

October 24, 2008

Mail Stop 6010

David P. Vieau  
Chief Executive Officer  
A123 Systems, Inc.  
Arsenal on the Charles  
321 Arsenal Street  
Watertown, Massachusetts 02472

**Re: A123 Systems, Inc.  
Registration Statement on Form S-1  
Filed October 9, 2008  
File No. 333-152871**

Dear Mr. Vieau:

We have reviewed your filing and have the following comments. Where 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 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.

Overview, page 1

1. In the second paragraph, please explain in more detail the current and projected markets for lithium-ion batteries within the transportation industry. If you retain total market statistics, clarify the current and projected percentage of that market that lithium-ion batteries represent. We note, for example, that the April 2007 report by Manahem Anderman furnished as Tab 2(b) discusses in detail the hybrid electric vehicle battery market and estimates that the market is expected to grow to \$1.9 billion by 2012 and will be dominated by the NiMH battery market. Please revise to reconcile this with your current disclosure and to furnish investors

with more specific information about the lithium-ion battery market within the transportation industry.

2. We note your response to prior comment 45 that the GM joint development agreement and the BAE agreement are “neither material in significance or amount.” If you retain the references in the second paragraph of your summary, please explain to investors the materiality of these agreements to you.

Industry and Market Opportunity, page 2

3. Because oil prices have declined significantly since the time of your initial filing, it would be appropriate to revise the first sentence under this caption.

Risks That We Face, page 4

4. Expand to state in the bullet on page 5 that the patent litigation involves the technology used in Black & Decker products.

Because of the research funding we receive..., page 21

5. We note your response to prior comment 9 and the removal of risk factor disclosure regarding march-in rights held by the United States government. Please provide additional support for your determination that the risk is not material to your business. In your response, please include, without limitation, discussion of the following:
  - the technology or technologies subject to march-in rights;
  - the portion of your business that would be affected by the exercise of march-in rights; and
  - the conditions that might prompt the U.S. government to exercise its march-in rights, including whether your patents, or patents that are licensed to you, are subject to U.S. domestic manufacturing requirements.

Third parties have asserted that they own or control patents..., page 22

6. Expand to explain in plain English the finding of the PTO. If it found you were in violation of the patent, as noted in press accounts, please say so. Expand to state what effects this litigation has had on your revenues and/or business relationship with Black & Decker.

Revenue, page 58

7. Expand to quantify the decline in revenue from your most significant customer for the six-month period, and state the reasons for the decline.

Intellectual Property, page 85

8. We note the third paragraph of your response to prior comment 35. Please discuss your intellectual property rights with respect to your research and development efforts with the U.S. government, other government agencies and commercial customers. Please specifically address the status of intellectual property rights under your contracts with the United States Advanced Battery Consortium.

Legal Proceedings, page 86

9. Please revise the disclosure in the second paragraph on page 87 to explain more clearly what the PTO decision means and how that affects the registrant and its products. By saying that Hydro-Quebec and UT can assert “only” the claims of the reexamination certificate,” you seem to be implying that this is not very significant to the registrant. Please clearly describe the significance of this finding.

Annual Cash Incentive Bonus, page 97

10. We note your amended disclosure in response to prior comment 20. Please disclose the 2007 targets for total revenue, profit, ending cash, product cost reductions, financing objectives and revenue generated from new customers.

Related Person Transactions, page 108

11. We note that GE announced this week a \$30 million investment in the registrant. Please discuss here.

Principal and Selling Stockholders, page 111

12. We note your amended disclosure in response to prior comment 23 and reference footnotes 1 and 14. Please disclose the names of the natural person or persons who exercise the sole or shared voting and/or dispositive powers with respect to the shares held in the name of entities affiliated with North Bridge Venture Partners.

Undertakings, page II-4

13. You do not appear to have revised your disclosure in response to prior comment 25. We therefore reissue the comment.

Exhibits

14. We note your response to prior comment 45 and your statement that you are unable to publicly disclose all of your contractual agreements due to the unwillingness of several customers to waive confidentiality provisions of the agreements. Please tell us whether you have concluded that each of your agreements with undisclosed customers is not material to your business.

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 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 Rules 460 and 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.

You may contact at Jeanne Bennett at (202) 551-3606 or Brian Cascio, Accounting Branch Chief, at (202) 551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Joseph McCann at (202) 551-6262 or me at (202) 551-3800 with any other questions.

Sincerely,

Peggy Fisher  
Assistant Director

cc (via fax): John H. Chory, Esq.— Wilmer Cutler Pickering Hale and Dorr LLP