

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT3115276

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
JAMES Q. CROWE	03/13/2012
JOHN F. WATERS JR.	03/09/2012
ANDREW DUGAN	03/14/2012
CHRISTOPHER NEWTON	01/11/2012
LAURENCE LIPSTONE	01/12/2012
KEN BROOKMAN	03/13/2012
JOSEPH LAWRENCE	04/12/2012
ANDREW SWART	03/22/2012
DAVID FULLAGAR	02/10/2012
KEVIN PAUL	03/07/2012
RECEIVING PARTY DATA	
Name:	LEVEL 3 COMMUNICATIONS, LLC
Street Address:	1025 ELDORADO BLVD.
City:	BROOMFIELD
State/Country:	COLORADO
Postal Code:	80021
PROPERTY NUMBERS Total: 2	
Property Type	Number
Application Number:	14537706
Application Number:	14537733
CORRESPONDENCE DATA	
Fax Number:	(720)888-5619
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
Email:	kathleen.mcinnish@level3.com
Correspondent Name:	JONATHAN C. SIEKMANN
Address Line 1:	1025 ELDORADO BLVD.
Address Line 4:	BROOMFIELD, COLORADO 80021
ATTORNEY DOCKET NUMBER:	0384-US-D1 / D2
NAME OF SUBMITTER:	JONATHAN C. SIEKMANN

PATENT

SIGNATURE:	/Jonathan C. Siekmann/
DATE SIGNED:	11/19/2014
Total Attachments: 21 source=0384_US_U1_assignment#page1.tif source=0384_US_U1_assignment#page2.tif source=0384_US_U1_assignment#page3.tif source=0384_US_U1_assignment#page4.tif source=0384_US_U1_assignment#page5.tif source=0384_US_U1_assignment#page6.tif source=0384_US_U1_assignment#page7.tif source=0384_US_U1_assignment#page8.tif source=0384_US_U1_assignment#page9.tif source=0384_US_U1_assignment#page10.tif source=0384_US_U1_assignment#page11.tif source=0384_US_U1_assignment#page12.tif source=0384_US_U1_assignment#page13.tif source=0384_US_U1_assignment#page14.tif source=0384_US_U1_assignment#page15.tif source=0384_US_U1_assignment#page16.tif source=0384_US_U1_assignment#page17.tif source=0384_US_U1_assignment#page18.tif source=0384_US_U1_assignment#page19.tif source=0384_US_U1_assignment#page20.tif source=0384_US_U1_assignment#page21.tif	

ASSIGNMENT

WHEREAS, I, James Q. CROWE, residing at Englewood CO 80113
5000 E. Quaking Ave
James Q. Crowe
(hereinafter, individually the "Assignor"), have invented certain new and useful inventions for which a non-provisional patent application for Letters Patent has been prepared for filing with the United States Patent and Trademark Office having application no. 13/360,551, filed January 27, 2012, entitled "**CONTENT DELIVERY NETWORK WITH DEEP CACHING INFRASTRUCTURE**," and having Attorney Docket No. 0384-US-U1.

NOW THEREFORE, for good and valuable consideration, receipt of which is acknowledged, Assignor has agreed to assign and transfer and does hereby assign and transfer unto **Level 3 Communications, LLC** ("Assignee"), a limited liability company organized and existing under the laws of the State of Delaware, having its principal office at 1025 Eldorado Boulevard, Broomfield, Colorado 80021, its successors and assigns, the entire right, title, and interest in and to said invention and applications, and in and to any application from which said application claims priority, any divisional or continuation (in whole or in part) of said application, and in and to any and all improvements in said invention made by Assignor (provided any such improvement is made during, or within one year after the termination, of the employment by said Company of Assignor), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries, foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

Assignor further agrees for Assignor and for Assignor's heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as Assignor lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid to obtain to maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries;

Assignor hereby authorizes Assignee, its successors and assigns, or anyone it may properly designate, to insert in this instrument the application number and filing date of the Patent Application once known;

Assignor hereby acknowledges that Assignee's internal and external counsel have represented only Assignee and will continue to represent only Assignee with respect to this invention;

Assignor hereby acknowledges an obligation of assignment and transfer of this invention to Assignee at the time the invention was made; and

Assignor hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of said applications, to said Company, as the assignee of the entire right, title, and interest therein.

