

Title (en)

Firing systems including a controller which is connectable by electrical wires

Title (de)

Zündsystem mit einer mittels elektrischer Leitungen anschliessbaren Steuereinheit

Title (fr)

Système de mise à feu avec un contrôleur connectable par moyen de câbles électriques

Publication

EP 0897098 A2 19990217 (EN)

Application

EP 98306434 A 19980812

Priority

- ZA 977246 A 19970813
- ZA 981828 A 19980304

Abstract (en)

A method and system for causing a multi-shot blast is disclosed and claimed. According to the method, suitable positions for detonators 14.1 to 14.8 are determined in situ. Position related data (x;y) is determined automatically for each position utilizing a GPS system and also identification code data of each detonator. This data is transferred to a controller 16 via a data-capturing device 18. The controller establishes a blast programme including inter hole delay times calculated by taking into account the position related data, geological structure, hole depth, mass of explosive in hole etc. The controller transmits signals including delay time data to the detonators, to cause them to detonate according to the programme.

IPC 1-7

F42D 1/055

IPC 8 full level

F42D 1/055 (2006.01)

CPC (source: EP)

F42D 1/055 (2013.01)

Cited by

US7578237B2; WO2005047812A1; CN103217081A; AU2004226923B2; EP3842730A1; CN103217082A; EA015887B1; AU2003254393B2; CN113790647A; DE19930904A1; DE19930904B4; DE10032139A1; AU785008B2; DE10032139B4; AU2004258227B2; EP1105693A4; AU2019303427B2; EP2391864A4; EP3690186A1; CN113330187A; US6945174B2; US7810430B2; US8256349B2; US6851369B2; US11644292B2; WO0004337A1; WO2008078288A1; WO2020156872A1; WO2021130296A1; WO2008074071A1; WO2004020934A1; US7694627B2; US11221200B2; US12013222B2; US8385042B2; WO2015066736A2; US10429162B2; US11009331B2; US7650841B2; US6941870B2; WO2005008169A3; WO2013020456A1; WO2006086843A1; WO03083406A1; US7370513B2; US7958824B2; US8839720B2; US9091518B2; US9091519B2; WO0231431A1; WO2010085837A1; WO2010144952A1

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

EP 0897098 A2 19990217; **EP 0897098 A3 19991215**; AU 7990298 A 19990225; BR 9806570 A 20000222; CA 2245026 A1 19990213; PE 49399 A1 19990520

DOCDB simple family (application)

EP 98306434 A 19980812; AU 7990298 A 19980812; BR 9806570 A 19980813; CA 2245026 A 19980812; PE 00073398 A 19980813