

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT7170763

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
DZS INC.	02/09/2022

RECEIVING PARTY DATA

Name:	JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE ASSISTANT
Street Address:	383 MADISON AVENUE FLOOR 22
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10017

PROPERTY NUMBERS Total: 19

Property Type	Number
Application Number:	11086063
Application Number:	10950801
Application Number:	10889858
Application Number:	09733841
Application Number:	09736353
Application Number:	09766255
Application Number:	10515222
Application Number:	10435873
Application Number:	10956780
Application Number:	12394591
Application Number:	12908325
Application Number:	10269209
Application Number:	09032671
Application Number:	09144926
Application Number:	11108244
Application Number:	11496353
Application Number:	16174220
Application Number:	15993647
Application Number:	15714586

PATENT

CORRESPONDENCE DATA**Fax Number:** (214)745-5390*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.***Phone:** 2147455612**Email:** ngraham@winstead.com**Correspondent Name:** NANCY GRAHAM C/O WINSTEAD PC**Address Line 1:** 2728 N. HARWOOD STREET**Address Line 2:** SUITE 500**Address Line 4:** DALLAS, TEXAS 75201

ATTORNEY DOCKET NUMBER:	13312.748
NAME OF SUBMITTER:	NANCY GRAHAM
SIGNATURE:	/Nancy Graham/
DATE SIGNED:	02/10/2022

Total Attachments: 12

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INTELLECTUAL PROPERTY SECURITY AGREEMENT

This INTELLECTUAL PROPERTY SECURITY AGREEMENT (as it may be amended, restated, supplemented or otherwise modified from time to time, this “Agreement”) is entered into as of February 9, 2022 by and between DZS INC., a Delaware corporation (the “Grantor”), and JPMORGAN CHASE BANK, N.A., as administrative agent on behalf of the Secured Parties (the “Administrative Agent”).

BACKGROUND

The Grantor, the financial institutions party thereto (the “Lenders”), and the Administrative Agent are entering into a Credit Agreement dated as of the date hereof (as the same may be amended, restated, supplemented or otherwise modified from time to time, the “Credit Agreement”).

In connection with the Credit Agreement, the Grantor executed and delivered that certain Pledge and Security Agreement dated as of the date hereof (as the same may be amended, restated, supplemented or otherwise modified from time to time, the “Security Agreement”) in favor of the Administrative Agent, for the benefit of the Secured Parties, pursuant to which the Grantor is required to execute and deliver this Agreement.

The Grantor is entering into this Agreement in order to induce the Administrative Agent and the Lenders to enter into and extend credit to the Grantor under the Credit Agreement and to secure the Secured Obligations that it has agreed to guarantee pursuant to Article X of the Credit Agreement.

ACCORDINGLY, the Grantor and the Administrative Agent, on behalf of the Secured Parties, hereby agree as follows:

ARTICLE I DEFINITIONS; OTHER TERMS

1.1 Terms Defined in Credit Agreement. All capitalized terms used herein and not otherwise defined shall have the meanings assigned to such terms in the Security Agreement or, if not defined therein, the Credit Agreement.

1.2 Terms Defined in UCC. Capitalized terms used herein which are defined in the UCC and which are not otherwise defined in this Agreement, the Security Agreement or the Credit Agreement are used herein as defined in the UCC.

1.3 Definitions of Certain Terms Used Herein. As used in this Agreement, in addition to the terms defined elsewhere herein, the following terms shall have the following meanings:

“Collateral” has the meaning assigned to it by Section 2.1 hereof.

“Copyrights” means, with respect to the Grantor, all of the Grantor’s right, title, and interest in and to the following: (a) all copyrights, rights and interests in copyrights, works protectable by copyright, copyright registrations, and copyright applications; (b) all renewals of any of the foregoing; (c) all income, royalties, damages, and payments now or hereafter due and/or payable under any of the foregoing, including, without limitation, damages or payments for past or future infringements for any of the foregoing; (d) the right to sue for past, present, and future infringements of any of the foregoing; and (e) all rights corresponding to any of the foregoing throughout the world.

“Licenses” means, with respect to the Grantor, all of the Grantor’s right, title, and interest in and to the following: (a) any and all licensing agreements or similar arrangements in and to its Patents, Copyrights, or Trademarks, (b) all income, royalties, damages, claims, and payments now or hereafter due or payable under and with respect thereto, including, without limitation, damages and payments for past and future breaches thereof, and (c) all rights to sue for past, present, and future breaches thereof.

