AETHER SYSTEMS INC
Form S-3/A
January 25, 2002

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As filed with the Securities and Exchange Commission on January 25, 2002.

Registration No. 333-74428

SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

Amendment No. 1

to

Form S-3

REGISTRATION STATEMENT UNDER THE

SECURITIES ACT OF 1933

Aether Systems, Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**52-2186634**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)

11460 Cronridge Drive
Owings Mills, Maryland 21117
(410) 654-6400

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant s Principal Executive Offices)

David S. Oros
Chairman and Chief Executive Officer
11460 Cronridge Drive
Owings Mills, Maryland 21117
(410) 654-6400

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

with a copy to:
Mark A. Dewire, Esq.
David M. Lynn, Esq.
Wilmer, Cutler & Pickering
2445 M Street, N.W.
Washington, D.C. 20037
(202) 663-6000

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. o

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. o

CALCULATION OF REGISTRATION FEE

Title of Class of Securities To be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share(2)	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, par value $0.01 per share	737,790	$7.59	$5,599,826	$1,339
Common Stock, par value $0.01 per share 14,693 $6.96 102,263 10				
Total 752,483			$5,702,089	$1,349(3)

(1) All of the shares of common stock offered hereby are being sold for the account of the selling stockholders named herein. See Selling Stockholders herein.

(2) Estimated solely for purposes of calculating the registration fee pursuant to Rule 457(c) under the Securities Act of 1933. The proposed maximum offering price per share is based on the average of the high and low prices for a share of Aether common stock quoted on the Nasdaq National Market on November 30, 2001 and on January 23, 2002.

(3) The registrant previously paid $1,339 of this amount.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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PROSPECTUS

752,483 Shares

Common Stock

The stockholders of Aether Systems, Inc. named in this prospectus are offering and selling up to 752,483 shares of Aether s common stock. The selling stockholders obtained their shares in connection with our acquisitions of Riverbed Technologies, Inc. or Cerulean Technology, Inc., except for one selling stockholder which obtained its shares in connection with a strategic alliance. We will not receive any proceeds from the sale of shares of common stock by the selling stockholders pursuant to this prospectus. We have agreed to bear the expenses of registration of the shares in this prospectus.

The selling stockholders may offer their shares through public or private transactions, on or off the Nasdaq National Market at prevailing market prices or at privately negotiated prices. They may make sales directly to purchasers or to or through brokers, agents, dealers or underwriters. The selling stockholders will bear all commissions and other compensation paid to brokers in connection with the sale of their shares.

Our shares are traded on the Nasdaq National Market under the symbol AETH. On January 24, 2002, the closing sale price of shares of our common stock was $7.70 per share.

Investing in the common stock involves risks that are described in the Risk Factors section beginning on page 4 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is January 25, 2002.

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ABOUT AETHER SYSTEMS

Aether Systems helps enterprise customers improve efficiency and profitability by providing the services, software and support necessary to extend existing and future business applications from the desktop to any unwired device, whether it be mobile or real time wireless. Through Aether Fusion , Aether s enabling technology foundation, Aether develops, deploys and manages mobile and wireless solutions built on industry standard technology and backed by Aether s expertise in wireless hosting, software and services. Aether provides the worlds of business and government with a single source for reliable, scalable and cost effective mobile and wireless solutions.

Aether s enabling technology foundation gives businesses, systems integrators and developers the ability to quickly create, deploy and manage wireless solutions across multiple carrier networks and types of devices. Customers may choose specific wireless products or services, or have Aether build and manage a comprehensive wireless solution. In every case, Aether s flexibility to adapt to a wide variety of systems protects businesses from betting on technologies in a rapidly changing wireless environment.

