## CLAIMS

1. A method for inserting an object into an object-receiving area by means of an actuator-driven robot manipulator of a robot and for the controlling the actuator-driven robot manipulator, wherein the actuator-driven robot manipulator has an effector at its distal end, designed to receive and/or grip the object, and wherein a joining trajectory $T$ is defined for the object-receiving area and the object to be joined, and a target orientation $O_{soll}(\vec{R}_T)$ of the object to be inserted is defined along the joining trajectory $T$ for locations $\vec{R}_T$ of the joining trajectory $T$, the method comprising the following steps:

   1.1 receiving/gripping (101) the object using the effector;

   1.2 moving (202) the object using the actuator-driven robot manipulator along the joining trajectory $\vec{T}$ into the object-receiving area while continuously performing predetermined rotating/tilting movements of the object relative to the target orientation $O_{soll}(\vec{R}_T)$ in a force-regulated and/or impedance-regulated manner, until

   - a specific threshold condition G1 for a torque acting on the effector and/or a force acting on the effector is reached or exceeded, and/or
   - a provided force/torque signature and/or a position/speed signature on the effector is reached or exceeded, which indicate(s) that the object has been completely successfully joined into the object-receiving area within specified tolerances;

   1.3 release (103) of the object by the effector;

   1.4 moving (104) effector away from the object-receiving area using the actuator-driven robot manipulator along a specified exit trajectory $A$.

2. Method according to Claim 1,
in which the release (103) takes place by means of continuously performed force-regulated and/or impedance-regulated rotating/tilting motions.

3. Method according to Claim 1 or 2,

in which the effector also makes translational lateral movements with the object in step 1.2 and/or step 1.3 around the joining trajectory $T$ / exit trajectory $A$.

4. Method according to one of the Claims 1 through 3,
in which the rotating/tilting motions in step 1.2 and/or in step 1.3 rotate or tilt the object around one, two, or three rotational or tilting axes relative to the target orientation $O_{soll}(\vec{R}_T)$, such that the rotation or tilting of the object around the respective rotational or tilting axis is by an angle in the range of up to $\pm 1°, \pm 2°, \pm 5°, \pm 7°, \pm 10°, \pm 12°, \pm 15°$ to the target orientation $O_{soll}(\vec{R}_T)$.

5. Method according to one of the Claims 1 through 4,
in which, if during the receiving/gripping of the object by the effector an error should occur, the receiving/gripping of the object by the effector is repeated with different parameters for receiving/gripping the object.

6. Method according to one of the Claims 1 through 5,
in which, to the extent that an error should occur when the object is moved by the actuator-driven robot manipulator along the joining trajectory $T$ in the joining direction into the object-receiving area, the movement of the object using the actuator-driven robot manipulator into the object-receiving area along a modified joining trajectory $T^*$ and/or with modified parameters for the force-regulated and/or impedance-regulated rotation/tilting of the object relative to the target orientation $O_{soll}(\vec{R}_T)$ is repeated.

7. A computer system with a data processing device, in which the data processing device is designed such that a method according to one of the previous Claims 1 through 6 is executed on the data processing device.

8. A digital storage medium with electronically readable control signals, in which the control signals can interact with a programmable computer system in such a manner that a method according to one of the previous Claims 1 through 6 is executed.

9. A computer program product with a program code stored on a machine-readable medium for executing the method according to one of the previous Claims 1 through 6, when the program code is executed on a data processing device.

10. A computer program with program codes for the execution of the method according to one of the previous Claims 1 through 6, when the program runs on a data processing device.

11. A robot with an actuator-driven robot manipulator, wherein the actuator-driven robot manipulator has an effector at its distal end, designed to receive and/or grip the object, and wherein a joining trajectory $T$ is defined for an object-receiving area and an object to be joined into the object-receiving area, and target orientations $O_{soll}(\vec{R}_T)$ of the object to be joined is defined along the joining trajectory $T$ for locations $\vec{R}_T$ of the joining trajectory $T$, featuring a control unit, designed and adapted such that a method according to one of the Claims 1 through 5 can be executed.