PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G11B 5/596

A1

(11) International Publication Number: WO 99/16059

(43) International Publication Date: 1 April 1999 (01.04.99)

(21) International Application Number: PCT/US98/10055

(22) International Filing Date: 14 May 1998 (14.05.98)

(30) Priority Data:

60/059,822	23 September 1997 (23.09.97)	US
08/986,112	5 December 1997 (05.12.97)	US

(71) Applicant: SEAGATE TECHNOLOGY, INC. [US/US]; 920 Disc drive, Scotts Valley, CA 95067–0360 (US).

(72) Inventor: WOODS, Philip, R.; 5725 N.W. 36th, Oklahoma City, OK 73122 (US).

(74) Agents: MCCARTHY, Bill, D.; McCarthy, Free & McCarthy, Suite 250, 101 Park Avenue, Oklahoma City, OK 73102 (US) et al.

(81) Designated States: CN, DE, GB, JP, KR, SG.

Published
With international search report.

(54) Title: REPEATED SERVO RUNOUT ERROR COMPENSATION IN A DISC DRIVE

(57) Abstract

An apparatus and associated method are disclosed for compensating for repeated servo runout error in a disc drive (100). The disc drive includes a disc (106) on which servo information is arranged as a plurality of servo fields (154) which defines tracks (152) on the disc. An actuator assembly (110) is provided adjacent the disc and includes a head (120) which accesses the servo fields and an actuator motor (114) which moves the head relative to the disc. A servo circuit (148) controls radial location of the head by applying current to the actuator motor in response to the servo information. The repeated servo runout error, caused by errors in the radial location of the servo fields on the disc, is compensated by the servo circuit through the use of compensation values which are stored (258) in compensation fields (160) of the servo fields. The compensation values are determined by measuring current (240) applied to the actuator motor as the head follows a selected track, twice integrating the sequence of current measurement samples to determine first and second integrals of current (244, 248), and using the second integral of current to determine the compensation values (250). Radial offset is preferably removed from the current measurement samples (242) and the first integral of current (246).