Our strategy. Our strategy is to be the dominant provider in the United States and internationally of wireless data services and systems to corporations by using our engineering expertise, our software products, our hosted solutions and our other resources. We believe our capabilities and experience have established us as an early market leader in wireless data services, and a key element of our strategy is to move quickly into new opportunities to extend our leadership position. Additionally, at the same time, we believe the competitive landscape has significantly weakened, and Aether has identified a number of growth areas including:

Small and Medium Enterprise (SME);

Homeland Security;

Transportation and Logistics;

New products addressing opportunities such as SME and field force automation; and

Licensable, comprehensive wireless technology foundation.

We will continue to monitor and evaluate new opportunities as they arise.

Other information. We are a Delaware corporation. Our principal executive offices are located at 11460 Cronridge Drive, Owings Mills, Maryland 21117, and our telephone number is (410) 654-6400. We maintain a Web site at *www.aethersystems.com*. Information contained in our Web site does not constitute a part of this prospectus. All references to we, us, our or Aether in this prospectus mean Aether Systems, Inc. and its subsidiaries or predecessor

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RISK FACTORS

Investing in our common stock involves risks. You should carefully consider the following risks together with the other information contained in this prospectus and all the information incorporated by reference before deciding to buy our common stock. A list of factors affecting our operating results is incorporated herein by reference to our Annual Report on Form 10-K for the year ended December 31, 2000. The risks below relate solely to this offering.

Our stock price, like that of many technology companies, has been, and may continue to be, volatile.

The market price of our common stock has been highly volatile and is likely to continue to be highly volatile. The trading price of our common stock has fluctuated from a high of $58.50 to a low of $5.25 in the one year prior to the date of this prospectus. We are involved in a highly visible, rapidly changing industry and stock prices in our industry and similar industries have risen and fallen in response to a variety of factors, including:

- announcements of new wireless data communications technologies and new providers of wireless data communications;
- acquisitions of or strategic alliances among providers of wireless data communications;
- changes in recommendations by securities analysts regarding the results or prospects of providers of wireless data communications; and
- changes in investor perceptions of the acceptance or profitability of wireless data communications.

Shares eligible for future sale by our current stockholders may depress our share price.

As of December 31, 2001, we had outstanding 41,864,546 shares of common stock. Sales of a substantial number of our shares of common stock in the public market or the expectation of such sales could cause the market price of our common stock to drop. All the shares sold pursuant to this prospectus will be, and the shares sold in our initial public offering, our offering in March 2000, our September 2000 offering and the October 2000, February 2001 and June 2001 shelf registrations are, freely tradable. In addition to the shares covered by this prospectus and the shelf registrations referenced above, we have agreed to register the resale of 9,009,076 shares upon demand. 12,778,366 of our shares (including some of the shares subject to registration rights) are currently held as restricted securities, however most of these shares are either covered by a shelf registration or are eligible for sale under Rule 144, subject to a limitation on the number of shares that can be sold in any three-month period.

We filed a registration statement to register all shares of common stock that were issued to our employees under our equity incentive plan and intend to file future registration statements registering shares of common stock issued under our equity incentive plan. Shares issued upon exercise of stock options will be eligible for resale in the public market without restriction. As of December 31, 2001, options and warrants to purchase 5,749,277 shares of our common stock and 503,618 shares of restricted stock were issued and outstanding and covered by the registration statement.

The stockholder agreement among certain of our major stockholders has the effect of allowing them to nominate five of our eight authorized directors, which limits the ability of new investors to influence control of Aether.

NexGen Technologies, L.L.C., Telcom-ATI Investors, L.L.C. and Reuters MarketClip Holdings Sarl, a subsidiary of Reuters Group Plc. who together hold 22.6% of the shares of our common stock entered into a stockholder

agreement that governs voting for our directors. The agreement provides that each party will vote all of its shares for one director nominated by NexGen, two directors nominated by Telcom-ATI Investors, one director nominated jointly by NexGen and Telcom-ATI Investors and one director nominated by Reuters. As a result, five directors of our board may be nominated by these major stockholders, though Telcom-ATI Investors waived its rights in the most recent election of directors. As we currently have authorized only eight directors, the voting rights of our stockholders other than these

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major stockholders may effectively be meaningfully exercised only in connection with the election of three of our directors. In addition to its effect on the voting rights of our new investors, the stockholder agreement could have the effect of delaying or preventing a change in control.

