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VEHICLE TRACKING SYSTEM THROUGH GSM NETWORK

A PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

Certified that this project report **"VEHICLE TRACKING SYSTEM THROUGH GSM NETWORK"** is the bonafide work of **"A.MANGALAM, P.S.PRIYADHARSHINI, S.SINDUJA"** who carried out the project work under my supervision.

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ABSTRACT

The vehicle tracking system is hardware-oriented project that involves wireless communication. This system is targeted to track the location of the vehicles that are fitted with the GSM module. This system communicates using the GSM network. The GSM module is fitted in the vehicle and the GSM modem is connected to the PC. The registered users can query for the location of the registered vehicle using their mobile phones. The queries and responses are sent as text messages (SMS). Application on the PC does the device handling and request processing functions.

The registered users send the queries to the PC, which in turn sends message to the module equipped in the vehicle. The module, with the help of the GSM network, sends back the location details to the PC. The PC then sends the required information to the user's mobile.

It allows carrying out the remote supervision behind a condition of the automobile, to define a location of the automobile and to carry out active bucking to stealing of the automobile.

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LIST OF ABBREVIATIONS

S.NO.	ABBREVIATION	EXPANSION
1	GSM	Global System for Mobile
2	GPS	Global positioning System
3	PC	Personal Computer
4	SMS	Short Messaging Service
5	ID	Identity
6	SIM	Subscriber Identity Module
7	AT	Attention
8	IP	Internet Protocol

1. INTRODUCTION

The Vehicle Tracking System delivers comprehensive tracking solutions to keep users connected to their vehicles and helps them to control their operations. We apply our expertise in wireless and mobile communications to the wide-ranging demands of the transportation, auto and distribution marketplaces. The locations of the vehicles are tracked by our system on the reception of a query from the user by sending text messages from a mobile phone. Our system allows only registered users to track the vehicles.

Our system can provide the optimum vehicle tracking solution. It makes the day-to-day fleet operations more efficient with accurate and reliable information easily obtained from our vehicle-tracking product. Our system provides users with flexible, practical, reliable, and cost-effective answers to their unique asset tracking needs.

1.1 EXISTING SYSTEM AND ITS LIMITATIONS

To date, the tracking systems are implemented using the GPS. This would provide precise information about the location of the vehicle. The hardware required for the implementation of the tracking system using GPS is high. The cost incurred by the network and installation is huge.

1.2 THE PROPOSED SYSTEM AND ITS ADVANTAGES

The installation and implementation cost incurred by the proposed system is reduced to a greater extent when compared to the existing system. It provides a highly secured and reliable transfer of

information. It is a time saving system and the implementation is also easy. Few advantages are as follows,

- Real Time Vehicle Tracking
- Customizable Event Monitoring
- Two Way Messaging
- Real Time Reports

2. SYSTEM REQUIREMENT ANALYSIS

2.1 PROJECT PLAN

2.1.1 ANALYSIS

The existing system uses GPS network to track the vehicles. The GPS transmitters and receivers are very expensive. Therefore, it increases the implementation cost.

The proposed system uses GSM network to track the location of the vehicles. The cost of implementation is low in the proposed system compared to the existing system.

2.1.2 DESIGN

The design part includes the front end and the back end design. The front-end design consists of the administrator interface. The administrator can make changes to the database and monitor the activities. The location of the vehicle can be tracked by the user. The front end is designed using visual Basic and the back end is designed using Microsoft Access.

2.1.3 CODING

Visual Basic is used as front end. Microsoft Access is used as back end. MS Access enables portability. The code is written for the communication layer. AT commands are used in the code to enable the two-way communication between GSM modem and GSM module.

2.1.4 TESTING

The performance of the system is tested under real time scenario. The location of the vehicle is tracked by sending a message from the mobile phone to the GSM modem fixed in the vehicle. The reply is sent back after tracking the location.

2.2 SYSTEM REQUIREMENTS SPECIFICATION

2.2.1 GENERAL DESCRIPTION

2.2.1.1 SYSTEM OVERVIEW

The purpose of the project **VEHICLE TRACKING SYSTEM** is to track the registered vehicles using mobile via SMS and PC. On identification of the location of the vehicle, the required information is sent back to the user's mobile as SMS.

2.2.1.2 USER CHARACTERISTICS

The user must be registered to use the system. The user has to know the number of the registered vehicle and the SIM

number of the modem. The user could track only those vehicles for which he/she is given permission.

2.2.2 FUNCTIONAL REQUIREMENTS

2.2.2.1 MODULES

- Modem Communication Driver / Layer
- Application Layer
  - Keyword Parsing
  - Keyword Processing
  - Database query
  - Composing SMS
  - Generation of Reports

2.2.3 SOFTWARE CONSTRAINTS

- Windows XP Professional
- Visual Basic 6.0
- Microsoft Access 7.0
- Microsoft Communication Driver for communicating with the Serial port (MSCOMM32.OCX)

2.2.4 HARDWARE CONSTRAINTS

- GSM tri-band modem for PC
- GSM tri-band module for vehicle
- Pentium 4 @ 1.5 GHz
- 256 MB RAM
- 10 GB HDD
- Regular Input / Output devices

3. SYSTEM STUDY

The Vehicle Tracking System is aimed at tracking the location of the vehicles through GSM network. The registered users, to know the location of vehicle, can send a query through SMS. This system identifies the location of the vehicle and sends back the information to the user's mobile through SMS. As with all other communications, speech is digitally encoded and transmitted through the GSM network as a digital stream. GSM users can send and receive data, at rates up to 9600 bps.

The users and vehicles must be registered to use this system. Each user is registered with user name, user ID, mobile SIM number, user address and permission. A GSM modem is connected to the PC and a GSM module is equipped in the registered vehicles. Separate SIM cards are inserted in the modem and the module. The GSM module is connected with the battery available in the vehicle and its antenna is fixed in the vehicle. The vehicle to be tracked must also be registered. The vehicle is registered with vehicle number, vehicle SIM number, operator name and operator ID

The IP address of the areas under the coverage of this system are determined and stored in the database with the IP address, location name and status of the IP address.

Thus the user sends message to the SIM number of the SIM card inserted in the modem. The modem in turn sends the message to the SIM number of the SIM card inserted in the module fitted in the

particular vehicle. The module with the SIM card would log on to the nearest GSM station and would send back its IP address to the PC with the modem. Then the system identifies the location name from its database and sends back the location of the vehicle to the user mobile as an SMS.

3.1 WORKING OF THE SYSTEM

Step 1: The registered user sends a query through SMS to the system (SIM number of the modem attached to the PC) to track the vehicle.

Step 2: The modem parses the information received.

Step 3: The modem then sends SMS to the vehicle's GSM module.

Step 4: The GSM module in the vehicle sends a SMS back to the GSM modem attached to the PC.

Step 5: The PC with GSM modem sends the location information of the vehicle to the user mobile through SMS

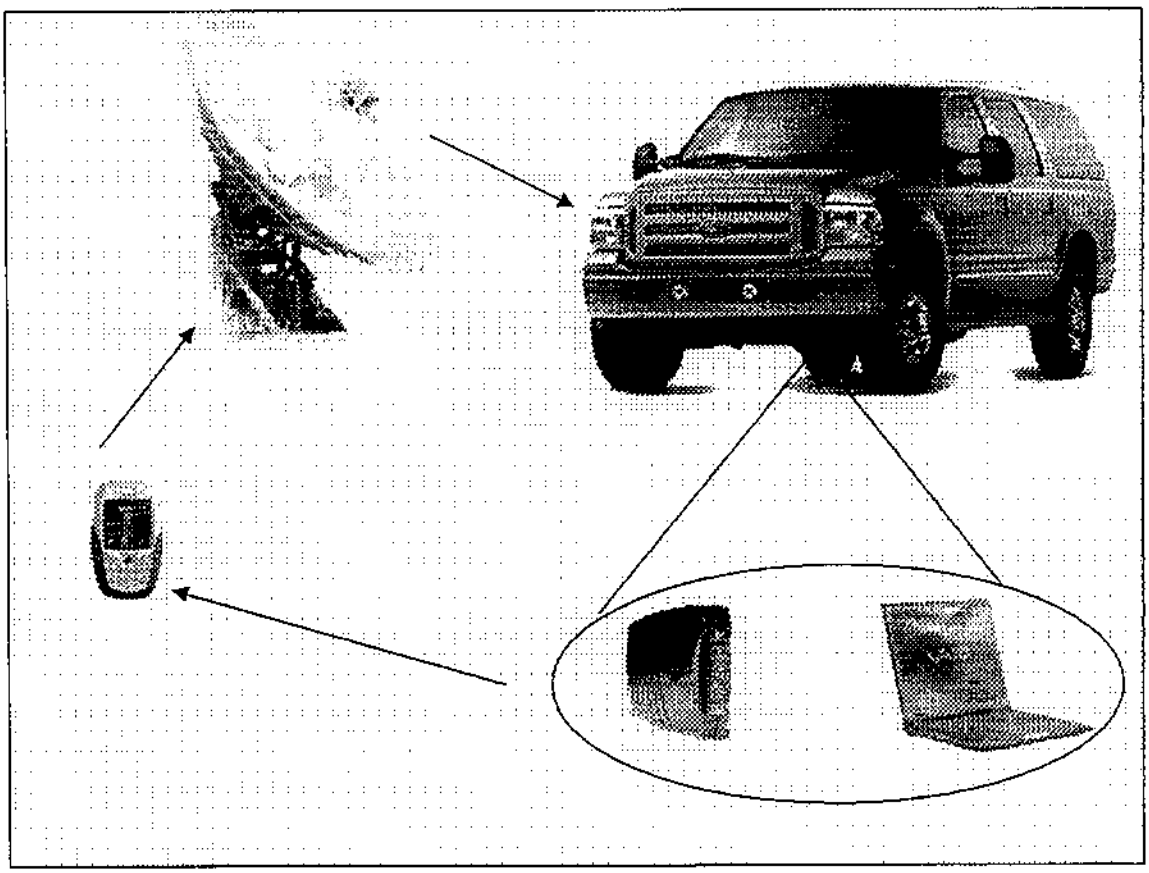


Fig.3.1.1 working of the system

3.2 FUNCTIONALITY

The solution of our system increases efficiency by providing constant awareness of vehicles. The solution offers the optimum combination of value through the right set of features and functionalities.

