UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FUJITSU NETWORK COMMUNICATIONS, INC. Petitioner

v.

CAPELLA PHOTONICS, INC. Patent Owner

> Case IPR2015-00726 Patent RE42,368

## PATENT OWNER RESPONSE

*Mail Stop "PATENT BOARD"* Patent Trial and Appeal Board U.S. Patent & Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450

DOCKET

# Case IPR2015-00726 of U.S. Patent No. RE42,368

## TABLE OF CONTENTS

I.	INTF	INTRODUCTION1				
II.	TEC	TECHNICAL BACKGROUND				
	A.	Optic	cal Networks Need Switches	5		
	B.		crease Bandwidth, Modern Optical Networks Use elength-Division Multiplexing (WDM)	7		
	C.		DM Networks, a Special Kind of Switch, Called an cal Add-Drop Multiplexer (OADM), Is Used	8		
	D.		ventional OADMs Required Expensive and Bulky Optical allators to Properly Route Spectral Channels.	8		
	E.	Route	ke Conventional OADMs, the Claimed Inventions Can e Any Spectral Channel to Any of a Plurality of Output	13		
	F.		Examiner Properly Found the Claimed Inventions to Be ntable Over Conventional OADMs	.17		
III.	CLA	IM CC	ONSTRUCTION	.19		
IV.		THIS IPR SHOULD BE TERMINATED AS TO ANY CLAIM THAT IS LATER CONFIRMED IN THE '166 IPR20				
V.	FUJITSU FAILED TO SHOW THAT THE CHALLENGED CLAIMS ARE UNPATENTABLE			23		
	A.		nds 2 and 3: A POSA Would Not Have Combined evitch with Carr or Sparks	23		
		1.	The intentional misalignment taught by Carr and Sparks conflicts with Bouevitch's principle of operation.	23		
		2.	Fujitsu's proposed combinations are based on nothing but impermissible hindsight.	.31		

		Case IPR2015-00726 of
		U.S. Patent No. RE42,368
	B.	Grounds 2 and 3: None of the applied references teach or
		suggest the claimed "ports."
		1. The '368 patent claims at least three ports; whereas Bouevitch has only two
		2. Neither Carr nor Sparks teach or suggest ports configured to carry distinct sets of spectral channels
	C.	<u>Grounds 2 and 3:</u> Dr. Ford's Testimony is Based on Hindsight Reasoning and Bias43
VI.		FORD'S DECLARATION TESTIMONY SHOULD BE EN LITTLE, IF ANY, WEIGHT45
	А.	Capella Was Unable to Cross Examine Dr. Drabik on the Facts and Data that Underlie His, and Now Dr. Ford's, Opinions46
	B.	Dr. Ford's 2015 Declaration Testimony Conflicts with His Own 2006 Peer-reviewed Paper
VII.	CON	ICLUSION

# Case IPR2015-00726 of U.S. Patent No. RE42,368

### **EXHIBIT LIST**

Exhibit Number	Reference
1001	U.S. Patent No. RE42,368 to Chen et al.
1002	U.S. Patent No. 6,498,872 to Bouevitch et al.
1003	Prosecution History for U.S. Patent No. RE42,368.
1004	Joseph E. Ford et al., <i>Wavelength Add-Drop Switching Using</i> <i>Tilting Micromirrors</i> , 17(5) Journal of Lightwave Technology 904 (1999).
1005	U.S. Patent No. 6,442,307 to Carr et al.
1006	U.S. Patent No. 6,625,340 to Sparks et al.
1007	U.S. Patent Publication No. 2002/0081070 to Tew.
1008	U.S. Provisional Patent Application No. 60/250,520 to Tew.
1009	U.S. Patent No. 6,798,941 to Smith et al.
1010	U.S. Provisional Patent Application No. 60/234,683 to Smith et al.
1011	J. Alda, "Laser and Gaussian Beam Propagation and Transformation," in <i>Encyclopedia of Optical Engineering</i> , R. G. Driggers, Ed. Marcel Dekker, 2003, pp. 999–1013. ("Alda")
1012	Joint Claim Construction and Prehearing Statement, Capella Litigation, Case No. 3:14-cv-03348-EMC, Dkt. 151.
1013	Newton's Telecom Dictionary (17th ed. 2001) (excerpted).
1014	Fiber Optics Standard Dictionary (3rd ed. 1997) (excerpted).
1015	Webster's New World College Dictionary (3rd ed. 1997) (excerpted).
1016	Declaration of Dr. Timothy Drabik.
1017	Curriculum Vitae of Dr. Timothy Drabik.
1018	U.S. Patent No. 6,253,001 to Hoen.
1019	U.S. Patent No. 6,567,574 to Ma et al.
1020	U.S. Patent No. 6,256,430 to Jin et al.
1021	U.S. Patent No. 6,631,222 to Wagener et al.
1022	U.S. Patent No. 5,414,540 to Patel et al.
1023	U.S. Patent Publication No. 2002/0097956.
1024	Shigeru Kawai, Handbook of Optical Interconnects (2005)

Exhibit Number	Reference
	(excerpted).
1025	U.S. Patent No. 6,798,992 to Bishop et al.
1026	Joseph W. Goodman, <i>Introduction to Fourier Optics</i> , Second Edition, McGraw-Hill (1996).
1027	U.S. Patent No. 6,204,946 to Aksyuk et al.
1028	L.Y. Lin, "Free-Space Micromachined Optical Switches for Optical Networking, <i>IEEE Journal of Selected Topics In Quantum</i> <i>Electronics</i> ," Vol. 5, No. 1, pp. 4–9, Jan./Feb. 1999.
1029	SS. Lee, "Surface-Micromachined Free-Space Fiber Optic Switches With Integrated Microactuators for Optical Fiber Communications Systems," in <i>Tech. Dig. 1997 International</i> <i>Conference on Solid-State Sensors and Actuators</i> , Chicago, June 16-19, 1997, pp. 85–88.
1030	H. Laor, "Construction and performance of a 576×576 single-stage OXC," in <i>Tech. Dig. LEOS</i> '99 (vol. 2), Nov. 8–11, 1999, pp. 481–482.
1031	R. Ryf, "1296-port MEMS Transparent Optical Crossconnect with 2.07 Petabit/s Switch Capacity," in <i>Tech. Dig. OSA Conference on Optical Fiber Communication</i> , March 2001, pp. PD28-1–PD28-3.
1032	A. Husain, "MEMS-Based Photonic Switching in Communications Networks," in <i>Tech. Dig. OSA Conference on</i> <i>Optical Fiber Communication</i> , 2001, pp. WX1-1–WX1-3.
1033	U.S. Patent No. 5,661,591 to Lin et al.
1034	H. Laor et al., "Performance of a 576×576 Optical Cross Connect," <i>Proc. of the Nat'l Fiber Optic Engineers Conference</i> , Sept. 26-30, 1999.
1035	V. Dhillon. (2012, Sep. 18). <i>Blazes and Grisms</i> . Available: http://www.vikdhillon.staff.shef.ac.uk/teaching/phy217/instrument s/ph y217_inst_blaze.html. ("Dhillon")
1036	Fianium Ltd. <i>WhiteLase SC480 New Product Data Sheet</i> . Available: http://www.fianium.com/pdf/WhiteLase_SC480_BrightLase_v1.p df. ("Fianium")
1037	Declaration of Dr. Joseph E. Ford.

DOCKET

# DOCKET A L A R M



# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

# **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

# **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

# **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

#### LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

#### FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

#### E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.