TO DEVELOP A GPS (GLOBAL POSITIONING SYSTEM) AVL (AUTOMATIC VEHICLE LOCATOR) TRACKING SYSTEM

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DECLARATION

We hereby declare that this project is based on the results found by us. Materials of work found by other researcher are mentioned by reference. This project, neither in whole nor in part, has been previously submitted for any degree.

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ACKNOWLEDGMENTS

ABSTRACT

With today's stand-alone global positioning system (GPS) receivers we are able to pinpoint our own location but what is more useful about these stand-alone GPS receivers is that they can transmit our position information to other receivers. These features which take into consideration important factors regarding both position (GPS) and data communications (GSM) can be combined together to build a wireless tracking system.

In the ever growing metropolitan cities of today, one prime example being Bangladesh, we are faced with rising hindrances in terms of logistics such as traffic congestions, fleet management & also security issues such as increased car thefts, child hijacking and so on. To overcome all these limitations a basic tracking platform can be implemented in the form of a device (AVL) which when attached with our mobile assets can be located continuously (in an electronic map) from any remote place around the globe if only we have the access to the local GSM network. This is what we are trying to achieve through our project.

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CHAPTER I

ABOUT

1.1 Project Overview

In order to track our mobile assets (car, child etc) each asset is equipped with an AVL (Automatic Vehicle Locator) device. The GPS & GSM technologies are linked logically in the AVL. To start with the AVL communicates with the satellite GPS. It calculates its own location information such as **latitude**, **longitude**, **time**, **speed** and **direction** and outputs the data to the nearby control center (base station) by the GSM module with which it is logically connected. The owner of the asset can thus continuously pinpoint the exact location of the AVL attached with the asset by signing into the specified server via internet using a desktop pc, laptop or cell phone. The data received in the form of time and position is displayed on a digitized map and recorded in a database file. The recorded information can be replayed later for debriefing or evaluation
of a mission.

Besides tracking location, the control center can also maintain wireless communication with the GPS units to
provide other services such as alarms, status control and system updates etc. Thus this project integrates location determination (GPS) and cellular (GSM)-two distinct and powerful technologies in a single device.
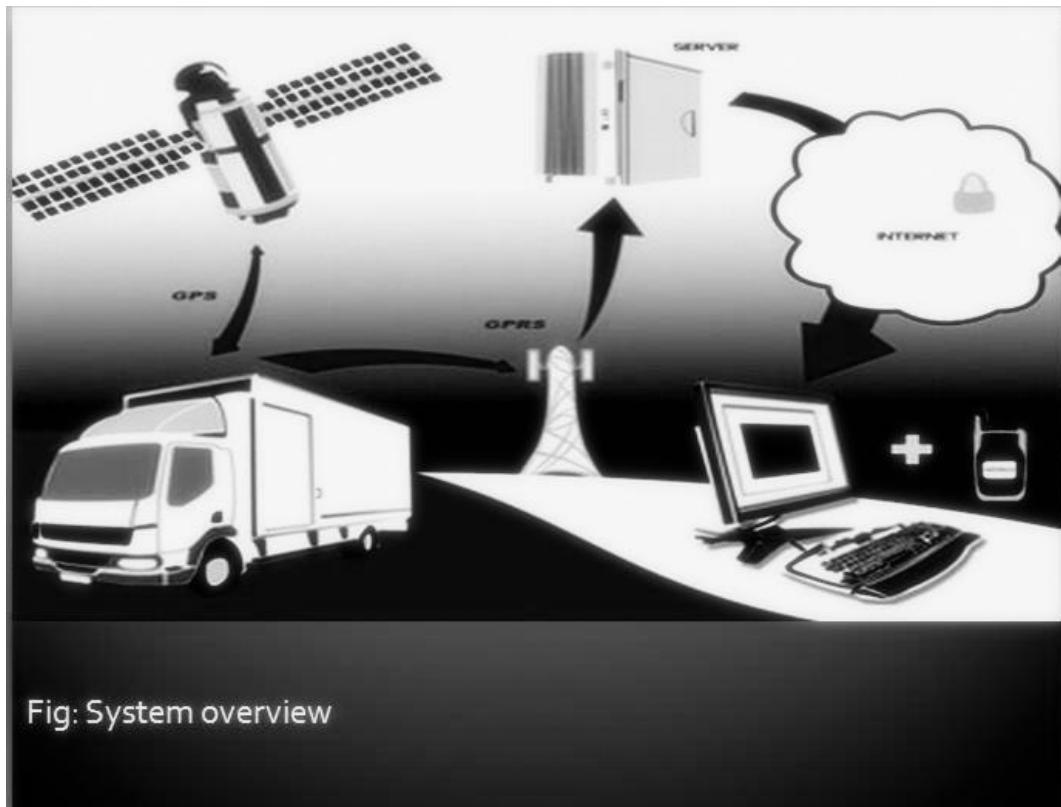
Fig: System overview

Fig 1.1 Illustration of the processes involved in the project.

1.2 Our Assignment

Our project group collaborated with the IT division of Interport Maritime LTD. to implement this project (outsourcing) for a client in Greece.

Following are the excerpted details of the project the foreign client assigned for us to develop:

1. Web based application.
2. Windows Base.
3. GPRS is the protocol that we will be using to collect the data from the Devices.
4. The application should be able to display the main page with maps and all the functions.
Following are the functions that we are told to incorporate in the system:
1. History Reports with address (They have MapInfo data for this reports) and Detailed Reports.
2. Be able to select the maps format (MAPQUEST, GOOGLE MAPS, MICROSOFT VIRTUAL EARTH).

3. Be able to create multiple GEOFENCES pointing on the map with the mouse.
4. Be able to create multiples LOCATIONS AND POINT.
5. Be able to create ROUTES at the map by clicking the MAP and also be able to save the route and assign the route to multiple Units CARS for Trailer Control.
6. Be able to create unlimited Login for different Users (Also be able to assign Units of Cars to this customers).
7. Unlimited vehicles to be tracked.
8. Built in many kinds of maps include latest Google map with Street View function.
9. Advanced command comes with Car Listen, Car Talk, device reset and support AT Commands.
10. IT support IE, Firefox and Safari
11. Support multi-languages

1.3 Our Progress

Under the guidance of Faisal Abdul Kadir, Head of IT, Interport Maritime LTD. we have been able to develop all the web base applications mentioned above using PHP, MySql and Java Script. We also deployed the J2ME applications using Net Beans and Cinterion Wireless Module XT65 Software Development Kit, Release 2 which were required for activating the device (AVL) for the client in Greece.

CHAPTER II
THE DEVICE (AVL)

2. 1 ABOUT AVL

Automatic Vehicle Locator (AVL) is a complete out-of-the-box low cost vehicle tracking solution. It is simple to buy, install, and use. This provides up-to-date location information for emergency vehicles, delivery trucks, freight trucks, service vehicles etc. The AVL system consists of a GPS receiver on the truck or vehicle, a communications link between the vehicle and the dispatcher, and pc-based tracking software for dispatch. The communication system is usually a cellular network similar to the one used by your cellular phone.

GPS provides the location of a vehicle with accuracies of about 25-30 feet. The GPS NavStar system was developed by the military for use by nuclear submarines and field military units. It is also used to guide missiles and artillery shells with pinpoint accuracy.
The system has 24-satellites which at least 4 communicate to the AVL vehicle GPS receiver. The geographic location is logged into the vehicles GPS units and transferred with vehicle ID to dispatch along with time, speed, and heading. User set updates can be every X seconds or X minutes. For communications, Cloudberry uses a robust "always connected" wireless national data network.

As an alternative communications link, a satellite communication network (not to be confused with the GPS satellite system) is available for areas where ground-based wireless communications is weak. The communication satellite receives position information from the AVL vehicle's satellite transmitter (uplinks) and forwards it (downlinks) to the tracking dispatch station. The dispatch software street map layer shows vehicle icons against specific local streets and intersections.
An added feature to the system is two-way mobile messaging. It allows e-mail messaging to and from the driver over the Internet wireless communications link. Now Nextel GPS embedded cellular are available as alternative vehicle equipment. In addition, an Executive Web Service allows access for authorized managers, customers, owners, and shippers.

2.2 THE AVL:CINTERION XT65 MODULE

The XT65 is the very first wireless module on the market to include a logical combination of GPS and GSM technology, which considerably simplifies the development of tracking applications intended for use in fleet management, logistic, navigation, and for protecting people, vehicles, and buildings. This is the device we have used for implementing our project. The time required for developing new applications and launching them on the market can be dramatically reduced due to the smart integration of GPS and GSM/GPRS functionalities and the integrated Java™ Open Platform.

Aside from having superb GPS features, the XT65 also supports the GPRS data transfer standard, thereby allowing position-related data to be transmitted permanently if necessary. And as four GSM frequency ranges are supported by the module (Quad-Band), specific objects and people can be located virtually anywhere in the world. So a global market is there and waiting for applications created on the basis of the XT65! Since Java™ Open Platform has been integrated; software engineers can develop new applications quickly and at moderate cost, for valuable resources such as RAM, a controller and a TCP/IP stack are already available and don't need to be provided at an extra expense.

The integrated GPS receiver can receive position data via all cellular phone networks around the world. The GPRS technology for data transmission allows the permanent transmission of the relevant data for locating and positioning. Since the module includes components such as an integrated processor, memory and a large number of interfaces, solutions developers can save substantial costs. In addition, the interaction with the JavaTM platform means that applications can be developed much faster.

New areas of use in fields such as fleet management, logistics, navigation, and security will all profit from this full-feature M2M tracking platform, which will make brand new service possible as well as speeding up the development stage. Take car navigation systems using the XT65, for instance - thanks to the GPRS components they contain, drivers can download updates of maps and points of interest, get up-to-the-minute reports on traffic jams and roadwork's, and use any other Internet service whenever they need them. The XT65 is also lead-free, thus conforming to the RoHS Directive (EU Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment).

2. 3 General Features :-

- Quad-band GSM 850/900/1800/1900
- GPRS multi-slot class 12
- GSM release 99
- Control via standardised (Hayes 3GPP TS 27.007 and 27.005) and enhanced AT commands
- SIM Application Toolkit (release 99)
- TCP/IP stack access via AT commands
- Internet Services: TCP, UDP, HTTP, FTP, SMTP, POP3
- Supply voltage range: 3.3 ... 4.5V
- Power consumption:
- Power down: 50 μA
- Sleep mode: (registered DRX = 6) 4.5 mA
- Speech mode (average): 300 mA
- GPRS class 12 (average): 600 mA
- Charging control for Lithium batteries
- Temperature range
- Normal Operation: -30°C to +75°C
- Restricted Operation: -30°C to +85°C
- Switch off: +90°C
- Dimensions: 34 x 59 x 3.5 mm
- Weight: <10g

2.4 Specification for GPRS data transmission:-

- GPRS class 12
- Mobile station class B
- PBCCH support
- Coding schemes CS 1-4

2.5 Specification for SMS:-

- Point-to-point MO and MT
- SMS cell broadcast
- Text and PDU mode

2.6 Specification for CSD data transmission:-

- Up to 14.4kbps
- V.110
- Non-transparent mode
- USSD support

2.7 Specification for fax:-

- Group 3, class 1

2.8 Specification for voice:-

- Triple-rate codec for HR, FR, and EFR
- Adaptive multi-rate AMR
- Basic hands-free operation
- Echo cancellation
- Noise reduction

2.9 Java™ features:-

- CLDC 1.1 HI
- J2ME™ profile IMP-NG
- Location API (JSR179) for GPS access
- Secure data transmission with HTTPS, SSL and PKI

2.10 Open application resources:-

- ARM© Core, Blackfin© DSP
- Memory: 400kB (RAM) and 1.2MB (Flash)
- Improved power-saving modes
- Support for integrated development environments
- with On-Device-Debugging

2.11 Over-the-air update:-

- Application SW: OTAP
- Firmware: FOTA (OMA compliant)

2.12 Special features:-

- Character framing 7E1 and 8E1 at serial interface
- Customer IMEI as variant
- Programmable module reset
- SIM Access Profile integrated
- RIL software for Microsoft® Windows Mobile™ based devices
- Multiplexer driver for Microsoft® Windows

2.13 Interfaces:-

- 2 separated Hirose U.FL-R-SMT 50 Ohm antenna connectors for GPS and GSM
- 2 seperated antenna solder pads for GSM and GPS
- Molex 80-pin board-to-board connector
- Power supply
- Audio: 2x analog, 1x digital
- 1x serial interface (ITU-T V.24 protocol)
- USB 2.0 full speed
- SIM card interface 3V, 1.8V
- PC bus and SPI bus
- 2x analog in (ADC)
- 1x analog out (PWM)
- Multiple GPIOs

2.14 Specification for GPS:-

- Receiver 16 channel, L1 1575.42 MHz
- Accuracy Position: 2.5 m CEP; 5.0 m SEP
- Position with DGPS/SBAS: 2.0 m CEP; 3.0 m SEP
- GPS dedicated AT commands
- Support of SBAS (WAAS/EGNOS) data
- GPS active antenna supply: 3.0V
- A-GPS enabled
- Tracking sensitivity: -157dBm (with external antenna)
- Date WGS-84
- Start-up Time
- Hot start: <3.5 s
- Warm start: 33 s
- Cold start: 34s

2.15 XT65 Hardware Interface Description:-

Feature	Implementation
General	
Frequency bands	Quad band: GSM 850/900/1800/1900MHz
GSM class	Small MS
Output power (according to Release 99, V5)	Class 4 (+33dBm ±2dB) for EGSM850 Class 4 (+33dBm ±2dB) for EGSM900 Class 1 (+30dBm ±2dB) for GSM1800 Class 1 (+30dBm ±2dB) for GSM1900 XT75 only: Class E2 (+27dBm ± 3dB) for GSM 850 8-PSK Class E2 (+27dBm ± 3dB) for GSM 900 8-PSK Class E2 (+26dBm +3 /-4dB) for GSM 1800 8-PSK Class E2 (+26dBm +3 /-4dB) for GSM 1900 8-PSK The values stated above are maximum limits. According to Release 99, the maximum output power in a multislot configuration may be lower. The nominal reduction of maximum output power varies with the number of uplink timeslots used and amounts to 3.0dB for 2Tx, 4.8dB for 3Tx and 6.0dB for 4Tx.
Power supply	3.3V to 4.5V
Ambient operating temperature according to IEC 60068-2	Normal operation: -30°C to +65°C Restricted operation:-30°C / +85°C
Physical	Dimensions: 34mm x 59mm x 3.5mm Weight: < 10g
RoHS	All hardware components fully compliant with EU RoHS Directive
GSM / GPRS / EGPRS features	
Data transfer	GPRS: - Multislot Class 12 - Full PBCCH support - Mobile Station Class B - Coding Scheme 1 – 4 EGPRS (XT75 only): - Multislot Class 10 - Mobile Station Class B - Modulation and Coding Scheme MCS 1 – 9 CSD: - V.110, RLP, non-transparent - 2.4, 4.8, 9.6, 14.4kbps - USSD PPP-stack for GPRS data transfer

Feature	Implementation
SMS	Point-to-point MT and MO
	Cell broadcast
	Text and PDU mode
	Storage: SIM card plus 25 SMS locations in mobile equipment
	Transmission of SMS alternatively over CSD or GPRS. Preferred mode can be user defined.
Fax	Group 3; Class 1
Audio	Speech codecs:
	- Half rate HR (ETS 06.20) - Full rate FR (ETS 06.10) - Enhanced full rate EFR (ETS 06.50/06.60/06.80) - Adaptive Multi Rate AMR
	Speakerphone operation, echo cancellation, noise suppression, DTMF, 7 ringing tones
GPS Features	
Supported Protocol	NMEA-0183, RTCM v2.2, UBX binary protocol
GPS modes	GPS, Assisted GPS (AGPS), Differential GSP (DGPS), Satellite Based Augmentation Systems (SBAS)
Position accuracy	2.5 m CEP, 5.0 m SEP; With DGPS/SBAS: 2.0 m CEP, 3.0 m SEP
Start-up times	Hot start < 3.5s
	Warm start 33s, average
	Cold start 34s, average
Sensitivity	Active antenna:
	- Acquisition sensitivity: -141dBm - Tracking sensitivity: -158dBm
	At antenna connector:
	- Acquisition sensitivity: -139dBm - Tracking sensitivity: -156dBm
General	Receiver 16 channel, L1 1575.42 MHz, GPS part controlled by GSM baseband controller, Java engine or via application (ASC0)
Software	
AT commands	AT-Hayes GSM 07.05 and 07.07, Siemens
	AT commands for RIL compatibility (NDIS/RIL)
Microsoft™ compatibility	RIL / NDIS for Pocket PC and Smartphone
Java platform JDK Version: 1.4.2_09	Java Virtual Machine with APIs for AT Parser, Serial Interface, FlashFileSystem and TCP/IP Stack.
	Major benefits: seamless integration into Java applications, ease of programming, no need for application microcontroller, extremely cost-efficient hardware and software design – ideal platform for industrial GSM applications.
	The memory space available for Java programs is around 1.2 MB in the flash file system and around 400kB RAM. Application code and data share the space in the flash file system and in RAM.
SIM Application Toolkit	SAT Release 99

Feature	Implementation
TCP/IP stack	Access by AT commands
IP addresses	IP version 4
Remote SIM Access	XT65/XT75 supports Remote SIM Access. RSA enables XT65/XT75 to use a remote SIM card via its serial interface and an external application, in addition to the SIM card locally attached to the dedicated lines of the application interface. The connection between the external application and the remote SIM card can be a Bluetooth wireless link or a serial link. The necessary protocols and procedures are implemented according to the "SIM Access Profile Interoperability Specification of the Bluetooth Special Interest Group".
Firmware update	Generic update from host application over ASC0 or USB. Over-the-air (OTA) firmware update is possible via SPI interface.
Interfaces	
Serial interface (ASC0)	- 8-wire modem interface with status and control lines, unbalanced, asynchronous - Fixed bit rates: 300 bps to 460,800 bps - Autobauding: 1,200 bps to 460,800 bps - RTS0/CTS0 and XON/XOFF flow control. - Multiplex ability according to GSM 07.10 Multiplexer Protocol.
USB	Supports a USB 2.0 Full Speed (12Mbit/s) slave interface.
I^{2}C	I^{2}C bus for 7-bit addressing and transmission rates up to 400kbps. Programmable with AT^SSPI command. Alternatively, all pins of the I^{2}C interface are configurable as SPI.
SPI	Serial Peripheral Interface for transmission rates up to 6.5 Mbps. Programmable with AT^SSPI command. If the SPI is active the I^{2}C interface is not available.
Audio	2 analog interfaces (2 microphone inputs and 2 headphone outputs with microphone power supply) 1 digital interface (PCM)
SIM interface	Supported SIM cards: 3V, 1.8V
Antenna	- 50Ohms. External GSM antenna can be connected via antenna connector. - 50Ohms. External GPS antenna can be connected via antenna connector.
Module interface	80-pin board-to-board connector
Power on/off, Reset	
Power on/off	Switch-on by hardware pin IGT Switch-off by AT command (AT^SMSO) Automatic switch-off in case of critical temperature and voltage conditions.
Reset	Orderly shutdown and reset by AT command Emergency reset by hardware pin EMERG_RST and IGT.