- Real-time tracking information of the location of the vehicles

- Two-way data transmission of text between PC with the modem and the vehicle facilitating optimal routing.
- Reports to provide transparency in operations and facilitate decision-making.
- Customizable visual settings for easy navigation.
- User-friendly software and tamper-proof devices.

3.3 BENEFITS OF THIS SYSTEM

With this Vehicle Tracking System, users can access location information in real-time and enhancing operational efficiency. Main benefits include:

- Determine vehicles' location at any time.
- Effective and reliable vehicle's location tracking saves time, decreases customers' costs and increases customers' satisfaction.
- Messaging capabilities save drivers' time searching for pay phones and reduce mobile phone costs.
- Rapid time-to-market deployment.

4. DESIGN DOCUMENT

4.1 INPUT DESIGN

The user gives the inputs. The user gives input to the system through their mobile as SMS.

USER INPUT	FUNCTION
TRACK	To track the location of the vehicle
REG	To register users to the system



4.2 PROCESS DESIGN

The PC with the modem connected to it processes all the incoming messages. The registered users send in queries to the PC with the modem through SMS. The PC then parses the information received and then composes an appropriate message and sends that to the module in the particular vehicle through the GSM network as an SMS. The module then logs on to the nearest station and sends back the IP address of that GSM station to the PC. The PC then checks in its database to identify the location name of that IP address. Then the PC sends back the location information of the vehicle to the user mobile as an SMS. This whole process takes place in less than 5 seconds. The PC communicates with the GSM network with the use of AT commands.

4.3 OUTPUT DESIGN

The output of the **Vehicle Tracking System** is received in the mobile phone of the users. When the user makes a query, the GSM modem receives it and the processing of the query is done in the PC and the location of the vehicle is sent as the response, back to the user's mobile.

The output device of the **Vehicle Tracking System:**

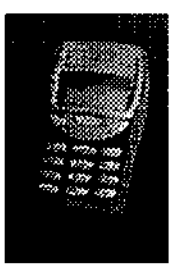


Fig.4.3.1 Output device

4.4 DATABASE DESIGN

The databases of this system are used to store the IPAddress, location details, user details and vehicle details. When the user sends a message to track the vehicle, the system checks the database to see if he\she is a registered user. For this purpose the user database is used.

The Tracking system is applied only on the registered vehicles and to check if the vehicles are registered, the vehicle database is used. When the modem finds the IPAddress, by connecting to the nearby networks, the PC parses the Address and checks the location database the returns back the location address to the user.

The sent and the received messages are stored in the message database. The date and time of reception of the messages and the sender name are stored in this database.

The databases and the records used in the **Vehicle Tracking System** are:

Locationdb:

Sno	ipaddress	locationaddr	status

Table.4.4.1 Location db

Userdb:

Sno	Userid	Username	Password	Permission	address	Mobile no

Table.4.4.2 User db

Messagedb:

Sno	Sendername	Time	Date	Messagereceived

Table.4.4.3 Message db

Vehicledb:

Sno	Vehicleno	Vehiclesimno	Operator	Operatorid	Remarks

Table.4.4.4 Vehicle db

5. PRODUCT TESTING

The devices used for the **Vehicle Tracking System** are a mobile phone, PC and a GSM modem. The GSM modem is connected to the PC and the user of the system handles the mobile.

The system is tested at every stage of its development with the help of the devices used in this system.

The IPaddress is collected by carrying the PC along with the modem to various locations and by giving the AT commands in the hyper terminal. The commands are given repeatedly at a location to verify the IPaddress.

The details of the vehicles to be tracked and the users of the system are also collected. All these collected data are entered in the database.

The product is tested by placing the PC and the modem in a registered vehicle and by giving the keywords to track the vehicle, through the mobile.

The testing process were carried out at various locations and verified.

6. FUTURE ENHANCEMENTS

The current **Vehicle Tracking System** is very time saving and interesting too. By using more sensors and control units, additional input data could be fed to the application Software and thereby introducing new features to this system. Considering a scenario, the embedded system in the vehicle could monitor the vehicle condition and proactively alert the control center if some problem arises such as engine temperatures are high, brake pads are worn out, oil flow is slow etc. Application software will diagnose the problem and transmit remedial information to the vehicle. Real-time performance statistics could be gathered and stored in the SIM, which could be viewed, incase of any accidents. The system could also be enhanced to display

the nearby hospitals, petrol stations, police stations and other important landmarks.

7. CONCLUSION

The **Vehicle Tracking System through GSM** is an alternative approach to GPS based tracking with an aim to eliminate some of the limitations of these technologies.

This system promises to be more effective and the benefits of such a system could be clearly understood from the reports of the users. Even though the current version does not have some enhanced features, the entire system is built with an aim of integrating this feature in the future. This **Vehicle Tracking System** proposes a simple and cost-effective solution.

8. APPENDIX

8.1 SAMPLE CODE

FLOGIN.FORM:

```
Dim urs As Recordset

Private Sub Form_Load()
    SBorder.Top = 0
    SBorder.Left = 0
    SBorder.Height = Screen.Height
     SBorder.Width = Screen.Width
     ILogin.Picture = fLogin.BtUp.Picture
    IQuit.Picture = fLogin.BtUp.Picture
     IReset.Picture = fLogin.BtUp.Picture
    Set urs = dbf.OpenRecordset("select * from SystemUser")
    If urs.RecordCount = 0 Then
     cProcess "Creating default User and sample data.  Please wait
    ..."
     urs.AddNew
     urs.Fields("UserName").Value = "SYSTEM"
     urs.Fields("Password").Value = "MANAGER"
     urs.Fields("UserType").Value = "AdminAuto"
                    urs.Fields("CreationDate").Value = Format(Now,
    "dd-mmm-yyyy")
```

```
                urs.Fields("LoggedIn").Value = False
                urs.Update
               End If
    fSplash.Hide
End Sub

Private Sub ILogin_Click()
    ChkPass
End Sub

Private Sub ILogin_MouseDown(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBDown fLogin.ILogin
End Sub

Private Sub ILogin_MouseUp(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBUp fLogin.ILogin
End Sub

Private Sub IQuit_Click()
    urs.Close
    dbf.Close
    End
End Sub
```

```
Private Sub IQuit_MouseDown(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBDown fLogin.IQuit
End Sub

Private Sub IQuit_MouseUp(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBUp fLogin.IQuit
End Sub

Private Sub IReset_Click()
    LReset_Click
End Sub

Private Sub IReset_MouseDown(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBDown fLogin.IReset
End Sub

Private Sub IReset_MouseUp(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBUp fLogin.IReset
End Sub

Private Sub LLogin_Click()
    ILogin_Click
End Sub
```

```
Private Sub LLogin_MouseDown(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBDown fLogin.ILogin
End Sub

Private Sub LLogin_MouseUp(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBUp fLogin.ILogin
End Sub

Private Sub LQuit_Click()
    urs.Close
    End
End Sub

Private Sub LQuit_MouseDown(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBDown fLogin.IQuit
End Sub

Private Sub LQuit_MouseUp(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBUp fLogin.IQuit
End Sub

Private Sub LReset_Click()
```

```
    TUName.Text = Empty
    TPass.Text = Empty
End Sub

Private Sub LReset_MouseDown(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBDown fLogin.IReset
End Sub

Private Sub LReset_MouseUp(Button As Integer, Shift As Integer, X As
Single, Y As Single)
    cBUp fLogin.IReset
End Sub

Private Sub ChkPass()
    urs.Requery
    urs.MoveFirst
    urs.FindFirst "UserName='" & UCase(TUName.Text) & "'"
    If urs.NoMatch Then
        cMsgBox "The user does not exist.  Please check your username once
again.  For further assistance, please contact the system manager."
    Else
        If urs.Fields("Password").Value = UCase(TPass.Text) Then
            cProcess "Logging you in as " & UCase(TUName.Text)
            fHyper.Picture = fLogin.ImgHyper.Picture
            fHyper.Show
            LReset_Click
```

```
            TUName.SetFocus
            Me.Hide
            Exit Sub
        Else
            cMsgBox "The password you have entered is invalid.  Please enter
the correct password or contact the system manager for assistance."
        End If
    End If
End Sub

Private Sub TPass_KeyPress(KeyAscii As Integer)
    If KeyAscii = vbKeyReturn Then
        ILogin_Click
    End If
End Sub
```

