



Information Highway.

Digital key-controlled Vehicle
Access system



ALTANAI BISHT- VM 3178

BTECH INFORMATION TECHNOLOGY < FINAL YEAR >

VEL TECH MULTITECH DR RR DR SR ENGG. COLLEGE

affiliated : ANNA UNIVERSITY



ABSTRACT



To harness computer and communication technologies to support vehicular infrastructure control , driver – vehicle authentication and significantly tracking the vehicle movement.

It connects the connect the driver's cell, the vehicle based GSM/Bluetooth system and the administrator in client server network.

OBJECTIVE



To replace the physical vehicular keys by mobile phone generated session keys. Also enabling the effective tracking of vehicle movement via GSM based BTS(base transceiver station monitoring) and transmitting critical data through net to vehicle via server administrator .

INTRODUCTION



The following are steps to establish authentication between the driver and the vehicle:

1. Driver requests a session key from the server
2. Server provides it with a session key, the same is stored into the vehicle account.
3. As the driver tries to establish the communication with vehicle, both the session keys are matched ,
 - > if true then driver obtains access to start and operate the vehicle.
 - > if false then driver is restricted the permission to operate the vehicle.
4. The vehicle is tracked by BTS reception (on vehicle GSM).

EXISTING SYSTEM



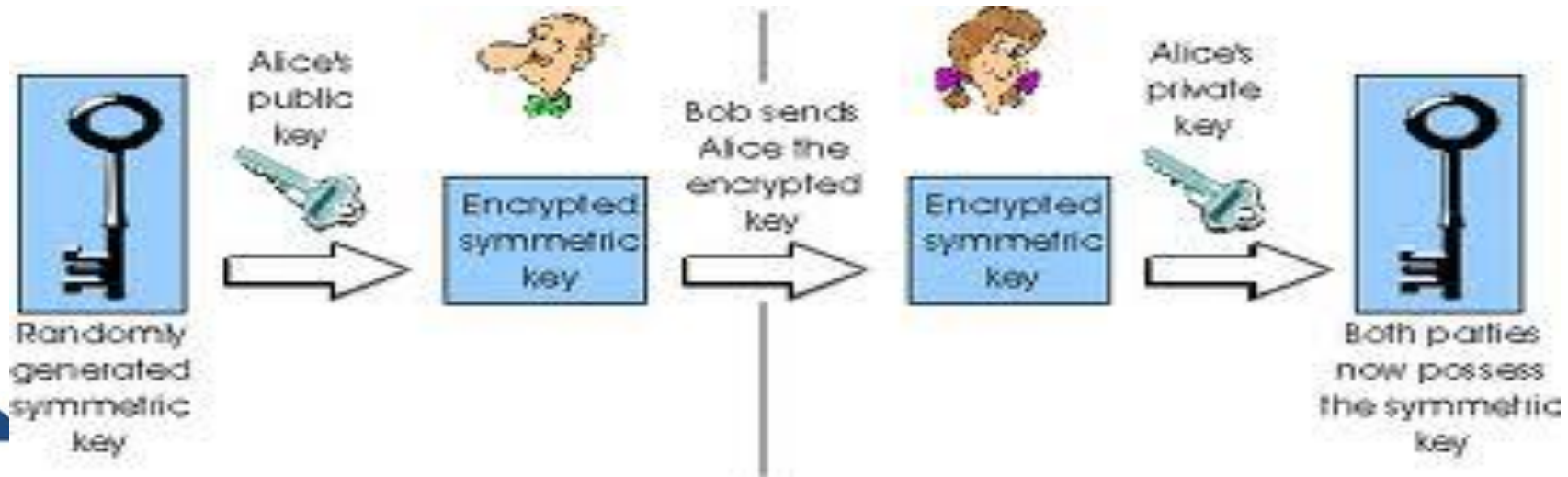
Driver uses a physical metallic key to initiate the mechanism of vehicle

Limitation of existing system :

