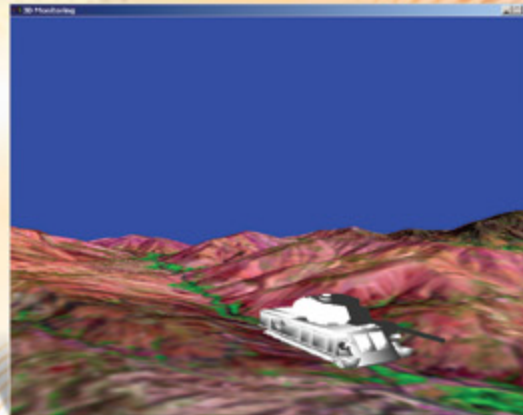
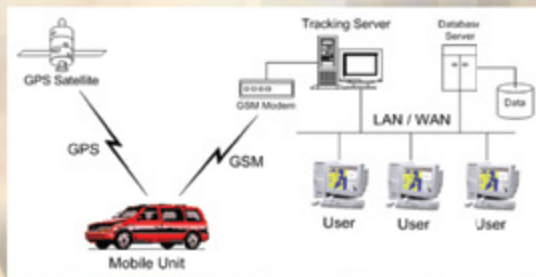


# Automatic Vehicle Location in 3D Space (AVL3D)



## Automatic Vehicle Location in 3D Space (AVL3D)

Monitoring and Control systems have been one of the main tools of management. Optimizing using of resources has direct effect on reducing System cost and increasing whole system efficiency. There are some systems which are using mobile resources such as vehicles, train, airplane and etc. knowing the last position of these vehicles in real-time with respect to operational environment such as terrain features are very important. AVL3D system was designed and created for showing and managing spatial and environmental attributes of mobile units in 3D space.

### System Architecture:

- **Mobile Unit**  
Each Mobile unit has a GPS to get its geographic position and a Transmitter unit to send information to control center.
- **Communication link**  
Information of each mobile unit should be send to control center via a communication link. Selection of proper link is depended to the distribution of movement area and requested response time of system.  
For example if area is large as one or some country we use GSM link and if system will be used in military environment we can use wireless link in UHF/VHF frequency.

- **Control Center**  
All information of mobile unit will gather, control and show in control center. AVL3D software will be install in control center to show in online or offline mode the mobile unit position on the Map or 3d model of terrain.
- **Applications:**
  - **Monitoring of emergency units**  
Emergency center needs to know exact position of emergency vehicles to send the closest unit to accident position from the best path.
  - **Monitoring of Police patrol**  
Police center is a good candidate for installing AVL3D system. They can conduct the patrols during their missions.
  - **Monitoring of Transit Vehicles**  
Transporting company has very interest in controlling and monitoring their vehicles. Controlling the speed and the movement path of vehicles is possible with AVL3D system.
  - **Monitoring Military unit in the Maneuvers or real combats**  
May be the best suitable position of using AVL3D software is on maneuvers or real combat to monitor the movement of military unit.  
Showing the position of mobile units on 3D space has very important effect in making better decision in the real combat.

