$\begin{array}{cc} \tilde{\text{UNI}} \; \acute{\text{O}} & \underbrace{\tilde{\text{Di}}} \; \tilde{\text{No}} \; \hat{\text{e}} \; \hat{\text{r}} \; \hat{\text{c}} \; \hat{\text{b}} \\ \text{Expires 06/30/99} \\ \text{OMB 0651-0027} \end{array}$ 

11-26-2002



102294319 **RECORDATION FORM COVER SHEET**  **U.S. Department of Commerce Patent and Trademark Office** 

**PATENT** 

|   |                    | PAIENIS ON rks: Please record the | attached original de     | soumant(e) or conv(ice)   |
|---|--------------------|-----------------------------------|--------------------------|---|
| Submission Type   |                    | Conveyance Ty                     |                          | ocument(s) or copy(les).  |
| X New   | <b>;</b>           | X Assignment                      | Security A               | greement  |
| _   | (Non-Recordation)  |                                   |                          |   |
| Document ID#  | Non-itecordation)  | License                           | Change of                | Name  |
| Correction of P   |                    | Merger                            | Other                    |   |
| Reel # Corrective Docu  | Frame #            | (For t                            | U.S. Governme            | 9 <i>nt</i><br>ment Agencies)   |
| Reel #  | Frame #            | D                                 | epartmental File         | Secret File   |
| Conveying Party   | (ies)              | Mark if additiona                 | al names of conveying p  | parties attached Execution Dat<br>Month Day Y   |
| Name (line 1)   | EVEN GOLDBERG      |                                   |                          | 10212002  |
| Name (line 2)   |                    |                                   |                          | Execution Date  |
| Second Party  | IOELO CUEEADO      |                                   |                          | Month Day 10232002  |
| Name (line 1) AN  | IGELO CUFFARO      |                                   |                          | 1023200   |
| Name (line 2)   |                    |                                   |                          |   |
| Receiving Party   |                    |                                   | Mark if additional name: | s of receiving parties attached   |
| Name (line 1)   | TERDIGITAL TECHNO  | LOGY CORPORA                      | ATION                    | If document to be a is an assignment a  |
| Name (line 2)   |                    |                                   |                          | receiving party is n domicited in the Ur  |
| . 4 - 111 - 111 - 1   |                    |                                   |                          |   |
|   | O DEL ANA DE ANENI | IE CUITE 507                      |                          | States, an appointr   |
| Address (line 1) 30   | 0 DELAWARE AVENU   | JE, SUITE 527                     |                          | States, an appoint  |
|   | 0 DELAWARE AVENU   | JE, SUITE 527                     |                          | States, an appointr of a domestic representative is ai (Designation must  |
| Address (line 1) 300 Address (line 2)   | LMINGTON           | DE                                |                          | States, an appointr of a domestic representative is al (Designation must separate documen Assignment.)                |
| Address (line 1) 300 Address (line 2) WI  |                    | DE<br>State/Count                 |                          | States, an appointr of a domestic representative is a (Designation must separate documen Assignment.)  19801 Zip Code |
| Address (line 1) 300 Address (line 2) WI Address (line 3) WI Domestic Repres  | LMINGTON<br>City   | DE<br>State/Count                 | у                        | States, an appointr of a domestic representative is a (Designation must separate documen Assignment.)  19801 Zip Code |
| Address (line 1) 300 Address (line 2) WI Address (line 3) WI Domestic Repres  | LMINGTON<br>City   | DE<br>State/Count                 | у                        | States, an appointr of a domestic representative is a (Designation must separate documen Assignment.)  19801 Zip Code |
| Address (line 1) 300 Address (line 2) WI Address (line 3) WI Domestic Repres  | LMINGTON<br>City   | DE<br>State/Count                 | у                        | States, an appointr of a domestic representative is a (Designation must separate documen Assignment.)  19801 Zip Code |
| Address (line 1) 300 Address (line 2) WI Address (line 3) WI Domestic Repres  | LMINGTON<br>City   | DE<br>State/Count                 | у                        | States, an appointr of a domestic representative is a (Designation must separate documen Assignment.)  19801 Zip Code |
| Address (line 1) 300 Address (line 2) WI Address (line 3) WI Domestic Repres Name Address (line 1)                  | LMINGTON<br>City   | DE<br>State/Count                 | у                        | States, an appointr of a domestic representative is a (Designation must separate documen Assignment.)  19801 Zip Code |
| Address (line 1) 300 Address (line 2) WI Address (line 3) WI Domestic Repres Name Address (line 1) Address (line 2) | LMINGTON<br>City   | DE<br>State/Count                 | у                        | States, an appointr of a domestic representative is a (Designation must separate documen Assignment.)  19801 Zip Code |

