Title (en)
WELL DRILLING METHODS WITH EVENT DETECTION

Title (de)
BOHRVERFAHREN MIT EREIGNISERKENNUNG

Title (fr)
PROCÉDÉS DE FORAGE DE PUITS AVEC DÉTECTION D'ÉVÉNEMENTS

Publication
EP 2459844 A4 20170712 (EN)

Application
EP 09847914 A 20090730

Priority
US 2009052227 W 20090730

Abstract (en)
[origin: WO2011014171A1] A drilling method includes assigning values to behaviors of drilling parameters during a drilling operation; forming multiple parameter signatures, each of the parameter signatures comprising a respective combination of the values; comparing the parameter signatures to multiple event signatures, each of the event signatures being indicative of a respective drilling event; and controlling the drilling operation in response to at least a partial match resulting from comparing the parameter signatures to the event signatures. Another method includes defining an event signature comprising a unique combination of a behavior of each of multiple drilling parameters, the event signature being indicative of a drilling event; accessing data from each of multiple sensors which sense the respective drilling parameters during a drilling operation; determining multiple parameter signature segments from the respective sensed drilling parameters; combining the parameter signature segments, thereby forming a parameter signature; and comparing the parameter signature to the event signature.

IPC 8 full level
E21B 44/00 (2006.01); **E21B 47/00** (2012.01)

CPC (source: EP US)
E21B 44/00 (2013.01 - EP); **E21B 47/00** (2013.01 - EP US)

Citation (search report)
- [XY] EP 1135577 A1 20010926 - NOBLE ENGINEERING AND DEV LTD [US]
- [Y] US 2007185696 A1 20070809 - MORAN DAVID P [US], et al
- [A] EP 1556579 A1 20050727 - NOBLE DRILLING SERVICES INC [US]
- [A] US 6868920 B2 20050322 - HOTEIT LEILA [FR], et al
- See references of WO 2011014171A1

Designated contracting state (EPC)
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 SE SI SK SM TR

DOCDB simple family (publication)
WO 2011014171 A1 20110203; AU 2009350516 A1 20120202; AU 2009350516 B2 20140529; AU 2014204436 A1 20140731; AU 2014204436 B2 20160616; EP 2459844 A1 20120606; EP 2459844 A4 20170712; MX 2011013899 A 20120522; MX 359083 B 20180907

DOCDB simple family (application)
US 2009052227 W 20090730; AU 2009350516 A 20090730; AU 2014204436 A 20140715; EP 09847914 A 20090730; MX 2011013899 A 20090730; MX 2014009591 A 20090730