TO: Professor K. LaGrandeur

FROM:

SUBJECT: Proposal for a technical report regarding the DVD+RW format drive

DATE: 11/18/04

PURPOSE:

The purpose of this memo is to request consent for the provision of a research report about the DVD+RW format drive, a hardware component used to write DVDs.

SUMMARY:

With some older formats of DVD recording, it could take almost as long to write a small file to a disc as to write a very large file. The access time needed to find a file on a DVD could also be fairly long. The DVD+RW format was created to decrease the writing time for smaller files, such as those used for backup purposes with computers, and also to reduce the necessary access time. The report will evaluate the effectiveness of the DVD+RW format drive in comparison to older formats in terms of performance (disc writing speed, access time, etc.), user functionality, and consumer acceptance. This information could be useful to anyone who wishes to purchase a DVD recorder but is not familiar with the differences among the various formats. The projected completion date for this report is December 19, 2004. An estimated figure of $520 is needed to undertake this project.

PROPOSED PROGRAM:

With older DVD writing formats, such as DVD-RW, a disc had to be finalized before it could be read. Finalization is a step in the recording process where the writing session is closed and formatting information is written to the DVD to make it readable. This step takes about the same length of time whether the amount of data written is small or large. With the DVD+RW format, finalization is not required. When data is written to the disc, the disc will be formatted in the background (while the drive is not reading or writing). This data can be read right away, without having to wait for finalization. New data can be added to the disc at any time, and the formatting will pause until the drive is idle again. This process can be much quicker than the DVD-RW method when backing up individual files or groups of files on a PC.

When performing reading or writing operations, computer drives regularly access random areas of the disc, frequently changing to a different radius. Older format drives read and write in CLV (Constant Linear Velocity) mode, where the disc spins faster when the laser is near the center, and slower when the laser is near the outer diameter. When switching from one radius to another, the drive must wait for the disc rotation to increase or decrease to the proper speed before reading or writing. The time to change the rotation speed of the disc is often the longest operation in seeking. DVD+RW drives operate in CAV (Constant Angular Velocity) mode, where the disc rotates at a constant speed, and data is written faster at the outer edge than at the inner diameter. This eliminates the wait time for the disc to change speeds, and improves read and write speeds when many random accesses are needed.

This project shall be completed through the following tasks:

Task 1: Research performance factors of the DVD+RW drive and other format drives.

Task 2: Research user functionality of the DVD+RW drive and other format drives.

Task 3: Research consumer acceptance of the DVD+RW drive and other format drives.

Task 4: Write a technical report comparing the effectiveness of the DVD+RW drive to older format drives.
QUALIFICATIONS AND EXPERIENCE:

I, student, will be providing this report, and am fully competent to accomplish this task. My qualifications include:

- B.S. in Electrical and Computer Engineering, New York Institute of Technology, Old Westbury, NY (Anticipated graduation date: December 2004)
- I currently work as an engineer for a company which provides components for military and commercial electronics.
- I have a personal interest in this subject, and plan to purchase a DVD recorder in the near future.

BUDGET:

Below is an itemized budget for the proposed project.

<table>
<thead>
<tr>
<th>Item</th>
<th>Hours</th>
<th>Rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>20</td>
<td>$20</td>
<td>$400</td>
</tr>
<tr>
<td>Writing</td>
<td>4</td>
<td>$20</td>
<td>$80</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>-</td>
<td>-</td>
<td>$20</td>
</tr>
<tr>
<td>Travel</td>
<td>1</td>
<td>$20</td>
<td>$20</td>
</tr>
</tbody>
</table>

Total: $520

ANNOTATED BIBLIOGRAPHY:


This web page gives a feature comparison of two popular recordable DVD formats, DVD+RW and DVD-RW. In addition, it lists the advantages each format has over the other.


This booklet gives a brief discussion of how the DVD+RW format works. It outlines the features of DVD+RW, gives details on the video format, and describes how files are handled. It also provides information on how the discs are made.


This web page defines the usage differences between CDs and DVDs, and compares the features of the rewritable DVD formats. It provides sales data for rewritable DVD drives when sold as a standalone unit, and when attached to a PC.


This report contains shipment data for DVD+RW drives. It gives an overview of the DVD+RW and DVD-RW formats, and includes a side-by-side comparison of shipments for the two formats. It also assesses the difference in sales between DVD+RW drives and Set-top DVD recorders.
KEY: 3=PRETTY GOOD; 2=O.K.; 1=NEEDS WORK

I. CONTENT 3

II. ORGANIZATION of sentences and ideas is clear 3

III. FORMATTING of document is proper 3

III. GRAMMAR  
   A.) Word order is clear 3
   B.) Word choices are clear and well-considered 3
   C.) Punctuation 3

IV. GRADE: A