UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended September 30, 2023
OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from ______ to
000-32743
(Commission File Number)

DZS INC.
(Exact name of registrant as specified in its charter)

Delaware **(State or other jurisdiction of incorporation or organization)**	**22-3509099** **(I.R.S. Employer Identification Number)**
5700 Tennyson Parkway, Suite 400 **Plano, Texas** **(Address of principal executive offices)**	**75024** **(Zip code)**

(469) 327-1531
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, $0.001 par value	DZSI	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☐ No ☒

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☐ No ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☒
Non-accelerated filer	☐	Smaller reporting company	☒
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of July 22, 2024, there were 38,024,783 shares outstanding of the registrant's common stock, $0.001 par value.

TABLE OF CONTENTS

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

DZS INC. AND SUBSIDIARIES
Unaudited Condensed Consolidated Balance Sheets
(In thousands, except par value)

	September 30, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 4,294	$ 34,347
Restricted cash	710	3,969
Accounts receivable - trade, net of allowance for credit losses of $18,324 as of September 30, 2023 and $16,184 as of December 31, 2022	69,072	134,471
Other receivables	19,921	16,144
Inventories	107,741	94,288
Contract assets	759	576
Prepaid expenses and other current assets	11,973	7,410
Total current assets	214,470	291,205
Property, plant and equipment, net	6,107	9,478
Right-of-use assets from operating leases	9,462	12,606
Goodwill	12,594	12,594
Intangible assets, net	27,780	31,742
Other assets	15,766	15,536
Total assets	$ 286,179	$ 373,161
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable - trade	$ 95,445	$ 118,667
Short-term debt – bank, trade facilities and secured borrowings	11,065	9,706
Current portion of long-term debt	—	24,073
Contract liabilities	10,144	18,705
Operating lease liabilities	4,736	4,834
Accrued and other liabilities	44,952	25,562
Total current liabilities	166,342	201,547
Long-term debt, net of current portion	29,291	—
Contract liabilities - non-current	5,918	7,788
Operating lease liabilities - non-current	8,046	11,417
Pension liabilities	10,717	11,021
Other long-term liabilities	1,793	2,806
Total liabilities	222,107	234,579
Commitments and contingencies (Note 13)		
Stockholders' equity:		
Common stock, 72,000 and 36,000 shares authorized, 31,954 and 30,968 shares issued and outstanding as of September 30, 2023 and December 31, 2022, respectively, at $0.001 par value	31	30
Preferred stock, $0.001 par value, 25,000 shares authorized and no shares issued and outstanding as of September 30, 2023 and December 31, 2022, respectively	—	—
Additional paid-in capital	284,134	271,884
Accumulated other comprehensive loss	(8,756)	(4,662)
Accumulated deficit	(211,337)	(128,670)
Total stockholders' equity	64,072	138,582
Total liabilities and stockholders' equity	$ 286,179	$ 373,161

See accompanying notes to unaudited condensed consolidated financial statements.

DZS INC. AND SUBSIDIARIES
Unaudited Condensed Consolidated Statements of Comprehensive Loss
(In thousands, except per share data)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	**2022**	**2023**	**2022**
Net revenue	$ 49,448	$ 98,890	$ 179,608	$ 253,828
Cost of revenue	47,517	66,860	138,219	173,122
Gross profit	1,931	32,030	41,389	80,706
Operating expenses:				
Research and product development	12,767	15,499	42,660	39,691
Selling, marketing, general and administrative	22,096	23,698	69,946	61,953
Restructuring and other charges	135	601	4,881	1,393
Impairment of long-lived assets	—	827	499	827
Amortization of intangible assets	1,321	1,190	3,913	1,948
Total operating expenses	36,319	41,815	121,899	105,812
Operating loss	(34,388)	(9,785)	(80,510)	(25,106)
Interest expense, net	(1,010)	(399)	(2,844)	(653)
Loss on extinguishment of debt	(375)	—	(375)	—
Other income (expense), net	813	(1,984)	1,653	(2,847)
Loss before income taxes	(34,960)	(12,168)	(82,076)	(28,606)
Income tax provision (benefit)	(947)	(1,214)	591	2,498
Net loss	(34,013)	(10,954)	(82,667)	(31,104)
Foreign currency translation adjustments (a)	(823)	(4,004)	(3,916)	(8,803)
Actuarial loss	(56)	—	(178)	—
Comprehensive loss	$ (34,892)	$ (14,958)	$ (86,761)	$ (39,907)
Net loss per share				
Basic	$ (1.07)	$ (0.39)	$ (2.63)	$ (1.12)
Diluted	$ (1.07)	$ (0.39)	$ (2.63)	$ (1.12)
Weighted average shares outstanding				
Basic	31,892	27,902	31,386	27,696
Diluted	31,892	27,902	31,386	27,696

(a) Includes net loss of $0.4 million and $0.2 million on intra-entity foreign currency transactions that are of a long-term investment nature for three and nine months ended September 30, 2023. Includes net loss of $0.9 million and $2.0 million on intra-entity foreign currency transactions that are of a long-term investment nature for three and nine months ended September 30, 2022.

See accompanying notes to unaudited condensed consolidated financial statements.

DZS INC. AND SUBSIDIARIES
Unaudited Condensed Consolidated Statements of Stockholders' Equity
(In thousands)

	Common stock		Additional paid-in capital	Accumulated other comprehensive loss	Accumulated deficit	Total stockholders' equity
	Shares	Amount				
Nine months ended September 30, 2023:						
Balance as of December 31, 2022	30,968	$ 30	$ 271,884	$ (4,662)	$ (128,670)	$ 138,582
Issuance of common stock upon vesting of restricted stock units, exercise of stock options and employee stock plan purchases, net of shares withheld for taxes	134	1	(88)	—	—	(87)
Stock-based compensation	—	—	4,486	—	—	4,486
Net loss	—	—	—	—	(23,818)	(23,818)
Other comprehensive loss	—	—	—	(1,949)	—	(1,949)
Balance as of March 31, 2023	31,102	$ 31	$ 276,282	$ (6,611)	$ (152,488)	$ 117,214
Issuance of common stock upon vesting of restricted stock units, exercise of stock options and employee stock plan purchases, net of shares withheld for taxes	323	—	741	—	—	741
Stock-based compensation	—	—	4,326	—	—	4,326
Net loss	—	—	—	—	(24,836)	(24,836)
Other comprehensive loss	—	—	—	(1,266)	—	(1,266)
Balance as of June 30, 2023	31,425	$ 31	$ 281,349	$ (7,877)	$ (177,324)	$ 96,179
Issuance of common stock upon vesting of restricted stock units, exercise of stock options and employee stock plan purchases, net of shares withheld for taxes	529	—	(913)	—	—	(913)
Stock-based compensation	—	—	3,698	—	—	3,698
Net loss	—	—	—	—	(34,013)	(34,013)
Other comprehensive loss	—	—	—	(879)	—	(879)
Balance as of September 30, 2023	31,954	$ 31	$ 284,134	$ (8,756)	$ (211,337)	$ 64,072
Nine months ended September 30, 2022:						
Balance as of December 31, 2021	27,505	$ 27	$ 223,336	$ (4,457)	$ (86,999)	$ 131,907
Cumulative effect of ASC 326 adoption	—	—	—	—	(401)	(401)
Issuance of common stock upon vesting of restricted stock units, exercise of stock options and employee stock plan purchases, net of shares withheld for taxes	98	—	156	—	—	156
Stock-based compensation	—	—	2,671	—	—	2,671
Net loss	—	—	—	—	(7,586)	(7,586)
Subsidiary dissolution	—	—	—	(68)	—	(68)
Other comprehensive loss	—	—	—	(268)	—	(268)
Balance as of March 31, 2022	27,603	$ 27	$ 226,163	$ (4,793)	$ (94,986)	$ 126,411
Issuance of common stock upon vesting of restricted stock units, exercise of stock options and employee stock plan purchases, net of shares withheld for taxes	181	—	938	—	—	938
Stock-based compensation	—	—	2,868	—	—	2,868
Net loss	—	—	—	—	(12,564)	(12,564)
Other comprehensive loss	—	—	—	(4,531)	—	(4,531)
Balance as of June 30, 2022	27,784	$ 27	$ 229,969	$ (9,324)	$ (107,550)	$ 113,122
Issuance of common stock upon vesting of restricted stock units, exercise of stock options and employee stock plan purchases, net of shares withheld for taxes	141	—	(609)	—	—	(609)
Stock-based compensation	—	—	5,023	—	—	5,023
Net loss	—	—	—	—	(10,954)	(10,954)
Other comprehensive loss	—	—	—	(4,004)	—	(4,004)
Balance as of September 30, 2022	27,925	$ 27	$ 234,383	$ (13,328)	$ (118,504)	$ 102,578

See accompanying notes to unaudited condensed consolidated financial statements.

DZS INC. AND SUBSIDIARIES
Unaudited Condensed Consolidated Statements of Cash Flows
(In thousands)

	Nine months ended September 30,	
	2023	**2022**
Cash flows from operating activities:		
Net loss	$ (82,667)	$ (31,104)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	6,569	4,551
Impairment of long-lived assets and non-cash restructuring	499	827
Loss on extinguishment of debt	375	—
Amortization of deferred financing costs	234	121
Stock-based compensation	12,510	10,562
Provision for inventory write-down	12,191	3,498
Provision for credit losses, net of recoveries	2,361	(482)
Provision for sales returns	4,255	2,307
Provision for warranty expense	(42)	323
Unrealized loss on foreign currency transactions	806	1,318
Subsidiary dissolution	—	(68)
Loss (gain) on disposal of property, plant and equipment	56	(68)
Changes in operating assets and liabilities, excluding effects of acquisition:		
Accounts receivable	61,806	(28,207)
Other receivable	(4,196)	(11,577)
Inventories	(30,058)	(50,719)
Contract assets	(183)	1,515
Prepaid expenses and other assets	(2,950)	(4,248)
Accounts payable	(18,729)	58,202
Contract liabilities	(10,221)	5,744
Accrued and other liabilities	6,165	(662)
Net cash used in operating activities	(41,219)	(38,167)
Cash flows from investing activities:		
Proceeds from disposal of property, plant and equipment and other assets	1,829	65
Purchases of property, plant and equipment	(1,408)	(2,310)
Acquisition of business, net of cash acquired	—	(22,297)
Net cash provided by (used in) investing activities	421	(24,542)
Cash flows from financing activities:		
Proceeds from long-term borrowings	—	25,000
Repayments of long-term borrowings	(24,073)	(313)
Proceeds from short-term borrowings and line of credit, net	11,537	7,000
Repayments of short-term borrowings and line of credit, net	(4,325)	—
Proceeds from related party term loan	36,930	—
Repayments of related party term loan	(12,693)	—
Payments for debt issue costs	(198)	(776)
Payments of contingent consideration	(347)	(558)
Payments for and proceeds from exercise of stock awards and employee stock plan purchases	(259)	485
Net cash provided by financing activities	6,572	30,838
Effect of exchange rate changes on cash, cash equivalents and restricted cash	914	(815)
Net change in cash, cash equivalents and restricted cash	(33,312)	(32,686)
Cash, cash equivalents and restricted cash at beginning of period	38,464	53,639
Cash, cash equivalents and restricted cash at end of period	$ 5,152	$ 20,953
Reconciliation of cash, cash equivalents and restricted cash to condensed consolidated balance sheets		
Cash and cash equivalents	$ 4,294	$ 17,861
Restricted cash	710	2,942
Long-term restricted cash	148	150
	$ 5,152	$ 20,953
Supplemental disclosure of cash flow information:		
Cash paid during the period for:		
Interest - bank and trade facilities	$ 2,460	$ 425
Interest - related party	$ 159	$ —
Income taxes	$ 722	$ 986

See accompanying notes to unaudited condensed consolidated financial statements.

Notes to Unaudited Condensed Consolidated Financial Statements

(1) Organization and Summary of Significant Accounting Policies

(a) Description of Business

DZS Inc. (referred to, collectively with its subsidiaries, as "DZS" or the "Company") is global provider of access and optical networking infrastructure and cloud software solutions that enable the emerging hyper-connected, hyper-broadband world and broadband experiences. The Company provides a wide array of reliable, cost-effective networking technologies and software to a diverse customer base.

DZS was incorporated under the laws of the state of Delaware in June 1999. The Company is headquartered in Plano, Texas with contract manufacturers and original design manufacturers located in the U.S, India, Korea, China, Taiwan, and Vietnam. The Company also maintains offices to provide sales and customer support at global locations. Through 2022, we also utilized our in-house manufacturing facility in Seminole, Florida. In October 2022, we announced an agreement with Fabrinet, a third-party provider of electro-mechanical and electronic manufacturing and distribution services, to transition the sourcing, procurement, order-fulfillment, manufacturing and return merchandise authorization activities in the Company's Seminole facility to Fabrinet. The transition began in October 2022 and substantially completed in the beginning of 2023, whereupon the Company no longer manufactures its products.

(b) Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP) for interim financial information and with the instructions to Form 10-Q and Article 3 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by U.S. GAAP for complete financial statements. These financial statements include the accounts of the Company and its wholly owned subsidiaries. These unaudited condensed consolidated financial statements should be read in conjunction with the consolidated financial statements of the Company and notes thereto included in the Company's Annual Report on Form 10-K/A for the year ended December 31, 2022 filed with the Securities and Exchange Commission ("SEC") on August 13, 2024. For a complete description of what the Company believes to be the critical accounting policies and estimates used in the preparation of its unaudited condensed consolidated financial statements, refer to the Company's Annual Report on Form 10-K/A for the year ended December 31, 2022.

