

Title (en)  
DRIVELINE MODELLER

Title (de)  
ANTRIEBSSTRANGMODELLIERER

Title (fr)  
MODELEUR DE CHAÎNE CINÉMATIQUE

Publication  
**EP 2904528 A1 20150812 (EN)**

Application  
**EP 13791857 A 20130930**

Priority  
• EP 12186876 A 20121001  
• GB 201305324 A 20130322  
• GB 2013052544 W 20130930  
• EP 13791857 A 20130930

Abstract (en)  
[origin: GB2506532A] Computer aided engineering for designing a driveline comprises the steps of: creating a single parametric description of the driveline; analysing the parametric description for performance using one or more failure modes. The mathematical model may provide a dynamic analysis using a discrete model, using nodes sufficient for a defined frequency range and in which degrees of freedom per node may have linear or non-linear characteristics suitable for the failure mode. The user may assess performance against a design target and the software may optimise performance by amending the parametric description and repeating the analysing step. The driveline may be an electric motor/generator and a gearbox with associated gear mesh roller bearing stiffness and/or unbalanced magnetic pull at a given speed and load operating point. The model may analyse vibration power being passed from bearings to housing in response to torque ripple and/or transmission error. Engineering performance may include vehicle performance, energy/fuel efficiency, exhaust emissions, stress, durability, fatigue, cost, thermal, noise performance, manufacturability, failure due to dynamic input loads, speed and gearbox ratio changing.

IPC 8 full level  
**G06F 17/50** (2006.01); **G06Q 10/04** (2012.01)

CPC (source: EP GB)  
**G06F 30/15** (2020.01 - EP GB); **G06F 30/17** (2020.01 - EP GB); **Y02T 90/00** (2013.01 - EP)

Citation (search report)  
See references of WO 2014053817A1

Citation (examination)  
• EP 2587423 A2 20130501 - ROMAX TECHNOLOGY LTD [GB]  
• WIKIPEDIA: "Repository (version control)", INTERNET ARTICLE, 14 September 2012 (2012-09-14), XP055260735, Retrieved from the Internet <URL:https://en.wikipedia.org/w/index.php?title=Repository\_(version\_control)&oldid=512431914> [retrieved on 20160323]  
• MATTHEW WHITTLE ET AL: "A Parametric Investigation of the Effect of Generator Misalignment upon Bearing Fatigue Life in Wind Turbines", EWEA 2011, 17 March 2011 (2011-03-17), XP055260848, Retrieved from the Internet <URL:http://www.sari-energy.org/PageFiles/What\_We\_Do/activities/EWEC\_2011\_Brussels/Presentations/Scientifics574.pdf> [retrieved on 20160324]  
• YOU LIANG SU ET AL: "Analysis of Wind Turbine Gearbox Based on RomaxWIND Flexible FE Structures", ADVANCED MATERIALS RESEARCH, vol. 512-515, 14 May 2012 (2012-05-14), pages 669 - 674, XP055260867, DOI: 10.4028/www.scientific.net/AMR.512-515.669  
• WILLIAM COLLINGS: "Evaluation of a BLDC drive line and energy analysis for an electric Ultra Light Vehicle", MASTER OF SCIENCE THESIS, CHALMERS UNIVERSITY OF TECHNOLOGY, 31 December 2011 (2011-12-31), XP055327784, Retrieved from the Internet <URL:http://publications.lib.chalmers.se/records/fulltext/163436.pdf> [retrieved on 20161209]

Cited by  
CN111262203A; CN106446354A

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

DOCDB simple family (publication)  
**GB 201317303 D0 20131113**; **GB 2506532 A 20140402**; **GB 2506532 B 20150930**; CN 104798073 A 20150722; CN 104798073 B 20180918; EP 2904528 A1 20150812; JP 2015533244 A 20151119; JP 6505601 B2 20190424; KR 102193254 B1 20201222; KR 20150065836 A 20150615; WO 2014053817 A1 20140410

DOCDB simple family (application)  
**GB 201317303 A 20130930**; CN 201380059615 A 20130930; EP 13791857 A 20130930; GB 2013052544 W 20130930; JP 2015533699 A 20130930; KR 20157011606 A 20130930