CLAIMS

1. A vehicle parking management system comprising:
a detection sensor operable to detect a presence of a vehicle at a location, and to obtain a first identifier of the vehicle,
a base station operable to communicate with a vehicle communication device of the vehicle to receive a second identifier of the vehicle after the detection sensor detects the presence of the vehicle at the location,
a validation module configured to receive the first identifier and the second identifier,
wherein the validation module is operable to compare the first identifier with the second identifier to determine whether there is any discrepancy between the first identifier and the second identifier,
wherein the vehicle parking management system further comprises a parking timer configured to start timing once the validation module determines that there is no discrepancy between the first identifier and the second identifier; and
wherein the base station is configured to repeatedly communicate with the vehicle communication device at every predetermined time interval, and the parking timer is configured to stop timing once the base station fails to communicate with the vehicle communication device.

2. The vehicle parking management system of claim 1, wherein detection sensor is an image-capturing device.

3. The vehicle parking management system of claim 1 or claim 2, wherein the base station and the vehicle communication device comprises one or more of the following: BLUETOOTH™, WiFi, ZigBee and 2G/3G/4G cellular.

4. The vehicle parking management system of any preceding claim, wherein the first identifier comprises vehicle plate number of the vehicle, vehicle color, vehicle model, or any combination thereof.

5. The vehicle parking management system of claim 4, wherein the second identifier comprises vehicle plate number of the vehicle, vehicle color, vehicle model, vehicle IU number, vehicle owner name, or any combination thereof.

6. The vehicle parking management system of any preceding claim, further comprising a toll calculator arranged to be in data communication with the parking timer.

7. The vehicle parking management system of any preceding claim, wherein the vehicle communication device is arranged to be in data communication with a toll payment terminal.

8. The vehicle parking management system of any preceding claim, wherein the validation module is operable to send an alert message to a vehicle park manager, the vehicle communication device, an owner of the vehicle or any combination thereof.

9. The vehicle parking management system of any preceding claim, further comprising a database configured to store the first identifier and the second identifier.

10. A method for managing a vehicle park, comprising steps of:
(a) detecting a presence of a vehicle at a location and obtaining a first identifier of the vehicle by a detection sensor,
(b) activating a base station by the detection sensor to communicate with a vehicle communication device of the vehicle to receive a second identifier of the vehicle,
(c) comparing the first identifier and the second identifier by a validation module to determine whether there is any discrepancy between the first identifier and the second identifier,

(d) activating a parking timer to start timing, if there is no discrepancy detected in the step (c).

(g) repeatedly activating the base station to communicate with the vehicle communication device at every predetermined time interval, and

(h) stopping the parking timer, if the base station fails to communicate with the vehicle communication device in the step (g).

11. The method of claim 10, further comprising a step (e) of repeating the step (a), the step (b) and the step (c), if there is at least one discrepancy detected in the step (c).

12. The method of claim 11, further comprising a step (f) of transmitting a first alert message by the validation module to a vehicle park manager, if the step (e) has been repeated a predetermined number of times.

13. The method of claim 10,11 or 12, further comprising a step (i) of detecting the presence of the vehicle by the detection sensor, if the base station fails to communicate with the vehicle communication device in the step (g).

14. The method of claim 13, further comprising a step (j) of stopping the parking timer, if the detection sensor fails to detect the presence of the vehicle at the step (i).

15. The method of claim 13, further comprising a step (k) of transmitting a second alert message to the vehicle park manager, if the detection sensor detects the presence of the vehicle at the step (i).

16. The method of claim 10 or 14, further comprising a step (l) of calculating a parking time duration by the parking timer.

17. The method of claim 16, further comprising a step (m) of calculating a toll for the vehicle based on the parking time duration by a toll calculator.

18. The method of claim 17, further comprising a step (n) of making payment for the toll at a toll payment terminal.