All intercompany transactions and balances have been eliminated in consolidation. The unaudited condensed consolidated financial statements reflect all adjustments (consisting only of normal recurring adjustments) that, in the opinion of management, are necessary for a fair presentation of the results for the interim periods presented. The results of operations for the current interim period are not necessarily indicative of results to be expected for the current year or any other period.

(c) Risks and Uncertainties

The accompanying unaudited condensed consolidated financial statements have been prepared in conformity with U.S. GAAP, assuming the Company will continue as a going concern.

We continue to be exposed to macroeconomic pressures in the post-COVID-19 environment, including concerns about energy costs, geopolitical issues, inflation, the availability and cost of credit, business and consumer confidence, and unemployment. We have seen improvement in our supply chain in 2023 as supply chain pricing, freight and logistics costs, product and component availability, and extended lead-times which were a challenge in 2021 and 2022 begin to alleviate in 2023 as the world economy recovers from the COVID-19 pandemic. We expect elevated costs for components and expedite fees to further improve throughout 2023.

We conduct significant business in South Korea, Japan, Vietnam, India, Spain, and Canada, as well as in other countries in Europe, Asia-Pacific, Middle East and Latin America, all of which subject us to foreign currency exchange rate risk. The local currencies of our significant foreign subsidiaries are the South Korean Won ("KRW"), Japanese Yen ("JPY"), Euro ("EUR), and Pound Sterling ("GBP"). Revenues and operating expenses are typically denominated in the local currency of each country and result from transactions by our operations in these countries. However, a significant portion of our international cost of sales is denominated in the U.S. Dollar ("USD").

(d) Use of Estimates

The preparation of the unaudited condensed consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the unaudited condensed consolidated financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ materially from those estimates.

(e) Disaggregation of Revenue

The following table presents revenues by product technology (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Access Networking Infrastructure	$ 39,446	$ 83,199	$ 146,551	$ 225,814
Cloud Software & Services	10,002	15,691	33,057	28,014
Total	$ 49,448	$ 98,890	$ 179,608	$ 253,828

The following table present revenues by geographical concentration (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Americas	$ 11,080	$ 27,609	$ 51,111	$ 78,950
Europe, Middle East, Africa	12,352	25,042	46,041	54,786
Asia	26,016	46,239	82,456	120,092
Total	$ 49,448	$ 98,890	$ 179,608	$ 253,828

(f) Concentration of Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash, cash equivalents and restricted cash, accounts receivables, and contract assets. Cash, cash equivalents and restricted cash consist of financial deposits and money market accounts that are principally held with various domestic and international financial institutions with high credit standing. As of September 30 2023, the Company had cash accounts in excess of Federal Deposit Insurance Corporation ("FDIC") insured limits.

The Company's customers include competitive and incumbent local exchange carriers, competitive access providers, internet service providers, wireless carriers and resellers serving these markets. The Company performs ongoing credit evaluations of its customers and generally does not require collateral. Allowances are maintained for potential doubtful accounts based upon the expected collectability of accounts receivable using historical loss rates adjusted for customer-specific factors and current economic conditions. The Company determines historical loss rates on a rational and systematic basis. The Company performs periodic assessments of its customers' liquidity and financial condition through analysis of information obtained from credit rating agencies, financial statement review and historical and current collection trends.

Activity under the Company's allowance for credit losses consists of the following (in thousands):

	Nine Months Ended September 30,	
	2023	2022
Balance at beginning of period	$ 16,184	$ 17,735
Charged to expense, net of recoveries	2,361	(482)
Utilization and write off	—	(117)
Cumulative effect of ASC 326 adoption	—	401
Foreign currency exchange impact	(221)	(1,446)
Balance at end of period	$ 18,324	$ 16,091

For the three months ended September 30, 2023, no customers accounted for more than 10% of net revenue. For the nine months ended September 30, 2023, one customer accounted for 12% of net revenue. For the three months ended September 30, 2022, one customer accounted for 13% of net revenue. For the nine months ended September 30, 2022, no customers accounted for more then 10% of net revenue.

As of September 30, 2023 and December 31, 2022, no customers represented more than 10% of net accounts receivable.

As of September 30, 2023 and December 31, 2022, net accounts receivables from customers in countries other than the United States represented 67% and 85%, respectively.

In 2017, the Company entered into an agreement with a customer in India to supply product for a state sponsored broadband project. The Company substantially completed its obligations under the agreement in 2018. The Company billed the customer, which is a state government sponsored entity, approximately $59.0 million and collected payments of approximately $41.7 million by December 31, 2020. In late March 2021, the customer's state government parent experienced difficulty passing a budget impacting the ability of the customer to make remaining agreed-upon payments to us. In light of this development, the Company recorded an allowance that covered the entire balance unpaid by the customer. Subsequent to March 2021, the Company recovered approximately $3.1 million of accounts receivable related to the customer. As of September 30, 2023 the Company has a recorded allowance for doubtful accounts of $12.3 million related to this receivable. The Company will continue to pursue collection of the entire outstanding balance and any amounts collected will be recognized in the period which they are received. In the event the Company's efforts to collect from this customer prove unsuccessful, DZS may seek payment through other means, including through legal action.

(g) Business Combinations

We account for business combinations using the acquisition method, which requires the identification of the acquirer, the determination of the acquisition date and the allocation of the purchase price paid by the acquirer to the identifiable tangible and intangible assets acquired, the liabilities assumed, including any contingent consideration and any noncontrolling interest in the acquiree at their acquisition date fair values. Goodwill represents the excess of the purchase price over the fair value of net assets acquired, including the amount assigned to identifiable intangible assets. Identifiable intangible assets with finite lives are amortized over their expected useful lives. Acquisition-related costs are expensed in the periods in which the costs are incurred. The results of operations of acquired businesses are included in our consolidated financial statements from the acquisition date.

(h) Restructuring and Other Charges

From time to time, the Company takes actions to align its workforce, facilities and operating costs with perceived market opportunities, business strategies and changes in market and business conditions. The Company recognizes a liability for the cost associated with an exit or disposal activity in the period in which the liability is incurred, except for one-time employee termination benefits, which are measured at the communication date and recognized ratably over the required service period, if any.

(i) Recent Accounting Pronouncements

In June 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments, which requires the Company to measure and recognize expected credit losses for financial assets held and not accounted for at fair value through net income. In November 2018, April 2019 and May 2019, the FASB issued ASU No. 2018-19, Codification Improvements to Topic 326, Financial Instruments - Credit Losses, ASU No. 2019-04, Codification Improvements to Topic 326, Financial Instruments - Credit Losses, and ASU No. 2019-05, Financial Instruments - Credit Losses (Topic 326): Targeted Transition Relief, which provided additional implementation guidance on the previously issued ASU. The Company adopted the updated guidance on January 1, 2022, utilizing the modified retrospective transition method and recorded a cumulative-effect adjustment of $0.4 million to accumulated deficit.

In October 2021, the FASB issued Accounting Standards Update ASU 2021-08, Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers, which requires the Company to apply ASC 606, Revenue from Contracts with Customers, to recognize and measure contract assets and contract liabilities from contracts with customers acquired in a business combination. Before the update such balances were measured and recognized at fair value on the acquisition date. The ASU is effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. Early adoption is permitted, including in interim periods. The Company adopted these requirements prospectively, effective on the first day of the second quarter of year 2022. There was no material impact on our consolidated financial statements on the adoption date.

In December 2023, the FASB issued ASU 2023-09 Income Taxes (Topic 740): Improvements to Income Tax Disclosures, which aims to address requests for improved income tax disclosures from investors that use the financial statements to make capital allocation decisions. The amendments in this ASU address the investor requests for more transparency of income tax information and apply to all entities that are subject to income taxes. The ASU is effective for years beginning after December 15, 2024, but early adoption is permitted. This ASU should be applied on a prospective basis, although retrospective application is permitted. Management is currently evaluating the impact of the changes required by the new standard on the Company's financial statements and related disclosures.

In March 2024, the SEC issued Release Nos. 33-11275; 34-99678 "The Enhancement and Standardization of Climate-Related Disclosures for Investors", which require registrants to provide certain climate-related information in their registration statements and annual reports. The rules require information about a registrant's climate-related risks that are reasonably likely to have a material impact on its business, results of operations, or financial condition. The compliance date for this release was scheduled to be fiscal year 2027 for smaller reporting companies. On April 4, 2024, the SEC voluntarily stayed implementation of this new rule pending judicial review. The Company is currently analyzing the impact that the new climate-related rules will have on its consolidated financial statements and related disclosures.

(2) Business Combinations

ASSIA Acquisition

On May 27, 2022, the Company acquired certain assets and liabilities of Adaptive Spectrum and Signal Alignment, Incorporated an industry pioneer of broadband access quality-of-experience and service assurance software solutions (the “ASSIA Acquisition”). The core assets acquired include the CloudCheck® Wi-Fi experience management and Expresse® access network optimization software solutions.

The initial purchase consideration was $25.0 million, including a $2.5 million holdback that was released during the third quarter of 2023. In October 2022, the Company agreed to pay an additional $1.35 million of purchase consideration to settle certain unresolved matters related to the ASSIA Acquisition.

The acquisition was recorded as a business combination with valuation of the assets acquired and liabilities assumed recorded at their acquisition date fair value determined using primarily level three inputs, defined as unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. The Company used a combination of income approach and market approach to determine the fair value of intangible assets acquired. Significant unobservable inputs included estimated future cash flows and a discount rate. Cash flow projections were based on management’s estimates of revenue growth rates and operating margins, EBITDA margins, consideration of industry and market conditions, terminal growth rates and management’s estimates of working capital requirements. The discount rate of 23% was based on a weighted average cost of capital adjusted for the relevant risk associated with the characteristics of intangible assets acquired. Under the market approach, the Company utilized an analysis of royalty rate licensing data. We completed the purchase price allocation for ASSIA Acquisition in the first quarter of 2023.

The following summarizes the final fair values of the assets acquired and liabilities assumed at the date of the ASSIA Acquisition (in thousands):

Allocation of purchase consideration		
Cash and cash equivalents	$	203
Accounts receivable		2,322
Other assets		407
Right-of-use assets		2,172
Property, plant and equipment		232
Intangible assets		30,200
Accounts payable		(75)
Contract liabilities		(12,192)
Operating lease liabilities		(2,612)
Accrued and other liabilities		(756)
Goodwill		6,449
Total purchase consideration	$	26,350

The purchase price allocation resulted in the recognition of goodwill of approximately $6.4 million, which included the experienced workforce and the expected synergies from combining operations. The Company expects no goodwill to be deductible for tax purposes.

The following table represents the final estimated fair value and useful lives of identifiable intangible assets acquired (estimated fair value in thousands):

		Estimated fair value	**Estimated useful life**
Intangible assets acquired			
Customer relationships	$	18,600	15 years
Customer backlog		5,100	10 years
Developed technology		6,200	5 - 7 years
Tradenames		300	10 years
Total intangible assets	$	30,200	

(3) Fair Value Measurement

The Company utilizes a fair value hierarchy that is intended to increase consistency and comparability in fair value measurements and related disclosures. The fair value hierarchy is based on inputs to valuation techniques that are used to measure fair value that are either observable or unobservable. Observable inputs reflect assumptions market participants would use in pricing an asset or liability based on market data obtained from independent sources while unobservable inputs reflect a reporting entity's pricing based upon their own market assumptions. The fair value hierarchy consists of the following three levels:

Level 1 Inputs are quoted prices in active markets for identical assets or liabilities.

Level 2 Inputs are quoted prices for similar assets or liabilities in an active market, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable and market-corroborated inputs which are derived principally from or corroborated by observable market data.

Level 3 Inputs are derived from valuation techniques in which one or more significant inputs or value drivers are unobservable

Assets and Liabilities Measured at Fair Value on a Recurring Basis:

The carrying values of financial instruments such as cash and cash equivalents, restricted cash, accounts and other receivables, accounts payable and accrued liabilities approximate their fair values based on their short-term nature. The Company classifies its cash and cash equivalents and restricted cash within Level 1 and other short-term assets and liabilities within Level 2. The carrying value of the Company's debt approximates its fair values based on the current rates available to the Company for debt of similar terms and maturities. The Company classifies its debt within Level 2.

The Company classifies its contingent liability from Optelian acquisition within Level 3 as it includes inputs not observable in the market. The Company estimates the fair value of contingent consideration as the present value of the expected contingent payments, determined using the revenue forecast for certain Optelian products through the end of 2023. The fair value of contingent liability is generally sensitive to changes in the revenue forecast during the payout period. The change in the respective fair value is included in selling, marketing, general and administrative expenses on the unaudited condensed consolidated statement of comprehensive loss.

The following table reconciles the beginning and ending balances of the Company's Level 3 contingent liability (in thousands):

	Nine Months Ended September 30,	
	2023	2022
Balance at beginning of period	$ 1,156	$ 2,121
Cash payments	(347)	(558)
Net change in fair value	(503)	(516)
Balance at end of period	$ 306	$ 1,047

(4) Cash, Cash Equivalents and Restricted Cash

As of September 30, 2023 and December 31, 2022, the Company's cash, cash equivalents and restricted cash consisted of financial deposits. Cash, cash equivalents and restricted cash held within the U.S. totaled $0.6 million and $24.9 million as of September 30, 2023 and December 31, 2022, respectively. Cash, cash equivalents and restricted cash held within the U.S. are held at FDIC insured depository institutions. Cash, cash equivalents and restricted cash held outside the U.S. totaled $4.7 million and $13.6 million as of September 30, 2023 and December 31, 2022, respectively. Restricted cash consisted primarily of cash collateral for performance bonds and warranty bonds. Long-term restricted cash was $0.1 million and $0.2 million as of September 30, 2023 and December 31, 2022, respectively, and is included in other assets on the unaudited condensed consolidated balance sheets.