- 1.Driver might lose the key.**
- 2.Key might fall into wrong hands.**
- 3.Difficult to replace a key.**
- 4.Number of duplicate keys can be produced.**

PROPOSED SYSTEM

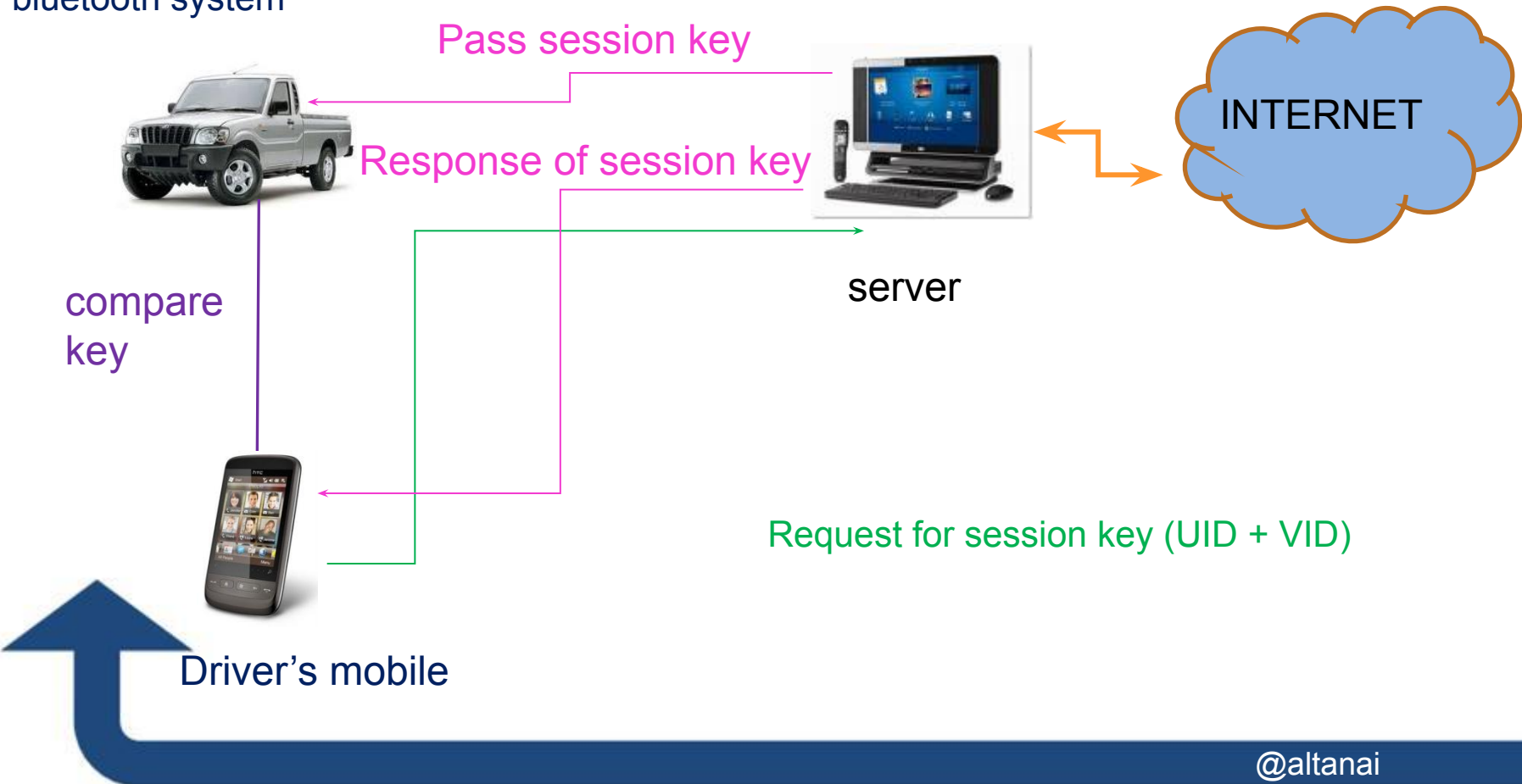
Replacing the physical key ,by **session key** mechanism between the driver's mobile and vehicle based device, connected through the server.