We have anti-takeover defenses that could delay or prevent an acquisition of Aether and could adversely affect the price of our common stock.

Provisions of our certificate of incorporation and bylaws and provisions of Delaware law could delay, defer or prevent an acquisition or change of control of Aether or otherwise adversely affect the price of our common stock. For example, our bylaws limit the ability of stockholders to call a special meeting. Moreover, our certificate of incorporation permits our board to issue shares of preferred stock without stockholder approval, which means that the board could issue shares with special voting rights or other provisions that could deter a takeover. In addition to delaying or preventing an acquisition, the issuance of a substantial number of preferred shares could adversely affect the price of our common stock.

One of our suppliers of wireless network capacity has filed for reorganization under Chapter 11, which raises uncertainty regarding its ability to continue to supply us with access to its wireless data network. If the supplier were unable to continue to supply us with capacity, replacing that capacity would be costly or impossible, which could cause a material increase in costs or loss in revenue.

Motient Corporation, which supplies us with wireless network capacity, has filed for reorganization under Chapter 11. Although Motient currently is continuing to meet its obligations to provide us with wireless network capacity, its Chapter 11 filing creates uncertainty regarding its ability to continue to do so. If Motient becomes unable to continue to supply us with the same level of network capacity, we would need to replace that capacity in order to continue meeting our obligations to our customers. The increased costs of obtaining this capacity, or the loss of revenue if we were unable to replace the capacity or lost customers, would increase our losses or reduce earnings.

FORWARD-LOOKING STATEMENTS

This prospectus includes forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act. We have based these forward-looking statements on our current expectations and projections about future events. In some cases, you can identify forward-looking statements by terminology such as may, will, should, could, pending, potential, continue, expects, anticipates, int believes, predicts, estimates and similar expressions, although not all forward-looking statements are identified by these words. These forward-looking statements are subject to a number of risks, uncertainties and assumptions about Aether and our industry, including those we describe and incorporate by reference in the Risk Factors section of this prospectus. In light of these risks, uncertainties and assumptions, the forward-looking events discussed in this prospectus might not occur. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

USE OF PROCEEDS

This prospectus relates to shares of our common stock being offered and sold for the account of the selling stockholders named in this prospectus. We will not receive any proceeds from the shares sold pursuant to this prospectus.

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SELLING STOCKHOLDERS

The following table sets forth certain information with respect to beneficial ownership of our common stock by the selling stockholders as of December 31, 2001, as adjusted to reflect the sale of 752,483 shares of common stock pursuant to this prospectus.

Except as indicated in the footnotes to this table and under applicable community property laws, to our knowledge, the persons named in the table have sole voting and investment power with respect to all shares of common stock. For the purposes of calculating percent ownership as of December 31, 2001, 41,864,546 shares were issued and outstanding.

The persons selling shares pursuant to this prospectus may include pledgees, donees, transferees or other successors in interest of the persons identified below as the selling stockholders.

	Ownership of Shares Before the Offering		Shares of Common Stock Covered by this Prospectus	Ownership of Shares After the Offering(1)	
Selling Stockholders	Number	Percent		Number	Percent
America Online, Inc.(2)	799,025	1.9%	737,790	61,235	*
Robert P. Badavas	9,625	*	1,033	8,592	*
Comerica Incorporated	1,999	*	1,999	0	*
Commonwealth Capital Ventures, L.P.	7,278	*	7,278	0	*
Gardner C. Hendrie	881	*	881	0	*
Thomas R. Holler	1,282	*	137	1,145	*
John R. Mandile	103	*	103	0	*
Nancy W. Opalack	332	*	332	0	*
Michael P. Thompson(3)	14,122	*	1,465	12,657	*
Gregory C. Visalli	13,180	*	1,465	11,715	*

* Less than 1%.

