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): January 21, 2008

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)

1

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 5.03 Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year

On January 21, 2008, the Board of Directors of Mercury Computer Systems, Inc. (the Company) approved an amendment to Section 4.5 of the Company s By-Laws, which amendment was effective immediately. The amendment allows for the delivery of unanimous consents in lieu of meeting of the Board of Directors (or committees designated by the Board) by electronic transmission. The full text of the amendment is attached hereto as Exhibit 3.1 and is incorporated herein by reference.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

Exhibit No. Description

3.1 Amendment to By-Laws of Mercury Computer Systems, Inc. dated January 21, 2008

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: January 24, 2008 MERCURY COMPUTER SYSTEMS, INC.

By: /s/ Robert E. Hult
Robert E. Hult
Senior Vice President,
Chief Financial Officer and Treasurer

EXHIBIT INDEX

Exhibit No. Description

3.1 Amendment to By-Laws of Mercury Computer Systems, Inc. dated January 21, 2008