Tracking Industrial Waste

Application: Transportation
Location: Taiwan

Project Introduction:

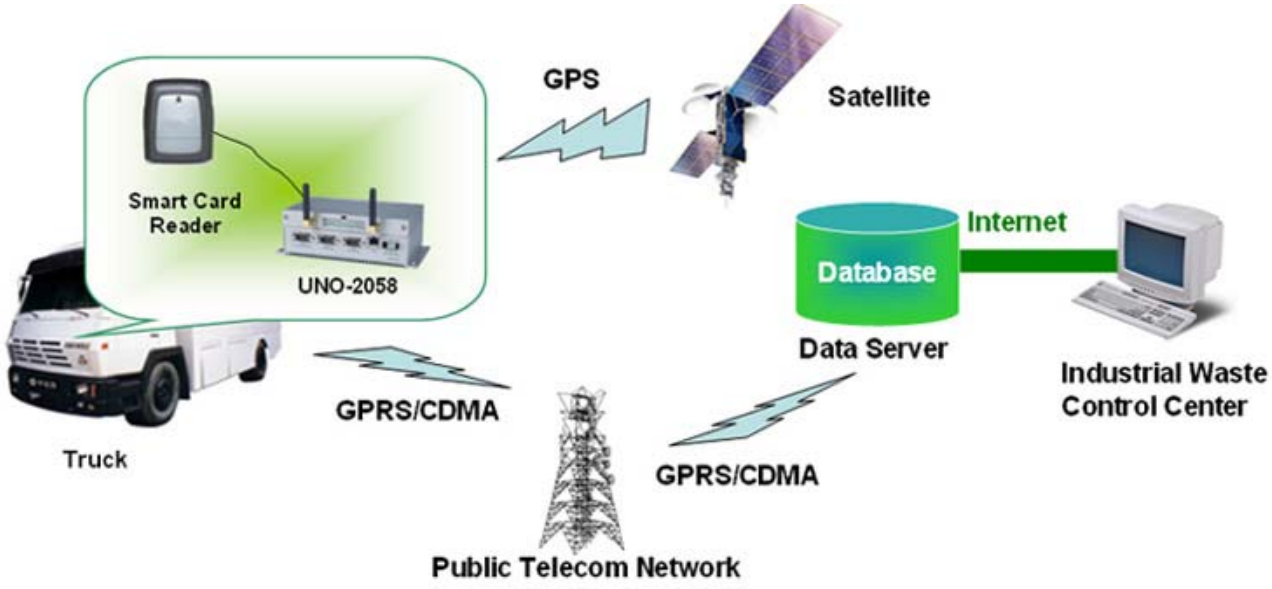
Illegal dumping of industrial waste is a serious problem in many developing countries. But Taiwan's EPA (Environmental Protection Administration) has taken action with a new waste tracking system. EPA has equipped all waste transport trucks with mobile computers that manage real-time shipment data and exact positioning by GPS. The key component? Advantech's UNO-2058.

System Requirements:

In order to more effectively manage industrial waste in Taiwan, the EPA has established an industrial waste control center. This center is configured with control systems to monitor industrial waste clean-up operations and removal of waste from factories. To keep track of industrial waste trucks, the best solution was to use a satellite positioning system based on GPS (Geographical Positioning System). To communicate with the trucks, a solution based on GPRS has replaced the previous system that was based on postal delivery of documents. This prevents illegal disposals, and provides a real-time view of any problems in the waste treatment cycle. Also included is an online reporting system that acts as a guideline for further development of waste treatment policies.

Project Implementation:

UNO-2058 : GX1-300 Universal Network Controller with GPS/GPRS Communication



System Description:

Each truck is installed with one UNO-2058 as a car PC and a smart card reader for data storage. Each shipment comes with a smart card that is installed in the truck's smart card reader before departure.

The car PC will constantlycheck its current position by GPS, and UNO-2058 will send the current position to a data server through GPRS/CDMA. The staff at the industrial waste control center can retrieve real-time information of each vehicle through the Internet. The smart card identifies the truck and its load. In the case of an accident, the response is fast and efficient.

Conclusions:

With a compact design and fanless mechanism, UNO-2058 fits into small compartments of vehicles and withstands vibrations, shocks and a wide temperature range. The built-in GPS/GPRS interface enables real-time monitoring and control of the trucks, for improved safety and accident prevention. All data is saved on a central data server, eliminating paper work and shortening the work process.

Power management is another important feature of UNO-2058. It helps to safely shutdown the operating system to reduce chances of a system crash, and reduces maintenance costs.