

Title (en)  
SYSTEMS AND METHODS FOR SIMULATING CEMENT PLACEMENT

Title (de)  
SYSTEME UND VERFAHREN ZUM SIMULIEREN VON ZEMENTPLATZIERUNG

Title (fr)  
SYSTÈMES ET PROCÉDÉS DE SIMULATION DE MISE EN PLACE DE CIMENT

Publication  
**EP 3284903 A1 20180221 (EN)**

Application  
**EP 16306066 A 20160818**

Priority  
EP 16306066 A 20160818

Abstract (en)  
A method may include receiving data related to a wellbore fluid, a wellbore, and a geological formation. The method may then determine properties associated with the wellbore fluid over a period of time based on the data; determine temperature values associated with the wellbore fluid based on the data and the properties associated with the wellbore fluid; determine an expected shape of the annulus space based on the data, the properties associated with the wellbore fluid, and the temperature values; and determine bottom-hole fluid properties associated with the wellbore fluid based on the properties of the wellbore fluid and the temperature values. The method may then generate a wellbore fluid placement map based on the bottom-hole fluid properties, the shape of the annulus space, and the temperature values, such that the wellbore fluid placement map includes expected concentration levels of the wellbore fluid.

IPC 8 full level  
**E21B 33/14** (2006.01); **E21B 47/00** (2012.01); **E21B 47/10** (2012.01)

CPC (source: EP US)  
**E21B 33/14** (2013.01 - EP); **E21B 47/005** (2020.05 - EP); **E21B 47/10** (2013.01 - EP US)

Citation (applicant)  
US 2013132050 A1 20130523 - PARRY ANDREW J [FR], et al

Citation (search report)  
• [XA] WO 2015143368 A1 20150924 - SCHLUMBERGER CA LTD [CA], et al  
• [XAI] SCHLUMBERGER: "Cementics Zonal isolation software", 4 April 2016 (2016-04-04), XP055357291, Retrieved from the Internet <URL:http://www.slb.com/~media/Files/cementing/product\_sheets/cementics\_ps.pdf> [retrieved on 20170321]  
• [XI] MARK SAVERY ET AL: "Modeling Fluid Interfaces During Cementing Using a 3D Mud Displacement Simulator", OFFSHORE TECHNOLOGY CONFERENCE, 30 April 2007 (2007-04-30), Houston, TX, XP055357299, DOI: 10.4043/18513-MS  
• [A] VADIM S TIKHONOV ET AL: "NUMERICAL SIMULATION OF CASING CENTRALIZATION", WCCM XI ECCM V ECFD VI, 25 July 2014 (2014-07-25), Barcelona, Spain, XP055357304

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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

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DOCDB simple family (application)  
**EP 16306066 A 20160818**; EP 2017000938 W 20170808