Feature	Implementation
Special features	
Charging	Supports management of rechargeable Lithium Ion and Lithium Polymer batteries
Real time clock	Timer functions via AT commands
GPIO	10 I/O pins of the application interface programmable as GPIO. Programming is done via AT commands. Alternatively, GPIO10 pin is configurable as pulse counter.
Pulse counter	Pulse counter for measuring pulse rates from 0 to 1000 pulses per second. If the pulse counter is active the GPIO10 pin is not available.
DAC output	Digital-to-Analog Converter which can provide a PWM signal.
Phonebook	SIM and phone
Evaluation kit	
DSB75	DSB75 Evaluation Board designed to test and type approve Siemens cellular engines and provide a sample configuration for application engineering.
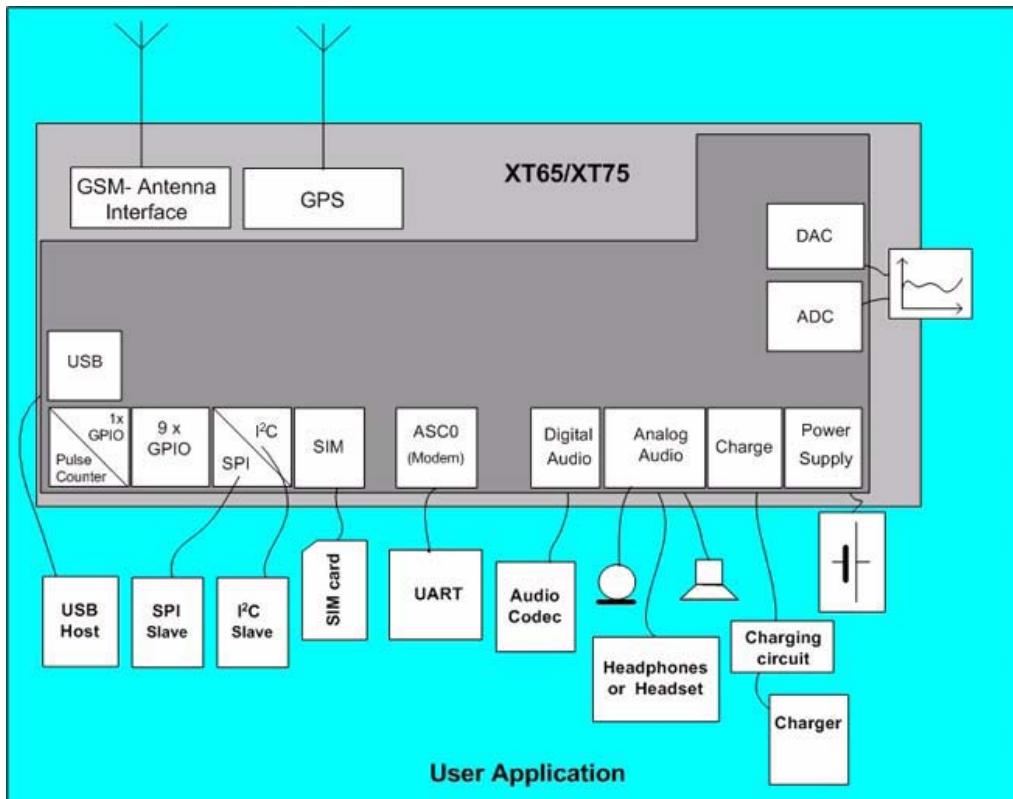
Fig. 2.1 XT65 system overview

CHAPTER III

DEVICE PROGRAMMING (J2ME Application)

3.1 Introduction

The ME features an ultra-low profile and low-power consumption for data (CSD and GPRS), voice, SMS and fax. Java technology and several peripheral interfaces on the module allows us to easily integrate your application.
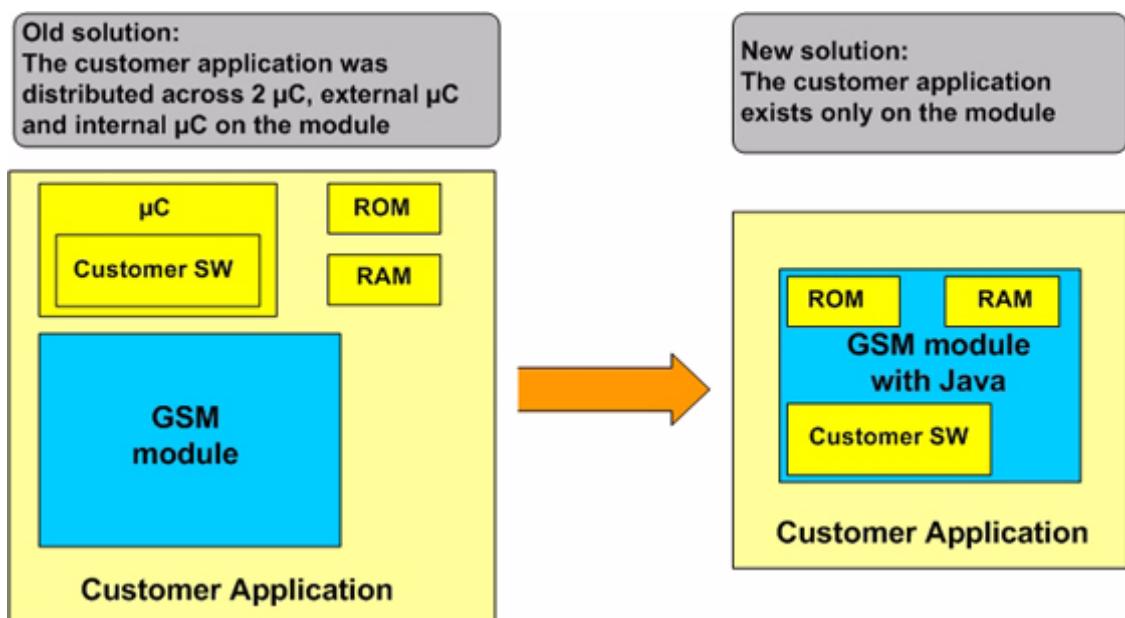
Fig. 3.1 Overview

The CMTK enables a customer to develop a Java application on a PC and have it be executable on the Java enabled module. The application is then loaded onto the module. The platform comprises:
• JavaTM Micro Edition (Java METM), which forms the base of the architecture.

The Java METM is provided by SUN Microsystems, http://java.sun.com/javame/. It is specifically designed for embedded

systems and has a small memory footprint. The ME uses:CLDC 1.1 HI, the connected limited device configuration hot spot implementation. IMP-NG, the information module profile 2nd generation, this is for the most part identical to MIDP 2.0 but without the lcdui package.

• Additional Java virtual machine interfaces:
AT Command API
File I/O API

• Memory space for Java programs:
Flash File System: around 1700k (1200k in XT65)
RAM: around 400k
Application code and data share the space in the flash file system and in RAM.

• Additional accessible periphery for Java applications
- A maximum of ten digital I/O pins usable, for example, as:
Output: status LEDs
- Input: Emergency Button
- One I2C/SPI Interface.
- One Digital Analog Converter and two Analog Digital Converters.
- Serial interface (RS-232 API): This standard serial interface could be used, for example,
with an external GPS device or a current meter.

3.2 GPS functionality in Java:

The on-board GPS functionality can be accessed in 4 different ways from a Java application.
• AT commands via ATCommand
• Java API JSR179
• transparent via CommConnection
• transparent via ATCommand

It is discouraged to use the forth possibility since it uses up a valuable ATCommand instance. Use Java API for non-transparent, use CommConnection for transparent GPS access. Transparent and non-transparent modes can not be used concurrently but it is possible and in some cases may be necessary to use AT commands concurrently with the Java API e.g. for GPS power saving modes. For details about AT Command related GPS functionality.The usage of CommConnection for GPS access is very straight forward. Calling Connector. open with port-id "gps0" opens a transparent channel to the

GPS module. Then all protocols supported by the GPS hardware can be used.

3.3 The Java location API (JSR179)

The Java location API (JSR179) offers three basic functionalities:
• location listener, a periodic call-back with current location information
• proximity listener, a call-back when a specified location is close
• landmark store, a storage for landmarks/way-points

The landmark store is persistent. The stores are saved to FFS under a:/lmstores/store_X.xml, where X is the number of the store (0 is the default store). There can be 8 stores plus 1 default store each containing up to 100 landmarks in up to 8 categories ("no category" also counts as a category). Using AddressInfo with the landmarks might decrease the maximum number of possible landmarks in a store, depending on the amount of AddressInfo data being used. An IOException indicates that a store is full.There is only one store active at a time. The current store information is kept in RAM and only written to FFS when the application switches to a different store or terminates. Saving a store might take up to 45s! During this time period the VM is blocked, no processing can be done in parallel.

IMP-NG	File API	AT Command API
Connected Limited Device Configuration (CLDC)		
Java ME		

Fig.3.2 JVM interface configuration
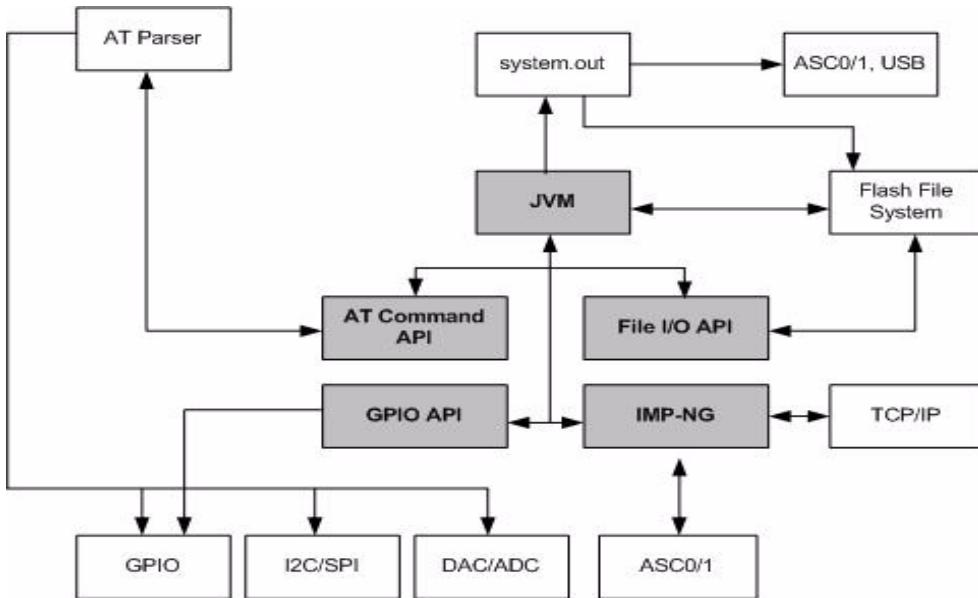
Fig. 3.3. Data flow of a Java application running on the module.

The diagram shows the data flow of a Java application running on the module. The data flow of a Java application running in the debug environment can be found in figure 3.2. The compiled Java applications are stored as JAR files in the Flash File System of module. When the application is started, the JVM interprets the JAR file and calls the interfaces to the module environment.

The module environment consists of the:
• Flash File System: available memory for Java applications
• TCP/IP: module internal TCP/IP stack
• GPIO: general purpose I/O
• ASC0: Asynchronous serial interface 0
• ASC1: Asynchronous serial interface 1
• I2C: I2Cbus interface
• SPI: Serial Peripheral Interface
• DAC: digital analog converter
• ADC: analog digital converter
• AT parser: accessible AT parser

The Java environment on the module consists of the:
• JVM: Java Virtual Machine
• AT command API: Java API to AT parser
• File API: Java API to Flash File System
• IMP-NG: Java API to TCP/IP and ASC0/1

• GPIO API: Java API to GPIO pins and pulse counter
• I2C/SPI API: Java API to access I2C/SPI Bus (TC65i only)
• ADC/DAC API: Java API to access ADC and DAC (TC65i only)
• Watchdog API: Java API to HW watchdog
• Bearer Control API: Java API for bearer state information and hang-up.

The following diagram gives information about the Java command execution throughput ("jPS"= Java statements per second). The scope of this measurement is only the statement execution time, not the execution delay (Java command on AT interface → Java instruction execution → reaction on GPIO).
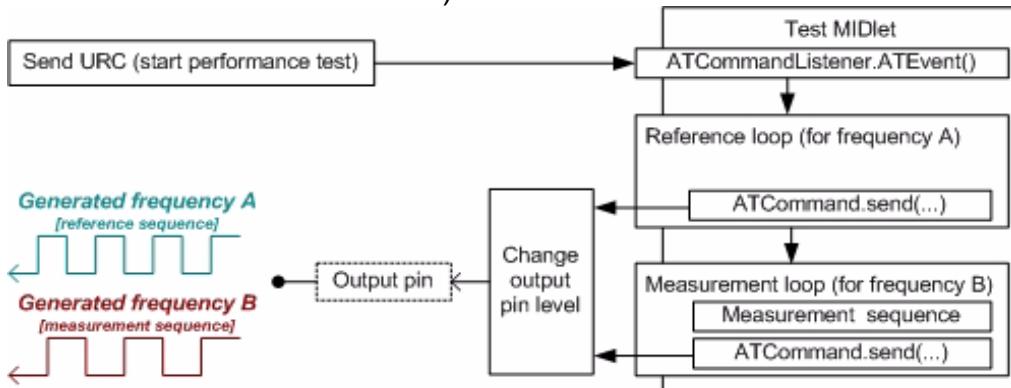
Fig. 3.4 Test case for measuring Java command execution throughput

The following Java instruction was used for calculation of the typical jPS:

value = (2 x number of calculation statements) /
((1 / frequencyB) - (1 / frequencyA));

Measurement and calculation were done using:
• **duration of each loop** = 600 s
• **number of calculation statements** = 50
"result=(CONSTANT_VALUE/variable_value);"-
Instructions (executed twice per pin cycle)
• **frequencyA** as measured with a universal counter
• **frequencyB** as measured with a universal counter

The reference loop has the same structure as the measurement loop except that the measurement sequence is moved.
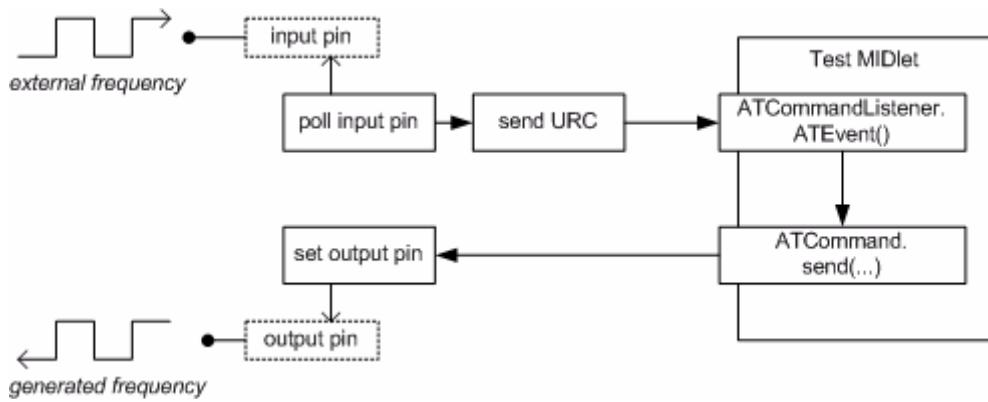
Fig. 3.5 Test case for measuring Java MIDlet performance and handling pin-IO

3.4 Data Flow of a Java Application in the Debug Environment:
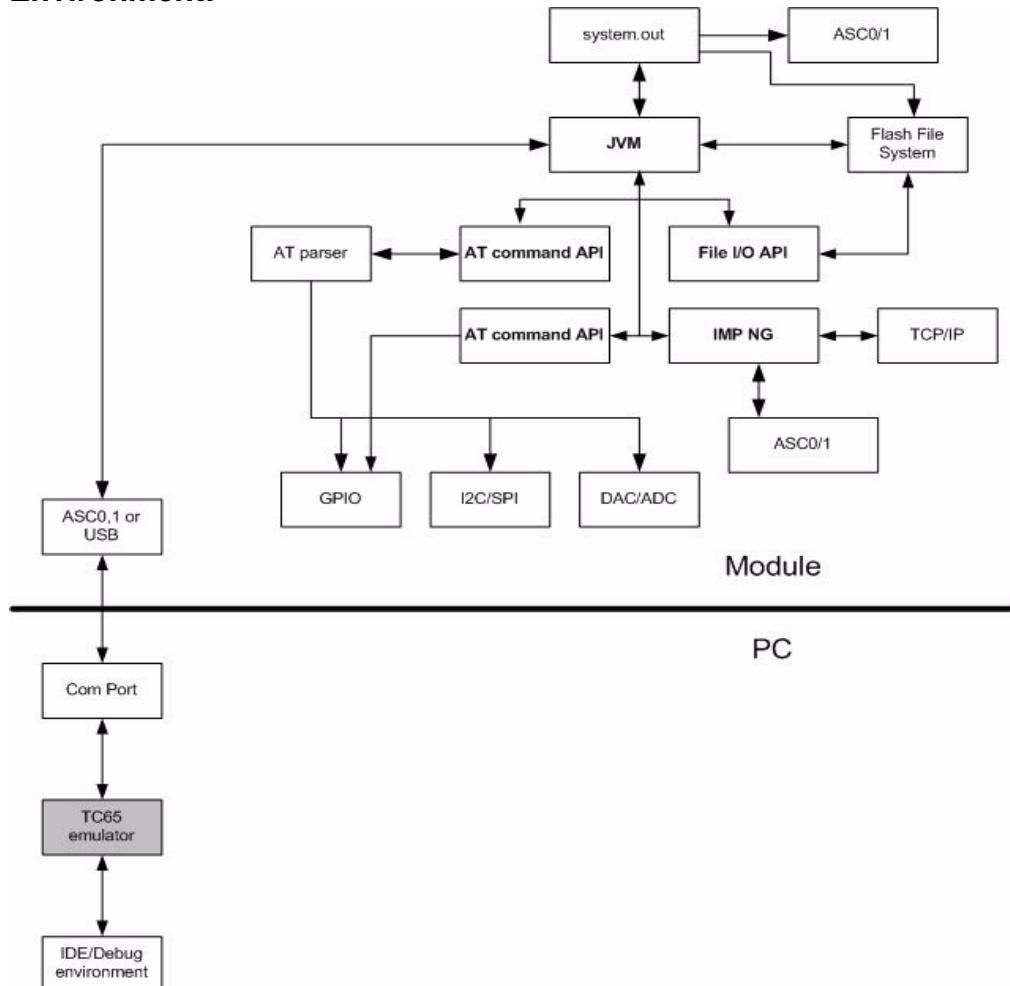
Fig. 3.6 Data flow of a Java application in the debug environment

3.5 Java Security

The Java Security Model follows the specification of MIDP 2.0 and is IMP-NG conforming. It integrates only a simple protection domain concept since protection domains are not needed for module use cases.

