APPARATUS AND METHOD
Employing Autonomous Vehicles to Reduce Risk

BACKGROUND
There are real world situations where responsibility requirements put individuals at risk. The following examples such as military force protection, road checks, or pulling over vehicles with drivers can demonstrate the advantages of autonomous vehicle platforms over human interaction. Consider a situation where a security guard or law enforcement officer (LEO) conducting force protection within an area of responsibility. A LEO approaches a stopped vehicle at the road check; the driver turns out to be a wanted felon using someone else’s vehicle (e.g., a loaned vehicle from associate) and has a weapon. This situation could rapidly turn tragic for a lone LEO; however, the danger can be significantly reduced or completely mitigated using an autonomous vehicle.

Traditional methods rely on sending human law enforcement operators to do the assessment of the environment. More recent explorations of using remote controlled vehicles have been explored for traffic monitoring, site surveillance, and search as rescue. These methods operate in a benign environment...
The present invention combines sensor and communications technologies on an autonomous vehicle platform controlled by a user in a novel way for suspicious object interaction and integrates them in a unique system including, but not limited to, law enforcement activities to reduce risk.

INVENTION SUMMARY

An object of the present invention is to provide an apparatus and method that employs an autonomous air vehicle to reduce risk in high risk interactions with individuals. It is a further object of the present invention to provide a mobile apparatus to transport and deploy an autonomous air vehicle. Further the present invention provides an apparatus to facilitate bidirectional communications between a deployed autonomous air vehicle, an operator’s vehicle, and remoted databases. It is yet still a further object of the present invention to provide a method for using an autonomous air vehicle to observe and interact with a suspect in high risk situations.

Briefly stated, the present invention achieves these and other objects through employing autonomous air vehicles to perform high risk observation, interaction, and interrogation with individuals. Invention comprises an autonomously controlled air vehicle with mounting and transporting means being attachable to automobiles and other first responder vehicle types. Mounting and transporting means serves also as a base station for commanding autonomous air vehicle and relaying communications to and from autonomous air vehicle to and from remote data base sources. An autonomously controlled air vehicle is equipped with a variety of sensors which aid in observation and detection of suspects, their vehicles and possessions therein, and any documentation produced during the interrogation.

According to an embodiment of the invention, an apparatus for employing autonomous vehicles to reduce risk, comprises an autonomously controlled air vehicle and a base station. The autonomously controlled air vehicle comprises an airborne communications module, an airborne processing unit, and a sensor module. The base station comprises a communications unit, a processing unit, a plurality of beacons, a plurality of object tracking means, a landing pad, a data storage unit, and a plurality of mounting means.

For a better understanding of the invention, please review the entire patent for accompanying drawings, claims and detailed description.