

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5531728

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT	
NATURE OF CONVEYANCE:	Corrective Assignment to correct the APPLICATION NUMBER previously recorded on Reel 049099 Frame 0712. Assignor(s) hereby confirms the CORRECT APPLICATION NUMBER IS 13/510,912.	
CONVEYING PARTY DATA		
	Name	Execution Date
	ICE EDGE BUSINESS SOLUTIONS, LTD.	04/09/2019
RECEIVING PARTY DATA		
Name:	DIRTT ENVIRONMENTAL SOLUTIONS, LTD.	
Street Address:	7303 30TH STREET SE	
City:	CALGARY	
State/Country:	CANADA	
Postal Code:	T2C 1N6	
PROPERTY NUMBERS Total: 1		
Property Type	Number	
Application Number:	13510912	
CORRESPONDENCE DATA		
Fax Number:	(801)328-1707	
<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>		
Phone:	8015339800	
Email:	lbateman@wnlaw.com	
Correspondent Name:	MICHAEL J. FRODSHAM	
Address Line 1:	60 E. SOUTH TEMPLE	
Address Line 4:	SALT LAKE CITY, UTAH 84111	
ATTORNEY DOCKET NUMBER:	16196.31A.1	
NAME OF SUBMITTER:	MICHAEL J. FRODSHAM	
SIGNATURE:	/Michael J. Frodsham/	
DATE SIGNED:	05/20/2019	
Total Attachments: 8		
source=16196-31a-1_Corrective-Assignment Nunc Pro Tunc (Ice Edge Ltd to DIRTT Ltd)#page1.tif		
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PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5510212

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	NUNC PRO TUNC ASSIGNMENT	
EFFECTIVE DATE:	12/30/2018	
CONVEYING PARTY DATA		
	Name	Execution Date
	ICE EDGE BUSINESS SOLUTIONS, LTD.	04/09/2019
RECEIVING PARTY DATA		
Name:	DIRTT ENVIRONMENTAL SOLUTIONS, LTD.	
Street Address:	7303-30TH STREET S.E.	
City:	CALGARY	
State/Country:	CANADA	
Postal Code:	T2C 1N6	
PROPERTY NUMBERS Total: 2		
	Property Type	Number
	Application Number:	61264219
	Application Number:	13541912
CORRESPONDENCE DATA		
Fax Number:	(801)328-1707	
<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>		
Phone:	8015339800	
Email:	lbateman@wnlaw.com	
Correspondent Name:	MICHAEL J FRODSHAM	
Address Line 1:	60 EAST SOUTH TEMPLE	
Address Line 2:	SUITE 1000	
Address Line 4:	SALT LAKE CITY, UTAH 84111	
ATTORNEY DOCKET NUMBER:	16196.31; 31A.1	
NAME OF SUBMITTER:	MICHAEL J. FRODSHAM	
SIGNATURE:	/Michael J. Frodsham/	
DATE SIGNED:	05/07/2019	
Total Attachments: 7		
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WHEN RECORDED RETURN TO:

PATENT ASSIGNMENT

Docket No(s): *as listed*

Workman Nydegger
1000 Eagle Gate Tower
60 East South Temple
Salt Lake City, Utah
84111

PATENT ASSIGNMENT NUNC PRO TUNC

WHEREAS, ICE EDGE BUSINESS SOLUTIONS, LTD., was a Canadian corporation with a principal place of business at 7303-30th Street SE, Calgary, Canada T2C 1N6 ("Assignor"), and is the owner of record of the trademark registrations listed in Schedule A ("Patents"), enclosed herewith;

WHEREAS, DIRT ENVIRONMENTAL SOLUTIONS, LTD., also with a principal place of business at 7303-30th Street SE, Calgary, Canada T2C 1N6 ("Assignee"), is a Canadian corporation and whole owner of Assignor, both currently, and prior to December 30, 2018 ("Effective Date");