Java Security is divided into two main areas:
• Secure MIDlet data links (HTTPS, Secure Connection)
• Execution of signed/unsigned MIDlets
The interface of Java Security offers the following functionality.
• Insert/delete X.509 certificate
• Switch between trusted and untrusted mode for the execution of MIDlet
• Enable/disable untrusted domain in trusted mode (default is disabled)
• Switch MES
• Switch https certificate verification

Restrictions:
• The module does not supply users independent date/time base. Therefore no examination
of the validity of the expiration date/time of the certificate takes place.

In addition to the Java secured mode it is possible to prevent the activation of the Module Exchange Suite. When Module Exchange Suite access is deactivated with *AT^SJSEC*, it is no longer possible to access to the Flash file system on the module. A condition for the deactivation of the access to the Flash file system is the existence of a customer root certificate inside of the module.

3.6 Codes

The following are the codes that being implemented and deployed in the XT65 device

```java
/*
 * Config.java
 *
 * To change this template, choose Tools | Template
Manager
 * and open the template in the editor.
 */

public class Config
{
    public static String APN = "";
    public static String USER = "";
    public static String PASS = "";
    public static String SMSC = "";
    public static String PIN = "";
    public static String TERMINAL_ID = "";
    public static String NOTIFY_TO = "";

    public static String POST_SITE =
"http://dynamicmalloc.com/test/avl/tracker.php";
    public static String HOST = "dynamicmalloc.com";
    public static String PORT = "80";
    public static String PATH =
"/test/avl/tracker.php";
    public static String SHOULD_NOTIFY = "1";
    public static long POST_INTERVAL = 30; //in
seconds
    public static long MAX_RING_ACCEPT = 4;
    public static long GPS_LOG_INTERVAL = 4; ///in
seconds
    public static long GMT_OFFSET = 0;
    public static long PENDING_DATA_FILE_SIZE = 1;
///in KB

    public static void loadConfig()
    {
        try
        {
            if(GPSGPRS.rootApp!=null)
            {
```

```java
if(GPSGPRS.rootApp.getAppProperty("APN")!=null)
                    APN =
GPSGPRS.rootApp.getAppProperty("APN");

if(GPSGPRS.rootApp.getAppProperty("USER")!=null)
                    USER =
GPSGPRS.rootApp.getAppProperty("USER");

if(GPSGPRS.rootApp.getAppProperty("PASS")!=null)
                    PASS =
GPSGPRS.rootApp.getAppProperty("PASS");

/*if(GPSGPRS.rootApp.getAppProperty("PIN")!=null)
                    PIN =
GPSGPRS.rootApp.getAppProperty("PIN");*/

if(GPSGPRS.rootApp.getAppProperty("NOTIFY-
TO")!=null)
                    NOTIFY_TO =
GPSGPRS.rootApp.getAppProperty("NOTIFY-TO");

if(GPSGPRS.rootApp.getAppProperty("SMSC")!=null)
                    SMSC =
GPSGPRS.rootApp.getAppProperty("SMSC");

if(GPSGPRS.rootApp.getAppProperty("SHOULD-
NOTIFY")!=null)
                {
                    SHOULD_NOTIFY =
GPSGPRS.rootApp.getAppProperty("SHOULD-NOTIFY");
                    if("".equals(SHOULD_NOTIFY))
SHOULD_NOTIFY = "1";
                }

if(GPSGPRS.rootApp.getAppProperty("POST-
INTERVAL")!=null)
                {
                    String str =
GPSGPRS.rootApp.getAppProperty("POST-INTERVAL");
                    if(!"".equals(str))
                    {
                        try{POST_INTERVAL =
Long.parseLong(str);}catch(Exception exc){}
                        if(POST_INTERVAL<=0)
POST_INTERVAL=60;
```

```java
                        }
                }

if(GPSGPRS.rootApp.getAppProperty("GPS-LOG-
INTERVAL")!=null)
                {
                        String str =
GPSGPRS.rootApp.getAppProperty("GPS-LOG-INTERVAL");
                        if(!"".equals(str))
                        {
                                try{GPS_LOG_INTERVAL =
Long.parseLong(str);}catch(Exception exc){}
                                if(GPS_LOG_INTERVAL<=0)
GPS_LOG_INTERVAL = 4;
                        }
                }

if(GPSGPRS.rootApp.getAppProperty("MAX-RING-
ACCEPT")!=null)
                {
                        String str =
GPSGPRS.rootApp.getAppProperty("MAX-RING-ACCEPT");
                        if(!"".equals(str))
                        {
                                try{MAX_RING_ACCEPT =
Long.parseLong(str);}catch(Exception exc){}
                                if(MAX_RING_ACCEPT<=0)
MAX_RING_ACCEPT=4;
                        }
                }

if(GPSGPRS.rootApp.getAppProperty("GMT-
OFFSET")!=null)
                {
                        String str =
GPSGPRS.rootApp.getAppProperty("GMT-OFFSET");
                        boolean isNeg = false;
                        if(str.startsWith("-") ||
str.startsWith("+"))
                        {
                            if(str.startsWith("-"))
                                isNeg = true;
                            str = str.substring(1);
                        }
                        if(!"".equals(str))
                        {
```

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```java
                            try{GMT_OFFSET =
Long.parseLong(str);}catch(Exception exc){}
                            if(isNeg) GMT_OFFSET=-
1*GMT_OFFSET;
                        }
                    }

if(GPSGPRS.rootApp.getAppProperty("PENDING-DATA-
FILE-SIZE")!=null)
                    {
                        String str =
GPSGPRS.rootApp.getAppProperty("PENDING-DATA-FILE-
SIZE");
                    if(!"".equals(str))
                        {
                            try{PENDING_DATA_FILE_SIZE =
Long.parseLong(str);}catch(Exception exc){}

if(PENDING_DATA_FILE_SIZE<=0)
PENDING_DATA_FILE_SIZE=1;
                        }
                    }
                }
                ///SMSC = System.getProperty("");
            }catch(Exception exc){}
        }
        public static void saveConfig()
        {
        }
}
```

```java
/*
 * FileHandler.java
 *
  * To change this template, choose Tools | Template
Manager
 * and open the template in the editor.
 */

import javax.microedition.io.Connector;
import java.io.DataInputStream;
import java.io.DataOutputStream;
import java.io.IOException;
import com.siemens.icm.io.file.FileConnection;

public class FileHandler {

    /** Creates a new instance of FileHandler */
    String LOG_FILE = "file:///a:/log.txt";
    String ID_FILE = "file:///a:/id.txt";
    String PENDING_FILE = "file:///a:/pending.txt";

    public FileHandler() {
    }
    void writeLogData( String data )
    {

        try
        {
            FileConnection objFileConnection =
(FileConnection)
            Connector.open(LOG_FILE);
            if (!objFileConnection.exists())
                objFileConnection.create();
            DataOutputStream objDataOutputStream =
objFileConnection.openDataOutputStream();

objDataOutputStream.write(data.getBytes());
            objDataOutputStream.flush();
            objDataOutputStream.close();
            objFileConnection.close();
        }
        catch (IOException ioe)
        {
        }catch(Exception exc)
        {
        }
```

```java
        }
    void writeID( String data )
    {

        try
        {
            FileConnection objFileConnection =
(FileConnection)
            Connector.open(ID_FILE);
            if (!objFileConnection.exists())
                objFileConnection.create();
            DataOutputStream objDataOutputStream =
objFileConnection.openDataOutputStream();

objDataOutputStream.write(data.getBytes());
            objDataOutputStream.flush();
            objDataOutputStream.close();
            objFileConnection.close();
        }
        catch (IOException ioe)
        {
        }catch(Exception exc)
        {
        }
    }
    String readID()
    {
        byte[] data = null;
        try
        {
            FileConnection objFileConnection =
(FileConnection)
            Connector.open(ID_FILE);

            if (!objFileConnection.exists())
                return "";
            DataInputStream objDataInputStream =
objFileConnection.openDataInputStream();

            data = new
byte[objDataInputStream.available()];
            if (objDataInputStream.available() > -1)
            {
                objDataInputStream.read(data, 0,
objDataInputStream.available());
            }
```

```java
                objDataInputStream.close();
                objFileConnection.close();

                if(data!=null)
                    return new String(data);

        }catch (IOException ioe)
        {
        }catch(Exception exc)
        {
        }
        return "";
    }
    void writePendingData( String data , boolean
truncate)
    {

        try
        {
            FileConnection objFileConnection =
(FileConnection)
            Connector.open(PENDING_FILE);

            if (!objFileConnection.exists())
                objFileConnection.create();
            else if(truncate)
                objFileConnection.truncate(0);

            DataOutputStream objDataOutputStream =
objFileConnection.openDataOutputStream();

objDataOutputStream.write(data.getBytes());
            objDataOutputStream.flush();
            objDataOutputStream.close();
            objFileConnection.close();
        }
        catch (IOException ioe)
        {
        }catch(Exception exc)
        {
        }
    }
    String readPendingData()
    {
        byte[] data = null;
        try
```

```
        {
            FileConnection objFileConnection =
(FileConnection)
            Connector.open(PENDING_FILE);

            if (!objFileConnection.exists())
                return "";
            DataInputStream objDataInputStream =
objFileConnection.openDataInputStream();

            data = new
byte[objDataInputStream.available()];
            if (objDataInputStream.available() > -1)
            {
                objDataInputStream.read(data, 0,
objDataInputStream.available());
            }
            objDataInputStream.close();
            objFileConnection.close();

            if(data!=null)
                return new String(data);

        }catch (IOException ioe)
        {
        }catch(Exception exc)
        {
        }
        return "";
    }
}
```

```
/*
 * GPSGPRS.java
 *
 */


import java.io.IOException;
import java.io.OutputStream;
import java.io.InputStream;

import java.util.*;
import javax.microedition.midlet.MIDlet;
import
javax.microedition.midlet.MIDletStateChangeException
;
import javax.microedition.io.HttpConnection;
import javax.microedition.io.Connector;
import javax.microedition.io.StreamConnection;
import javax.microedition.io.SocketConnection;
import javax.microedition.location.Coordinates;


import com.siemens.icm.io.ATCommand;
import com.siemens.icm.io.ATCommandFailedException;
import com.siemens.icm.io.ATCommandListener;

public class GPSGPRS extends MIDlet {

    Calendar cal = Calendar.getInstance();
    ATCommand atc;
    ATList atl;

    GPSData lastGPS = new GPSData();


    Vector positions = new Vector();
    Vector msgIndices = new Vector();

    String terminalID = "";

    String IMEI = "";
    String IMSI = "";

    Object posSync = new Object();
    Object msgSync = new Object();

    boolean smsProcessing = false;
```

```java
    FileHandler fhandler = new FileHandler();
    static GPSGPRS rootApp = null;

    boolean postError = false;
    boolean sendDataLocked = false;

    String nowPostData = "";
    String pendPostData = "";

    String logOut = "";

    int ringCounter = 0;
    byte immobile=0;
    Coordinates lastCoordinate = null;
    //Constructor de la case
    public GPSGPRS()
    {
        super();
        rootApp = this;
    }

    protected void startApp() throws
MIDletStateChangeException
    {
        int result=0;

        int postInterval=2;

        try
        {
            atc = new ATCommand(false);
            atl = new ATList();
            atc.addListener(atl);
        }
        catch (IllegalStateException e)
        {
            e.printStackTrace();
        }
        catch (ATCommandFailedException e)
        {
            e.printStackTrace();
        }

        //Inicializamos el módem con una
cofiguración
```

```java
        result=setConfigInitial();
        if (result!=0)
        {
            System.out.println("ERROR.Could not
configure the modem\r");
            destroyApp(true);
        }
        if("".equals(terminalID))
        {
            System.out.println("No Terminal ID
Found. Requesting to server...");
            try
            {
                String ret = sendHTTPData("<RG
IMEI="+IMEI+" IMSI="+IMSI+">");
                ret = parseTerminalID(ret);
                System.out.println("Terminal ID :
"+ret);
                fhandler.writeID(ret);
                ///System.out.println("Sending
Terminal ID SMS.");

            }catch(Exception exc)
            {
            }
        }

        if("".equals(terminalID))
        {
            System.out.println("ERROR. Could not get
Terminal ID\r");
            destroyApp(true);
        }else if("1".equals(Config.SHOULD_NOTIFY))
        {
            ///logOut+=("Notifying SMS\n");
            ///fhandler.writeLogData(logOut);

            sendSM(Config.NOTIFY_TO,"ID:
"+terminalID);
        }
        //Inicializamos el GPS e indicamos que nos
devuelva cada 5 segundos URC con la posición

result=initGPS((int)Config.GPS_LOG_INTERVAL);
        if (result!=0)
        {
```

```java
                System.out.println("ERROR. GPS
Configuration Error\r");
                destroyApp(true);
            }
            ///logOut += ("Post Interval:
"+Config.POST_INTERVAL);
            ///fhandler.writeLogData(logOut);

            Timer timerMonGPS = new Timer();
            MonitorGPS mongps = new MonitorGPS();

timerMonGPS.schedule(mongps,0,Config.POST_INTERVAL*1
000);

            Timer timerMonSMS = new Timer();
            MonitorSMS monsms = new MonitorSMS();
            timerMonGPS.schedule(monsms,0,1*60000);

    }
    String parseTerminalID(String data)
    {
        int beg = data.indexOf("<OK ");
        int fin = data.indexOf(">");
        if(beg<0 || fin<0) return "";
        terminalID = data.substring(beg+4,fin);
        return terminalID;
    }
    String readHeaderLine(InputStream istrm) throws
Exception
    {
        int e;
        String line="";

        while((e=istrm.read())!=-1 )
        {
            line += (char)e;
            if(line.endsWith("\r\n")) return line;
        }
        return line;
    }
    String sendHTTPData(String data) throws
Exception
    {

        StreamConnection socket = null;
```

```java
        String connProfile =
";bearer_type=gprs;access_point="+Config.APN+";usern
ame="+Config.USER+";password="+Config.PASS+";";

        InputStream is = null;
        OutputStream os = null;
        String resp = "";
        String hdr = "POST "+Config.PATH+"
HTTP/1.1\r\n";

        try
        {
            try
            {
                socket =
(SocketConnection)Connector.open("socket://"+Config.
HOST + ":" + Config.PORT + connProfile);
            }catch(Exception exc)
            {
                System.out.println("Post Error.
[Connection Creation]");
                postError = true;
                return "";
            }
            ///System.out.println("Connection
Created.");

            is = socket.openInputStream();
            os = socket.openOutputStream();

            ////Now prepare the header
            hdr += "User-Agent: Profile/MIDP-2.0
Confirguration/CLDC-1.1\r\n";
            hdr += "Host: "+Config.HOST+"\r\n";
            hdr += "Content-Length:
"+data.length()+"\r\n";
            hdr += "Connection: close\r\n";

            hdr += "\r\n";
            data = hdr+data;


///System.out.println("\n***********************P
osting Data*************************");
            ////System.out.println(data);
```

```java
///System.out.println("****************************
*********************************\n");

            ///Write the data and flush it
            os.write(data.getBytes());
            os.flush();

