

Mail Stop 3720 Building 2

April 18, 2006

**Via U.S. Mail and Fax (408.522.2800)**

James E. Doyle  
Vice President of Finance and Chief Financial Officer  
Applied Signal Technology, Inc.  
400 West California Avenue  
Sunnyvale, CA 94086

**RE: Form 10-K for the fiscal year ended October 31, 2005  
Filed January 17, 2006  
Form 10-Q for the quarter ended January 27, 2006  
Filed March 7, 2006**

Dear Mr. Doyle:

We have reviewed your supplemental response letter dated March 24, 2006 as well as your filings and have the following comments. As noted in our comment letter dated February 24, 2006, we have limited our review to your financial statements and related disclosures and do not intend to expand our review to other portions of your documents.

**Forms 10-K for the year ended October 31, 2005**

1. We note your response to comment 2 and we request that you fully comply with the reporting requirements of 5-03(b) Regulation S-X. Notwithstanding the fact that you follow the guidance in SOP 81-1 for determining when contract revenues are earned, Regulation S-X requires that Applied Signal Technology, Inc. state separately on the face of its income statement revenues from sales of products and revenues from services, along with the associated costs of providing the products and services. Revise accordingly or advise us.
2. We note in your response to comment 5 you refer to paragraph 10 of ABP Opinion 28 which states, "[i]n general, the results for each interim period should be based on the accounting principles and practices used by the enterprise in the preparation of its latest annual financial statements." Applying this guidance to Applied Signal Technology, Inc., it seems to us this would mean you should report indirect expenses in the interim period at the amounts that were incurred in the interim period since you

report indirect expenses in your annual financial statements in the amounts that were incurred in the annual period. Further, we refer you to paragraph 15.a of APB Opinion 28 which states, “[c]osts and expenses other than product costs should be charged to income in interim periods as incurred...” Regarding your reference to paragraph 17 of APB Opinion No. 28, the costs you have chosen to estimate in interim periods do not appear to be the types of costs subject to adjustment contemplated in this paragraph. Assuming you have a reasonably functioning accounting system, we believe management should know exactly what the Company has incurred for indirect labor, facilities, repairs and maintenance, depreciation and amortization, fringe benefits, and support costs in an interim period. We request that you revise your policy for reporting indirect contract expenses in interim periods or provide us the justification in GAAP for your current policy.

3. We note your representation in your responses to comments 4 – 6 that historically the impact of adjusting the estimated indirect rate to the actual indirect rate has been insignificant. So that we may better understand the impact of your indirect rate adjustments, please provide us a quantified analysis of the impact of recording estimated amounts on your quarterly results of operations in 2004 and 2005, including the fourth quarters. In your analysis show us the amounts as reported in your Forms 10-Q for each affected line item, and the affected line-item amounts recorded in your fourth quarter after the rate adjustment, and compare these amounts to the actual expense amounts incurred and revenue amounts earned in each quarter.
4. Tell us the total amount of indirect costs that the Company has incurred in fiscal 2004 and 2005.
5. We note your response to comment 7. Since all of your goodwill relates to the acquisition of DTI it is unclear to us why you do not identify the operations formally associated with the DTI business as a reporting unit for impairment testing purposes. Please refer to paragraph 30 of SFAS No. 142 and advise us in detail.

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Please respond to these comments within 10 business days or tell us when you will provide us with a response. You may contact Joe Cascarano, Staff Accountant, at (202) 551-3376 or Robert Littlepage, Accountant Branch Chief, at (202) 551-3361 if you have questions regarding our comments on the financial statements and related matters. Please contact me at (202) 551-3810 with any other questions.

Sincerely,

Larry Spirgel  
Assistant Director