(5) Balance Sheet Details

Balance sheet detail as of September 30, 2023 and December 31, 2022 is as follows (in thousands):

Inventories

	September 30, 2023	December 31, 2022
Raw materials	$ 39,795	$ 37,354
Work in process	1,552	1,050
Finished goods	66,394	55,884
Total inventories	$ 107,741	$ 94,288

Inventories are stated at the lower of cost or net realizable value, with cost being computed based on an adjusted standard basis, which approximates actual cost on an average or first-in, first-out basis. Finished goods include deferred cost of revenue of $24.0 million and $16.4 million as of September 30, 2023 and December 31, 2022, respectively.

Provision for inventory write-down was $8.6 million and $12.2 million for the three and nine-month periods ended September 30, 2023, respectively and $2.4 million and $3.5 million, for the three and nine-month periods ended September 30, 2022, respectively.

Property, plant and equipment

	September 30, 2023	December 31, 2022
Machinery and equipment	$ 13,204	$ 17,214
Leasehold improvements	2,369	5,683
Computers and software	4,549	4,713
Furniture and fixtures	2,073	1,748
Construction in progress and other	545	1,264
	22,740	30,622
Less: accumulated depreciation and amortization	(16,597)	(21,062)
Less: government grants	(36)	(82)
Total property, plant and equipment, net	$ 6,107	$ 9,478

Depreciation expense associated with property, plant and equipment for the three and nine months ended September 30, 2023 was $0.7 million and $2.7 million, respectively. Depreciation expense associated with property, plant and equipment for the three and nine months ended September 30, 2022 was $0.9 million and $2.6 million, respectively.

Warranties

The Company accrues warranty costs based on historical trends for the expected material and labor costs to provide warranty services. The Company's standard warranty period is one year from the date of shipment with the ability for customers to purchase an extended warranty of up to five years from the date of shipment. The following table summarizes the activity related to the product warranty liability:

	Nine Months Ended September 30,	
	2023	2022
Balance at beginning of period	$ 1,896	$ 1,980
Charged to cost of revenue	(42)	323
Claims and settlements	(109)	(434)
Foreign currency exchange impact	(42)	(110)
Balance at end of period	$ 1,703	$ 1,759

Contract Balances

The Company records contract assets when it has a right to consideration and records accounts receivable when it has an unconditional right to consideration. Contract liabilities consist of cash payments received (or unconditional rights to receive cash) in advance of fulfilling performance obligations. The majority of the Company's performance obligations in its contracts with customers relate to contracts with duration of less than one year.

The opening and closing balances of current and long-term contract assets and contract liabilities related to contracts with customers are as follows:

	Contract assets	Contract liabilities
December 31, 2022	$ 576	$ 26,493
September 30, 2023	$ 759	$ 16,062

The decrease in contract liabilities during the nine months ended September 30, 2023 was primarily due to the revenue recognition criteria being met for previously deferred revenue, partially offset by invoiced amounts that did not yet meet the revenue recognition criteria. The amount of revenue recognized in the nine months ended September 30, 2023 that was included in the prior period contract liability balance was $18.4 million. The amount of revenue recognized in the nine months ended September 30, 2022 that was included in the prior period contract liability balance was $5.4 million. This revenue consists of services provided to customers who had been invoiced prior to the current period. We expect to recognize approximately 63% of outstanding contract liabilities as revenue over the next 12 months and the remainder thereafter.

The balance of contract cost deferred as of September 30, 2023 and December 31, 2022 was $0.9 million and $1.0 million, respectively. During the nine months ended September 30, 2023, the Company recorded $0.6 million in amortization related to contract cost deferred as of December 31, 2022. During the nine months ended September 30, 2022, the Company recorded $0.6 million in amortization related to contract cost deferred as of December 31, 2021.

(6) Goodwill and Intangible Assets

The following table summarizes the activity related to goodwill (in thousands):

	September 30, 2023	September 30, 2022
Balance at beginning of period, gross	$ 13,597	$ 7,148
Accumulated impairment at beginning of period	(1,003)	(1,003)
Goodwill from acquisitions	—	13,268
Foreign currency exchange impact	—	7
Balance at end of period	$ 12,594	$ 19,420

Intangible assets consisted of the following (in thousands):

	September 30, 2023		
	Gross Carrying Amount	Accumulated Amortization	Net
Customer relationships	$ 24,330	$ (6,834)	$ 17,496
Customer backlog	5,100	(1,157)	3,943
Developed technology	11,207	(5,542)	5,665
In-process research and development	890	(474)	416
Tradenames	300	(40)	260
Total intangible assets, net	$ 41,827	$ (14,047)	$ 27,780

	December 31, 2022		
	Gross Carrying Amount	Accumulated Amortization	Net
Customer relationships	$ 24,330	$ (4,759)	$ 19,571
Customer backlog	5,100	(506)	4,594
Developed technology	11,207	(4,463)	6,744
In-process research and development	890	(340)	550
Tradenames	300	(17)	283
Total intangible assets, net	$ 41,827	$ (10,085)	$ 31,742

Amortization expense associated with intangible assets for the three and nine months ended September 30, 2023 was $1.3 million and $3.9 million, respectively. Amortization expense associated with intangible assets for the three and nine months ended September 30, 2022 was $1.2 million and $1.9 million, respectively.

The following table presents the future amortization expense of the Company's intangible assets as of September 30, 2023 (in thousands):

Remainder of 2023	$ 1,321
2024	5,283
2025	5,278
2026	4,095
2027	3,143
Thereafter	8,660
Total	$ 27,780

(7) Debt

The following table summarizes the Company's debt (in thousands):

	September 30, 2023	December 31, 2022
JPMorgan Term Loan, current portion	$ —	$ 24,375
Unamortized debt issuance costs	—	(302)
DNI Related Party Loan	29,291	—
Long-term debt, including current portion	29,291	24,073
JPMorgan Revolving Credit Facility	—	4,000
Bank and Trade Facilities - Foreign Operations	11,065	—
DNI Related Party Loan	—	5,706
Short-term debt and credit facilities	11,065	9,706
Total Debt	$ 40,356	$ 33,779

Related Party Debt

On October 31, 2022, DNS Korea, the Company's wholly-owned subsidiary, entered into a Loan Agreement with Dasan Networks, Inc. ("DNI") (the "November 2022 DNI Loan"). The November 2022 DNI Loan was negotiated and approved on behalf of the Company and its subsidiaries by the audit committee of the Board of Directors of the Company which consists of directors determined to be independent from DNI. The November 2022 DNI Loan consisted of a term loan in the amount of KRW 7.2 billion ($5.0 million USD), with interest payable monthly at an annual rate of 6.0%. The entire outstanding balance on the November 2022 DNI Loan was repaid in the first quarter of 2023.

On January 31, 2023, DNS Korea entered into another short-term loan arrangement with DNI (the "February 2023 DNI Loan") and borrowed KRW 5.0 billion ($4.1 million USD), with interest payable monthly at an annual rate of 7.0%. The entire outstanding balance on the February 2023 was repaid in the second quarter of 2023.

On May 12, 2023, DNS Korea entered into another short-term loan arrangement with DNI (the "May 2023 DNI Loan") and borrowed KRW 4.0 billion ($3.0 million USD), with interest payable monthly at an annual rate of 7.0%. The entire outstanding balance on the May 2023 DNI Loan was repaid in the third quarter of 2023.

On September 12, 2023 and September 22, 2023, DNS Korea entered into two long-term Loan Agreements (the "DNI Loan Agreements") with DNI, as lender, DZS California, Inc., a California corporation, as collateral provider, and DZS Inc. Pursuant to the DNI Loan Agreements, DNS Korea received two three-year term loans in an aggregate principal amount equal to KRW 39.6 billion , the equivalent of $29.9 million as of the date of the transactions. The net proceeds under the DNI Loan Agreements were used to repay the outstanding obligations under the JPM Credit Agreement, and the JPM Credit Agreement was terminated on December 14, 2023.

The obligations under the DNI Loan Agreements are secured by liens on certain assets of DNS Korea (the "Collateral Assets") and on 9,999,999 shares of the common stock of DNS Korea held by DZS California (the "Pledged Shares"). Collateral Assets included inventory of KRW 85.7 billion ($63.5 million USD) in its Janghowon warehouse, which should be maintained at a minimum of KRW 35.0 billion ($25.9 million USD), and account receivable for two certain customer in the amount of KRW 16.2 billion ($12.0 million USD).

The Loan Agreement contains certain financial covenants, including requiring DNS Korea to maintain (i) a maximum Leverage Ratio (as defined in the Loan Agreement) of (a) 6.00 to 1.00 at the end of each of the second and third quarter of 2024, (b) 5.00 to 1.00 from the fourth quarter of 2024 through the second quarter of 2025 and (c) 4.00 to 1.00 from the third quarter of 2025 until the DNI Loan is repaid in full, (ii) cash of at least KRW 1.3 billion and (iii) a combined total of cash, accounts receivable and inventory of at least KRW 33.0 billion.

In addition, the Loan Agreement contains various covenants that limit the ability of the Company, DNS Korea and DZS California to, among other things, (i) grant liens on the Collateral Assets to any third party, (ii) sell, donate, pledge, provide as collateral or otherwise dispose of the Pledged Shares to any third party, (iii) incur or assume indebtedness, (iv) make loans to affiliates or (v) engage in certain other transactions or make certain other fundamental changes.

The Company's debt obligation under the DNI Loan Agreements was KRW 39.6 billion ($29.3 million USD) as of September 30, 2023.

Bank and Trade Facilities - Foreign Operations

DNS Korea has entered into various short-term financing arrangements with foreign banks and other lending institutions consisting primarily of term loans and trade facilities. As of September 30, 2023, the Company had an aggregate outstanding balance of $11.1 million under such financing arrangements.

Industrial Bank of Korea Loan

On March 30, 2023, DNS Korea entered into a Loan Agreement with Industrial Bank of Korea (the "IBK Loan"). The IBK Loan consisted of a short-term loan in the amount of KRW 1.2 billion ($0.9 million USD) with interest payable monthly at an annual rate of 6.3%. The entire outstanding balance on the IBK Loan was repaid in the second quarter of 2023.

Shinhan Bank

On June 15, 2023, DNS Korea entered into a Loan Agreement with Shinhan Bank (the "Shinhan Loan"). The Shinhan Loan consisted of a short-term loan in the amount of KRW 6.0 billion ($4.7 million USD) with interest payable monthly at an annual rate of 5.2%. The Company's debt obligation under the Shinhan Loan was KRW 6.0 billion ($4.4 million USD) as of September 30, 2023.

Kookmin Bank

On July 31, 2023, DNS Korea entered into a Loan Agreement with Kookmin Bank (the "Kookmin Loan"). The Kookmin Loan consisted of a short-term loan in the amount of KRW 2.0 billion ($1.7 million USD) with interest payable monthly at an annual rate of 5.8% The Company's debt obligation under the Kookmin Loan was KRW 2.0 billion ($1.5 million USD) as of September 30, 2023.

Hana Bank

On August 17, 2023, DNS Korea entered into a Loan Agreement with Hana Bank (the "Hana Loan"). The Hana Loan consisted of a short-term loan in the amount of KRW 2.0 billion ($1.5 million USD) with interest payable monthly at an annual rate of 5.9% The Company's debt obligation under the Hana Loan was KRW 2.0 billion ($1.5 million USD) as of September 30, 2023.

The Export–Import Bank of Korea

On August 25, 2023, DNS Korea entered into a Loan Agreement with the Export–Import Bank of Korea (the "Export–Import Bank Loan"). The Export–Import Bank Loan consisted of a short-term loan in the amount of KRW 5.0 billion ($3.8 million USD) with interest payable monthly at an annual rate of 4.8% The Company's debt obligation under the Export–Import Bank Loan was KRW 5.0 billion ($3.7 million USD) as of September 30, 2023.

JPMorgan Credit Agreement

On February 9, 2022, the Company entered into a Credit Agreement (the "Credit Agreement") by and between the Company, as borrower, certain subsidiaries of the Company, as guarantors, the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent. The Credit Agreement originally provided for revolving loans (the "Revolving Credit Facility") in an aggregate principal amount of up to $30.0 million, up to $15.0 million of which is available for letters of credit, and was scheduled to mature on February 9, 2024. The maximum amount that the Company can borrow under the Credit Agreement is subject to a borrowing base, which is based on a percentage of eligible accounts receivable and eligible inventory, subject to reserves and other adjustments, plus $10.0 million.

On May 27, 2022, the Company entered into a First Amendment to Credit Agreement (the "Amendment"), which amends the Credit Agreement dated February 9, 2022 with the Company, as borrower, certain subsidiaries of the Company, as guarantors, the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent.

The Amendment, among other things, (1) provides for a term loan (the "Term Loan") in an aggregate principal amount of $25.0 million with a maturity date of May 27, 2027, (2) extends the maturity date of the $30.0 million Revolving Credit Facility to May 27, 2025, (3) permits the ASSIA Acquisition, (4) modifies the applicable margin for borrowings under the Credit Agreement to be, at the Company's option, either (i) the adjusted term SOFR rate plus a margin ranging from 3.0% to 3.5% per year or (ii) the prime rate plus a margin ranging from 2.0% to 2.5% per year, in each case depending on the Company's leverage ratio, (5) modifies the letter of credit fee such that it ranges from 3.0% to 3.5%, depending on the Company's leverage ratio, (6) modifies the commitment fee on the unused portion of the Revolving Credit Facility to range from 0.25% to 0.35% per year, depending on the Company's leverage ratio, (7) modifies the method of calculating the leverage ratio, and (8) modifies the financial covenants to (i) increase the maximum permitted leverage ratio to 3.00 to 1.00 through September 30, 2022, 2.50 to 1.00 thereafter through September 30, 2023, and 2.00 to 1.00 thereafter and (ii) replace the minimum liquidity requirement with a minimum permitted fixed charge coverage ratio of 1.25 to 1.00.