FLAUNCH.FORM:

```
Option Explicit
'Variables for Wavecom Modem
Dim InBuf As String
Dim ErrorCode As String
Dim Level As String
Dim OutMessage As String
Dim SMSNumber As String
Dim NextSMS As Boolean
Dim InLen As Integer
Dim PrevLen As Integer
```

```
Dim tmobnum As String

'Program Variables
Dim prs As Recordset
Dim GUsr As Recordset
Dim itm As Recordset
Dim spr As Recordset
Dim cmp As Recordset
Dim trn As Recordset
Dim rmd As Recordset
Dim tmprec As Recordset
Dim ipad As Recordset

Dim aitm As rdoResultset
Dim stp As rdoResultset
Dim sto As rdoResultset
Dim stb As rdoResultset
Dim rfound As Boolean
Dim csh As Integer
Dim mobnum As String
Dim tCustName As String
Dim tAttender As String
Dim MyTime As Double
Dim param(5) As String
Public ValidNum As String
Public vKeyword As String
```

```
Private Sub Command1_Click()
    Wavecom.Output = TPush.Text & vbCr
End Sub

Private Sub Form_Load()
    cInitWindow fLaunch
    IClose.Picture = fLogin.BtUp.Picture
    ISend.Picture = fLogin.BtUp.Picture
    IStart.Picture = fLogin.BtUp.Picture
    IStop.Picture = fLogin.BtUp.Picture
    ISMS.Picture = fLogin.BtUp.Picture
    IHide.Picture = fLogin.BtUp.Picture
    MyTime = 1
    OpAll.Picture = IBul2.Picture
    OpAdmin.Picture = IBul1.Picture
    OpClient.Picture = IBul1.Picture
    OpEmp.Picture = IBul1.Picture
    OpCEO.Picture = IBul1.Picture
    OpCompTech.Picture = IBul1.Picture
    OpOTech.Picture = IBul1.Picture
    csh = 1

    GSMLog.TextMatrix(0, 0) = "User"
    GSMLog.TextMatrix(0, 1) = "Mobile Number"
    GSMLog.TextMatrix(0, 2) = "Keyword"
    GSMLog.TextMatrix(0, 3) = "Date"
    GSMLog.TextMatrix(0, 4) = "Time"
```

```
GSMLog.TextMatrix(0, 5) = "Dir"
ValidNum = "0"
vKeyword = ""
Set prs = dbf.OpenRecordset("select * from GSMLog")
Set GUsr = dbf.OpenRecordset("select * from GSMUser")
GUsr.MoveFirst
While Not GUsr.EOF
    CMobileNumber.AddItem GUsr.Fields("UserName").Value
    GUsr.MoveNext
Wend
'Wavecom Settings
With Wavecom
    .COMMPort = COMMPort
    .DTREnable = True
    .Handshaking = comNone
    .InBufferSize = 1024
    .InputLen = 0
    .InputMode = comInputModeText
    .NullDiscard = True
    .OutBufferSize = 1024
    .ParityReplace = "?"
    .RThreshold = 1
    .RTSEnable = True
    .Settings = "9600,N,8,1"
    .SThreshold = 1
    .PortOpen = True
End With
```

```
    Level = "Init"
    ErrorCode = "No Error"
    LError.Caption = ErrorCode
    Wavecom.Output = "ATE0" & vbCr
    Wavecom.Output = "AT+CMGF=1" & vbCr
    Wavecom.Output = "AT+CPMS?" & vbCr
    Wavecom.Output = "AT+CSCA?" & vbCr
    SMSNumber = "0"
    InLen = 0
    PrevLen = 0
    LMobile.Caption = "Connection Active..."
End Sub

Private Sub IClose_Click()
    prs.Close
    GUsr.Close
    'Wavecom Port close
    Wavecom.Output = "ATE1" & vbCr
    Wavecom.PortOpen = False
    Unload Me
End Sub

Private Sub ISend_Click()
    Dim bdbf As Recordset
    If csh = 1 Then
        Set bdbf = dbf.OpenRecordset("select * from GSMUser")
    ElseIf csh = 2 Then
```

```
        Set bdbf = dbf.OpenRecordset("select * from GSMUser where
UserType='AD'")
    ElseIf csh = 3 Then
        Set bdbf = dbf.OpenRecordset("select * from GSMUser where
UserType='AR'")
    ElseIf csh = 4 Then
        Set bdbf = dbf.OpenRecordset("select * from GSMUser where
UserType='AS'")
    ElseIf csh = 5 Then
        Set bdbf = dbf.OpenRecordset("select * from GSMUser where
UserType='CE'")
    ElseIf csh = 6 Then
        Set bdbf = dbf.OpenRecordset("select * from GSMUser where
UserType='CT'")
    ElseIf csh = 7 Then
        Set bdbf = dbf.OpenRecordset("select * from GSMUser where
UserType='OT'")
    End If

    Level = "Broadcast"
    If bdbf.RecordCount <> 0 Then
        bdbf.MoveFirst
        While Not bdbf.EOF
            SendKeyword bdbf.Fields("MobileNumber").Value,
TBroadcast.Text
            LogIt bdbf.Fields("MobileNumber").Value, "BROADCAST",
"Out"
```

```
            bdbf.MoveNext
        Wend
    End If
    bdbf.Close
End Sub

Private Sub ISMS_Click()
    GUsr.MoveFirst
    GUsr.FindFirst "UserName='" & CMobileNumber.Text & "'"
    If GUsr.NoMatch Then
        If Val(CMobileNumber.Text) <> 0 Then
            SendKeyword CMobileNumber.Text, Text1.Text
            LogIt CMobileNumber.Text, "TEXT MESSAGE", "Out"
        Else
            cMsgBox "Please specify a valid GSM or CDMA mobile number
to send the message."
        End If
    Else
        SendKeyword GUsr.Fields("MobileNumber").Value, Text1.Text
        LogIt GUsr.Fields("MobileNumber").Value, "TEXT MESSAGE",
"Out"
    End If
End Sub

Private Sub IStart_Click()
    If LStat.Caption = "Active" Then
```

```
        cMsgBox "Connection is already active.  Cannot start a new thread for
this process."
    Else
        LStat.Caption = "Active"
    End If
End Sub

Private Sub IStop_Click()
    If LStat.Caption = "Idle" Then
        cMsgBox "GSM activity is idle.  Process has already been stopped."
    Else
        LStat.Caption = "Idle"
    End If
End Sub

Private Sub RemTimer_Timer()
    If rmd.RecordCount = 0 Then
        Exit Sub
    End If
    Set tmprec = dbf.OpenRecordset("select * from GSMUser where
UserType='AR'")
    If MyTime = vDura Then
        rmd.MoveFirst
        While Not rmd.EOF
            tmprec.MoveFirst
            While Not tmprec.EOF
```

```
            SendSMS tmprec.Fields("MobileNumber").Value, "Attend to
Complaint No. " & rmd.Fields("ComplaintNo").Value & " from " &
rmd.Fields("Company").Value & ". " & SMSFooter
            LogIt tmprec.Fields("MobileNumber").Value, "Reminder Sent",
"Out"
            tmprec.MoveNext
        Wend
        rmd.MoveNext
    Wend
    MyTime = 1
  Else
    MyTime = MyTime + 1
  End If
  tmprec.Close
End Sub

Private Sub TBroadcast_Change()
  Dim rfound As Boolean
  Dim lcfnd As String
  Set ipad = db1.OpenRecordset("select * from locationdb")
  rfound = False
  ipad.MoveFirst
  lcfnd = Empty
  While Not ipad.EOF
    If Mid(ipad.Fields("ipaddress").Value, 1, 17) = Mid(TBroadcast.Text,
1, 17) And rfound = False Then
    'If Trim(ipad.Fields("ipaddress")) = Trim(TBroadcast.Text) Then
```

```
            Text1.Text = ipad.Fields("locationaddr").Value  '& ", " &
SendTimer.Enabled
            rfound = True
        End If
        ipad.MoveNext
    Wend
    ipad.Close
    ProcessKeyword TMbNo.Text, "RESULT"
End Sub

Private Sub DelSMS(loc As Long)
    On Error GoTo ErrorTrap
    LMobile.Caption = "Connection Active..."
    Exit Sub
    ErrorTrap:
        cMsgBox "Invalid memory location."
End Sub

Private Sub ProcessKeyword(sender As String, keyword As String)
    Dim trec As Recordset
    Dim tmobnum As String
    Dim rct As Integer
    Dim SMSOut As String
    Dim ValidUser As Boolean
    Dim mbs As Double
    Dim mps As Double
    Dim mos As Double
```

```
Dim mcstock As Double
Dim tmrc As Recordset
Dim ABy As String
ValidUser = False
 SMSOut = sender
 GUsr.MoveFirst
GUsr.FindFirst "MobileNumber='" & SMSOut & "'"

If Level = "Broadcast" Then
    Exit Sub
End If

If GUsr.NoMatch Then
    ValidUser = False
    Exit Sub
Else
    ValidUser = True
End If
keyword = UCase(keyword)
If Mid(keyword, 1, 4) = "HELP" Then
    If Len(keyword) = 4 Then
        SendKeyword SMSOut, "Keywords : REG and TRACK.  For more
info sms HELP followed by the keyword. " & SMSFooter
        LogIt SMSOut, "REPLY SENT", "Out"
    Else
        If Trim(Mid(keyword, 6)) = "TRACK" Then
```

```
            SendKeyword SMSOut, "TRACK : Usage ITEM Vehicle
Number.  If Vehicle exists in database, its location is tracked and returned. "
& SMSFooter
            LogIt SMSOut, "REPLY SENT", "Out"
        ElseIf Trim(Mid(keyword, 6)) = "REG" Then
            SendKeyword SMSOut, "REG : Usage REG User Name.  Your
name and mobile number will be registered in our database. A confirmation
will be sent to you. " & SMSFooter
            LogIt SMSOut, "REPLY SENT", "Out"
        Else
            SendKeyword SMSOut, "Cannot find help on that keyword.
Make sure that you have specified the correct keyword for Help. " &
SMSFooter
            LogIt SMSOut, "REPLY SENT", "Out"
        End If
    End If

ElseIf Mid(keyword, 1, 3) = "REG" Then
    If Len(keyword) = 3 Then
        SendKeyword SMSOut, "Please include your name after REG to
register your name in our database. " & SMSFooter
        LogIt SMSOut, "REPLY SENT", "Out"
    ElseIf Len(keyword) > 3 Then
        GUsr.MoveFirst
        GUsr.FindFirst "MobileNumber='" & Mid(keyword, 5, 13) & "'"
        If GUsr.NoMatch Then
            GUsr.AddNew
```

```
            GUsr.Fields("UserName").Value = Mid(keyword, 19)
            GUsr.Fields("UserType").Value = "CB"
            GUsr.Update
            GUsr.Requery
            SendKeyword SMSOut, "You have been successfully registered
in our database. " & SMSFooter
            LogIt SMSOut, "REPLY SENT", "Out"
        Else
            SendKeyword SMSOut, "You are already registered in our
database as : " & GUsr.Fields("UserName").Value & ". " & SMSFooter
            LogIt SMSOut, "REPLY SENT", "Out"
        End If
    End If

ElseIf Mid(keyword, 1, 6) = "RESULT" Then
