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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549**

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**FORM S-8**

**REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

**PDF SOLUTIONS, INC.**

(Exact Name of Registrant as Specified in Its Charter)

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Delaware  
(State or Other Jurisdiction of  
Incorporation or Organization)

25-1701361  
(I.R.S. Employer  
Identification Number)

333 West San Carlos Street, Suite 700  
San Jose, California 95110  
(Address of Principal Executive Offices) (Zip Code)

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**2001 STOCK PLAN**  
(Full Title of the Plans)

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**JOHN K. KIBARIAN**  
**President and Chief Executive Officer**  
**PDF Solutions, Inc.**  
333 West San Carlos Street, Suite 700  
San Jose, California 95110  
(Name and Address of Agent for Service)

**(408) 280-7900**  
(Telephone Number, Including Area Code, of Agent for Service)

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Copy to:

**Peter Cohn, Esq.**  
**Orrick, Herrington & Sutcliffe LLP**  
**1020 Marsh Road**  
**Menlo Park, California 94025**  
**(650) 614-7400**

**CALCULATION OF REGISTRATION FEE**

Title of Securities to be Registered	Amount To Be Registered (1)	Proposed Maximum Offering Price Per Share (2)	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, \$0.00015 par value (2001 Stock Plan)	1,321,686	\$18.25	\$24,120,769.50	\$2,580.93
Total	1,321,686	\$18.25	\$24,120,769.50	\$2,580.93

- (1) This Registration Statement shall also cover any additional shares of Common Stock which become issuable under the Plan by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the Registrant's receipt of consideration which results in an increase in the number of the Registrant's outstanding shares of Common Stock.

- (2) The Proposed Maximum Offering Price Per Share is calculated in accordance with Rule 457(h) under the Securities Act of 1933, as amended (the “Securities Act”) solely for the purpose of calculating the registration fee. With respect to 1,321,686 shares of Common Stock available for future issuance under the 2001 Stock Plan, the estimated Proposed Maximum Offering Price Per Share was calculated pursuant to Rules 457(c) and 457(h) under the Securities Act on the basis of \$18.25 per share, the average of the high and low price of the Common Stock on the Nasdaq National Market System on April 13, 2006.
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## PART II

### INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

#### Item 3. Incorporation of Documents by Reference.

PDF Solutions, Inc. (the “Registrant”) hereby incorporates by reference into this Registration Statement the following documents previously filed with the Securities and Exchange Commission (the “Commission”):

- (a) The Registrant’s Annual Report on Form 10-K, as amended, for the fiscal year ended December 31, 2005, filed with the SEC on March 16, 2006 (File No. 000-31311);
- (b) All other reports filed pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (the “Exchange Act”) since the end of the fiscal year covered by the Registrant document referred to in (a) above; and
- (c) The Registrant’s Registration Statement on Form 8-A12G, as amended, filed with the SEC on August 10, 2000 (File No. 000-31311), in which are described the terms, rights and provisions applicable to the Registrant’s Common Stock.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14, and 15(d) of the Exchange Act, prior to the filing of a post-effective amendment which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date of filing of such documents.

#### Item 4. Description of Securities.

Not applicable.

#### Item 5. Interests of Named Experts and Counsel.

The validity of the common stock being registered hereby will be passed upon for the Registrant by Orrick, Herrington & Sutcliffe LLP, Menlo Park, California. As of the date of this Registration Statement, Peter Cohn, a partner of Orrick, Herrington & Sutcliffe LLP, is the Secretary of PDF Solutions, Inc.

#### Item 6. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law provides that a corporation may indemnify directors and officers, as well as other employees and individuals, against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by any such person in connection with any threatened, pending or completed actions, suits or proceedings in which such person is made a party by reason of such person being or having been a director, officer, employee or agent of the Registrant. The Delaware General Corporation Law provides that Section 145 is not exclusive of other rights to which those seeking indemnification may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise. Article XII of the Registrant’s Amended and Restated Certificate of Incorporation and Article VI of the Registrant’s Bylaws provide for indemnification by the Registrant of its directors and officers to the fullest extent permitted by the Delaware General Corporation Law.

Section 102(b)(7) of the Delaware General Corporation Law permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director’s duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for unlawful payments of dividends or unlawful stock repurchases, redemptions or other distributions, or (iv) for any transaction from which the director derived an improper personal benefit. The Registrant’s Amended and Restated Certificate of Incorporation provides for such limitation of liability.

The Registrant has obtained directors’ and officers’ insurance providing indemnification for certain of the Registrant’s directors, officers and employees for certain liabilities.

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The Registrant has entered into indemnification agreements with each director and executive officer which provide indemnification under certain circumstances for acts and omissions which may not be covered by any directors' and officers' liability insurance.

**Item 7. Exemption From Registration Claimed.**

Not applicable.