On May 27, 2022, the Company borrowed the full amount of the Term Loan to finance the ASSIA Acquisition.

On February 15, 2023, the Company entered into a Second Amendment to Credit Agreement (the "Second Amendment"), which amends the Credit Agreement dated February 9, 2022 (as previously amended on May 27, 2022). The Second Amendment, among other things, (1) modifies the financial covenants to (i) suspend the maximum leverage ratio requirement of 2.50 to 1.00 until the fiscal quarter ending September 30, 2023 and (ii) suspend the minimum fixed charge coverage ratio requirement of 1.25 to 1.00 until the fiscal quarter ending December 31, 2023, (2) adds new financial covenants to require (i) minimum liquidity of $30.0 million for the fiscal quarter ending March 31, 2023, $35.0 million for the fiscal quarters ending June 30, 2023 and September 30, 2023, and $20.0 million at any time until September 30, 2023, and (ii) minimum EBITDA (as defined in the Credit Facility) of ($1 million) for the fiscal quarter ending March 31, 2023 and $1 for the fiscal quarter ending June 30, 2023, (3) increases the applicable margin for adjusted term SOFR borrowings and prime rate borrowings to 4.0% and 3.0%, respectively, when the Company's leverage ratio exceeds 2.50 to 1.00, (4) increases the commitment fee on the unused portion of the revolving commitment to 0.40% per year when the Company's leverage ratio exceeds 2.50 to 1.00, and (5) prohibits dividends and other distributions and tightens certain covenants.

On May 8, 2023, the Company entered into the Third Amendment to the Credit Agreement (the "Third Amendment"), which amends the Credit Agreement dated February 9, 2022 (as previously amended on May 27, 2022 and February 15, 2023). The Third Amendment, among other things, (1) modifies the financial covenants to eliminate the minimum EBITDA (as defined in the Credit Facility) of ($1 million) for the fiscal quarter ending March 31, 2023, (2) decreases the calculation of the borrowing base by $5 million through June 30, 2023 and an additional $5 million thereafter, (3) reduces the amount of the Revolving Credit Facility commitment to $25 million effective June 15, 2023, and (4) increases the applicable margin for adjusted term SOFR borrowings and prime rate borrowings to 4.5% and 3.5%, respectively, when the Company's leverage ratio exceeds 2.50 to 1.00.

In the third quarter of 2023, the Company repaid the Term Loan outstanding under the Credit Agreement and subsequently terminated the Credit Agreement, including the Revolving Credit Facility, on December 14, 2023. In conjunction with the debt restructuring, the Company recorded $0.4 million loss on extinguishment of debt.

As of December 31, 2022, we presented our long-term debt obligation within the current portion of long-term debt due to the risk of non-compliance with certain financial covenants in the next 12 months

The future principal maturities of the Company's debt obligations for each of the next five years was as follows as of September 30, 2023 (in thousands):

Remainder of 2023	$	67
2024		10,998
2025		—
2026		—
2027		29,291
Total	$	40,356

(8) Employee Benefit Plans

Defined Contribution Plans

The Company maintains a 401(k) plan for its employees in the US whereby eligible employees may contribute up to a specified percentage of their earnings, on a pretax basis, subject to the maximum amount permitted by the Internal Revenue Code. Under the 401(k) plan, the Company made discretionary contributions to the plan in 2022. For the three and nine months ended September 30, 2023, the Company recorded an expense of $0.2 million and $0.7 million, respectively. For the three and nine months ended September 30, 2022, the Company recorded an expense of $0.3 million and $0.7 million, respectively.

The Company maintains a defined contribution plan for its employees in Korea. Under the defined contribution plan, the Company contributes the equivalent of 8.3% of an employee's gross salary into the plan. For the three and nine months ended September 30, 2023, the Company recorded an expense of $0.1 million and $0.9 million, respectively. For the three and nine months ended September 30, 2022, the Company recorded an expense of $0.3 million and $0.9 million,

Defined Benefit Plans

The Company sponsors defined benefit plans for its employees in Germany and Japan. Defined benefit plans provide pension benefits based on compensation and years of service. The Germany plans were frozen as of September 30, 2003 and have not been offered to new employees after that date. The Company has recorded the underfunded status as of September 30, 2023 and December 31, 2022 as a long-term liability on the unaudited condensed consolidated balance sheets. The accumulated benefit obligation for the plans in Germany and Japan was $10.7 million and $11.0 million as of September 30, 2023 and December 31, 2022, respectively. Periodic benefit costs for the three and nine months ended September 30, 2023 were $0.1 million and $0.2 million, respectively. Periodic benefit costs for the three and nine months ended September 30, 2022 were $0.1 million and $0.2 million, respectively.

The Company holds pension insurance contracts, with the Company as beneficiary, in the amount of $2.1 million as of September 30, 2023 and $2.5 million as of December 31, 2022 related to individuals under the pension plans. The Company records these insurance contracts based on their cash surrender value at the balance sheet dates. These insurance contracts are classified as other assets on the Company’s unaudited condensed consolidated balance sheet. The Company intends to use any proceeds from these policies to fund the pension plans. However, since the Company is the beneficiary on these policies, these assets have not been designated pension plan assets.

(9) Restructuring and Other Charges

In 2021, the Company made the strategic decision to relocate manufacturing functions of DZS GmbH and Optelian to Seminole, Florida and to transition the above subsidiaries to sales and research and development centers. For the three and nine months ended September 30, 2022, the Company recorded zero and $0.8 million of restructuring related costs, respectively, consisting primarily of logistics costs and professional services related to legal and accounting support. The restructuring of DZS GmbH and Optelian was completed in 2022 and no related restructuring costs were recorded for the three and nine months ended September 30, 2023.

On September 17, 2022, DZS signed an agreement with Fabrinet, a third-party provider of electro-mechanical and electronic manufacturing and distribution services, to transition the sourcing, procurement, order-fulfillment, manufacturing and return merchandise authorization activities in the Company's Seminole, Florida facility to Fabrinet. The transition to Fabrinet began in October 2022 and substantially completed in the beginning of 2023. Post transition, the DZS Seminole, Florida-based operations, supply chain and manufacturing workforce was reduced by approximately two-thirds and the remaining team was relocated to an appropriately sized facility. For the three and nine months ended September 30, 2022, the Company recorded a $0.4 million loss on inventory to be sold to Fabrinet, which was included in restructuring and other charges in the unaudited condensed consolidated statement of comprehensive loss. The Company also recorded $0.2 million of restructuring for personnel related costs. For the three months ended September 30, 2023, the Company recorded $0.2 million of Fabrinet restructuring related costs, consisting of facility and labor costs of $0.1 million and other costs of $0.1 million. For the nine months ended September 30, 2023, the Company recorded $4.6 million of Fabrinet restructuring related costs, consisting of freight costs of $0.9 million, facility and labor costs of $1.8 million, accelerated depreciation of manufacturing related assets of $0.4 million, inventory write-off of $0.5 million, and other costs of $1.0 million. The above expenses were included in restructuring and other charges on the unaudited condensed consolidated statement of comprehensive loss.

For the three and nine months ended September 30, 2023, the Company also incurred $2.4 million and $3.0 million, respectively, of expedite fees and other elevated inventory related costs, which directly related to the Fabrinet transition. For the three and nine months ended September 30, 2023, the Company also recorded an inventory obsolescence reserve of $2.2 million associated with the inventory transition to Fabrinet. These costs were included in cost of revenue on the unaudited condensed consolidated statement of comprehensive loss.

For the three and nine months ended September 30, 2023, the Company also incurred certain maintenance costs related to impaired facilities and non-capitalizable implementation costs related to replacement of the Company’s legacy enterprise resource planning and reporting software. The Company included such costs in restructuring and other charges on the unaudited condensed consolidated statement of comprehensive loss.

(10) Related Party Transactions

Related Party Debt

As of September 30, 2023, the Company had KRW 39.6 billion ($29.3 million USD) outstanding of the related party borrowing from DNI. See Note 7 Debt for additional information about the Company’s related party debt. DNI owns approximately 28.5% of the outstanding shares of the Company's common stock.

The following table sets forth payment guarantees of the Company's obligations as of September 30, 2023 that have been provided by DNI. The amount guaranteed exceeds the principal amounts of outstanding obligations due to collateral requirements by the banks.

Guarantor	Amount Guaranteed (in thousands)	Description of Obligations Guaranteed
Dasan Networks, Inc.	$ 12,000	Payment guarantee to Korea Development Bank
Dasan Networks, Inc.	5,322	Payment guarantee to Industrial Bank of Korea
Dasan Networks, Inc.	532	Payment guarantee to Shinhan Bank
	$ 17,854	

Other Related Party Transactions

Net revenue, cost of revenue, operating expense, interest expense, net and other expenses to and from related parties were as follows (in thousands) for the three and nine months ended September 30, 2023 and 2022:

	Three Months Ended September 30, 2023				
Counterparty	Net revenue	Cost of revenue	Operating expense	Interest expense, net	Other expenses
Dasan Networks, Inc.	$ 250	$ 139	$ 188	$ 124	$ —

	Three Months Ended September 30, 2022				
Counterparty	Net revenue	Cost of revenue	Operating expense	Interest expense, net	Other expenses
Dasan Networks, Inc.	$ 98	$ 67	$ 167	$ —	$ 15

Counterparty	Nine Months Ended September 30, 2023 Net revenue	Cost of revenue	Operating expense	Interest expense, net	Other expenses
Dasan Networks, Inc.	$ 534	$ 368	$ 702	$ 253	$ 26

Counterparty	Nine Months Ended September 30, 2022 Net revenue	Cost of revenue	Operating expense	Interest expense, net	Other expenses
Dasan Networks, Inc.	$ 1,014	$ 873	$ 890	$ —	$ 48

The Company has entered into sales agreements with DNI to sell certain services and finished goods produced by the Company. The Company also has an agreement with DNI in which DNI acts as a sales channel to third party customers. The above transactions are included in net revenue and cost of revenue on the unaudited condensed consolidated statement of comprehensive loss. Net revenue from DNI is recorded net of royalty fees for a sales channel arrangement.

DNS Korea has a lease agreement with DNI related to the lease of a warehouse facility. Operating lease cost related to the DNI lease totaled $0.1 million and $0.3 million for the three and nine months ended September 30, 2023, respectively. Operating lease cost related to the DNI leases totaled $0.1 million and $0.5 million for the three and nine months ended September 30, 2022, respectively. Operating lease expense is allocated between cost of revenue, research and product development, and selling, marketing, general and administrative expenses on the unaudited condensed consolidated statement of comprehensive loss. As of September 30, 2023, the right-of-use asset and operating lease liability related to DNI leases were $1.4 million. As of December 31, 2022, the right-of-use asset and operating lease liability related to DNI leases were $1.7 million.

The Company also pays a license fee under the Trademark License Agreement with DNI. The license fee is calculated as 0.4% of DNS Korea annual sales. For the three and nine months ended September 30, 2023, license related expense were $0.1 million and $0.4 million, respectively. For the three and nine months ended September 30, 2022, license related expense were $0.2 million and $0.4 million, respectively. License related expense are included in selling, marketing, general and administrative expenses on the consolidated statements of comprehensive loss.

Interest expense represents interest paid to DNI for the related party debt. Interest due to DNI was included in accrued and other liabilities on the unaudited condensed consolidated balance sheets as of September 30, 2023 and December 31, 2022. See Note 7 Debt for additional information about the Company's related party debt.

Other expenses represent charges from DNI for its payment guarantees relating to the Company's obligations. The Company pays DNI a guarantee fee which is calculated as 0.9% per annum of the guaranteed amount. Refer to the table above for further information about obligations guaranteed by DNI.

Balances of Receivables and Payables with Related Parties

Balances of receivables and payables arising from sales and purchases of goods and services with related parties as of September 30, 2023 and December 31, 2022 were included in the following balance sheet captions on the unaudited condensed consolidated balance sheets, as follows (in thousands):

Counterparty	As of September 30, 2023 Account receivables	Other receivables	Loans Payable	Accounts payable	Accrued and other liabilities
Dasan Networks, Inc.	$ 2,287	$ —	$ 29,291	$ 1,391	$ 491

Counterparty	As of December 31, 2022 Account receivables	Other receivables	Loans Payable	Accounts payable	Accrued and other liabilities
Dasan Networks, Inc.	$ 943	$ 123	$ 5,706	$ 1,019	$ 483

(11) Net Loss Per Share

Basic net loss per share is computed by dividing the net loss for the period by the weighted average number of shares of common stock outstanding during the period. The calculation of diluted net loss per share gives effect to common stock equivalents; however, potential common stock equivalents are excluded if their effect is antidilutive. Potential common stock equivalents are composed of incremental shares of common stock issuable upon the exercise of stock options and the vesting of restricted stock units. In periods when a net loss is reported, all common stock equivalents are excluded from the calculation because they would have an anti-dilutive effect, meaning the loss per share would be reduced. Therefore, in periods when a loss is reported, basic and dilutive loss per share are the same.

