

Title (en)
AUTONOMOUS LOADING VEHICLE CONTROLLER

Title (de)
STEUERGERÄT FÜR AUTONOMES LADEFAHRZEUG

Title (fr)
DISPOSITIF DE COMMANDE DE VÉHICULE À CHARGEMENT AUTONOME

Publication
EP 3102744 A4 20180307 (EN)

Application
EP 15740514 A 20150123

Priority

- US 201461931243 P 20140124
- US 201462033904 P 20140806
- CA 2015000044 W 20150123

Abstract (en)
[origin: WO2015109392A1] Provided are dig controller and dig control method embodiments for an autonomous loading vehicle (ALV) used in applications such as mining, construction, and exploration. Embodiments may comprise at least one controller that controls a bucket and/or the ALV in accordance with at least one sensor signal, wherein the at least one sensor signal is representative of interaction between the bucket and the rock pile during a dig. Some embodiments include at least one admittance controller and optionally at least one iterative learning controller (ILC) that uses feedback from at least one previous dig to modify the at least one sensor signal provided to the at least one controller.

IPC 8 full level
E02F 9/20 (2006.01); **E02F 3/43** (2006.01); **E02F 9/26** (2006.01); **E21C 27/30** (2006.01)

CPC (source: EP RU)
E02F 3/434 (2013.01 - EP); **E02F 9/20** (2013.01 - RU); **E02F 9/2029** (2013.01 - EP); **E02F 9/205** (2013.01 - EP); **E02F 9/265** (2013.01 - EP)

Citation (search report)

- [XY] US 6233511 B1 20010515 - BERGER ALAN D [US], et al
- [XY] EP 0990739 A1 20000405 - HITACHI CONSTRUCTION MACHINERY [JP]
- [X] US 2007168100 A1 20070719 - DANKO GEORGE [US]
- [Y] US 2011106384 A1 20110505 - CORKE PETER [AU], et al
- [I] US 5682312 A 19971028 - ROCKE DAVID J [US]
- [Y] US 2009326768 A1 20091231 - SHULL ANDREW GORDON [US]
- [Y] US 2004117092 A1 20040617 - BUDDE STEVEN C [US]
- [Y] KR 20130068544 A 20130626 - HYUN DAI HEAVY IND CO LTD [KR]
- [Y] US 6845311 B1 20050118 - STRATTON KENNETH LEE [US], et al
- [Y] US 6510628 B1 20030128 - KOCH ROGER D [US]
- [I] US 6205687 B1 20010327 - ROCKE DAVID J [US]
- [X] SERAJI H: "Adaptive admittance control: an approach to explicit force control in compliant motion", ROBOTICS AND AUTOMATION, 1994. PROCEEDINGS., 1994 IEEE INTERNATIONAL CONFERENCE ON SAN DIEGO, CA, USA 8-13 MAY 1, LOS ALAMITOS, CA, USA, IEEE COMPUT. SOC, 8 May 1994 (1994-05-08), pages 2705 - 2712, XP010097345, ISBN: 978-0-8186-5330-8, DOI: 10.1109/ROBOT.1994.350927
- See references of WO 2015109392A1

Cited by
EP4219844A4

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

DOCDB simple family (publication)
WO 2015109392 A1 20150730; AU 2015208631 A1 20160728; AU 2015208631 B2 20190725; CA 2935576 A1 20150730; CA 2935576 C 20220802; CL 2016001684 A1 20161118; EP 3102744 A1 20161214; EP 3102744 A4 20180307; EP 3102744 B1 20230705; EP 3102744 C0 20230705; MX 2016008819 A 20160908; RU 2016134403 A 20180301; RU 2016134403 A3 20180821; RU 2703086 C2 20191015

DOCDB simple family (application)
CA 2015000044 W 20150123; AU 2015208631 A 20150123; CA 2935576 A 20150123; CL 2016001684 A 20160630; EP 15740514 A 20150123; MX 2016008819 A 20150123; RU 2016134403 A 20150123