UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 8-K

CURRENT REPORT

PURSUANT TO SECTION 13 OR 15(d) OF THE

SECURITIES EXCHANGE ACT OF 1934

Date of report (Date of earliest event reported): November 19, 2007

Mercury Computer Systems, Inc.

(Exact Name of Registrant as Specified in Charter)

Massachusetts (State or Other Jurisdiction 000-23599 (Commission File Number) 04-2741391 (IRS Employer

of Incorporation)

Identification No.)

199 Riverneck Road, Chelmsford, Massachusetts (Address of Principal Executive Offices)

01824 (Zip Code)

Registrant s telephone number, including area code: (978) 256-1300

Not Applicable

(Former Name or Former Address, if Changed Since Last Report)

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Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (*see* General Instruction A.2. below):

- " Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- " Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- " Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- " Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 5.02. Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers

On November 19, 2007, the Board of Directors of Mercury Computer Systems, Inc. (the Company) appointed Mark Aslett as President and Chief Executive Officer of the Company and as a member of the Company s Board, effective as of that date. James R. Bertelli, who held the title of Chief Executive Officer and President prior to such appointment, will continue to serve as Executive Chairman of the Board and will remain a full-time employee. Mr. Aslett s appointment was the result of the Company s ongoing succession planning process.

Mr. Aslett, age 39, was COO and CEO of Enterasys Networks from 2003 to 2006, and held various positions with Marconi plc and its affiliated companies, including executive vice president of marketing, vice president of portfolio management, and president of Marconi Communications North America, from 1998 to 2002. Mr. Aslett has also held positions at GEC Plessey Telecommunications, as well as other telecommunications-related technology firms. Mr. Aslett has a Master s degree in Business Administration from the Harvard Business School, and a First Class Honors Bachelor s degree in Digital Systems Engineering.

There are no family relationships between Mr. Aslett and any of the Company s directors or executive officers. There is no arrangement or understanding between Mr. Aslett and any other person pursuant to which he was selected as a director or executive officer, nor is the Company aware, after inquiry of Mr. Aslett, of any related-person transaction or series of transactions required to be disclosed under the rules of the Securities and Exchange Commission.

In connection with his appointment, the Company entered into an employment agreement with Mr. Aslett dated November 19, 2007. The agreement provides for an 18-month term, but will automatically renew for additional one-year periods unless an advance notice of non-renewal is provided by either party to the other at least 180 days prior to the expiration of the then-current term.

Under the employment agreement, Mr. Aslett s annual base salary will be \$500,000, subject to annual review by the Board in the first fiscal quarter of the Company. In addition, Mr. Aslett will be entitled to participate in the Company s Annual Bonus Plan (the Bonus Plan) in an amount determined by the Board in accordance with the terms of the Bonus Plan. For fiscal year 2008, Mr. Aslett s target bonus will be 70% of his base salary. Sixty percent of Mr. Aslett s potential bonus for each fiscal year will be determined based upon the Company s attainment of its annual operating plans and targets for revenue and earnings per share, with the remaining 40% to be determined based on achievement of other objectives to be determined by the Board.

Mr. Aslett also will be eligible to participate in the Company s Long Term Incentive Plan (the LTIP) in an amount determined by the Compensation Committee of the Board based on the attainment of certain financial thresholds established annually by the Compensation Committee, payable 50% in cash and 50% in shares of restricted stock. Any such shares of restricted stock will vest in four equal annual installments, commencing with the first anniversary of the grant date. If the Company achieves the annual financial thresholds, then Mr. Aslett will receive a bonus under the LTIP equal to his target bonus under the Bonus Plan. If the Company exceeds these annual financial thresholds, Mr. Aslett would be eligible to receive a bonus under the LTIP of up to 1.75 times his target bonus under the Bonus Plan.

The employment agreement provides for termination and severance benefits in the case of a termination of Mr. Aslett s employment by the Company without cause (as defined in the employment agreement) or by Mr. Aslett for good reason (as defined in the employment agreement). In such event, Mr. Aslett will be entitled to receive an amount equal to the sum of his base salary and target bonus under the Bonus Plan, payable over a 12-month period. In addition, all unvested shares of restricted stock granted to Mr. Aslett under the LTIP would immediately vest, unless such vesting would be prohibited by the Company s Stock Incentive Plan, in which case the Company would pay Mr. Aslett the cash equivalent value of such shares. If the date of termination

occurs on or before the 18-month anniversary of the commencement of his employment agreement, then Mr. Aslett also will be entitled to accelerated vesting of any stock option and restricted stock awards held by Mr. Aslett that would have otherwise vested in the next 12 months. Mr. Aslett will be entitled to continue to participate in the Company s group health, dental and vision program for 18 months.

In connection with his appointment, the Company will grant Mr. Aslett an option to purchase 200,000 shares of the Company s common stock, and 114,285 shares of restricted stock under the Company s Stock Incentive Plan. Both the option award and the restricted stock will vest in four equal annual installments, commencing on the first anniversary of the grant date. Mr. Aslett also will be eligible to receive additional grants of equity-based awards in the discretion of the Compensation Committee and the Board, with it being anticipated that the annual option grant for Mr. Aslett in fiscal years 2009 and 2010 will be between 50,000 and 75,000 per year, based on performance.

The foregoing summary of the employment agreement is qualified in its entirety by reference to the employment agreement, a copy of which is attached as Exhibit 10.1 to this Current Report on Form 8-K and is incorporated herein by reference.

Contemporaneously with entering into the employment agreement, the Company also entered into a change of control severance agreement with Mr. Aslett in substantially the same form as the Company s other executive officers. A summary description of the terms of this change of control severance agreement is included in the Company s proxy statement filed with the Securities and Exchange Commission on October 12, 2007 under the heading Executive Compensation Change in Control Arrangements, which description is incorporated herein by reference. Such summary of the change of control severance agreement is qualified in its entirety by reference to the change in control severance agreement, the form of which is attached as Exhibit A to Mr. Aslett s employment agreement (see Exhibit 10.1 to this Current Report on Form 8-K) and is incorporated herein by reference.

There were no changes made to Mr. Bertelli s compensation arrangements with the Company in connection with the foregoing events.

Item 9.01. Financial Statements and Exhibits

Exhibit No. Description

10.1 Employment Agreement, dated November 19, 2007, by and between Mercury Computer Systems, Inc. and Mark Aslett

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Dated: November 19, 2007 MERCURY COMPUTER SYSTEMS, INC.

By: /s/ James R. Bertelli James R. Bertelli Executive Chairman of the Board

EXHIBIT INDEX

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