UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 8-K/A **AMENDMENT NO. 1**

CURRENT REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE **SECURITIES EXCHANGE ACT OF 1934**

Date of report (Date of earliest event reported): February 9, 2010

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.)

201 Riverneck Road, Chelmsford, Massachusetts 01824 (Address of Principal Executive Offices) (Zip Code)

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

Not Applicable

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

follo	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 wing provisions (<i>see</i> 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))

EXPLANATORY NOTE

This Amendment No. 1 amends the Current Report on Form 8-K of Mercury Computer Systems, Inc. (the "Company") dated January 27, 2010, reporting under Item 2.02 that the Company had issued a press release announcing results for the quarter ended December 31, 2009. This Amendment No. 1 amends the Current Report as originally filed by correcting the unaudited consolidated financial information included in Exhibit 99.1. The Company has subsequently issued a new press release containing corrected unaudited consolidated financial information, a copy of which is included as Exhibit 99.2 hereof.

Item 2.02 Results of Operations and Financial Condition

On January 26, 2010, the Company issued a press release (the "Original Press Release") announcing results for the quarter ended December 31, 2009. On February 9, 2010, the Company issued a second press release (the "Second Press Release") correcting the cost of revenues for the three and six months ended December 31, 2009, as announced in the Original Press Release. This correction had the net effect of reducing gross profit, income from operations, income tax expense, income from continuing operations, net income, basic and diluted earnings per share, and adjusted EBITDA, all of which have been revised in the Second Press Release. The correction also had an impact on the information presented in the Unaudited Consolidated Balance Sheets, the Unaudited Condensed Consolidated Statements of Cash Flows, and the Unaudited Supplemental Information – Reconciliation of GAAP to Non-GAAP Measures. The Company is filing this Amendment No. 1 to Current Report on Form 8-K to include the Second Press Release.

The Second Press Release is attached to this Current Report as Exhibit 99.2 and is incorporated into this Item 2.02 by reference. Information in Item 2.02 of this Current Report on Form 8-K and the Exhibits 99.1 and 99.2 attached hereto shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, regardless of any general incorporation language in such filing.

USE OF NON-GAAP FINANCIAL MEASURES

In addition to reporting financial results in accordance with generally accepted accounting principles, or GAAP, the Company provides adjusted EBITDA, a non-GAAP financial measure adjusted to exclude certain non-cash and other specified charges, which the Company believes is useful to help investors better understand its past financial performance and future prospects. However, the presentation of adjusted EBITDA is not meant to be considered in isolation or as a substitute for financial information provided in accordance with GAAP. Management believes the adjusted EBITDA financial measure assists in providing a more complete understanding of the Company's underlying operational results and trends, and management uses this measure along with the corresponding GAAP financial measure to manage the Company's business, to evaluate its performance compared to prior periods and the marketplace, and to establish operational goals.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	<u>Description</u>
99.1	Press Release, dated January 26, 2010, of Mercury Computer Systems, Inc. (incorporated by reference to Exhibit 99.1 to Form 8-K filed January 27, 2010).
99.2	Press Release, dated February 9, 2010, 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	igned
thereunto duly authorized.	

Dated: February 9, 2010

MERCURY COMPUTER SYSTEMS, INC.

By: /s/ Robert E. Hult

Robert E. Hult Senior Vice President, Chief Financial Officer, and Treasurer

Exhibit Index

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News Release

FOR IMMEDIATE RELEASE

Mercury Computer Systems Announces Correction to Previously Announced Second Quarter Fiscal 2010 Results

CHELMSFORD, Mass. – February 9, 2010 – Mercury Computer Systems, Inc. (NASDAQ: MRCY) today announced the correction of an error that was discovered in the process of finalizing the Company's Quarterly Report on Form 10-Q for the second quarter of fiscal 2010. The correction related to the cost of revenues and inventory balances reported in the press release issued on January 26, 2010, announcing the Company's results for the quarter ended December 31, 2009. Cost of revenues for the three and six months ended December 31, 2009 was \$19.3 million and \$39.4 million, respectively, rather than \$18.8 million and \$38.9 million as previously announced. This correction resulted from the incomplete release of inventory into costs of revenue. While it had no impact on revenue, the correction had the net effect of reducing the previously announced gross profit, income from operations, income tax expense, income from continuing operations, net income, basic and diluted earnings per share and adjusted EBITDA for the three and six months ended December 31, 2009.