IN WITNESS WHEREOF, the Assignor hereunto has executed this Assignment upon the date indicated below.

STATE OF)
CITY OF) ss.
COUNTY OF)

By:

James Q. CROWE

Dated:

3/13/2012

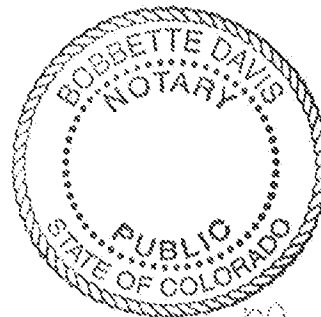
Before me, a Notary Public in and for said County and State, personally appeared James Q. CROWE, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office this 13 day of March, 2012.

Bobette Davis
Notary Public

My Commission Expires:

May 9, 2015



My Commission Expires

May 9, 2015

ASSIGNMENT

WHEREAS, I, John F. **WATERS**, Jr., residing at *1265 Meadows Place, Boulder, CO 80304* (hereinafter, individually the "Assignor"), have invented certain new and useful inventions for which a non-provisional patent application for Letters Patent has been prepared for filing with the United States Patent and Trademark Office having application no. 13/360,551, filed January 27, 2012, entitled "**CONTENT DELIVERY NETWORK WITH DEEP CACHING INFRASTRUCTURE**," and having Attorney Docket No. 0384-US-U1.

NOW THEREFORE, for good and valuable consideration, receipt of which is acknowledged, Assignor has agreed to assign and transfer and does hereby assign and transfer unto **Level 3 Communications, LLC** ("Assignee"), a limited liability company organized and existing under the laws of the State of Delaware, having its principal office at 1025 Eldorado Boulevard, Broomfield, Colorado 80021, its successors and assigns, the entire right, title, and interest in and to said invention and applications, and in and to any application from which said application claims priority, any divisional or continuation (in whole or in part) of said application, and in and to any and all improvements in said invention made by Assignor (provided any such improvement is made during, or within one year after the termination, of the employment by said Company of Assignor), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries, foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

Assignor further agrees for Assignor and for Assignor's heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as Assignor lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid to obtain to maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries;

Assignor hereby authorizes Assignee, its successors and assigns, or anyone it may properly designate, to insert in this instrument the application number and filing date of the Patent Application once known;

Assignor hereby acknowledges that Assignee's internal and external counsel have represented only Assignee and will continue to represent only Assignee with respect to this invention;

Assignor hereby acknowledges an obligation of assignment and transfer of this invention to Assignee at the time the invention was made; and

Assignor hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of said applications, to said Company, as the assignee of the entire right, title, and interest therein.

IN WITNESS WHEREOF, the Assignor hereunto has executed this Assignment upon the date indicated below.

STATE OF Colorado)
CITY OF Broomfield) ss.
COUNTY OF Broomfield

By:

John F. WATERS, Jr.

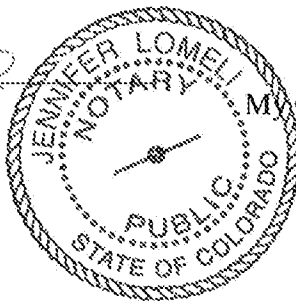
Dated:

3.9.12

Before me, a Notary Public in and for said County and State, personally appeared John F. WATERS, Jr., known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office this 9th day of March, 2012.

