

February 1, 2007

Mail Stop 4561

Geoffrey S. M. Hedrick
Chief Executive Officer
Innovative Solutions and Support, Inc.
720 Pennsylvania Drive
Exton, PA 19341

**RE: Innovative Solutions and Controls, Inc.
Registration Statement on Form S-3
Filed January 16, 2007
File number 333-140018**

**Form 10-K for September 30, 2006
Filed December 12, 2006
File number 0-31157**

Dear Mr. Hedrick:

We have limited our review of your filings to those issues we have addressed in our comments. We think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comments are 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 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.

Form S-3
Selling Shareholders, page 7

1. Please disclose the details of any transactions within the past three years where the selling shareholders acquired the shares or the rights to the shares that they are seeking to register. Please include the specifics of each transaction such as the date, the remuneration paid for the securities, and the material terms of the transaction.

2. Further, please confirm, if true, that there are no registered broker-dealers or affiliates of a registered broker-dealer among the selling shareholders.
3. Please identify the natural persons who exercise voting and/or dispositive power over the shares being offered for resale by Lifepath, Inc. Please see Interpretation I.60 of our July 1997 Manual of Publicly Available Telephone Interpretations and Interpretation 4S of the Regulation S-K portion of the March 1999 Supplement to our July 1997 Manual of Publicly Available Telephone Interpretations.

Plan of Distribution, page 9

4. You note that the selling shareholders may engage in short sales of your common stock. Please confirm that you are aware of Corporation Finance Telephone Interpretation A.65.

Incorporation of Certain Documents by Reference. Page 10

5. We note that you have incorporated your Form 10-K for the fiscal year ended September 30, 2006 into the registration statement. This Form 10-K has incorporated its Part III information from the definitive proxy soliciting materials, which will be filed within 120 days from the end of the fiscal year. Please note that since your definitive proxy materials have not been filed, we will not be able to accelerate your registration until such material has been filed. (Alternatively, an amended Form 10-K may be filed that includes the Part III information.) Please see Telephone Interp. H.6 in the July 1997 Manual of Publicly Available Telephone Interpretations.

Part II

Item 16. Exhibits

Exhibit 5.1, Form of Opinion of Dechert LLP

6. You have filed a form of opinion. Please file a completed and properly signed opinion of counsel regarding the legality of the shares to be sold.

Form 10-K

Item 9A. Controls and Procedures, page 46

7. In future filings, please revise the disclosure in the final sentence of the first paragraph to use the complete definition specified in Rule 13a-15(e) of the Securities Exchange Act of 1934 or cite the Rule itself. Confirm, if true, that for purposes of this filing the information required to be disclosed was accumulated and communicated to the appropriate persons to allow timely decisions regarding

required disclosure.

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses 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 your amendment and responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment 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.

Notwithstanding our comments, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness 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 connection with our review of your filing or in response to our comments on your filing.

We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the

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securities specified in the above registration statement. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rule 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

Please contact Hugh Fuller at (202) 551-3853 or me at (202) 551-3730 with any other questions.

Sincerely,

Barbara C. Jacobs
Assistant Director

CC: Henry N. Nassau
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