

**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): May 1, 2007

Mercury Computer Systems, Inc.

(Exact Name of Registrant as Specified in Charter)

Massachusetts
(State or Other Jurisdiction
of Incorporation)

000-23599
(Commission File Number)

04-2741391
(IRS Employer
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

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

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 2.05. Costs Associated with Exit or Disposal Activities.

On May 1, 2007, Mercury Computer Systems, Inc. (the "Company") announced that it had initiated certain measures across the organization pursuant to a comprehensive restructuring plan designed to return the Company to profitability and growth. As part of this initiative, the Company's U.S. workforce will be reduced by approximately 80 positions. On May 1, 2007, the Company began notifying affected employees that their employment was being terminated. The workforce reduction plan affects primarily the Company's defense and commercial business units and corporate functions. Notification of affected personnel is expected to be substantially completed by May 8, 2007. The workforce reduction action is expected to result in total cash expenditures of approximately \$4.0 million, payable primarily over the next three quarters.

Additional information related to this workforce reduction action is contained in a press release issued by the Company on May 1, 2007, a copy of which is attached as Exhibit 99.1 to this Current Report on Form 8-K and incorporated by reference herein.

Safe Harbor Statement

This Current Report on Form 8-K contains statements regarding the workforce reduction action and total estimated cash expenditures associated with this action which are "forward-looking statements" as defined in Section 21E of the Securities Exchange Act of 1934, as amended. Such statements are based on current assumptions and expectations of the Company's management and are neither promises nor guarantees but involve risks and uncertainties, both known and unknown, that could cause actual results to differ materially from those discussed in the forward-looking statements. Important factors that could cause actual results to differ materially from those presently expected include, but are not limited to, difficulties for management in successfully implementing the restructuring plan, unanticipated delays in the implementation of the restructuring plan, unanticipated costs and expenses relating to the implementation of the restructuring plan, declines in the Company's revenues and earnings, and reliability and quality issues and adverse changes in general economic or market conditions. Reference is made to the discussion of risk factors detailed in our filings with the Securities and Exchange Commission, including, but not limited to, the Company's annual report on Form 10-K for the fiscal year ended June 30, 2006. The "forward-looking statements" included herein are made only as of the date of publication and the Company undertakes no obligation to update the information set forth in this Current Report on Form 8-K.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
99.1	Press Release, dated May 1, 2007, of Mercury Computer Systems, Inc.

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 hereunto duly authorized.

MERCURY COMPUTER SYSTEMS, INC.
(Registrant)

Date: May 3, 2007

By: /s/ Alex N. Braverman
Alex N. Braverman
Vice President, Corporate Controller and
Chief Accounting Officer

EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
99.1	Press Release, dated May 1, 2007, of Mercury Computer Systems, Inc.

News Release



FOR IMMEDIATE RELEASE

Mercury Computer Systems Implements Plan to Restore Profitability and Growth

CHELMSFORD, Mass. – May 1, 2007 – Mercury Computer Systems, Inc. (NASDAQ: MRCY) announced that it is implementing a comprehensive restructuring plan designed to return the Company to profitability and restore growth. As announced in the April 26 3QFY07 earnings release, the Company will make strategic cost reductions for its new fiscal year.

Management is restructuring the organization around common capabilities to achieve better strategic focus. The Company will renew growth by focusing resources and management attention on three key areas:

- Increase market share in current advanced computing segments
- Expand growth in 3D visualization and PACS (picture archiving and communications systems) in Life Sciences
- Focus on new business in the national intelligence computing markets and emerging homeland security market.

The Company will consolidate its specialized computing businesses into a single new operating unit called Advanced Computing Solutions. This structure will allow the Company to more readily leverage its R&D investments and capabilities across numerous markets including semiconductor, communications, seismic, and multiple defense applications. Furthermore, Mercury's Life Sciences business, now organized as part of Commercial Imaging and Visualization, will operate as an independent business unit focusing on the 3D PACS market.