Jennifer Lomell
Notary Public



My Commission Expires:

11/16/13

ASSIGNMENT

WHEREAS, I, Andrew **DUGAN**, residing at 1885 Eldorado Cir Superior CO 80027 (hereinafter, individually the "Assignor"), have invented certain new and useful inventions for which a non-provisional patent application for Letters Patent has been prepared for filing with the United States Patent and Trademark Office having application no. 13/360,551, filed January 27, 2012, entitled "**CONTENT DELIVERY NETWORK WITH DEEP CACHING INFRASTRUCTURE**," and having Attorney Docket No. 0384-US-U1.

NOW THEREFORE, for good and valuable consideration, receipt of which is acknowledged, Assignor has agreed to assign and transfer and does hereby assign and transfer unto **Level 3 Communications, LLC** ("Assignee"), a limited liability company organized and existing under the laws of the State of Delaware, having its principal office at 1025 Eldorado Boulevard, Broomfield, Colorado 80021, its successors and assigns, the entire right, title, and interest in and to said invention and applications, and in and to any application from which said application claims priority, any divisional or continuation (in whole or in part) of said application, and in and to any and all improvements in said invention made by Assignor (provided any such improvement is made during, or within one year after the termination, of the employment by said Company of Assignor), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries, foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

Assignor further agrees for Assignor and for Assignor's heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as Assignor lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid to obtain to maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries;

Assignor hereby authorizes Assignee, its successors and assigns, or anyone it may properly designate, to insert in this instrument the application number and filing date of the Patent Application once known;

Assignor hereby acknowledges that Assignee's internal and external counsel have represented only Assignee and will continue to represent only Assignee with respect to this invention;

Assignor hereby acknowledges an obligation of assignment and transfer of this invention to Assignee at the time the invention was made; and

Assignor hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of said applications, to said Company, as the assignee of the entire right, title, and interest therein.

IN WITNESS WHEREOF, the Assignor hereunto has executed this Assignment upon the date indicated below.

STATE OF)
CITY OF) ss.
COUNTY OF)

By:

Andrew DUGAN
Andrew DUGAN

Dated:

3/14/12

Before me, a Notary Public in and for said County and State, personally appeared Andrew DUGAN, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office this _____ day of _____, 2012.

Notary Public

My Commission Expires: _____

ASSIGNMENT

WHEREAS, I, Christopher NEWTON, residing at 981 Via Colinas, Westlake Village, California 91362-5050, U.S.A (hereinafter the "Assignor"), have invented certain new and useful inventions for which a non-provisional patent application for Letters Patent has been prepared and filed with the United States Patent and Trademark Office on January 27, 2012, receiving Application No. 131 360, 551, entitled "**CONTENT DELIVERY NETWORK WITH DEEP CACHING INFRASTRUCTURE**," and having Attorney Docket No. 0384-US-U1.

NOW THEREFORE, for good and valuable consideration, receipt of which is acknowledged, Assignor has agreed to assign and transfer and does hereby assign and transfer unto **Level 3 Communications, LLC** ("Assignee"), a limited liability company organized and existing under the laws of the State of Delaware, having its principal office at 1025 Eldorado Boulevard, Broomfield, Colorado 80021, its successors and assigns, the entire right, title, and interest in and to said invention and applications, and in and to any application from which said application claims priority (including, but not limited to, application nos. 61/437,544 and 61/486,039), any divisional or continuation (in whole or in part) of said application, and in and to any and all improvements in said invention made by Assignor (provided any such improvement is made during, or within one year after the termination, of the employment by said Company of Assignor), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries, foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

Assignor further agrees for Assignor and for Assignor's heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as Assignor lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid to obtain to maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries;

Assignor hereby authorizes Assignee, its successors and assigns, or anyone it may properly designate, to insert in this instrument the application number and filing date of the Patent Application once known;

Assignor hereby acknowledges that Assignee's internal and external counsel have represented only Assignee and will continue to represent only Assignee with respect to this invention;

Assignor hereby acknowledges an obligation of assignment and transfer of this invention to Assignee at the time the invention was made; and

Assignor hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of said applications, to said Company, as the assignee of the entire right, title, and interest therein.

