**Claims**

1. A method for learning and executing mutually coordinated paths (11, 22) of a first robot manipulator (10) and a second robot manipulator (20), comprising the steps:
- manual guiding (S1) a first reference point of the first robot manipulator (10) over a ~~desired~~ first path (11),
- acquiring (S2) the first path (11) or acquiring a first set of poses for the first path (11) and storing the first path (11) or the first set of poses in a first data set,
- automatic traveling (S3) along the first path (11) according to the first data set,
- during the automatic travel along the first path (11): manual guiding (S4) a second reference point of the second robot manipulator (20) over a ~~desired~~ second path (22),
- acquiring (S5) the second path (22) or acquiring a second set of poses for the second path (22) and storing the second path (22) or the second set of poses in a second data set, wherein the second data set is assigned to the first data set so that a location of the first path (11) is at least approximately assigned to each location of the second path (22), and
- synchronized traveling along the first path (11) by the first robot manipulator (10) according to the first data set and traveling along the second path (22) by the second robot manipulator (20) according to the second data set.

2. The method according to claim 1,
wherein the first data set stores the first path (11) and the second data set stores the second path (22) in each case by means of a discrete number of path points, and wherein a length of the second data set is matched to ~~the~~a length of the first data set in order to assign the second data set to the first data set, so that the first data set and the second data set have an equal number of discrete path points.

3. The method according to claim 1,
wherein the first data set stores the first path (11) and the second data set stores the second path (22) in vectorized fashion, respectively.

4. The method according to any one of the preceding claims,

where the first reference point is a specified point on the first end effector (13) and/or the second reference point is ~~in each case a specified point on a respective~~ a specified point on the second end effector (~~13,~~ 23) ~~of the respective robot manipulator (10, 20)~~.

5. The method according to any one of the preceding claims,
wherein the first robot manipulator (10) is controlled in a gravity-compensated manner during the manual guidance of the first robot manipulator (10) and/or wherein the second robot manipulator (20) is controlled in a gravity-compensated manner during the manual guidance of the second robot manipulator (20).

6. The method according to any one of the preceding claims,
wherein each of the first robot manipulator (10) and~~/or~~ the second robot manipulator (20) ~~each~~ has links connected to one another by joints with degrees of freedom at least partially redundant to one another, so that at least a subset of the links of the first robot manipulator (10) and~~/or~~ the second robot manipulator (20) are each movable in a null space, and wherein the first data set has, in addition to the first path (11) of the first reference point, items of information about a first pose of the first robot manipulator (10) in its null space, and~~/or~~ wherein the second data set has, in addition to the ~~respective~~second path (~~11,~~ 22) of the ~~respective~~second reference point, items of information about a ~~respective~~second pose of the ~~respective~~second robot manipulator (~~10,~~ 20) in its null space.

7. A system (100) for teaching and executing mutually coordinated paths (11, 22) of a first robot manipulator (10) and a second robot manipulator (20), comprising a first robot manipulator (10) with a first control unit (14) and a second robot manipulator (20) with a second control unit (24), wherein the first robot manipulator (10) has a first path acquisition unit (15) and wherein the second robot manipulator (20) has a second path acquisition unit (25), wherein the first path acquisition unit (15) is designed to acquire a ~~desired~~ first path (11) of a first reference point of the first robot manipulator (10) or a first set of poses for the first path (11) during manual guidance of the first robot manipulator (10) and to store it in a first data set, wherein the first control unit (14) is designed to control the first robot manipulator (10) to travel along the first path (11) according to the first data set, and wherein the second path

acquisition unit (25) is designed to acquire a ~~desired~~ second path (22) of a second reference point of the second robot manipulator (20) or a second set of poses for the second path (22) during manual guidance of the second robot manipulator (20) during the travel along the first path (11) by the first robot manipulator (10) and to store it in a second data set, wherein the second data set is assigned to the first data set in such a way that a location of the first path (11) is at least approximately assigned to each location of the second path (22).

8. The system (100) according to claim 7,

wherein the first control unit (14) and/or the second control unit (24) are each designed to control the first robot manipulator (10) to travel along the first path (11) according to the first data set and, synchronized thereto, to control the second robot manipulator (20) to travel along the second path (22) according to the second data set.