WHEREAS, I, Nandini Somayaji, as in-house counsel to Assignee, hold full signatory authority and authorization to assign and receive all right, title, and interest, including any associated goodwill or rights to sue for past infringement in and to any intellectual property of Assignee, and, both on and prior to the Effective Date, held full signatory authority and authorization to assign and receive all right, title, and interest, including any associated goodwill or rights to sue for past infringement of Assignor;

WHEREAS, I, Dale Sawyer, also held full signatory authority and authorization to assign and receive all right, title, and interest, including any associated goodwill or rights to sue for past infringement in and to any intellectual property of Assignee prior to the Effective Date;

WHEREAS, Assignor wound up all operations on the Effective Date;

WHEREAS, as part of Assignor's wind up operations, Assignor transferred (or intended to transfer) all of the intellectual property rights, including any and all rights in the Patents, owned by Assignor to Assignee, and it was Assignor's intent to execute and record a full assignment of the intellectual property assets to Assignee on or before the Effective Date pursuant to the wind up;

NOW, THEREFORE, in order to confirm assignment of all rights in said above-identified patent applications and the inventions found therein in countries foreign to the United States, and any other related inventions in whole or in part, do execute this Assignment Nunc Pro Tunc, which assignment shall be effective as of the "Effective Date" specified below.

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In consideration of One Dollar (\$1.00) and other good and valuable consideration paid to Assignor by the Assignee, the receipt and sufficiency of which we hereby acknowledge, ASSIGNOR HEREBY ASSIGNS TO ASSIGNEE:

The entire right, title and interest in said invention in the patents and/or patent applications listed in Schedule A herein, and in all divisions, continuations and continuations-in-part of said application, or reissues or extensions of Letters Patent or Patents granted thereon, and in all corresponding applications which may be filed in countries foreign to the United States, and in all patents issuing thereon in the United States and foreign countries, including, but not limited to the international or foreign patent applications listed in Exhibit B hereto.

The right to file foreign patent applications on said invention in its own name, wherever such right may be legally exercised, including the right to claim the benefits of the International Convention for such applications.

Assignor hereby authorizes and request the United States Commissioner of Patents and Trademarks, and such Patent Office officials in foreign countries as are duly authorized by their patent laws to issue patents, to issue any and all patents on said invention to the Assignee as the owner of the entire interest, for the sole use and behoof of the said Assignee, its successors, assigns and legal representatives.

Assignor hereby agrees, without further consideration and without expense to us, to sign all lawful papers and to perform all other lawful acts which the Assignee may request of Assignor to make this Assignment fully effective, including, by way of example but not of limitation, the following:

Prompt execution of all original, divisional, substitute, reissue, and other United States and foreign patent applications on said invention, and all lawful documents requested by the Assignee to further the prosecution of any of such patent applications.

Cooperation to the best of Assignor's ability in the execution of all lawful documents, the production of evidence, nullification, reissue, extension, or infringement proceedings involving said invention.

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This Assignment shall be binding upon our heirs and legal representatives and shall be effective as of **December 30, 2018** (the "Effective Date").

This Assignment may be executed in multiple counterparts, each of which shall be deemed an original, but all of which taken together shall constitute one and the same agreement. This Agreement may be executed and delivered by facsimile or electronic delivery and the Parties agree that such execution and facsimile or electronic delivery will have the same force and effect as delivery of an original document with original signatures, and that each Party may use such signatures delivered by facsimile or electronic delivery as evidence of the execution and delivery of this Agreement by all Parties to the same extent that an original signature could be used.