IN WITNESS WHEREOF, the Assignor hereunto has executed this Assignment upon the date indicated below.

STATE OF CALIFORNIA)
CITY OF THOUSAND OAKS) ss.
COUNTY OF VENTURA)

By: Christopher Newton
Christopher NEWTON

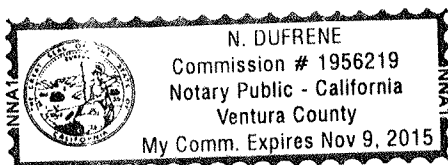
Dated: 11th January 2012

Before me, a Notary Public in and for said County and State, personally appeared Christopher **NEWTON**, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office this 11 day of JAN, 2012

Notary Public

My Commission Expires: 11-9-2015



ASSIGNMENT

WHEREAS, I, Laurence **LIPSTONE**, residing at 22724 Sparrow Dell Drive, Calabasas California 91302, U.S.A. (hereinafter the "Assignor"), have invented certain new and useful inventions for which a non-provisional patent application for Letters Patent has been prepared and filed with the United States Patent and Trademark Office on January 27, 2012, receiving Application No. 13/360,551, entitled "**CONTENT DELIVERY NETWORK WITH DEEP CACHING INFRASTRUCTURE**," and having Attorney Docket No. **0384-US-U1**.

NOW THEREFORE, for good and valuable consideration, receipt of which is acknowledged, Assignor has agreed to assign and transfer and does hereby assign and transfer unto **Level 3 Communications, LLC** ("Assignee"), a limited liability company organized and existing under the laws of the State of Delaware, having its principal office at 1025 Eldorado Boulevard, Broomfield, Colorado 80021, its successors and assigns, the entire right, title, and interest in and to said invention and applications, and in and to any application from which said application claims priority (including, but not limited to, application nos. 61/437,544 and 61/486,039), any divisional or continuation (in whole or in part) of said application, and in and to any and all improvements in said invention made by Assignor (provided any such improvement is made during, or within one year after the termination, of the employment by said Company of Assignor), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries, foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

Assignor further agrees for Assignor and for Assignor's heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as Assignor lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid to obtain to maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries;

Assignor hereby authorizes Assignee, its successors and assigns, or anyone it may properly designate, to insert in this instrument the application number and filing date of the Patent Application once known;

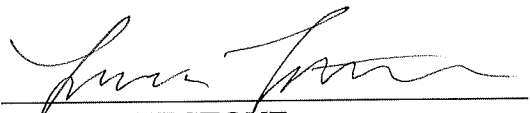
Assignor hereby acknowledges that Assignee's internal and external counsel have represented only Assignee and will continue to represent only Assignee with respect to this invention;

Assignor hereby acknowledges an obligation of assignment and transfer of this invention to Assignee at the time the invention was made; and

Assignor hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of said applications, to said Company, as the assignee of the entire right, title, and interest therein.

IN WITNESS WHEREOF, the Assignor hereunto has executed this Assignment upon the date indicated below.


STATE OF Colorado)
CITY OF Broomfield) ss.
COUNTY OF Broomfield)

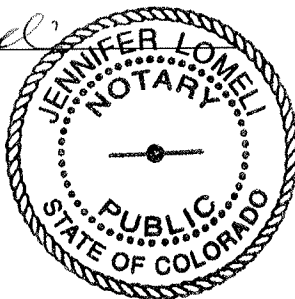
By: 
Laurence LIPSTONE

Dated: 12 JAN 2012

Before me, a Notary Public in and for said County and State, personally appeared Laurence LIPSTONE, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office this 12 day of January, 2012.


Notary Public



My Commission Expires: 11/10/13

ASSIGNMENT

WHEREAS, I, Ken **BROOKMAN**, residing at 230 EMERSON ST. DENVER, CO, (hereinafter, individually the "Assignor"), have invented certain new and useful inventions for which a non-provisional patent application for Letters Patent has been prepared for filing with the United States Patent and Trademark Office having application no. 13/360,551, filed January 27, 2012, entitled "**CONTENT DELIVERY NETWORK WITH DEEP CACHING INFRASTRUCTURE**," and having Attorney Docket No. 0384-US-U1.