The following table shows the impact of the correction to the information presented in the Unaudited Consolidated Statements of Operations. Dollars are presented in thousands, except per share amounts.

	As Previously Announced			Corrected				
	Three months ended December 31, 2009		Six months ended December 31, 2009		Three months ended December 31, 2009		Six months ended December 31, 2009	
Net revenues	\$	45,158	\$	92,589	\$	45,158	\$	92,589
Cost of revenues	\$	18,762	\$	38,891	\$	19,293	\$	39,422
Gross profit	\$	26,396	\$	53,698	\$	25,865	\$	53,167
Income from operations	\$	2,445	\$	7,500	\$	1,914	\$	6,969
Income tax expense	\$	412	\$	1,318	\$	330	\$	1,236
Income from continuing operations	\$	2,364	\$	6,789	\$	1,915	\$	6,340
Net income	\$	2,520	\$	6,878	\$	2,071	\$	6,429
Basic income from continuing operations per share	\$	0.10	\$	0.30	\$	80.0	\$	0.28
Diluted income from continuing operations per share	\$	0.10	\$	0.30	\$	0.08	\$	0.28
Adjusted EBITDA	\$	6,051	\$	13,810	\$	5,520	\$	13,279

This correction also had an impact on the information presented in the Unaudited Consolidated Balance Sheets, Unaudited Condensed Consolidated Statements of Cash Flows, and Unaudited Supplemental Information – Reconciliation of GAAP to Non-GAAP Measures. Corrected unaudited financial information is attached hereto.

Use of Non-GAAP (Generally Accepted Accounting Principles) Financial Measures

In addition to reporting financial results in accordance with generally accepted accounting principles, or GAAP, the Company provides adjusted EBITDA, a non-GAAP financial measure adjusted to exclude certain non-cash and other specified charges, which the Company believes is useful to help investors better understand its past financial performance and prospects for the future. However, the presentation of adjusted EBITDA is not meant to be considered in isolation or as a substitute for financial information provided in accordance with GAAP. Management believes the adjusted EBITDA financial measure assists in providing a more complete understanding of the Company's underlying operational results and trends, and management uses this measure along with the corresponding GAAP financial measure to manage the Company's business, to evaluate its performance compared to prior periods and the marketplace, and to establish operational goals. A reconciliation of GAAP to non-GAAP financial results discussed in this press release is contained in the attached exhibits.

Mercury Computer Systems, Inc. - Where Challenges Drive Innovation™

Mercury Computer Systems (www.mc.com, NASDAQ: MRCY) provides embedded computing systems and software that combine image, signal, and sensor processing with information management for data-intensive applications. With deep expertise in optimizing algorithms and software and in leveraging industry-standard technologies, we work closely with customers to architect comprehensive, purpose-built solutions that capture, process, and present data for defense electronics, semiconductor equipment manufacturing, commercial computing, homeland security, and other computationally challenging markets. Our dedication to performance excellence and collaborative innovation continues a 25-year history in enabling customers to gain the competitive advantage they need 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.