(1) Assuming all of the shares covered by this prospectus are sold and none of the shares covered by other prospectuses are sold. All of the shares set forth herein as owned after the offering are covered by other prospectuses.

(2) We entered into a strategic alliance with the America Online whereby Aether Fusion™ technology would extend America Online s Netbusiness, email and instant messaging to wireless platforms for small and medium enterprises. America Online purchased the shares offered by this prospectus in connection with the strategic alliance, and has agreed to purchase additional shares of our common stock, subject to certain conditions, upon

our request. Under the terms of the agreement pursuant to which the shares covered by this prospectus were purchased, Ted Leonsis, Vice Chairperson, New Products of America Online, is expected to begin to serve on our board in early 2002. The number of shares of common stock presented in the table as owned before and after the offering includes 61,235 shares of common stock that America Online obtained in connection with our acquisition of RTS Wireless, Inc. To our knowledge, America Online shares with AOL Time Warner Inc. voting and investment power with respect to all of the shares of common stock covered by this prospectus.

(3) Includes 1,000 shares held jointly with Natalie Thompson.

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PLAN OF DISTRIBUTION

We have been advised that the selling stockholders (and their pledgees, donees, transferees and other successors in interest) may offer shares of common stock from time to time depending on market conditions and other factors, in one or more transactions on the Nasdaq National Market, or any other national securities exchanges or over-the-counter markets on which the shares may be traded, or in negotiated transactions, at market prices prevailing at the time of sale, at prices related to those market prices, at negotiated prices or at fixed prices.

Sales of shares of common stock by the selling stockholders may involve (i) block transactions in which the broker or dealer so engaged will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction, (ii) purchases by a broker-dealer as principal and resale by such broker-dealer for its own account pursuant to this prospectus, (iii) ordinary brokerage transactions and transactions in which a broker solicits purchasers or (iv) privately negotiated transactions. To the extent required, this prospectus may be amended and supplemented from time to time to describe a specific plan of distribution. In connection with the distribution of the shares of common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions. In connection with such transactions, broker-dealers or other financial institutions may engage in short sales of the common stock in the course of hedging the position they assume with the selling stockholders. The selling stockholders may also sell the common stock short and redeliver the shares to close out such short positions.

The selling stockholders may also enter into option transactions (including call or put option transactions) or other transactions with broker-dealers or other financial institutions which require delivery to such broker-dealer or other financial institution of shares offered hereby, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction, if necessary). The selling stockholders may also pledge shares to a broker-dealer or other financial institution and, upon a default, such broker-dealer or other financial institution may effect sales of the pledged shares pursuant to this prospectus (as supplemented or amended to reflect such transaction, if necessary). The selling stockholders may also sell the common stock through one or more underwriters on a firm commitment or best-efforts basis (with a supplement or amendment to this prospectus, if necessary). In addition, any shares that qualify for sale pursuant to Rule 144 may be sold under Rule 144 rather than pursuant to this prospectus.

Brokers and dealers may receive compensation in the form of discounts, concessions or commissions from the selling stockholders and/ or purchasers of shares for whom they may act as agent and/ or to whom they may sell as principal (which compensation may be in excess of customary commissions). The selling stockholders and any broker or dealer that participates in the distribution of shares may be deemed to be underwriters and any commissions received by them and any profit on the resale of shares positioned by a broker or dealer may be deemed to be underwriting discounts and commissions under the Securities Act. We have agreed to indemnify the selling stockholders, the officers, directors, partners, agents and employees of the selling stockholders, any underwriter (as defined in the Securities Act) for the selling stockholders, and each person, if any, who controls the selling stockholders or underwriter within the meaning of the Securities Act or the Exchange Act against certain liabilities, including liabilities arising under the Securities Act or the Exchange Act. The selling stockholders may agree to indemnify any agent or broker-dealer that participates in transactions involving sales of the shares of common stock against certain liabilities, including liabilities arising under the Securities Act.