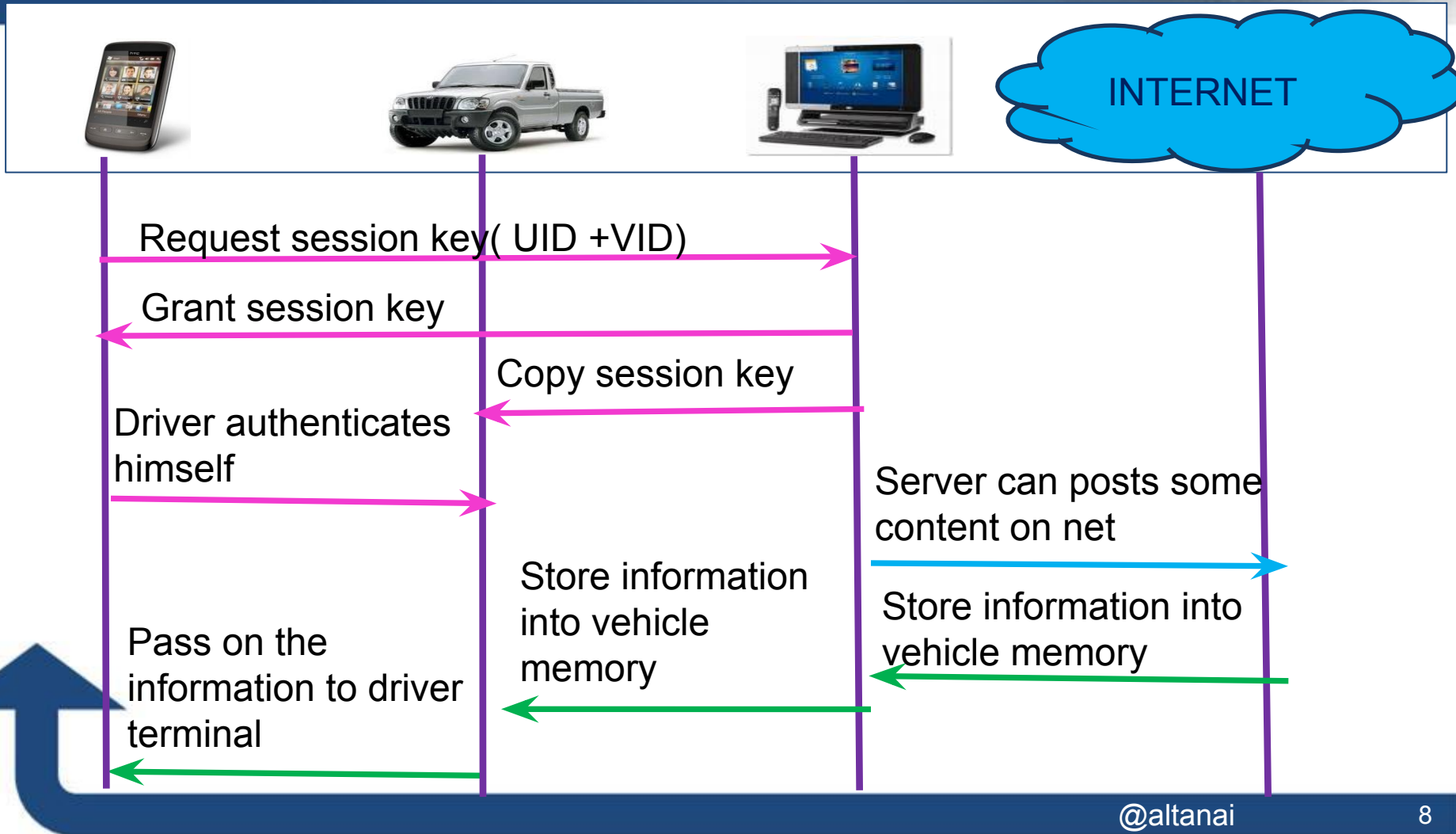
ARCHITECTURE



Vehicle –fitted with GSM and