ELECTRO SCIENTIFIC INDUSTRIES INC Form SC 13D/A

January 24, 2007

UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

SCHEDULE 13D Under the Securities Exchange Act of 1934 (Amendment No. 6)

ELECTRO SCIENTIFIC INDUSTRIES INC. (ESIO) (Name of Issuer)

Common Stock (Title of Class of Securities)

285229100 (CUSIP Number)

David Nierenberg The D3 Family Funds 19605 NE 8th Street Camas, WA 98607 (360) 604-8600

With a copy to:

Henry Lesser, Esq. DLA Piper US LLP 2000 University Avenue East Palo Alto, CA 94303 (650) 833-2000

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

January 22, 2007 (Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D and is filing this schedule because of ss.ss. 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box $|_|$.

1 NAME OF REPORTING PERSON S.S. OR I.R.S. IDENTIFICATION NOS. OF ABOVE PERSON The D3 Family Fund, L.P. 2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) |X| (b) |_| 3 SEC USE ONLY

4 SOURCE OF FUNDS*

	WC						
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) _					_	
6	CITIZENSH	HIP O	R PLACE OF ORGANIZATION			-	
	Washingto	on					
		7	SOLE VOTING POWER			_	
			585,202 Common shares (2.0%)				
	JMBER OF	8	SHARED VOTING POWER				
BENE	SHARES EFICIALLY		0				
	VNED BY EACH EPORTING	9	SOLE DISPOSITIVE POWER				
	PERSON		585,202				
	WITH	10	SHARED DISPOSITIVE POWER				
			0				
11	AGGREGATE	C AMO	UNT BENEFICIALLY OWNED BY EACH REPORTING PERSON			-	
	For the r	eport	ting person listed on this page, 585,202; for al.	1			
	reporting	g per	sons as a group, 3,374,484 shares (11.6%)			_	
12	СНЕСК ВОХ	K IF (THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN	J SI	HARES* _	Ι	
13 PERCENT OF CLASS REPRESENTED BY AMOUNT		OF CL	ASS REPRESENTED BY AMOUNT IN ROW (11)			_	
	11.6%						
 14	TYPE OF REPORTING PERSON*				-		
	PN						
			*SEE INSTRUCTIONS BEFORE FILLING OUT!			-	
			2				
			2				
						_	
1	NAME OF REPORTING PERSON S.S. OR I.R.S. IDENTIFICATION NOS. OF ABOVE PERSON						
	The DIII Offshore Fund, L.P.						
2	СНЕСК ТНЕ	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*					
				a) o)	X _		
3	SEC USE C	NLY				-	

_____ 4 SOURCE OF FUNDS* WC ____ _____ CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED 5 PURSUANT TO ITEMS 2(d) OR 2(e) 1_1 _____ 6 CITIZENSHIP OR PLACE OF ORGANIZATION Bahamas _____ _____ 7 SOLE VOTING POWER 774,214 common shares (2.7%) _____ _____ NUMBER OF 8 SHARED VOTING POWER SHARES BENEFICIALLY 0 OWNED BY _____ 9 SOLE DISPOSITIVE POWER EACH REPORTING 774,214 PERSON WITH _____ 10 SHARED DISPOSITIVE POWER 0 _____ _____ 11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON For the reporting person listed on this page, 774,214; for all reporting persons as a group, 3,374,484 shares (11.6%) _____ CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES* |_| 12 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 13 11.6% _____ 14 TYPE OF REPORTING PERSON* PN _____ *SEE INSTRUCTIONS BEFORE FILLING OUT! 3 _____ 1 NAME OF REPORTING PERSON S.S. OR I.R.S. IDENTIFICATION NOS. OF ABOVE PERSON The D3 Family Bulldog Fund, L.P. -----_____ 2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*