“Patents” means, with respect to the Grantor, all of the Grantor’s right, title, and interest in and to the following: (a) any and all patents and patent applications; (b) all inventions and improvements described and claimed therein; (c) all reissues, divisions, continuations, renewals, extensions, and continuations-in-part thereof; (d) all income, royalties, damages, claims, and payments now or hereafter due or payable under and with respect thereto, including, without limitation, damages and payments for past and future infringements thereof; (e) all rights to sue for past, present, and future infringements thereof; and (f) all rights corresponding to any of the foregoing throughout the world.

“Section” means a numbered section of this Agreement, unless another document is specifically referenced.

“Trademarks” means, with respect to the Grantor, all of the Grantor’s right, title, and interest in and to the following: (a) all trademarks (including service marks), trade names, trade dress, and trade styles and the registrations and applications for registration thereof and the goodwill of the business symbolized by the foregoing; (b) all licenses of the foregoing, whether as licensee or licensor; (c) all renewals of the foregoing; (d) all income, royalties, damages, and payments now or hereafter due or payable with respect thereto, including, without limitation, damages, claims, and payments for past and future infringements thereof; (e) all rights to sue for past, present, and future infringements of the foregoing, including the right to settle suits involving claims and demands for royalties owing; and (f) all rights corresponding to any of the foregoing throughout the world.

“UCC” means the Uniform Commercial Code, as in effect from time to time, of the State of Texas or of any other state the laws of which are required as a result thereof to be applied in connection with the attachment, perfection or priority of, or remedies with respect to, the Administrative Agent’s Lien on any Collateral.

ARTICLE II GRANT OF SECURITY INTEREST

2.1 Grant of Security Interest. The Grantor hereby pledges, collaterally assigns and grants to the Administrative Agent, on behalf of and for the benefit of the Secured Parties, a security interest in all of its right, title and interest in, to and under all of its now owned or existing and hereafter acquired or arising property described as follows (collectively, the “Collateral”) to secure the prompt and complete payment and performance of the Secured Obligations:

- (a) all Copyrights, including, without limitation, those listed on Exhibit A hereto;
- (b) all Trademarks, including, without limitation, those listed on Exhibit B hereto;
- (c) all Licenses, including, without limitation, those listed on Exhibit C hereto;
- (d) all Patents, including, without limitation, those listed on Exhibit D hereto; and
- (e) all accessions to, substitutions for and replacements, proceeds, insurance proceeds and products of the foregoing, together with all books and records, customer lists, credit files,

computer files, programs, printouts and other computer materials and records related thereto and any general intangibles at any time evidencing or relating to any of the foregoing;

provided however, that Collateral (and each term used in the definition of “Collateral”) shall not include any Excluded Assets.

2.2 Security Agreement. The security interest granted pursuant to this Agreement is granted in conjunction with the Lien granted to the Administrative Agent, on behalf of the Secured Parties, pursuant to the Security Agreement, and the Grantor hereby acknowledges and affirms that the rights and remedies of the Administrative Agent with respect to the Lien on the Collateral made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control; provided, however, a more expansive or explanatory term or provision shall not be deemed a conflict.

ARTICLE III MISCELLANEOUS

3.1 Benefit of Agreement. The terms and provisions of this Agreement shall be binding upon and inure to the benefit of the Grantor, the Administrative Agent, the other Secured Parties and their respective successors and assigns, except that the Grantor shall not have the right to assign its rights or delegate its obligations under this Agreement or any interest herein, without the prior written consent of the Administrative Agent. No sales of participations, assignments, transfers, or other dispositions of any agreement governing the Secured Obligations or any portion thereof or interest therein shall in any manner impair the Lien granted to the Administrative Agent, for the benefit of the Administrative Agent and the other Secured Parties, hereunder.

3.2 Survival of Representations. All representations and warranties of the Grantor contained in this Agreement shall survive the execution and delivery of this Agreement.

3.3 Headings. The title of and section headings in this Agreement are for convenience of reference only, and shall not govern the interpretation of any of the terms and provisions of this Agreement.

3.4 Entire Agreement. This Agreement and the other Loan Documents embody the entire agreement and understanding between the Grantor and the Administrative Agent relating to the Collateral and supersede all prior agreements and understandings between the Grantor and the Administrative Agent relating to the Collateral.

