

## **Concept of Multiple SIM card in Single USIM**

**Mohammad Shafiquddin, Aafreen Jahan , Naziya Farhat**

*(Electronics & Telecommunication, Anjuman Polytechnic, India)*

*(Electronics & Telecommunication, Anjuman Polytechnic, India)*

*(Electronics & Telecommunication, Anjuman Polytechnic, India)*

**ABSTRACT:** *With increase in demand of cellular system in today's scenario every person wants to carry more than one SIM card to enjoy different services provided by telecom operator. For this, user has to carry multiple SIM cell phones .But there is lots of problem related to this kinds of cell phones .To overcome this problem we are going to propose this project. This single USIM has capability of handling multiple network access. Means, we are providing single SIM in place of multiple where, different operator can store different network keys to access their respective network. Advantage to use these USIM is that, use of multiple SIM can be avoided. For this we have to make changes in mobile software as well as internal architecture of SIM card. The concept proves itself worth mentioning contribution towards wireless and mobile communication.*

**Keywords-***Android, Mobile Station, Subscriber Identity Module, Symbian, Universal Sim.*

### **I. INTRODUCTION**

There are cell phones which consist of SIM card operating under the same service provider. In many case it may be possible to use a SIM card from a second provider with the same phone, provided the additional card is the proper size and with the assumption that the mobile phone is not locked to a specific cell [3][4]. But this ratio is very small when compared with the company's manufacturing dual SIM card mobile which can support any service provider. The conversion of old mobile phones to support dual SIM is not that much difficult with the technology available. Not all phones can accept dual SIM cards, but there are adapters available to turn almost any late model phone into a dual SIM phone. [5]Some adapters may require both SIM cards to be cut down and fitted, while others may offer a more tailored fit. When using adapters instead of dual SIM mobile phones, it may not be possible to use both SIMs at the same time. Users must switch from one to the other by using an on screen menu. Full functioning dual SIM mobile phones [5], by comparison, do not usually require the user to choose between one SIM and another. Both phone numbers can be used at the same time. This feature is convenient for those who wish to separate business and personal calls using two separate phone numbers, as well as those who travel frequently and want a local number for each location. In some parts of the world the dual SIM phone has been taken a step further with phones that can hold three SIM cards. These are generally bulkier than traditional one-SIM phones. They are also not as widely used or desired as single and dual SIM mobile phones.

#### **1.1. Advantages with Dual SIMs**

With a dual SIM phone you are not stuck with a single network providers pricing plan. You can take advantage of the best offers from multiple networks. There are numerous ways to mix and match the networks and get a great deal. Acquiring a spare SIM card is simple, with most networks happy to let you order them for free on their websites in the hopes of gaining more customers. The greatest advantage is that with multiple network coverage can resolve troubles with other network coverage problems sometime. Mobile users in remote or rural areas in particular know well the pains of mobile network black spots.

#### **1.2. Drawback with Dual SIMs**

It requires two transceivers for dual sim mobile station having two identical IMEI numbers.

## II. PROPOSED ARCHITECTURE

Wireless data communication is one of the vital aspects amongst others, in the era of modern information technology age. A trend setting technology for wireless data communication is based on cellular mobile phones (MS). There are three major independent party involved in communications through MSs; service providers, MS manufactures and end-users.

Service providers are responsible for various data communication activities. Their services vary in price, quality and wireless communication standards and value added services. In today's competitive world, a number of service providers operate in the same region and provide services to end-users through subscribers identity module (SIM) placed in a MS. MS manufacturers provide and integrate hardware as well as software part of their equipment. However, some manufacturers are producing equipments with the capabilities of handling multiple SIMs due to a shift in the trend of end-users. The equipment with multiple SIMs support suffers from compromises on quality and cost. Different hardware intensive attempts have been made to overcome these issues. Apart from hardware redesigning, a comprehensive research on software restructuring of a MS is required to enable multiple SIM support which is the focus of this paper.

Symbian [5] and Android [6] are two of the most widely used system software for a MS. Application Services and OS Services layers are responsible for establishing a connection and providing communications in case of Symbian, while in case of Android, Application and Application Framework layers are responsible for the same. In brief the proposed architecture consists of Sim handler which handles all kind of interaction between your multiple SIM and different events. Connection manager manages the connection between different system software like symbian and android .Communication manager tries to provide service and application to system along with telephony voice calls. Scheduler shares memory with system software whenever required with the use of kernel. This proposed architecture manages each of its layer in connection with MS. The other layer provides and facilitates the mechanism associated with MS internal features and services such as multimedia voice calling, file sharing, etc.

