CLAIMS

1. A portable sensor system (100) for detecting objects (8) in the surroundings of the portable sensor system (100) and for temporary mounting on a mobile object, having a surroundings detection sensor (10) for detecting the objects (8),
a mounting apparatus (20), connected to the surroundings detection sensor (10), for temporarily mounting the portable sensor system (100) on an outer surface of the mobile object,
wherein the mounting apparatus (20) is designed for temporarily mounting of the portable sensor system (100) at any position on a mounting region (3) of the outer surface of the mobile object, and
a position determination device (32) for determining a sensor attitude (11) of the surroundings detection sensor (10) when the surroundings detection sensor (10) is in a state in which it is mounted on the outer surface,
wherein the position determination device (32) is configured to determine the sensor attitude (11) relative to the mobile object on the basis of a predetermined geometric model of the outer surface and a region of the outer surface that is detected by the surroundings detection sensor (10).

2. The portable sensor system (100) as claimed in claim 1,
wherein the mobile object is a means for transporting people or goods, in particular an aircraft (1), and
wherein the mounting apparatus (20) is designed for temporary mounting of the portable sensor system (100) on an outer surface of the means for transporting people or goods, in particular on a fuselage region (2) of the aircraft (1).

3. The portable sensor system (100) as claimed in claim 1 or 2,
wherein the surroundings detection sensor (10) comprises a laser scanner, in particular a 3D laser scanner (12), for extensively detecting objects (8) in the surroundings of the portable sensor system (100).

4. The portable sensor system (100) as claimed in one of the preceding claims, having at least one further surroundings detection sensor for detecting the objects (8), wherein the mounting apparatus (20) is also connected to the further surroundings detection sensor for the purpose of temporarily mounting the portable sensor system (100) on the outer surface of the mobile object.

5. The portable sensor system (100) as claimed in one of the preceding claims, wherein the mounting apparatus (20) is designed for toolless mounting of the portable sensor system (100) on the outer surface of the mobile object.

6. The portable sensor system (100) as claimed in one of the preceding claims, wherein the mounting apparatus (20) comprises at least one handle (21) for manual mounting of the portable sensor system (100) on the outer surface of the mobile object.

7. The portable sensor system (100) as claimed in one of the preceding claims, wherein the mounting apparatus (20) comprises at least one suction cup (22) for suction-force-based mounting of the portable sensor system (100) on the outer surface of the mobile object.

8. The portable sensor system (100) as claimed in one of the preceding claims, wherein the position determination device (32) is configured to determine the sensor attitude (11) in an object coordinate system that is referenced to the mobile object.

9. The portable sensor system (100) as claimed in one of the preceding claims, wherein the position determination device (32) is configured to determine the sensor attitude (11) on the basis of a geometric correlation between the detected region of the outer surface and the predetermined geometric model of the outer surface.

10. The portable sensor system (100) as claimed in one of the preceding claims, wherein the position determination device (32) is configured to determine the sensor attitude (11) autonomously.

11. The portable sensor system (100) as claimed in one of the preceding claims, wherein the position determination device (32) is part of a computing and control device (30) for evaluating measurement data from the surroundings detection sensor (10) and for actuating the surroundings detection sensor (10).

12. The portable sensor system (100) as claimed in one of the preceding claims, having a mobile terminal that comprises the position determination device (32).

13. The portable sensor system (100) as claimed in one of the preceding claims, having a mobile terminal (40) that is configured to wirelessly communicate with the surroundings detection sensor (10) in order to control the surroundings detection sensor (10) remotely.

14. The portable sensor system (100) as claimed in either of claims 12 and 13, wherein the mobile terminal (40) is configured to display objects detected in the surroundings of the portable sensor system (100) by the portable sensor system (100).

15. The portable sensor system (100) as claimed in one of the preceding claims, having a collision monitoring device (34) for monitoring objects (8) situated in the surroundings of the portable sensor system (100), which collision monitoring device is configured to identify whether an object (8) monitored in the surroundings is a potential collision object.

16. The portable sensor system (100) as claimed in one of the preceding claims, wherein the position determination device (32) comprises a data interface to a logistics information system for the purpose of providing objects (8) detected or monitored by the portable sensor system (100) for the logistics information system.

17. A method for detecting objects (8) in the surroundings of a mobile object, comprising the steps of:
temporarily mounting (S1) at least one surroundings detection sensor (10) at any position on a mounting region (3) on an outer surface of the mobile object,
detecting (S2) a region of the outer surface by way of the surroundings detection sensor (10) mounted on the outer surface,

determining (S3) a sensor attitude (11) of the surroundings detection sensor (10) relative to the mobile object on the basis of a predetermined geometric model of the outer surface and the region of the outer surface that is detected by the surroundings detection sensor system (10), and
detecting (S4) objects (8) in the surroundings of the mobile object by way of the surroundings detection sensor (10) relative to the mobile object.

18. The method as claimed in claim 17, comprising the further step of:
displaying (S5), in particular displaying in real time, the objects (8) detected in the surroundings of the portable sensor system (100) by the portable sensor system (100) on a mobile terminal (40).

19. The method as claimed in claim 17 or 18 for monitoring the surroundings for potential collision objects that may potentially collide with the mobile object, comprising the further steps of:
identifying whether an object (8) detected in the surroundings is a potential collision object, and
displaying the potential collision object on a mobile terminal (40).

20. The method as claimed in one of claims 17 to 19,
wherein the step of detecting (S4) comprises filtering, in particular on the basis of two-dimensional or three-dimensional mapping, of objects (8) in the surroundings of the mobile object that are detected by the surroundings detection sensor (10).

21. The method as claimed in one of claims 17 to 20,
wherein the mobile object is a means for transporting people or goods, in particular an aircraft (1),
wherein the step of temporarily mounting (S1) comprises temporary mounting of the surroundings detection sensor (10) on an outer surface of the means for transporting people or goods, in particular on a fuselage region (2) of the aircraft (1), and
wherein at least the step of detecting (S4) objects (8) is performed during movement of the means for transporting people or goods over the ground, in particular during rolling or reversing of the aircraft (1) on the ground, in particular on a runway (7) of an airport.