.111 - SMS Evolution - GSMA Document

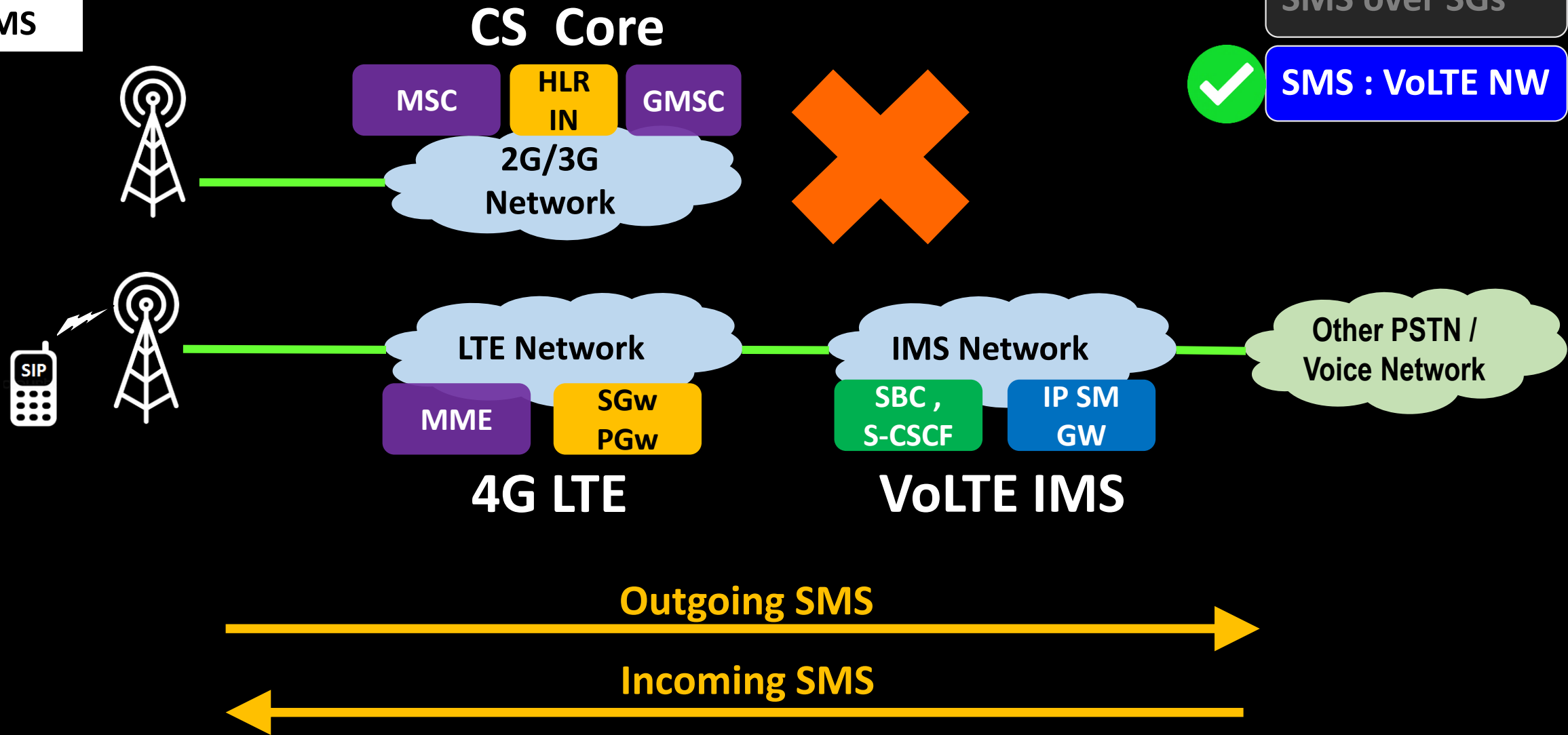
4G Support

VoLTE Support

3
SMS

VoLTE SMS - IMS SMS using SIP

- SMS : CS NW
- SMS over SGs
- SMS : VoLTE NW

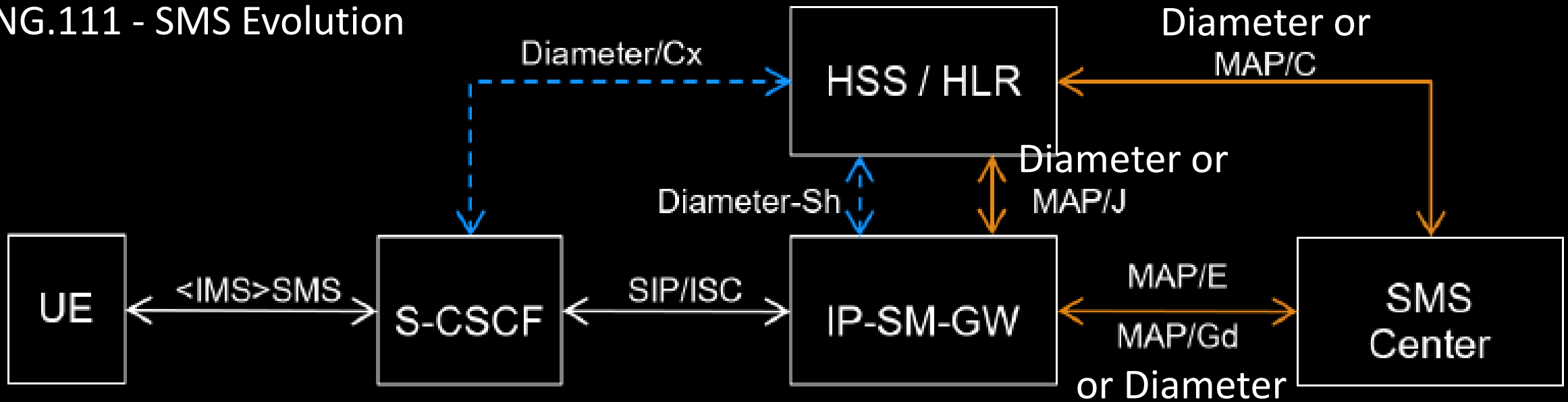


VoLTE SMS - IMS SMS using SIP

