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September 29, 2000

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

BY HAND DELIVERY

Ms. Magalie R. Salas, Secretary
Federal Communications Commission
The Portals, 445 12th Street, S.W.
Washington, D.C. 20554

Re: ET Docket 98-153
Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems
Ex Parte Filing

Dear Ms. Salas:

Roberto Aiello and James Lovette of Fantasma Networks, Dino Vendetti of Vulcan Ventures Inc., William Gamble of Gamble Telecommunications, Inc. and the undersigned, met with Dale Hatfield, Julius Knapp, Bruce Romano, Karen Rackley and John Reed of the Office of Engineering and Technology on September 28, 2000 to discuss Fantasma's position in the above referenced proceeding. The Fantasma position is reflected fully in its comments submitted on September 12, 2000. In addition the attached document, providing a corporate overview of Fantasma, was given to the OET participants.

If there are any questions in this regard, please contact the undersigned.

Respectfully submitted,

Henry Goldberg
Attorney for Fantasma Networks

Attachment
cc: Dale Hatfield
Julius Knapp
Bruce Romano
Karen Rackley
John Reed
William Gamble

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Company Overview

Fantasma Networks Inc., a privately-held company, was founded in January 2000 by a world class team of wireless experts. The Company develops and commercializes innovative wireless products and services based on ultra-wideband (UWB) technology.

The Company completed its first round of funding with investments from APV Technology Partners, Centennial Ventures, Intel Capital, and Vulcan Ventures (the investment organization of Paul G. Allen) to develop **Fantasma's** innovative wireless products and services and establish itself as the premier enabler of low-cost, high performance broadband connectivity for the wireless web marketplace.

Market Overview

Increased mobility and dependency on Internet resources, together with a demand for the same high-speed access now familiar at home and office are driving the demand for high speed wireless Web browsing, e-commerce and e-mail messaging. Barriers to achieve success in this high-speed wireless marketplace have traditionally been driven by scarce spectrum capacity and technical hurdles prohibiting the high data rates required by web-based applications. Fantasma engineers have created a platform for wireless products and services based on a patent pending UWB technology designed to extend the reach of the Internet and unleash the revenue potential of wireless web-based services. In recent years, Fantasma's UWB technologyhas emerged as a high data rate, efficient use of scarce spectrum resources. So much so, that the FCC has opened the door to companies hoping to commercialize the use of this spectrum[1]. For several years, Fantasma has been one of a handful of companies actively developing and testing receivers for this spectrum, and more importantly, the only company to test and demonstrate UWB wireless web networks.

All the critical business factors - market demand, technology performance, regulatory approval, industry standards, and the support of major consumer electronics manufacturers and distributors - are coming together under a common belief that enabling wireless Internet access will drive new sources of revenue. **Fantasma** is prepared to leverage its three-year head start for commercial benefit in the wireless web marketplace.

Product Strategy

Fantasma Networks Inc. designs, develops and markets advanced wireless broadband wireless products and services, optimized for indoors, ideal for data and media distribution in homes, retail environments and schools. The Company's business strategy is to license chipsets to OEM partners and provide value-added solutions such as Wireless Web services. **Fantasma's** core chipset technology allows original equipment manufacturers of CE products to build a highly scalable wireless handsets,

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[1] Action by the Federal Communications Commission May 10, 2000, by Notice of Proposed Rulemaking (FCC 00-163)

internet appliances and receivers. **Fantasma's** wireless web solution will allow customer's to configure and transmit high-speed data, multimedia and video from a centralized Internet Protocol platform to multiple wireless client devices simultaneously.

Management Team

Dr. Roberto Aiello, President and CEO

Fantasma's technology has been incubated under Roberto's leadership since 1996. During his tenure at Interval Research, Roberto led the development of the first UWB wireless network that connects consumer devices. Prior to Interval, Roberto held senior positions at the Stanford Linear Accelerator Center (SLAC) and Superconducting Super Collider Laboratory in Texas. Previously, he was Visiting Professor at the Arcetri Astrophysics Observatory and worked at Elettra, in Italy. Roberto has patents pending on wireless communication technologies. A member of APS, IEEE, and AAAS, he earned his Doctorate in Physics from the University of Trieste.