    TBroadcast.Text = Empty
    If Text1.Text <> Empty Then
        SendKeyword TMbNo.Text, "The vehicle is near " & Text1.Text
        LogIt TMbNo.Text, "REPLY SENT", "Out"
    End If

ElseIf Mid(keyword, 1, 5) = "TRACK" Then
    TMbNo.Text = SMSOut
    If ValidUser = True Then
        If Len(keyword) = 5 Then
            SendKeyword SMSOut, "Please include Vehicle number to
locate. " & SMSFooter
```

```
            LogIt SMSOut, "REPLY SENT", "Out"
            TMbNo.Text = SMSOut
        ElseIf Len(keyword) > 5 Then
            Wavecom.Output = "AT+CCED=0" & vbCr
            Wavecom.Output = "AT" & vbCr
            TMbNo.Text = SMSOut
            End If
    Else
        SendKeyword SMSOut, "You are not authorized to use this
service.  Kindly register before using our services.  Sms HELP for more
info. " & SMSFooter
        LogIt SMSOut, "REPLY SENT", "Out"
    End If

ElseIf Mid(keyword, 1, 6) = "REPORT" Then
    Dim tfnd1 As Boolean
    Dim local As String
    Set ipad = db1.OpenRecordset("select * from locationdb")
    tfnd1 = False
    local = Empty
    ipad.MoveFirst
    While Not ipad.EOF
        If Mid(keyword, 8, 24) = Mid(ipad.Fields("ipaddress"), 1, 24)
Then
            tfnd1 = True
            local = ipad.Fields("locationaddr").Value
        End If
```

```
        Wend

        If tfnd1 = True Then
            SendKeyword SMSOut, "The vehicle is near " & local1 & ". " &
SMSFooter
            LogIt SMSOut, "REPLY SENT", "Out"
        Else
            SendKeyword SMSOut, "The vehicle cannot be tracked now. " &
SMSFooter
            LogIt SMSOut, "REPLY SENT", "Out"
        End If
    ElseIf Mid(keyword, 1, 6) = "STATUS" Then
        If ValidUser = True Then
            If Len(keyword) = 6 Then
               SendKeyword SMSOut, "Please specify your complaint number
after the STATUS keyword to get details on the complaint status. " &
SMSFooter
                LogIt SMSOut, "REPLY SENT", "Out"
            ElseIf Len(keyword) > 5 Then

                If cmp.RecordCount > 0 Then
                    cmp.MoveFirst
                    cmp.FindFirst "CompNo=" & Val(Mid(keyword, 8))
                    If cmp.NoMatch Then
                        SendKeyword SMSOut, "The complaint number you
have speficied does not exist. " & SMSFooter
                        LogIt SMSOut, "REPLY SENT", "Out"
```

```
                Else
                    If cmp.Fields("MobileNumber").Value <> SMSOut Then
                        'SendSMS SMSOut, "You cannot view the status of
complaints placed by other clients. " & SMSFooter
                        SendKeyword SMSOut, "You cannot view the status
of complaints placed by other clients. " & SMSFooter
                        LogIt SMSOut, "REPLY SENT", "Out"
                    Else
                        SendKeyword SMSOut, "Status of Complaint Number
" & cmp.Fields("CompNo").Value & " - " & cmp.Fields("Status").Value & "
- Attended by " & cmp.Fields("AttendedBy") & ". " & SMSFooter
                        LogIt SMSOut, "REPLY SENT", "Out"
                    End If
                End If
            Else
                SendKeyword SMSOut, "There are no Complaints registered
in the database. " & SMSFooter
                LogIt SMSOut, "REPLY SENT", "Out"
            End If
        End If
    Else
        SendKeyword SMSOut, "You are not authorized to use this
service.  Kindly register before using our services.  Sms HELP for more
info. " & SMSFooter
        LogIt SMSOut, "REPLY SENT", "Out"
    End If
```

```
    ElseIf Mid(keyword, 1, 6) = "ATTEND" Then
        If ValidUser = True Then
            If Len(keyword) = 6 Then
                SendKeyword SMSOut, "Please specify the complaint number
after the ATTEND keyword. " & SMSFooter
                LogIt SMSOut, "REPLY SENT", "Out"
            ElseIf Len(keyword) > 6 Then
                If cmp.RecordCount > 0 Then
                    cmp.MoveFirst
                    cmp.FindFirst "CompNo=" & Val(Mid(keyword, 8))
                    If cmp.NoMatch Then
                        SendKeyword SMSOut, "The complaint number you
have speficied does not exist. " & SMSFooter
                        LogIt SMSOut, "REPLY SENT", "Out"
                    Else
                        GUsr.MoveFirst
                        GUsr.FindFirst "UserName='" &
cmp.Fields("AttendedBy").Value & "'"
                                        If cmp.Fields("Status").Value =
"Pending" Then
                                cmp.Edit
                                GUsr.MoveFirst
                                GUsr.FindFirst "MobileNumber='" & SMSOut &
"'"
                                cmp.Fields("AttendedBy").Value =
GUsr.Fields("UserName").Value
                                ABy = GUsr.Fields("UserName").Value
```

```
                    cmp.Fields("Status").Value = "Attending"
                    cmp.Update
                    cmp.Requery
                    rmd.MoveFirst
                    rmd.FindFirst "ComplaintNo=" &
Val(Mid(keyword, 8))
                    rmd.Delete
                    rmd.Requery
                    SendKeyword SMSOut, "Complaint status updated
in the database. " & SMSFooter
                    LogIt SMSOut, "REPLY SENT", "Out"
                    Set tmrc = dbf.OpenRecordset("select * from
GSMUser where UserType='AR' and UserName<>'" &
GUsr.Fields("UserName").Value & "'")
                    If tmrc.RecordCount <> 0 Then
                        tmrc.MoveFirst
                        While Not tmrc.EOF
                            SendKeyword
tmrc.Fields("MobileNumber").Value, "This complaint is being attended by "
& ABy & ". " & SMSFooter
                            LogIt tmrc.Fields("MobileNumber").Value,
"Notified Engineer", "Out"
                            tmrc.MoveNext
                        Wend
                    End If
                    tmrc.Close
                ElseIf cmp.Fields("Status").Value = "Attending" Then
```

```
                    SendKeyword SMSOut, "This complaint is being
attended by " & cmp.Fields("AttendedBy").Value & ". " & SMSFooter
                    LogIt SMSOut, "REPLY SENT", "Out"
                Else
                    SendKeyword SMSOut, "Cannot attend to this
complaint. Please check with the administrator. " & SMSFooter
                    LogIt SMSOut, "REPLY SENT", "Out"
                End If
            End If
        Else
            SendKeyword SMSOut, "There are no Complaints registered
in the database. " & SMSFooter
            LogIt SMSOut, "REPLY SENT", "Out"
        End If
    End If
Else
    SendKeyword SMSOut, "You are not authorized to use this
service. Kindly register before using our services. Sms HELP for more
info. " & SMSFooter
    LogIt SMSOut, "REPLY SENT", "Out"
End If

ElseIf Mid(keyword, 1, 5) = "CLOSE" Then
    If ValidUser = True Then
        If Len(keyword) = 5 Then
            SendKeyword SMSOut, "Please specify the complaint number
to CLOSE. " & SMSFooter
```

```
            LogIt SMSOut, "REPLY SENT", "Out"
        ElseIf Len(keyword) > 6 Then
            If cmp.RecordCount > 0 Then
                cmp.MoveFirst
                cmp.FindFirst "CompNo=" & Val(Mid(keyword, 7))
                If cmp.NoMatch Then
                    SendKeyword SMSOut, "The complaint number you
have speficied does not exist. " & SMSFooter
                    LogIt SMSOut, "REPLY SENT", "Out"
                Else
                    GUsr.MoveFirst
                    GUsr.FindFirst "UserName='" &
cmp.Fields("AttendedBy").Value & "'"
                    If SMSOut <> GUsr.Fields("MobileNumber").Value
Then
                        SendKeyword SMSOut, "You cannot close a
complaint directed to another engineer. " & SMSFooter
                        LogIt SMSOut, "REPLY SENT", "Out"
                    Else
                        If cmp.Fields("Status").Value = "Attending" Then
                            cmp.Edit
                            GUsr.MoveFirst
                            GUsr.FindFirst "MobileNumber='" & SMSOut &
"'"
                            cmp.Fields("AttendedBy").Value =
GUsr.Fields("UserName").Value
                            ABy = GUsr.Fields("UserName").Value
```

```
                    cmp.Fields("Status").Value = "Completed"
                    cmp.Update
                    cmp.Requery
                    SendKeyword SMSOut, "Complaint No. " &
Mid(keyword, 7) & " closed successfully by " & ABy & ". " & SMSFooter
                    LogIt SMSOut, "REPLY SENT", "Out"
                    SendKeyword "+919843161180", "Complaint No.
" & Mid(keyword, 7) & " closed successfully by " & ABy & ". " &
SMSFooter
                    LogIt "+919843161180", "REPLY SENT", "Out"
                    GUsr.MoveFirst
                    GUsr.FindFirst "MobileNumber='" &
cmp.Fields("MobileNumber").Value & "'"
                    SendKeyword
GUsr.Fields("MobileNumber").Value, "Complaint No. " & Mid(keyword, 7)
& " closed successfully by " & ABy & ". " & SMSFooter
                    LogIt GUsr.Fields("MobileNumber").Value,
