ALTERNATE WIRED COMMUNICATION

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Abstract- Currently the communication plays a very important role in this sophisticated world of real happenings. Sometimes, it becomes the crucial aspect in manipulating the situation to favor us. Though our communication architecture is very advanced and is meeting our expectations in most of the cases, there are a few communities like IARC (International Agency for Research on Cancer), which have declared that mobile radiations are possibly carcinogenic, which means long term usage of mobile phones could be some risk of carcinogenicity, so further research is to be carried out to confirm such possibilities. But having an alternate mode of safe communication, without any radiations is always an additional feather to the crown of successful communication.

Index Terms- 1. Communication Architecture, here refers to the mode of communication, mostly used i.e. wireless mobile communication. 2. Carcinogenic is something, that has a capacity to cause cancer.

I. INTRODUCTION

Mobile or cellular phones are now an integral part of modern telecommunications. In many countries, over half the population use mobile phones and a study by Motorola found that one in ten cell phone subscribers have a second phone that often is kept secret from other family members.

These phones may be used to engage in activities including extramarital affairs or business dealings. WHO Says The concern about scientific investigations carried out by some internationally popular communities and the reports of different researches carried out on mobile phone radiations, is some of them are positive the World Health Organization stated that mobile phone use may possibly represent a long-term health risk.

Mobile phones are in category 2B, which ranks it alongside coffee and other possibly carcinogenic substances.

So we need to work towards a more efficient network providing architecture, that is completely free from radiations, thus we may end up with some nearly possible outcome.

II. CELLULAR NETWORK OPERATION

A mobile phone receives or makes calls through a base station, or transmitting tower. Radio waves are used to transfer signals to and from the cell phone. Large geographic areas are split into smaller cells to avoid line-of-sight signal loss and to support a large number of active phones in that area. All of the cell sites are connected to telephone exchanges (or switches), which in turn connect to the public telephone network.

BTS: Base Transceiver Station. BSC: Base Station Controller. MSC: Mobile Switching Centre. VLR: Visitor Location Registry. GMSC: Gateway Mobile Switching Centre. HLR: Home Location Registry.

Each mobile has a mobile identification number (MIN). When a user wants to make a call, he sends a call request to the MSC. He also sends the MIN of the person to whom the call has to be made. The MSC then sends this MIN to all the base stations. The base station transmits this MIN and all the mobiles within the coverage area of that base station receive the MIN and match it with their own. If the MIN matches with a particular MS, that mobile sends an acknowledgment to the BS. The BS then informs the MSC that the mobile is within its coverage area. The MSC then instructs the base station to access specific unused voice channel pair. The base station then sends
a message to the mobile to move to the particular channels and it also sends a signal to the mobile for ringing.

III. RESIDENTIAL GATEWAY FOR IPTV

One official definition of IPTV by the International Telecommunication Union is: "IPTV is defined as multimedia services such as television/video/audio/text/graphics/data delivered over IP based networks managed to provide the required level of quality of service and experience, security, interactivity and reliability."

This networking technology takes advantage of existing home wiring such as power lines, phone lines or coaxial cables or of wireless hardware have become common solutions for this problem.

IV. PAPER MAIN VIEW

After looking into the mobile network and residential gateway for IPTV, I would like to make a proposal for providing the mobile network through the same residential gateway “by using a wire” for which I propose the following changes

- The current mobile phone must be provided with a Network Mode Selection i.e. customer should be able to select either wired or wireless [GSM/any current protocol]. Thus conveniently switching to a wireless mode when off from a homely surrounding.
- In order to provide a wired network in the mobile, firstly we need to increase the scope of the landline phone exchanges, by providing additional architecture that can detect and authenticate a SIM card, as shown in the cellular network.
- The mobile phones must be modified such that, there is a possibility of connecting the mobile phone to the residential gateway, to authenticate the SIM card.
- Further feasibility studies must be carried, to make this as an alternate to the current mobile network by solving the loop issues of this proposal.

V. ADVANTAGES OF THIS VIEW

We are aware of the fact that range of the network cells in order to provide a wireless signal in urban areas is less as the no of customers are more and in the rural areas the range is more, as there are a comparatively less customers and with an increasing no of network providers, the urban areas are exposed to a very high amount of radiations.

- By providing this alternate wired network in the mobile, we can decrease the no of customers operating through a wireless network [considered not a safe mode, compared to wired network], thus we can control the increase of further division of the current cells, to provide signals to more no of customers.
- The main advantage being the zero radiation, as we can see from figure(1), the radiations play an important role only to connect a mobile phone to the nearest BTS. By connecting the mobile phone to the nearest land phone exchanges, the mobile phone completely operates through the wired network.
- The mobile phones could directly access the value added services by the provider, like the broadband etc.
- With the wireless technology becoming so convenient, wired phone usage is losing its reliability causing very little usage of the sophisticated telephone exchanges. By making the above changes, we could make use of them.
- Further the mobile phones can be provided with a low power mode, where the calling protocol can be powered by the telephone exchange itself, in cases of battery discharge.

VI. ISSUES TO BE Addressed

As this view includes many changes in the current telecommunication sector, many associations should come forward to make this mode a reality.
- The land line exchanges must be equipped with the VLR, HLR and the other registry equipment, required to authenticate the SIM card.
- There are customers who use a network provider, without a land phone service. Such customers may not be able to connect to a wired service of some other network provider.
- A proper change must be made to the current mobile structure, in order to connect them to a wired
network i.e. a circuit change must be done to it, to connect to wired network alternatively.

- If possible, the landline exchanges must be equipped with the HLR, VLR and other required equipment of all the wireless network providers, so that any SIM card could be authenticated by the same telephone exchange.
- Considering the advantages, customers must be ready to go wired whenever there is a possibility.

CONCLUSION

The current mobile communication is quite reliable and is also sophisticated, with latest equipment in it, but all this did not happen at once. Thus implementing the above idea would surely require some major changes in the current telecommunication system which requires a lot work to be done, thus consuming much time.

If the network providers, instead of increasing the no of sub-cells in the urban area, if they could start moving towards something like this, they can provide a safer and much reliable mode of communication.

The customer’s main motto of having a mobile phone is to make and receive calls in a conveniently mobile manner, I do appreciate- that is being served by the current communication protocols but using an alternate protocol in their long calls or when they are in some stationary mode [in office cabin, home, etc.] could be possibly keep them away from., mobile radiations for that period.

By this, the customers can use a mobile phone as a normal phone when they are stationary at least, in order to decrease the long term effects of mobile radiations.

REFERENCES