bluetooth system

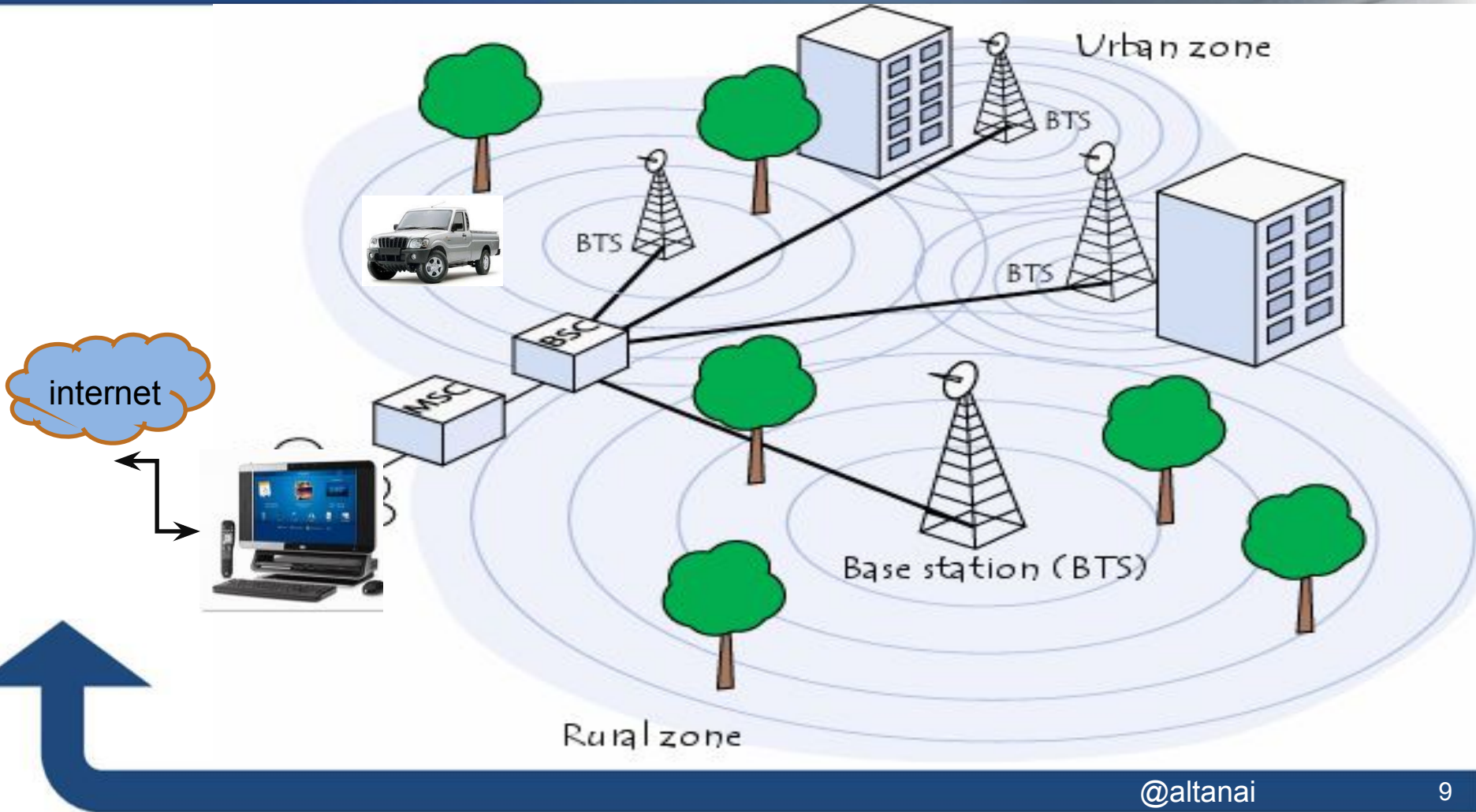


Call Flow Events and Actions