- more -

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Mercury will achieve additional cost synergies, eliminate management layers, and reduce other operating expenses including discretionary spending, which are expected to result in annual cost savings of approximately \$15 million per year. The Company's U.S. workforce will be reduced by approximately 80 positions within the defense and commercial business units and corporate functions. A restructuring charge of approximately \$4 million will be taken in 4QFY07, to be paid primarily over the next three quarters. The 4QFY07 guidance as outlined in the Company's April 26 announcement is not expected to change, as the benefit of these cost reductions is expected to be minimal in the current quarter.

"For more than 20 years, the Mercury team has solved challenging compute problems with innovative solutions that continue to drive the advancement of computing technology," said Jay Bertelli, President and Chief Executive Officer of Mercury Computer Systems, Inc. "In order to effectively leverage our capabilities for our customers' success, it is critical that we take the necessary measures to maintain a proper balance between revenue growth and profit."

Mercury Computer Systems, Inc. – Where Challenges Drive Innovation

Mercury Computer Systems is the leading provider of computing systems and software for data-intensive applications that include image processing, signal processing, and visualization. With a strong commitment to innovation, our expertise in algorithm optimization, systems development, and silicon design is blended with software application knowledge and industry-standard technologies to solve unique computing challenges. We work closely with our customers to architect solutions that have a meaningful impact on everyday life: detecting aneurysms; designing safer, more fuel-efficient aircraft; identifying security threats; discovering oil; developing new drugs; and visualizing virtually every aspect of scientific investigation.

Mercury's comprehensive, purpose-built solutions capture, process, and present data for the world's largest medical imaging companies, 8 of the 10 top defense prime contractors, and other leading Fortune 500 and mid-market companies in semiconductor, energy, telecommunications, and other industries. Our dedication to performance excellence and collaborative innovation continues a 24-year history in enabling customers to stay at the forefront of the markets they serve.

Mercury is based in Chelmsford, Massachusetts and serves customers worldwide through a broad network of direct sales offices, subsidiaries, and distributors. We are listed on the Nasdaq National Market (NASDAQ: MRCY). Visit Mercury at www.mc.com.

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Forward-Looking Safe Harbor Statement

This press release contains certain forward-looking statements, as that term is defined in the Private Securities Litigation Reform Act of 1995, including those relating to the restructuring plan that the Company is undertaking. You can identify these statements by our use of the words “may,” “will,” “should,” “plans,” “expects,” “anticipates,” “continue,” “estimate,” “project,” “intend,” and similar expressions. These forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from those projected or anticipated. Such risks and uncertainties include, but are not limited to, difficulties for management in successfully implementing the restructuring plan, unanticipated delays in the implementation of the restructuring plan, unanticipated costs and expenses relating to the implementation of the restructuring plan, declines in the Company’s revenues and earnings, reliability and quality issues, general economic and business conditions, including unforeseen weakness in the Company’s markets, effects of continued geo-political unrest and regional conflicts, competition, changes in technology and methods of marketing, delays in completing engineering and manufacturing programs, changes in customer order patterns, changes in product mix, continued success in technological advances and delivering technological innovations, continued funding of defense programs, the timing of such funding, changes in the U.S. Government’s interpretation of federal procurement rules and regulations, market acceptance of the Company’s products, shortages in components, production delays due to performance quality issues with outsourced components, inability to fully realize the expected benefits from acquisitions or delays in realizing such benefits, challenges in integrating acquired businesses and achieving anticipated synergies, and difficulties in retaining key customers. These risks and uncertainties also include such additional risk factors as are discussed in the Company’s recent filings with the U.S. Securities and Exchange Commission, including its Annual Report on Form 10-K for the fiscal year ended June 30, 2006. The Company cautions readers not to place undue reliance upon any such forward-looking statements, which speak only as of the date made. The Company undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made.

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Contact:

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