

08-21-2000

Substitute Form PTO-1595  
 Attorney Docket No.: 07880-069001  
 Client's Ref. No.: (UMA 99-27)



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 PATENTS ONLY

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| Commissioner for Patents: Please record the attached original document(s) or copy(ies).   |  |
| 1. Name of conveying party(ies):<br>Jayanta K. Dey, Zhi-Li Zhang, Don Towsley and Subhabrata Sen<br>Additional name(s) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | 2. Name and address of receiving party(ies):<br>UNIVERSITY OF MASSACHUSETTS<br>One Beacon Street, 26th Floor<br>Boston, Massachusetts 02108<br>Additional names/addresses attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  |
| 3. Nature of conveyance:<br><input checked="" type="checkbox"/> Assignment<br><input type="checkbox"/> Merger<br><input type="checkbox"/> Security Agreement<br><input type="checkbox"/> Change of Name<br><input type="checkbox"/> Other:<br>Execution Date: Jayanta K. Dey, 7/18/00;<br>Zhi-Li Zhang, 7/10/00; Don Towsley, 7/5/00; and<br>Subhabrata Sen, 7/5/00.                                |  |
| 4. Application number(s) or patent number(s):<br>If this document is being filed with a new application, the execution date of the application is:<br>A. Patent Application No(s): 09/527,656<br>B. Patent No(s):<br>Additional numbers attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   |  |
| 5. Name/address of party to whom correspondence concerning document should be mailed:<br>J. PETER FASSE<br>Fish & Richardson P.C.<br>225 Franklin Street<br>Boston, MA 02110-2804   | 6. Total number of applications/patents involved: 1<br>7. Total fee (37 CFR §3.41): \$40.00<br><input checked="" type="checkbox"/> Enclosed<br><input type="checkbox"/> Authorized to charge Deposit Account.<br>8. Deposit Account No.: 06-1050<br>Please apply any additionally charges, or any credits, to our Deposit Account No. 06-1050. |
| DO NOT USE THIS SPACE   |  |
| 9. Statement and Signature: <i>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.</i><br>J. Peter Fasse<br>Reg. No. 32,983<br>Name of Person Signing<br>Signature: <i>J. Peter Fasse</i><br>Date: <i>July 21, 2000</i><br>Total number of pages including coversheet, attachments and document: 6 |  |

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## CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner of Patents, Washington, D.C. 20231.

July 21, 2000  
 Date of Deposit

*Cheryl L. McGrath*  
 Signature

Cheryl L. McGrath

Typed Name of Person Signing Certificate

PATENT  
 REEL: 011001 FRAME: 0926

## ASSIGNMENT

For valuable consideration, we, Subhabrato Sen of Amherst, Massachusetts; Don Towsley of Amherst, Massachusetts; Zhi-Li Zhang of Minneapolis, Minnesota; and Jayanta K. Dey of Cambridge, Massachusetts; hereby assign to University of Massachusetts, a Massachusetts corporation having a place of business at: One Beacon Street, 26<sup>th</sup> Floor, Boston, Massachusetts 02108, and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in the inventions and improvements which are the subject of an application for United States Patent signed by us, entitled MULTICASTING VIDEO, filed March 17, 2000, and assigned U.S. Serial Number 09/527,656; this assignment including said application, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all countries in our name or in its own name for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements; and we agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment.

IN WITNESS WHEREOF, I hereto set my hand and seal at Amherst,  
this 5<sup>th</sup> day of July, 20 00  
Subhabrata Sen L.S.  
SUBHABRATA SEN

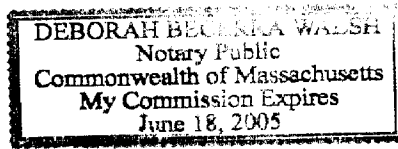
State of Massachusetts :  
: SS.  
County of Hampshire :

Before me this 5<sup>th</sup> day of July, 20 00, personally  
appeared SUBHABRATA SEN known to me to be the person whose name is subscribed to the  
foregoing Assignment and acknowledged that he executed the same as his free act and deed for  
the purposes therein contained.

Deborah Beena Walsh  
Notary Public

My Commission Expires:

[Notary's Seal Here]



IN WITNESS WHEREOF, I hereto set my hand and seal at Amherst,  
this fifth day of July, 2000  
Don Towsley L.S.  
DON TOWSLEY

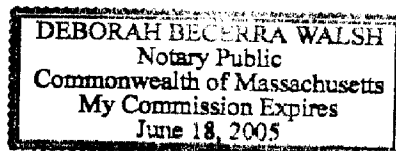
State of Massachusetts :  
: SS.  
County of Hampshire :

Before me this 5th day of July, 2000, personally  
appeared DON TOWSLEY known to me to be the person whose name is subscribed to the  
foregoing Assignment and acknowledged that he executed the same as his free act and deed for  
the purposes therein contained.

Deborah Becerra Walsh  
Notary Public

My Commission Expires:

[Notary's Seal Here]



IN WITNESS WHEREOF, I hereto set my hand and seal at this assignment,  
this 10<sup>th</sup> day of July, 20 00  
Zhi Li Zhang L.S.  
ZHI-LI ZHANG

State of Minnesota :  
County of Hennepin : ss.

Before me this 10<sup>th</sup> day of July, 20 00, personally  
appeared ZHI-LI ZHANG known to me to be the person whose name is subscribed to the  
foregoing Assignment and acknowledged that he executed the same as his free act and deed for  
the purposes therein contained.



Bettylou Viskocil  
Notary Public  
My Commission Expires:

[Notary's Seal Here]

IN WITNESS WHEREOF, I hereto set my hand and seal at WALTHAM, MA,  
this 18<sup>th</sup> day of JULY, 2000  
Jayanta K. DeY L.S.  
JAYANTA K. DEY

State of Massachusetts

: ss.

County of Middlesex :

Before me this 18<sup>th</sup> day of July, 2000, personally  
appeared JAYANTA K. DEY known to me to be the person whose name is subscribed to the  
foregoing Assignment and acknowledged that he executed the same as his free act and deed for  
the purposes therein contained.

Karen L. DeFrancisco  
Notary Public

My Commission Expires: April 26, 2002

[Notary's Seal Here]

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