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**REVIEW OF LITERATURE**

**NEED/IMPORTANCE OF THE STUDY**

**STATEMENT OF THE PROBLEM**

**OBJECTIVES**

**HYPOTHESES**

**RESEARCH METHODOLOGY**

**RESULTS & DISCUSSION**

**FINDINGS**

**RECOMMENDATIONS/SUGGESTIONS**

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- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

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## WIRELESS COMMUNICATION

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HEAD

DEPARTMENT OF ELECTRONIC SCIENCE

A.V.C.COLLEGE

MANNAMPANDAL

## ABSTRACT

When a mobile originates a call, a call initiation request is sent on the reverse control channel. With this request the mobile units transmits its telephone number (MIN), Electronic Serial Number (ESN), and the telephone number of the called party. The mobile also transmits a station class mark (SCM) which indicates what the maximum transmitter power level is for the particular user. The cell base station receives the data and sends it to the MSC. The MSC validates the request, makes connection to the called party through the PSTN, and instructs the base station and mobile user to move to an unused forward and reverse voice channel pair to allow the conversation to begin. All cellular system provides a service called roaming. This allows subscribers to operate in service areas other than the one from which service is subscribed. When a mobile enters a city or geographic area that is different from its home service area, it is registered as a roamer in the new service area. This is accomplished over the FCC, since each roamer is camped on to an FCC at all times. Every several minutes, the MSC issues a global command over each FCC in the system, asking for all mobiles which are previously unregistered to report their MIN and ESN over the RCC. New unregistered mobiles in the system periodically report back their subscriber information upon receiving the registration request, and the MSC then uses the MIN/ESN data to request billing status from the home location register (HLR) for each roaming mobile. If a particular roamer has roaming authorization for billing purposes, the MSC registers the subscriber as a valid roamer. Once registered, roaming mobiles are allowed to receive and place calls from that area, and billing is routed automatically to subscriber's home service provider. My suggestion in this regard is after handshaking the roamer with home station if the roamer is a true person of that particular home station then the call is forwarded where the roamer is currently situated (New base station of a roamer which is at remote area). The current location base station take care of the call of the particular roamer this will reduce the per call cost of a roamer the billing preparation, network function are under the control of current location of a roamer. This will provide the roamer good communication with less cost. In this manner the future signaling system will be planned and designed.

## KEYWORDS

wireless communication, MIN, ESN.

## INTRODUCTION

Nowadays without mobile phones we cannot do nothing, in our day to day life the mobile phones are take importance to convey messages in the form of Video, Audio, and Data to our neighbours and friends who are all located remote areas. When the mobile user go away from his home location (Permanent location) where he is located to remote location, he/she is called a roamer, during roaming to enjoy mobile communication the user may pay considerable cost for per call designed by the network provider (Service provider), the reason behind this is the user may be a roamer he is handshake with home location register from the new location base station and his call is forwarded through the home location register for billing purpose this call forwarding procedure of SS7 add considerable amount to the user per call cost to avoid this the SS7 (Signaling System 7) signaling system may adopt the new architecture such as after identify the home location register of the user the call may be forwarded through the new location base station call continuity, billing etc., and cost of per call is to be reduced. This is my suggestion to call handoff strategy between mobile user and base station, Mobile Switching Center in future wireless networks.

## REVIEW OF LITERATURE

When a mobile originates a call, a call initiation request is sent on the reverse control channel. With this request the mobile units transmits its telephone number (MIN), Electronic Serial Number (ESN), and the telephone number of the called party. The mobile also transmits a station class mark (SCM) which indicates what the maximum transmitter power level is for the particular user.

The cell base station receives the data and sends it to the MSC. The MSC validates the request, makes connection to the called party through the PSTN, and instructs the base station and mobile user to move to an un used forward and reverse voice channel pair to allow the conversation to begin. During call initiation the following steps to be followed,

## HOW A CALL TO A MOBILE USER INITIATED BY A LANDLINE SUBSCRIBER IS ESTABLISHED

## MSC (MOBILE SWITCHING CENTER)

- i) Receives call from PSTN and sends the MIN to all base stations
- ii) Verifies that the mobile has a valid MIN, ESN pair
- iii) Requests BS to move mobile to unused voice channel pair
- iv) Connects the mobile with the calling party on the PSTN

## BS (BASE STATION)

## FCC (FORWARD CONTROL CHANNELS)

- i) Transmits page (MIN) for Specified user
- ii) Transmits data message for mobile to move to specific voice channel

RCC (REVERSE CONTROL CHANNELS):- Receives MIN, ESN, station class mark and passes to MSC

FVC (FORWARD VOICE CHANNELS):- Begin voice transmission

RVC (REVERSE VOICE CHANNELS) - Begin voice reception

## MS (MOBILE STATION)

## FCC (FORWARD CONTROL CHANNELS):

- i) Receives page and matches the MIN with its own MIN
- ii) Receives data messages to move to specified voice channel

## RCC (REVERSE CONTROL CHANNELS):

Acknowledges receipt of MIN and sends ESN and station class mark

FVC (FORWARD VOICE CHANNELS):- Begin voice reception

RVC (REVERSE VOICE CHANNELS):- Begin voice transmission

**HOW A CALL INITIATED BY A MOBILE IS ESTABLISHED****MSC (MOBILE SWITCHING CENTER)**

- i) Receives call initiation request from base station and verifies that the mobile has a valid MIN, ESN pair
- ii) Instructs FCC of originating base station to move mobile to a pair of voice channels
- iii) Connects the mobile with the called party on the PSTN

**BS (BASE STATION)****FCC (FORWARD CONTROL CHANNELS):**

Page for called mobile, instructing the mobile to move to voice channel.

