

A PROJECT REPORT ON
IMPEMENTING VOLTE MOBILE TERMINATION,
HOME PROCEDURE
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR
THE AWARD OF THE DEGREE OF
BACHELOR OF TECHNOLOGY
IN
COMPUTER SCIENCE AND ENGINEERING

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AN AUTONOMOUS INSTITUTE

(Approved by AICTE - New Delhi, Govt. of T.S. and Affiliated to JNTUH)

Accredited by NBA and NAAC with “A” Grade

Vignana Jyothi Nagar, Bachupally, Nizampet (S.O.), Hyderabad-500 090.
Telangana,

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CERTIFICATE

This is to certify that the project report entitled **IMPLEMENTING VOLTE MOBILE TERMINATION, HOME PROCEDURE** that is being submitted by Mr. P.Lokesh Reddy (13071A0545), Mr. P.Rahul (13071A0547) and Ms. CH.Bhargavi (13071A0509) in partial fulfillment for the award of Degree of **Bachelor of Technology in Computer Science and Engineering** of VNR VJIET, Hyderabad during the academic year 2016-2017 is a record of bonafide work carried out by them under our guidance and supervision. The results embodied in this thesis have not been submitted to any other university or institute for the award of any degree or diploma.

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ABSTRACT

Wireless operators throughout the world are getting ready to retire their older 2G voice networks and replace them with service that runs over the new 4G LTE networks they've built during the past couple of years. The VoLTE, service enables wireless operators to use the data network to transmit voice services in the same way they transmit data by which the companies are able to offer high-quality voice calls. The benefit to wireless operators is that it provides more-efficient use of their network resources, which will result in lower operational costs and these carriers can free up spectrum that had been used for the traditional voice service and put it to use to allocate more bandwidth for more lucrative data services. The consumers will also see some benefits as operators make this transition like High-definition voice, Rich Communications Services or RCS, Faster call setup times.

The aim of the project is to implement “Mobile Termination, home” procedure in IMS (IP Multimedia Subsystem) network. This termination procedure applies to users in their home service area. The session termination procedures specify the signalling path between the Serving-CSCF assigned to perform the session termination service and the UE. This signalling path is determined at the time of UE registration, and remains fixed for the life of the registration. A UE always has a proxy (P-CSCF) associated with it. As a result of the registration procedure, the P-CSCF knows the address of the UE. The assigned S-CSCF, knows the address of the P-CSCF depending on the location of S-CSCF and P-CSCF. We have implemented the procedure in client server model using socket programming. By running the program we can see the messages getting transferred between UE, S-CSCF & P-CSCF. VoLTE is the future of voice communications on all wireless networks. Once wireless operators get more experience in real-world deployments, they will refine the technology.

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ABBREVIATIONS:

1. LTE	Long Term Evolution
2. VoLTE	Voice over Long Term Evolution
3. RCS	Rich Communication Services
4. IMS	IP Multimedia Subsystem
5. S-CSCF	Serving Call Session Control Function
6. P-CSCF	Proxy Call Session Control Function
7. I-CSCF	Interrogating Call State Control Function
8. UE	User Equipment
9. SMS	Short Message Service
10. MMS	Multimedia Messaging Service
11. AMPS	Advanced Mobile Phone Service
12. MTSO	Mobile Telephone Switching Office
13. PSTN	Public Switched Telephone Network
14. CSDN	Circuit Switched Data Network
15. BTS	Base Transceiver Station
16. GSM	Global System for Mobile
17. TDMA	Time Division Multiple Access
18. CDMA	Code Division Multiple Access
19. GPRS	General Packet Radio Service
20. BSC	Base Station Controller
21. MSC	Mobile Switching Centre
22. HLR	Home Location Register
23. VLR	Visitor Location Register
24. EIR	Equipment Identity Register
25. ISDN	Integrated Services Digital Network
26. PSPDN	Packet Switched Public Data Network
27. CSPDN	Circuit Switched Public Data Network
28. UMTS	Universal Mobile Telecommunications Service
29. WCDMA	Wideband Code Division Multiple Access

30. E-UTRA	Evolved UMTS Terrestrial Radio Access Network
31. PDN	Public Data Network
32. EDGE	Enhanced Data rates for GSM Evolution
33. QoS	Quality of Service
34. EPC	Evolved Packet Core
35. MME	Mobility Management Entity
36. HSS	Home Subscriber Server
37. SGW	Serving Gateway
38. PCRF	Policy and Charging Rules Function
39. UICC	Universal Integrated Circuit Card
40. SIM	Subscriber Identity Module
41. USIM	UMTS Subscriber Identity Module
42. CSIM	CDMA Subscriber Identity Module
43. ISIM	IP Multimedia Services Identity Module
44. IMPI	IP Multimedia Private Identity
45. SIP	Session Initiation Protocol

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