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 fiscal 2010 business performance and beyond and the Company's plans for growth and improvement in profitability and cash flow. You can identify these statements by the 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, general

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economic and business conditions, including unforeseen weakness in the Company's markets, effects of continued geopolitical 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 and divestitures or delays in realizing such benefits, challenges in integrating acquired businesses and achieving anticipated synergies, timing and costs associated with disposing of businesses, and difficulties in retaining key customers. These risks and uncertainties also include such additional risk factors as are discussed in the Company's filings with the U.S. Securities and Exchange Commission, including its Annual Report on Form 10-K for the fiscal year ended June 30, 2009. 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:

Robert Hult, CFO, Mercury Computer Systems, Inc. 978-967-1990

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MERCURY COMPUTER SYSTEMS, INC. CONSOLIDATED BALANCE SHEETS (in thousands)

Total liabilities and shareholders' equity

Assets	December 31, 2009 (unaudited)	June 30, 2009	
Current assets:			
Cash and cash equivalents	\$ 52.197	\$ 46,950	
Marketable securities	44,444	44,977	
Accounts receivable, net	31,239	28,595	
Inventory	16,884	16,805	
Option to sell auction rate securities at par	4,741	5,030	
Prepaid expenses and other current assets	3,184	3,748	
Total current assets	152,689	146,105	
Property and equipment, net	8,283	7,960	
Goodwill	57,653	57,653	
Acquired intangible assets, net	2,043	2,911	
Other non-current assets	6,058	4,743	
Total assets	\$ 226,726	\$219,372	
Liabilities and Shareholders' Equity			
Current liabilities:			
Accounts payable	\$ 5,290	\$ 3,770	
Accrued expenses	6,498	7,449	
Accrued compensation	9,065	9,372	
Borrowings under line of credit and current capital lease obligations	32,716	33,408	
Income taxes payable	2,959	2,316	
Deferred revenues and customer advances	7,314	7,840	
Current liabilities of discontinued operations	121	1,234	
Total current liabilities	63,963	65,389	
Deferred gain on sale-leaseback	7,292	7,870	
Other non-current liabilities	1,595	1,076	
Total liabilities	72,850	74,335	
Shareholders' equity:			
Common stock	226	224	
Additional paid-in capital	107,321	104,843	
Retained earnings	45,742	39,313	
Accumulated other comprehensive income	587	657	
Total shareholders' equity	153,876	145,037	

\$ 226,726

\$219,372

MERCURY COMPUTER SYSTEMS, INC. UNAUDITED CONSOLIDATED STATEMENTS OF OPERATIONS (in thousands, except per share data)

	Decem	Three months ended December 31,		ths ended iber 31,
	2009	2008	2009	2008
Net revenues	\$45,158	\$ 45,094	\$92,589	\$ 89,934
Cost of revenues (1)	19,293	19,690	39,422	39,603
Gross profit	25,865	25,404	53,167	50,331
Operating expenses:				
Selling, general and administrative (1)	13,485	13,929	24,829	26,014
Research and development (1)	9,901	11,632	20,097	21,883
Impairment of long-lived assets	150	_	150	_
Amortization of acquired intangible assets	434	447	868	1,457
Restructuring	(19)	235	254	474
Total operating expenses	23,951	26,243	46,198	49,828
Income (loss) from operations	1,914	(839)	6,969	503
Interest income	163	686	242	1,681
Interest expense	(113)	(945)	(170)	(1,783)
Other income (expense), net	281	(119)	535	(265)
Income (loss) from continuing operations before income taxes	2,245	(1,217)	7,576	136
Income tax expense	330		1,236	
Income (loss) from continuing operations	1,915	(1,217)	6,340	136
(Loss) income from discontinued operations, net of tax	(15)	(15,863)	15	(18,992)
Gain on disposal of discontinued operations, net of tax	171	16	74	488
Net income (loss)	\$ 2,071	\$(17,064)	\$ 6,429	\$(18,368)
Basic earnings (loss) per share:				
Income (loss) from continuing operations	\$ 0.08	\$ (0.05)	\$ 0.28	\$ 0.01
(Loss) income from discontinued operations	· —	(0.72)	_	(0.86)
Gain on disposal of discontinued operations	0.01		0.01	0.02
Net income (loss) per share	\$ 0.09	\$ (0.77)	\$ 0.29	\$ (0.83)
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Diluted earnings (loss) per share:	\$ 0.08	<u>ቀ</u> (በ በ፫)	\$ 0.28	\$ 0.01
Income (loss) from continuing operations	\$ 0.06	\$ (0.05) (0.72)	\$ 0.28	(0.85)
(Loss) income from discontinued operations Gain on disposal of discontinued operations	0.01	(0.72)		0.02
Net income (loss) per share	\$ 0.09	\$ (0.77)	\$ 0.28	\$ (0.82)
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Weighted average shares outstanding:				
Basic	22,500	22,121	22,450	22,065
Diluted	22,870	22,121	22,806	22,318
(1) Includes stock-based compensation expense, which was allocated as follows:				
Cost of revenues	\$ 73	\$ 141	\$ 110	\$ 209
Selling, general and administrative	\$ 1,318	\$ 1,785	\$ 1,718	\$ 2,515
Sching, general and administrative				