The following table is a reconciliation of the numerator and denominator in the basic and diluted net loss per share calculation (in thousands, except per share data) for the three and nine months ended September 30, 2023, and 2022:

	Three months ended September 30,		Nine months ended September 30,	
	2023	2022	2023	2022
Net loss	$ (34,013)	$ (10,954)	$ (82,667)	$ (31,104)
Weighted average number of shares outstanding:				
Basic	31,892	27,902	31,386	27,696
Effect of dilutive securities:				
Stock options, restricted stock units and share awards	—	—	—	—
Diluted	31,892	27,902	31,386	27,696
Net loss per share:				
Basic	$ (1.07)	$ (0.39)	$ (2.63)	$ (1.12)
Diluted	$ (1.07)	$ (0.39)	$ (2.63)	$ (1.12)

The following table sets forth potential common stock that is not included in the diluted net loss per share calculation above because their effect would be anti-dilutive for the periods indicated (in thousands):

	Three months ended September 30,	
	2023	2022
Outstanding stock options	1,333	689
Unvested restricted stock units	6,373	415

(12) Leases

The Company leases certain properties and buildings (including manufacturing facilities, warehouses, and office spaces) and equipment under various arrangements which provide the right to use the underlying asset and require lease payments for the lease term. The Company's lease portfolio consists of operating leases which expire at various dates through 2028.

Assets and liabilities related to operating leases are included in the consolidated balance sheets as right-of-use assets from operating leases, operating lease liabilities - current and operating lease liabilities - non-current. The Company recognizes minimum rental expense on a straight-line basis based on the fixed components of a lease arrangement. The Company amortizes this expense over the term of the lease beginning with the date of initial possession, which is the date the lessor makes an underlying asset available for use. For the three and nine months ended September 30, 2023, the Company recognized lease expense of $1.0 million and $3.4 million, respectively. For the three and nine months ended September 30, 2022, the Company recognized lease expense of $1.1 million and $3.2 million, respectively.

In the second quarter of 2023, the Company recorded an impairment charge of $0.5 million for the right-of use assets from operating leases in connection with vacating a part of its office space in Plano, Texas, following the reduction in administrative personnel.

The following table presents the Company's future contractual rent obligations as of September 30, 2023 (in thousands):

Remainder of 2023	$	1,393
2024		5,039
2025		3,542
2026		2,220
2027		1,118
Thereafter		690
Total operating lease payments		14,002
Less: imputed interest		(1,220)
Total operating lease liabilities	$	12,782

(13) Commitments and Contingencies

Performance Guarantees

In the normal course of operations, from time to time, the Company arranges for the issuance of various types of performance guarantees, such as standby letters of credit or surety bonds. These instruments are arrangements under which the financial institution or surety provides a financial guarantee that the Company will perform in accordance with contractual or legal obligations. As of September 30, 2023, the Company had $21.8 million of performance guarantees in the form of bank guarantees or surety bonds guaranteed by third parties.

Trade Compliance Matter

During the first quarter of 2022, DASAN India Private Limited ("DIPL"), an indirect subsidiary of the Company, received a notice letter from the Office of the Commissioner of Customs, Chennai II of the India Department of Revenue (the "Notice") claiming DIPL had allegedly mis-declared and incorrectly classified certain products imported to India by DIPL at the time of clearance of customs. The Notice claims that due to such mis-declaration and incorrect classification of the imported products, the Company and its contract manufacturer in India underpaid duties approximating INR 299.6 million ($3.6 million USD based on exchange rates as of September 30, 2023) related to such products. The documents relied upon in the Notice were requested by the Company, however they are yet to be received. In the second quarter of 2023, the Company received a second notice letter issued by the Office of the Principal Commissioner of Customs (Air Cargo) Complex, Chennai VII Commissionerate claiming the alleged underpaid duties approximated INR 389.3 million ($4.7 million based on exchange rates as of September 30, 2023). The two notice letters cover substantially the same shipments and overlap in scope. The Company intends to vigorously defend itself in this matter. As we have not yet received the full contents of the Notice, we are unable to estimate a potential loss related to this matter, if any, which could range up to the full amount of the alleged unpaid duties, plus penalties and interest. In the beginning of 2024, the Company divested its certain subsidiaries in Asia, including DIPL. Following the divestiture, any litigation and claims related to the divested subsidiaries are no longer an obligation of the Company. Refer to Note 16 Subsequent Events for additional information about the divestiture.

Plume

On October 10, 2022, Plume Design, Inc. ("Plume") filed suit against DZS in the Superior Court of the State of Delaware, alleging that DZS breached a reseller contract with Plume and seeking $24.75 million in damages. The parties have completed briefing on dispositive motions, and a trial is currently set for October 7, 2024. DZS intends to vigorously defend this lawsuit.

Class Action

In June and August of 2023, DZS shareholders filed three putative securities class actions related to DZS's June 1, 2023 Form 8-K announcing the Company's intention to restate its financial statements for the first quarter of 2023. Each suit was filed in the Eastern District of Texas. All three cases allege violations of Sections 10(b) and 20(a) of the Exchange Act against DZS, its Chief Executive Officer and its Chief Financial Officer. The cases are: (1) Shim v. DZS et al., filed June 14, 2023; (2) Link v. DZS et al., filed June 27, 2023; and (3) Cody v. DZS et al., filed August 9, 2023.

Three potential lead plaintiffs filed applications for appointment on August 14, 2023. On September 12, 2023, the cases were consolidated under the lead case Shim v. DZS et al. The plaintiffs are seeking unspecified damages, interest, fees, costs and interest. As of July 31, 2024, the court has not yet ruled on the appointment of a lead plaintiff and the Defendants have not yet responded to any complaint. DZS intends to vigorously defend these lawsuits.

In light of the events giving rise to the restatement, DZS began cooperating, and intends to continue to cooperate, with the U.S. Securities and Exchange Commission (the "SEC"), which has informed DZS that it is investigating potential violations of the federal securities laws related to DZS.

On June 3, 2024, counsel for a shareholder of the Company sent the Company a demand for certain books and records related to events related to the Company's June 1, 2023 Form 8-K. The demand was made pursuant to Section 220 of the Delaware General Corporation Law. While the Company does not concede the demand is proper, it has produced certain records to the shareholder.

In addition to the matters discussed above, from time to time, the Company is subject to various legal proceedings, claims and litigation arising in the ordinary course of business. While the outcome of these matters is currently not determinable, the Company records an accrual for legal contingencies that it has determined to be probable to the extent that the amount of the loss can be reasonably estimated. The Company does not expect that the ultimate costs to resolve these matters will have a material adverse effect on its consolidated financial position, results of operations or cash flows. However, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. If an unfavorable ruling were to occur, there exists the possibility of a material adverse impact on the results of operations and cash flows of the reporting period in which the ruling occurs, or future periods.

(14) Income Taxes

Income tax benefit for the three months ended September 30, 2023 was $0.9 million on pre-tax loss of $35.0 million. Income tax provision for the nine months ended September 30, 2023 was approximately $0.6 million on pre-tax loss of $82.1 million. Income tax benefit for the three months ended September 30, 2022 was approximately $1.2 million on pre-tax loss of $12.2 million. Income tax provision for the three months ended September 30, 2022 was approximately $2.5 million on pre-tax loss of $28.6 million.

As of September 30, 2023, the income tax rate varied from the United States statutory income tax rate primarily due to valuation allowances in North America, EMEA and Asia, mandatory R&D expense capitalization in the U.S., and foreign and state income tax rate differentials. Consistent with the prior periods, the Company continued to maintain valuation allowances in North America, EMEA and Asia.

The total amount of unrecognized tax benefits, including interest and penalties, as of September 30, 2023 was $5.2 million. There were no significant changes to unrecognized tax benefits during the three months ended September 30, 2023. The Company does not anticipate any significant changes with respect to unrecognized tax benefits within the next twelve months.

(15) Enterprise-Wide Information

The Company is a global provider of ultra-broadband network access solutions and communications platforms deployed by advanced Tier 1, national and regional service providers and enterprise customers. There are no segment managers who are held accountable for operations, operating results and plans for levels or components below the Company unit level. Accordingly, the Company is considered to be in a single operating segment. The Company's chief operating decision maker is the Company's Chief Executive Officer, who reviews financial information presented on a consolidated basis accompanied with disaggregated revenues by geographic region for purposes of making operating decisions and assessing financial performance.

The Company attributes revenue from customers to individual countries based on location shipped. Refer to Note 1(e) Disaggregation of Revenue for the required disclosures on geographical concentrations and revenues by source.

The Company's property, plant and equipment, net of accumulated depreciation, were located in the following geographical areas (in thousands) as of September 30, 2023 and December 31, 2022:

	September 30, 2023	December 31, 2022
United States	$ 3,199	$ 5,725
Korea	2,128	2,706
Japan	518	644
Canada	—	157
Germany	172	110
Other	90	136
	$ 6,107	$ 9,478

(16) Subsequent Events

On December 29, 2023, the Company, as borrower, entered into a Loan Agreement (the "EdgeCo Loan Agreement") with EdgeCo, LLC ("EdgeCo"), as lender. Pursuant to the EdgeCo Loan Agreement, the Company received a three-year term loan in an aggregate principal amount equal to $15.0 million. The principal amount of the Loan is payable on December 29, 2026 and bears interest at a fixed rate of 13.0% per annum. In connection with the EdgeCo Loan Agreement, the Company also entered into a Warrant Agreement (the "Warrant Agreement"), dated as of December 29, 2023, by and between the Company and EdgeCo, that issued a warrant to EdgeCo to subscribe for 6,100,000 shares of Common Stock at an exercise price of $1.84 per share.

On December 29, 2023, the Company entered into a Securities Purchase Agreement (the "Securities Purchase Agreement") with IV Global Fund No. 4, a Korean limited partnership ("IV Global Fund"). The general partner of IV Global Fund, Invites Ventures Co., Ltd., and its limited partners are affiliates of DNI. Pursuant to the Securities Purchase Agreement, the Company agreed to issue 5,434,783 shares (the "Private Placement Shares") of Common Stock to IV Global Fund, at a purchase price of $1.84 per share, for an aggregate purchase price of $10.0 million. The issuance and sale of the Private Placement Shares was consummated on January 3, 2024.

On January 5, 2024, the Company and DZS California Inc. ("DZS California"), a wholly owned subsidiary of the Company, entered into a Stock Purchase Agreement (the "Stock Purchase Agreement") with DNI. Pursuant to the Stock Purchase Agreement, DZS California sold to DNI all of the equity interests in DASAN Network Solutions, Inc., a Korean company ("DNS Korea"), D-Mobile Limited, a Chinese company, DZS Vietnam Company Limited, a Vietnamese company, Dasan India Private Limited, an Indian company, and DZS Japan, Inc., a Japanese company (the "Asia Sale"). The purchase price for the divestiture consisted of $3.8 million cash, net of certain adjustments, and the elimination of approximately $34 million in debt owed to DNI as of the transaction date. DNI also assumed all DNS Korea's debt obligations to foreign banks outstanding as of the transaction date. The Asia Sale closed on April 5, 2024.

On May 3, 2024, the Company entered into a Share Purchase Agreement (the "Share Purchase Agreement") with Casa Communications Holdings Pty Ltd, a private limited company registered in New South Wales, Australia (the "Seller"). Pursuant to the Share Purchase Agreement, the Company acquired all of the issued and outstanding share capital of Netcomm Wireless Pty Ltd, a private limited company registered in New South Wales, Australia ("Netcomm") for a purchase price of approximately $8.1 million paid in cash. The purchase price also included a contingent consideration component based on the satisfaction of certain revenue thresholds for the period from January 1, 2024 to December 31, 2024. The maximum contingent consideration payable from the Company to the Seller is $3.0 million. The acquisition closed on June 1, 2024.

On May 31, 2024, the Company, as borrower, entered into a Loan Agreement (the "EdgeCo Second Loan Agreement") with EdgeCo, LLC, as lender. Pursuant to the EdgeCo Second Loan Agreement, the Company received a three-year term loan in an aggregate principal amount equal to $15.0 million. The principal amount of the Loan is payable on May 31, 2027 and bears interest at a fixed rate of 13.0% per annum. In connection with the EdgeCo Second Loan Agreement, the Company also entered into a Warrant Agreement, dated as of May 31, 2024, by and between the Company and EdgeCo, that issued a warrant to EdgeCo to subscribe for 6,100,000 shares of Common Stock at an exercise price of $0.9095 per share. The loan was primarily used to finance the acquisition of Netcomm and provide working capital to Netcomm.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

As used in this Quarterly Report on Form 10-Q, unless the context suggests otherwise, the terms "DZS," the "Company" "we," "our" and "us" refer to DZS Inc. and its subsidiaries.

Forward-Looking Statements

This Quarterly Report on Form 10-Q, including "Management's Discussion and Analysis of Financial Condition and Results of Operations," contains forward-looking statements regarding future events and our future results that are subject to the safe harbors created under the Securities Act of 1933 (the "Securities Act") and the Securities Exchange Act of 1934 (the "Exchange Act"). These statements are based on current expectations, estimates, forecasts, and projections about the industries in which we operate, and reflect the beliefs and assumptions of our management as of the date hereof.

We use words such as "anticipate," "believe," "continue," "could," "estimate," "expect," "forecast," "goal," "intend," "may," "plan," "project," "seek," "should," "target," "will," "would," variations of such words, and similar expressions to identify forward-looking statements. In addition, statements that refer to projections of earnings, revenue, costs or other financial items in future periods; anticipated growth and trends in our business, industry or key markets; cost synergies, growth opportunities and other potential financial and operating benefits of our acquisitions; future growth and revenues from our products; our plans and our ability to refinance or repay our existing indebtedness prior to the applicable maturity dates; our ability to access capital to fund our future operations; future economic conditions and performance; the impact of the global outbreak of COVID-19, also known as the coronavirus; the impact of inflation, interest rate and foreign currency fluctuations; anticipated performance of products or services; competition; plans, objectives and strategies for future operations, including our pursuit or strategic acquisitions and our continued investment in research and development; other characterizations of future events or circumstances; and all other statements that are not statements of historical fact, are forward-looking statements within the meaning of the Securities Act and the Exchange Act. Although we believe that the assumptions underlying the forward-looking statements are reasonable, we can give no assurance that our expectations will be attained. Readers are cautioned not to place undue reliance on such forward-looking statements, which are being made as of the date of this Quarterly Report on Form 10-Q. Except as required by law, we undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.