"REPLY SENT", "Out"

                ElseIf cmp.Fields("Status").Value = "Pending" Then
                    SendKeyword SMSOut, "Cannot close a pending
complaint.  Please check with the administrator. " & SMSFooter
                    LogIt SMSOut, "REPLY SENT", "Out"
                Else
                    SendKeyword SMSOut, "Cannot attend to this
complaint.  Please check with the administrator. " & SMSFooter
                    LogIt SMSOut, "REPLY SENT", "Out"
```

```
                End If
            End If
        End If
    Else
        SendKeyword SMSOut, "There are no Complaints registered
in the database. " & SMSFooter
        LogIt SMSOut, "REPLY SENT", "Out"
    End If
End If
Else
    SendKeyword SMSOut, "You are not authorized to use this
service.  Kindly register before using our services.  Sms HELP for more
info. " & SMSFooter
    LogIt SMSOut, "REPLY SENT", "Out"
End If

ElseIf Mid(keyword, 1, 7) = "CREDITS" Then
    SendKeyword SMSOut, "*** Developed by Axis Technologies,
powered by Nokia. ***"
    LogIt SMSOut, "REPLY SENT", "Out"

Else
    End If
End Sub

Private Sub LogIt(MobileNumber As String, keyword As String, Dir As
String)
```

```
Dim rctr As Integer
Dim ictr As Integer
Dim unm As String
If rctr > 100 Then
    GSMLog.Rows = 2
    For ictr = 0 To 4
        GSMLog.TextMatrix(1, ictr) = Empty
    Next ictr
    rctr = 1
End If
GUsr.MoveFirst
GUsr.FindFirst "MobileNumber='" & MobileNumber & "'"
If GUsr.NoMatch Then
    unm = "None"
Else
    unm = GUsr.Fields("UserName").Value
End If
If MobileNumber <> "0" Then
    If GSMLog.Rows = 2 Then
        If GSMLog.TextMatrix(1, 0) = Empty Then
            GSMLog.TextMatrix(1, 0) = unm
            GSMLog.TextMatrix(1, 1) = MobileNumber
            GSMLog.TextMatrix(1, 2) = keyword
            GSMLog.TextMatrix(1, 3) = Format(Now, "dd-mmm-yyyy")
            GSMLog.TextMatrix(1, 4) = Format(Now, "hh:mm:ss")
            GSMLog.TextMatrix(1, 5) = Dir
        Else
```

```
            GSMLog.Rows = GSMLog.Rows + 1
            GSMLog.TextMatrix(GSMLog.Rows - 1, 0) = unm
            GSMLog.TextMatrix(GSMLog.Rows - 1, 1) = MobileNumber
            GSMLog.TextMatrix(GSMLog.Rows - 1, 2) = keyword
            GSMLog.TextMatrix(GSMLog.Rows - 1, 3) = Format(Now,
"dd-mmm-yyyy")
            GSMLog.TextMatrix(GSMLog.Rows - 1, 4) = Format(Now,
"hh:mm:ss")
            GSMLog.TextMatrix(GSMLog.Rows - 1, 5) = Dir
        End If
    Else
        GSMLog.Rows = GSMLog.Rows + 1
        GSMLog.TextMatrix(GSMLog.Rows - 1, 0) = unm
        GSMLog.TextMatrix(GSMLog.Rows - 1, 1) = MobileNumber
        GSMLog.TextMatrix(GSMLog.Rows - 1, 2) = keyword
        GSMLog.TextMatrix(GSMLog.Rows - 1, 3) = Format(Now, "dd-
mmm-yyyy")
        GSMLog.TextMatrix(GSMLog.Rows - 1, 4) = Format(Now,
"hh:mm:ss")
        GSMLog.TextMatrix(GSMLog.Rows - 1, 5) = Dir
    End If
    rctr = GSMLog.Rows
    prs.AddNew
    prs.Fields("MobileNumber").Value = MobileNumber
    prs.Fields("Keyword").Value = keyword
    prs.Fields("LDate").Value =
Format(GSMLog.TextMatrix(GSMLog.Rows - 1, 3), "dd-mmm-yyyy")
```

```
        prs.Fields("LTime").Value =
Format(GSMLog.TextMatrix(GSMLog.Rows - 1, 4), "hh:mm:ss")
        prs.Fields("Dir").Value = Dir
        prs.Update
    End If
End Sub
Private Sub Pause(fSeconds As Single)
    On Error Resume Next
    Dim FTimer As Single
    FTimer = Timer
    Do While Timer - FTimer < fSeconds
        DoEvents
        If Timer < FTimer Then
            FTimer = FTimer - 86400
        End If
    Loop
End Sub

Private Sub Text1_Change()
    LenSMS.Caption = 160 - Len(Text1.Text)
End Sub

'Wavecom Controls

Private Sub GetTimer_Timer()
    If GIncoming.TextMatrix(0, 0) <> Empty Then
        If TGetComm.Text = Empty Then
```

```
            GetTimer.Enabled = False
            Wavecom.Output = "AT+CMGR=" & GIncoming.TextMatrix(0,
0) & vbCr
            SMSNumber = GIncoming.TextMatrix(0, 0)
            If GIncoming.Rows = 1 Then
                GIncoming.TextMatrix(0, 0) = Empty
            Else
                GIncoming.RemoveItem 0
            End If
        End If
    End If
End Sub

Private Sub SendTimer_Timer()
    If GOutGoing.TextMatrix(0, 0) <> Empty Then
        If TGetComm.Text = Empty Then
            SendTimer.Enabled = False
            SendSMS GOutGoing.TextMatrix(0, 0), GOutGoing.TextMatrix(0,
1)
            If GOutGoing.Rows = 1 Then
                GOutGoing.TextMatrix(0, 0) = Empty
                GOutGoing.TextMatrix(0, 1) = Empty
            Else
                GOutGoing.RemoveItem 0
            End If
        End If
    Else
```

```
        Level = "Ready"
    End If
End Sub

Private Sub Timer1_Timer()
    If Trim(TGetComm.Text) = Empty Then
        Timer1.Enabled = False
        Exit Sub
    Else
        ScanOutput
    End If
End Sub

Private Sub Wavecom_OnComm()
    InBuf = Wavecom.Input
    If Wavecom.CommEvent = comEvRing Then
        Wavecom.Output = "ATH" & vbCr
    End If

    If Wavecom.CommEvent = comEvReceive Then
        TGetComm.Text = TGetComm.Text & InBuf
    ElseIf Wavecom.CommEvent = comEvSend Then
        While Wavecom.OutBufferCount > 0
            Wend
    End If
    InBuf = Empty
    If Timer1.Enabled = False Then
```

```
        Timer1.Enabled = True
    End If
End Sub

Private Sub ScanOutput()
    Dim tget As String
    Dim cctr As Integer
    Dim smscount As String
    Dim mobnum As String
    Dim kword As String
    Dim i As Integer
    Dim rrd As Integer
    Dim rud As Integer
    Dim looper As Boolean
    Dim ochar As String

    If Trim(TGetComm.Text) = Empty Then
        Exit Sub
    End If
    If Level = "Init" Then
        Level = "Start"
        cctr = InStr(TGetComm.Text, "OK")
        If cctr > 1 Then
            TGetComm.Text = Mid(TGetComm.Text, cctr)
        End If
    End If
    cctr = 1
```

```
tget = Empty
looper = True
Do While looper = True
    ochar = Mid(TGetComm.Text, cctr, 1)
    If ochar <> vbCr Then
        tget = tget & ochar
        cctr = cctr + 1
    Else
        looper = False
    End If
    If cctr > Trim(Len(TGetComm.Text)) Then
        looper = False
    End If
Loop
If cctr <= 1 Then
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr))
End If

'When mobile rings, send instruction to hang up
If tget = "ATH" Or tget = "ATE0" Then
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 3))

'If modem responds with OK, clear the OK string
ElseIf tget = "OK" Then
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 2))
    If SMSNumber > Val("0") Then
        Wavecom.Output = "AT+CMGD=" & SMSNumber & vbCr
```

```
        SMSNumber = "0"
    End If

'If modem responds with K or single char
ElseIf tget = "K" Then  'Or Len(Trim(tget)) = 1 Then
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 2))

'While sending an SMS
ElseIf tget = ">" Then
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 2))

'If modem responds with ERROR, Update Error Status
ElseIf tget = "ERROR" Then
    ErrorCode = "Error"
    LError.Caption = ErrorCode
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 2))

'If modem gets an incoming call
ElseIf tget = "RING" Then
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 2))

'After sending the SMS
ElseIf Mid(tget, 1, 6) = "+CMGS:" Then
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 2))
    NextSMS = True
    SendTimer.Enabled = True
    GetTimer.Enabled = True
```

```
'Checking total number of messages in SIM memory
ElseIf Mid(tget, 1, 6) = "+CPMS:" Then
    smscount = Mid(tget, 13, 2)
    If Right(smscount, 1) = "," Then
        LCount.Caption = Mid(smscount, 1, 1)
    Else
        LCount.Caption = smscount
    End If
    If Val(LCount.Caption) <> 0 Then
        For i = 1 To Val(LCount.Caption)
            NotifySMS Str(i)
        Next i
    End If
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 4))

'Requesting the SMS Centre address from the modem
ElseIf Mid(tget, 1, 6) = "+CSCA:" Then
    LSMSC.Caption = Mid(tget, 9, 13)
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 4))

'Requesting the location address from the modem
ElseIf Mid(tget, 1, 5) = "+CSQ:" Then
    TGetComm.Text = Trim(Mid(TGetComm.Text,
InStr(TGetComm.Text, "404")))
    TBroadcast.Text = Mid(TGetComm.Text, 1, InStr(TGetComm.Text,
",,,") + 2)
```

```
    kword = Empty
    kword = TBroadcast.Text
    ProcessKeyword tmobnum, TBroadcast.Text
    TGetComm.Text = Empty

'New message notification
ElseIf Mid(tget, 1, 6) = "+CMTI:" Then
    smscount = Mid(tget, 13, 2)
    If Right(smscount, 1) = "," Then
        LCount.Caption = Mid(smscount, 1, 1)
    Else
        LCount.Caption = smscount
    End If
    SMSNumber = smscount
    NotifySMS smscount
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 4))

'Reading Message
ElseIf Mid(tget, 1, 6) = "+CMGR:" Then
    If InStr(tget, "REC UNREAD") > 0 Then
        mobnum = Mid(tget, 22, 13)
    ElseIf InStr(tget, "REC READ") > 0 Then
        mobnum = Mid(tget, 20, 13)
    End If
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 2))
    i = 1
    kword = Empty
```


