some cases, cause a delay of the processing operation, frequent occurrence of errors, operation freeze, abnormal noise, and the like. Generally, no method is usually employed from the very start to utilize the total capacity of the hard disk drive, and the hard disk drive is instead utilized with unused areas still remaining in operation that gradually uses up the unused areas. Whereupon, if it is possible to provide an information processing device that is capable of managing data by using unused areas on the hard disk drive, it is possible to effectively avoid the loss of data, to prevent the wide spread of damage, and to usefully improve reliability of the hard disk drive.

Means for Solving Problem

[0005] An information processing device includes, for example, an area assignment unit, an information acquisition unit, a copy processing unit, and an output unit. The area assignment unit is configured to assign ring areas to a platter provided to rotate in a hard disk drive, the ring areas including a first area and a second area, each of whose minimum unit is a track, wherein the first area includes a candidate area and an alternate sector, the candidate area being an area from or in which data is read or write, the alternate sector being a sector in which data of another sector, where write processing of the data on the candidate area has failed, is written, the alternate sector substituting for said another sector, and the second area includes at least one auxiliary area in an area different from the first area, the auxiliary area corresponding to capacity of the first area, the auxiliary area being assigned to be concentric with the first area. The information acquisition unit is configured to acquire history information in which a number of the alternate sectors formed in the first area is recorded. The copy processing unit is configured to cause the hard disk drive to: copy data in the first area onto the auxiliary area included in the second area when an increase in the alternate sectors due to the read and write processing is equal to or larger than a predetermined threshold; and execute the read and write processing on the auxiliary area as the first area where the copying has been completed. The output unit is configured to output utilization information representing a usage status of the auxiliary area.

CLAIMS

1. An information processing device comprising:

an area assignment unit configured to assign ring areas to a platter provided to rotate in a hard disk drive, the ring areas including a first area and a second area, each of whose minimum unit is a track, wherein

the first area includes a candidate area and an alternate sector,

the candidate area being an area from or in which data is read or write,

the alternate sector being a sector in which data of another sector, where write processing of the data on the candidate area has failed, is written,

the alternate sector substituting for said another sector, and

the second area includes at least one auxiliary area in an area different from the first area,

the auxiliary area corresponding to capacity of the first area,

the auxiliary area being assigned to be concentric with the first area;

an information acquisition unit configured to acquire history information in which a number of the alternate sectors formed in the first area is recorded;

a copy processing unit configured to cause the hard disk drive to

copy data in the first area onto the auxiliary area included in the second area when an increase in the alternate sectors due to the read and write processing is equal to or larger than a predetermined threshold, and

execute the read and write processing on the auxiliary area as the first area where the copying has been completed; and

an output unit configured to output utilization information representing a usage status of the auxiliary area.

2. The information processing device according to claim 1, wherein the area assignment unit is configured to determine whether or not to assign the auxiliary area,

the determination being performed in accordance with a state of a selection switch that switches whether the auxiliary area is to be assigned or not.

3. The information processing device according to claim 1 or 2, wherein, when a copy request command is received in a case that the increase in the auxiliary sectors is below the threshold, the copy processing unit causes the hard disk drive to copy data in the first area onto the auxiliary area and execute the read and write processing on the auxiliary area as the first area.

4. The information processing device according to any one of claims 1 to 3, wherein, before causing the hard disk drive to execute the copying, the copy processing unit causes the hard disk drive to

execute read and write check processing on the auxiliary area on which copying is to be performed, and

execute the copying of the data when a number of read and write errors is below a predetermined threshold.