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U.S. DEPARTMENT OF COMMERCE U.S. Patent and Trademark Office

Tab settings

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies): Margarete Neumann Brien Ross Rekha Doshi J. Robert Pursel Additional name(s) of conveying party(ies) attached? Yes No

2. Name and address of receiving party(ies) Name: Raytheon Company Internal Address: Office of the General Counsel a corporation of the state of Delaware Street Address: 141 Spring Street City: Lexington State: MA Zip: 02421 Additional name(s) & address(es) attached? Yes No

3. Nature of conveyance: [X] Assignment [] Merger [] Security Agreement [] Change of Name [] Other Execution Date: January 6, 2002

4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the application is: Jan. 6, 2002 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? Yes No

5. Name and address of party to whom correspondence concerning document should be mailed: Name: Raytheon Company Internal Address: Intellectual Property & Licensing Bldg. EO/E01 M/S E150 Street Address: 2000 E. El Segundo Blvd. P. O. Box 902 City: El Segundo State: CA Zip: 90245

6. Total number of applications and patents involved: 1 7. Total fee (37 CFR 3.41) \$ 40 [] Enclosed [X] Authorized to be charged to deposit account 8. Deposit account number: 50-0616 (Attach duplicate copy of this page if paying by deposit account)

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9. Statement and signature. To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. William C. Schubert, Reg. 30,102 Name of Person Signing Signature Date: Jan. 17, 2002

Total number of pages including cover sheet, attachments, and documents: 5

Mail documents to be recorded with required cover sheet information to: Commissioner of Patents & Trademarks, Box Assignments Washington, D.C. 20231

In duplicate

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PATENT REEL: 012523 FRAME: 0478

ASSIGNMENT

WHEREAS, I, as below named sole inventor (if only one name is listed below) or joint inventor (if plural names are listed below) of the city and state as stated below next to my name, have invented a (an)

OPTICAL SYSTEM WITH OPTICAL FREQUENCY DISCRIMINATOR

for which application for Letters Patent of the United States has been executed by me, or *(if the following is completed)*
 was filed on _____ as Application No. _____ and

WHEREAS, RAYTHEON COMPANY (hereinafter referred to as RAYTHEON), a Delaware corporation, having its principal place of business in Lexington, Massachusetts, is desirous of acquiring the entire and exclusive right, title and interest in, to and under said invention, said application and any and all Letters Patent that may be granted therefor in the United States and throughout the world;

NOW, THEREFORE, in consideration of the obligations voluntarily assumed by me and set forth in an invention agreement between me and my employer, effective the date as stated below next to my name, and other good and valuable consideration, receipt of which is hereby acknowledged, I do hereby sell, assign and transfer to RAYTHEON, its successors, assigns or other legal representatives, the entire and exclusive right, title and interest in and to said invention invented by me, to said application and any and all applications which are continuations, continuations-in-part, divisions or substitutes of said application and any and all Letters Patent that may be granted therefor in the United States and throughout the world on any of said applications and to any and all reexaminations, reissues, renewals or extensions of said Letters Patent in the United States and throughout the world for the full term or terms for which said Letters patent may be granted in the United States and throughout the world; authorize and request the Director of the United States Patent and Trademark Office and all foreign countries to issue all such Letters Patent to said RAYTHEON, its successors, assigns or other legal representatives; covenant that no assignment, sale, agreement, transfer or encumbrance has been, or will be, made or entered into which would conflict with this assignment, sale and transfer; and agree to communicate to RAYTHEON, its successors, assigns or other legal representatives, upon request and at no cost or expense to me, any facts known by me respecting said invention, do all lawful acts, including the execution and delivery of all papers and proper oaths and giving of testimony that is deemed necessary or desirable by RAYTHEON, its successors, assigns or other legal representatives with regard to said invention for protecting, obtaining, maintaining and enforcing any and all of said Letters Patent in the United States and throughout the world for said invention and for perfecting, affirming, recording and maintaining the title of RAYTHEON, its successors, assigns or other legal representatives, and generally cooperate to the fullest extent in all matters pertaining to said invention, and any and all of said Letters Patent and the title thereto in RAYTHEON, its successors, assigns or other legal representatives.

USPS Express Mail

IN WITNESS WHEREOF, I have executed this instrument.

FULL NAME OF SOLE OR JOINT INVENTOR Margarete Neumann	INVENTOR'S SIGNATURE <i>Margarete Neumann</i>	DATE SIGNED <i>Oct. 17, 2001</i>
RESIDENCE (CITY AND STATE) Penetanguishine, Ontario, Canada		INVENTION AGREEMENT DATE 3 November 1958
FULL NAME OF SOLE OR JOINT INVENTOR Rekha Doshi	INVENTOR'S SIGNATURE <i>R. Doshi</i>	DATE SIGNED <i>Jan. 6/2002</i>
RESIDENCE (CITY AND STATE) Victoria Harbour, Ontario, Canada Painted Post, N.Y., 14870		INVENTION AGREEMENT DATE 16 June 1984
FULL NAME OF SOLE OR JOINT INVENTOR Robert Pursel	INVENTOR'S SIGNATURE <i>J. Robert Pursel</i>	DATE SIGNED <i>Jan 6/2002</i>
RESIDENCE (CITY AND STATE) Victoria Harbour, Ontario, Canada Painted Post, N.Y., 14870		INVENTION AGREEMENT DATE January 1988
FULL NAME OF SOLE OR JOINT INVENTOR Brien Ross	INVENTOR'S SIGNATURE <i>Brien Ross</i>	DATE SIGNED <i>Oct 17/2001</i>
RESIDENCE (CITY AND STATE) Wyevale, Ontario, Canada		INVENTION AGREEMENT DATE 14 March 1984

Ontario, CANADA)
) SS:
 County of SIMCOE)

On October 17, 2001, before me MICHAEL W. NIHILL, a Commissioner in and for said County, personally appeared MARGARETE NEUMANN & BRIEN ROSS

personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

WITNESS my hand and official seal.

Commissioner *Michael W. Nihill*
 MICHAEL W. NIHILL

13650 CO FEB 96[RSC/0198]

**MICHAEL WALTER NIHILL, a Commissioner, etc.,
 County of Simcoe, for
 ELCAN Optical Technologies,
 a Division of Raytheon Systems Canada Ltd.
 Expires June 5, 2004.**

Raytheon Company
 Intellectual Property & Licensing, Bldg. EO/E1/E150
 2000 East El Segundo Boulevard, P. O. Box 902
 El Segundo CA 90245-0902
 Fax: (310) 647-2592

*NOTE: R. DOSHI & R. PURSEL ARE NO
 LONGER EMPLOYEES OF ELCAN Optical Technologies*

PATENT

RECORDED: 01/17/2002

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