Title (en)

ROBOT PROCESS

Title (de

ROBOTERPROZESS

Title (fr)

PROCESSUS ROBOTISÉ

Publication

EP 4133341 A1 20230215 (DE)

Application

EP 21715537 A 20210324

Priority

- DE 102020204551 A 20200408
- EP 2021057572 W 20210324

Abstract (en)

[origin: WO2021204544A1] The invention relates to a method for executing a process, in particular with the aid of at least one robot (10), which method has the steps of: executing (S10) a run-through of the process with a process control, in particular of the robot; detecting (S10) a value of a first process variable (x) for this execution; and detecting (S10) an assessment (E) of this executed process run-through; the following assessment learning steps, repeated multiple times: varying (S20) the process control, in particular at least one parameter of the process control, in particular of a controller (31), by an optimiser (4) to achieve a varied process control on the basis of values of a quality criterion for executed process run-throughs; executing (S20) a run-through of the process with the varied process control; detecting (S20) a value of the first process variable for this execution; and detecting an assessment (E) of this executed process run-through; wherein a first quality factor model (51) of the process, which determines a quality factor (E') of the process on the basis of the first process variable; and the following process control optimisation steps, repeated multiple times: varying (S40) the process control by the optimiser to achieve a varied process control on the basis of values of the quality criterion for executed process run-throughs; executing (S40) a run-through of the process with the varied process control; and detecting (S40) a value of the first process variable for this execution; wherein the value of the quality criterion for at least one of the process run-throughs executed with one of the altered process controls is determined on the basis of a quality factor (E') determined by the machine-learned first quality factor model on the basis of the value of the first process variable detected for this process run-through.

IPC 8 full level

G05B 13/02 (2006.01); B25J 9/16 (2006.01); G06J 1/00 (2006.01); G06N 3/00 (2006.01); G06N 20/00 (2019.01)

CPC (source: EP US)

B25J 9/161 (2013.01 - US); B25J 9/163 (2013.01 - EP US); G05B 13/0265 (2013.01 - EP); G06N 20/00 (2018.12 - EP); G05B 2219/49065 (2013.01 - EP); G06N 3/02 (2013.01 - EP)

Citation (search report)

See references of WO 2021204544A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

DE 102020204551 A1 20211014; CN 115398352 A 20221125; EP 4133341 A1 20230215; US 2023141359 A1 20230511; WO 2021204544 A1 20211014

DOCDB simple family (application)

DE 102020204551 A 20200408; CN 202180027260 A 20210324; EP 2021057572 W 20210324; EP 21715537 A 20210324; US 202117917645 A 20210324