CLAIMS

WHAT IS CLAIMED IS:

1. A method of operating a motorized scooter, the motorized scooter comprising an apparatus configured to receive an unlock request from a remote server via wireless mobile communication and configured to receive a backup unlock request from the remote server via short message service, the method comprising:

transmitting, at the remote server, the unlock request to the apparatus via the wireless mobile communication;

receiving, at the apparatus, the unlock request from the remote server via the wireless mobile communication;

if after a pre-determined time a network response from the motorized scooter is not received, sending, at the remote server, the backup unlock request to the apparatus via the short message service;

receiving, at the apparatus, the backup unlock request from the remote server via the short message service;

unlocking the motorized scooter in response to the unlock request or the backup unlock request; and

continuously uploading status of the motorized scooter to the remote server based on a schedule when the motorized scooter is unlocked,

wherein the pre-determined time is adjusted according to a real-time distribution of unlocking durations among sessions during a certain time period.

2. The method of claim 1, further comprising:

receiving, at the apparatus, a lock request from the remote server; and

locking the motorized scooter in response to the lock request.

3. The method of claim 1 or 2, further comprising:

receiving, at the apparatus, a speed control command from the remote server; and

setting a maximum speed of the motorized scooter based on the speed control command.

4. The method of any one of claims 1-3, further comprising:

establishing a wireless connection with the remote server based on a wireless communication identifier associated with the motorized scooter and a vehicle identifier of the motorized scooter.

5. A method of managing motorized scooters, the method comprising:

receiving, at a server from a mobile device, a vehicle identifier of a motorized scooter;

retrieving a vehicle status of the motorized scooter based on the vehicle identifier;

generating an unlock request when the vehicle status is a normal usable status; and

transmitting the unlock request to the motorized scooter via wireless mobile communication; and

sending a backup unlock request via short message service to the motorized scooter, after a pre-determined time in which a network response from the motorized scooter is not received, wherein the pre-determined time is adjusted according to a real-time distribution of unlocking durations among sessions during a certain time period.

6. The method of claim 5, further comprising:

continuously receiving, from the motorized scooter, the vehicle status of the motorized scooter based on a schedule.

7. The method of claim 5 or 6, further comprising:

receiving, at the server, a message from the mobile device, the message requesting locking the motorized scooter;

generating a lock request in response to the message when the motorized scooter is in an unlocking status;

transmitting the lock request to the motorized scooter; and

sending the backup unlock request via the short message service to the motorized scooter, after the pre-determined time in which the network response from the motorized scooter is not received.

8. The method of any one of claims 5-7, further comprising:

generating a speed control command limiting a maximum speed of the motorized scooter based on the vehicle status of the motorized scooter; and

transmitting the speed control command to the motorized scooter.

9. The method of claim 5 or 6, further comprising:

determining whether there is an active order associated with the motorized scooter when the motorized scooter is unlocked; and

transmitting a lock request to the motorized scooter when there is no active order associated with the motorized scooter and the motorized scooter is unlocked.

10. The method of any one of claim 5-9, further comprising:

determining whether an order associated with the motorized scooter is active when the motorized scooter is locked; and

terminating the order when the order is active and the motorized scooter is locked.

11. The method of any one of claims 5-10, further comprising:

determining a time instance to upgrade a firmware of the motorized scooter based on the vehicle status of the motorized scooter; and

upgrading the firmware of the motorized scooter at the determined time instance.

12. A system for operating a motorized scooter, comprising an apparatus, the system comprising:

a remote server configured to:

transmit an unlock request to the apparatus via wireless mobile communication; and

if after a pre-determined time a network response from the motorized scooter is not received, send a backup unlock request to the apparatus via short message service; and

the motorized scooter comprising the apparatus, the apparatus comprising:

a memory; and

at least one processor coupled to the memory and configured to:

receive the unlock request from the remote server via the wireless mobile communication;

receive the backup unlock request from the remote server via the short message service;

unlock the motorized scooter in response to the unlock request or the backup unlock request; and

continuously upload status of the motorized scooter to the remote server based on a schedule when the motorized scooter is unlocked,

wherein the pre-determined time is adjusted according to a real-time distribution of unlocking durations among sessions during a certain time period.

13. The system of claim 12, wherein the at least one processor is further configured to:

receive a lock request from the remote server; and

lock the motorized scooter in response to the lock request.

14. The system of claim 12 or 13, wherein the at least one processor is further configured to:

receive a speed control command from the remote server; and

set a maximum speed of the motorized scooter based on the speed control command.

15. The system of any one of claims 12-14, wherein the at least one processor is further configured to:

establish a wireless connection with the remote server based on a wireless communication identifier associated with the motorized scooter and a vehicle identifier of the motorized scooter.

16. An apparatus for managing motorized scooters, the apparatus being a server, the apparatus comprising:

a memory; and

at least one processor coupled to the memory and configured to:

receive, from a mobile device, a vehicle identifier of a motorized scooter;

retrieve a vehicle status of the motorized scooter based on the vehicle identifier;

generate an unlock request when the vehicle status is a normal usable status;

transmit the unlock request to the motorized scooter via wireless mobile communication; and

if after a pre-determined time a network response from the motorized scooter is not received, send a backup unlock request via short message service to the motorized scooter, wherein the pre-determined time is adjusted according to a real-time distribution of unlocking durations among sessions during a certain time period.

17. The apparatus of claim 16, wherein the at least one processor is further configured to:

continuously receive, from the motorized scooter, the vehicle status of the motorized scooter based on a schedule.

18. The apparatus of claim 16 or 17, wherein the at least one processor is further configured to:

receive a message from the mobile device, the message requesting locking the motorized scooter;

generate a lock request in response to the message when the motorized scooter is in an unlocking status; and

transmit the lock request to the motorized scooter.

19. The apparatus of any one of claims 16-18, wherein the at least one processor is further configured to:

generate a speed control command limiting a maximum speed of the motorized scooter based on the vehicle status of the motorized scooter; and

transmit the speed control command to the motorized scooter.

20. The apparatus of claim 16 or 17, wherein the at least one processor is further configured to:

determine whether there is an active order associated with the motorized scooter when the motorized scooter is unlocked; and

transmit a lock request to the motorized scooter when there is no active order associated with the motorized scooter and the motorized scooter is unlocked.

21. The apparatus of any one of claim 16-20, wherein the at least one processor is further configured to:

determine whether an order associated with the motorized scooter is active when the motorized scooter is locked; and

terminate the order when the order is active and the motorized scooter is locked.

22. The apparatus of any one of claims 16-21, wherein the at least one processor is further configured to:

determine a time instance to upgrade a firmware of the motorized scooter based on the vehicle status of the motorized scooter; and

upgrade the firmware of the motorized scooter at the determined time instance.