Claims

1. Method (151) for recording and processing elevator data of an existing elevator system (11), wherein each floor (21, 23, 25, 27) of the existing elevator system (11) is approached at least once by means of at least one measuring run (65) with the existing elevator system (11), and at least the measurement data (G1, G2, G3, G4, h1, h2, h3) representing the floor heights (h1, h2, h3) are recorded by means of a measuring device (63, 73),
wherein
a three-dimensional digital-double dataset (111) is generated from component model datasets (112) and stored in a storage medium (115), wherein the component model datasets (112) can have different configurations and are defined by characterizing properties (T, B, H) that are predefined with default values (x, y, z),
wherein, for each floor (21, 23, 25, 27) of the elevator system (11) recorded by the measuring run (65), component model datasets (112) configured as a floor portion component model dataset (121, 123, 125, 127) or component model datasets (112) configured as a shaft portion component model dataset (141, 143, 145, 147) are arranged in the recorded sequence one above the other in the vertical direction, and in which the default value (y, y, z) of the characterizing property (T, B, H), which defines the height distance (h1, h2, h3) to the next floor portion component model dataset (121, 123, 125, 127) or the shaft portion height of the shaft portion component model dataset (141, 143, 145, 147), is replaced by the corresponding floor height (h1, h2, h3) determined from the measurement data (G1, G2, G3, G4, h1, h2, h3).

2. Method (151) according to claim 1, wherein each floor portion component model dataset (121, 123, 125, 127) or each shaft portion component model dataset (141, 143, 145, 147) has predefined interfaces (131, 135), via which component model datasets (112) can be connected to one another and positioned relative to one another, wherein corresponding characterizing properties (T, B, H) of each component model dataset to be added are automatically replicated with the corresponding characterizing properties (T, B, H) of the component model dataset (112) provided for the connection via the interface (131, 135).

3. Method (151) according to claim 1 or 2, wherein a component model dataset (112) configured as an elevator car component model dataset (153) is arranged in the virtual shaft formed by at least one shaft portion component model dataset (141, 143, 145, 147) and the individual motion profiles (G1, G2, G3, G4) of the existing elevator car (43) recorded during the measuring run (65) are assigned as characterizing properties (G1, G2, G3, G4) to the elevator car component model dataset (153) in the hierarchy of the floors (21, 23, 25, 27).

4. Method (151) according to claim 3, wherein spatial dimensions of the existing elevator car (43) are recorded as measured values (u, v, w) and the default values (q, r, s) of the assigned characterizing properties (N, O, P) of the elevator car component model dataset (153) can be replaced by the measured spatial dimensions, wherein the default values of the characterizing properties (B, T) of the shaft portion component model datasets (141, 143, 145, 147) are checked using a collision checking routine and, in the case of colliding dimensions, corresponding characterizing properties (B, T) are adapted to the projections leading to collisions.

5. Method (151) according to any of claims 1 to 4, wherein the three-dimensional digital-double dataset (111) can be retrieved from a storage medium (115) and displayed on a screen (171) in a static and/or dynamic manner as a virtual elevator system, reproducing at least the height distances (h1, h2, h3) of the floors (21, 23, 25, 27) in the correct ratio to one another.

6. Method (151) according to any of claims 1 to 5, wherein further component model datasets (112) of components of an elevator system (11) can be selected from a database (175) via a graphical user interface (173) and inserted into the three-dimensional digital-double dataset (111) via predefined interfaces (131, 135).

7. Method (151) according to claim 6, wherein at least counterweight (177), guide rail (179), shaft door (161), car door (163), drive component model datasets (181) and suspension means component model datasets (183) in different suspension means guiding variants can be selected as component model datasets (112) of components.

8. Method (151) according to any of claims 1 to 7, wherein the characterizing properties (B, T, H) defined by measurement data (G1, G2, G3, G4, h1, h2, h3) are provided with a marker (*), so that they can be distinguished from characterizing properties (B, T, H) with default values (x, y, z).

9. Method (151) according to claim 8, wherein a component model dataset (112) of the digital-double dataset (111) can be replaced by a definitive component model dataset in that its characterizing properties (B, T, H) provided with a marker (*) are read via a replacement routine, possible defined component model datasets of actually existing components of elevator systems (11) matching the characterizing properties (B, T, H) are determined from a database (175) using said marked characterizing properties (B, T, H), and the replacement component model dataset (112) can optionally additionally be selected by manual inputs.

10. Elevator system (1) comprising a system (1) for recording and processing elevator data of the elevator system (11), wherein the system (1) comprises:

at least one measuring device (63, 73), wherein by at least one measuring run (65) with the elevator system (11) at least those measurement data (G1, G2, G3, G4, h1, h2, h3) can be recorded by the measuring device (63, 73), from which the floor heights (h1, h2, h3) of the floors (21, 23, 25, 27) of the elevator system (11) can be determined;

a programmable device (101); and

a computer program product (109) with machine-readable program instructions (107);

characterized in that,

during the measuring run (65) with the elevator system (11) each floor (21, 23, 25, 27) of the elevator system (11) is approached at least once and by means of a measuring device (63, 73) at least those measurement data (G1, G2, G3, G4, h1, h2, h3) is recorded, which represent floor heights (h1, h2, h3); and in that by executing the computer program product (109) on the programmable device (101) and by taking into account the measurement data (G1, G2, G3, G4, h1, h2, h3) recorded by the measuring device (63, 73) during the measuring run (65), a three-dimensional digital-double dataset (111) can be built up from component model datasets (112) and can be stored in a storage medium (115) of the programmable device (101); wherein the component model datasets (112) being able to have different configurations and are defined by characterizing Properties (B, T, H) which are predefined with default values (x, y, z), wherein in the three-dimensional digital-double dataset (111) created by the programmable device (101), for each floor (21, 23, 25, 27) of the existing elevator system (11) recorded by the measuring run (65) in the recorded order, a component model dataset (112), configurable as a floor section component model dataset (121, 123, 125, 127) or shaft section component model dataset (141, 143, 145, 147) is arranged one above the other in the vertical direction and the default value (x, y, z) of its characterizing property (B, T, H), which represents the height distance (h1, h2, h3) to the next floor portion component model dataset (121, 123, 125, 127) or the shaft portion height of the shaft portion component model dataset (141, 143, 145, 147) is replaced by the corresponding floor height (h1, h2, h3) determined from the measurement data (G1, G2, G3, G4, h1, h2, h3), and wherein the measuring device (63, 73) is connected to the elevator control unit (41) of the existing elevator system (11) and characterizing properties (T, B, H) can be extracted by the measuring device (63, 73) from control signals of the elevator control unit (41) and transmitted to the programmable device (101).