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TO THE ASSISTANT COMMISSIONER FOR PATENTS. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies): (If multiple assignors, list numerically)

- 1) Luc Deneire
- 2) Patrick Vandenameele

Additional name(s) of conveying party(ies) attached?  
( ) Yes (X) No

2. Name and address of receiving party(ies):

**Name:** Interuniversitair Micro-Elektronica Centrum  
**Street Address:** Kapeldreef 75  
**City:** B-3001 Leuven **Country:** BELBIUM

Additional name(s) of receiving party(ies) attached?  
( ) Yes (X) No

3. Nature of conveyance:

- (X) Assignment
- ( ) Merger
- ( ) Security Agreement
- ( ) Change of Name
- ( ) Other:

Execution Date: (If multiple assignors, list execution dates in numerical order corresponding to numbers indicated in 1 above)

- 1) September 6, 2001
- 2) September 13, 2001

4. Application number(s) or Patent number(s):

( ) Application(s) filed herewith Execution Date(s):

(X) Patent Application No.: 09/871,571  
Filing Date: May 30, 2001

( ) Patent No.:  
Issue Date:

Additional numbers attached? ( ) Yes (X) No

5. Name and address of party to whom correspondence concerning document should be mailed:

**Name:** Mark M. Abumeri  
KNOBBE, MARTENS, OLSON & BEAR, LLP  
**Customer No.** 20,995  
**Internal Address:** Sixteenth Floor  
**Street Address:** 620 Newport Center Drive  
**City:** Newport Beach **State:** CA **ZIP:** 92660  
**Attorney's Docket No.:** IMEC210.001AUS

7. Total fee (37 CFR 3.41): \$40

(X) Enclosed

8. Deposit account number: 11-1410

Please charge this account for any additional fees which may be required, or credit any overpayment to this account.

6. Total number of applications and patents involved: 1

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.

Mark M. Abumeri  
Name of Person Signing

Signature

Date

43,458  
Registration No.

Total number of pages including cover sheet, attachments and document: 2

Mail documents to be recorded with required cover sheet information to:

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ASSIGNMENT

*Baanckkenweg 3, 3060 Beersel*

WHEREAS, We, Luc Deneire, a citizen of Belgium, residing at Rue du Rivage 7, Mélin, BELGIUM, and Patrick Vandenameele, a citizen of Belgium, residing at ~~Parkstraat 6, 3000 Leuven~~, BELGIUM, have invented certain new and useful improvements in a A METHOD AND APPARATUS FOR CHANNEL ESTIMATION for which we have executed an application for Letters Patent in the United States, having Application No. 09/871,571, filed on May 30, 2001;

AND WHEREAS, Interuniversitair Micro-Elektronica Centrum, a Belgium Corporation, with its principal place of business at Kapledreef 75, B-3001 Leuven, BELGIUM, and Naional Semiconductor Corporation, with its principle place of business at 2900 Semiconductor Drive, Santa Clara, CA 95051, USA any, (hereinafter "ASSIGNEES"), desire to acquire the entire right, title, and interest in and to the said improvements and the said Application:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) to me in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said inventors, do hereby acknowledge that we have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said ASSIGNEES, their successors, legal representatives and assigns, the entire right, title, and interest throughout the world in, to and under the said improvements, and the said application and all divisions, renewals and continuations thereof, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof, and all rights of priority under International Conventions and applications for Letters Patent which may hereafter be filed for said improvements in any country or countries foreign to the United States, and all Letters Patent which may be granted for said improvements in any country or countries foreign to the United States and all extensions, renewals and reissues thereof; and we hereby authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said improvements to the said ASSIGNEES, their successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant and agree that we will communicate to the said ASSIGNEES, their successors, legal representatives and assigns, any facts known to us respecting said improvements, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing and reissue applications, make all rightful oaths and generally do everything possible to aid the said ASSIGNEES, their successors, legal representatives and assigns, to obtain and enforce proper patent protection for said improvements in all countries.

*06 Sept 2001*  
\_\_\_\_\_  
Date

*Luc Deneire*  
\_\_\_\_\_  
Luc Deneire

*13 sept 2001*  
\_\_\_\_\_  
Date

*Patrick Vandenameele*  
\_\_\_\_\_  
Patrick Vandenameele