Frank Brooks, Jr. -Vice President of Finance & Administration

Frank Brooks brings to **Fantasma Network**, Inc., a wealth of experience in corporate finance, high technology management, and business development. Prior to joining **Fantasma**, Frank oversaw strategic business planning and technology forecasting for Interval Research Corporation, Paul Allen's high technology R&D incubator. Frank has served as the president, CEO, and CFO of two pioneering desktop video system development companies. His early career includes positions as Assistant Treasurer for Chase Manhattan Bank and Vice President of Morgan Bank in New York. Mr. Brooks holds a Bachelor of Arts from Washington & Lee University, in Lexington, Virginia. He was a visiting professor of finance and accounting at Columbia University's Graduate School of Business and New York University's Stern School of Business, respectively; and has been a visiting lecturer on money and banking at Harvard University's Graduate School of Business.

Don Burtis, Vice President of Engineering

Don brings a diverse and extensive background in engineering development and product marketing to the **Fantasma** management team. At Burtis Associates, his Consulting practice, Don successfully introduced engineering process to many high profile Silicon Valley start-ups, bringing focus and discipline to enable timely delivery of products and services. Prior to forming Burtis Associates in 1996, Mr. Burtis created the Corporate Marketing department and served as Vice President of Corporate Marketing at PCSI. Before joining PCSI, Mr. Burtis was Vice President of Strategic Partners at General Magic, where he was responsible for managing the coordination of product positioning and features among the various MagicCap partners. Prior to General Magic, Mr. Burtis founded and managed companies that designed and developed hardware and software products used with computers, notably the Softcard for Microsoft that allowed Z-80 based programs to run on the Apple computer. Mr. Burtis also provided early design and prototyping support to Microsoft for integrating a mouse device into their software operating system. Mr. Burtis studied at Caltech and UCLA and has a B.S. degree in engineering, with a specialization in computer design.

James J. Kubinec, Strategic Technologist

Jim has been in the semiconductor and integrated circuits field for 30 years. Among some of his more recent positions are Vice President Technical Marketing and Applications of Kaveri Networks, President and CEO of Sierra Microsystems, President

of Sierra Design Center, and Manager of VLSI engineering for Mitel Corp. He was, for 9 years, an AMD Fellow working in the Architecture and Advanced Development Group. He has held various positions at AMD including Director of High Speed Networking, and Director of Strategic Development. He holds BSEE Summa Cum Laude from the Rochester Institute of Technology and an MSEE with honors from Stanford University.

Jim Lovette, Director of Strategic Policies

Jim is responsible for **Fantasma's** activities with government regulatory agencies such as the FCC. Prior to joining **Fantasma** he was Principal Scientist, Communications Technologies, for Apple Computer, where he achieved several unlicensed-spectrum allocations. Jim's 1991 Data-PCS Petition resulted in the User-PCS and Data-PCS unlicensed bands, and he established WINForum as the primary technical and lobbying force for wireless data. His NII Band Petition resulted in 300 MHz of unlicensed spectrum in the 5 GHz band, requiring only seven months from initial to final FCC actions. He earned a BS in Physics from Davidson College.

Board of Directors

Ronald Foerster, Chairman

As Senior Vice President at Qualcomm, Ron formed QUALCOMM Europe S.A.R.L. in Sophia Antipolis, France where he led the development of products and standards to integrate Qualcomm's CDMA technology with European and Global GSM networks. As Executive Director, Wireless Technology, and Chief Technology Officer for US West, Ron was responsible for strategic planning for next generation cellular and Personal Communications Service (PCS) business opportunities. Ron's leadership resulted in U.S. West's first-in-the-world commitment to deploy CDMA cellular technology. Previous to US West, Ron held officer level positions in development stage high technology companies where he focused his significant talents on engineering management, product development and innovative business and technical strategies. Ron holds a Bachelor of Science in Aeronautical Engineering from the University of Minnesota, Minneapolis, and a Masters Degree and Ph.D in Joint Applied Mechanics/EE from Stanford University.