            ////start reading the header
            int respCode = -1;
            try
            {
                String str = "";
                while(true)
                {
                    str = readHeaderLine(is);
                    if(str.equals("\r\n")) break;

if(str.toLowerCase().startsWith("http"))
                    {
                        if(str.indexOf("200")>=0)
                        {
                            respCode = 200;
                        }
                    }
                }
            }catch(Exception exc)
            {
                System.out.println("Post Error.
[Parsing Header]");
                postError = true;
                return "";
            }

            if (respCode == 200)
            {
                int e;
                char c;
                while((e=is.read())!=-1 )
                {
                    c = (char)e;
                    resp += c;
                }
            }
            else
            {
```

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```java
                postError = true;
                System.out.println("Post Error.
[Wrong Response Code : "+respCode+"]");
            }
            ///logOut += "Response: "+resp+"\n";
        }
        finally
        {

            if(is!= null)
                is.close();
            if(os != null)
                os.close();
            if(socket != null)
                socket.close();
        }
        return resp;
    }


    String sendAT(String str)
    {
        try
        {
            System.out.println("ATRequest: "+str);
            str = atc.send(str +
"\r".toUpperCase());
            System.out.println("ATResponse: "+str);
        }
        catch (IllegalStateException e)
        {
            e.printStackTrace();
        }
        catch (IllegalArgumentException e)
        {
            e.printStackTrace();
        }
        catch (ATCommandFailedException e)
        {
            e.printStackTrace();
        }
        return str;
    }


    int setConfigInitial()
    {
        String requestAT;
```

```java
        int hasError=0;

        Config.loadConfig();

        ///First try to read the terminal id from
the filesystem
        terminalID = fhandler.readID();
        System.out.println("Terminal ID :
"+terminalID);

        ////Get the IMEI number
        requestAT=sendAT("AT+CGSN");
        if(requestAT.indexOf("OK")>0)
        {
            int brk1 = requestAT.indexOf("\r\n");
            int brk2 =
requestAT.indexOf("\r\n",brk1+2);
            IMEI = requestAT.substring(brk1+2,brk2);
            IMEI = IMEI.trim();
            ///logOut += "IMEI : "+IMEI+"\n";
            System.out.println("IMEI : "+IMEI);
        }
        ////Get the IMSI number
        requestAT=sendAT("AT+CIMI");
        if(requestAT.indexOf("OK")>0)
        {
            int brk1 = requestAT.indexOf("\r\n");
            int brk2 =
requestAT.indexOf("\r\n",brk1+2);
            IMSI = requestAT.substring(brk1+2,brk2);
            IMSI = IMSI.trim();
            ///logOut += "IMSI : "+IMSI+"\n";
            System.out.println("IMSI : "+IMSI);
        }

        requestAT=sendAT("at+cpin?");

        if (requestAT.indexOf("READY")<=0)
        {
            requestAT=sendAT("at+cpin=" +
Config.PIN);
            if (requestAT.indexOf("OK")<=0)
                hasError=1;
            else
                hasError=0;
        }
```

```java
        else
            System.out.println("No Valid SIM
PIN\r");

        if(hasError==0)
        {
            String resp = "";

            resp = sendAT("AT+CNMI=3,1,2,0,1");
            resp = sendAT("AT+CMGF=1");

            if("".equals(Config.SMSC))
            {
                resp = sendAT("AT+CSCA?");
                if(resp.indexOf("OK")>=0 &&
resp.indexOf("+CSCA:")>=0)
                {
                    try
                    {
                        int beg =
resp.indexOf("+CSCA:");
                        resp =
resp.substring(beg+8);

                        String str = "";
                        beg = 1;
                        char ch = resp.charAt(0);
                        if( (ch>='0' && ch<='9') ||
ch == '+')
                        {
                            str += ch;
                            while(beg<resp.length())
                            {
                                ch =
resp.charAt(beg);

                                if(ch>='0' &&
ch<='9')
                                {
                                    str += ch;
                                    beg++;
                                }else break;
                            }
                        }
                        Config.SMSC = str;
                    }catch(Exception exc)
                    {
                    }
```

```java
                }
            }
            if(!"".equals(Config.SMSC))
            {
                resp =
sendAT("AT+CSCA=\""+Config.SMSC+"\"");
                ///logOut += "Service Center:
"+Config.SMSC+"\n";
                System.out.println("Service Center:
"+Config.SMSC);
            }
        }
        if(hasError==0)
        {

            ///logOut += sendAT("AT^SRTC=?");
            ///logOut += sendAT("AT^SRTC=3,7");
            String resp = "";
            resp +=
sendAT("AT^SIND=\"audio\",1")+"\n";
            resp += sendAT("AT+CMER=2,,,2")+"\n";
            resp += sendAT("AT+CRC=0")+"\n";

            ///logOut += resp;

        }
        ///fhandler.writeLogData(logOut);
        return hasError;
    }

    int initGPS (int segundosURC)
    {
        String requestAT;
        int hasError=0;

        requestAT=sendAT("AT^SGPSS=1,0");
        if (requestAT.indexOf("OK")<=0)
            hasError=1;
        else
            hasError=0;

        requestAT=sendAT("AT^SGPSP=" + segundosURC);
        if (requestAT.indexOf("OK")<=0)
            hasError=1;
        else
            hasError=0;
```

```
            return hasError;
    }

    protected void pauseApp()
    {
    }

    protected void destroyApp(boolean arg0) throws
MIDletStateChangeException
    {
        //this.preparePostData();

///this.fhandler.writePendingData(this.nowPostData,t
rue);
        this.fhandler.writeLogData("Entered in
destroyed state");
        notifyDestroyed();
        notifyDestroyed();
    }

    public String getTimeString(long millis)
    {
        Date dt = new Date(millis);
        cal.setTime(dt);
        String hr =
""+cal.get(Calendar.HOUR_OF_DAY);
        hr = "00".substring(0,2-hr.length())+hr;
        String min = ""+cal.get(Calendar.MINUTE);
        min = "00".substring(0,2-min.length())+min;
        String sec = ""+cal.get(Calendar.SECOND);
        sec = "00".substring(0,2-sec.length())+sec;
        return hr+":"+min+":"+sec;
    }
    public String getDateString(long millis)
    {
        Date dt = new Date(millis);
        cal.setTime(dt);
        String year = ""+cal.get(Calendar.YEAR);
        year = "0000".substring(0,4-
year.length())+year;
        String mon = ""+cal.get(Calendar.MONTH);
        mon = "00".substring(0,2-mon.length())+mon;
        String day =
""+cal.get(Calendar.DAY_OF_MONTH);
        day = "00".substring(0,2-day.length())+day;
```

```java
            return year+"/"+mon+"/"+day;
    }
    public long getMillisForDate(String tm,String
dt)
    {
        dt = dt.trim();
        tm = tm.trim();

        int hr=0,min=0,sec=0;
        int day=0,mon=0,year=0;
        int pos1 = tm.indexOf(":");
        try{hr =
Integer.parseInt(tm.substring(0,pos1));}catch(Except
ion exc){}
        int pos2 = tm.indexOf(":",pos1+1);
        try{min =
Integer.parseInt(tm.substring(pos1+1,pos2));}catch(E
xception exc){}
        try{sec =
Integer.parseInt(tm.substring(pos2+1));}catch(Except
ion exc){}
        pos1 = dt.indexOf("/");
        try{year =
Integer.parseInt(dt.substring(0,pos1));}catch(Except
ion exc){}
        pos2 = dt.indexOf("/",pos1+1);
        try{mon
=Integer.parseInt(dt.substring(pos1+1,pos2));}catch(
Exception exc){}
        try{day
=Integer.parseInt(dt.substring(pos2+1));}catch(Excep
tion exc){}

        cal.set(Calendar.DAY_OF_MONTH,day);
        cal.set(Calendar.MONTH,mon);
        cal.set(Calendar.YEAR,year);
        cal.set(Calendar.HOUR_OF_DAY,hr);
        cal.set(Calendar.MINUTE,min);
        cal.set(Calendar.SECOND,sec);

        return cal.getTime().getTime();
    }

    private String adjustPendingDataSize(String
data)
    {
```

```java
        long max_size =
Config.PENDING_DATA_FILE_SIZE*1024; //in bytes
        long now_size = data.length();
        if(now_size<= (max_size+10) ) return data;
        try
        {
            data = data.substring((int)(now_size-
(max_size+10))));
            int pos = data.indexOf("<ST>");
            if(pos>=0)
            {
                data = "<ID
"+terminalID+">"+data.substring(pos);
            }
        }catch(Exception exc){}
        return data;
    }

    private class ATList implements
ATCommandListener
    {
        public void RINGChanged(boolean arg0)
        {
        }
        public void DCDChanged(boolean arg0)
        {
        }
        public void CONNChanged(boolean arg0)
        {
        }
        public void DSRChanged(boolean arg0)
        {
        }

        public void ATEvent(String arg0)
        {
            int posi = 0;
            try
            {
                if (arg0.indexOf("^SGPSP")>0)
                {
                    System.out.println(arg0);

///GPSGPRS.this.fhandler.writeLogData(GPSGPRS.this.l
ogOut);
```

```java
                        boolean
positionValid=validatePosition(arg0);
                }
                if(arg0.indexOf("CIEV: call,0")>=0)
                {
                        ringCounter = 0;
                        System.out.println("HANGUP");

///GPSGPRS.this.fhandler.writeLogData(GPSGPRS.this.l
ogOut);
                }
                if(arg0.indexOf("RING")>=0)
                {

if(ringCounter>=Config.MAX_RING_ACCEPT)
                        {
                                GPSGPRS.this.sendAT("ATA");
                                ringCounter = 0;
                        }else
                                ringCounter++;
                }
                if (arg0.indexOf("+CMTI:")>0 )
                {
                        System.out.println("Recieved
LOCATION REQUEST SMS");
                        posi = arg0.indexOf(",");
                        Integer messageIndex = null;
                        try
                        {
                                messageIndex =
Integer.valueOf(arg0.substring(posi+1,arg0.length()-
2));
                        }catch(Exception exc)
                        {
                        }
                        if(messageIndex!=null)
                        {
                                synchronized(msgSync)
                                {

msgIndices.addElement(messageIndex);
                                }
                        }
                }
            }catch(Exception exc)
            {
```

```java
                }
            }


        }
        public boolean sendSM(String number, String
text)
        {
            try
            {
                char controlZ = 26;
                String atResp = "";
                atResp = sendAT("at+cmgf=1");
                atResp =
sendAT("at+cpms=\"mt\",\"mt\",\"mt\"");
                atResp =
sendAT("at+cmgs=\""+number+"\"");
                atResp = sendAT(text+controlZ);
                if(atResp.indexOf("OK")<=0)
                {
                    ///logOut+="Error while trying to
send SMS. ( "+atResp+")";
                    ///fhandler.writeLogData(logOut);
                    return false;
                }else
                {
                    ///logOut+=("SMS Sent to (
"+number+")");
                    ///fhandler.writeLogData("SMS Sent
to ( "+number+")");
                }
            }
            catch(Exception e)
            {
                e.printStackTrace();
                return false;
            }
            return true;
        }
        public void sendPositionHTTP()
        {
            try
            {
                sendHTTPData(nowPostData);
                ///System.out.println("Posted Position
Data : "+nowPostData);
            }
```

```
        catch(Exception exc)
        {
        }
    }
    double calcDistance(GPSData nowGPS)
    {

        double lon = 0.0;
        double lat = 0.0;
        float alt = (float)0.0;
        double dist = 0.0;


try{lon=Double.parseDouble(nowGPS.GpsLongitude);}cat
ch(Exception exc){}

try{lat=Double.parseDouble(nowGPS.GpsLatitude);}catc
h(Exception exc){}

try{alt=Float.parseFloat(nowGPS.GpsAltitude);}catch(
Exception exc){}

        if(lastCoordinate==null)
        {
            lastCoordinate = new
Coordinates(lat,lon,alt);
            return 4.0;
        }

        try{dist = lastCoordinate.distance(new
Coordinates(lat,lon,alt));}catch(Exception exc){}

        lastCoordinate.setAltitude(alt);
        lastCoordinate.setLatitude(lat);
        lastCoordinate.setLongitude(lon);

        return dist;
    }
    public boolean validatePosition(String data)
    {

        int posiIni;
        int posiFin;


        GPSData nowGPS = new GPSData();
```

```
        lastGPS = nowGPS;
        posiIni=data.indexOf(":");
        posiFin=data.indexOf(",",posiIni+2);

nowGPS.GpsDate=data.substring(posiIni+2,posiFin);
        ///System.out.println("GpsDate: " +
positionGPS.GpsDate);

        posiIni=data.indexOf(",",posiFin);
        posiFin=data.indexOf(",",posiIni+1);

nowGPS.GpsUTCTime=data.substring(posiIni+1,posiFin);

        try
        {
            long millis =
getMillisForDate(nowGPS.GpsUTCTime,nowGPS.GpsDate);
            millis +=
(Config.GMT_OFFSET*60*60*1000);
            nowGPS.GpsDate=
this.getDateString(millis);
            nowGPS.GpsUTCTime=
this.getTimeString(millis);
            System.out.println("Converted Date and
Time: "+nowGPS.GpsDate+" and
"+nowGPS.GpsUTCTime+"\n");

        }catch(Exception exc){}
        posiIni=data.indexOf(",",posiFin);
        posiFin=data.indexOf(",",posiIni+1);

nowGPS.GpsLatitude=data.substring(posiIni+1,posiFin)
;

        posiIni=data.indexOf(",",posiFin);
        posiFin=data.indexOf(",",posiIni+1);

nowGPS.NSIndicator=data.substring(posiIni+1,posiFin)
;

        posiIni=data.indexOf(",",posiFin);
        posiFin=data.indexOf(",",posiIni+1);
```

```
nowGPS.GpsLongitude=data.substring(posiIni+1,posiFin
);


        posiIni=data.indexOf(",",posiFin);
        posiFin=data.indexOf(",",posiIni+1);

nowGPS.EWIndicator=data.substring(posiIni+1,posiFin)
;


        posiIni=data.indexOf(",",posiFin);
        posiFin=data.indexOf(",",posiIni+1);

nowGPS.GpsAltitude=data.substring(posiIni+1,posiFin)
;


        posiIni=data.indexOf(",",posiFin);
        posiFin=data.indexOf(",",posiIni+1);

nowGPS.GpsSpeed=data.substring(posiIni+1,posiFin);
        ////nowGPS.GpsSpeed = "5.0";
        double speed = 100.0;
        try{speed =
Double.parseDouble(nowGPS.GpsSpeed);}catch(Exception
exc){speed = 100.0;}

        posiIni=data.indexOf(",",posiFin);
        posiFin=data.indexOf(",",posiIni+1);

nowGPS.GpsCourse=data.substring(posiIni+1,posiFin);


        posiIni=data.indexOf(",",posiFin);
        posiFin=data.length();



nowGPS.GpsStatus=data.substring(posiIni+1,posiFin);

        if (((nowGPS.GpsStatus.indexOf("2")>-
1)||(nowGPS.GpsStatus.indexOf("3")>-1)))
        {
                synchronized(posSync)
```

```java
                {

                        double dist =
calcDistance(nowGPS);
                        ///System.out.println("Distance
: "+dist);
                        ///System.out.println("Speed :
"+speed);
                        ///dist = 5.0;

                        if( (dist>3.0)&&(speed>=1.0))
                        {

////System.out.println("########Device
Moving###########");
                                immobile=0;

positions.addElement(nowGPS);
                        }
                        else if((immobile==0))
                        {

///System.out.println("########Device
Waiting###########");
                                nowGPS.isWaiting=1;
                                immobile=1;

positions.addElement(nowGPS);
                        }
                    }
                    System.out.println("GPS Data
Valid");
                    return true;
            }
            else
            {
                ///synchronized(posSync)
                ///{
                    ///positions.addElement(nowGPS);
                ///}
                System.out.println("GPS Data Invalid");
                return false;
            }

    }
    String prepareSMSData()
```

```java
    {
        String smsData = "";
        smsData+= "<TM "+lastGPS.GpsUTCTime+">";
        smsData+= "<DT "+lastGPS.GpsDate+">";
        smsData+= "<LT "+lastGPS.GpsLatitude+">";
        smsData+= "<LN "+lastGPS.GpsLongitude+">";
        smsData+= "<SP "+lastGPS.GpsSpeed+">";
        smsData+= "<NS "+lastGPS.NSIndicator+">";
        smsData+= "<EW "+lastGPS.EWIndicator+">";
        smsData+= "<DR "+lastGPS.GpsCourse+">";
        return smsData;
    }
    void preparePostData()
    {
        int tot = positions.size();
        GPSData nowGPS= null;
        synchronized(posSync)
        {
            for(int i=0;i<tot;i++)
            {
                nowGPS =
(GPSData)positions.elementAt(i);
                GPSGPRS.this.nowPostData+="<ST>";
                if(nowGPS.isWaiting==1)
                {
                    nowGPS.GpsSpeed = "0.00";
                }
                GPSGPRS.this.nowPostData+= "<TM
"+nowGPS.GpsUTCTime+">";
                GPSGPRS.this.nowPostData+= "<DT
"+nowGPS.GpsDate+">";
                GPSGPRS.this.nowPostData+= "<LT
"+nowGPS.GpsLatitude+">";
                GPSGPRS.this.nowPostData+= "<LN
"+nowGPS.GpsLongitude+">";
                GPSGPRS.this.nowPostData+= "<SP
"+nowGPS.GpsSpeed+">";
                GPSGPRS.this.nowPostData+= "<NS
"+nowGPS.NSIndicator+">";
                GPSGPRS.this.nowPostData+= "<EW
"+nowGPS.EWIndicator+">";
                GPSGPRS.this.nowPostData+= "<DR
"+nowGPS.GpsCourse+">";

                GPSGPRS.this.nowPostData+= "<EN>";
            }
```

```
                    positions.removeAllElements();
                    positions.trimToSize();
            }
            if(!"EMPTY".equals(pendPostData))
            {
                    GPSGPRS.this.nowPostData =
GPSGPRS.this.pendPostData+GPSGPRS.this.nowPostData;
                    GPSGPRS.this.pendPostData = "EMPTY";
            }else
            {
                    GPSGPRS.this.nowPostData = "<ID
"+terminalID+">"+GPSGPRS.this.nowPostData;
            }
        }
        //Clase para guardar la última posición GPS
        private class GPSData
        {
            public String GpsDate="";
            public String GpsUTCTime="";
            public String GpsLatitude="";
            public String NSIndicator="";
            public String GpsLongitude="";
            public String EWIndicator="";
            public String GpsAltitude="";
            public String GpsSpeed="";
            public String GpsCourse="";
            public String GpsStatus="";
            public byte isWaiting=0;
        }
        private class SMS
        {
            String phoneNumber="";
            String text = "";
        }
        private class MonitorGPS extends TimerTask
        {
            public void run()
            {
                try
                {
                    String data =
GPSGPRS.this.fhandler.readPendingData();

                    if( (positions.size()<=0)&&(
(data==null)||(data.length()<=5))) return;
```

```
                if(GPSGPRS.this.sendDataLocked)
return;

                GPSGPRS.this.sendDataLocked=true;

                System.out.println("Trying to send
data at: "+System.currentTimeMillis());
                System.out.println();

                GPSGPRS.this.pendPostData = data;


if("".equals(GPSGPRS.this.pendPostData))
GPSGPRS.this.pendPostData="EMPTY";


///System.out.println("\n*************************
*********Loaded Pending Post
Data*********************************");

///System.out.println(GPSGPRS.this.pendPostData);

////System.out.println("*************************
***********************************************
****************\n");

                preparePostData();
                sendPositionHTTP();

                if(GPSGPRS.this.postError)
                {
                    GPSGPRS.this.pendPostData =
adjustPendingDataSize(GPSGPRS.this.nowPostData);
                    GPSGPRS.this.postError = false;
                }


///System.out.println("\n*************************
*********Storing Pending Post
Data*********************************");

///System.out.println(GPSGPRS.this.pendPostData);

///System.out.println("**************************
***********************************************
****************\n");
```

```java
GPSGPRS.this.fhandler.writePendingData(GPSGPRS.this.
pendPostData,true);

            }
            catch (Exception e)
            {

            }
            GPSGPRS.this.nowPostData = "";
            GPSGPRS.this.sendDataLocked=false;
        }

    }
    private class MonitorSMS extends TimerTask
    {
        SMS readSMS(int index)
        {
            String atResp = "";
            SMS nowSMS = new SMS();
            int beg,end;
            atResp = sendAT("at+cmgr="+index);
            beg = atResp.indexOf(",");
            end = atResp.indexOf(",",beg+1);
            nowSMS.phoneNumber =
atResp.substring(beg+2,end-1);

            beg = atResp.indexOf("\r",20);
            end = atResp.indexOf("\r",beg+2);

            nowSMS.text =
atResp.substring(beg+2,end);

            return nowSMS;
        }
        public void run()
        {
            int len =
GPSGPRS.this.msgIndices.size();
            if(smsProcessing || len<=0) return;
            try
            {
                int i=0,theIndex;
                Integer[] indices = new
Integer[len];
```

```java
                SMS theSMS = null;
                String smsData = prepareSMSData();
                boolean ret = false;
                synchronized(GPSGPRS.this.msgSync)
                {
                    for(i=0;i<len;i++)
                    {
                        indices[i] =
(Integer)GPSGPRS.this.msgIndices.elementAt(i);
                    }

GPSGPRS.this.msgIndices.removeAllElements();

GPSGPRS.this.msgIndices.trimToSize();
                }
                for(i=0;i<len;i++)
                {
                    theIndex =
indices[i].intValue();
                    theSMS = readSMS(theIndex);
                    if(theSMS != null)
                    {

if(theSMS.text.toLowerCase().indexOf("location")>=0)
                        {
                            ret =
sendSM(theSMS.phoneNumber,smsData);
                        }

///GPSGPRS.this.fhandler.writeLogData("Sent: DATA:
"+smsData+" TO NUMBER: "+theSMS.phoneNumber+" STAT:
"+ret);
                    }
                }

            }catch(Exception exc)
            {
            }finally
            {
                smsProcessing = false;
            }
        }

    }
}
```