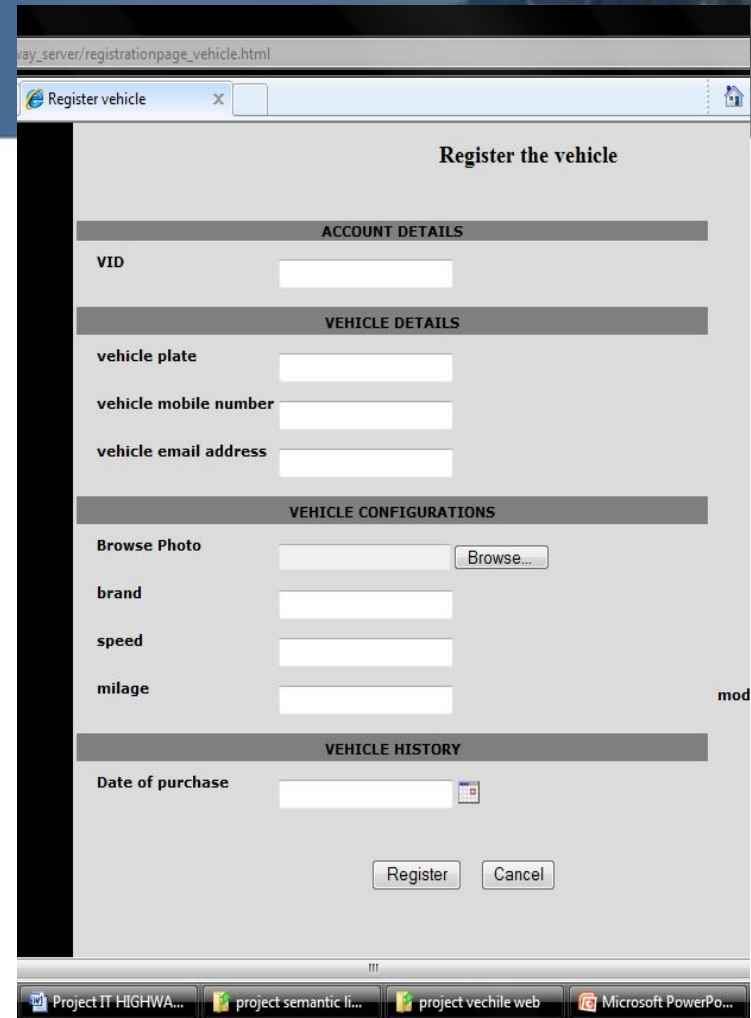
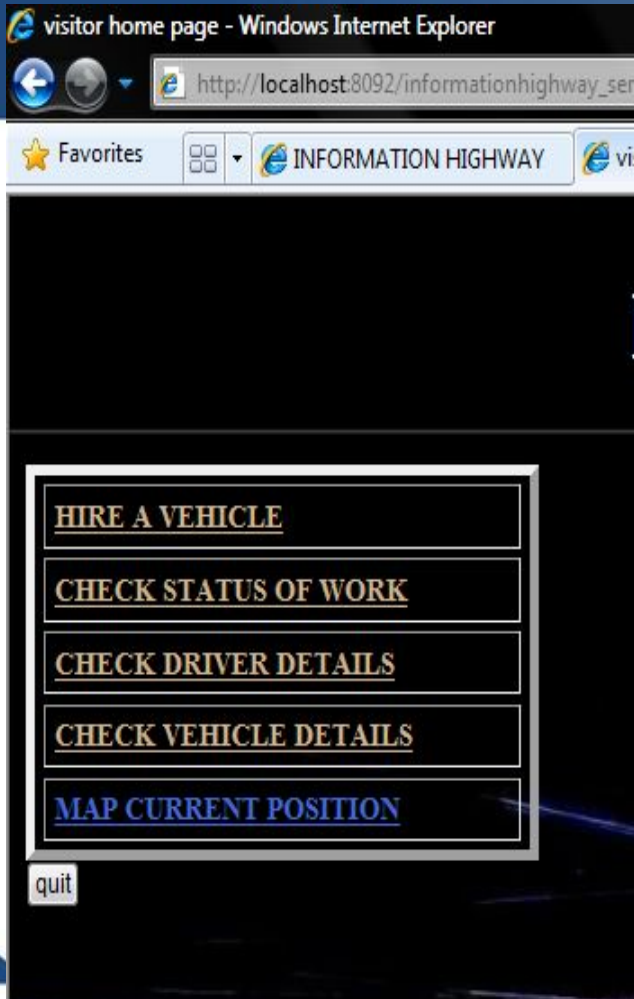


