Claims

1. Method for monitoring a state of a passenger transport system (1), **characterized in** that the monitoring of the state of the passenger transport system (1) is carried out by using an updated digital double data record that reflects characterizing properties of components (11) of the passenger transport system (1) in a machine-processable manner and represents the passenger transport system (1) in an actual configuration after its assembly and installation in a building, wherein, by monitoring, changes and trends in the characterizing properties of components (11) can be tracked and assessed and wherein the method further includes previously creating the updated digital double data record;
which creation comprises at least the steps of:

- creating a commissioning digital double data record with planning data, which reflects the characterizing properties of components (11) of the passenger transport system (1) in a planned configuration;
- creating a completion digital double data record based on the commissioning digital double data record by measuring actual data, which reflects characterizing properties of components (11) of the passenger transport system (1) in the actual configuration of the passenger transport system (1) directly after the assembly and installation thereof in a building and replacing of planned data in the commissioning digital double data record with corresponding actual data; and
- creating the updated digital double data record based on the completion digital double data record by modifying the completion digital double data record during the operation of the passenger transport system (1) taking into account measurement values, which reflects changes in the characterizing properties of components (11) of the passenger transport system (1) during operation.

2. Method according to claim 1, wherein the updated digital double data record comprises data which were ascertained by measuring characterizing properties on the completed passenger transport system (1).

3. Method according to any of the preceding claims, wherein the characterizing properties of a component (11) are selected from a group comprising geometric dimensions of the component (11), weight of the component (11), material properties of the component (11) and surface properties of the component (11).

4. Method according to any of the preceding claims, wherein the monitoring of the state of the passenger transport system (1) comprises simulating future characterizing properties of the passenger transport system (1) by using the updated digital double data record.

5. Method according to any of the preceding claims, further comprising: planning of maintenance work to be carried out on the passenger transport system (1) based on information about the monitored state of the passenger transport system (1).

6. Method according to any of the preceding claims, further comprising: assessing quality properties of a type of component (11) based on an analysis of updated digital double data records of a plurality of passenger transport systems (1) containing the component (11) in question.

7. Method according to any of claims 1 to 6, wherein the creation of the commissioning digital double data record comprises creating commissioning data taking into account customer specifications and creating production data by modifying the commissioning data taking into account production specifications.

8. Method according to claim 7, wherein when the commissioning data is created, a virtual image of the passenger transport system (1) is generated using generic component model data records (11) of the passenger transport system (1) and including the customer specifications.

9. Method according to claim 7 or 8, wherein when creating the commissioning data, simulations are performed from a group comprising static and dynamic simulations, and wherein the commissioning digital double data record is created taking into account the results of the simulations.

10. Method according to any of claims 1 to 9, wherein the passenger transport system (1) is selected from a group comprising escalators (3) and moving walkways and wherein the components (11) of the passenger transport system (1) are selected from a group comprising:

- components (11) of a framework (5) comprising a plurality of components (11) selected from a subgroup comprising upper straps (13), lower straps (15), uprights (21), cross struts (17), diagonal struts (19), gusset plates (25), support angles (7), and framework separation points (23); and
- components (11) of a conveyor (27) comprising at least one component (11) selected from a subgroup comprising driving stages (29), driving pallets, conveyor chains (31), conveyor belts, deflection sprockets (37), deflection disks (39), drive machines (33), service brakes (35), and controllers (36).

11. Method according to any of the preceding claims 1 to 10, wherein the passenger transport system (1) is an elevator (51) and wherein the components (11) of the passenger transport system (1) are selected from a group comprising:
- components of a support structure (80) comprising a plurality of components (11) selected from a subgroup comprising guide rails (67), wall fastenings (69), drive frames (71), floor fastenings (73), cross struts (75), longitudinal struts (77) and diagonal struts (79); and
- components of a conveyor (66) comprising at least one component (11) selected from a subgroup comprising elevator cabs (55), counterweights (57), suspension means (59), drive machines (61), braking apparatuses (63), and controllers (65).

12. Apparatus (87) for monitoring a state of a passenger transport system (1), the apparatus being configured to monitor the state of the passenger transport system (1), **characterized in** that monitoring is carried out by using an updated digital double data record that reflects characterizing properties of components (11) of the passenger transport system (1) in an actual configuration of the passenger transport system (1) in a machine-processable manner after the assembly and installation thereof in a building, and that changes and change trends in the characterizing properties of components are traceable and assessable by monitoring (11), with the apparatus also being able to produce the updated digital double data record step by step in that:

- a commissioning digital double data record having planning data, which reflects the characterizing properties of components (11) of the passenger transport system (1) in a planned configuration, can be created by means of generic component model data records and defined component model data records;

- a completion digital double data record can be created based on the commissioning digital double data record by measuring actual data, which reflects characterizing properties of components (11) of the passenger transport system (1) in the actual configuration of the passenger transport system (1) directly after the assembly and installation thereof in a building and replacing of planning data in the commissioning digital double data record with corresponding actual data; and
- the updated digital double data record can be created based on the completion digital double data record by modifying the completion digital double data record during the operation of the passenger transport system (1) taking into account measurement values, which reflects changes in the characterizing properties of components (11) of the passenger transport system (1) during operation;
wherein the generic component model data records are data records that reflect the planned configuration of a plurality of different components with regard to a plurality of properties that are substantial for the production of the passenger transport system (1) and wherein the defined component model data records are data records that reflect a planned configuration of individual components with regard to all the characterizing properties that are substantial for the production of the passenger transport system (1).

13. Passenger transport system (1), comprising an apparatus according to claim 12.

14. Computer program product, comprising machine-readable program instructions which, when executed on a programmable apparatus configured for performing a method according to any of claims 1 to 11, cause the apparatus to carry out or control the method according to any of claims 1 to 11.

15. Computer-readable medium that has a computer program product according to claim 14 stored on it.