[SIGNATURE PAGES TO FOLLOW]

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Docket No(s): *as listed*

Workman Nydegger
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For and on behalf of Assignor

Dated this 9th of April, 2019

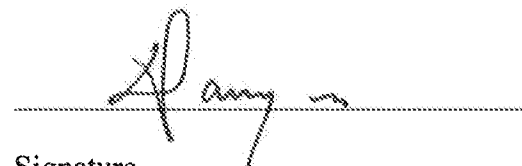

Signature

Name: Nandini Sornayaji

Title: Associate General Counsel

For and on behalf of Assignee

Dated this 9th of APRIL, 2019


Signature

Name: DALE SAWYER

Title: DIRECTOR OF IP

WHEN RECORDED RETURN TO:

PATENT ASSIGNMENT

Docket No(s): *as listed*

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SCHEDULE A

WN File No.	Country	Title	Patent No.	Issue Date	Serial No.	Filing or Deposit Date
16196.1	US	Capturing a user's intent in design software			60/602,233	Aug 17, 2004
16196.1.1	US	Capturing a user's intent in design software	8751950	Jun. 10, 2014	11/204,421	Aug 16, 2005
16196.1.1b	CA	Capturing a user's intent in design software	2577199	Dec. 22, 2015	2577199	Feb 15, 2007
16196.1.1.1	US	Game Engine (Continuation)	9536340	Jan. 06, 2017	14/032,946	Sep 20, 2013
16196.1.2	US	Capturing a User's Design Intent with Resolvable Objects (software)	7277830	Oct. 02, 2007	11/204,420	Aug 16, 2005
16196.1.2b	CA	Capturing a User's Design Intent with Resolvable Objects (software)	2577202	Nov. 08, 2011	2577202	Feb 15, 2007
16196.1.3	US	Design software incorporating efficient 3-D rendering (software)	7249005	Jul. 24, 2007	11/204,419	Aug 16, 2005
16196.1.3b	CA	Design software incorporating efficient 3-D rendering (software)	2577205	Oct. 23, 2012	2577205	Feb 15, 2007
16196.7	US	Integrating Object-Oriented Design Software with Record-Based CAD Software			60/774,096	Feb 16, 2006
16196.7.1	US	Integrating Object-Oriented Design Software with Record-Based CAD Software	7908296	Mar. 15, 2011	11/577,302	Apr 13, 2007
16196.7.1a.2	CA	Integrating Object-Oriented Design Software with Record-Based CAD Software	2642553	Apr. 19, 2016	2,642,553	Aug 15, 2008
16196.7.1a.3	EP	Integrating Object-Oriented Design Software with Record-Based CAD Software			07 701 791.1	Sep 02, 2008
16196.22	US	Creation and Modification of Valid Functional Design Layouts (software)			61/028,409	Feb 13, 2008
16196.22A.1	US	Creation and Modification of Valid Functional Design Layouts (software)	8762877	Jun. 24, 2014	12/444,890	Apr 09, 2009
16196.22A.2	CA	Creation and Modification of Valid Functional Design Layouts (software)	2665427	Jan. 26, 2016	2665379	Apr 16, 2009
16196.22A.3	EP	Creation and Modification of Valid Functional Design Layouts (software)			9711161.1	Feb 13, 2009
16196.23	US	Automated Conversion of CAD Based Blocks to Intelligent Rendered Objects in Object-Oriented Design Software			61/028,399	Feb 13, 2008