	Edgar	Filing	g: ELECTRO SCIENTIFIC INDUSTRIES INC - Form SC 13D/A		
			(a) X (b) _		
3	SEC USE O				
4	SOURCE OF FUNDS*				
	WC				
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) _				
6	CITIZENSH	IP OF	PLACE OF ORGANIZATION		
	Washingto	n			
		7	SOLE VOTING POWER		
			2,015,068 common shares (6.9%)		
	JMBER OF	8	SHARED VOTING POWER		
BENE	SHARES EFICIALLY		0		
OV	NED BY EACH	9	SOLE DISPOSITIVE POWER		
	EPORTING PERSON		2,015,068		
	WITH	10	SHARED DISPOSITIVE POWER		
			0		
11	AGGREGATE	AMOU	INT BENEFICIALLY OWNED BY EACH REPORTING PERSON		
			ing person listed on this page, 2,015,068; for all ons as a group, 3,374,484 shares (11.6%)		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES* $ _ $				
13	PERCENT O	F CLA	SS REPRESENTED BY AMOUNT IN ROW (11)		
	11.6%				
14	TYPE OF R	EPORI	'ING PERSON*		
	PN				
			*SEE INSTRUCTIONS BEFORE FILLING OUT!		
			4		

	Nierenber	g In	vestment Management Company, Inc.			
2	CHECK THE	APP	ROPRIATE BOX IF A MEMBER OF A GROUP*		X _	
3	SEC USE ONLY					
4	SOURCE OF FUNDS*					
	WC					
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) _					
6	CITIZENSH	IP O	R PLACE OF ORGANIZATION			
	Washingto	n 				
		7	SOLE VOTING POWER			
			0			
NU	JMBER OF	8	SHARED VOTING POWER			
BENE	SHARES SFICIALLY WNED BY EACH SPORTING PERSON WITH		3,374,484 shares (11.6%)			
		9	SOLE DISPOSITIVE POWER			
			0			
		10	SHARED DISPOSITIVE POWER			
			3,374,484 shares			
 11	AGGREGATE	AMO	UNT BENEFICIALLY OWNED BY EACH REPORTING PERS	SON		
			ting person listed on this page, 3,374,484; f sons as a group, 3,374,484 shares (11.6%)	for all		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES* _			HARES* _		
 13	PERCENT O	F CL	ASS REPRESENTED BY AMOUNT IN ROW (11)			
	11.6%					
14	TYPE OF R	EPOR	TING PERSON*			
	PN					
			*SEE INSTRUCTIONS BEFORE FILLING OUT!			

1			FING PERSON IDENTIFICATION NOS. OF ABOVE PERSON			
	Nierenber	g Inv	vestment Management Offshore, Inc.			
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP* (a) X (b) _					
3	SEC USE ONLY					
4	4 SOURCE OF FUNDS*					
WC						
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) _					
6 CITIZENSHIP OR PLACE OF ORGANIZATION						
	Bahamas					
		/	SOLE VOTING POWER			
			0			
	MBER OF HARES	8	SHARED VOTING POWER			
	FICIALLY NED BY		774,214 common shares (2.7%)			
	EACH EPORTING PERSON WITH	9	SOLE DISPOSITIVE POWER			
P			0			
		10	SHARED DISPOSITIVE POWER			
			774,214			
11 AGGREGATE AMC		AMO	JNT BENEFICIALLY OWNED BY EACH REPORTING PERS	 ON		
	reporting	per	ting person listed on this page, 774,214 for sons as a group, 3,374,484 shares (11.6%)			
12			THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CER			
 13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)					
	11.6%					
14	TYPE OF REPORTING PERSON*					
	PN					
			*SEE INSTRUCTIONS BEFORE FILLING OUT!			

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This Amendment No. 6 to Schedule 13D (this "Amendment") amends the below-indicated items from the Schedule 13D previously filed by or on behalf of the undersigned parties (the "Reporting Persons") (the "Schedule 13D"), by supplementing such Items with the information below:

Item 4. Purpose of Transaction

Our proposal that ESIO put excess cash to work to maximize shareholder value seems to be progressing. We cite three recent developments to illustrate our point.

First, and foremost, we thank ESIO's management and Board of Directors for their constructive and timely announcement yesterday reiterating their commitment to enhancing shareholder value. We know that ESIO is working to prepare its substantive response to our suggestions. As current and former public company board members ourselves, we appreciate that doing this the right way takes time. We are prepared to be patient while good people do the right thing.