Reference

GSMA Document

NG.111 - SMS Evolution



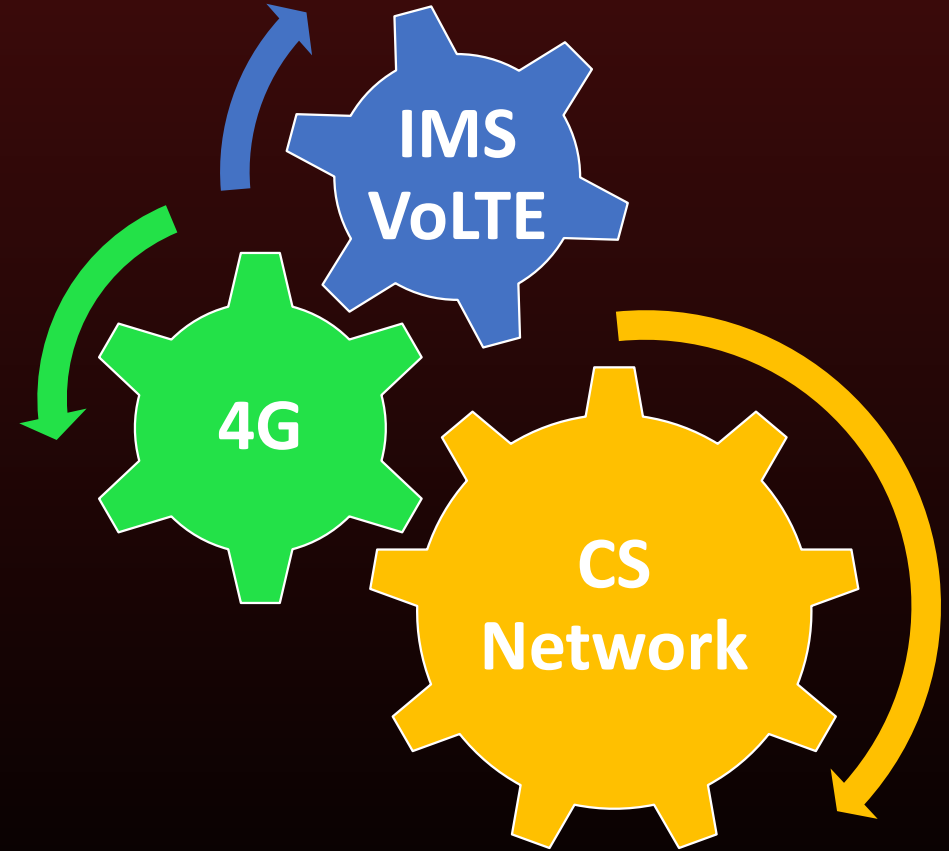


Reuse CS Core in VoLTE

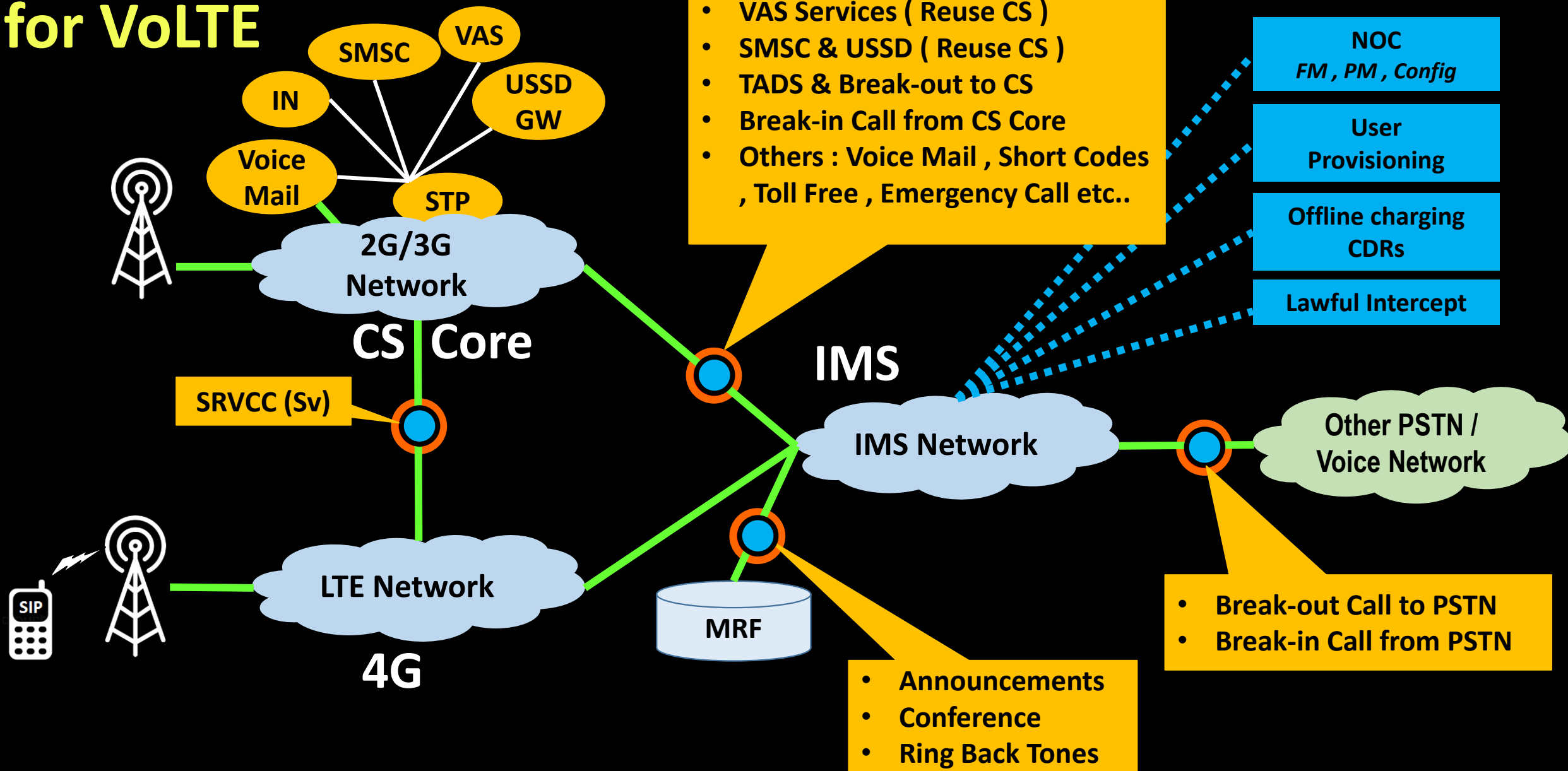
SECTION

4

Volte
Evolution



Re-use CS Network for VoLTE





Future Reading & References

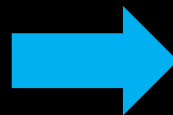
- **3GPP TS 23.272**
 - CSFB (Circuit Switched fallback)
- **3GPP TS 29.118**
 - SGs Interface Specs
- **NG.111**
 - SMS Evolution Guide - GSMA Document

THANK YOU



Vikas Shokeen

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