We have advised the selling stockholders that Regulation M under the Exchange Act may apply to sales of shares and to the activities of the selling stockholders or broker-dealers in connection therewith. We will bear all costs, expenses and fees in connection with the registration of the shares of common stock covered by this prospectus. The selling stockholders will bear any brokerage commissions and similar selling expenses, if any, attributable to the sale

of the shares.

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LEGAL MATTERS

The validity of the common stock offered hereby will be passed upon for Aether by Wilmer, Cutler & Pickering, Washington, D.C.

EXPERTS

The consolidated financial statements and schedule of Aether Systems, Inc. as of December 31, 1999 and 2000, and for each of the years in the three-year period ended December 31, 2000, have been incorporated by reference herein and in the registration statement in reliance upon the reports of KPMG LLP, independent certified public accountants, which as to the year 2000, is based in part on the report of Ernst & Young LLP, independent auditors. These reports, incorporated by reference herein, are given upon the authority of said firms as experts in accounting and auditing.

The financial statements of LocusOne Communications, Inc. as of December 31, 1998 and 1999, and for each of the years then ended have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent certified public accountants, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

The financial statements of Riverbed Technologies, Inc. as of December 31, 1998 and 1999, and for the period from October 21, 1998 (date of inception) to December 31, 1998 and for the year ended December 31, 1999, have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent certified public accountants, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

The financial statements incorporated in this prospectus on Form S-3 by reference to the financial statements of Mobeo, Inc. as of December 31, 1997 and 1998 and for the years then ended have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, independent accountants, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act and we file reports, proxy and information statements and other information with the SEC. You may read and copy all or any portion of the reports, proxy and information statements or other information we file at the SEC s principal office in Washington, D.C., and copies of all or any part thereof may be obtained from the Public Reference Section of the SEC, 450 Fifth Street, N.W., Washington, D.C. 20549, and at the SEC s regional offices located at Citicorp Center, 500 West Madison Street, Suite 1400, Chicago, Illinois 60661 and at 233 Broadway, New York, New York 10279 after payment of fees prescribed by the SEC. Please call the SEC at 1-800-SEC-0330 for further information on operation of the public reference rooms. The SEC also maintains a Web site which provides online access to reports, proxy and information statements and other information regarding registrants that file electronically with the SEC at the address http://www.sec.gov.

We have filed with the SEC a Registration Statement on Form S-3 under the Securities Act with respect to the common stock to be sold in this offering. This prospectus does not contain all of the information set forth in the Registration Statement and the exhibits to the Registration Statement. For further information with respect to Aether

and our common stock offered hereby, reference is made to the Registration Statement and the exhibits filed as a part of the Registration Statement. Statements contained in this prospectus concerning the contents of any contract or any other document are not necessarily complete; reference is made in each instance to the copy of such contract or any other document filed as an exhibit to the Registration Statement. Each such statement is qualified in all respects by such reference to such exhibit. The Registration Statement, including exhibits thereto, may be inspected without charge at the locations described above, or obtained upon payment of fees prescribed by the SEC.

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The Securities and Exchange Commission also allows Aether to incorporate by reference information into this prospectus. This means that Aether can disclose important information to you by referring you to another document filed separately with the Securities and Exchange Commission. The information incorporated by reference is considered to be part of this prospectus, except for any information that is superseded by information that is included directly in this document, or any future filings with the Securities and Exchange Commission made under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934.

This prospectus incorporates by reference the documents listed below:

Aether s Annual Report on Form 10-K, as amended, for the fiscal year ended December 31, 2000.

Aether s Current Report on Form 8-K/A filed April 16, 2001, including any amendments.

Aether s Current Report on Form 8-K filed May 11, 2001.

Aether s Current Report on Form 8-K filed June 29, 2001.

Aether s Current Report on Form 8-K filed August 3, 2001.