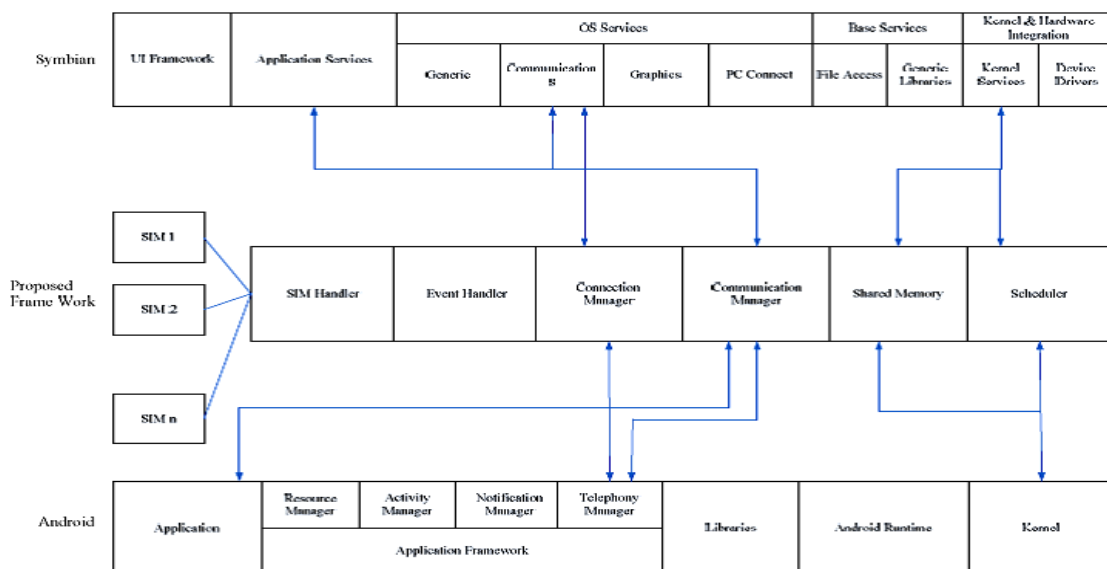


Figure 1. The Proposed Framework for Multiple SIM Handling

## III. CONCLUSION

In this paper, we have put forward a concept which is capable of handling multiple networks in single USIM. This concept is presented for Symbian and Android but can be modified to accommodate other MS system software. The proposed concept may play a vital role in contributing to the research on wireless and mobile communications, especially in the environments with multiple service providers in competition. And also providing with the comfort for user to life easiest lifestyle

## REFERENCES

- [1] Mariam Nosheen, Muhammad Abuzar Fahiem: 'Handling Multiple SIMs - A Framework based on Software Restructuring Approach' - 2011 Third International Conference on Communications and Mobile Computing.
- [2] Multiple Network Operator Services Utilization Using Single SIM Card - *International Journal of Computer Theory and Engineering*, Vol. 3, No. 3, June 2011
- [3] [http://en.wikipedia.org/wiki/Subscriber\\_Identity\\_Module](http://en.wikipedia.org/wiki/Subscriber_Identity_Module)
- [4] ETSI, ETSI Recommendation GSM 11.11, Specifications of the SIM-ME Interface, Version 3.16.0
- [5] Symbian Foundation Community Home, [www.symbian.org/](http://www.symbian.org/)
- [6] Andriod, [www.android.com/](http://www.android.com/)
- [7] Coulton, P., Rashid, O., Edwards, R., Thompson, R., "Creating Entertainment Applications for Cellular Phones" ACM magazine on Computers in Entertainment, vol 3, issue 3, 2005, pp.(1 – 12 )
- [8] Jain, S. Jain, A. "SIM Application Tool Kit-Protocol Conformance and implementation Challenges" Proceedings of IEEE International Conference on Wireless and Mobile Communications, 2006, pp.(47-47).
- [9] Zeng, M.; Annamalai, A.; Bhargava, V.K.; Victoria Univ., BC, "Recent advances in cellular wireless communications", IEEE Communications Magazine, vol 37, pp (128 – 138)
- [10] Hansen, K. , Motorola Inc., Plantation, FL, "Wireless communications devices and technology: future directions", Proceedings of IEEE Symposium on Radio Frequency Integrated Circuits, 1998 , pp(1-5)
- [11] Schwarz Dasilva, J. Ikonomou, D. Erben, H., "European R&D programs on third-generation mobile communication systems", IEEE Personal Communications, vol 4, issue 1, pp (46 – 52)
- [12] Vedder, K., Weikmann, F., "Smart Cards-Requirements, Properties, and Applications", Lecture Notes in Computer Science, vol 1528, 1998, pp(308-331)
- [13] Hill, J.L.; Culler, D.E., "MICA: A Wireless Platform for Deeply Embedded Networks", IEEE Micro, vol 26, issue 6, 2002, pp.( 12 – 24)
- [14] Zhang, X. , "Recent advances and Future Trends of the Multimode Wireless Terminal", Proceedings of IEEE International Conference on Portable Information Devices, 2007, pp.(1 – 4).