**RCC (REVERSE CONTROL CHANNELS):-** Receives call initiation request and MIN, ESN, Station class mark

**FVC (FORWARD VOICE CHANNELS):-** Begin voice transmission

**RVC (REVERSE VOICE CHANNELS):-** Begin voice reception

**MS (MOBILE STATION)****FCC (FORWARD CONTROL CHANNELS):**

Receives page and matches the MIN with its own MIN. Receives instruction to move to voice channel.

**RCC (REVERSE CONTROL CHANNELS):-** Sends a call initiation request along with subscribe, MIN and number of called party

**FVC (FORWARD VOICE CHANNELS):-** Begin voice reception

**RVC (REVERSE VOICE CHANNELS):-** Begin voice transmission

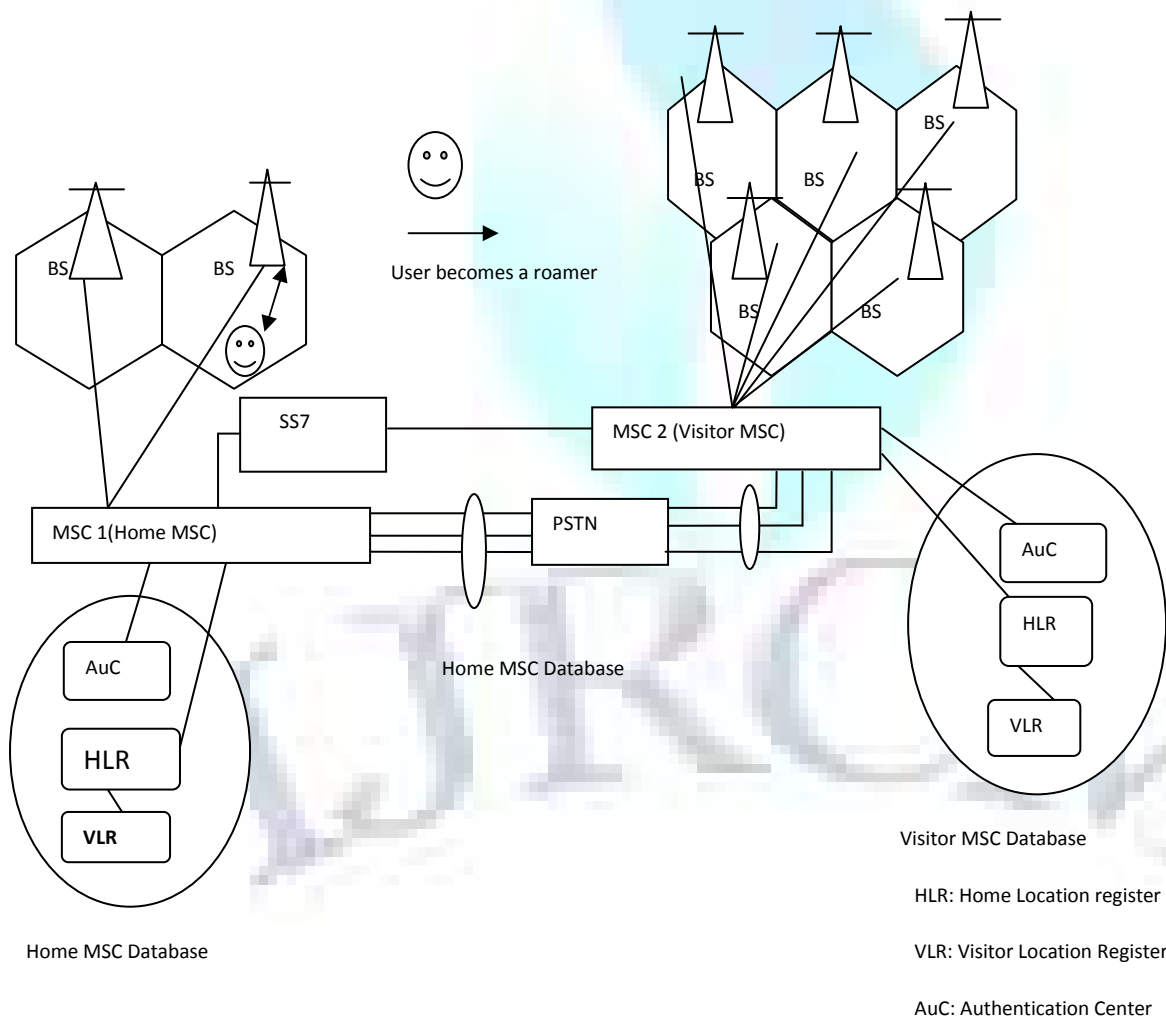
All cellular system provides a service called roaming. This allows subscribers to operate in service areas other than the one from which service is subscribed. When a mobile enters a city or geographic area that is different from its home service area, it is registered as a roamer in the new service area. This is accomplished over the FCC, since each roamer is camped on to an FCC at all times.