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```
    While Mid(TGetComm.Text, i, 1) <> vbCr
        kword = kword & Mid(TGetComm.Text, i, 1)
        i = i + 1
    Wend
     LogIt mobnum, kword, "In"
     TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 2))
    ProcessKeyword mobnum, kword

'Reading All Message
ElseIf Mid(tget, 1, 6) = "+CMGL:" Then
    rud = InStr(tget, "REC UNREAD")
    rrd = InStr(tget, "REC READ")
    If rud > 0 Then
        mobnum = Mid(tget, rud + 14, 13)
    ElseIf rrd > 0 Then
        mobnum = Mid(tget, rrd + 11, 13)
    End If

    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 1))
    i = 1
    kword = Empty
    While Mid(TGetComm.Text, i, 1) <> vbCr
            kword = kword & Mid(TGetComm.Text, i, 1)
        i = i + 1
    Wend
    LogIt mobnum, kword, "In"
    TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + i + 2))
```

```
    'Blank output or vbCr / vbLf in buffer
    ElseIf tget = Empty Then
        TGetComm.Text = Trim(Mid(TGetComm.Text, cctr + 2))
    End If
End Sub
Private Sub SendKeyword(mobile As String, keyword As String)
    'SendSMS mobile, keyword
    If GOutGoing.TextMatrix(0, 0) = Empty Then
        GOutGoing.TextMatrix(0, 0) = mobile
        GOutGoing.TextMatrix(0, 1) = keyword
    Else
        GOutGoing.Rows = GOutGoing.Rows + 1
        GOutGoing.TextMatrix(GOutGoing.Rows - 1, 0) = mobile
        GOutGoing.TextMatrix(GOutGoing.Rows - 1, 1) = keyword
    End If
End Sub

Private Sub NotifySMS(loc As String)
    If GIncoming.TextMatrix(0, 0) = Empty Then
        GIncoming.TextMatrix(0, 0) = loc
    Else
        GIncoming.Rows = GIncoming.Rows + 1
        GIncoming.TextMatrix(GIncoming.Rows - 1, 0) = loc
    End If
End Sub
```

```
Private Sub SendSMS(mobile As String, msg As String)
    Wavecom.Output = "AT+CMGS=" & Chr(34) & mobile & Chr(34) &
vbCr
    Wavecom.Output = msg & Chr(26) & vbCr
End Sub
```

GSMLOG.FORM

```
Dim dchoice As Integer
Dim smsdir As Integer
Dim GLog As Recordset
Dim GUsr As Recordset
Dim GUName As String
Dim vSQL As String

Private Sub Form_Load()
    cInitWindow fGSMLog
    IClose.Picture = fLogin.BtUp.Picture
    IGet.Picture = fLogin.BtUp.Picture
    IPrint.Picture = fLogin.BtUp.Picture
    IDelete.Picture = fLogin.BtUp.Picture
    OpSingle.Picture = IBul2.Picture
    OpRange.Picture = IBul1.Picture
    OpAll.Picture = IBul2.Picture
    OpIn.Picture = IBul1.Picture
    OpOut.Picture = IBul1.Picture
    dchoice = 1
    smsdir = 1
```

```
    Set GUsr = dbf.OpenRecordset("select * from GSMUser")

    GSMLog.ColWidth(0) = GSMLog.Width * 0.15
    GSMLog.ColWidth(1) = GSMLog.Width * 0.15
    GSMLog.ColWidth(2) = GSMLog.Width * 0.35
    GSMLog.ColWidth(3) = GSMLog.Width * 0.1
    GSMLog.ColWidth(4) = GSMLog.Width * 0.1
    GSMLog.ColWidth(5) = GSMLog.Width * 0.1
    GSMLog.TextMatrix(0, 0) = "User Name"
    GSMLog.TextMatrix(0, 1) = "Mobile Number"
    GSMLog.TextMatrix(0, 2) = "Keyword"
    GSMLog.TextMatrix(0, 3) = "Date"
    GSMLog.TextMatrix(0, 4) = "Time"
    GSMLog.TextMatrix(0, 5) = "Dir"
End Sub

Private Sub IDelete_Click()
    Dim i As Integer
    recdel = False
    fConfirm.Show 1
    If recdel = False Then
        cMsgBox "Deletion process aborted.  Please check before you delete
any records."
    Else
        dbf.Execute "delete " & Mid(vSQL, 10)
        GSMLog.Rows = 2
```

```
        For i = 0 To 5
            GSMLog.TextMatrix(1, i) = Empty
        Next i
        cMsgBox "Records deleted successfully."
    End If
End Sub
Private Sub IGet_Click()
    Dim i As Integer
    If dchoice = 1 Then
        TDate1.Text = Format(TDate1.Text, "dd-mmm-yyyy")
        vSQL = "select * from GSMLog where LDate = #" &
Format(TDate1.Text, "dd-mmm-yyyy") & "#"
    Else
        TDate1.Text = Format(TDate1.Text, "dd-mmm-yyyy")
        TDate2.Text = Format(TDate2.Text, "dd-mmm-yyyy")
        vSQL = "select * from GSMLog where LDate >= #" &
Format(TDate1.Text, "dd-mmm-yyyy") & "# and LDate <= #" &
Format(TDate2.Text, "dd-mmm-yyyy") & "#"
    End If

    If smsdir = 2 Then
        vSQL = vSQL & " and Dir='In'"
    ElseIf smsdir = 3 Then
        vSQL = vSQL & " and Dir='Out'"
    End If

    Set GLog = dbf.OpenRecordset(vSQL)
```

```
    If GLog.RecordCount = 0 Then
        cMsgBox "No records were found for this search criteria.  Please try
other date combinations."
    Else
        GSMLog.Rows = 2
        For i = 0 To 5
            GSMLog.TextMatrix(1, i) = Empty
        Next i

        i = 1
        GLog.MoveFirst
        While Not GLog.EOF
            GUsr.MoveFirst
            GUsr.FindFirst "MobileNumber='" &
GLog.Fields("MobileNumber").Value & "'"
            If GUsr.NoMatch Then
                GUName = "Non-existant"
            Else
                GUName = GUsr.Fields("UserName").Value
            End If
            GSMLog.TextMatrix(i, 0) = GUName
            GSMLog.TextMatrix(i, 1) = GLog.Fields("MobileNumber").Value
            GSMLog.TextMatrix(i, 2) = GLog.Fields("Keyword").Value
            GSMLog.TextMatrix(i, 3) = Format(GLog.Fields("LDate").Value,
"dd-mmm-yyyy")
```

```
            GSMLog.TextMatrix(i, 4) = Format(GLog.Fields("LTime").Value,
"hh:mm:ss")
            GSMLog.TextMatrix(i, 5) = GLog.Fields("Dir").Value
            GLog.MoveNext
            If Not GLog.EOF Then
               i = i + 1
               GSMLog.Rows = GSMLog.Rows + 1
            End If
         Wend
      End If
      GLog.Close
End Sub

Private Sub IPrint_Click()
      Dim linct As Integer
      Dim rowct As Integer
      Printer.FontBold = True
      Printer.FontName = "Arial"
      Printer.FontSize = 14
      Printer.Print Tab(20); "Alpine Knits India Pvt. Ltd."
      Printer.FontBold = False
      Printer.FontSize = 12
      Printer.Print Tab(27); "GSM Log report printed on - "; Format(Now, "dd-
mmm-yyyy")
      Printer.Print
      linct = 1
      rowct = 1
```

