

Claims

1. A quick vehicle check system adopting multi-dose regional scanning comprising:

a radiation source configured to produce a first X ray with a first dose and a second X ray with a second dose, wherein the first dose is smaller than the second dose, and the first X ray is used for checking a first part of a checked vehicle having a predetermined distance and the second X ray is used for checking a second part of the checked vehicle;

a first sensor configured to detect a set position of the checked vehicle;

a second sensor configured to detect the passing distance of the checked vehicle; and

a control unit coupled with the first sensor and the second sensor, configured to receive the set position of the checked vehicle from the first sensor and receive the passing distance of the checked vehicle from the second sensor, and when it is determined that the set position of the checked vehicle reaches a scanning region, the control unit informs the radiation source to emit the first X ray; and when the passing distance of the checked vehicle reaches the predetermined distance, the control unit informs the radiation source to emit the second X ray so as to scan the second part,

wherein the set position of the checked vehicle is rear edge of a cab, front edge of a carriage or an arbitrary position therebetween.

2. The quick vehicle check system according to Claim 1, wherein the second sensor is a speed sensor which determines whether the checked vehicle has passed the predetermined distance according to vehicle speed and the elapsed time.

3. The quick vehicle check system according to Claim 1, wherein the second sensor is a position sensor, and the distance from the first sensor to the second sensor is equal to the predetermined distance.

4. The quick vehicle check system according to any of Claims 1-3, further comprising a third sensor which is configured to inform the control unit to stop scanning of the radiation source after the detection of the rear edge of the checked vehicle.

5. The quick vehicle check system according to any of Claims 1-3, wherein the first X-ray and/or the second X-ray is dual-energy rays.

6. The quick vehicle check system according to any of Claims 1-3, wherein the checked vehicle is a van or a train.

7. The quick vehicle check system according to any of Claims 1-3, wherein scattering generated by

the first X-ray in the first part and scattering generated by the second X-ray in the second part do not cause out-of-limit X-ray dose for a driver.

8. A quick vehicle check method with multi-dose regional scanning comprising steps of:

emitting a first X ray of a first dose when it is detected that a set position of a checked vehicle reaches a scanning region;

scanning a second part of the checked vehicle with a second X-ray of a second dose when the checked vehicle has passed a predetermined distance and scanning of a first part of the checked vehicle is completed, wherein the first dose is smaller than the second dose; and

stopping X-ray scanning when the second part of the checked vehicle has passed through the scanning region,

wherein the set position of the checked vehicle is a rear edge of a cab, a front edge of a carriage or an arbitrary position therebetween..

9. The quick vehicle check method according to Claim 8, wherein whether the checked vehicle has passed the predetermined distance is detected according to vehicle speed and the elapsed time.

10. The quick vehicle check method according to Claim 8, wherein a position sensor is employed to detect whether the checked vehicle has passed the predetermined distance, and the distance from the position sensor to the set position is equal to the predetermined distance.

11. The quick vehicle check method according to any of Claims 8-10, wherein the first X-ray and/or the second X-ray is dual-energy rays.

12. The quick vehicle check method according to any of Claims 8-10, wherein the checked vehicle is a van or a train.

13. The quick vehicle check method according to any of Claims 8-10, wherein scattering generated by the first X-ray in the first part and scattering generated by the second X-ray in the second part do not cause out-of-limit X-ray dose for a driver.