

Claims**What is claimed is:**

1. A vehicle control system comprising:
5 a network;
at least one highway vehicle;
at least one first set of two highway points located along a path of the vehicle;
at least one first RFID tag located at each of the at least one first set of two highway
points and configured to store dynamic and static characteristics of the at least one highway
10 vehicle as it passes the at least one first set of two highway points;
at least one second set of two highway points located along a traffic signal section;
at least one second RFID tag located at each of the at least one second set of two highway
points and configured to store dynamic and static characteristics of the at least one highway
vehicle as it passes the at least one second set of two highway points; and
15 at least one RFID tag reader located on the at least one highway vehicle connected to the
network.
2. The vehicle control system of claim 1,
wherein the at least one first RFID tag comprises a first RFID Type 1 tag, and
20 wherein the at least one second RFID tag comprises a first RFID Type 2 tag.
3. The vehicle control system of claim 2,

wherein the first RFID Type 2 tag is connected to a second RFID Type 2 tag by an RS485 or serial data transmission cable, and

wherein the first RFID Type 2 tag comprises an I2C to RS485 converter connected to an RFID chip connected by I2C BUS connection, connected by a parallel connection to a tag
5 antenna.

4. The vehicle control system of claim 1, wherein the at least one RFID tag reader comprises an RF transparent enclosure containing inside at least a pair of reader antennas wired to a chip reader, connected to the at least one highway vehicle.

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5. The vehicle control system of claim 2, wherein the at least one first RFID tag and the at least one RFID tag reader have a separation in a range between approximately 7 inches and approximately 40 inches.

15 6. The vehicle control system of claim 1, wherein the at least one RFID tag reader is located on an underside of the at least one highway vehicle.

7. The vehicle control system of claim 2, wherein the at least one first RFID tag comprises multiple type 1 RFID tags spaced apart by less than approximately 30 feet from each other.

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8. The vehicle control system of claim 1, wherein the at least one highway vehicle is connected to a wireless communication network comprising an Ultra-Wide Band, LWIP, LWA,

WLAN, ADSL, Cable, or LTE network at locations where the at least one first set of two highway points or the at least one second set of two highway points are at an open highway.

9. The system of claim 1, further comprising:

5 another highway vehicle.

10. A method of controlling a vehicle system, the method comprising:

communicating from a first vehicle to a second vehicle via a centralized data network traffic management center, wherein the centralized data network traffic management center

10 comprises a highway database, a schedule database, and a route database; and

communicating from the first vehicle to the second vehicle via a communication system, wherein the communication system comprises:

at least a first set of two highway points located along a path of the first vehicle;

at least a second set of two highway points located along a traffic signal;

15 at least one first RFID tag located at each of the at least the first set of two highway points, wherein the at least one first RFID tag is configured to store dynamic and static characteristics of the first vehicle as it passes the at least the first set of two highway points;

at least one second RFID tag located at each of the at least the second set of two highway points, wherein the at least one second RFID tag is configured to store dynamic and static characteristics of the vehicle as it passes the at least the second set of two highway points;

20 at least one first RFID tag reader located on the first vehicle; and

at least one second RFID tag reader located on the second vehicle.

11. The method of claim 10,
wherein the first vehicle communicates parameters to the second vehicle via the
5 communication system, and
wherein the parameters are selected from the group consisting of: a speed of the first
vehicle, a location of the first vehicle, and a headway of the first vehicle.
12. The method of claim 10,
10 wherein the at least one first RFID tag comprises a first RFID Type 1 tag, and
wherein the at least one second RFID tag comprises a first RFID Type 2 tag.
13. The method of claim 12, wherein the communication system further comprises:
a backup or a fail-safe system.
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14. The method of claim 13, wherein the first RFID Type 1 tag or the first RFID Type 2 tag
of the backup system stores a speed, a brake status, a vehicle ID, a traffic signal status, a time
stamp, and a schedule of a latest vehicle to pass the first RFID Type 1 tag or the first RFID Type
2 tag.
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15. The method of claim 14, further comprising:

rewriting the speed, the brake status, the vehicle ID, the traffic signal status, the time stamp, and the schedule of the latest vehicle to pass the first RFID Type 1 tag or the first RFID Type 2 tag with a next vehicle to pass the first RFID Type 1 tag or the first RFID Type 2 tag.

- 5 16. The method of claim 15, wherein the rewriting step is completed within a time range of approximately 10 milliseconds to approximately 30 milliseconds.

17. The method of claim 12, wherein each of the first RFID Type 1 tag and the first RFID Type 2 tag comprise unique identifiers.

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18. The method of claim 12, wherein the each of the first RFID Type 1 tag and the first RFID Type 2 tag comprise volatile memory.