WHAT IS CLAIMED IS:

1. A device for monitoring a state of a moving object, characterized in that the device comprises:

   a laser scanner configured to monitor at least one moving object entering a monitoring region, by emitting a plurality of laser beams of different angles to the at least one moving object with a preset scanning frequency; and

   a processing unit configured to, for each moving object, determine at least one fixed point on the moving object, receive a first distance between the at least one fixed point of the moving object and an emitting position of the laser beams and an emitting angle of a corresponding laser beam, all of which are detected by the laser scanner at each time instance, and determine and output a relative position of the moving object with respect to the laser scanner at each time instance according to the first distance and the emitting angle of the corresponding laser beam;

   wherein the processing unit is further configured to, for each moving object, according to the determined relative position of the moving object with respect to the laser scanner, output a current relative position of the moving object with respect to the laser scanner with different time intervals or with different moving distance intervals of the moving object; and

   wherein when the moving object moves towards the laser scanner, the smaller the relative distance between the moving object and the laser scanner is, the smaller the time interval or the moving distance interval is.

2. The device for monitoring a state of a moving object of claim 1, wherein the processing unit is further configured to, for each moving object, determine and output a moving speed of the moving object according to the first distance and the emitting angle of the corresponding laser beam.

3. The device for monitoring a state of a moving object of claim 2, wherein the at least one fixed point includes a plurality of fixed points, and determining a moving speed

of the moving object according to the first distance and the emitting angle of the corresponding laser beam comprises: acquiring a second distance of the moving object at a time instance according to first distances between the fixed points of the moving object and the emitting position of the laser beams at the same time instance; and determining the moving speed of the moving object according to second distances of the moving object at time instances.

4. The device for monitoring a state of a moving object of claim 3, wherein the processing unit is configured to average the first distances to acquire the second distance.

5. The device for monitoring a state of a moving object of claim 1, wherein the processing unit is further configured to, for each moving object, determine a moving direction of the moving object at a current time instance.

6. The device for monitoring a state of a moving object of claim 5, wherein the processing unit is configured to determine the moving direction of the moving object at the current time instance according to the different relative positions of the moving object with respect to the laser scanner at the current time instance and at the previous time instance.

7. A method for monitoring a state of a moving object based on a laser scanner, characterized in that the method comprises:
monitoring at least one moving object entering a monitoring region, by causing the laser scanner to emit a plurality of laser beams of different angles to the at least one moving object with a preset scanning frequency; and
for each moving object,
determining at least one fixed point on the moving object;
receiving a first distance between the at least one fixed point of the moving object and an emitting position of the laser beams and an emitting angle of a

corresponding laser beam, all of which are detected by the laser scanner at each time instance;

determining and outputting a relative position of the moving object with respect to the laser scanner at each time instance according to the first distance and the emitting angle of the corresponding laser beam; and

according to the determined relative position of the moving object with respect to the laser scanner, determining and outputting a current relative position of the moving object with respect to the laser scanner with different time intervals or with different moving distance intervals of the moving object;

wherein when the moving object moves towards the laser scanner, the smaller the relative distance between the moving object and the laser scanner is, the smaller the time interval or the moving distance interval is.

8. The method for monitoring a state of a moving object based on a laser scanner of claim 7, further comprising: for each moving object, determining and outputting a moving speed of the moving object according to the first distance and the emitting angle of the corresponding laser beam.

9. The method for monitoring a state of a moving object based on a laser scanner of claim 8, wherein the at least one fixed point includes a plurality of fixed points, and determining a moving speed of the moving object according to the first distance and the emitting angle of the corresponding laser beam comprises: acquiring a second distance of the moving object at a time instance according to first distances between the fixed points of the moving object and the emitting position of the laser beams at the same time instance; and determining the moving speed of the moving object according to second distances of the moving object at time instances.

10. The method for monitoring a state of a moving object based on a laser scanner of claim 9, further comprising: for each moving object, determining a moving direction of the moving object at a current time instance.

11. A system for fast inspecting a vehicle, characterized in that the system comprises:

a radiation imaging device comprising: a ray source configured to emit radiation rays for detecting a subject vehicle; a detector configured to detect radiation rays transmitted through the subject vehicle and/or scattered radiation rays; and an image processing device configured to present images according to signals of the radiation rays detected by the detector;

the device for monitoring a state of a moving object of any one of claims 1-6; and

a controlling device configured to control the radiation imaging device to emit radiation rays to the subject vehicle according to the output of the device for monitoring a state of a moving object.