

(Full Title of the Plan)

Bonnie L. Herron**Chief Financial Officer***Copies to:***Intelligent Systems Corporation****Larry D. Ledbetter****4355 Shackleford Road****Ledbetter Wanamaker Glass LLP****Norcross, Georgia 30093****1201 Peachtree Street, N.E., Suite 1501****(770) 381-2900****Atlanta, Georgia 30361**(Name, Address, and Telephone Number, **(404) 835-9503**

Including Area Code, of Agent for Service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company) Smaller reporting company

Calculation of Registration Fee

| Title of Securities to be Registered | Amount to be Registered⁽¹⁾⁽²⁾ | Proposed Maximum Offering Price Per Share | Proposed Maximum Aggregate Offering Price⁽²⁾ | Amount of Registration Fee |
|---|---|--|--|-----------------------------------|
| Common Stock, \$.01 par value | 226,500 | \$1.66 ⁽³⁾ | \$375,990 ⁽³⁾ | \$37.86 ⁽³⁾ |
| Common Stock, \$.01 par value | 876,000 | \$3.74 ⁽⁴⁾ | \$3,276,240 ⁽⁴⁾ | \$329.92 ⁽⁴⁾ |
| Total | 1,102,500 | — | \$3,652,230 | \$367.78 |

(1) This registration statement (the “Registration Statement”) registers the issuance of an aggregate of 226,500 shares of the common stock of Intelligent Systems Corporation (the “Registrant”), par value \$0.01 per share (the “Common Stock”), issuable pursuant to outstanding equity awards under the 2003 Incentive Stock Plan and the 2011 Non-Employee Directors’ Stock Plan and an additional 126,000 and 750,000 of the shares available for future

issuance under the 2011 Non-Employee Directors' Stock Plan and the 2015 Incentive Stock Plan, respectively.

(2) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement also covers an indeterminate number of additional shares that may be offered or issued as a result of a stock split, stock dividend, reclassification of stock, corporate transaction or similar adjustment of the outstanding shares of Registrant

(3) Estimated solely for purpose of calculating the registration fee and, pursuant to Rule 457(h) under the Securities Act, based upon the exercise price of outstanding options to purchase Common Stock.

(4) Estimated solely for purpose of calculating the registration fee and, pursuant to Rules 457(c) and (h) under the Securities Act, based upon the average of the high and low sales prices of the Common Stock as reported on the NYSE MKT on May 11, 2016

Part I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

Item 1. Plan Information.*

Item 2. Registrant Information and Employee Plan Annual Information.

*Information required by Part I to be contained in the Section 10(a) prospectuses is omitted from this Registration Statement in accordance with Rule 428 under the Securities Act of 1933, as amended (the "Securities Act") and the Note to Part I of Form S-8.

Part II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by reference.

The reports listed below have been filed by the Registrant with the Securities and Exchange Commission (the "SEC") and are incorporated herein by reference. All of Registrant's reports filed with the SEC pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934 (the "Exchange Act"), after the date of this Registration Statement and prior to filing a post-effective amendment which indicates that all securities offered hereby 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 part hereof from the date of filing of such documents.

(a) Annual Report on Form 10-K for the year ended December 31, 2015;

(b) Quarterly Report on Form 10-Q for the quarter ended March 31, 2016;

(c) Current Reports on Form 8-K filed with the SEC on January 19, 2016, and March 9, 2016; and

(d) The description of the Registrant's Common Stock contained in the Registrant's Form S-1/A filed with the SEC on June 18, 2009, and any amendment or report filed for the purpose of updating such description .

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement in any subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 4. Description of Securities.

The securities to be offered are registered under Section 12 of the Exchange Act.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

The Georgia Business Corporation Code permits, and Registrant's bylaws require, Registrant to indemnify any director of the Registrant (an "Indemnified Person") who was or is a party, or is threatened to be made a party, to any threatened, pending or completed action, suit, or proceeding, whether civil, criminal, administrative, or investigative, whether formal or informal, including any action or suit by or in the right of the Registrant ("Proceeding") because he or she is or was a director, officer, employee, or agent of the Registrant, against any judgment, settlement, penalty, fine, or reasonable expenses (including, but not limited to, attorneys' fees and disbursements, court costs, and expert witness fees) incurred with respect to the Proceeding. However, Registrant will not indemnify any director who is found liable to Registrant or is subjected to injunctive relief in favor of Registrant for:

- (1) any appropriation of any business opportunity of Registrant in violation of the director's duties;
- (2) acts or omissions that involve intentional misconduct or a knowing violation of law;
- (3) paying a dividend or approving a stock repurchase in violation of Georgia law; or
- (4) any transaction from which the director derived an improper personal benefit.

