Controlling a Media Master Writing Machine to Produce Curvilinear Servo Sector Patterns

ABSTRACT

Curvilinear servo sector patterns are produced on a master media by determining a series of offsets between a radially aligned reference and the desired curvilinear servo sector and expressing each offset as a delay that can be expressed in settings for controlling a master writer. Incorporation of the delay into the master writer allows a curvilinear servo sector pattern to be produced using data mapping that is ordinarily used for the radially aligned servo sector pattern. Thus, curvilinear servo sector patterns with a desired resolution are produced without increasing computational overhead or memory requirements, or decreasing throughput. The delay can be converted into control settings such as sector delay, clock cycle delay and residual fractional delay settings that each represent a portion of the delay. In certain embodiments, a piece-wise linear approximation of the curvilinear shape can be implemented to reduce the amount of required control data, and a master writer controller that generates pulses for multiple lasers can be implemented.



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