CHAPTER IV
PHP CODES (Web Application)

4.1 Web application Overview

Data is accumulated by the AVL tracker every four second. After every thirty seconds the collection of data is sent to the web by GPRS. The file tracker.php collects and extracts the information. This data contains the vital information about the location of the vehicle-the longitude, latitude, speed, direction, and clock time. If the device happens to send data to the web for the first time (after installation) it sends messages containing data for registration consisting of <RG> tags. Thus two types of data can be sent. With these data a database is formed, which is used for viewing the location by the user/client and also the data can be saved to create report for future use.

4.2 An illustration of one web page (code and snapshots)
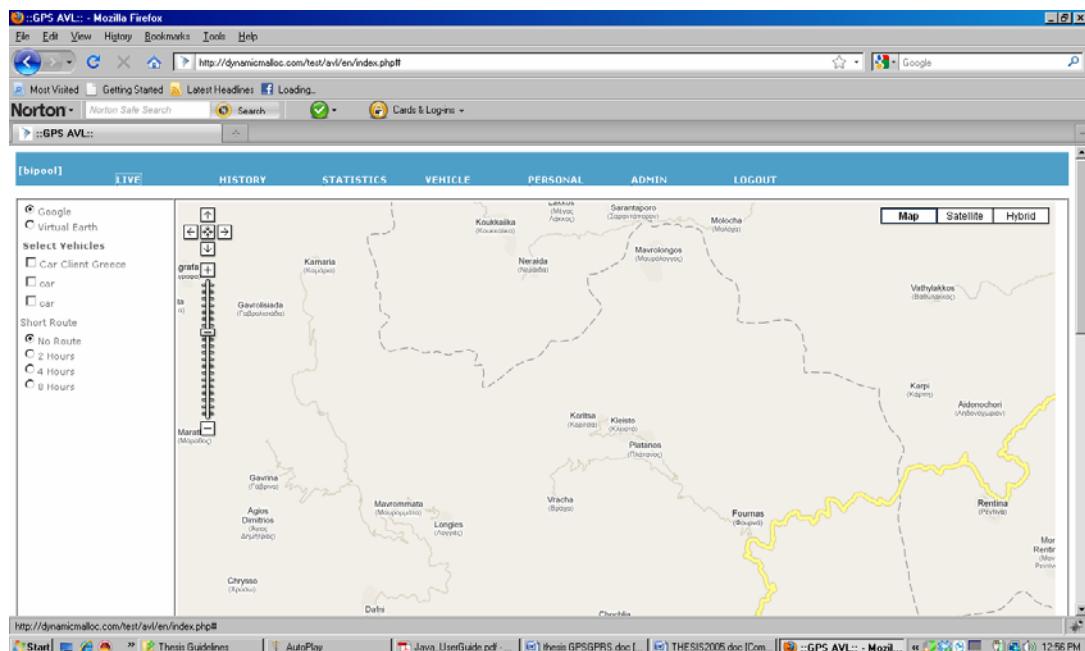
Fig. 4.1 Web Interface Snapshot

The real-time view of the vehicle from the web developed from the following code.

```html
<html >
<head>

   <meta name="author" content="dynamicmalloc.com"/>
   <meta http-equiv="content-type"
content='text/html; charset=UTF-8'/>
   <meta http-equiv="cache-control" content='no-
cache'/>
   <meta http-equiv="pragma" content="no-cache"/>
   <meta http-equiv="expires" content="0"/>
   <meta name="copyright" content="Copyright (C)
2008-2009 dynamicmalloc.com"/>
   <meta name="robots" content="none"/>


<title>::GPS AVL::</title>
<meta name="keywords" content="" />
<meta name="description" content="" />


      <link rel="stylesheet" type="text/css"
href="../css/yui.css" />
     <link href="../css/style.css" rel="stylesheet"
type="text/css" media="screen" />
     <link rel="stylesheet" type="text/css"
href="../css/ddlevelsmenu-base.css" />
     <link rel="stylesheet" type="text/css"
href="../css/ddlevelsmenu-topbar.css" />

     <link rel="stylesheet"
href="../date_picker/themes/forest.css" />
     <link rel="stylesheet"
href="../date_picker/themes/layouts/small.css" />
     <script type="text/javascript"
src="../date_picker/src/calendar.js"></script>
     <script type="text/javascript"
src="../date_picker/lang/calendar-en.js"></script>
```

```
    <script type="text/javascript"
src="../js/ddlevelsmenu.js"></script>



        <script
src="http://btilelog.access.mapquest.com/tilelog/tra
nsaction?transaction=script&key=Fmjtd%7Clu61n9ur21%2
C22%3Do5-5wbl5&itk=true&v=5.3.s&ipkg=controls1"
type="text/javascript"></script>
        <script
src="http://maps.google.com/maps?file=api&amp;v=2&am
p;key=ABQIAAAAHiPwVpTg_cgVYLhEPRdYTBSzomTl2uQlvg8VZ2
D63fhrqQ9rShR-xfpugvC2oI_3PvtAnAEtClFCyA"
type="text/javascript"></script>


    <script src="../js/common.js"
language="javascript"></script>
        <script src="../js/cars.js"
language="javascript"></script>
        <script src="../js/groups.js"
language="javascript"></script>
        <script src="../js/login.js"
language="javascript"></script>
        <script src="../js/maps.js"
language="javascript"></script>
        <script src="../js/communication.js"
language="javascript"></script>
        <script src="../js/history.js"
language="javascript"></script>
        <script src="../js/personal_settings.js"
language="javascript"></script>
        <script src="../js/admin.js"
language="javascript"></script>


</head>
<body onload="DoInit('bipool' , '39.0742080000' ,
'21.8243120000')">
<!--
<div id="logo">
      <center><h1><a href="#">GPS
AVL</a></h1></center>
</div>
-->
```

```html
<div id="menu"  >
    <table id="tblMenu" align=left width=100%
style="visibility:hidden" border=0>
      <tr>
        <td align=left width=5%
id="tdUserName"><a>[Bipool]</a></td>
        <td width=92% align=left>
            <div id="ddtopmenubar"
class="mattblackmenu">
              <ul>
            <li><a href="#" rel="ddsubmenu1"
onclick="ShowInfo(2)">LIVE</a></li>
            <li><a href="#" rel="ddsubmenu2"
onclick="ShowInfo(14)">HISTORY</a></li>
            <li><a href="#" rel="ddsubmenu3"
onclick="ShowInfo(4)">STATISTICS</a></li>
            <li><a href="#" rel="ddsubmenu4"
onclick="ShowInfo(16)">VEHICLE</a></li>
            <li><a href="#" rel="ddsubmenu5"
onclick="ShowInfo(15)">PERSONAL</a></li>
            <li><a href="#" rel="ddsubmenu6"
onclick="ShowInfo(20)">ADMIN</a></li>
            <li><a href="#" rel="ddsubmenu7"
onclick="LogOut();">LOGOUT</a></li>
      </ul>
</div>
<script type="text/javascript">
ddlevelsmenu.setup("ddtopmenubar", "topbar");
</script>

                <ul id="ddsubmenu1"
class="ddsubmenustyle">
                <!--<li><a href="#"
onclick="ShowInfo(2)">Map</a></li>
                <li><a href="#"
onclick="ShowInfo(1)">Main Menu</a></li>-->
                </ul>

                <ul  id="ddsubmenu2"
class="ddsubmenustyle">
                <!--<li><a href="#"
onclick="ShowInfo(14)">History</a></li>
                    <li><a href="#"
onclick="ShowInfo(3)">Vehicle Group Map</a>
                -->
```

```
                                </ul>
                                <ul  id="ddsubmenu3"
class="ddsubmenustyle">
                        <!--    <li><a href="#"
onclick="ShowInfo(4)">Details Report</a></li>
                         <li><a href="#"
onclick="ShowInfo(5)">Summary Report</a>
                         <li><a href="#"
onclick="ShowInfo(6)">Performace Report</a>
                         -->
                         </ul>
                <ul  id="ddsubmenu4"
class="ddsubmenustyle">
                        <!-- <li><a href="#"
onclick="ShowInfo(16)">Settings</a></li> -->
                </ul>
                <ul  id="ddsubmenu5"
class="ddsubmenustyle">
                        <!-- <li><a href="#"
onclick="ShowInfo(15)">Settings</a></li> -->
                </ul>


                         <ul  id="ddsubmenu6"
class="ddsubmenustyle">
                        <!--    <li><a href="#"
onclick="ShowInfo(7)">Account Admin</a></li>
                         <li><a href="#"
onclick="ShowInfo(8)">User Setting</a>
                         <li><a href="#"
onclick="ShowInfo(9)">Vehicle Setting</a>
                         <li><a href="#"
onclick="ShowInfo(10)">Search</a></li>
                         <li><a href="#"
onclick="ShowInfo(11)">Statistics</a>
                         <li><a href="#"
onclick="ShowInfo(7)">System</a>
                         <li><a href="#"
onclick="ShowInfo(17)">Communication</a>
                         <li><a href="#"
onclick="ShowInfo(18)">Playback</a>
                         <li><a href="#"
onclick="ShowInfo(19)">DB Statistics</a>
                         -->

                         </ul>
```

```html
            <ul  id="ddsubmenu7"
class="ddsubmenustyle">
                <!-- <li><a href="#"
onclick="ShowInfo(17)">Logout</a></li> -->
            </ul>


</div>
        </td>

    </tr>
    </table>

</div>
<br>
<div id="dvLogin" >
    <br><br><br><br>
    <br><br>
    <Table align=center>
        <Tr>
            <Td>User Name::</Td>
            <Td><input type="text"
name="txtUserName" id="txtUserName" value=""></Td>
        </Tr>
        <Tr>
            <Td>Password::</Td>
            <Td><input type="password"
name="txtPass" id="txtPass" value=""></Td>
        </Tr>

        <Tr>
            <Td>Prefered Language:: </Td>
            <Td>
                <SELECT name="selLang" id="selLang">
                    <option value="en"
selected>English</option>
                    <option
value="spn">Spanish</option>
                    <option
value="fr">French</option>
                    <option
value="bn">Bangla</option>
                </SELECT>

            </Td>
        </Tr>
```

```html
        <Tr>
            <Td colspan=2 align=center><input
type="Button" name="btnSubmit" value="Submit"
onclick="CheckLogin();"></Td>
        </Tr>


    </Table>


</div>
<div id="divMainMenu" style="display:none">
      <br><br>
    <table align=center>
            <tr height='100%'>
              <td >
                    <br/>
<span >Please select an item from the following
menu:</span><br/>
<hr/>
<ul >
<li >Mapping
<ul>
<li ><a  href='#' onclick="ShowInfo(2)"
title="Select and Track the location of a Vehicle on
a map">Track Vehicle locations on a
map</a></span><br><span
class='itemLeafHelpPad'>Select and Track the
location of a Vehicle on a map</li>
<!--<li ><a  href='#' onclick="ShowInfo(3)"
title="Select and Track the location of a Vehicle
Group on a map">Track Vehicle Group locations on a
map</a></span><br><span
class='itemLeafHelpPad'>Select and Track the
location of a Vehicle Group on a map</li> -->
</ul>
</li>
<li >Reports
<ul>
<li ><a  href='#' onclick="ShowInfo(4)"
title="Display various Vehicle detail
reports">Vehicle detail reports</a></span><br><span
class='itemLeafHelpPad'>Display various Vehicle
detail reports</li>
```

```
<!--<li ><a  href='#' onclick="ShowInfo(5)"
title="Display various Vehicle summary
reports">Vehicle summary reports</a></span><br><span
class='itemLeafHelpPad'>Display various Vehicle
summary reports</li>
<li ><a  href='#' onclick="ShowInfo(6)"
title="Display various driver performance
reports">Driver performance
reports</a></span><br><span
class='itemLeafHelpPad'>Display various driver
performance reports</li>
-->
</ul>
</li>
<li >Administration
<ul>
<!--<li ><a  href='#' onclick="ShowInfo(7)"
title="View and Edit the current Account
information">View/Edit Account
Information</a></span><br><span
class='itemLeafHelpPad'>View and Edit the current
Account information</li> -->
<li ><a  href='#' onclick="ShowInfo(8)" title="View
and Edit User information">View/Edit User
Information</a></span><br><span
class='itemLeafHelpPad'>View and Edit User
information</li>
<li ><a  href='#' onclick="ShowInfo(9)" title="View
and Edit Vehicle information">View/Edit Vehicle
Information</a></span><br><span
class='itemLeafHelpPad'>View and Edit Vehicle
information</li>
<li ><a  href='#' onclick="ShowInfo(10)" title="View
and Edit Vehicle Group information">View/Edit
Vehicle Group Information</a></span><br><span
class='itemLeafHelpPad'>View and Edit Vehicle Group
information</li>
<li ><a  href='#' onclick="ShowInfo(11)" title="View
and Edit Geozone information">View/Edit Geozone
Information</a></span><br><span
class='itemLeafHelpPad'>View and Edit Geozone
information</li>
<li ><a  href='#' onclick="ShowInfo(12)"
title="Change your login password">Change your
password</a></span><br><span
```

```
class='itemLeafHelpPad'>Change your login
password</li>
</ul>
</li>
</ul> </td>
          </tr>
    </table>

</div><div id="divVMap" style="display:none">

    <table align=center width=100% border=1
cellspacing=0 cellpadding=0 valign=top>

          <tr>
                    <td width=15% valign=top>


                <table valign=top>
                    <tr>
                        <td>
                            <input type=radio
name="radMap" id="radMap" onclick="DisplayMap(1)"
checked>Google<br>
                                <input type=radio
name="radMap" id="radMap"
onclick="DisplayMap(2)">Virtual Earth<br>
                                <!-- <input type=radio
name="radMap" id="radMap"
onclick="DisplayMap(3)">MapQuest<br> >-->
                            </td>
                        </tr>
                    </table>

                        <table valign=top>
                        <!--   <tr>
                                <td> Date
Start: 2009-11-11 </td>
                                    </tr>

                                    <tr>
                                        <td> Date
To:2009-11-11 </td>
                                    </tr>
-->

                                    <tr>
```

```
                                        <td
id='tdVehicals'><b> Vehicles</b></td>
                                   </tr>



                        </table>



              <table valign=top>
                  <tr>
                      <td> Short Route </td>
                  </tr>
                  <tr>
                      <td>
                          <input type=radio
name="sRoute" id="sRoute" onclick="ShortRoute(0)"
selected>No Route<br>
                          <input type=radio
name="sRoute" id="sRoute" onclick="ShortRoute(2)">2
Hours<br>
                          <input type=radio
name="sRoute" id="sRoute" onclick="ShortRoute(4)">4
Hours<br>
                          <input type=radio
name="sRoute" id="sRoute" onclick="ShortRoute(8)">8
Hours<br>
                      </td>
                  </tr>
              </table>

                   </td>
           <td valign=top>
                        <table height=650
valign=top>
                            <tr>
                                <td
valign=top>
                                    <div
id="theMap" style="width: 870px; height:
650px;overflow:auto;">
                                    </div>
                                </td>
                            </tr>
                            <!--
```

```
                          <tr>
                                          <td
valign=top>
                                             <div
id="repVehicals" height="200">  
                                             </div>
                                          </td>
                                       </tr>
                          -->

                          </table>
               </td>
                       <!--
                       <td width=15% valign=top>
                             <table valign=top>
                                    <tr>
                                         <td>
                                             <input
type=radio name="radMap" id="radMap"
onclick="DisplayMap(1)" checked>Google<br>
                                             <input
type=radio name="radMap" id="radMap"
onclick="DisplayMap(2)">Virtual Earth<br>
                                             <input
type=radio name="radMap" id="radMap"
onclick="DisplayMap(3)">MapQuest<br>
                                         </td>
                                    </tr>

                                    <tr><td> <hr
/></td></tr>
                                    <tr>
                                         <td
onclick="MakeCarLocTable('repVehicals', 1)"> Show
Report</td>
                                    </tr>

                             </table>
               </td>
                       -->


        </tr>
    </table>

</div><div id="dvHistory" style="display:none">
```

```
<table align=center width=100% border=1
cellspacing=0 cellpadding=0 valign=top>

        <tr>
                <td width=20% valign=top>

                        <table valign=top>
                <tr>
                    <td>
                        <input type=radio
name="hisRadMap" id="hisRadMap" value=1
onclick="DisplayMap(1)" checked>Google<br>
                        <input type=radio
name="hisRadMap" id="hisRadMap" value=2
onclick="DisplayMap(2)">Virtual Earth<br>
                        <!--<input type=radio
name="hisRadMap" id="hisRadMap" value=3
onclick="DisplayMap(3)">MapQuest<br>-->
                    </td>
                </tr>

                        <tr>
                            <td><b>Select
Vehicles:</b></td>
                        </tr>
                <tr>
                    <td id='selHVehicals'></td>
                </tr>

                <tr>
                    <td><b>Select Date</b></td>
                </tr>

                <tr>
                    <td> From:
                            <input
type="text" id="calHis" name="calHis"  size=10
readonly/>
                            <button
id="trigger2">...</button>
                            <script
type="text/javascript">//<![CDATA[

Zapatec.Calendar.setup({
```