Registrant's Amended and Restated Articles of Incorporation also provide that the indemnification rights contained in the Bylaws shall not be exclusive of any other right which any person may have or hereafter acquire under any provision of the articles of incorporation, bylaw, resolution or agreement specifically or in general terms approved or ratified by the affirmative vote of holders of a majority of the shares entitled to vote thereon.

Registrant has purchased and maintains liability insurance to protect its officers and directors against any liability asserted against them or incurred by them as permitted by its Bylaws and Section 14-2-858 of the Georgia Business Corporation Code. The insuring of the directors and officers is permitted whether or not Registrant would have the power to indemnify that director, officer, agent or employee under its articles of incorporation or the terms of the Georgia Business Corporation Code.

These indemnification provisions may be sufficiently broad to permit indemnification of Registrant's officers and directors for liabilities (including reimbursement of expenses incurred) arising under the Securities Act.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

The exhibits to this Registration Statement are listed in the Exhibit Index immediately following and incorporated by reference in 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 of 1933;

(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 the volume of securities offered (if the total 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; and

(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 (a)(1)(i) and (a)(1)(ii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, 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 that is incorporated by reference into this registration statement 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.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities 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 the requirements for filing 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 Norcross, State of Georgia, on this 12th day of May, 2016.

INTELLIGENT SYSTEMS CORPORATION

By: /s/ J. Leland Strange
J. Leland Strange
Chairman, President and Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below hereby constitutes and appoints J. Leland Strange and Bonnie L. Herron, and each of them, any of whom may act without the joinder of the others, as his or her lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for him or her and in any and all capacities, to sign any or all amendments or post-effective amendments to this registration statement, and to file the same with all exhibits hereto and other documents in connection therewith or in connection with registration of the securities under the Securities Exchange Act of 1934, as amended, with the Securities and Exchange Commission, to sign any and all applications, registration statements, notices or other document necessary or advisable to comply with the applicable state securities laws, and to file the same, together with all other documents in connection therewith, with the appropriate state securities authorities, granting unto such attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary in connection with such matters and hereby, ratifying and confirming all that such attorneys-in-fact and agents, or his or her substitute may lawfully do or cause to be done by virtue hereof.

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:

| Signature | Title | Date |
|----------------------|--|--------------|
| /s/J. Leland Strange | Chairman, President, Chief Executive Officer and Director (Principal Executive Officer) | May 12, 2016 |

J. Leland Strange

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| /s/Bonnie L. Herron Bonnie L. Herron | Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer) | May 12, 2016 |
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| /s/Philip H. Moise Philip H. Moise | Director | May 12, 2016 |
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| /s/Cherie M. Fuzzell Cherie M. Fuzzell | Director | May 12, 2016 |
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| /s/Parker H. Petit Parker H. Petit | Director | May 12, 2016 |
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EXHIBIT INDEX

Exhibit Number Description

⁵Opinion of Ledbetter Wanamaker Glass LLP as to the legality of the securities to be issued.

23.1 Consent of Ledbetter Wanamaker Glass LLP (included in the opinion filed as Exhibit 5 hereto).

23.2 Consent of Nichols, Cauley & Associates, LLC.

23.3 Consent of Habif, Arogeti & Wynne, LLP.

24 Powers of Attorney (included on signature page).

Intelligent Systems Corporation 2003 Incentive Stock Plan.

99.1

(Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2003 filed with the SEC on March 30, 2004.)

Intelligent Systems Corporation 2015 Incentive Stock Plan.

99.2

(Incorporated by reference to the Registrant's 2015 Definitive Proxy Statement on Schedule 14A filed with the SEC on April 13, 2015.)

Intelligent Systems Corporation 2011 Non-Employee Directors' Stock Plan.

99.3

(Incorporated by reference to the Registrant's 2011 Definitive Proxy Statement on Schedule 14A filed with the SEC on April 8, 2011.)