Factors which could have a material adverse effect on our operations and future prospects or which could cause actual results to differ materially from our expectations include factors discussed in Part I, Item 1A "Risk Factors" of our Annual Report on Form 10-K/A, as well as factors described from time to time in our future reports filed with the U.S. Securities and Exchange Commission (the "SEC").

OVERVIEW

We are a global provider of access and optical networking infrastructure and cloud software solutions that enable the emerging hyper-connected, hyper-broadband world and broadband experiences. The Company provides a wide array of reliable, cost-effective networking technologies and software to a diverse customer base.

We research, develop, test, sell, manufacture and support platforms in the areas of mobile transport and fixed broadband access, as discussed below. We have extensive regional development and support centers around the world to support our customer needs.

Our solutions and platforms portfolio include products in Access Edge, Subscriber Edge, Optical Edge, and Cloud Software.

- *Access Edge.* Our DZS Velocity portfolio offers a variety of solutions for carriers and service providers to connect residential and business customers, either using high-speed fiber or leveraging their existing deployed copper networks to offer broadband services to customer premises. Once our broadband access products are deployed, the service provider can offer voice, high-definition and ultra-high-definition video, high speed internet access and business class services to their customers. In addition, the switching and routing products we provide in this space offer a high-performance and manageable solution that bridges the gap from carrier access technologies to the core network. XCelerate by DZS increases the velocity with which service providers can leap to multi-gigabit services at scale by enabling rapid transition from Gigabit Ethernet Passive Optical Network to 10 Gigabit Symmetrical Passive Optical Network ("XGS-PON") and Gigabit Ethernet to 10 Gigabit Ethernet via any service port across a range of existing DZS Velocity chassis and 10 gigabit optimized stackable fixed form factor units.

- *Subscriber Edge*. Our DZS Helix connected premises product portfolio offers a large collection of optical network terminals ("ONTs") and smart gateway solutions for any fiber to the "x" ("FTTx") deployment. DZS ONTs and Smart Gateway platforms are designed for high bandwidth services being deployed to the home or business. Our connected premises portfolio consists of indoor/outdoor ONTs and gateways delivering best-in-class data and WiFi throughout the premises to support FTTx applications. The product feature set gives service providers an elegant migration path from legacy to soft switch architectures without replacing ONTs.
- *Optical Edge.* Our DZS Chronos and DZS Saber portfolios provide robust, manageable and scalable solution for mobile operators and service providers that enable them to upgrade their mobile fronthaul/midhaul/backhaul ("xHaul") systems and migrate to fifth generation wireless technologies ("5G") and beyond as well as deliver robust edge transport. DZS Chronos provides a full range of 5G-ready xHaul and coherent optical capable solutions that are open, software-defined, and field proven. Our mobile xHaul and edge transport products may be collocated at the radio access node base station and can aggregate multiple radio access node base stations into a single backhaul for delivery of mobile traffic to the radio access node network controller or be leveraged as transport vehicles for FTTx deployments. Our products support pure Ethernet switching as well as layer 3 IP and Multiprotocol Label Switching, and we interoperate with other vendors in these networks. Our DZS Saber portfolio provides high bandwidth optical transport and services, enabling service providers to push high bandwidth transport closer to their subscribers near the edge of their networks. Complementary to the growth of high bandwidth technologies like XGS-PON and 5G mobile at the access edge, DZS Saber products leverage environmentally hardened dense wavelength-division multiplexing (DWDM) coherent optics to deliver transport bandwidth speeds from 100 gigabits per second (Gbps) to 400 Gbps over long distances that can be necessary to support advanced access and mobile technologies. Some DZS Saber platforms also provide additional feature such as multi-degree colorless directionless contentionless (CDC) FlexGrid reconfigurable optical add-drop multiplexer (ROADM) functionality, which allows service providers to easily adjust to changing network traffic demands.
- *Cloud Software.* Our DZS Cloud platform provides software capabilities specifically in the areas of network orchestration, application slicing, automation, analytics, service assurance, and consumer broadband experience. Via our DZS Xtreme solutions we offer a commercial, carrier-grade network-slicing enabled orchestration platform complementing our position with physical network devices supporting Open RAN and 4G/5G networks. Communications service providers are implementing software defined networking and network functions virtualization architectures to reduce reliance on proprietary systems and hardware, which increase service agility, flexibility, and deployment of new network services while lowering costs. Our Expresse software solution provides a clear view of multi-vendor, multi-technology access networks for both network and service assurance while monitoring, identifying, diagnosing, and fixing network problems via an artificial intelligence (AI) based recommendation engine. CloudCheck software is an advanced WiFi experience management and analytics solution that enables communications service providers to monitor, manage and optimize home WiFi networks. DZS customers are implementing experience and service assurance solutions to reduce support costs, including specifically the costs of WiFi troubleshooting and truck rolls, improve service performance and customer satisfaction, and ultimately reduce subscriber churn and increase average revenue per user (ARPU).

Our key financial objectives include the following:

- Increasing revenue while continuing to carefully control costs;
- Continuing investments in strategic research and product development activities that will provide the maximum potential return on investment;
- Minimizing consumption of our cash and cash equivalents; and
- Improving gross margin through a wide range of initiatives, including an increase in the mix of recurring software revenue and reducing fixed costs by outsourcing manufacturing.

RECENT DEVELOPMENTS

On February 15, 2023, the Company entered into a Second Amendment to Credit Agreement (the “Second Amendment”), which amends the Credit Agreement dated February 9, 2022 (as previously amended on May 27, 2022) and, among other things, modifies certain financial covenants. Refer to Note 7, in the Notes to Unaudited Condensed Consolidated Financial Statements, for further information on the Second Amendment.

On May 8, 2023, the Company entered into the Third Amendment to the Credit Agreement (the "Third Amendment"), which amends the Credit Agreement dated February 9, 2022 (as previously amended on May 27, 2022 and February 15, 2023) and, among other things, modifies certain financial covenants. Refer to Note 7, in the Notes to the Unaudited Condensed Consolidated Financial Statements, for further information on the Third Amendment.

On September 12, 2023 and September 22, 2023, DASAN Network Solutions, Inc., a Korea corporation, as borrower (“DNS Korea”), entered into two Loan Agreements (the “DNI Loan Agreements”) with DNI, as lender, DZS California, Inc., a California corporation, as collateral provider, and DZS Inc. DNS Korea is an indirect subsidiary of the Company. Pursuant to the DNI Loan Agreements, DNS Korea received two three-year term loans in an aggregate principal amount equal to 39.6 billion South Korean Won (“KRW”), the equivalent of $29.9 million as of the date of the transactions. The net proceeds under the DNI Loan Agreements were used to repay the outstanding obligations under the JPM Credit Agreement, and the JPM Credit Agreement was terminated on December 14, 2023.

RESULTS OF OPERATIONS

The tables below presents the historical consolidated statement of comprehensive loss as a percentage of revenues and period-over-period changes (dollars in thousands).

	Three months ended September 30,				
	2023	**% of net revenue**	**2022**	**% of net revenue**	**Increase (Decrease)**
Net revenue	$ 49,448	100 %	$ 98,890	100 %	(50.0)%
Cost of revenue	47,517	96 %	66,860	68 %	(28.9)%
Gross profit	1,931	4 %	32,030	32 %	(94.0)%
Operating expenses:					
Research and product development	12,767	26 %	15,499	16 %	(17.6)%
Selling, marketing, general and administrative	22,096	45 %	23,698	24 %	(6.8)%
Restructuring and other charges	135	— %	601	1 %	(77.5)%
Impairment of long-lived assets	—	— %	827	1 %	(39.7)%
Amortization of intangible assets	1,321	3 %	1,190	1 %	11.0 %
Total operating expenses	36,319	74 %	41,815	43 %	(13.1)%
Operating loss	(34,388)	(70)%	(9,785)	(11)%	251.4 %
Interest expense, net	(1,010)	(2)%	(399)	— %	153.1 %
Loss on extinguishment of debt	(375)	(1)%	—	— %	100.0 %
Other income (expense), net	813	2 %	(1,984)	(2)%	(141.0)%
Loss before income taxes	(34,960)	(71)%	(12,168)	(13)%	187.3 %
Income tax benefit	(947)	(2)%	(1,214)	(1)%	(22.0)%
Net loss	$ (34,013)	(69)%	$ (10,954)	(12)%	210.5 %

	Nine Months Ended September 30,				
	2023	% of net revenue	2022	% of net revenue	Increase (Decrease)
Net revenue	$ 179,608	100 %	$ 253,828	100 %	(29.2)%
Cost of revenue	138,219	77 %	173,122	68 %	(20.2)%
Gross profit	41,389	23 %	80,706	32 %	(48.7)%
Operating expenses:					
Research and product development	42,660	24 %	39,691	16 %	7.5 %
Selling, marketing, general and administrative	69,946	39 %	61,953	24 %	12.9 %
Restructuring and other charges	4,881	3 %	1,393	2 %	250.4 %
Impairment of long-lived assets	499	1 %	827	— %	(39.7)%
Amortization of intangible assets	3,913	2 %	1,948	1 %	100.9 %
Total operating expenses	121,899	69 %	105,812	43 %	15.2 %
Operating loss	(80,510)	(46)%	(25,106)	(10)%	220.7 %
Interest expense, net	(2,844)	(2)%	(653)	— %	335.5 %
Loss on extinguishment of debt	(375)	— %	—	— %	100.0 %
Other income (expense), net	1,653	1 %	(2,847)	(1)%	(158.1)%
Loss before income taxes	(82,076)	(47)%	(28,606)	(11)%	186.9 %
Income tax provision	591	— %	2,498	1 %	(76.3)%
Net loss	$ (82,667)	(47)%	$ (31,104)	(12)%	165.8 %

Net Revenue

The following table presents our revenues by product technology (dollars in thousands):

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2023	2022	Increase (Decrease)	2023	2022	Increase (Decrease)
Access Networking Infrastructure	$ 39,446	$ 83,199	(52.6)%	$ 146,551	$ 225,814	(35.1)%
Cloud Software & Services	10,002	15,691	(36.3)%	33,057	28,014	18.0 %
Total	$ 49,448	$ 98,890	(50.0)%	$ 179,608	$ 253,828	(29.2)%

Our revenue from sales of access networking infrastructure products includes Access Edge, Optical Edge, and Subscriber Edge network solutions. Our cloud software and services revenue represents revenue from our Cloud Software solutions including DZS Xtreme, Expresse and CloudCheck software, and revenue from maintenance and other professional services associated with product shipments.

For the three months ended September 30, 2023, access networking infrastructure revenue decreased by 52.6% or 43.8 million to $39.4 million from $83.2 million in the same period last year. For the nine months ended September 30, 2023, access networking infrastructure revenue decreased by 35.1% or $79.3 million to $146.6 million from $225.8 million in the same period last year. The decrease was primarily attributable to lower spending levels from our major customers in Asia, EMEA, and Americas. The decrease in cloud software and services revenue for the three months ended September 30, 2023 was primarily due to the decreased product and software sales. The increase in cloud software and services revenue for the nine months ended September 30, 2023 was primarily due to the revenue related to the ASSIA Acquisition.

The following table presents our revenues by geographical concentration (dollars in thousands):

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2023	2022	Increase (Decrease)	2023	2022	Increase (Decrease)
Americas	$ 11,080	$ 27,609	(59.9)%	$ 51,111	$ 78,950	(35.3)%
Europe, Middle East, Africa	12,352	25,042	(50.7)%	46,041	54,786	(16.0)%
Asia	26,016	46,239	(43.7)%	82,456	120,092	(31.3)%
Total	$ 49,448	$ 98,890	(50.0)%	$ 179,608	$ 253,828	(29.2)%

Our geographic diversification reflects the combination of market demand, a strategic focus on capturing market share through new customer wins and new product introductions.

The decrease in net revenue for the three and nine months ended September 30, 2023 was attributable to decreased revenue in Asia, EMEA, and Americas driven by decreased spending levels from our major customers, which was partially offset by revenue related to the ASSIA Acquisition.

For the three months ended September 30, 2023, no customers accounted for more then 10% of net revenue. For the nine months ended September 30, 2023, one customer accounted for 12% of net revenue. For the three months ended September 30, 2022, one customer accounted for 13% of net revenue. For the nine months ended September 30, 2022, no customers accounted for more then 10% of net revenue.

We anticipate that our results of operations in any given period may depend to a significant extent on sales to a small number of large customers. As a result, our revenue for any quarter may be subject to significant volatility based upon changes in orders from one or a small number of key customers.

Cost of Revenue and Gross Profit

Total cost of revenue decreased by 28.9% to $47.5 million for the three months ended September 30, 2023, compared to $66.9 million for the three months ended September 30, 2022. Total cost of revenue was 96.1% of net revenue for the three months ended September 30, 2023, compared to 67.6% of net revenue for the three months ended September 30, 2022, which resulted in a decrease in gross profit percentage to 3.9% for the three months ended September 30, 2023 from 32.4% for the three months ended September 30, 2022.

Total cost of revenue decreased by 20.2% to $138.2 million for the nine months ended September 30, 2023, compared to $173.1 million for the nine months ended September 30, 2022. Total cost of revenue was 77.0% of net revenue for the nine months ended September 30, 2023, compared to 68.2% of net revenue for the nine months ended September 30, 2022, which resulted in a decrease in gross profit percentage to 23.0% for the nine months ended September 30, 2023 from 31.8% for the nine months ended September 30, 2022.

The decrease in total cost of revenue was primarily due to the decrease in sales volume. The gross profit percentage decrease was primarily due to the change in number and mix of products sold, elevated component costs, expedite fees paid to deliver certain products, and increase in inventory obsolescence reserve.

