

Room 4561

October 18, 2006

Matthew C. Frost, Senior Vice President
On2 Technologies, Inc.
21 Corporate Drive, Suite 103
Clifton Park, NY 12065
By facsimile also at (603) 348-0099

**RE: On2 Technologies, Inc.
Registration Statement on Form S-3
File No. 333-137577
Filed on September 25, 2006**

**Form 10-K for the fiscal year ended December 31, 2005
Filed on March 15, 2006**

**Form 10-Q for the quarterly period ended March 31, 2006
Filed on May 5, 2006**

**Form 10-Q for the quarterly period ended June 30, 2006
Filed on August 2, 2006**

Dear Mr. Frost:

This is to advise you that we have limited our review of the above filing to the matters addressed in the comments below. 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 comments are inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation.

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

1. Revise the disclosure under “The Offering” subsection on page 3 to identify all of the selling shareholders that are participating in this resale offering. Currently, you only identify Midsummer Investment, Ltd. and Rockmore Investment Master Fund, Ltd.
2. In an appropriate location, please provide a materially complete discussion of how the selling shareholders acquired the shares that you seek to register for resale on their behalf or otherwise advise of the basis for your belief that the incorporation by reference of On2 Technologies’ Form 8-K filed on August 25, 2006 meets the requirements of Item 7 of Form S-3.

Form 10-K for the fiscal year ended December 31, 2005

Item 9A Controls and Procedures

Evaluation of Disclosure Controls and Procedures

3. The disclosure indicates that your certifying officers have evaluated the effectiveness of your disclosure controls and procedures “(as defined in Rules 13a-14(c) and 15d-14(c) of the Securities Exchange Act of 1934).” The definition of disclosure controls and procedures is contained in Exchange Act Rules 13a-15(e) and 15d-15(e). Advise us as to whether On2 Technologies, Inc.’s disclosure controls and procedures were effective as defined in paragraph (e) of rules 13a-15 and 15d-15 for the fiscal year ended December 31, 2005 and confirm that On2 will evaluate its disclosure controls and procedures required by these rules in all future annual and periodic reports.

Forms 10-Q for the quarterly periods ended March 31, 2006 and June 30, 2006

Item 4 Controls and Procedures

4. Disclosure indicates that “within the 90 days prior to the filing of this report, the Company carried out an evaluation” Please be advised that management must evaluate the effectiveness of your disclosure controls and procedures as of the end of the fiscal quarter. See Exchange Act Rules 13a-15(b) and 15d-15(b) and Item 307 of Regulation S-K. Please confirm that On2 Technologies, Inc.’s disclosure controls and procedures were effective as of the end of the periods covered by the reports referenced above. Also, confirm that On2 will evaluate its disclosure controls and procedures required by these rules as of the end of the period covered by the reports in all future annual and periodic reports.
5. Please see the immediately preceding comment. Item 307 of Regulation S-K requires that your Chief Executive Officer and Chief Financial Officer evaluate

- the effectiveness of your disclosure controls and procedures as defined by paragraph (e) of rules 13a-15 or 15d-15. In this regard, your disclosure suggests that the disclosure controls and procedures that were evaluated by your Chief Executive Officer and Chief Financial Officer were narrower than the disclosure controls and procedures defined by paragraph (e) of rules 13a-15 and 15d-15. Similar to our request in comment 3, above, advise us as to whether On2 Technologies, Inc.'s disclosure controls and procedures were effective as defined in paragraph (e) of rules 13a-15 and 15d-15 for the quarterly periods ended March 31, 2006 and June 30, 2006 and confirm that On2 will evaluate its disclosure controls and procedures required by these rules in all future annual and periodic reports.
6. We note your disclosure in the above referenced reports that "[t]here were no changes in the Company's internal controls or in other factors that could have significantly affected those controls subsequent to the date of the Company's most recent evaluation." Please confirm that On2 Technologies, Inc. did not have any changes in its internal control over financial reporting, that occurred during the quarter ended December 31, 2004, that materially affected, or are reasonably likely to materially affect, its internal control over financial reporting. Also, confirm that On2 Technologies will conduct this evaluation in all future periodic reports. See Item 308(c) of Regulation S-K.

Requests for Confidential Treatment

7. Staff comments on your application for confidential treatment relating to certain portions of Exhibit 99.1 of a Form 8-K dated May 5, 2005 will be provided by separate letter. Please be advised that these comments will need to be resolved prior to effectiveness of the Form S-3.

* * * *

As appropriate, please amend your filings 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 supplemental 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 filings to be certain that the filings include all information required under the Securities Act and Exchange Act 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 the 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 your registration statement as a confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act and the Exchange Act 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 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.

Matthew C. Frost
On2 Technologies, Inc.
October 18, 2006
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You may contact Jay Ingram at (202) 551-3397 or Jeff Werbitt at (202) 551-3456 with any questions. If you need further assistance, you may contact me at (202) 551-3730.

Sincerely,

Barbara C. Jacobs
Associate Director