Second, we note the Schedule 13D filed earlier today by ESIO's largest shareholder, Third Avenue Management LLC. We particularly note the thoughtful letter from Third Avenue's Co-Chief Investment Officer, Curtis R. Jensen, to ESIO's CEO, Nick Konidaris, advocating a combined share repurchase and dividend program to improve ESIO's return on equity (ROE) and tangibly demonstrate the company's commitment to maximizing shareholder value. Though Third Avenue's suggestions differ from those in our last 13D, we think they have improved our original ideas.

Third, we note with enthusiasm today's announcement that United Microelectronics Corp. (UMC), which is Taiwan's second largest contract chip manufacturer, will use its excess cash to retire fully 30% of its outstanding shares and pay shareholders a one time cash dividend. Taiwanese technology companies are showing American technology companies how to use cash to build shareholder value.

* * * * *

In conclusion, we would like to update the Schedule 13D to disclose that in two separate recent conversations we have told ESIO's CEO and Board Chairman that we do not require the company to use a one time cash dividend as the only or principal way to return excess cash to the shareholders. As Mr. Jensen's letter points out so powerfully, there are other perfectly acceptable ways to use excess cash to build shareholder value. If, for example, ESIO's Board and advisors were to conclude that the best way to improve ROE were to repurchase shares, we could support that decision with just two conditions. First, we would want the size of the repurchase program to be large enough that it would meaningfully boost both ROE and earnings per share, like we believe UMC's program will. And, second, we would like ESIO to make a continuing commitment to use excess cash flow to repurchase a significant percentage of shares on an ongoing basis. To illustrate the size of programs which could be acceptable to us, we could support a one time repurchase of six million shares, which is over 20% of the outstanding

share count, succeeded by a continuing program to repurchase at least one

million more shares annually.

We appreciate the company's consideration of our views and look forward to the response.

The previous statements by the Reporting Persons to their views regarding their investment in ESIO represent solely their own analyses and judgments, based on publicly-available information and their own internal evaluation thereof. Those statements are not intended, and should not be relied on, as investment advice to any other investor or prospective investor. To the extent those statements reflect assessments of possible future developments, those assessments are inherently subject to the uncertainties associated with all assessments of future events; actual developments may materially differ as a result of circumstances affecting ESIO and/or extrinsic factors such as developments in the company's industry and the economic environment. The Reporting Persons reserve the right to change their internal evaluation of this investment in the future , as well as to increase or decrease their investment depending on their evaluation, without further amending their Schedule 13D except as required by applicable rules.

Item 5. Interest in Securities of the Issuer

(a, b) The Reporting Persons, in the aggregate, beneficially own 3,374,484 common shares, constituting approximately 11.6% of the outstanding shares.

(c) Since Amendment No. 5 to Schedule 13D, the following purchases of Shares were made by D3 Family Funds in open market transactions:

Fund	Trade Date	Quantity	Price
D3 Family Fund, LP	1/18/2007	14,370	19.61
D3 Family Bulldog Fund,	LP 1/18/2007	45,570	19.61
DIII Offshore Fund, LP	1/18/2007	15,060	19.61
D3 Family Fund, LP	1/19/2007	5,900	19.64
D3 Family Bulldog Fund,	LP 1/19/2007	20,300	19.64
DIII Offshore Fund, LP	1/19/2007	7,800	19.64
D3 Family Fund, LP	1/22/2007	17,900	19.44
D3 Family Bulldog Fund,	LP 1/22/2007	64,020	19.44
DIII Offshore Fund, LP	1/22/2007	24,080	19.44

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SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, each of the undersigned certifies that the information set forth in the Statement is true, complete and correct.

D3 Family Fund, L.P., and D3 Bulldog Fund, L.P.

By: Nierenberg Investment Management Company, Inc.

Its: General Partner

January 24, 2007

By: /s/ David Nierenberg

David Nierenberg, President

	DIII Offshore Fund, L.P.
	By: Nierenberg Investment Management Offshore, Inc.
	Its: General Partner
January 24, 2007	By: /s/ David Nierenberg
	David Nierenberg, President
	Nierenberg Investment Management Company, Inc.
January 24, 2007	By: /s/ David Nierenberg
	David Nierenberg, President
	Nierenberg Investment Management Offshore, Inc.
January 24, 2007	By: /s/ David Nierenberg
	David Nierenberg, President