3.5 Counterparts. This Agreement may be executed in any number of counterparts, all of which taken together shall constitute one agreement, and any of the parties hereto may execute this Agreement by signing any such counterpart. Delivery of an executed counterpart of a signature page of this Agreement by facsimile or other electronic transmission (including, without limitation, an emailed .pdf) shall be effective as delivery of a manually executed counterpart of this Agreement.

3.6 CHOICE OF LAW. THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE INTERNAL LAWS OF THE STATE OF TEXAS, BUT GIVING EFFECT TO FEDERAL LAWS APPLICABLE TO NATIONAL BANKS.

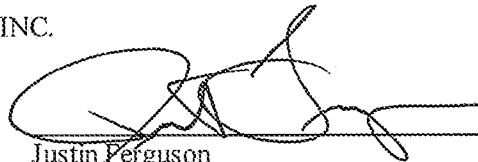
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IN WITNESS WHEREOF, the undersigned have caused this Agreement to be executed by their respective duly authorized representatives as of the date first set forth above.

GRANTOR:

DZS INC.


By:

A handwritten signature in black ink, appearing to read "Justin Ferguson", is written over a horizontal line. The signature is stylized and somewhat cursive.

Justin Ferguson
Chief Legal Officer and Secretary

ADMINISTRATIVE AGENT:

JPMORGAN CHASE BANK, N.A.,
as Administrative Agent

By: 

Shiv Kariwala
Authorized Signatory

EXHIBIT A
COPYRIGHTS

None.

EXHIBIT B

TRADEMARKS AND TRADEMARK APPLICATIONS

Country	Application No.	Filing Date	Registration No.	Issue Date	Trademark	
US	76/060,907	01-Jun-2000	2,856,212	22-Jun-2004	BITSTORM	DZS Inc.
US	88/236,798	20-Dec-2018	6,097,260	07-Jul-2020	DZS	DZS Inc.
US	90/142,063	27-Aug-2020	6472714	31-Aug-2021	DZS	DZS Inc.
US	87/440,114	08-May-2017	5,667,114	29-Jan-2019	DZS (stylized and/or with design)	DZS Inc.
US	90/532,126	17-Feb-2021			DZS CHRONOS	DZS Inc.
US	87/440,078	08-May-2017	5,716,313	02-Apr-2019	DZS EVERY CONNECTION MATTERS (stylized and/or with design)	DZS Inc.
US	88/314,824	25-Feb-2019	5,821,944	30-Jul-2019	DZS EVERY CONNECTION MATTERS (stylized and/or with design)	DZS Inc.
US	90/532,136	17-Feb-2021			DZS HELIX	DZS Inc.
US	90/532,118	17-Feb-2021			DZS VELOCITY	DZS Inc.
US	90/803,240	30-Jun-2021			DZS X-CELERATE	DZS Inc.
US	78/706,963	06-Sep-2005	3,331,453	06-Nov-2007	ETHERXTEND	DZS Inc.
US	86/126,754	22-Nov-2013	4,745,309	26-May-2015	FIBERLAN	DZS Inc.
US	88/624,451	20-Sep-2019	6,564,453	16-Nov-2021	FIBERLAN	DZS Inc.
US	76/175,453	30-Nov-2000	2,725,112	10-Jun-2003	MALC	DZS Inc.
US	77/739,166	18-May-2009	3,725,214	15-Dec-2009	MXK	DZS Inc.
US	76/197,073	17-Jan-2001	2,885,561	21-Sep-2004	REACHDSL	DZS Inc.
US	90/532,144	17-Feb-2021			sdNOS	DZS Inc.
US	76/110,937	16-Aug-2000	2,608,096	13-Aug-2002	SLMS	DZS Inc.
US	90/552,680	01-Mar-2021			xHaul	DZS Inc.
US	76/175,462	30-Nov-2000	2,725,113	10-Jun-2003	ZHONE	DZS Inc.

Country	Application No.	Filing Date	Registration No.	Issue Date	Trademark	
US	76/174,513	30-Nov-2000	2,586,521	25-Jun-2002	ZMS	DZS Inc.
US	77/067,082	19-Dec-2006	3,390,835	04-Mar-2008	Znid	DZS Inc.
US	97/039610	22-Sept-2021			XCelerate by DZS	DZS Inc.

EXHIBIT C

LICENSES

None.