MERCURY COMPUTER SYSTEMS, INC. UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (in thousands)

		Three months ended December 31,		ths ended lber 31,
	2009	2008	2009	2008
Cash flows from operating activities:				
Net income (loss)	\$ 2,071	\$(17,064)	\$ 6,429	\$(18,368)
Depreciation and amortization	1,658	2,393	3,346	5,419
Impairment of goodwill and long-lived assets	150	14,555	150	14,555
Other non-cash items, net	462	2,573	(1,164)	3,061
Changes in operating assets and liabilities	826	277	(987)	703
Net cash provided by operating activities	5,167	2,734	7,774	5,370
Cash flows from investing activities:				
Sales (purchases) of marketable securities, net	448	(57,737)	850	(57,628)
Purchases of property and equipment, net	(1,983)	(1,108)	(2,800)	(2,219)
Proceeds from liquidation of insurance policies	_	831	—	831
Payments on sale of discontinued operations, net	(923)		(707)	
Payments for acquired intangible assets	(67)		(125)	
Net cash used in investing activities	(2,525)	(58,014)	(2,782)	(59,016)
Cash flows from financing activities:				
Proceeds from employee stock option and purchase plans	750	247	823	413
Repurchases of common stock	(142)	(58)	(367)	(297)
(Payments) borrowings under line of credit	(514)	31,410	(773)	31,410
Payments under capital leases	(8)	(93)	(45)	(135)
Gross tax windfall from stock-based compensation	278	92	614	450
Net cash provided by financing activities	<u>364</u>	31,598	252	31,841
Effect of exchange rate changes on cash and cash equivalents	(59)	714	3	718
Net increase (decrease) in cash and cash equivalents	2,947	(22,968)	5,247	(21,087)
Cash and cash equivalents at beginning of period	49,250	60,926	46,950	59,045
Cash and cash equivalents at end of period	\$52,197	\$ 37,958	\$52,197	\$ 37,958

UNAUDITED SUPPLEMENTAL INFORMATION—RECONCILIATION OF GAAP TO NON-GAAP MEASURES

Beginning with the first quarter of fiscal 2010, Mercury changed its non-GAAP measure for reporting financial performance to adjusted EBITDA. This financial measure excludes the impact of certain items and, therefore, has not been calculated in accordance with GAAP. The adjustments to this non-GAAP financial measure, and the basis for such adjustments, are outlined below:

Stock-based compensation expense. The Company incurs expense related to stock-based compensation included in its GAAP presentation of cost of revenues, selling, general and administrative expense and research and development expense. Although stock-based compensation is an expense of the Company and viewed as a form of compensation, these expenses vary in amount from period to period, and are affected by market forces that are difficult to predict and are not within the control of management, such as the market price and volatility of the Company's shares, risk-free interest rates and the expected term and forfeiture rates of the awards. In accordance with FASB ASC 718, previously SFAS No. 123R, stock-based compensation expense is calculated as of the grant date of each stock-based award, and generally cannot be changed or influenced by management after the grant date. Management believes that exclusion of these expenses allows comparisons of operating results that are consistent with periods prior to the Company's adoption of FASB ASC 718, and allows comparisons of the Company's operating results to those of other companies, both public, private or foreign, that disclose non-GAAP financial measures that exclude stock-based compensation.