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WN File No.	Country	Title	Patent No.	Issue Date	Serial No.	Filing or Deposit Date
16196.23A.1	US	Automated Conversion of CAD Based Blocks to Intelligent Rendered Objects in Object-Oriented Design Software	8,762,941	Jun. 24, 2014	12/444,893	Apr 09, 2009
16196.23A.2	CA	Automated Conversion of CAD Based Blocks to Intelligent Rendered Objects in Object-Oriented Design Software	2665637	May. 17, 2016	2,665,637	Apr 16, 2009
16196.23A.2.1	CA	Rendering and Modifying CAD Design Entities in Object-Oriented Applications			2923333	Mar 08, 2016
16196.23A.3	EP	Automated Conversion of CAD Based Blocks to Intelligent Rendered Objects in Object-Oriented Design Software			09711306.2	Oct 09, 2009
16196.24	US	Automatically Creating and Modifying Furniture Layouts in Design Software			61/035,716	Mar 11, 2008
16196.24A.1	US	Automatically Creating and Modifying Furniture Layouts in Design Software	8510672	Aug. 13, 2013	12/444,886	Apr 09, 2009
16196.24a.1.1	US	Automatically Creating and Modifying Furniture Layouts in Design Software	9519407	Dec. 13, 2016	13/839,033	Mar 15, 2003
16196.24A.2	CA	Automatically Creating and Modifying Furniture Layouts in Design Software	2665379	May. 12, 2015	2665379	Apr 16, 2009
16196.24A.3	EP	Automatically Creating and Modifying Furniture Layouts in Design Software			9719352.8	Mar 11, 2009
16196.31	US	Securely Streaming 3D Design Content over Web (software)			61/264,219	Nov 04, 2009
16196.31a	PCT	Securely Streaming 3D Design Content over Web (software)			PCT/US10/58092	Nov 24, 2010
16196.31a.1	US	Securely Streaming 3D Design Content over Web (software)			13/541,912	May 18, 2012
16196.31a.2	CA	Securely Streaming 3D Design Content over Web (software)			2781638	May 23, 2012
16196.31a.3	EP	Securely Streaming 3D Design Content over Web (software)			1833972.2	Jun 21, 2012
16196.43a	PCT	Automated Reconfiguration of an As-built Design in Intelligent Design Software			PCT/US12/38582	Jun 11, 2012
16196.43a.1	US	Automated Reconfiguration of an As-built Design in Intelligent Design Software	9,189,571	Nov. 17, 2015	13/579,261	Aug 15, 2012
16196.63a.1	US	Efficient Lighting Effects in Design Software			14/110,533	Oct 08, 2013
16196.63a.4	SG	Efficient Lighting Effects in Design Software			11201609800S	Nov 23, 2016
16196.64a	PCT	Efficient Specular Reflection in Design Software			PCT/US13/24009	Jan 31, 2013

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WN File No.	Country	Title	Patent No.	Issue Date	Serial No.	Filing or Deposit Date
16196.64a.1	US	Efficient Specular Reflection in Design Software	9,619,920	Apr. 11, 2017	14/110,910	Oct 09, 2013
16196.64a.4	SG	Efficient Specular Reflection in Design Software	11201605971W	Nov. 17, 2017	11201605971W	Jul 20, 2016
16196.65a	PCT	Software for Visual Distortion Effects in Transparent Glass			PCT/US13/24063	Jan 31, 2013
16196.65a.1	US	Software for Visual Distortion Effects in Transparent Glass	9,245,381	Jan. 26, 2016	14/111,669	Oct 14, 2013
16196.65a.4	SG	Software for Visual Distortion Effects in Transparent Glass	11201605982W	Feb. 19, 2018	11201605982W	Jul 21, 2016
16196.68a.4	SG	Depth of Field in Design Software	11201609798X	Jul. 04, 2018	11201609798x	Nov 24, 2016
16196.84a.4	SG	Millwork - Automatically Resolving Boundaries (software)			11201606050X	Jul 22, 2016
16196.85a.4	SG	Millwork - Incorporating 3rd Party Features (software)			11201605818V	July 15 2016
16196.86a	PCT	Millwork - Cube In Cube (software)			PCT/US13/43735	May 31, 2013
16196.86a.1	US	Millwork - Cube In Cube (software)	9958858	May. 01, 2018	14/115,299	Nov 01, 2013
16196.86a.2	CA	Millwork - Cube In Cube (software)			2,883,079	Feb 25, 2015
16196.86a.3	EP	Millwork - Cube In Cube (software)			13 885 841.0	Aug 19, 2015
16196.86a.4	SG	Millwork - Cube In Cube (software)			11201605983T	Jul 21, 2016
16196.97a	PCT	Custom Timber Frame Software			PCT/US15/11105	Jan 13, 2015
16197.97a.2	CA	Custom Timber Frame Software			2,921,871	Jan 01, 2015
16196.97a.4	SG	Custom Timber Frame Software			11201608357X	Jan 01, 2015