Title (en)

Method and apparatus for electric/acoustic telemetry in a well.

Title (de)

Verfahren und Einrichtung zur elektrisch-akustischen Telemetrie im Bohrloch.

Title (fr)

Procédé et dispositif pour télémétrie électrique/acoustique dans un puits.

Publication

EP 0636763 A2 19950201 (EN)

Application

EP 94305423 A 19940722

Priority

US 9757093 A 19930726

Abstract (en)

A drill collar section (22) of a drill string (16) (i.e. at the downhole end of the drill string) includes an electric transmitter/receiver assembly (26) which communicates with an electric/acoustic repeater assembly (28) which communicates with an acoustic transmitter/ receiver assembly (29) uphole of the drill string by the transmission and receipt of electric and acoustic signals through the drill string. With drill strings that include downhole motors (30) the electric transmitter/receiver assembly may be positioned above or below the motor. Uphole telemetry comprises an electric current induced in the drill string by the downhole electric transmitter (26). The electric current contains encoded information of downhole conditions and travels up the drill string where it is detected at the electric receiver of the electric/acoustic repeater (28). The received signal is processed to drive the acoustic transmitter of the electric/acoustic repeater. An acoustic signal containing the encoded information is induced into the drill string by this acoustic transmitter and permeates up the drill string to the uphole acoustic receiver (29). This received signal is processed and utilized to evaluate and/or optimize the drilling process or to evaluate the earth formations being drilled. Downhole telemetry comprises an acoustic signal induced in drill string (16) by the uphole acoustic transmitter (29). The acoustic signal contains encoded information of uphole commands and travels down the drill string where it is detected at the acoustic receiver of the electric/acoustic repeater (28). The received signal is processed to drive the electric transmitter of the electric/acoustic repeater. An electric signal containing the encoded information is induced in the drill string by this electric transmitter and travels down the drill string to the downhole electric receiver (26). This received signal is processed and utilized to command a downhole processor (i.e., computer). <IMAGE>

IPC 1-7

E21B 47/12

IPC 8 full level

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CPC (source: EP US)

E21B 47/12 (2013.01 - EP US); **E21B 47/13** (2020.05 - EP); **E21B 47/16** (2013.01 - EP)

Cited by

US7172038B2; EP0932054A3; EP0919697A3; EP1083298A3; EP0922836A1; US6018501A; GB2307077A; EP0773345A1; FR2740827A1; GB2307077B; AU705269B2; US5914911A; WO2014100262A1; US10465505B2; US10837276B2; US10132149B2; US10689962B2; US11268378B2; US11293280B2; US10771326B2; EP2157279A1; US8994550B2; US9631486B2; EP2157278A1; US10480308B2; US11203927B2; WO2007019319A1; US9863222B2; US10487647B2; US11828172B2; US10344583B2; US10526888B2; WO2012131600A2; EP2763335A1; US9388635B2; US10590759B2; US7913773B2; US10100635B2; US10711600B2; US10724363B2; US11952886B2; US6597175B1; US8322461B2; US9631485B2; US12000273B2; US10415376B2; US10690794B2; US10697288B2; US10844708B2; US9816373B2; US10408047B2; US10697287B2; US10883363B2; US11035226B2; US11180986B2; US11313215B2; US7080699B2; US8605548B2; EP2762673A1; US9441479B2; US9759062B2; US10167717B2; US10364669B2; US11156081B2

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