EXHIBIT D

PATENTS AND PATENT APPLICATIONS

Country	Application No.	Filing Date	Patent No.	Issue Date	Title	Owner
US	11/086,063	22-Mar-2005	7,961,850	14-Jun-2011	APPARATUS AND METHOD FOR SIMULTANEOUS MULTIPLE TELEPHONE TYPE SERVICES ON A SINGLE TELEPHONE LINE	DZS Inc.
US	10/950,801	27-Sep-2004	7,936,689	03-May-2011	SYSTEM AND METHOD FOR THE MEASUREMENT OF SERVICE QUALITY IN A COMMUNICATION NETWORK	DZS Inc.
US	10/889,858	13-Jul-2004	7,747,000	29-Jun-2010	SUBSCRIBER LINE DRIVER AND TERMINATION	DZS Inc.
US	09/733,841	07-Dec-2000	6,975,694	13-Dec-2005	DIGITAL SUBSCRIBER LINE DRIVER	DZS Inc.
US	09/736,353	14-Dec-2000	7,099,401	29-Aug-2006	DISCRETE MULTITONE INTERLEAVER	DZS Inc.
US	09/766,255	17-Jan-2001	7,088,781	08-Aug-2006	TONE ORDERED DISCRETE MULTITONE INTERLEAVER	DZS Inc.
US	10/515,222	19-Nov-2004	7,969,900	28-Jun-2011	DETERMINATION OF NETWORK PERFORMANCE CHARACTERISTICS	DZS Inc.
US	10/435,873	12-May-2003	8,867,335	21-Oct-2014	SYSTEM AND METHOD FOR FAULT ISOLATION IN A PACKET SWITCHING NETWORK	DZS Inc.
US	10/956,780	01-Oct-2004	7,522,679	21-Apr-2009	SYSTEM AND METHOD FOR ADAPTING TO A CHANGE IN CONSTELLATION DENSITY WHILE RECEIVING A SIGNAL	DZS Inc.
US	12/394,591	27-Feb-2009	7,835,459	16-Nov-2010	SYSTEM AND METHOD FOR ADAPTING TO A CHANGE IN CONSTELLATION	DZS Inc.

Country	Application No.	Filing Date	Patent No.	Issue Date	Title	Owner
					DENSITY WHILE RECEIVING A SIGNAL	
US	12/908,325	20-Oct-2010	8,279,969	02-Oct-2012	SYSTEM AND METHOD FOR ADAPTING A CHANGE IN CONSTELLATION DENSITY WHILE RECEIVING A SIGNAL	DZS Inc.
US	10/269,209	03-Oct-2002	7,020,266	28-Mar-2006	SIMULTANEOUS TRANSMISSION OF AN ANALOG POTS SIGNAL AND A DIGITAL SIGNAL ON A SUBSCRIBER LINE	DZS Inc.
US	09/032,671	27-Feb-1998	6,580,785	17-Jun-2003	APPARATUS AND METHOD FOR SIMULTANEOUS MULTIPLE TELEPHONE TYPE SERVICES ON A SINGLE TELEPHONE LINE	DZS Inc.
US	09/144,926	01-Sep-1998	6,798,742	28-Sep-2004	SYSTEM AND METHOD FOR THE MEASUREMENT OF SERVICE QUALITY IN A COMMUNICATION NETWORK	DZS Inc.
US	11/108,244	18-Apr-2005	7,149,268	12-Dec-2006	DIGITAL SUBSCRIBER LINE DRIVER	DZS Inc.
US	11/496,353	31-Jul-2006	7,418,048	26-Aug-2008	TONE ORDERED DISCRETE MULTITONE INTERLEAVER	DZS Inc.
US	16/174,220	Oct 29, 2018	10,454,584	Oct 22, 2019	OPTICAL LINE TERMINAL AND METHOD FOR MANAGING PASSIVE OPTICAL NETWORK IMPLEMENTED THEREON	DZS Inc.
US	15/993,647	May 31, 2018	10,516,921	Dec 24, 2019	OPTICAL LINE TERMINAL FOR PROVIDING MANAGEMENT FUNCTION EMULATING VIRTUAL CHASSIS SWITCH FOR FIBER LOCAL AREA NETWORK SYSTEM	DZS Inc.

Country	Application No.	Filing Date	Patent No.	Issue Date	Title	Owner
US	15/714,586	Sep 25, 2017	10,616,039	Apr 7, 2020	SYSTEM AND METHOD FOR REMOTE MAINTENANCE	DZS Inc.