INCREASING QoS AND RELOCATING GATEWAY IN 4G NETWORK USING THRESHOLD: A GRAPH THEORITICAL APPORACH

ABSTRACT

1G technology is used to make a voice call only, this technology uses analog signals. In this technology signal quality is very less and it is not accurate so we move to the next generation. That is 2G technology; in this we can make a call and SMS to another node. In 2G we convert an analog signal into digital signals. It takes some time to convert analog in to digital, so the user have to wait until he/she get the replay from the other node. To overcome this we move to 3G technology. Internet was introduced in 3G. It is used to make a call, SMS and Internet. Packet switching was introduced in this technology. It transmits 384 kbps, i.e. for downloading a movie it will take min of 26 hrs. To overcome this limitation we move up to the next generation of technology that is 4G. This network was designed especially for making a video calls and fast browsing. So they introduced a latest technology LTE (Long Term Evaluation). By using this LTE, the network speed is better while comparing to the 3G technology (100 mbps), i.e. for downloading a movie it will take minimum of 6 min. But if a node gets a call from another node, it switches to 3G or 2G network. To overcome this VOLTE (Voice Over LTE) was introduced. By using this VOLTE we can browse and make a call at a time. So from this we can get a conclusion, the technologies are developed only to increase the speed of the internet. There is no focus on call quality and security of the data.

4G, short for fourth generation, which is the current technology, is going to lead the mobile telecommunications technology. In our proposed system, the handoff/handover technique is implemented between gateway to gateway and base station to base station, to increase the speed by reducing the looping. Velocity based handoff scheme is introduced in 4G.In this method Stations will choose the Access Point based on the signal strength of Access Point and velocity of the moving node. Each Access Points propagates its coverage range; initially we set one threshold value for better handoff. When the node crosses the threshold value, it will scan the best Access Point for handoff. Threshold values are generated by signal strength of the Access Points. After select the Access Point, it will handoff / handover to the corresponding Access Point. Hence reducing the packet loss there by maintaining the signal strength stable during the handoff / handover.