NOW THEREFORE, for good and valuable consideration, receipt of which is acknowledged, Assignor has agreed to assign and transfer and does hereby assign and transfer unto **Level 3 Communications, LLC** ("Assignee"), a limited liability company organized and existing under the laws of the State of Delaware, having its principal office at 1025 Eldorado Boulevard, Broomfield, Colorado 80021, its successors and assigns, the entire right, title, and interest in and to said invention and applications, and in and to any application from which said application claims priority, any divisional or continuation (in whole or in part) of said application, and in and to any and all improvements in said invention made by Assignor (provided any such improvement is made during, or within one year after the termination, of the employment by said Company of Assignor), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries, foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

Assignor further agrees for Assignor and for Assignor's heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as Assignor lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid to obtain to maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries;

Assignor hereby authorizes Assignee, its successors and assigns, or anyone it may properly designate, to insert in this instrument the application number and filing date of the Patent Application once known;

Assignor hereby acknowledges that Assignee's internal and external counsel have represented only Assignee and will continue to represent only Assignee with respect to this invention;

Assignor hereby acknowledges an obligation of assignment and transfer of this invention to Assignee at the time the invention was made; and

Assignor hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of said applications, to said Company, as the assignee of the entire right, title, and interest therein.

IN WITNESS WHEREOF, the Assignor hereunto has executed this Assignment upon the date indicated below.

STATE OF Colorado)
CITY OF Broomfield) ss.
COUNTY OF Broomfield

By: 
Ken **BROOKMAN**

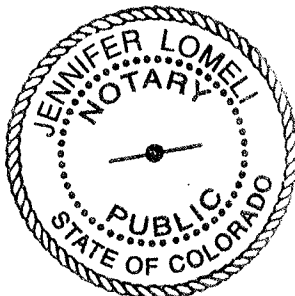
Dated: 3/13/2012

Before me, a Notary Public in and for said County and State, personally appeared Ken **BROOKMAN**, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office this 13 day of March, 2012.


Notary Public

My Commission Expires: 11/16/13



ASSIGNMENT

WHEREAS, I, Joseph **LAWRENCE**, residing at 2989 Tincup, Boulder CO (hereinafter, individually the "Assignor"), have invented certain new and useful inventions for which a non-provisional patent application for Letters Patent has been prepared for filing with the United States Patent and Trademark Office having application no. 13/360,551, filed January 27, 2012, entitled "**CONTENT DELIVERY NETWORK WITH DEEP CACHING INFRASTRUCTURE**," and having Attorney Docket No. 0384-US-U1.

NOW THEREFORE, for good and valuable consideration, receipt of which is acknowledged, Assignor has agreed to assign and transfer and does hereby assign and transfer unto **Level 3 Communications, LLC** ("Assignee"), a limited liability company organized and existing under the laws of the State of Delaware, having its principal office at 1025 Eldorado Boulevard, Broomfield, Colorado 80021, its successors and assigns, the entire right, title, and interest in and to said invention and applications, and in and to any application from which said application claims priority, any divisional or continuation (in whole or in part) of said application, and in and to any and all improvements in said invention made by Assignor (provided any such improvement is made during, or within one year after the termination, of the employment by said Company of Assignor), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries, foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

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IN WITNESS WHEREOF, the Assignor hereunto has executed this Assignment upon the date indicated below.

STATE OF Colorado)
CITY OF Broomfield) ss.
COUNTY OF Broomfield

By:

Joseph LAWRENCE

Dated:

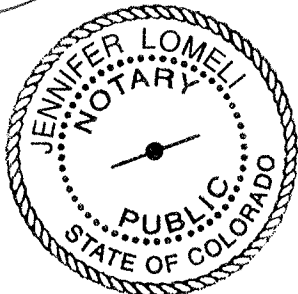
4/12/12

Before me, a Notary Public in and for said County and State, personally appeared Joseph LAWRENCE, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office this 12 day of April, 2012.