```
    Printer.FontName = "Courier New"
    Printer.FontSize = 10
    Printer.FontBold = True
    Printer.Print Tab(5); "User"; Tab(25); "Number"; Tab(40); "Keyword";
Tab(65); "Date"; Tab(80); "Time"; Tab(95); "Dir"
    Printer.FontBold = False
    For rowct = 1 To GSMLog.Rows - 1
        Printer.Print Tab(5); GSMLog.TextMatrix(rowct, 0); Tab(25);
GSMLog.TextMatrix(rowct, 1); Tab(40); GSMLog.TextMatrix(rowct, 2);
Tab(65); GSMLog.TextMatrix(rowct, 3); Tab(80);
Format(GSMLog.TextMatrix(rowct, 4), "hh:mm:ss am/pm"); Tab(95);
GSMLog.TextMatrix(rowct, 5)
    Next rowct
    Printer.EndDoc
End Sub

Private Sub OpAll_Click()
    OpAll.Picture = IBul2.Picture
    OpIn.Picture = IBul1.Picture
    OpOut.Picture = IBul1.Picture
    smsdir = 1
End Sub

Private Sub OpIn_Click()
    OpAll.Picture = IBul1.Picture
    OpIn.Picture = IBul2.Picture
    OpOut.Picture = IBul1.Picture
```

```
    smsdir = 2
End Sub

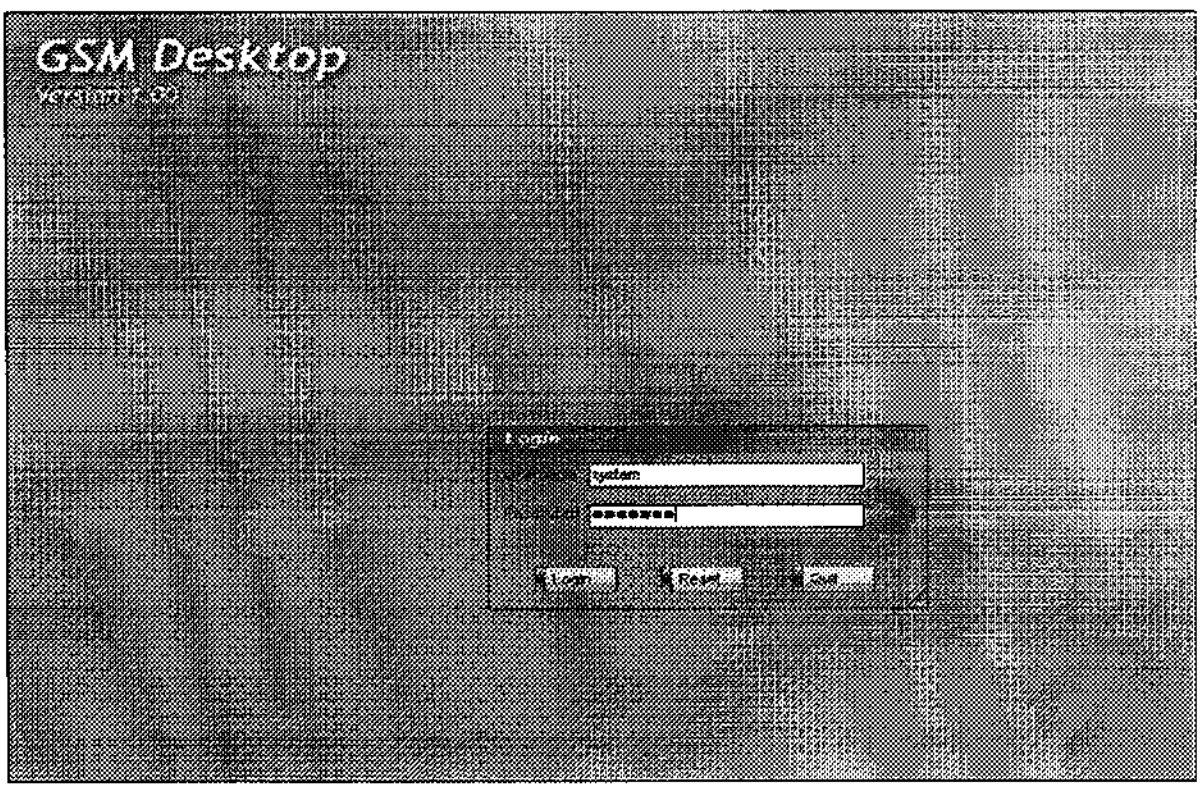
Private Sub OpOut_Click()
    OpAll.Picture = IBul1.Picture
    OpIn.Picture = IBul1.Picture
    OpOut.Picture = IBul2.Picture
    smsdir = 3
End Sub

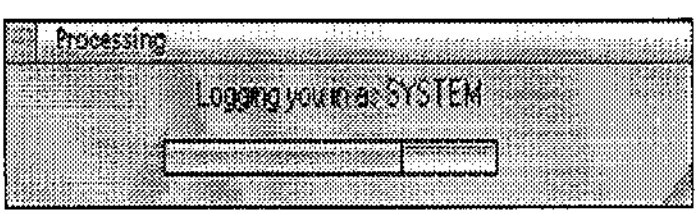
Private Sub OpRange_Click()
    OpSingle.Picture = IBul1.Picture
    OpRange.Picture = IBul2.Picture
    dchoice = 2
    If Label1.Visible = False Then
        Label1.Visible = True
        TDate2.Visible = True
    End If
End Sub