Public burden reporting for this collection of information is estimated to average approximately 30 minutes per Cover Sheet to be recorded, including time for reviewing the document and gathering the data needed to complete the Cover Sheet. Send comments regarding this burden estimate to the U.S. Patent and Trademark Office, Chief Information Officer, Washington, D.C. 20231 and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Paperwork Reduction Project (6651-0027), Washington, D.C. 20503. See OMB Information Collection Budget Package 6851-0027, Patent and Trademark Assignment Practice. DO NOT SEND REQUESTS TO RECORD ASSIGNMENT DOCUMENTS TO THIS ADDRESS.

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

**PATENT** 

REEL: 013513 FRAME: 0140

| ÚÑÎ Ó ĐÌ ÑƠ ÊT Ç Þ<br>Expires 06/30/99<br>OMB 0651-0027   | Page 2   | U.S. Department of Commerce Patent and Trademark Office PATENT |  |  |  |  |  |
|---|--|--|--|--|--|--|--|
| Correspondent Name and  | Address Area Code and Telephone Number   | (215) 568-6400   |  |  |  |  |  |
| Name GERALD B. H  | IALT, JR.  |  |  |  |  |  |  |
| Address (line 1) VOLPE AND  | KOENIG, P.C.   |  |  |  |  |  |  |
| Address (line 2) SUITE 400, C   | ONE PENN CENTER  |  |  |  |  |  |  |
| Address (line 3) 1617 JOHN F  | . KENNEDY BLVD.  |  |  |  |  |  |  |
| Address (line 4) PHILADELPH   | dress (line 4) PHILADELPHIA, PA 19103  |  |  |  |  |  |  |
| Pages Enter the total n   | umber of pages of the attached conveyance docutachments.   | ument # 3  |  |  |  |  |  |
| Application Number(s) or F  | • ,  | if additional numbers attached                                 |  |  |  |  |  |
| Enter either the Patent Application N  Patent Application N                                     | lumber or the Patent Number (DO NOT ENTER BOTH number umber(s) Pate  | ers for the same property).<br>ent Number(s)                   |  |  |  |  |  |
|   | vith a new. Patent Application, enter the date the patent applica  |  |  |  |  |  |  |
| Patent Cooperation Treaty  Enter PCT application  only if a U.S. Applicat  has not been assigne | number PCT PCT PCT PCT   | PCT PCT  |  |  |  |  |  |
| Number of Properties  Enter the total number of properties involved. # 1                        |  |  |  |  |  |  |  |
| Fee Amount F  | ee Amount for Properties Listed (37 CFR 3.41):   | \$ 40.00   |  |  |  |  |  |
| Method of Payment: Deposit Account (Enter for payment by deposit ac                             | Enclosed Deposit Account Scount or if additional fees can be charged to the account.)  Deposit Account Number:  Authorization to charge additional fees: | # 22-0493<br>Yes <b>X</b> No                                   |  |  |  |  |  |
| Statement and Signature   |  |  |  |  |  |  |  |
| attached copy is a true of indicated herein.  | edge and belief, the foregoing information is true<br>copy of the original document. Charges to depos  |  |  |  |  |  |  |
| Gerald B. Halt, Jr.   | /_/  | November 12, 2002  |  |  |  |  |  |
| Name of Person Signin<br>Reg. No. 37,633  | g signature  | Date   |  |  |  |  |  |