Aether s Quarterly Report on Form 10-Q for the quarter ended March 31, 2001.

Aether s Quarterly Report on Form 10-Q for the quarter ended June 30, 2001.

Aether s Quarterly Report on Form 10-Q and Form 10-Q/A for the quarter ended September 30, 2001.

Aether s Proxy Statement on Schedule 14A dated May 25, 2001.

The financial statements of LocusOne Communications, Inc. and Riverbed Technologies, Inc. included in Aether s Registration Statement on Form S-1 (File No. 333-44566), as amended.

The financial statements of Mobeo, Inc. as of December 31, 1997 and 1998 and for the years then ended included in Aether s Registration Statement on Form S-1 (File No. 333-44566), as amended.

The Description of Capital Stock contained in Aether s Registration Statement on Form S-1 (Registration No. 333-45656) dated September 27, 2000, including any amendments or reports filed for the purpose of updating such description.

In addition, all documents subsequently filed by Aether pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of the offering shall be deemed to be incorporated by reference herein from their respective dates of filing.

You may request a copy of any filings incorporated by reference in this prospectus from Aether at no cost by contacting:

Kevin Connelly
VP Finance and Accounting
Aether Systems, Inc.
11460 Cronridge Drive
Owings Mills, Maryland 21117
Telephone: (410) 654-6400

You should rely only on the information incorporated by reference or provided in this prospectus. Aether has not authorized anyone else to provide you with different or additional information. You should not assume that the information in this prospectus is accurate as of any date other than the date set forth on the front cover.

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752,483 Shares

Common Stock

PROSPECTUS

January 25, 2002

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. *Other Expenses of Issuance and Distribution*

The expenses to be paid by Aether Systems, Inc. (Aether or Aether Systems) in connection with the distribution of the securities being registered are as follows:

	Total Amount(1)
Securities and Exchange Commission Registration Fee	$1,349
Accounting Fees and Expenses	10,000
Legal Fees and Expenses	7,500
Printing and Engraving Expenses	10,000
Miscellaneous Fees and Expenses	651
Total	$29,500

(1) All amounts are estimates except the SEC filing fee.

ITEM 15. *Indemnification of Directors and Officers*

Under Section 145 of the General Corporation law of the State of Delaware, Aether Systems has broad powers to indemnify its directors and officers against liabilities they may incur in such capacities, including liabilities under the Securities Act of 1933, as amended (the Securities Act). Aether Systems bylaws also provide for mandatory indemnification of its directors and executive officers, and permissive indemnification of its employees and agents, to the fullest extent permissible under Delaware law.

Aether s certificate of incorporation provides that the liability of its directors for monetary damages shall be eliminated to the fullest extent permissible under Delaware law. Pursuant to Delaware law, this includes elimination of liability for monetary damages for breach of the directors fiduciary duty of care to Aether and its stockholders. These provisions do not eliminate the directors duty of care and, in appropriate circumstances, equitable remedies such as injunctive or other forms of non-monetary relief will remain available under Delaware law. In addition, each director will continue to be subject to liability for breach of the director s duty of loyalty to Aether, for acts or omissions not in good faith or involving intentional misconduct, for knowing violations of law, for any transaction from which the director derived an improper personal benefit, and for payment of dividends or approval of stock

repurchases or redemptions that are unlawful under Delaware law. The provision also does not affect a director s responsibilities under any other laws, such as the federal securities laws or state or federal environmental laws.

Aether has entered into agreements with its directors and certain of its executive officers that require Aether to indemnify such persons against expenses, judgments, fines, settlements and other amounts actually and reasonably incurred (including expenses of a derivative action) in connection with any proceeding, whether actual or threatened, to which any such person may be made a party by reason of the fact that such person is or was a director or officer of Aether or any of its affiliated enterprises, provided such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of Aether and, with respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful. The indemnification agreements also set forth certain procedures that will apply in the event of a claim for indemnification thereunder.