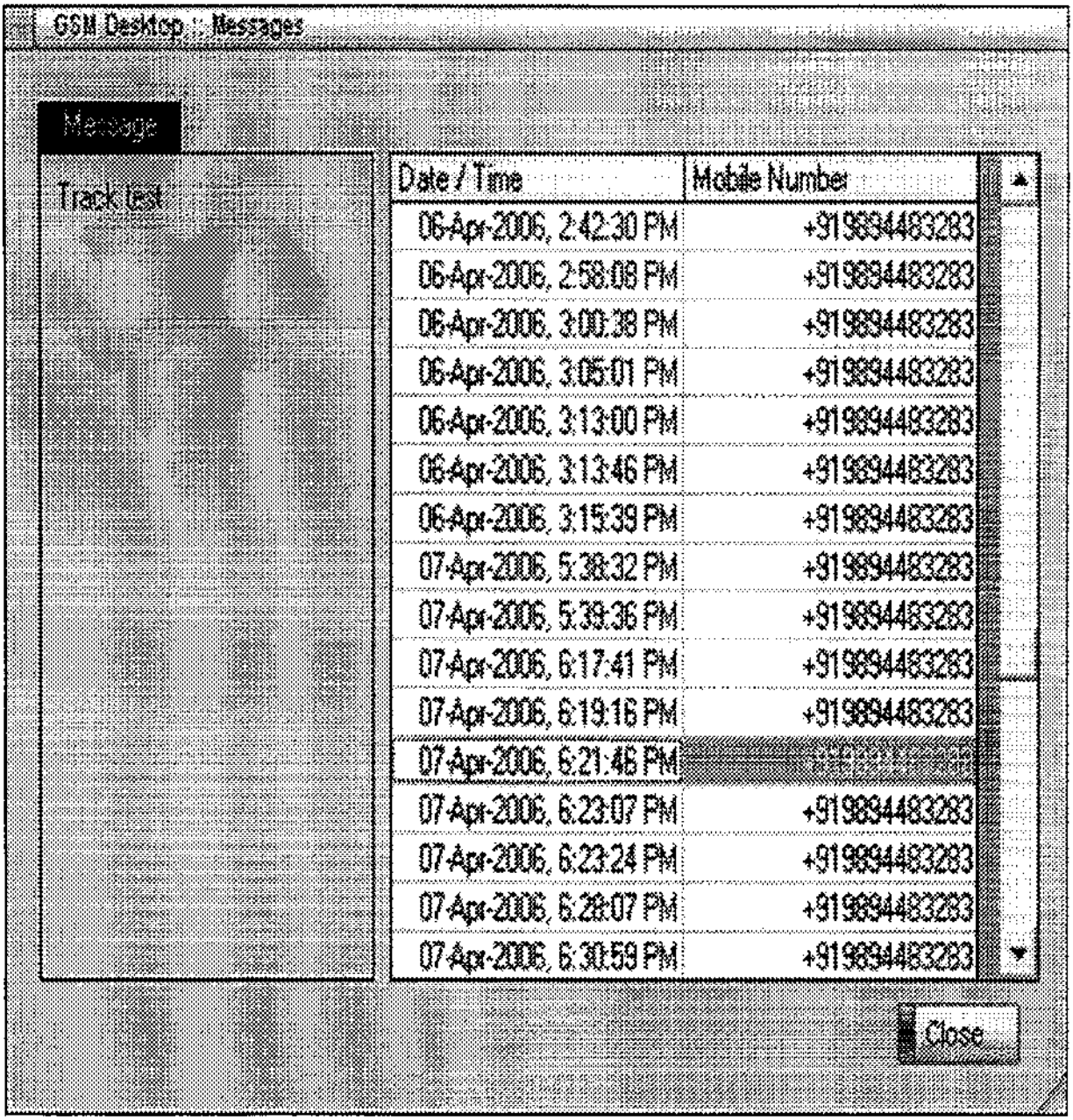
Private Sub OpSingle_Click()
    OpSingle.Picture = IBul2.Picture
    OpRange.Picture = IBul1.Picture
    dchoice = 1
    If Label1.Visible = True Then
        Label1.Visible = False
        TDate2.Visible = False
```

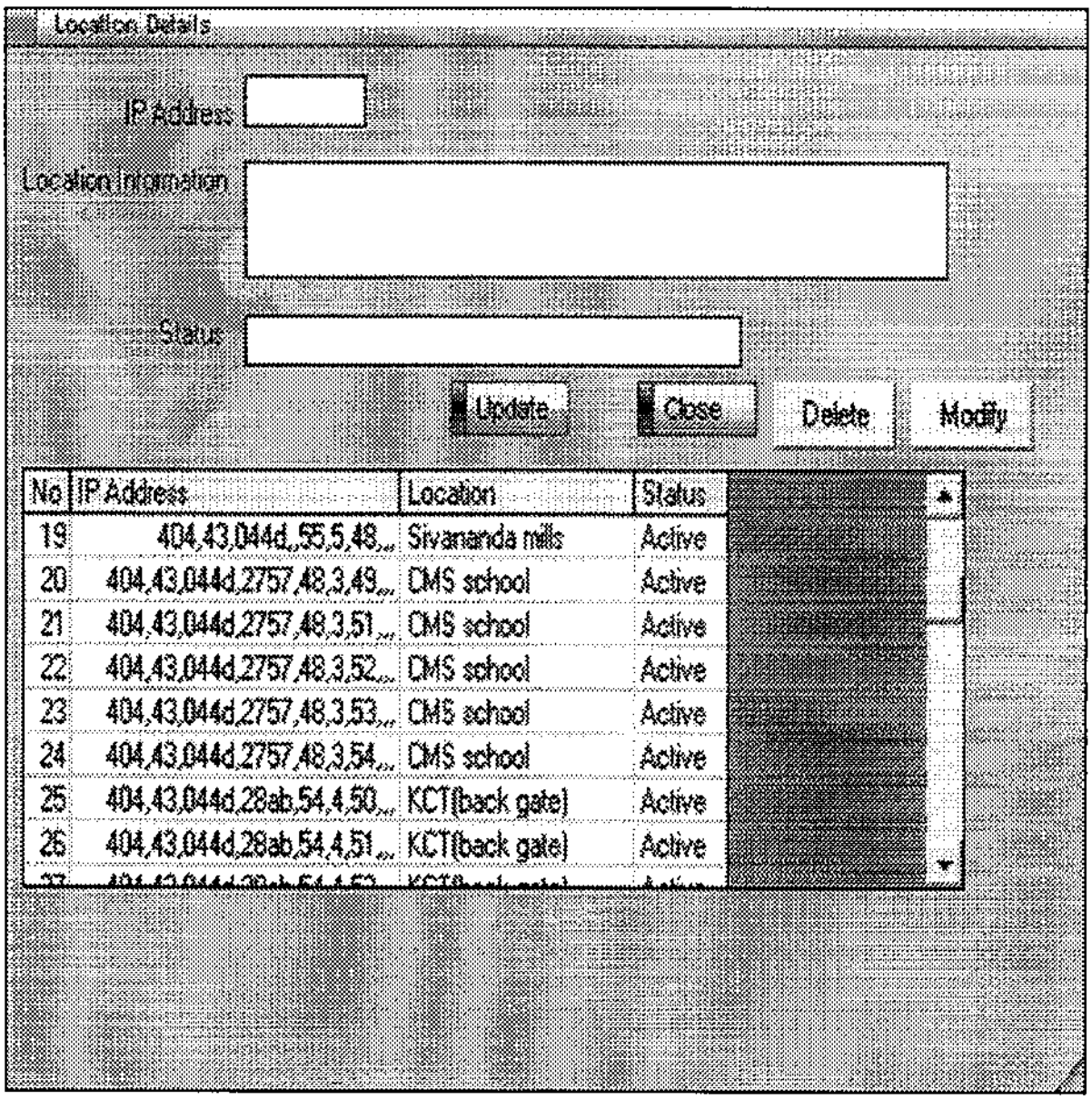
```
    End If
End Sub
```

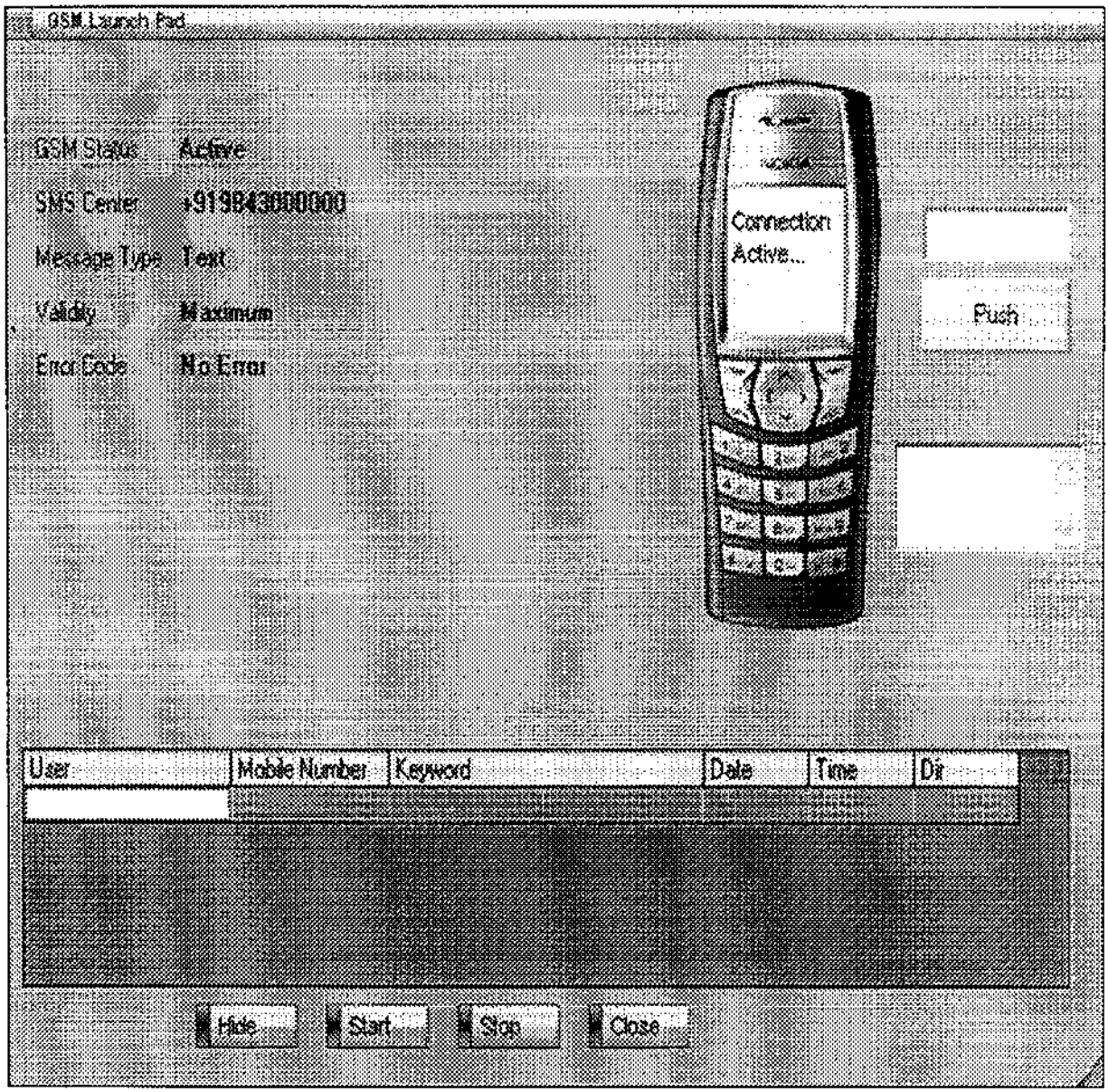
8.2 SAMPLE OUTPUT






GSM Desktop :: Messages
Message
Track test
Date / Time
Mobile Number
06-Apr-2006, 2:42:30 PM +919894483283
06-Apr-2006, 2:58:08 PM +919894483283
06-Apr-2006, 3:00:38 PM +919894483283
06-Apr-2006, 3:05:01 PM +919894483283
06-Apr-2006, 3:13:00 PM +919894483283
06-Apr-2006, 3:13:46 PM +919894483283
06-Apr-2006, 3:15:39 PM +919894483283
07-Apr-2006, 5:38:32 PM +919894483283
07-Apr-2006, 5:39:36 PM +919894483283
07-Apr-2006, 6:17:41 PM +919894483283
07-Apr-2006, 6:19:16 PM +919894483283
07-Apr-2006, 6:21:46 PM
07-Apr-2006, 6:23:07 PM +919894483283
07-Apr-2006, 6:23:24 PM +919894483283
07-Apr-2006, 6:28:07 PM +919894483283
07-Apr-2006, 6:30:59 PM +919894483283
Close


Location Details
IP Address
Location Information
Status
Update
Close
Delete
Modify
No
IP Address
Location
Status
19 404,43,044d,55,5,48,.. Sivananda mills Active
20 404,43,044d,2757,48,3,49,.. CMS school Active
21 404,43,044d,2757,48,3,51,.. CMS school Active
22 404,43,044d,2757,48,3,52,.. CMS school Active
23 404,43,044d,2757,48,3,53,.. CMS school Active
24 404,43,044d,2757,48,3,54,.. CMS school Active
25 404,43,044d,28ab,54,4,50,.. KCT(back gate) Active
26 404,43,044d,28ab,54,4,51,.. KCT(back gate) Active


GSM Launch Pad
GSM Status
Active
SMS Center
+919843000000
Message Type
Text
Validity
Maximum
Error Code
No Error
Connection Active...
Push
User
Mobile Number
Keyword
Date
Time
Dir
Hide
Start
Stop
Close

9. REFERENCES:

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http://en.wikipedia.org/wiki/gsm

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Programming VB2005 by Jesse liberty