

Title (en)

CONTROL OF A ROBOT MANIPULATOR UPON CONTACT WITH A PERSON

Title (de)

STEUERUNG EINES ROBOTERMANIPULATORS BEI KONTAKT MIT EINER PERSON

Title (fr)

COMMANDE DE MANIPULATEUR ROBOTISÉ LORS D'UN CONTACT AVEC UNE PERSONNE

Publication

EP 4106958 A1 20221228 (DE)

Application

EP 21709341 A 20210210

Priority

- DE 102020104364 A 20200219
- EP 2021053124 W 20210210

Abstract (en)

[origin: WO2021165105A1] The invention relates to a method for controlling a robot manipulator (1), having the steps of: - providing (S1) a database containing body zones of a person, wherein each of the body zones is assigned a particular maximum permissible value of contact pressure, - determining (S2) a current or future contact event involving the robot manipulator (1) and the person and determining the body zone of the person with which contact is made, - determining (S3) a reference position that is fixed with respect to the body relative to the person, wherein the reference position indicates the beginning of the local progression of the pushing-in of tissue of the person during the contact event with the person, and - controlling (S4) the robot manipulator (1) in an impedance-controlled manner in such a way that the determined reference position as a zero position of an artificial spring component is used for impedance control of the robot manipulator (1) and the maximum permissible contact pressure as a limit value is not exceeded.

IPC 8 full level

B25J 9/16 (2006.01); **G05B 19/406** (2006.01)

CPC (source: EP KR US)

B25J 9/1633 (2013.01 - EP KR US); **B25J 9/1653** (2013.01 - US); **B25J 9/1676** (2013.01 - EP KR US); **B25J 13/089** (2013.01 - US); **G05B 19/406** (2013.01 - EP KR); **G05B 2219/39338** (2013.01 - EP KR); **G05B 2219/39339** (2013.01 - EP KR); **G05B 2219/39342** (2013.01 - EP KR); **G05B 2219/39343** (2013.01 - EP KR); **G05B 2219/40198** (2013.01 - EP KR); **G05B 2219/40201** (2013.01 - EP KR)

Citation (search report)

See references of WO 2021165105A1

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 102020104364 B3 20210527; CN 115023321 A 20220906; EP 4106958 A1 20221228; JP 2023513956 A 20230404; KR 20220141853 A 20221020; US 2023067761 A1 20230302; WO 2021165105 A1 20210826

DOCDB simple family (application)

DE 102020104364 A 20200219; CN 202180011727 A 20210210; EP 2021053124 W 20210210; EP 21709341 A 20210210; JP 2022549771 A 20210210; KR 20227031799 A 20210210; US 202117794433 A 20210210