Jennifer Lomeli
Notary Public

My Commission Expires: 11/16/13



ASSIGNMENT

WHEREAS, I, Andrew SWART, residing at 175 WOODSAMONSA RD., PLAININGTON, NJ (hereinafter, individually the "Assignor"), have invented certain new and useful inventions for which a non-provisional patent application for Letters Patent has been prepared for filing with the United States Patent and Trademark Office having application no. 13/360,551, filed January 27, 2012, entitled "**CONTENT DELIVERY NETWORK WITH DEEP CACHING INFRASTRUCTURE**," and having Attorney Docket No. 0384-US-U1.

NOW THEREFORE, for good and valuable consideration, receipt of which is acknowledged, Assignor has agreed to assign and transfer and does hereby assign and transfer unto **Level 3 Communications, LLC** ("Assignee"), a limited liability company organized and existing under the laws of the State of Delaware, having its principal office at 1025 Eldorado Boulevard, Broomfield, Colorado 80021, its successors and assigns, the entire right, title, and interest in and to said invention and applications, and in and to any application from which said application claims priority, any divisional or continuation (in whole or in part) of said application, and in and to any and all improvements in said invention made by Assignor (provided any such improvement is made during, or within one year after the termination, of the employment by said Company of Assignor), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries, foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

Assignor further agrees for Assignor and for Assignor's heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as Assignor lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid to obtain to maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries;

Assignor hereby authorizes Assignee, its successors and assigns, or anyone it may properly designate, to insert in this instrument the application number and filing date of the Patent Application once known;

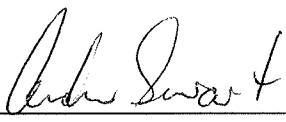
Assignor hereby acknowledges that Assignee's internal and external counsel have represented only Assignee and will continue to represent only Assignee with respect to this invention;

Assignor hereby acknowledges an obligation of assignment and transfer of this invention to Assignee at the time the invention was made; and

Assignor hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of said applications, to said Company, as the assignee of the entire right, title, and interest therein.

IN WITNESS WHEREOF, the Assignor hereunto has executed this Assignment upon the date indicated below.


STATE OF New Jersey)
CITY OF Pennington) ss.
COUNTY OF Mercer)

By: 
Andrew **SWART**

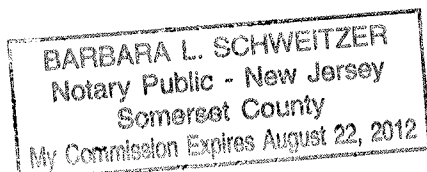
Dated: 3-22-2012

Before me, a Notary Public in and for said County and State, personally appeared Andrew **SWART**, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office this 22 day of March, 2012.


Notary Public

My Commission Expires: August 22, 2012



ASSIGNMENT

WHEREAS, I, David **FULLAGAR**, residing at 775 Cherryvale Road, Boulder, CO (hereinafter, individually the "Assignor"), have invented certain new and useful inventions for which a non-provisional patent application for Letters Patent has been prepared for filing with the United States Patent and Trademark Office having application no. 13/360551, filed January 27, 2012, entitled "**CONTENT DELIVERY NETWORK WITH DEEP CACHING INFRASTRUCTURE**," and having Attorney Docket No. 0384-US-U1.