Peter G. Bodine, Asia Pacific Ventures

General Partner of APV Technology Partners, a $250 million early stage venture fund backed by leading Global 1000 corporations, Pete's key area of focus is growing early stage Internet and IT companies. He applies the APV network of corporate contacts to help leverage marketing channels and capital revenues for the firm's portfolio companies. Pete is also on the boards of BUYandHOLD.com, Fatbrain.com, iPass, Onepipeline.Com, Sharewave, and 800.Com. He holds a BS from Brigham Young University and an MBA from the University of Utah.

Adam Goldman, Centennial Ventures

Since joining venture capital company Centennial Ventures nine years ago, Adam has specialized in network investments, broadband network consolidation, and Internet service companies. Previously, he was an Associate with Booz, Allen & Hamilton; a Portfolio Manager for WIG, the Pritzker family's investment management firm; and had a seat on the Chicago Board of Trade. He also sits on VIA Net.Works' board and is Exactis.com's Chairman of the Board. Adam holds a BA in Economics and History from Northwestern University and an MBA from Northwestern's J.L. Kellogg Graduate School of Management.

David M. Moore, Vulcan Ventures Inc.
Prior to joining Vulcan Ventures, Paul G. Allen's investment company, Dave was President of Paralex Corporation, which provided technical due diligence for venture capital firms and private investors. He was previously with Microsoft for 16 years, working on many products, including Chart, Commerce Server, Mail, Multiplan, Word, and Works; most recently he was Director of Development. Dave is also on the boards of Confirma and Vulcan's portfolio companies bSquare and Metricon. He holds a BS in Mathematics from the University of Washington.

Dino Vendetti, Vulcan Ventures Inc.
Dino specializes in telecom, data networking, and Internet infrastructure investments for Vulcan Ventures, the investment organization of Paul G. Allen. In addition to his seat on **Fantasma's** board, he represents Vulcan on the boards of Allegiance Telecom, HarvardNet, Northpoint, Sharewave, and Wavtrace. Previously, Dino was a Telecom Analyst at Dain Rausher and also spent 15 years in the wireless communications industry at Metawave Communications, Qualcomm, TRW, and US West. He earned BS and MS degrees in Electrical and Computer Engineering and an MBA at the University of Washington.

A Primer on UWB

UWB has a long history in military applications, with applications in military radar (1942) and covert military communication (1972). Different from most conventional wireless technologies which use a carrier method of signaling, UWB data are encoded in pulses and transmitted across a wide frequency band at low power. Until recently the FCC reserved this low power broad spectrum for government use only and tolerated unintentional noise transmissions. The FCC recently announced that it has adopted a proposal to consider permitting the operation of UWB technology on an unlicensed basis and that it considers high-speed data transmissions and broadband access to the Internet among the potential uses of UWB.Conventional wireless technologies use a carrier method of signaling that produces a unique signature characteristic at a unique frequency point (Figure 1). Here, the area under the graph represents signal quality. In the figure, both the conventional approach and **Fantasma's** approach achieve identical signal quality. Unlike these methods, **Fantasma** encodes data in brief pulses and transmits these across a wide frequency band at low power. This technique has the inherent feature of spreading a high bit rate workload across the spectrum, providing for a processing gain on the transceivers. As well, this technique is less susceptible to the reflected interference (multi-path fading) associated with conventional approaches.

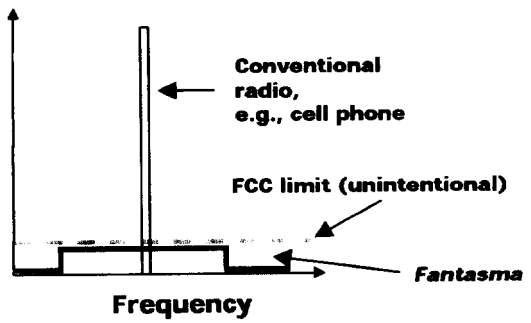

*Figure 1 – Comparison of **Fantasma** approach to Conventional Wireless*