

Operational Description

The FuelSafe system authorizes fueling transactions after reading a vehicle's ID, transmitting the ID data to the pump, communicating through a SecurPC to Securant's system and receiving authorization for the initiation of a fueling transaction.

More specifically, the system operates as follows:

1. A client vehicle arrives at a fuel station.
2. The vehicle driver removes the SecurNozzle from its place and inserts it into the vehicle's fuel tank neck.
3. The Accelerometer "wakes up" the SecurNozzle and initiates communication with the SecurNozzle – Secur-e-Pumpnetwork.
4. Utilizing the RF-ID Reader and Zigbee module, the SecurNozzle reads the vehicle's unique ID number and transmits the vehicle's ID to the network for fueling authorization.
5. Each Secur-e-Pump acts as a local coordinator for several nozzles.
6. The Secur-e-Pump unit senses the environment while searching for Nozzles requesting beacons. When a valid request is located, the Secur-e-Pump acknowledges the SecurNozzle with a beacon and a data exchange initiates.
7. The RF-ID Reader communicates with the RF-ID tag Transponder, reads its unique ID and transfers the data to the Secur-e-Pump controller. The transponder is a device attached to the vehicle's fuel tank that contains data to uniquely identify the vehicle. The vehicle data is periodically read by the proximity reader.