MERCURY COMPUTER SYSTEMS INC Form SC 13G/A

February 13, 2008

SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

> SCHEDULE 13G (Rule 13d-102)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO RULES 13d-1 (b) (c), AND (d) AND AMENDMENTS THERETO FILED PURSUANT TO RULE 13d-2 (b)

(Amendment No. 1) Mercury Computer Systems, Inc. ______ (Name of Issuer) Common Stock, \$0.01 par value (Title of Class of Securities) 589378108 _____ _____ (CUSIP Number) December 31, 2007 (Date of Event which Requires Filing of this Statement) Check the appropriate box to designate the rule pursuant to which this Schedule is filed: |X| Rule 13d-1(b)

- |_| Rule 13d-1(c)
- |_| Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

______ CUSIP No. 589378108 Page 2 of 8 Pages ______

NAMES OR REPORTING PERSONS

S.S. OR I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS

26-0385758 Renaissance Technologies LLC

- 2. CHECK APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS):
 - (a) |_|
 - (b) |_|

3.	SEC USE	ONLY						
4.	CITIZENS	HIP OR	PLACE OF ORGANIZATION					
	Delaware							
		5.	SOLE VOTING POWER					
			1,797,400					
SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON		6.	SHARED VOTING POWER					
			0					
		7.	SOLE DISPOSITIVE POWER					
			1,797,400					
W	ITH	8.	SHARED DISPOSITIVE POWER					
			0					
9.	AGGREGAT	E AMOUN	NT BENEFICIALLY OWNED BY EACH REPORTING PER	RSON				
	1,797,400							
10.	CHECK IF		GGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN	N SHARES	_			
11.	PERCENT	OF CLAS	SS REPRESENTED BY AMOUNT IN ROW (9)					
	7.93%							
12.	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)							
	IA							
			Page 2 of 8 Pages					
===== CUSIP	No. 5893	 78108	13G	Page 3 of 8	====== 8 Pages			
1.			TING PERSONS IDENTIFICATION NOS. OF ABOVE PERSONS					
	James H. Simons							
2.	CHECK APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS): (a) _ (b) _							
3.	SEC USE							

4. CITIZENSHIP OR PLACE OF ORGANIZATION

	United	l States	;				
		5.	SOLE VOTING POWER				
			1,797,400				
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH		6.	SHARED VOTING POWER				
		ıΥ	0				
		7.	SOLE DISPOSITIVE POWER				
			1,797,400				
		8.	SHARED DISPOSITIVE POWER				
			0				
9.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON						
	1,797,400						
10.		CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES SEE INSTRUCTIONS) _					
11.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)						
	7.93%						
12.	TYPE C	F REPOR	RTING PERSON (SEE INSTRUCTIONS)				
	IN						
			Page 3 of 8 Pages				
CUSIF	No. 58	 39378108	3 13G Page 4 of 8 Pag	== es			
Item	1.						
		Name of	Issuer.				
			Computer Systems, Inc.				
			s of Issuer's Principal Executive Offices.				
		199 Riv	verneck Road Ford, MA 01824				
Item	2.						
	(a)	Name of	F Person Filing.				
		This Sc	chedule 13G is being filed by Renaissance Technologies LLC and James H. Simons ("Simons").				

(b) Address of Principal Business Office or, if none, Residence.

The principal business address of the reporting persons is:

800 Third Avenue New York, New York 10022

(c) Citizenship.

Dr. Simons is a United States citizen and RTC is a Delaware limited liability company

(d) Title of Class of Securities.

Common Stock, \$0.01 par value

(e) CUSIP Number.

589378108

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- (a) |_ | Broker or dealer registered under Section 15 of the Act.
- (b) | Bank as defined in Section 3(a)(6) of the Act.
- (c) $|_|$ Insurance Company as defined in Section 3(a)(19) of the Act.
- (d) $|_|$ Investment Company registered under Section 8 of the Investment Company Act.
- (e) |X| Investment Adviser in accordance with Sec. 240.13d-1(b)(1)(ii)(E).
- (f) |_| Employee Benefit Plan or Endowment Fund in accordance with Sec. $240.13d1\,(b)\,(1)\,(ii)\,(F)\,.$
- (g) |_| Parent holding company, in accordance with Sec. 240.13d-1(b)(ii)(G).
- (h) \mid A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act.
- (i) |_| A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act of 1940.
- (j) $|_|$ Group, in accordance with Sec. 240.13d-1(b)(1)(ii)(J).

If this statement is filed pursuant to Sec. 240.13d-1(c), check this box $|_|$.

Item 4. Ownership

(a) Amount Beneficially Owned.

RTC: 1,797,400 shares

Simons: 1,797,400 shares, comprising the shares beneficially owned by RTC, because of Dr. Simons' position as control person of RTC.

- (b) Percent of Class. RTC: 7.93% Simons: 7.93%
- (c) Number of shares as to which each such person has

(i) sole power to vote or to direct the vote: RTC: 1,797,400 Simons: 1,797,400

(ii) shared power to vote or to direct the vote: 0

(iii) sole power to dispose or to direct the
 disposition of:

RTC: 1,797,400 Simons: 1,797,400

(iv) shared power to dispose or to direct the
 disposition of:

0

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Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following $\mid _ \mid$

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Certain funds and accounts managed by RTC have the right to receive dividends and proceeds from the sale of the securities which are the subject of this report. RIEF Trading LLC holds of record more than 5% of such securities.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company or Control Person.

Not applicable.

Item 8. Identification and Classification of Members of the Group.

Not applicable.

Item 9. Notice of Dissolution of Group.

Not applicable.

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Item 10. Certification.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: February 12, 2008

/s/ James H. Simons
----James H. Simons

Renaissance Technologies LLC

By: /s/ Mark Silber

Mark Silber

Executive Vice President

Attention: Intentional misstatements or omissions of fact constitute Federal criminal violations (see 18 U.S.C. 1001).

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SCHEDULE 13G

EXHIBIT INDEX

EXHIBIT NO. EXHIBIT -----

99.1 Agreement Pursuant to Rule 13d-1(k)(1)(iii) (incorporated by reference to Exhibit 99.1 to the initial filing of this Schedule 13G on February 12, 2007).

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