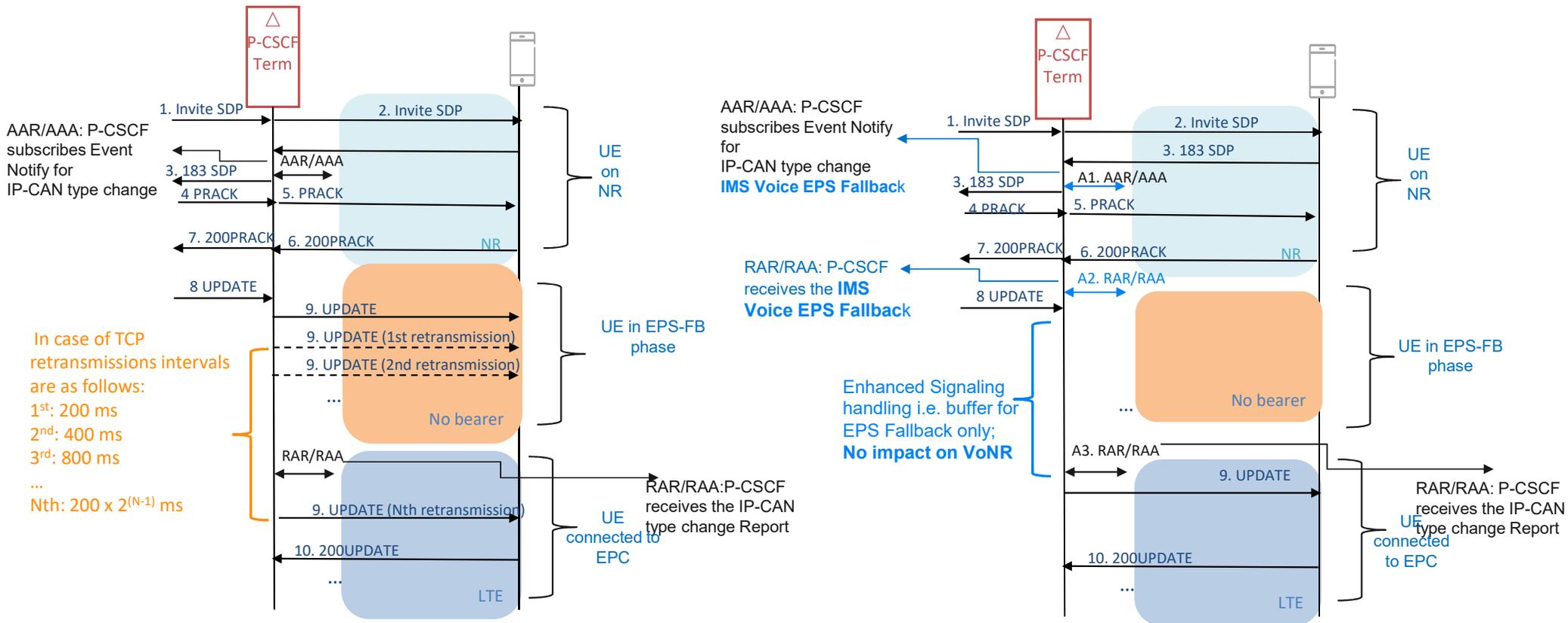


Support for 5GC EPS Fallback Event Notification

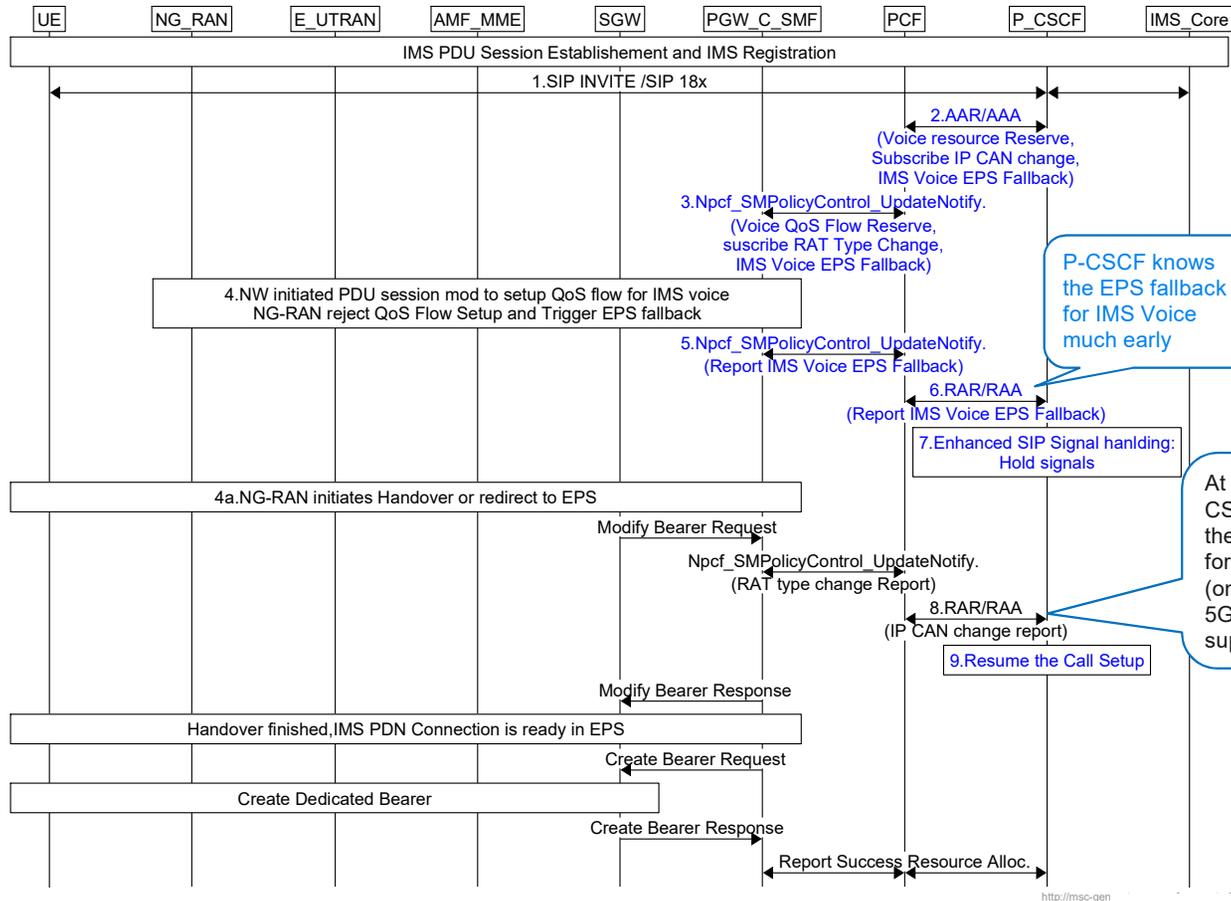
Problems

- To maintain separate statistics for sessions natively established in EPS vs sessions starting in NR and being subject to EPS FB, the P-CSCF needs to be informed of EPS FB events.
- The knowledge by P-CSCF about EPS FB can also improve the performance of the EPS FB session setup time:
 - The P-CSCF can stop the SIP signaling during the EPS FB transition period and until such time that the default QoS flow/default bearer for IMS signaling is established. This avoids any SIP signaling being lost, and which may occur, leading to SIP retransmission which can prolong the IMS session set up time.

SIP Signalling Retransmission vs SIP Buffering



EPS Event Notification



1. SIP call initiated in 5GS, P-CSCF receives SIP signaling for call setup.
2. P-CSCF requests voice resource reservation in 5GS and subscribes "IP CAN change" and "IMS voice EPS Fallback" to PCF.
3. PCF requests voice resource reservation in 5GS and subscribes "RAT Type change" and "IMS voice EPS Fallback" to PGW-C+SMF.
4. PGW-C+ SMF initiates the Voice QoS Flow setup and rejected by NG-RAN due to IMS Voice EPS Fallback. 5a. NG-RAN initiates handover or redirect to EPS.
5. PGW-C+SMF reports "IMS Voice EPS Fallback" to PCF.
6. PCF reports "IMS Voice EPS Fallback" to P-CSCF. At this point P-CSCF know the EPS fallback taken place.
7. P-CSCF handle SIP signaling in an optimized way. (details are described on next page)
8. The IP CAN type change report is received, which indicate that the EPS fallback with the default bearer is successful.
9. After receiving the IP CAN type change report, P-CSCF handles the SIP signaling in a normal way, continue the call setup.

3GPP CR Proposal

- Proposed Event Name : IMS Voice EPS Fallback
- Proposed Changes
 - 23.502 : SA2-20XXXXXX
 - 23.503 : SA2-20XXXXXX
 - 23.228 : SA2-20XXXXXX