

Mail Stop 4561
Via Fax (610) 646-0149

April 10, 2009

John C. Long
Chief Financial Officer
Innovative Solutions and Support, Inc.
720 Pennsylvania Drive
Exton, PA 19341

Re: Innovative Solutions and Support, Inc.
Form 10-K and Form 10-K/A for the Fiscal Year Ended
September 30, 2008
Filed December 11, 2008 and December 19, 2008
Form 10-Q for the Fiscal Quarter Ended December 31, 2008
Filed on February 6, 2009
File No. 000-31157

Dear Mr. Long:

We have reviewed your response letter dated March 27, 2009 in connection with the above-referenced filings and have the following comments. If indicated, we think you should revise your document 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 supplemental information so we may better understand your disclosure. After reviewing this information, we may raise additional comments. Unless otherwise noted, where prior comments are referred to they refer to our letter dated February 27, 2009.

Form 10-K and Form 10-K/A for Fiscal Year Ended September 30, 2008

General

1. We note from your response to prior comment 1 that the "typographical errors" did not result in a mathematical mistake based on your consideration of the definition of an error pursuant to SFAS 154. However, the typographical error of using the wrong net loss figure resulted in an error in the presentation of the cash flow statement and caused the mathematical calculations of "net cash provided by (used in) operating activities", "net decrease in cash and cash equivalents", and

"cash and cash equivalents, end of year" to be incorrect. As a result, it appears that the typographical errors would meet the definition of an error and, assuming these errors are considered material, the Company should have filed an Item 4.02 8-K and labeled the related cash flow information as restated. In this regard, please provide the Company's SAB 99 analysis in determining whether these errors were considered to be material.

Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Repurchase of Equity Securities

Comparison of the Five Year Total Return, page 20

2. Your response to prior comment 4 states that you do not use a published industry or line-of-business index because you are not aware of any such index made of companies that are comparable to you and that would be accessible to your security holders or is widely recognized and used. However, we note that other companies in the aerospace and aviation industry, under such SIC codes as 3721, 3728, 3812, and 3823, which appear to be comparable to you have identified and used such indices for comparison in their performance graphs; including the SPADES Defense index, the Dow Jones US Aerospace Index, or the S&P Aerospace and Defense Index. Please advise as to why identification and use of such industry or line-of-business indices are not feasible or appropriate; or alternatively why you are unable to construct an index of peer issuer(s), which need not be limited to direct competitors.

Note 3. Summary of Significant Accounting Policies, Revenue Recognition, page 39

3. You state in your response to prior comment 6 that the Company has not recognized any revenue under SOP 97-2 in the historical financial statements. However, from your response to prior comment 4 of your letter dated March 2, 2007, it appears that revenue from some of your arrangements was recognized pursuant to SOP 97-2. Please clarify this discrepancy and tell us whether you subsequently concluded that the arrangements discussed in your March 2, 2007 response letter should have been accounted for pursuant to SAB 104 from inception. Also, tell us the percentage of revenue recognized pursuant to SOP 97-2 for each period presented and if applying SAB 104 would have resulted in different revenue recognition. Additionally, tell us when and if there was a specific event that caused the Company to change its determination that SAB 104 was the appropriate guidance for revenue recognition.
4. Additionally, explain in detail, how you determined whether or not the subsequent evaluation of the Company's products, which resulted in the change from SOP 97-2 to SAB 104, should be considered a correction of an error pursuant to SFAS 154.

5. Please refer to prior comment 8. Tell us how you considered disclosing that your customer contracts include provisions "requiring the payment of all revenue earned and costs incurred through the date of contract termination" to make it clear that there is no risk with respect to refundable fees associated with contract termination rights.
6. Please refer to prior comment 9 and tell us in further detail the factors management considered to determine that the Eclipse inventory would not be used for other products in Q1'09. Additionally, we note that the Company stopped recognizing revenue in August 2008 "after you became aware of Eclipse's deteriorating financial condition." Please tell us what information the Company considered to determine that August 2008 was the appropriate month to cease revenue recognition for Eclipse and tell us exactly when this information became known to you. In this regard, considering you ceased recognizing revenue in August, it appears that management may have known about Eclipse's problems prior to the meeting referred to in your response. Also, tell us the amount of accounts receivable due from Eclipse at June 30, 2008 and tell us whether any of these receivables were outstanding for more than the Company's normal payment term (45 days).

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Please respond to these comments within 10 business days or tell us when you will provide us with a response. Please submit all correspondence and supplemental materials on EDGAR as required by Rule 101 of Regulation S-T. If you amend your filing(s), you may wish to provide us with marked copies of any amendment to expedite our review. Please furnish a cover letter that keys your response to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing any amendment and your response to our comments.

You may contact Melissa Feider, Staff Accountant, at (202) 551-3379 or me at (202) 551-3499 if you have any questions regarding comments on the financial statements and related matters. Please address questions regarding all other comments to Kevin Dougherty, Staff Attorney, at (202) 551-3271 or Mark P. Shuman, Legal Branch Chief, at (202) 551-3457.

Sincerely,

Kathleen Collins
Accounting Branch Chief