PATENT REEL: 013513 FRAME: 0141

Atty. Docket No. I-2-0357.1US

## ASSIGNMENT

Steven Goldberg, residing at 1017 Chiswell Drive, Downingtown, PA 19335, a citizen of the United States of America; and Angelo Cuffaro, residing at 3837 Place du Brigadier, Laval, QC, H7E 5M7, Canada, a citizen of Canada, (hereafter jointly and severally referred to as the undersigned), are the inventors of

## SYSTEM FOR EFFICIENTLY COVERING A SECTORIZED CELL UTILIZING BEAM FORMING AND SWEEPING

| for | which   | the  | undersigned   | have    | executed | an | application | for | United | States | Letters  |
|-----|---------|------|---------------|---------|----------|----|-------------|-----|--------|--------|----------|
| Pa  | tent, U | S. P | atent Applica | ation I | No       |    | , filed     |     |        |        | _, 2002. |

The undersigned hereby authorize assignee or assignee's representative to insert the Application Number and the filing date of this application if they are unknown at the time of execution of this assignment.

InterDigital Technology Corporation, a Delaware corporation, having a principal place of business at 300 Delaware Avenue, Suite 527, Wilmington, DE 19801, United States of America (hereafter referred to as the assignee), is desirous of acquiring the entire right, title and interest in said invention, all applications for and all letters patent issued on said invention.

For good and valuable consideration, the receipt and sufficiency of which is acknowledged, the undersigned, intending to be legally bound, do hereby sell, assign and transfer to the assignee and assignee's successors, assigns and legal representatives the entire right, title and interest in said invention and all patent applications thereon, including, but not limited to, the application for United States Letters Patent entitled as above, and all divisions and continuations thereof, and in all letters patent, including all reissues and reexaminations thereof, throughout the world, including the right to claim priority under the Paris Convention or other treaty.

It is agreed that the undersigned shall be legally bound, upon request of the assignee, to supply all information and evidence relating to the making and practice of said invention, to testify in any legal proceeding relating thereto, to execute all

1 of 3 PATENT REEL: 013513 FRAME: 0142

instruments proper to patent the invention throughout the world for the benefit of the assignee, and to execute all instruments proper to carry out the intent of this instrument.

The undersigned warrant that the rights and property herein conveyed are free and clear of any encumbrance.

EXECUTED under seal on this Arday of Atoland, 2002 at King of Mussin 8a. (Place)

Witness:

State of Paraghania

County of Matyonery

On this 21 day of Detalero, 2002 before me personally appeared Steven Goldberg, to me known to be the person described herein and who executed the foregoing instrument, and acknowledged that he executed the same knowingly and willingly and for the purposes therein contained.

Witness my hand and Notarial seal the day and year immediately above written.

My Commission Expires:

Notarial Seal Jean Marie Miluzzo, Notary Public Hatfield Twp., Montgomery County My Commission Expires July 9, 2006

Member, Pennsylvania Association Of Notaries

PATENT REEL: 013513 FRAME: 0143

| EXECUTED under seal on this 23rd at Marke at purific fun a sea (Place) | day of <u>Ochobec</u> , 2009 | 2 |
|--|------------------------------|---|
| Witness:  Belin Redit  | Angelo Cuffaro (L.S.)        |   |
| State of Ohne hee, Canada<br>State of Mentreal  Ss.  County of         |                              |   |

On this <u>23, l</u> day of <u>October</u>, 2002 before me personally appeared Angelo Cuffaro, to me known to be the person described herein and who executed the foregoing instrument, and acknowledged that he executed the same knowingly and willingly and for the purposes therein contained.

Witness my hand and Notarial seal the day and year immediately above

written.

Notary Public

My Commission Expires:

Deliber 200 4

3 of 3

PATENT REEL: 013513 FRAME: 0144