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Christine N. GENGE (Reg. No. 45,405) Name of Person Signing

02-14-2002



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'ket No.: 79275-15

U.S. DEPARTMENT OF COMMERCE Patent and Trademark Office

| To the Honorable Commissioner of Recents and Trademarks: | Please record the attached original documents or copy thereof. |
|---|---|
| 1. Name of conveying party(ies): NATIONAL RESEARCH COUNCIL OF CANADA 2 -8-82 | Name and address of receiving party(ies): Name: TRILLIUM PHOTONICS INC. Address: 750 Palladium Drive |
| Additional names(s) of conveying party(ies) | |
| 3. Nature of conveyance: | |
| ☐ Assignment ☐ Merger | |
| ☐ Security Agreement ☐ Change of Name | City: Ottawa State/Prov.: Ontario |
| ☑ Other LICENSE AGREEMENT | Country: Canada ZIP: K2V 1C7 |
| Execution Date: November 20, 2001 and January 8, 2002 | Additional name(s) & address(es) ☐ Yes ☒ No |
| 4. Application number(s) or patent numbers(s):If this document is being filed together with a new applicationPatent Application No.Filing date | , the execution date of the application is: B. Patent No.(s) |
| Additional numbers | 5,530,584 5,280,549 5,870,514 |
| Name and address of party to whom correspondence concerning document should be mailed: | 6. Total number of applications and patents involved: |
| Name: Christine N. GENGE | 7. Total fee (37 CFR 3.41):\$ 120,00 |
| Registration No. 45,405 Address: SMART & BIGGAR | ☑ Enclosed - Any excess or insufficiency should be credited or debited to deposit account |
| P.O. Box 2999, Station D | ☐ Authorized to be charged to deposit account |
| 900-55 Metcalfe Street | 8. Deposit account number: |
| City: Ottawa State/Prov.: Ontario | 19-2550 |
| Country: Canada 02/13/2002 BBYRNE 00000032 5530584 | (Attach duplicate copy of this page if paying by deposit account) |
| A1 LP1401 | USE THIS SPACE |
| 9. Statement and signature. To the best of my knowledge and beflief, the foregoing inform | ation is true and correct and any attached copy is a true copy |

Total number of pages including cover sheet, attachments, and Mail documents to be recorded with required cover sheet information to:

PATENT

February 7, 2002

Date

REEL: 012559 FRAME: 0097

AGREEMENT

THIS AGREEMENT

BETWEEN:

NATIONAL RESEARCH COUNCIL OF CANADA, 1200 Montreal Road, Ottawa, ON K1A 0R6

("Licensor")

- and -

TRILLIUM PHOTONICS INC., 750 Palladium Drive, Ottawa, ON K2V 1C7

("Licensee")

WHEREAS on July 14, 2000, the parties entered into an Agreement that granted to Licensee a licence to certain patents and patent applications specified in the Agreement;

AND WHEREAS the July 14, 2000 Agreement included additional exclusive rights, the Licensor having the right to withdraw the grant of these additional exclusive rights if it notified Licensee in writing within 45 days of the signing of the July 14, 2000 Agreement;

AND WHEREAS the Licensor did not withdraw the grant of these additional exclusive rights within 45 days of the signing of the July 14, 2000 Agreement;

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PATENT REEL: 012559 FRAME: 0098 AND WHEREAS the parties now wish to confirm the grant of licence specified in the July 14, 2000 Agreement,

THE PARTIES AGREE AS FOLLOWS:

Subject to the terms and conditions of the July 14, 2000 Agreement, Licensor hereby confirms its grant to Licensee of an exclusive, worldwide, royalty-free licence to commercially exploit (and to use the services of third parties to commercially exploit) the inventions covered by the Patent Rights as defined below, and know-how, trade secrets, unpatented inventions, and technical information relating to those inventions, all of which can be defined as related to fibre-optic equipment, the Patent Rights being the following patents and patent applications, any continuations, continuations-in-part, divisions, re-issues, re-examinations, and extensions of these patents and patent applications, and any priority rights and rights to apply for and obtain related foreign and domestic patents or equivalent exclusive protection:

| Country | Application/Patent # | Title |
|---------|--|---|
| U.S.A. | US Patent No. 5530584 Issued June 25, 1996 | Control of gain and dispersion of a signal in an optical medium |
| U.S.A. | US Patent No. 5280549 Issued January 18, 1994 | Frequency dependent optical isolator |
| U.S.A. | US Patent No. 5870514 Issued February 9, 1999 | Optical in-line elements in fibre optic systems |

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REEL: 012559 FRAME: 0099

| Canada | Canadian Patent No. 2,164,275 Issued October 30, 2001 | Control of gain and dispersion of a signal in an optical medium |
|--------|---|---|
| Canada | Canadian Patent Appl. No. 2,093,259 Filed April 2, 1993 | Frequency dependent optical isolator |
| Canada | Canadian Patent Appl. No. 2,124,862 Filed May 2, 1994 | Optical in-line elements in fibre optic systems |

IN WITNESS WHEREOF, the parties have signed this Agreement by their duly authorized legal representatives.

Executed this 8 day of January , 2007.

NATIONAL RESEARCH COUNCIL OF CANADA

Title: PRESIDENT

Executed this 20 day of November, 2001.

TRILLIUM PHOTONICS INC.

RECORDED: 02/08/2002

Name: P. Hyslinski Title: VP Fuj. RCTO

PATENT REEL: 012559 FRAME: 0100