

UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

Mail Stop 3720

March 5, 2010

Via U.S. Mail and Fax

Mr. James E. Doyle Vice President of Finance and Chief Financial Officer Applied Signal Technology, Inc. 460 West California Avenue Sunnyvale, CA 94086

> RE: Applied Signal Technology, Inc. Form 10-K for the fiscal year ended October 31, 2009 Filed January 12, 2010 File No. 0-21236

Dear Mr. Doyle:

We have reviewed your supplemental response letter dated February 2, 2010 as well as your filing and have the following comments. As noted in our comment letter dated January 29, 2010, 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.

<u>Form 10-K for Fiscal Year Ended October 31, 2009</u>
<u>Item 8: Consolidated Financial Statements and Supplementary Data</u>

Note 10: Segment Reporting

1. We note your response to prior comment no. 1. Please tell us whether your Company's management reviews discrete financial information for the indefinite delivery/indefinite quantity (IDIQ) contracts; and if so, why they would not be considered operating segments in accordance with ASC 280-10-50-1. Also, describe for us in detail the financial and operating results regularly reviewed by your Company's chief operating decision maker when allocating resources and assessing performance.

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You may contact Joseph 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 Paul Fischer, Attorney-Advisor, at (202) 551-3415, Kathleen Krebs, Special Counsel, at (202) 551-3350, or me, at (202) 551-3810, with any other questions.

Sincerely,

Larry Spirgel Assistant Director