**Item 8. Exhibits.**

Exhibit Number	Name
5.1	Opinion of Orrick, Herrington & Sutcliffe LLP
23.1	Consent of Independent Registered Public Accounting Firm
23.2	Consent of Orrick, Herrington & Sutcliffe LLP (included in Exhibit 5.1 to this Registration Statement)
24	Power of Attorney (See signature page to this Registration Statement)

**Item 9. Undertakings.**

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

*provided, however,* that paragraphs (1)(i) and (1)(ii) do not apply if the information required to be included in the post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or 15(d) of the Exchange Act that are incorporated by reference in this Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed

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to be a new Registration Statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Jose, State of California, on the 17th day of April, 2006.

**PDF SOLUTIONS, INC.**  
(Registrant)

By: /s/ John K. Kibarian  
John K. Kibarian  
President and Chief Executive Officer

**POWER OF ATTORNEY**

Each of the undersigned directors of PDF Solutions, Inc., a Delaware corporation (the "Company"), hereby constitutes and appoints John K. Kibarian and Keith A. Jones, and each of them, his true and lawful attorneys-in-fact, with full power of substitution, for him or her and in his or her name, place and stead, in his or her capacity as a director, to execute a Registration Statement or Registration Statements on Form S-8 under the Securities Act of 1933, as amended, relating to 1,321,686 shares of Common Stock that are issuable under the PDF Solutions, Inc. 2001 Stock Plan (the "Plan") and any and all amendments (including post-effective amendments) to such Registration Statements, and to file such Registration Statements and any and all amendments thereto, with exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto such attorneys-in-fact full power and authority to do and perform each and every act and thing necessary or desirable to be done in and about the premises, as fully to all intents and purposes, as he or she might or could do in person, and ratify and confirm all that such attorneys-in-fact or their substitutes may lawfully do or cause to be done by virtue hereof, and hereby consents to such registration of the Shares and the issuance thereof pursuant to the terms of the Plan. Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ John K. Kibarian</u> John K. Kibarian	Chief Executive Officer, President and Director (Principal Executive Officer)	April 17, 2006
<u>/s/ Keith A. Jones</u> Keith A. Jones	Chief Financial Officer, Vice President, Finance and Administration (Principal Financial and Accounting Officer)	April 17, 2006
<u>/s/ Kimon Michaels</u> Kimon Michaels	Vice President, Field Operations and Director	April 17, 2006
<u>/s/ B. J. Cassin</u> B. J. Cassin	Director	April 17, 2006
<u>/s/ Lucio L. Lanza</u> Lucio L. Lanza	Director	April 17, 2006
<u>/s/ Sue Billat</u> Sue Billat	Director	April 17, 2006
<u>/s/ Dr. Albert Y. C. Yu</u> Dr. Albert Y. C. Yu	Director	April 17, 2006
<u>/s/ R. Stephen Heinrichs</u> R. Stephen Heinrichs	Director	April 17, 2006

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23.2	Consent of Orrick, Herrington & Sutcliffe LLP is included in Exhibit 5.1 to this Registration Statement
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**OPINION AND CONSENT OF ORRICK, HERRINGTON & SUTCLIFFE LLP**

April 17, 2006

PDF Solutions, Inc.  
333 West San Carlos Street, Suite 700  
San Jose, California 95110

Re: PDF Solutions, Inc.  
Registration Statement on Form S-8

Ladies and Gentlemen:

At your request, we are rendering this opinion in connection with the Registration Statement on Form S-8 (the "Registration Statement") filed by you with the Securities and Exchange Commission (the "Commission") on or about April 17, 2006 in connection with the registration under the Securities Act of 1933, as amended, of a total of 1,321,686 shares of your Common Stock (the "Common Shares") reserved for issuance under the PDF Solutions, Inc. 2001 Stock Plan (the "Plan").

We have examined instruments, documents, and records which we deemed relevant and necessary for the basis of our opinion hereinafter expressed. In such examination, we have assumed the following: (a) the authenticity of original documents and the genuineness of all signatures; (b) the conformity to the originals of all documents submitted to us as copies; and (c) the truth, accuracy, and completeness of the information, representations, and warranties contained in the records, documents, instruments, and certificates we have reviewed.

Based on such examination, we are of the opinion that the Common Shares to be issued by the Company pursuant to the Plan have been validly authorized and when issued in accordance with the provisions of the Plan, will be legally issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion as an exhibit to the above-referenced Registration Statement and to the use of our name wherever it appears in said Registration Statement, including the Prospectus constituting a part thereof, as originally filed or as subsequently amended or supplemented. In giving such consent, we do not consider that we are "experts" within the meaning of such term as used in the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission issued thereunder, with respect to any part of the Registration Statement, including this opinion as an exhibit or otherwise.

Very truly yours,

/s/ ORRICK, HERRINGTON & SUTCLIFFE LLP

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in this Registration Statement on Form S-8 of our reports relating to the financial statements of PDF Solutions, Inc. and management's report on the effectiveness of internal control over financial reporting dated March 16, 2006, appearing in the Annual Report on Form 10-K of PDF Solutions, Inc. for the year ended December 31, 2005.

/s/ DELOITTE & TOUCHE LLP  
San Jose, California  
April 17, 2006