~ 70 ~

```
                                                firstDay
: 1,
                                                weekNumbers
: false,
                                                showOthers
: true,
                                                electric
: false,
                                                inputField
: "calHis",
                                                button
: "trigger2",
                                                ifFormat
: "%Y-%m-%d",
                                                daFormat
: "%Y/%m/%d"
                                        });
                                //]]></script>


                        </td>
                </tr>
                <tr>
                    <td>    To:
                                <input
type="text" id="calTHis" name="calTHis"  size=10
readonly/>
                                        <button
id="trigger3">...</button>
                                        <script
type="text/javascript">//<![CDATA[

Zapatec.Calendar.setup({
                                                firstDay
: 1,
                                                weekNumbers
: false,
                                                showOthers
: true,
                                                electric
: false,
                                                inputField
: "calTHis",
                                                button
: "trigger3",
```

~ 71 ~

```
                                            ifFormat
: "%Y-%m-%d",

                                            daFormat
: "%Y/%m/%d"

                                      });
                                   //]]></script>


                            </td>
                      </tr>

                      <tr>
                          <td><b>Select Time</b></td>
                      </tr>


                      <tr>
                          <td> From:
                              <select id="selTime"
name="selTime">
                                    <option value =-
1>Hour</option>
                                    <option value
=1>01:00</option>
                                    <option value
=2>02:00</option>
                                    <option value
=3>03:00</option>
                                    <option value
=4>04:00</option>
                                    <option value
=5>05:00</option>
                                    <option value
=6>06:00</option>
                                    <option value
=7>07:00</option>
                                    <option value
=8>08:00</option>
                                    <option value
=9>09:00</option>
                                    <option value
=10>10:00</option>
                                    <option value
=11>11:00</option>
                                    <option value
=12>12:00</option>
```

```
                                               <option value
=13>13:00</option>
                                               <option value
=14>14:00</option>
                                               <option value
=15>15:00</option>
                                               <option value
=16>16:00</option>
                                               <option value
=17>17:00</option>
                                               <option value
=18>18:00</option>
                                               <option value
=19>19:00</option>
                                               <option value
=20>20:00</option>
                                               <option value
=21>21:00</option>
                                               <option value
=22>22:00</option>
                                               <option value
=23>23:00</option>
                                               <option value
=0>23:59</option>
                                      </select>

                             </td>
                     </tr>
                     <tr>
                         <td>    To:
                             <select id="selTTime"
name="selTTime">
                                       <option value =-
1>Hour</option>
                                       <option value
=1>01:00</option>
                                       <option value
=2>02:00</option>
                                       <option value
=3>03:00</option>
                                       <option value
=4>04:00</option>
                                       <option value
=5>05:00</option>
```

```
                                        <option value
=6>06:00</option>
                                        <option value
=7>07:00</option>
                                        <option value
=8>08:00</option>
                                        <option value
=9>09:00</option>
                                        <option value
=10>10:00</option>
                                        <option value
=11>11:00</option>
                                        <option value
=12>12:00</option>
                                        <option value
=13>13:00</option>
                                        <option value
=14>14:00</option>
                                        <option value
=15>15:00</option>
                                        <option value
=16>16:00</option>
                                        <option value
=17>17:00</option>
                                        <option value
=18>18:00</option>
                                        <option value
=19>19:00</option>
                                        <option value
=20>20:00</option>
                                        <option value
=21>21:00</option>
                                        <option value
=22>22:00</option>
                                        <option value
=23>23:00</option>
                                        <option value
=0>23:59</option>
                                </select>

                        </td>
                </tr>

                <tr>
```

```
                                    <td><input type=button
name="btnHSubmit" id="btnHSubmit" value="Submit"
onclick="GetHistory();"><span
id="spnRouteDist"></span> </td>
                            </tr>

                        </table>

                <table>
                    <tr>
                        <td>
                            <div id="dvCarHistory"
name="dvCarHistory" style="height:300px;
overflow:auto">

                            </div>
                        </td>
                    </tr>

                    <tr>

                        <td>
                            <b>Speed:</b> <input
type="text" name="txtSpeed" id="txtSpeed" value="10"
size=3>
                            </td>
                     </tr>

                    <tr>
                        <td>
                            <input type="button"
name="btnPlay" id="btnPlay" value="Playback"
onclick="PlayBack();" style="display:block">
                            <input type="button"
name="btnStop" id="btnStop" value="Stop"
onclick="StopPlay();" style="display:none">
                            <input type="button"
name="btnFrontPlay" id="btnFrontPlay"
value="PlayFront" onclick="PlayBack(-1);"
style="display:block">
                            <input type="button"
name="btnExport1" id="btnExport1" value="KML Export"
onclick="Export(1);">
                            <input type="button"
name="btnExport2" id="btnExport2" value="XL Export"
onclick="Export(2);">
                            </td>
```

```
                        </tr>
                    </table>



                </td>

        <td valign=top>
                        <table height=850
valign=top>
                                <tr>
                                    <td
valign=top>
                                        <div
id="theHisMap" style="width: 800px; height:
650px;overflow:auto;">
                                        </div>
                                    </td>
                                </tr>

                    </table>
            </td>
        </tr>
    </table>

</div>

<div id="dvPersonal" style="display:none"
align=center>
<br>
    <table align=left border=1 cellspacing=0
cellpadding=0 width=100%>
        <tr>
            <td width=15% align=left valign=top>
                    <table align=left width=100%>
                    <tr bgcolor='336699'>
                        <td><font size=2
color=FFFFFF onclick="PersonalSettings(0)">General
Settings</font></td>
                    </tr>
                    <tr bgcolor='336699'>
                        <td> <font size=2
color=FFFFFF onclick="PersonalSettings(1)">Change
Password</font></td>
                    </tr>
                    <tr bgcolor='336699'>
```

```
                                <td> <font size=2
color=FFFFFF
onclick="PersonalSettings(2)">Activation
Request</font></td>
                        </tr>
                        <tr bgcolor='336699'>
                            <td><font size=2
color=FFFFFF onclick="PersonalSettings(3)">Support
Request</font></td>
                        </tr>
                      <!-- <tr bgcolor='336699'>
                            <td><font size=2
color=FFFFFF
onclick="PersonalSettings(4)">History</font></td>
                        </tr>
                        -->
                  </table>
              </td>

              <td>

                            <div id="dvPrGeneral">
                            <table>
                                <tr>
                                    <td>
                                        <b>Inital
Map</b>
                                    </td>
                                </tr>

<tr>

                                    <td>

   <input type=radio name='radInMap'
id='radInMap' value="1">Google
</td>
                                    </tr>

<tr>

                                    <td>

   <input type=radio name='radInMap'
id='radInMap' value="2">Virtual Earth
</td>
                                    </tr>

<tr>
```

```
                                                <td>

   <input type=radio name='radInMap'
id='radInMap' value="3">MapQuest
</td>
                                        </tr>

</table>


                                <table>
                                    <tr>
                                        <td>
                                            <b>Preferred
Language</b>
                                        </td>
                                    </tr>

<tr>
                                        <td>

   <input type=radio name='radLang'
id='radLang' value="1">English
</td>
                                    </tr>

<tr>
                                        <td>

   <input type=radio name='radLang'
id='radLang' value="2">Spanish
</td>
                                    </tr>

<tr>
                                        <td>

   <input type=radio name='radLang'
id='radLang' value="3">French
</td>
                                    </tr>

<tr>
                                        <td>

   <input type=radio name='radLang'
```

```html
id='radLang' value="4">Bangla
</td>
                                        </tr>

</table>

                              <table>
                                  <tr>
                                      <td>
                                          <input
type="button" name="btnSave" id="btnSave"
value="Save" onclick="SaveGenSetting()">
                                      </td>
                                  </tr>
                              </table>
                          </div>

                          <div id="dvCngPass"
style="display:none">
    <table align=left>
        <tr>
            <td>

                <b><font size= 4>Change
Password</font></b>

            </td>
        </tr>
    </table>
    <br><br><br>


    <table align=left>
        <tr>
            <td><b>Current Password:</b></td>
            <td><input type="password" id="curPass"
name="curPass" value=""></td>
        </tr>

        <tr>
            <td><b>New Password:</b></td>
            <td><input type="password" id="newPass"
name="newPass" value=""></td>
        </tr>
```

```
        <tr>
            <td><b>Retype New Password:</b></td>
            <td><input type="password"
id="renewPass" name="renewPass" value=""></td>
        </tr>


        <tr>
            <td colspan=2><br><br><input
type="button" id="btnSave" name="btnSave"
value="Save" onclick="SavePass();">
                
            <input type="button" id="btnCancel"
name="btnCancel" value="Cancel"
onclick="CancelPass();"></td>
        </tr>

    </table>


</div>                              <div
id="dvPrActReq">
                            <table>
                                <tr>
                                    <td>
                                        <b><font
size= 4>Activation Request Form</font></b>

                                    </td>
                                </tr>
                             </table>
                            <br><br><br>
                            <form name="frmAcRq"
id="frmAcRq" method="Post" enctype="multipart/form-
data" action="ifrm_activation_request.php"
target="ifrmActReq">
                                <table align=left>
                                    <tr>
                                        <td> <b>Vehicale
Name:</b> </td>
                                        <td>
                                            <input
type="text"  name="txtVname" id="txtVname" value="">
                                            <input
type="hidden"  name="hdnType" id="hdnType"
value="1">
```

```html
                                                    </td>
                                                </tr>
                                                <tr>
                                                    <td> <b>IMEI
#:</b> </td>
                                                    <td> <input
type="text"  name="txtVimei" id="txtVimei" value="">
</td>
                                                </tr>

                                                <tr>
                                                    <td>
<b>Activation Days:</b> </td>
                                                    <td> <input
type="text"  name="txtActDay" id="txtActDay"
value="">  </td>
                                                </tr>

                                                <tr>
                                                    <td>
<b>Document:</b> </td>
                                                    <td> <input
type="File"  name="flActDoc" id="flActDoc" value="">
</td>
                                                </tr>

                                                <tr>

                                                    <td colspan=2
align=center> <input type="Submit"
name="btnPSubmit" id="btnPSubmit" value="Submit">
</td>
                                                </tr>

                                             </table>
                                            </form>

                                            </div>

                                            <iframe
name="ifrmActReq" id="ifrmActReq" src="blank.php"
height=0 width=0 frameborder=0></iframe>

                                            <div id="dvPrSupReq">
                                            <table>
                                                <tr>
```

```html
            <td>
                <b><font
size= 4>Support Request Form</font></b>
                </td>
            </tr>
        </table>
        <br><br><br>
        <form name="frmSupRq"
id="frmSupRq" method="Post" enctype="multipart/form-
data" action="ifrm_activation_request.php"
target="ifrmActReq">
            <table align=left>

                <tr>
                    <td>
<b>Problem/Suggession:</b> </td>
                        <td>
                            <textarea
name="txtSg" id="txtSg" rows=3 cols=70></textarea>
                                <input
type="hidden"  name="hdnType" id="hdnType"
value="2">
                        </td>
                    </tr>

                <tr>
                    <td>
<b>Document:</b> </td>
                        <td> <input
type="File"  name="flActDoc" id="flActDoc" value="">
</td>
                    </tr>

                <tr>

                    <td colspan=2
align=center> <input type="Submit"  name="btnSubmit"
id="btnSubmit" value="Submit">  </td>
                    </tr>

             </table>
        </form>
        </div>
        <div id="dvPrHistory">
        <table>
```

```html
								<tr>
									<td>
									</td>
								</tr>
							</table>

						</div>

				</td>

			</tr>
		</table>

</div><div id="dvVehicleSet" style="display:none"
align=center>
<br>
	<table align=left border=1 cellspacing=0
cellpadding=0 width=100%>
			<tr>
				<td width=15% align=left valign=top>
					<table align=left width=100%>
						<tr bgcolor='336699'>
							<td><font size=2
color=FFFFFF onclick="VehicleSettings(0)">General
Settings</font></td>
						</tr>
						<tr bgcolor='336699'>
							<td> <font size=2
color=FFFFFF
onclick="VehicleSettings(1)">Group</font></td>
						</tr>
						<tr bgcolor='336699'>
							<td> <font size=2
color=FFFFFF
onclick="VehicleSettings(2)">Zone</font></td>
						</tr>


					</table>
				</td>

				<td>
						<div id="divVclAdmin" align=center
style="display:none" width=100%>
<br><br><br><br>
	<table align=center width=100% >
```

```
			<tr id="dvVehicleAdminBusy"
style="display:block" width=100%>

				<td colspan=2 align=center>
					wait plzz...
				</td>
			</tr>

			<tr id="dvVehicleUpdate"
style="display:none">

				<td colspan=2 align=center>
					<font size=3
color=green><b><u>Vehicle Information Updated
Successfully</u><b></font>
					<br><br>
				</td>
			</tr>

			<tr id="dvAllVehicle"
style="display:none">

				<td colspan=2 align=center> 

				</td>
			</tr>



			<tr id="dvVehicleAdminData"
style="display:none" width=100%>
			<td align=center width=100% colspan=2>
					<table align=center
width=100%>
						<tr>
							<td><b>Vehicle
Id:</b></td>
							<td><input
type="text" name="txtVehicleId" id="txtVehicleId"
value="" readOnly ></td>
						</tr>


						<tr>
							<td><b>Vehicle
Name:</b></td>
```

```html
                                        <td><input
type="text" name="txtVehicleName"
id="txtVehicleName" value="" ></td>
                                </tr>

                        <tr>
                            <td><b>Vehicle
Color:</b></td>
                            <td>
                                <SELECT id="selVColor"
name="selVColor">
                                        <option
value="white">White</option>
                                        <option
value="black">Black</option>
                                        <option
value="yellow">Yellow</option>
                                        <option
value="red">Red</option>
                                        <option
value="blue">Blue</option>
                                        <option
value="silver">Silver</option>
                                        <option
value="golden">Golden</option>
                                        <option
value="teal">Teal</option>
                                        <option
value="green">Green</option>
                                    </SELECT>
                                </td>
                        </tr>

                        <tr>
                            <td><b>Driver Name:</b></td>
                            <td><input type="text"
name="txtDriverName" id="txtDriverName" value=""
></td>
                        </tr>

                        <!--
                            <tr>
                                <td><b>Vehicle
Short Name:</b></td>
```

```html
                                            <td><input
type="text" name="txtVehicleShortName"
id="txtVehicleShortName" value="" ></td>
                                        </tr>

                                        <tr>
                                            <td><b>IMEI
Number:</b></td>
                                            <td><input
type="text" name="txtImeiNo" id="txtImeiNo" value=""
></td>
                                        </tr>
                        -->
                                        <tr>

    <td><b>Description:</b></td>
                                            <td>

    <textarea id="taDescription"
name="taDescription" rows=5 cols=45></textarea>
                                            </td>
                                        </tr>

                                        <tr>
                                            <td><b>Vehicle
type:</b></td>
                                            <td>
                                        <select
id="selVehicleType" name="selVehicleType">

    <option value="1">Car</option>

    <option value="2">Bus</option>

    <option value="3">Micro Bus</option>

    <option value="4">Others</option>

    </select>
                                            </td>
                                        </tr>

                                        <tr>
                                            <td><b>Vehicle
Activate:</b></td>
                                            <td>
```

```html
                                     <select
id="selActive" name="selActive">

       <option value="1">Active</option>

       <option value="0">Inactive</option>

       </select>
                                           </td>
                                     </tr>

                                     <tr>
                                           <td>
                                                 <input
type="button" name="btnBack" id="btnBack"
value="Back" style="display:block"
onclick="DoVehicleBack();">
                                                 </td>
                                           <td><input
type="button" name="btnSave" id="btnSave"
value="Save" style="display:block"
onclick="DoVehicleSave();"></td>
                                     </tr>


                               </table>

             </td>
         </tr>
     </table>

</div>                 <div id="divVclGrAdmin"
style="display:none" width=100%>


<br><br><br><br>
     <table align=center width=100%  border=0>
             <tr id="dvGrAdminBusy"
style="display:block" width=100% align=center>

                  <td colspan=2 align=center>
                          wait plzz...
                  </td>
             </tr>


             <tr id="dvGrUpdate"
style="display:none" align=center>
```

```html
                    <td colspan=2 align=center>
                        <font size=3
color=green><b><u>Vehicle Group Information Updated
Successfully</u><b></font>
                        <br><br>
                    </td>
            </tr>

            <tr id="dvAllGroups"
style="display:none" width=100% align=center>

                    <td colspan=2 align=center
id="tdAllGroups" name="tdAllGroups" 100%>
            nbsp;

                    </td>
            </tr>




            <tr id="dvGrAdminData"
style="display:none" width=100% align=center>
            <td align=center width=100% colspan=2>
                        <table align=center
width=100%>
                                <tr>
                                    <td><b>Group
Id:</b></td>
                                    <td><input
type="text" name="txtGrId" id="txtGrId" value=""
readOnly ></td>
                                </tr>

                                <tr>
                                    <td><b>Group
Name:</b></td>
                                    <td><input
type="text" name="txtGrName" id="txtGrName" value=""
></td>
                                </tr>


                                <tr>

        <td><b>Description:</b></td>
```

```html
                                       <td>

       <textarea id="taGrDescription"
name="taGrDescription" rows=5 cols=45></textarea>
                                       </td>
                                   </tr>

                                   <tr>
                                       <td><b>Group
Activate:</b></td>
                                       <td>
                                           <select
id="selGrActive" name="selGrActive">

       <option value="1">Active</option>

       <option value="0">Inactive</option>

       </select>
                                       </td>
                                   </tr>

                                   <tr >
                                       <td><b>Vehicle
Name Of This Group:</b></td>
                                       <td
id="tdSelGr">
                                           Not done
Yet
                                       </td>
                                   </tr>

                                   <tr>
                                       <td>
                                           <input
type="button" name="btnBack" id="btnBack"
value="Back" style="display:block"
onclick="DoGroupBack();">
                                       </td>
                                       <td><input
type="button" name="btnSave" id="btnSave"
value="Save" style="display:block"
onclick="DoGroupSave();"></td>
                                   </tr>
```

```
                                </table>

                </td>
            </tr>
        </table>
</div>                    <div id="divGeoZnAdmin"
style="display:none">
<br><br><br><br>
        <div id="addEditGeo" style="display:block">




        </div>

        <div id="viewGeoZone" style="display:none">
        <table border=1 width=100% align=center
cellspacing=0 cellpadding=0 valign=top>
            <tr>
                        <td valign=top width=750px>
                                <div id="geoMap"
style="width: 750px; height: 500px;overflow:auto;">
                                </div>
                        </td>
                        <td>
                                <table valign=top>
                                        <tr>
                                                <td>[Please
first select a place from map and then create
zone]<br><br></td>
                                        </tr>


                                        <tr>
                                                <td>


        Longitude: <input type=text name="txtLon"
id="txtLon" value="" readonly>
                                                </td>
                                        </tr>

                                        <tr>
```

```html
			<td>
		Latitude: <input type=text name="txtLat" id="txtLat" value="" readonly>
			</td>
		</tr>

		<tr>
			<td>
				Radius: <input type=text name="txtRad" id="txtRad" value="" size=5> meters
			</td>
		</tr>

		<tr>
			<td>
				<input type=button name="btnDraw" id="btnDraw" value="Draw" onclick="drawCircle();">
			</td>
		</tr>

		<tr>
			<td>
			Zone Name: <input type=text name="txtZoneName" id="txtZoneName" value="">
			</td>
		</tr>
		<tr>
			<td>
				Type: <select name="selZoneType" id="selZoneType">
					<option value=1>Parking</option>
					<option value=2>Zone</option>
				</select>
			</td>
		</tr>

		<tr>
			<td>
				Applied Vehicles:
```

```
                                        </td>
                                    </tr>

                        <tr>
                            <td id="tdZoneVehicles">

                            </td>
                        </tr>


                                <tr>
                                        <td>
                            <input type=button
name="btnSaveZone" id="btnSaveZone" value="Save"
onclick="SaveZone();">
                                        </td>
                                    </tr>

                            </table>
                        </td>
        </tr>
    </table>
    </div>

</div>
            </td>
          </tr>
      </table>

</div><div id="divVGMap" style="display:none">
<br><br><br><br>

    <table>
        <tr>
            <td>

                <b> Vehical Group Map</b>

                            <br>

                <b>Under Construnction </b>
            </td>
        </tr>
    </table>
```

```
</div><div id="divDtReport" style="display:none"
width=100%>


    <table border=1 cellspacing=0 cellpadding=0
width=100%>
        <tr>
            <td width=25% valign=top>
                            <table>

                                <tr>
                                    <td>

                            Report On::
                            </td>
                        </tr>
                        <tr>
                            <td>
                                <table>
                                    <tr>

                                        <td><input
type="Radio" name="radRep" id="radRep" value=0
onclick="SetReportOnOPtion(0);">Vehicles </td>
                                        <td
id="tdDetailsVehicals"> </td>
                                    </tr>
                                    <tr>
                                        <td><input
type="Radio" name="radRep" id="radRep" value=1
onclick="SetReportOnOPtion(1);">Drives </td>
                                        <td
id="tdDetailsDrivers"> </td>
                                    </tr>
                                    <tr>
                                        <td><input
type="Radio" name="radRep" id="radRep" value=2
onclick="SetReportOnOPtion(2);">Group</td>
                                        <td
id="tdDetailsGroup"> </td>
                                    </tr>
                                </tr>
                            </table>
                        </td>
                            </tr>
                    <tr>
```

```html
                        <td>Report Of:</td>
                    </tr>

                    <tr>
                        <td>
                            <SELECT id="selRep"
name="selRep">
                                <!--
                                <option
value=1>Distance Report</option>
                                <option
value=2>Parking Statistics</option>
                                <option
value=3>Destination of Vehicle</option>
                                <option
value=4>Average Speed of Vehicle</option>
                                <option
value=5>Distance By Driver</option>
                                <option
value=6>Groupwise Distance</option>
                                -->
                                <option
value=1>Distance Report</option>
                                <option
value=2>Stop Detail & Idle Time Report</option>
                                <option
value=3>Fleet Speed Violation Report</option>
                                <option
value=4>Speed Band Report</option>
                                <option
value=5>Engine Performance Report</option>
                                <option
value=6>Vehicle Stop Detail & Time Graph</option>
                                <option
value=7>Fleet Map Location</option>
                                <option
value=8>Geofence Report</option>

                            </SELECT>
                        </td>
                    </tr>

                        <tr>
                            <td>
                    Report From:
```

```
                                    <input
type="text" id="calendar" name="calendar"  size=10
readonly/>
                                    <button
id="trigger">...</button>
                                    <script
type="text/javascript">//<![CDATA[

Zapatec.Calendar.setup({
                                        firstDay
: 1,
                                        weekNumbers
: false,
                                        showOthers
: true,
                                        electric
: false,
                                        inputField
: "calendar",
                                        button
: "trigger",
                                        ifFormat
: "%Y-%m-%d",
                                        daFormat
: "%Y/%m/%d"
                                    });
                                    //]]></script>

                        </td>
                            </tr>
                            <tr>
                                    <td>
                        Report To:
                            <input
type="text" id="calendar1" name="calendar1"  size=10
readonly/>
                                    <button
id="trigger1">...</button>
                                    <script
type="text/javascript">//<![CDATA[

Zapatec.Calendar.setup({
                                        firstDay
: 1,
```

```
                                        weekNumbers
    : false,
                                        showOthers
    : true,
                                        electric
    : false,
                                        inputField
    : "calendar1",
                                        button
    : "trigger1",
                                        ifFormat
    : "%Y-%m-%d",
                                        daFormat
    : "%Y/%m/%d"
                                    });
                                //]]></script>

                        </td>
                            </tr>
                <tr>
                    <td><b>Select Time</b></td>
                </tr>


                <tr>
                    <td> From:
                        <select id="selRepTime"
name="selRepTime">
                            <option value =-
1>Hour</option>
                            <option value
=1>01:00</option>
                            <option value
=2>02:00</option>
                            <option value
=3>03:00</option>
                            <option value
=4>04:00</option>
                            <option value
=5>05:00</option>
                            <option value
=6>06:00</option>
                            <option value
=7>07:00</option>
                            <option value
=8>08:00</option>
```

```html
                                    <option value
=9>09:00</option>
                                    <option value
=10>10:00</option>
                                    <option value
=11>11:00</option>
                                    <option value
=12>12:00</option>
                                    <option value
=13>13:00</option>
                                    <option value
=14>14:00</option>
                                    <option value
=15>15:00</option>
                                    <option value
=16>16:00</option>
                                    <option value
=17>17:00</option>
                                    <option value
=18>18:00</option>
                                    <option value
=19>19:00</option>
                                    <option value
=20>20:00</option>
                                    <option value
=21>21:00</option>
                                    <option value
=22>22:00</option>
                                    <option value
=23>23:00</option>
                                    <option value
=0>23:59</option>
                             </select>

                       </td>
                  </tr>
                  <tr>
                       <td>    To:
                           <select id="selRepTTime"
name="selRepTTime">
                                   <option value =-
1>Hour</option>
                                   <option value
=1>01:00</option>
```

```
                                                    <option value
=2>02:00</option>
                                                    <option value
=3>03:00</option>
                                                    <option value
=4>04:00</option>
                                                    <option value
=5>05:00</option>
                                                    <option value
=6>06:00</option>
                                                    <option value
=7>07:00</option>
                                                    <option value
=8>08:00</option>
                                                    <option value
=9>09:00</option>
                                                    <option value
=10>10:00</option>
                                                    <option value
=11>11:00</option>
                                                    <option value
=12>12:00</option>
                                                    <option value
=13>13:00</option>
                                                    <option value
=14>14:00</option>
                                                    <option value
=15>15:00</option>
                                                    <option value
=16>16:00</option>
                                                    <option value
=17>17:00</option>
                                                    <option value
=18>18:00</option>
                                                    <option value
=19>19:00</option>
                                                    <option value
=20>20:00</option>
                                                    <option value
=21>21:00</option>
                                                    <option value
=22>22:00</option>
                                                    <option value
=23>23:00</option>
                                                    <option value
=0>23:59</option>
```

```html
                                   </select>


                              </td>
                          </tr>
                          <tr>
                              <td>
                                  <input type="button"
id="btnShowReport" name="btnShowReport" value="Show
Report" onclick="ShowReport();">
                                  </td>
                              </tr>


                          <tr>
                              <td><br><br>
                                  <input type="button"
id="btnReportExp" name="btnReportExp" value="Export"
onclick="ExportReport();">
                                  </td>
                              </tr>


                                  </table>

              </td>
                      <td width=100% valign=top>
                  <div id="repDtloc" width=100%
style="height: 500px; overflow:auto"></div>
                          </td>
              </tr>
          </table>

</div><div id="divSmReport" style="display:none">
<br><br><br><br>
      <table>
          <tr>
              <td>

                  <b> Summary Report</b>

                              <br>

                  <b>Under Construnction </b>
              </td>
          </tr>
```