Aether has a policy of directors and officers liability insurance that insures Aether s directors and officers against the cost of defense, settlement or payment of a judgment under certain circumstances.

ITEM 16. ***Exhibits***

The exhibit index is incorporated by reference.

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ITEM 17. ***Undertakings***

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933, as amended (the Securities Act);

(ii) To reflect in the prospectus any facts or events arising after the effective date of this Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this Registration Statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective Registration Statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in this Registration Statement or any material change to such information in this Registration Statement;

provided, however, that paragraphs (1)(i) and (1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Company pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the Exchange Act), that are incorporated by reference in this Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Company s annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan s annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question

whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Owings Mills, State of Maryland on the 25th day of January, 2002.

Aether Systems, Inc.

By: /s/ DAVID C. REYMANN

David C. Reymann
Chief Financial Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
*	Chairman, Chief Executive Officer and Director	January 25, 2002
David S. Oros		
/s/ DAVID C. REYMANN	Chief Financial Officer (Principal Financial and Accounting Officer)	January 25, 2002
David C. Reymann		
*	Director	January 25, 2002
J. Carter Beese, Jr.		
*	Director	January 25, 2002
Frank A. Bonsal, Jr.		
*	Director	January 25, 2002
George P. Stamas		
	Director	January , 2002
Devin Wenig		
*	Director	January 25, 2002
Thomas E. Wheeler		
*	President, Vice Chairman and Director	January 25, 2002
George M. Davis		
/s/ DAVID C. REYMANN		
David C. Reymann		
Attorney-in-fact		

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EXHIBIT INDEX

Exhibit Number	Document and Description
*2.1	Agreement of Merger, dated as of October 18, 1999, between Aether Systems LLC, and Aether Systems, Inc.
*2.2	Stock Purchase Agreement by and among Aether Technologies International, L.L.C., Mobeo, Inc. and Peter Kibler, Winston Barrett and Edward Spear dated as of August 19, 1999
**2.3	Stock Purchase Agreement by and among Aether Systems, Inc., LocusOne Communications, Inc. and the stockholders named therein dated as of January 25, 2000
2.4	Agreement and Plan of Merger dated as of February 9, 2000 by and among Aether Systems, Inc., RT Acquisition, Inc. and Riverbed Technologies, Inc.
2.5	LLC Interest Purchase Agreement made effective as of April 18, 2000 by and among Aether Systems, Inc., Net Search LLC and the members of Net Search, LLC and Augustine N. Esposito
2.6	Share Purchase Agreement relating to IFX Group Limited
***2.7	Agreement and Plan of Merger by and among Aether Systems, Inc. and Cerulean Technology, Inc.
*4.1	Specimen Certificate for Aether Systems Common Stock
4.2	Form of Indenture for Convertible Debt
5.1	Opinion of Wilmer, Cutler & Pickering as to the legality of the shares of Common Stock being registered
21.1	Subsidiaries of Aether Systems
23.1	Consent of KPMG LLP for Aether Systems, Inc.
23.2	Consent of KPMG LLP for LocusOne Communications, Inc.
23.3	Consent of KPMG LLP for Riverbed Technologies, Inc.
23.4	Consent of PricewaterhouseCoopers LLP
23.5	Consent of Ernst & Young LLP
23.6	Consent of Wilmer, Cutler & Pickering, included in Exhibit 5.1

* Incorporated by reference to the Registration Statement (File No. 333-85697) on Form S-1 filed with the Commission on October 20, 1999, as amended.

** Incorporated by reference to the Form 8-K filed with the Commission on February 15, 2000.

*** Incorporated by reference to the Registration Statement (File No. 333-44566) on Form S-1 filed with the Commission on September 7, 2000, as amended.

Incorporated by reference to the Registration Statement (File No. 333-30852) or Form S-1 filed with the Commission on February 22, 2000, as amended.

Incorporated by reference to the Form 10-Q filed with the Commission on August 14, 2000.