

Mail Stop 3720 Building 2

February 24, 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**

Dear Mr. Doyle:

We have reviewed your filing and have the following comments. We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your documents. Where indicated, we think you should revise your documents in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may or may not raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

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

Item 7 Management's Discussion and Analysis—Results of Operations

1. We refer to your explanation of changes in revenue. As one of the objectives of MD&A is to provide a narrative explanation of the company's financial statements that enables investors to see the company through the eyes of management, you should provide more insight into operational factors that affected revenue. For example, you categorized a number of COMINT products in your business section, but you do not quantify the volume and prices or indicate the relevant weight of each product in discussing growth of revenue. Therefore, in future filings, please provide a discussion of the components of revenue growth (e.g. volume, price, etc.) by major product category (voice grade channel processors, wideband processors, collection products, etc.) for all periods presented. Please refer to Item 303 of Regulation S-K and the Commission's Interpretive Release on Management's Discussion and Analysis of Financial Condition and Results of Operation on our website at:
<http://www.sec.gov/rules/interp/33-8350.htm>.

Consolidated Statements of Operations

2. State separately on the face of your income statement revenues from the sale of products and revenues from services, pursuant to 5-03(b)1 of Regulation S-X, or advise us. Similarly, separately disclose cost of tangible goods sold and costs of services pursuant to 5-03(b)2 of Regulation S-X.

Note 1: Organization and Summary of Significant Accounting Policies
Revenues and cost recognition

3. We note that a majority of your contracts are accounted for in accordance with SOP 81-1. Upon reading your descriptions of the contractual arrangements, it appears to us that the contracts would entail a number of different deliverables, including services, which may be separate units of accounting as defined by EITF 00-21. Please describe to us in detail how you determined which deliverables were within the scope of SOP 81-1 and which deliverables may, or may not, have been outside the scope and have met the separation criteria under the guidance of EITF 00-21.
4. Please disclose in your policy note the specific types of costs you consider to be indirect costs and advise us in detail.

Indirect rate variance adjustments to operations

5. We note you record contract revenues and costs of operations for interim reporting purposes based on annual targeted indirect rates. Explain to us your basis in GAAP for this policy, citing any supporting GAAP literature in your response.
6. We do not understand the third paragraph on this policy note, please elaborate in plain English. Explain to us how you are able to “modify your billing rate” and your legal basis for doing so. Tell us if the rate modifications are temporary or permanent. Also, tell us how your recording “adjustment to expense based on estimates of future contract activities” complies with GAAP.

Goodwill valuation

7. With a view towards expanded disclosure in future filings, please explain to us how you test goodwill for possible impairment. Specifically, explain to us your identification of reporting units and your assignment of acquired assets, liabilities and goodwill to them.

Note 4: Business Combination

8. You are required, pursuant to paragraph 39 of SFAS 141, to record all acquired identifiable intangible assets at their respective fair values. Disclose and explain to us, in detail, why the majority of your purchase price in excess of net tangible assets has been assigned to goodwill in your acquisition of DTI, consummated on July 1, 2005. When responding to this comment please refer to the list of identifiable intangible assets in paragraph A14 of SFAS 141, and with respect to the DTI acquisition, specifically explain to us why you apparently have acquired little if any customer related intangible assets, contract based intangible assets, or technology based intangible assets.

Note 12: Contingencies

9. Regarding your securities class action lawsuit, disclose the amount of possible loss or range of loss or state that such an estimate cannot be made, pursuant to paragraph 10 of SFAS No. 5.

Please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a letter that keys your responses to our comments and provides any requested supplemental information. Please file your response letter on EDGAR.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filings reviewed by the staff to be certain that they have provided all information investors require for an informed decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that

- the company is responsible for the adequacy and accuracy of the disclosure in the filings;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filings; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filings or in response to our comments on your filings.

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 comments on the financial statements and related matters. Please contact me at (202) 551-3810 with any other questions.

Sincerely,

Larry Spigel
Assistant Director