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```
        </table>

</div><div id="divPrfReport" style="display:none">
<br><br><br><br>
    <table>
        <tr>
            <td>

                <b>Performace Report</b>

                            <br>

                <b>Under Construnction </b>
            </td>
        </tr>
    </table>

</div><div id="divActAdmin" style="display:none">
<br><br><br><br>
    <table>
        <tr>
            <td>

                <b>Account Admin</b>

                            <br>

                <b>Under Construnction </b>
            </td>
        </tr>
    </table>

</div><div id="dvAdminSettings" style="display:none"
align=center>
    <table align=left border=1 cellspacing=0
cellpadding=0 width=100% valign=top>
        <tr>
            <td width=15% align=left valign=top>
                    <table align=left width=100%>
                        <tr bgcolor='336699'>
                            <td><font size=2
color=FFFFFF onclick="ShowAdminInfo(1)">User
Setting</font></td>
                        </tr>
                        <tr bgcolor='336699'>
```

```
                                    <td> <font size=2
color=FFFFFF onclick="ShowAdminInfo(2)">Vehicle
Setting</font></td>
                            </tr>
                            <tr bgcolor='336699'>
                                <td> <font size=2
color=FFFFFF
onclick="ShowAdminInfo(3)">Search</font></td>
                            </tr>
                            <tr bgcolor='336699'>
                                <td><font size=2
color=FFFFFF
onclick="ShowAdminInfo(5)">System</font></td>
                            </tr>
                            <tr bgcolor='336699'>
                                <td><font size=2
color=FFFFFF
onclick="ShowAdminInfo(4)">Statistics</font></td>
                            </tr>
                            <tr bgcolor='336699'>
                                <td> <font size=2
color=FFFFFF
onclick="ShowAdminInfo(6)">Communication</font></td>
                            </tr>
                            <tr bgcolor='336699'>
                                <td> <font size=2
color=FFFFFF
onclick="ShowAdminInfo(7)">Playback</font></td>
                            </tr>
                            <tr bgcolor='336699'>
                                <td><font size=2
color=FFFFFF onclick="ShowAdminInfo(0)">DB
Statistics</font></td>
                            </tr>

                        </table>
                </td>
                <td>
                    <div id="divUsrAdmin"
style="display:none" align=center>
        <table align=center>

                <tr id="dvUsrAdminBusy"
style="display:block">

                        <td colspan=2 align=center>
```

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```html
                                wait plzz...
                        <img src="../images/indicator.gif">
                          </td>
                  </tr>

                  <tr id="dvUsrUpdate"
style="display:none">

                        <td colspan=2 align=center>
                                <font size=3
color=green><b><u>User Information Updated
Successfully</u><b></font>
                                <br><br>
                          </td>
                  </tr>


                  <tr id="dvUsrAdminData"
style="display:none">
                    <td>

                          <table>
                                  <tr>
                                        <td><b>User
Name:</b></td>
                                        <td><input
type="text" name="txtContactUserName"
id="txtContactUserName" value="" readOnly></td>
                                  </tr>

                                  <tr>
                                        <td><b>Contact
Name:</b></td>
                                        <td><input
type="text" name="txtContactName"
id="txtContactName" value="" readOnly></td>
                                  </tr>

                          <tr>
                            <td><b>Surname:</b></td>
                            <td><input type="text"
name="txtSurName" id="txtSurName" value=""
readOnly></td>
                          </tr>
                          <tr>
                            <td><b>Password:</b></td>
```

```html
                        <td><input type="text"
name="txtUserPass" id="txtUserPass" value=""
readOnly></td>
                    </tr>

                        <tr>
                            <td><b>Contact
Email:</b></td>
                                <td><input
type="text" name="txtContactEmail"
id="txtContactEmail" value="" readOnly></td>
                        </tr>

                        <tr>
                            <td><b>Contact
Phone:</b></td>
                                <td><input
type="text" name="txtContactPhone"
id="txtContactPhone" value="" readOnly></td>
                        </tr>

                        <tr>
                            <td><b>Contact
Address:</b></td>
                            <td>
                        <textArea
name="txtContactAddress" id="txtContactAddress"
readOnly rows=3 cols=40>
                        </textArea>
                    </td>
                        </tr>

                <tr>
                    <td><b>Country:</b></td>
                    <td><SELECT id="selCountry"
name="selCountry">
                        <option value=1>United
States</option><option
value=2>Canada</option><option
value=3>Mexico</option><option
value=4>Afghanistan</option><option
value=5>Albania</option><option
value=6>Algeria</option><option
value=7>Andorra</option><option
value=8>Angola</option><option
value=9>Anguilla</option><option
```

value=10>Antarctica</option><option value=11>Antigua and Barbuda</option><option value=12>Argentina</option><option value=13>Armenia</option><option value=14>Aruba</option><option value=15>Ascension Island</option><option value=16>Australia</option><option value=17>Austria</option><option value=18>Azerbaijan</option><option value=19>Bahamas</option><option value=20>Bahrain</option><option value=21>Bangladesh</option><option value=22>Barbados</option><option value=23>Belarus</option><option value=24>Belgium</option><option value=25>Belize</option><option value=26>Benin</option><option value=27>Bermuda</option><option value=28>Bhutan</option><option value=29>Bolivia</option><option value=30>Bophuthatswana</option><option value=31>Bosnia-Herzegovina</option><option value=32>Botswana</option><option value=33>Bouvet Island</option><option value=34>Brazil</option><option value=35>British Indian Ocean</option><option value=36>British Virgin Islands</option><option value=37>Brunei Darussalam</option><option value=38>Bulgaria</option><option value=39>Burkina Faso</option><option value=40>Burundi</option><option value=41>Cambodia</option><option value=42>Cameroon</option><option value=44>Cape Verde Island</option><option value=45>Cayman Islands</option><option value=46>Central Africa</option><option value=47>Chad</option><option value=48>Channel Islands</option><option value=49>Chile</option><option value=50>China, Peoples Republic</option><option value=51>Christmas Island</option><option value=52>Cocos (Keeling) Islands</option><option value=53>Colombia</option><option value=54>Comoros Islands</option><option value=55>Congo</option><option value=56>Cook Islands</option><option value=57>Costa Rica</option><option