Operating Expenses

Research and Product Development Expenses: Research and product development expenses include personnel costs, outside contractor and consulting services, depreciation on lab equipment, costs of prototypes and overhead allocations.

Research and product development expenses decreased by 17.6% to $12.8 million for the three months ended September 30, 2023 compared to $15.5 million for the three months ended September 30, 2022. Research and product development expenses increased by 7.5% to $42.7 million for the nine months ended September 30, 2023 compared to $39.7 million for the nine months ended September 30, 2022. The decrease for the three months ended September 30, 2023 was primarily due to certain cost saving initiatives started by the Company in the third quarter of 2023. The increase for the nine months ended September 30, 2023 was primarily due to the ASSIA Acquisition.

We intend to continue to invest in research and product development to attain our strategic product development objectives, while seeking to manage the associated costs through expense controls.

Selling, Marketing, General and Administrative Expenses: Selling, marketing, general and administrative expenses include personnel costs for sales, marketing, administration, finance, information technology, human resources and general management as well as legal and accounting expenses, rent, utilities, trade show expenses and related travel costs.

Selling, marketing, general and administrative expenses decreased by 6.8% to $22.1 million for the three months ended September 30, 2023 compared to $23.7 million for the three months ended September 30, 2022. Selling, marketing, general and administrative expenses increased by 12.9% to $69.9 million for the nine months ended September 30, 2023 compared to $62.0 million for the nine months ended September 30, 2022. The decrease for the three months ended September 30, 2023 was primarily due to certain cost saving initiatives started by the Company in the third quarter of 2023. The increase for the nine months ended September 30, 2022 was primarily due to the ASSIA Acquisition and a stock-based compensation.

Restructuring and Other Charges: Restructuring and other charges for the three and nine months ended September 30, 2023 primarily related to the strategic decision to outsource manufacturing from the Company's Seminole, Florida facility to Fabrinet. Restructuring and other charges for the three and nine months ended September 30, 2022 related primarily to the transition of DZS GmbH and Optelian to sales and research and development centers. See Note 9 Restructuring and Other Charges of the Notes to Unaudited Condensed Consolidated Financial Statements, for further information.

Impairment of Long-Lived Assets: In the second quarter of 2023, the Company recorded an impairment charge of $0.5 million for the right-of use assets from operating leases in connection with vacating a part of its office space in Plano, Texas, following the reduction in administrative personnel. During the nine months ended September 30, 2022, the Company recorded $0.8 million in impairment charges on the right-of-use assets related to the office lease in Redwood City, California, acquired in conjunction with ASSIA Acquisition. Following the acquisition, the Company made a decision to vacate the space in Redwood City and to adopt a remote work policy in the region.

Interest Income (Expense), net: Interest income (expense) relates mainly to earnings from our cash and cash equivalents, interest expense associated with the credit facilities and amortization of debt issuance costs associated with obtaining such credit facilities. For the three and nine months ended September 30, 2023, the Company recorded $1.0 million and $2.8 million of interest expense, net, respectively. For the three and nine months ended September 30, 2022, the Company recorded $0.4 million and $0.7 million of interest expense, net, respectively.

Loss on Extinguishment of Debt: During the third quarter of 2023, the Company paid the outstanding term loan borrowings under JPM Credit Facility. In association with this debt repayment, the Company recorded a loss on extinguishment of debt of $0.4 million. There was no debt extinguishment related charge in 2022.

Other Income (Expense), net: Other income (expense), net relates mainly to realized and unrealized foreign currency exchange gains and losses. For the three and nine months ended September 30, 2023, the Company recorded $0.8 million and $1.7 million of other income, net, respectively. For the three and nine months ended September 30, 2022, the Company recorded $2.0 million and $2.8 million of other expense, net, respectively. The change in other income (expense), net was primarily due to foreign currency exchange rates fluctuation during the above periods.

Income Tax Provision: Income tax benefit for the three months ended September 30, 2023 was $0.9 million on pre-tax loss of $35.0 million. Income tax provision for the nine months ended September 30, 2023 was approximately $0.6 million on pre-tax loss of $82.1 million. Income tax benefit for the three months ended September 30, 2022 was approximately $1.2 million on pre-tax loss of $12.2 million. Income tax provision for the three months ended September 30, 2022 was approximately $2.5 million on pre-tax loss of $28.6 million.

As of September 30, 2023, the income tax rate varied from the United States statutory income tax rate primarily due to valuation allowances in North America, EMEA and Asia, mandatory R&D expense capitalization in the U.S., and foreign and state income tax rate differentials. Consistent with the prior periods, the Company continued to maintain valuation allowances in North America, EMEA and Asia.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

For a complete description of what we believe to be the critical accounting policies and estimates used in the preparation of our unaudited condensed consolidated financial statements, refer to Note 1 Organization and Summary of Significant Accounting Policies in the Notes to our Audited Consolidated Financial Statements in our Annual Report on Form 10-K/A for the year ended December 31, 2022, as supplemented by Note 1 Organization and Summary of Significant Accounting Policies of the Notes to Unaudited Condensed Consolidated Financial Statements in Part I, Item 1 of this Quarterly Report on Form 10-Q.

LIQUIDITY AND CAPITAL RESOURCES

Our operations are financed through a combination of our existing cash, cash equivalents, available credit facilities, and issuance of equity or debt instruments, based on our operating requirements and market conditions.

The following table summarizes the information regarding our cash and cash equivalents and working capital (in thousands):

	September 30, 2023	December 31, 2022
Unrestricted cash and cash equivalents	$ 4,294	$ 34,347
Working capital	$ 48,128	$ 89,658

As of September 30, 2023, we had $48.1 million of working capital and $4.3 million in unrestricted cash and cash equivalents, which included $3.7 million in cash balances held by our international subsidiaries.

As of September 30, 2023, the Company's total debt obligation was $40.4 million. Refer to Note 16 Subsequent events in the Notes to Unaudited Condensed Consolidated Financial Statements for further information about additional debt financing obtained by the Company in December 2023.

We continue to focus on cost management, operating efficiency and efficient discretionary spending. Management is actively taking measures to enhance profitability and liquidity, including reducing the Company’s cost structure and cash outflows, including its investment in inventory, and managing receivable balances through aggressive collection efforts and tighter customers payment terms. These plans are not completely within the Company’s control, as some actions are dependent on the Company’s lenders, vendors and customers. However, management believes that such plans are reasonably achievable and the Company will sufficiently meet its liquidity needs.

In addition, if necessary, we may sell assets, issue debt or equity securities, rationalize the number of products we sell, adjust our manufacturing footprint, and reduce our operations in low margin regions, including reductions in headcount. Based on our current forecast, plans and current business conditions, the Company believes its existing cash, together with the working capital balances, will be sufficient to fund the Company’s ongoing liquidity requirements, including operating expenses and capital expenditures for at least the next 12 months from the date of this Quarterly Report on Form 10-Q.

The following table presents a summary of our cash flow activity for the periods set forth below (in thousands):

	Nine months ended September 30,	
	2023	2022
Consolidated Statements of Cash Flows Data		
Net cash used in operating activities	$ (41,219)	$ (38,167)
Net cash provided by (used in) investing activities	421	(24,542)
Net cash provided by financing activities	6,572	30,838
Effect of exchange rate changes on cash, cash equivalents and restricted cash	914	(815)
Net change in cash, cash equivalents and restricted cash	$ (33,312)	$ (32,686)
Cash, cash equivalents and restricted cash at beginning of period	$ 38,464	$ 53,639
Cash, cash equivalents and restricted cash at end of period	$ 5,152	$ 20,953

Operating Activities

Net cash used in operating activities increased by $3.1 million to $41.2 million for the nine months ended September 30, 2023 from net cash used in operating activities of $38.2 million for the nine months ended September 30, 2022. The increase in cash used in operating activities was primarily due to an increase in research and development expenses, sales and marketing expense, and restructuring expenses related to the Fabrinet transition.

Investing Activities

Net cash provided by investing activities totaled $0.4 million for the nine months ended September 30, 2023 and consisted primarily of cash received from the sale of manufacturing equipment as part of transition to Fabrinet partially offset by cash used to purchase property and equipment. This is in comparison to net cash used in investing activities of $24.5 million for the nine months ended September 30, 2022, which consisted primarily of cash used in the ASSIA Acquisition and purchases of property and equipment.

Financing Activities

Net cash provided by financing activities totaled $6.6 million for the nine months ended September 30, 2023 and consisted primarily of net proceeds from the related party loans of $24.2 million, proceeds from short-term borrowings of $11.5 million partially offset by the repayment of the borrowings under the JPM Credit Facility of $4.3 million This is in comparison to net cash provided by financing activities of $30.9 million for the nine months ended September 30, 2022, which consisted primarily of borrowing under the JPM term loan to fund the ASSIA Acquisition.

Cash Management

Our primary source of liquidity comes from our cash, cash equivalents and restricted cash, which totaled $5.2 million at September 30, 2023. Our cash, cash equivalents and restricted cash as of September 30, 2023 included $4.7 million held by our international subsidiaries.

Debt Facilities

As of September 30, 2023, the Company's debt obligation consisted of $29.3 million of long-term obligation under the DNI Loan Agreements and $11.1 million of short-term obligations under the financing arrangements with foreign banks and other lending institutions. Refer to Note 7 Debt, in the Notes to Unaudited Condensed Consolidated Financial Statements, for more detail about our current and past debt obligations.

Future Cash Requirements and Funding Sources

Our fixed commitments for cash expenditures consist primarily of payments under operating leases, inventory purchase commitments, and payments of principal and interest for debt obligations.

From time to time, we may provide or commit to extend credit or credit support to our customers. This financing may include extending the terms for product payments to customers. Any extension of financing to our customers will limit the capital that we have available for other uses.

Our accounts receivable represent a concentration of credit risk because a significant portion of the accounts receivable balance at any point in time typically consists of a relatively small number of customer account balances. As of September 30, 2023, no customers represented more than 10% of net accounts receivable. Net accounts receivables from customers in countries other than the United States represented 67% of such receivables. We do not currently have any material commitments for capital expenditures, or any other material commitments aside from operating leases for our facilities, inventory purchase commitments and debt obligations.

The Tax Cuts and Jobs Act of 2017 (TCJA) requires capitalization of all research and development ("R&D") costs incurred in tax years beginning after Dec. 31, 2021 for tax reporting purposes. Capitalized R&D costs will be deductible over five years if the R&D activities are performed in the U.S. or 15 years if the activities are performed outside of the U.S. Due to the Company's significant annual investment in R&D, the impact of this legislation will accelerate the utilization of the Company's net operating loss carryforwards and the timing of when the Company becomes a tax paying entity in the U.S.

Operating Leases

Future minimum operating lease obligations include primarily payments for our office locations and manufacturing, research and development locations, which expire at various dates through 2028. See Note 12 Leases of the Notes to Unaudited Condensed Consolidated Financial Statements for further information regarding our operating leases.

Purchase Commitments

We may have short-term purchase commitments related to the purchase orders for products and services, within the normal course of business. In certain instances, we are permitted to cancel, reschedule or adjust these orders.

Debt obligations

Future debt obligations include scheduled principal repayments, and associated interest payments which may vary based on changes in market interest rates. See Note 7 Debt to Unaudited Condensed Consolidated Financial Statements for further information regarding our debt obligations.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Not required.

Item 4. Controls and Procedures

Disclosure Controls and Procedures

We are required to maintain disclosure controls and procedures designed to provide reasonable assurance of achieving the objective that information required to be disclosed in our reports filed or submitted pursuant to the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow for timely decisions regarding required disclosures. Our disclosure controls and procedures include those components of our internal control over financial reporting intended to provide reasonable assurance that transactions are recorded as necessary to permit preparation of financials in accordance with U.S. GAAP. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

As required by Rule 13a-15(b) under the Exchange Act, we conducted an evaluation of the effectiveness of our disclosure controls and procedures as of September 30, 2023, the end of the period covered by this Quarterly Report on Form 10-Q. The evaluation was done under the supervision and with the participation of management, including our principal executive officer and principal financial officer. In the course of the evaluation of our disclosure controls and procedures, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were not effective as of September 30, 2023, due to the existence of unremediated material weaknesses in internal control over financial reporting described below.

A material weakness (as defined in Rule 12b-2 under the Exchange Act) is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement in our annual or interim financial statements will not be prevented or detected on a timely basis.

Notwithstanding the existence of the material weaknesses described below, management believes that the condensed consolidated financial statements and related financial information included in this Quarterly Report on Form 10-Q fairly present, in all material respects, our financial position, results of operations and cash flows as of and for the periods presented, in conformity with generally accepted accounting principles in the United States of America ("GAAP").

Based on the assessment, management determined that the Company did not maintain effective internal control over financial reporting as of September 30, 2023, as a result of material weaknesses in the following areas:

Control Environment, Risk Assessment, Monitoring Activities, Information and Communication of Policies and Procedures

We did not maintain appropriately designed entity-level controls impacting the control environment and effective monitoring controls to prevent or detect material misstatements to the consolidated financial statements. These deficiencies were attributed to (i) inadequate oversight and accountability over the performance of control activities primarily in the Asia geographic region, (ii) ineffective identification and assessment of risks to properly design, implement, and maintain relevant controls for revenue recognition, (iii) inadequate education and training in certain areas important to financial reporting, and (iv) ineffective controls over ensuring consistent commitment to integrity and ethical values.