Amortization of acquired intangible assets. The Company incurs amortization of intangibles related to various acquisitions it has made in recent years. These intangible assets are valued at the time of acquisition, are then amortized over a period of several years after the acquisition and generally cannot be changed or influenced by management after the acquisition. Management believes that exclusion of these expenses allows comparisons of operating results that are consistent over time for both our newly-acquired and long-held businesses.

Depreciation. The Company incurs depreciation expense related to capital assets purchased to support the ongoing operations of the business. These assets are recorded at cost and are depreciated using the straight-line method over the useful life of the asset. Purchases of such assets may vary significantly from period to period and without any correlation to underlying operating performance. Management believes that exclusion of depreciation expense allows comparisons of operating results that are consistent across past, present and future periods.

Restructuring. The Company incurs restructuring charges in connection with management's decisions to undertake certain actions to realign operating expenses through workforce reductions and the closure of certain Company facilities, businesses and product lines. Management believes this item is outside the normal operations of the Company's business and is not indicative of ongoing operating results, and that exclusion of this expense allows comparisons of operating results that are consistent across past, present and future periods.

Impairment of long-lived assets. The Company incurs impairment charges of long-lived assets based on events that may or may not be within the control of management. Management believes these items are outside the normal operations of the Company's business and are not indicative of ongoing operating results, and that exclusion of these expenses allows comparisons of operating results that are consistent across past, present and future periods.

Income Taxes. The Company's GAAP tax expense can fluctuate materially from period to period due to tax adjustments that have no relation to underlying operating performance. Management feels that exclusion of tax expense allows comparisons of operating results that are consistent across past, present and future periods.

Interest Income and Expense. The Company receives interest income on investments and incurs interest expense on loans, capital leases and other financed arrangements. These charges may vary from period to period due to changes in interest rates driven by general market conditions or other circumstances outside of the normal course of Mercury's operations. Management believes that exclusion of these items allows comparisons of operating results that are consistent across past, present and future periods.

Mercury uses adjusted EBITDA as a principal indicator of the operating performance of its business. Management excludes the above-described items from its internal forecasts and models when establishing internal operating budgets, supplementing the financial results and forecasts reported to the Company's board of directors, determining the portion of bonus compensation for executive officers and other key employees based on operating performance, evaluating short-term and long-term operating trends in the Company's operations, and allocating resources to various initiatives and operational requirements. The Company believes that adjusted EBITDA permits a comparative assessment of its operating performance, relative to its performance based on its GAAP results, while isolating the effects of charges that may vary from period to period without any correlation to underlying operating performance. The Company believes that these non-GAAP financial adjustments are useful to investors because they allow investors to evaluate the effectiveness of the methodology and information used by management in its financial and operational decision-making. The Company believes that trends in its adjusted EBITDA are valuable indicators of its operating performance.

Adjusted EBITDA is a non-GAAP financial measure and should not be considered in isolation or as a substitute for financial information provided in accordance with GAAP. This non-GAAP financial measure may not be computed in the same manner as similarly titled measures used by other companies. The Company expects to continue to incur expenses similar to the adjusted EBITDA financial adjustments described above, and investors should not infer from the Company's presentation of this non-GAAP financial measure that these costs are unusual, infrequent or non-recurring.

The following tables reconcile the non-GAAP financial measures to their most directly comparable GAAP financial measures.

(in thousands)

	Decen	December 31,		December 31,	
	2009	2008	2009	2008	
Income (loss) from continuing operations		\$(1,217)	\$ 6,340	\$ 136	
Income tax expense	330	_	1,236	_	
Interest (income) expense, net	(50)	259	(72)	102	
Depreciation	1,224	1,440	2,478	2,940	
Amortization of acquired intangible assets	434	447	868	1,457	
Impairment of long-lived assets	150	_	150	_	
Restructuring	(19)	235	254	474	
Stock-based compensation expense	1,536	2,339	2,025	3,449	
Adjusted EBITDA		\$ 3,503	\$13,279	\$8,558	

Six months ended

Three months ended