Communication

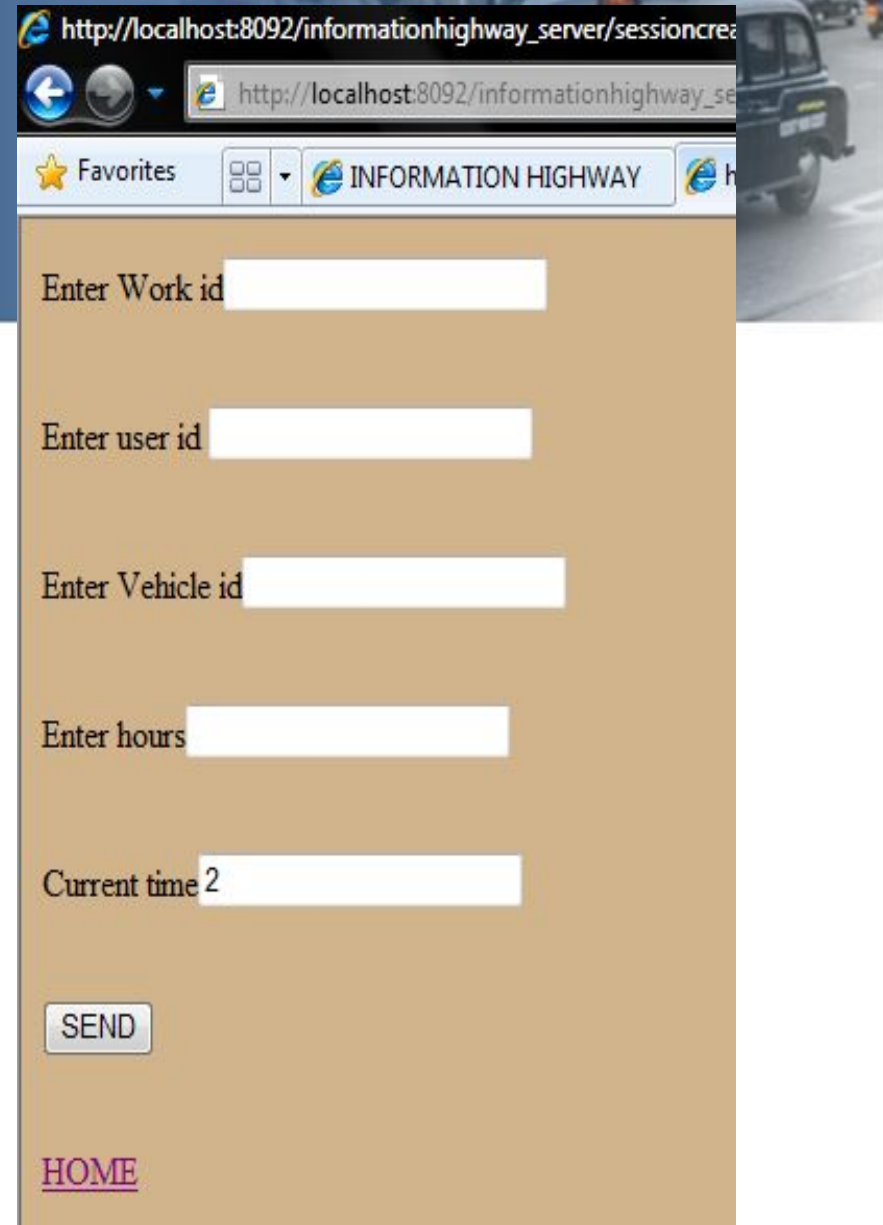
- between Vehicle and Remote Server over GSM / GPRS
- between Vehicle and Driver over Bluetooth