Control Activities Related to Certain Business Processes

These material weaknesses contributed to the following additional material weaknesses related to the control activities within certain business processes:

- Asia Region - We did not operate effective controls across substantially all of the Asia region's business processes that were in place to achieve timely, complete, and accurate financial accounting, reporting, and disclosures.
- Revenue Recognition - We did not appropriately design, implement and maintain effective controls over the revenue recognition process, relating to the proper application of Accounting Standards Codification Topic 606, Revenue from Contracts with Customers. The root cause of these control gaps was the inadequate or ineffective

process level controls (including but not limited to controls around capturing and managing changes to customer order terms in the company's records, timely processing of customer product returns, oversight of 3rd party business partners, and evaluating non-standard customer shipping terms, and ensuring consistent commitment to integrity and ethical values in documenting and recording revenue arrangements.

- Information Produced by the Entity – We did not have effective controls over the adequate testing of reports used in the operation of controls.
- Income Tax Controls - We did not operate effective controls surrounding deferred tax assets and liabilities and timeliness of performance of controls.
- Information Technology General Controls – We did not operate effective information technology general controls ("ITGC's") in the areas of user access, segregation of duties, and data processing related to certain information technology systems.
- Delivery Terms - In the fourth quarter of 2022, the Company entered a significant sales agreement with an existing customer which was subject to unique delivery terms. In reviewing the accounting for the revenue transaction, our management identified a deficiency in the effectiveness of a control intended to properly document and review relevant facts in connection with revenue recognition related to such transaction. Accordingly, a material error was detected in recorded revenue in our 2022 preliminary consolidated financial statements as a result of this misapplication of U.S. GAAP. The December 31, 2022 consolidated financial statements included in the 2022 Form 10-K filed on March 10, 2023 and in our earnings press release filed on February 16, 2023 with our Current Report on Form 8-K were corrected prior to issuance.

Remediation Plan and Status for Reported Material Weaknesses

We have been working and are currently working to remediate the material weaknesses described above, including assessing the need for additional remediation steps and implementing additional measures to remediate the underlying causes that gave rise to the material weaknesses. The Company is committed to a strong internal control environment as well as integrity and ethical values to ensure that a proper, consistent tone is communicated throughout the organization, including the expectation that previously existing deficiencies will be remediated through implementation of processes and controls to ensure strict compliance with GAAP and 2013 COSO framework.

As part of our commitment to strengthening our internal control over financial reporting, we have initiated or completed various personnel actions and remedial actions under the oversight of the Audit Committee, including:

- Initiated review and plan to enhance processes and controls around the IT environment and the use of key IT applications, including the storage, maintenance, the accessibility of transactional documentation, and the creation of key commercial documents within the Company's Oracle system.
- Initiated review and plan to enhance processes and controls around internal control documentation and document retention.
- Review and design/improve the corporate compliance program', including:
    - Initiated a plan to Conduct an updated corporate risk assessment.
    - Completed a review, assessment, and update of the corporate code of conduct.
    - Issued statement from CEO on commitment to compliance and ethics and assess methods to regularly demonstrate effective "tone at the top" to foster culture of compliance
    - Plan to provide training to individuals who provide certifications or representations in connection with the company's financial reporting on the meaning of the representations included therein.
    - Plan to develop and provide training throughout the organization on revenue recognition principles relating to the Company's business, including specific training on issues discovered in the review.
    - Assessed, enhanced, and promoted the use of the whistleblower hotline, including making the hotline available to external parties
- Initiated an assessment and plan to enhance controls for corporate oversight of third-party manufacturers..
- Initiated a review and plan to assess the sufficiency of internal audit resources.
- Completed a review of all incentive and bonus compensation.

To address certain control activities related to *material weakness in Revenue Recognition*:

- Initiated a review and plan to improve internal controls and processes related to capturing and managing changes to transaction terms, including required documentation and approvals.
- Plan to evaluate the adequacy of internal controls related to warehousing provided in connection with product sales.
- Initiated a review and plan to improve internal controls and processes for customer refusal of delivery or indication of intent to return an order, including timely notification to designated accounting personnel.
- Plan to assess and enhance process for use of freight forwarders to address specific risks.
- Plan to assess and enhance corporate oversight of regional finance and accounting personnel.
- Plan to assess the adequacy of staffing in the accounting function.
- Plan to assess and enhance the contract review process to address financial reporting risk, including those related to inconsistencies in terms between the contract and transaction documents and non-standard transaction terms.

In addition to the remedial actions planned and undertaken under the oversight of the Audit Committee, we are in the process of, and continue to focus on, strengthening our internal controls over financial reporting to remediate the material weaknesses. Management's additional initiated and completed remediation efforts for each identified material weakness include the following:

- *Asia Region*

  On April 5, 2024, the Company consummated the sale of its Asia operations to Korea-based DASAN Networks Inc. (DNI) and therefore, no longer needs to maintain internal controls over financial reporting for operations in the Asia region.

- *Revenue Recognition and Delivery Terms*

  Subsequent to the discovery of the revenue recognition material weakness, we initiated or completed the following remedial actions starting in the third quarter of 2023:

  - Initiated the design and implementation of enhanced internal controls surrounding identification, review and analysis of key transaction terms including documentation and approvals affecting revenue recognition for product sales orders to ensure that transactions are recorded in accordance with Company's policies and GAAP.
  - Initiated an evaluation of the adequacy and efficacy of controls related to warehousing provided in connection with product sales.
  - Initiated an evaluation of the adequacy and efficacy of controls and processes for customer refusal of delivery or indication of intent to return an order, including timely notification to designated accounting personnel.
  - We have enhanced our quarterly contract review process by implementing a quarterly certification program to ensure timely communication of modification of transaction terms by sales and operations personnel to identify inconsistencies between the contract and transaction documents and non-standard transaction terms.
  - We implemented participation in revenue recognition training programs by Company personnel.
- *Information Produced by the Entity*
  - Completed a review of controls over reports as part of the Company's Q1 2023 implementation of Oracle Cloud.
  - Initiated a plan to enhance documentation retention policies around report parameters
  - Initiated a review of all reports used in controls in order to fully identify the control owners and provide training on appropriate control performance and documentation.
- *Income Tax Controls*
  - Initiated our review of remedial actions to be taken to address the lack of sufficient and accurate support used in the preparation of the tax provision.
  - Initiated our review of remedial actions to be taken to address the lack of timeliness in the performance of existing controls over the preparation of the tax provision.

The material weaknesses will not be considered remediated until the applicable remedial controls operate for a sufficient period of time and management has concluded, through testing, that these controls are operating effectively. Additional remediation measures may be required, which may require additional implementation time. We will continue to assess the effectiveness of our remediation efforts in connection with our evaluations of internal control over financial reporting.

We can give no assurance that the measures we take will remediate the material weaknesses that we identified or that any additional material weaknesses will not arise in the future. We will continue to monitor the effectiveness of these and other processes, procedures and controls and will make any further changes management determines appropriate.

Changes in Internal Control over Financial Reporting

Except for the material weaknesses described above, no other change in the Company's internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) occurred during the quarter ended September 30, 2023, that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

Plume

On October 10, 2022, Plume Design, Inc. ("Plume") filed suit against DZS in the Superior Court of the State of Delaware, alleging that DZS breached a reseller contract with Plume and seeking $24.75 million in damages. The parties have completed briefing on dispositive motions, and a trial is currently set for October 7, 2024. DZS intends to vigorously defend this lawsuit.

Class Action

In June and August of 2023, DZS shareholders filed three putative securities class actions related to DZS's June 1, 2023 Form 8-K announcing the Company's intention to restate its financial statements for the first quarter of 2023. Each suit was filed in the Eastern District of Texas. All three cases allege violations of Sections 10(b) and 20(a) of the Exchange Act against DZS, its Chief Executive Officer and its Chief Financial Officer. The cases are: (1) Shim v. DZS et al., filed June 14, 2023; (2) Link v. DZS et al., filed June 27, 2023; and (3) Cody v. DZS et al., filed August 9, 2023.

Three potential lead plaintiffs filed applications for appointment on August 14, 2023. On September 12, 2023, the cases were consolidated under the lead case Shim v. DZS et al. The plaintiffs are seeking unspecified damages, interest, fees, costs and interest. As of July 31, 2024, the court has not yet ruled on the appointment of a lead plaintiff and the Defendants have not yet responded to any complaint. DZS intends to vigorously defend these lawsuits.

In light of the events giving rise to the restatement, DZS began cooperating, and intends to continue to cooperate, with the U.S. Securities and Exchange Commission (the "SEC"), which has informed DZS that it is investigating potential violations of the federal securities laws related to DZS.

On June 3, 2024, counsel for a shareholder of the Company sent the Company a demand for certain books and records related to events related to the Company's June 1, 2023 Form 8-K. The demand was made pursuant to Section 220 of the Delaware General Corporation Law. While the Company does not concede the demand is proper, it has produced certain records to the shareholder.

In addition to the matters discussed above and the Notice discussed in Note 13 of the Notes to Unaudited Condensed Consolidated Financial Statements, from time to time, the Company is subject to various legal proceedings, claims and litigation arising in the ordinary course of business. While the outcome of these matters is currently not determinable, the Company records an accrual for legal contingencies that it has determined to be probable to the extent that the amount of the loss can be reasonably estimated. The Company does not expect that the ultimate costs to resolve these matters will have a material adverse effect on its consolidated financial position, results of operations or cash flows. However, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. If an unfavorable ruling were to occur, there exists the possibility of a material adverse impact on the results of operations and cash flows of the reporting period in which the ruling occurs, or future periods.

Item 1A. Risk Factors

A list of factors that could materially affect our business, financial condition or operating results is described in Part I, Item 1A, "Risk Factors" in the 2022 Form 10-K/A. There have been no material changes to our risk factors from those disclosed in Part I, Item 1A, "Risk Factors" in the 2022 Form 10-K/A.

Item 5. Other Information

None.

Item 6. Exhibits

The exhibits required to be filed with this quarterly report on Form 10-Q are listed in the Exhibit Index attached hereto and are incorporated herein by reference.

EXHIBIT INDEX

Exhibit Number	Description
3.1	Restated Certificate of Incorporation of DASAN Zhone Solutions, Inc. (incorporated by reference to Exhibit 3.1 to the Company's Annual Report on Form 10-K filed with the SEC on September 27, 2017).
3.2	Certificate of Amendment to the Restated Certificate of Incorporation of DZS Inc. (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the SEC on August 27, 2020).
3.3	Amended and Restated Bylaws of DZS Inc. (incorporated by reference to Exhibit 3.2 to the Company's Annual Report on Form 10-K filed with the SEC on March 11, 2021).
10.1	Credit Agreement, dated as of February 9, 2022, among DZS Inc., as Borrower, the other Loan Parties party thereto, the Lenders from time to time parties thereto and JPMorgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on February 10, 2022).
10.2	First Amendment to Credit Agreement, dated as of May 27, 2022, among DZS Inc., as Borrower, the other Loan Parties party thereto, the Lenders party thereto and JPMorgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on June 1, 2022).
10.3	Second Amendment to Credit Agreement, dated as of February 15, 2023, among DZS Inc., as Borrower, the other Loan Parties party thereto, the Lenders party thereto and JPMorgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on February 16, 2023).
10.4	Third Amendment to Credit Agreement, dated as of May 8, 2023, among DZS Inc., as Borrower, the other Loan Parties party thereto, the Lenders party thereto and JPMorgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed with the SEC on May 9, 2023).
10.5	Loan Agreement, dated as of September 12, 2023, by and among Dasan Networks, Inc., as Lender, Dasan Network Solutions, Inc., as Borrower, DZS California, Inc., as Collateral Provider, and DZS Inc. (solely for the limited purposes stated therein) (English translation) (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on September 13, 2023).
10.6	Loan Agreement, dated as of September 22, 2023, by and among Dasan Networks, Inc., as Lender, Dasan Network Solutions, Inc., as Borrower, DZS California, Inc., as Collateral Provider, and DZS Inc. (English translation) (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on September 27, 2023).
31.1*	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a)/15d-14(a)
31.2*	Certification of Chief Financial Officer Pursuant to Rule 13a-14(a)/15d-14(a)
32.1*	Section 1350 Certification of Chief Executive Officer and Chief Financial Officer
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document
101.SCH	Inline XBRL Taxonomy Extension Schema with Embedded Linkbase Documents
104	Cover Page Interactive Data File (embedded within the Inline XBRL document and included in Exhibit 101)

* Filed herewith.
\+ Indicates management contract or compensatory plan, contract or arrangement.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

DZS INC.

Date: August 13, 2024

By:	/s/ Charles Daniel Vogt
Name:	Charles Daniel Vogt
Title:	President and Chief Executive Officer
By:	/s/ Misty Kawecki
Name:	Misty Kawecki
Title:	Chief Financial Officer (Principal Financial Officer)
By:	/s/ Brian Chesnut
Name:	Brian Chesnut
Title:	Chief Accounting Officer (Principal Accounting Officer)

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO
RULE 13a-14(a)/15d-14(a)

I, Charles Daniel Vogt, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of DZS Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 13, 2024

/s/ CHARLES DANIEL VOGT

Charles Daniel Vogt
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO
RULE 13a-14(a)/15d-14(a)

I, Misty Kawecki, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of DZS Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 13, 2024

/s/ MISTY KAWECKI

Misty Kawecki
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

SECTION 1350 CERTIFICATION

Pursuant to 18 U.S.C. Section 1350, Charles Daniel Vogt, President and Chief Executive Officer of DZS Inc. (the “Company”) and Misty Kawecki, Chief Financial Officer of the Company hereby certify that, to their knowledge:

1. The Company’s Quarterly Report on Form 10-Q for the quarter ended September 30, 2023 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 13, 2024

/s/ CHARLES DANIEL VOGT

Charles Daniel Vogt
President and Chief Executive Officer

/s/ MISTY KAWECKI

Misty Kawecki
Chief Financial Officer
(Principal Financial and Accounting Officer)