## ABSTRACT

## DISC DRIVE WITH IMPROVED SERVO SYSTEM

A disc drive (100) having a digital servo system for controlling the position of a servo head (116) on a dedicated servo surface (104). The servo surface is formatted in a series of consecutive frames (152) along concentric tracks (118, 120), each frame passing the servo head in a time that defines a sampling interval for the servo system.

The drive is characterised in the following ways. The frames contain track address (160) and position fields (162) for locating the servo head and location can be effected in relation to limited or extended fine control regions about the tracks via signals transmitted to a position circuit (450) utilised to generate a servo position error from the position field. The position circuit generates a track phase code for checking track addresses generated by a track address circuit (444) used to generate a track address from the address field. Servo routines are carried out by a servo microcomputer (278) using control equations, stored in the servo microcomputer, having coefficients stored in a system microcomputer (262) that transmits the coefficients with command to carry out servo operations. The drive thus achieves high track density as well as an increase in servo sampling time.

Fig. 6.