Web Screenshots - Registering Drivers and Vehicle



Web Screenshots - Requesting access to a Vehicle



http://localhost:8092/informationhighway_server/sessioncrea

http://localhost:8092/informationhighway_se

★ Favorites INFORMATION HIGHWAY

Enter Work id

Enter user id

Enter Vehicle id

Enter hours

Current time 2

SEND

[HOME](#)

Location tracking of Vehicle under active session



The screenshot shows a web browser window with the address bar displaying `http://localhost:8092/informationhighway_server/googlemap_tracking.html`. The browser's address bar also shows a search engine icon and several tabs. The main content area features a large, stylized image with the word "INFORMATION" in white, bold, capital letters. Below this image is a Google Map of the Ohio State University campus. The map shows various landmarks including Chadwick Lake, Schottensstein Center, North Campus, Ohio Stadium, The Oval, and South Campus. A red location marker is visible on the map, indicating the current location of the vehicle being tracked. The map is overlaid on a background image of a city at night with lights reflecting on water.



Mobile Screenshots

Driver login and request access to vehicle



Mobile Screenshots

Unlocking the vehicle with Digital Key



Vehicle console Screenshots

Check Driver Keys



Session Management between multiple user digital keys in vehicle using threads



spring framework
session management



session id
44



session id
45



session id
46



session id
47



session id
48



REQUIREMENTS

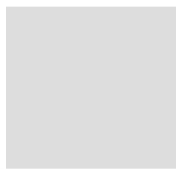
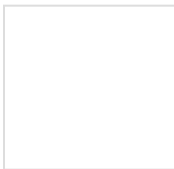


HARDWARE:

1. Vehicle fitted with GSM and Bluetooth.
2. Mobile phone or PDA for each driver.
3. Administrator system as server.

SOFTWARE:

1. Java ME for cell based application
2. JSP/servlets for web pages
3. JDBC for connecting with backend
4. Simulation tools –NS2



REFERENCES



- [1] Cascading Style Sheet, <http://www.w3.org/Style/CSS>, 2005.
- [2] Deitel-Internet and world wide web how to program
- [3] Pen Cheng, Shuang Liu- Intelligent Vehicle Monitoring System Based on GPS, GSM and GIS- 2010 WASE International Conference on Information Engineering
- [4] Robin Chase-The Grid, Our Cars and the Net: One Idea to Link Them All
- [5] Sensay system-Next Generation Wireless Vehicle Detection
- [6] Vehicular computing – Wikipedia, the free encyclopaedia.
- [7] Wolfgang Bott -MOST150: Concept of multimedia networking in vehicles.
- [8] B. G. Nagaraja, R. Rayappa, M. Mahesh, C. M. Patil and T. C. Manjunath, "Design & Development of a GSM Based Vehicle Theft Control System," 2009 International Conference on Advanced Computer Control, Singapore, 2009, pp. 148-152, doi: 10.1109/ICACC.2009.154.
- [9] Yougui Liu and Baoxing Bai, "Research on GPRS vehicle location network service system," 2010 International Conference on Computer, Mechatronics, Control and Electronic Engineering, Changchun, 2010, pp. 401-404, doi: 10.1109/CMCE.2010.5610118.
- [10] L. Robert, N. Pissinou and S. Makki, "Third generation wireless network: the integration of GSM and Mobile IP," 2000 IEEE Wireless Communications and Networking Conference. Conference Record (Cat. No.00TH8540), Chicago, IL, 2000, pp. 1291-1296 vol.3, doi: 10.1109/WCNC.2000.904818.

THANK YOU..



- > **QUERIES**
- > **SUGGESTIONS**
- > **FEEDBACKS**

