

ABSTRACT

SYSTEM AND METHOD FOR CONTROLLING A ROBOT

5 The invention relates to a system for controlling a robot (102), comprising: an interface (101) that provides data $DAT(t)$ captured by one or more sensors (100), wherein the data $DAT(t)$ indicate a current state $ZUS(t)$ of the robot (102), a first processor (103) that is connected to the interface (101) and that is set up to use a first algorithm to check, on the basis of the data $DAT(t)$ and a prescribed state space $\underline{Z}$, which indicates exclusively permitted states of the

10 robot (102), whether it holds that: $ZUS(t) \in \underline{Z}$, wherein in the event of: $ZUS(t) \notin \underline{Z}$ a first stop signal Sig1 is generated, a unit (105), connected to the first processor (103) via a data link (104), for generating a second stop signal Sig2, which generates the second stop signal Sig2 when the unit (105) receives the first stop signal Sig1 or when the unit (105) establishes that the data link (104) is interrupted, a second processor (106), connected to the interface (101)

15 and the first processor (103) or only to the first processor (103), that is set up to use a second algorithm to check, on the basis of the data $DAT(t)$ and a prescribed state space $\underline{Z}'$ or a boundary for the state space $\underline{Z}'$, whether it holds that: $ZUS(t) \in \underline{Z}'$, wherein in the event of $ZUS(t) \notin \underline{Z}'$ the second processor (106) prompts an interruption unit (114) to interrupt the data link (104) between the first processor (103) and the unit (105), and a control unit (107),

20 connected to the unit (105), for controlling the robot (102), which control unit controls/regulates the robot (102) into a prescribed safe state when the second stop signal Sig2 is present.

Fig. 1