Every several minutes, the MSC issues a global command over each FCC in the system, asking for all mobiles which are previously unregistered to report their MIN and ESN over the RCC. New unregistered mobiles in the system periodically report back their subscriber information upon receiving the registration request, and the MSC then uses the MIN/ESN data to request billing status from the home location register (HLR) for each roaming mobile.

If a particular roamer has roaming authorization for billing purposes, the MSC registers the subscriber as a valid roamer. Once registered, roaming mobiles are allowed to receive and place calls from that area, and billing is routed automatically to subscriber's home service provider.

My suggestion in this regard is after handshaking the roamer with home station if the roamer is a true person of that particular home station then the call is forwarded where the roamer is currently situated.

The current location base station take care of the call of the particular roamer this will reduce the per call cost of a roamer the billing preparation, network function are under the control of current location of a roamer. This will provide the roamer good communication with less cost. In this manner the future signaling system will be planned and designed.

**BLOCK DIAGRAM OF A CELLULAR RADIO NETWORK**



**NEED OR IMPOTANCE OF THE STUDY**

To reduce the per call cost of the mobile user when the user be a roamer, this will support the user to enjoy communication in remote area at low cost.

**STATEMENT OF THE PROBLEM**

The current location base station take care of the call of the particular roamer this will reduce the per call cost of a roamer the billing preparation, network function are under the control of current location of a roamer. This will provide the roamer good communication with less cost. In this manner the future signaling system will be planned and designed.

**OBJECTIVES**

A) How a call to a mobile user initiated by a landline subscriber is established:

- i) Role of Mobile Switching Center, Base station, Mobile station
- ii) Importance of FCC,RCC,FVC,RVC

B) How a call initiated by a mobile is established:

- i) Role of Mobile Switching Center, Base station, Mobile station
- ii) Importance of FCC,RCC,FVC,RVC

C) Difference between own cell user of a cell site and roamer, per call cost of the same user

**HYPOTHESES**

All cellular system provides a service called roaming. This allows subscribers to operate in service areas other than the one from which service is subscribed. When a mobile enters a city or geographic area that is different from its home service area, it is registered as a roamer in the new service area. This is accomplished over the FCC, since each roamer is camped on to an FCC at all times.

Every several minutes, the MSC issues a global command over each FCC in the system, asking for all mobiles which are previously unregistered to report their MIN and ESN over the RCC .New unregistered mobiles in the system periodically report back their subscriber information upon receiving the registration request, and the MSC then uses the MIN/ESN data to request billing status from the home location register (HLR) for each roaming mobile.

If a particular roamer has roaming authorization for billing purposes, the MSC registers the subscriber as a valid roamer. Once registered, roaming mobiles are allowed to receive and place calls from that area, and billing is routed automatically to subscriber's home service provider.

My suggestion in this regard is after handshaking the roamer with home station if the roamer is a true person of that particular home station then the call is forwarded where the roamer is currently situated. This will provide the roamer good communication with less cost. In this manner the future signaling system (SS7) will be planned and designed.

**RESEARCH METHODOLOGY****RESULT AND DISCUSSION**

My suggestion in this regard is after handshaking the roamer with home station if the roamer is a true person of that particular home station then the call is forwarded where the roamer is currently situated. This will provide the roamer good communication with less cost.

**FINDINGS**

People are suffering high call cost during roaming to avoid this after handshaking with the HLR the current location BS & MSC identified the user and disconnect the user from home station the call is once again forwarded by the current location till the end of the user termination.

**RECOMMENDATIONS / SUGGESTIONS**

The SS7 signaling system and CCS (common channel signaling) will designed in future after identified the roamer disconnect the call of the user from HLR and forwarded the call through the current location or new location (VLR, BS & MSC)

**CONCLUSIONS**

If a particular roamer has roaming authorization for billing purposes, the MSC registers the subscriber as a valid roamer. Once registered, roaming mobiles are allowed to receive and place calls from that area, and billing is routed automatically to subscriber's home service provider.

My suggestion in this regard is after handshaking the roamer with home station if the roamer is a true person of that particular home station then the call is forwarded where the roamer is currently situated. This will provide the roamer good communication with less cost. In this manner the future signaling system (SS7) will be planned and designed.

**LIMITATIONS**

The limitations of the mobile user will breakup and he/she is a roamer will be enjoy communication with considerable low cost

**SCOPE OF FURTHER RESEARCH**

The SS7 signaling system and CCS (common channel signaling) protocols will be designed in future that after the identification of the roamer with HLR the connection will disconnected and forwarded through the new or current location VLR, BSS, MSC instead of HLR-MSC & BSS.

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