value=58>Croatia</option><option
value=59>Cuba</option><option
value=60>Cyprus</option><option value=61>Czech
Republic</option><option
value=62>Denmark</option><option
value=63>Djibouti</option><option
value=64>Dominica</option><option value=65>Dominican
Republic</option><option value=66>Easter
Island</option><option
value=67>Ecuador</option><option
value=68>Egypt</option><option value=69>El
Salvador</option><option
value=70>England</option><option value=71>Equatorial
Guinea</option><option
value=72>Estonia</option><option
value=73>Ethiopia</option><option value=74>Falkland
Islands</option><option value=75>Faeroe
Islands</option><option
value=76>Fiji</option><option
value=77>Finland</option><option
value=78>France</option><option value=79>French
Guyana</option><option value=80>French
Polynesia</option><option
value=81>Gabon</option><option
value=82>Gambia</option><option value=83>Georgia
Republic</option><option
value=84>Germany</option><option
value=85>Gibraltar</option><option
value=86>Greece</option><option
value=87>Greenland</option><option
value=88>Grenada</option><option value=89>Guadeloupe
(French)</option><option
value=90>Guatemala</option><option value=91>Guernsey
Island</option><option value=92>Guinea
Bissau</option><option
value=93>Guinea</option><option
value=94>Guyana</option><option
value=95>Haiti</option><option value=96>Heard and
McDonald Isls</option><option
value=97>Honduras</option><option value=98>Hong
Kong</option><option
value=99>Hungary</option><option
value=100>Iceland</option><option
value=101>India</option><option
value=102>Iran</option><option
value=103>Iraq</option><option

value=104>Ireland</option><option value=105>Isle of Man</option><option value=106>Israel</option><option value=107>Italy</option><option value=108>Ivory Coast</option><option value=109>Jamaica</option><option value=110>Japan</option><option value=111>Jersey Island</option><option value=112>Jordan</option><option value=113>Kazakhstan</option><option value=114>Kenya</option><option value=115>Kiribati</option><option value=116>Kuwait</option><option value=117>Laos</option><option value=118>Latvia</option><option value=119>Lebanon</option><option value=120>Lesotho</option><option value=121>Liberia</option><option value=122>Libya</option><option value=123>Liechtenstein</option><option value=124>Lithuania</option><option value=125>Luxembourg</option><option value=126>Macao</option><option value=127>Macedonia</option><option value=128>Madagascar</option><option value=129>Malawi</option><option value=130>Malaysia</option><option value=131>Maldives</option><option value=132>Mali</option><option value=133>Malta</option><option value=134>Martinique (French)</option><option value=135>Mauritania</option><option value=136>Mauritius</option><option value=137>Mayotte</option><option value=139>Micronesia</option><option value=140>Moldavia</option><option value=141>Monaco</option><option value=142>Mongolia</option><option value=143>Montenegro</option><option value=144>Montserrat</option><option value=145>Morocco</option><option value=146>Mozambique</option><option value=147>Myanmar</option><option value=148>Namibia</option><option value=149>Nauru</option><option value=150>Nepal</option><option value=151>Netherlands Antilles</option><option

value=152>Netherlands</option><option value=153>New Caledonia (French)</option><option value=154>New Zealand</option><option value=155>Nicaragua</option><option value=156>Niger</option><option value=157>Niue</option><option value=158>Norfolk Island</option><option value=159>North Korea</option><option value=160>Northern Ireland</option><option value=161>Norway</option><option value=162>Oman</option><option value=163>Pakistan</option><option value=164>Panama</option><option value=165>Papua New Guinea</option><option value=166>Paraguay</option><option value=167>Peru</option><option value=168>Philippines</option><option value=169>Pitcairn Island</option><option value=170>Poland</option><option value=171>Polynesia (French)</option><option value=172>Portugal</option><option value=173>Qatar</option><option value=174>Reunion Island</option><option value=175>Romania</option><option value=176>Russia</option><option value=177>Rwanda</option><option value=178>S.Georgia Sandwich Isls</option><option value=179>Sao Tome, Principe</option><option value=180>San Marino</option><option value=181>Saudi Arabia</option><option value=182>Scotland</option><option value=183>Senegal</option><option value=184>Serbia</option><option value=185>Seychelles</option><option value=186>Shetland</option><option value=187>Sierra Leone</option><option value=188>Singapore</option><option value=189>Slovak Republic</option><option value=190>Slovenia</option><option value=191>Solomon Islands</option><option value=192>Somalia</option><option value=193>South Africa</option><option value=194>South Korea</option><option value=195>Spain</option><option value=196>Sri Lanka</option><option value=197>St. Helena</option><option value=198>St.

Lucia</option><option value=199>St. Pierre
Miquelon</option><option value=200>St.
Martins</option><option value=201>St. Kitts Nevis
Anguilla</option><option value=202>St. Vincent
Grenadines</option><option
value=203>Sudan</option><option
value=204>Suriname</option><option
value=205>Svalbard Jan Mayen</option><option
value=206>Swaziland</option><option
value=207>Sweden</option><option
value=208>Switzerland</option><option
value=209>Syria</option><option
value=210>Tajikistan</option><option
value=211>Taiwan</option><option
value=212>Tahiti</option><option
value=213>Tanzania</option><option
value=214>Thailand</option><option
value=215>Togo</option><option
value=216>Tokelau</option><option
value=217>Tonga</option><option value=218>Trinidad
and Tobago</option><option
value=219>Tunisia</option><option
value=220>Turkmenistan</option><option
value=221>Turks and Caicos Isls</option><option
value=222>Tuvalu</option><option
value=223>Uganda</option><option
value=224>Ukraine</option><option value=225>United
Arab Emirates</option><option
value=226>Uruguay</option><option
value=227>Uzbekistan</option><option
value=228>Vanuatu</option><option value=229>Vatican
City State</option><option
value=230>Venezuela</option><option
value=231>Vietnam</option><option value=232>Virgin
Islands (Brit)</option><option
value=233>Wales</option><option value=234>Wallis
Futuna Islands</option><option value=235>Western
Sahara</option><option value=236>Western
Samoa</option><option
value=237>Yemen</option><option
value=238>Yugoslavia</option><option
value=239>Zaire</option><option
value=240>Zambia</option><option
value=241>Zimbabwe</option>
                                </SELECT>
                         </td>

```html
			</tr>

			<tr>
				<td><b>Level:</b></td>
				<td><input type="text" name="txtUserLevel" id="txtUserLevel" value="" readOnly></td>
			</tr>

			<tr>
				<td><b>User Type:</b></td>
				<td><input type="text" name="txtUserType" id="txtUserType" value="" readOnly></td>
			</tr>

			<tr>

<td><b>Active/Inactive:</b></td>
				<td>
					<select name="selUserAct" id="selUserAct">
						<option value="0">Inactive</option>
						<option value="1">Active</option>
					</select>
				</td>
			</tr>

				<tr>
					<td>
						<input type="button" name="btnEdit" id="btnEdit" value="Edit" style="display:block" onclick="DoEdit();">
						<input type="button" name="btnBack" id="btnBack" value="Back" style="display:none" onclick="DoBack();">
					</td>
					<td><input type="button" name="btnSave" id="btnSave" value="Save" style="display:block" onclick="DoSave();"></td>
				</tr>
```

```
                                    </table>

            </td>
        </tr>
    </table>

    <div id="dvAllUser" style="display:none">
     
    </div>

</div>
<div id="divAdminVehicle" style="display:none"
align=center>

    <table align=center>

        <tr id="dvVechilesAdminBusy"
style="display:block">

            <td colspan=2 align=center>
                wait plzz...
                <img src="../images/indicator.gif">
            </td>
        </tr>

        <tr id="dvVechilesUpdate"
style="display:none">

            <td colspan=2 align=center>
                <font size=3
color=green><b><u>Vehicle Information Updated
Successfully</u><b></font>
                <br><br>
            </td>
        </tr>


        <tr id="dvVechilesAdminData"
style="display:none">
            <td>
                <table>
<!--                    <tr>
                        <td><b>Vehicle Id:</b></td>
```

```
                                    <td><input type="text"
name="txtVehicleId" id="txtVehicleId" value=""
readOnly ></td>
                        </tr>
-->

                        <tr>
                            <td><b>Vehicle
Name:</b></td>
                            <td><input type="text"
name="txtAdminVehicleName" id="txtAdminVehicleName"
value="" ></td>
                        </tr>
                         <tr>
                            <td><b>Contact
User:</b></td>
                            <td id="tdSelContactUser">

                            </td>
                        </tr>

                        <tr>
                            <td><b>Driver Name:</b></td>
                            <td><input type="text"
name="txtAdDriverName" id="txtAdDriverName" value=""
></td>
                        </tr>

                        <!--
                        <tr>
                            <td><b>Vehicle Short
Name:</b></td>
                            <td><input type="text"
name="txtVehicleShortName" id="txtVehicleShortName"
value="" ></td>
                        </tr>
-->
                        <tr>
                            <td><b>IMEI Number:</b></td>
                            <td><input type="text"
name="txtAdImeiNo" id="txtAdImeiNo" value="" ></td>
                        </tr>

                        <tr>
                            <td><b>IMSI Number:</b></td>
```

```html
                            <td><input type="text"
name="txtAdImsiNo" id="txtAdImsiNo" value="" ></td>
                        </tr>

                        <tr>
                            <td><b>Description:</b></td>
                            <td>
                                <textarea
id="taAdDescription" name="taAdDescription" rows=5
cols=45></textarea>
                            </td>
                        </tr>

                        <tr>
                            <td><b>Date of
Activation:</b></td>
                                <td><input type="text"
name="dtActivation" id="dtActivation" value=""
></td>
                        </tr>
                        <tr>
                            <td><b>Date of
Expiration:</b></td>
                                <td><input type="text"
name="dtExpire" id="dtExpire" value="" ></td>
                        </tr>

                        <tr>
                            <td><b>Vehicle
Color:</b></td>
                                <td>
                                    <SELECT id="selAdVColor"
name="selAdVColor">
                                        <option
value="white">White</option>
                                        <option
value="black">Black</option>
                                        <option
value="yellow">Yellow</option>
                                        <option
value="red">Red</option>
                                        <option
value="blue">Blue</option>
                                        <option
value="silver">Silver</option>
```

```
                                    <option
value="golden">Golden</option>
                                    <option
value="teal">Teal</option>
                                    <option
value="green">Green</option>
                                </SELECT>
                            </td>
                        </tr>

                        <tr>
                            <td><b>Vehicle
type:</b></td>
                            <td>
                                <select
id="selAdVehicleType" name="selAdVehicleType">
                                    <option
value="1">Car</option>
                                    <option
value="2">Bus</option>
                                    <option
value="3">Micro Bus</option>
                                    <option
value="4">Others</option>
                                </select>
                            </td>
                        </tr>

                        <tr>
                            <td><b>Vehicle
Activate:</b></td>
                            <td>
                                <select id="selAdActive"
name="selAdActive">
                                    <option
value="1">Active</option>
                                    <option
value="0">Inactive</option>
                                </select>
                            </td>
                        </tr>

                        <tr>
                            <td>
```

```
                                <input type="button"
name="btnVEdit" id="btnVEdit" value="Edit"
style="display:block" onclick="DoVehicleEdit();">
                                <input type="button"
name="btnVBack" id="btnVBack" value="Back"
style="display:none" onclick="DoBack();">
                            </td>
                            <td><input type="button"
name="btnSave" id="btnSave" value="Save"
style="display:block"
onclick="DoVehicleSave();"></td>
                      </tr>

                  </table>

            </td>
        </tr>
    </table>

    <div id="dvAllVechicles" style="display:none">
     
    </div>


</div><div id="dvAdminDB" style="display:none"
align=center>

      UNDER CONSTRUCTION
</div>    <div id="dvAdminStat" style="display:none"
align=center>

      UNDER CONSTRUCTION
</div>    <div id="dvAdminSystem"
style="display:none" align=center>
    <fieldset valign=top>
        <legend><b><i>Type Of
Customer</i></b></legend>
    <table valign=top align=left>
        <tr>
            <td id="tdSelCustType" >
                <select id="selCustomerType"
name="selCustomerType">

                </select>

            </td>
```

```html
        <td>
            <input type="button"
name="btnCustEdit" id="btnCustEdit" value="Edit"
onclick="EditCustType()">
            <input type="button"
name="btnCustDel" id="btnCustDel" value="Delete"
onclick="DeleteCustType()">
        </td>
        <td align=left style="display:none"
id="addEditCust">
            <b>Customer Type:</b><input
type="text" name="txtCustType" id="txtCustType"
value="">
            <input type="button"
name="btnCustSave" id="btnCustSave" value="Save"
onclick="SaveCustType()">
        </td>
    </tr>

</table>

</fieldset>
<br>

<fieldset valign=top>

<legend><b><i>Characteristics</i></b></legend>
    <table valign=top  border=0 align=left>
        <tr>
            <td><b>Select Customer Type:</b></td>
            <td id="SelCharCustType">  
            </td>
        </tr>

        <tr>
            <td><b>Maximum File Size To
Export:</b></td>
            <td align=left> <input type="text"
name="txtMaxFileExp" id="txtMaxFileExp" value="">
</td>
        </tr>

        <tr>
            <td><b>Can Export
Statistics?:</b></td>
```

```html
		<td align=left> <input type="Checkbox"
name="ChkExpStat" id="ChkExpStat" value=""> </td>
		</tr>


		<tr>
			<td><b>Can See/Search the History of
Vehicles?:</b></td>
			<td align=left> <input type="Checkbox"
name="ChkSrcHist" id="ChkSrcHist" value=""> </td>
		</tr>
		<tr>
			<td><b>How Many Days To Keep
Data?:</b></td>
			<td align=left> <input type="text"
name="txtDaysKeepData" id="txtDaysKeepData"
value=""> </td>
		</tr>
		 <tr>
			<td><b>Time of Renewal:</b></td>
			<td align=left> <input type="text"
name="txtTmRen" id="txtTmRen" value=""> </td>
		</tr>
		<tr>
			<td><b>Time of Preserved
History:</b></td>
			<td align=left> <input type="text"
name="txtTmHistory" id="txtTmHistory" value="">
</td>
		</tr>

		<tr>


			<td colspan=2 align=center> <input
type="button" name="btnCustCharSave"
id="btnCustCharSave" value="Save"
onclick="SaveCustChar()"> </td>
		</tr>


	</table>

  </fieldset>
</div>    <div id="dvAdminComm" style="display:none"
align=center>
	UNDER CONSTRUCTION
```

```
</div>     <div id="dvAdminPlay" style="display:none"
align=center>
    <Table>
        <Tr>
            <Td>
                Automatic Email Will Be Send Before
Following Days of Subscription Expire<br><br>
            </Td>
        </Tr>
                <Tr>
                    <Td>
                        <div id="AutoEmailDays">
                        </div>
                    </Td>
                </Tr>

                <Tr>
                    <Td><Br><Br>
                        <input type="Button"
name="btnAutoPlay" id="btnAutoPlay" value="Add One"
onclick="AddOnePlay();">
                    </Td>
                </Tr>


                <Tr>
            <td align=left style="display:none"
id="tdAddPlay">
                <input type="text"
name="txtPlayDays" id="txtPlayDays"
value="">   <b>Days:</b>
                <input type="button"
name="btnPlaySave" id="btnPlaySave" value="Save"
onclick="SavePlayDays()">
            </td>
            </tr>

    </Table>
</div>     <div id="divSearchAdmin"
style="display:none" align=center valign=top>
    <fieldset valign=top>
        <legend><b><i>Serach
Criteria</i></b></legend>
    <table valign=top width=100%>
        <tr>
            <td width=120px><b>Customer Name
:</b></td>
```

```html
            <td align=left><input type="text"
name="txtSrcCustName" id="txtSrcCustName"
value=""></td>
            <td width=120px><b>Customer Telephone #
:</b></td>
            <td align=left><input type="text"
name="txtSrcCustTel" id="txtSrcCustTel"
value=""></td>
        </tr>
        <tr>
            <td><b>IMEI #:</b></td>
            <td align=left><input type="text"
name="txtSrcImei" id="txtSrcImei" value=""></td>
            <td><b>Vehicle Id :</b></td>
            <td align=left><input type="text"
name="txtSrcVclId" id="txtSrcVclId" value=""></td>
        </tr>

        <tr>
         <td colspan=4 align=center> <input
type="button" name="btnSrcSearch" id="btnSrcSearch"
value="Search" onclick="SearchVehicle();"></td>
        </tr>

    </table>

  </fieldset>
   <fieldset valign=top>
        <legend><b><i>Serach
Result</i></b></legend>
      <table valign=top width=100%>
        <tr>
            <td>
              <div id="dvSearchResult"
name="dvSearchResult">
                     
              </div>

            </td>
        </tr>

      </table>

  </fieldset>
```

```html
</div>
    </td>

        </tr>
    </table>
</div>

<hr />
<div id="footer">
      <center><p class="legal">Copyright (c) 2009
dynamicmalloc.com. All rights reserved.</p></center>
</div>
</body>
</html>
```

LIST OF FIGURES

LIST OF REFERENCES

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