NOW THEREFORE, for good and valuable consideration, receipt of which is acknowledged, Assignor has agreed to assign and transfer and does hereby assign and transfer unto **Level 3 Communications, LLC** ("Assignee"), a limited liability company organized and existing under the laws of the State of Delaware, having its principal office at 1025 Eldorado Boulevard, Broomfield, Colorado 80021, its successors and assigns, the entire right, title, and interest in and to said invention and applications, and in and to any application from which said application claims priority, any divisional or continuation (in whole or in part) of said application, and in and to any and all improvements in said invention made by Assignor (provided any such improvement is made during, or within one year after the termination, of the employment by said Company of Assignor), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries, foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

Assignor further agrees for Assignor and for Assignor's heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as Assignor lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid to obtain to maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries;

Assignor hereby authorizes Assignee, its successors and assigns, or anyone it may properly designate, to insert in this instrument the application number and filing date of the Patent Application once known;

Assignor hereby acknowledges that Assignee's internal and external counsel have represented only Assignee and will continue to represent only Assignee with respect to this invention;

Assignor hereby acknowledges an obligation of assignment and transfer of this invention to Assignee at the time the invention was made; and

Assignor hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of said applications, to said Company, as the assignee of the entire right, title, and interest therein.

IN WITNESS WHEREOF, the Assignor hereunto has executed this Assignment upon the date indicated below.

STATE OF Colorado,
CITY OF Windsor) ss.
COUNTY OF Boulder

By: David Fullagar
David FULLAGAR

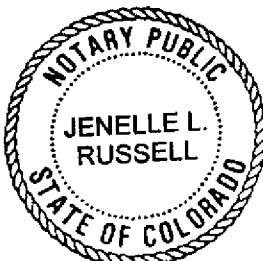
Dated: 2/10/12

Before me, a Notary Public in and for said County and State, personally appeared David FULLAGAR, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office this 10th day of February, 2012.

Jenelle Russell
Notary Public

My Commission Expires: 1/15/2016



My Commission Expires 01/15/2016

2 of 3

ASSIGNMENT

WHEREAS, I, Kevin PAUL, residing at 183 KUJIKAMA ST
14710A HI 96734
(hereinafter, individually the "Assignor"), have invented certain new and useful inventions for which a non-provisional patent application for Letters Patent has been prepared for filing with the United States Patent and Trademark Office having application no. 13/360,551, filed January 27, 2012, entitled "**CONTENT DELIVERY NETWORK WITH DEEP CACHING INFRASTRUCTURE**," and having Attorney Docket No. 0384-US-U1.

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Assignor further agrees for Assignor and for Assignor's heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as Assignor lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid to obtain to maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries;

Assignor hereby authorizes Assignee, its successors and assigns, or anyone it may properly designate, to insert in this instrument the application number and filing date of the Patent Application once known;

Assignor hereby acknowledges that Assignee's internal and external counsel have represented only Assignee and will continue to represent only Assignee with respect to this invention;

Assignor hereby acknowledges an obligation of assignment and transfer of this invention to Assignee at the time the invention was made; and

Assignor hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of said applications, to said Company, as the assignee of the entire right, title, and interest therein.

IN WITNESS WHEREOF, the Assignor hereunto has executed this Assignment upon the date indicated below.

STATE OF)
CITY OF) ss.
COUNTY OF)

By:

Kevin PAUL

Dated:

3-7-2012

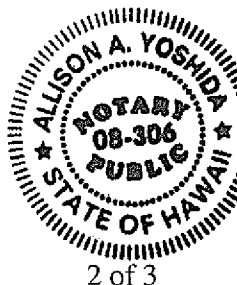
Before me, a Notary Public in and for said County and State, personally appeared Kevin PAUL, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

Given under my hand and seal of office this 7th day of March, 2012.



Allison A. Yoshida
Notary Public
Allison A. Yoshida

My Commission Expires: AUG 10 2012




2 of 3

Doc. Date: 1/27/12 # Pages: 9
Name: Allison A. Yoshida First Circuit.
Doc. Description: Patent Application
Allison A. Yoshida 3/7/12
Signature Date
NOTARY CERTIFICATION

ACCEPTANCE DECLARATION

Assignee hereby agrees to and accepts the above-mentioned Assignment from Assignor.

ASSIGNEE: Level 3 Communications, LLC

Signature: _____

Name & Title (printed): David D. Wier, VP Patent Counsel